



U.S. National Park Service

# George Washington Carver National Monument Fire Management Plan



Recommended By: \_\_\_\_\_ Date: \_\_\_\_\_  
Fire Management Officer

Approved By: \_\_\_\_\_ Date: \_\_\_\_\_  
Superintendent

## FMP/NEPA REVISION TRIGGERS

Over time, an FMP and its supporting NEPA document may become outdated due to changes in policy or circumstances in the park and thus require revision.

The following questions will help you to determine whether FMP revisions and a new environmental compliance process needs to be initiated. Some items may require discussions with staff from other divisions to complete. An FMP can be amended through a categorical exclusion (CE), environmental assessment (EA) or environmental impact statement (EIS) depending on the complexity of the issues involved.

If you answer YES to any of the questions below, additional compliance may be necessary. Consult with your Regional Fire Planner and Park Compliance Specialist to determine if additional NEPA and/or other compliance (section 7, section 106, etc.) will be necessary.

***In the space to the right, please list the current FMP NEPA compliance with date: EA-2004 & CE-2023***

	FMP/NEPA REVISION TRIGGERS	YES	NO
1	Is the park strategy for managing wildfires and implementing fuel treatments <u>inconsistent</u> with the FMP and NEPA documents?		<b>X</b>
2	Are FMP goals and objectives <u>inconsistent</u> with newer, approved park planning documents (Foundation Document, GMP, RSS, etc.)? <i>If FMP goals and objectives are inconsistent with park planning documents, please provide a brief description of the inconsistency or conflict:</i>		<b>X</b>
3	Have there been changes in the status of cultural resources, historic properties and/or sensitive species in the park that could affect FMP implementation? <i>If yes, consult with appropriate specialist.</i>		<b>X</b>
4	Since FMP approval or update, have there been changes in park policy or legal requirements that require changes to the FMP and supporting compliance documents? <i>Explain if yes:</i>		<b>X</b>

5	<p>If new lands with burnable vegetation have been added to the park since the last FMP approval or FMP NEPA review/amendment:</p> <ul style="list-style-type: none"> <li>● Is the new land going to have a fuels treatment plan this year?</li> <li>● Is management of the new land different from the rest of the unit?</li> <li>● Does the new land have any threatened or endangered species?</li> <li>● Does the new land have any cultural resources and/or historic properties?</li> </ul> <p><i>Note: if you answered YES to any of these questions, consult your regional fire planner to determine if additional environmental compliance is needed for the area.</i></p>		X
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Prepared by: \_\_\_\_\_

Fire Management Officer

Approved by: \_\_\_\_\_

Superintendent

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## 1.0 INTRODUCTION, LAND MANAGEMENT PLANNING, and COMMUNICATION

The mission of the National Park Service Wildland Fire Program is to manage wildland fire to protect the public, park communities, and infrastructure, conserve natural and cultural resources, and maintain and restore natural ecosystem processes ([NPS Wildland Fire Strategic Plan, NPS 2023](#)). Each park unit with burnable vegetation must have an approved Fire Management Plan that will address the need for adequate funding and staffing to support the fire management program. ([Directors Order #18, Wildland Fire Management, NPS 2008](#)). To align with the DOI FMP Framework, the NPS developed fire management planning guidance described in NPS [Reference Manual \(RM\) - 18, Fire Planning, Chapter 4 \(2023\)](#), that considers fire program complexity and efficient and effective planning direction.

The George Washington Carver National Monument (GWCA) Fire Management Plan is a strategic plan that defines a program of work to manage wildland fire (includes prescribed fire and wildfire) and non-fire fuel treatments. It is based on direction contained in existing park unit planning documents. This fire management plan provides for firefighter and public safety and includes strategies for managing wildland fire. The GWCA Fire Management Plan addresses values to be protected and is consistent with GWCA resource management objectives and environmental laws and regulations such as the [National Environmental Policy Act \(NEPA\)](#), the National and State Historic Preservation Acts, the Clean Air Act, etc.

The Missouri/Iowa Parks Fire Management Zone Fire Management Officer (FMO) determines program requirements to implement land use decisions through the FMP to meet land management objectives. The FMO is responsible for developing, maintaining, and annually evaluating the FMP to ensure accuracy and validity by completing an annual review. ([Interagency Standards for Fire and Fire Aviation Operations \(Red Book\), Chapter 3, NPS Program Organization and Responsibilities](#)).

### 1.1 Program Organization

The fire management organization located at the George Washington Carver National Monument is part of a grouping of National Park Units in Missouri and Iowa. The grouping of units is called the Missouri/Iowa Parks Fire Management Zone (MIPZ), and consists of the following NPS units:

- George Washington Carver National Monument
- Ozark National Scenic Riverways
- Wilson's Creek National Battlefield
- Herbert Hoover National Historic Site
- Effigy Mounds National Monument
- Gateway Arch National Park

The fire management staff located at Ozark National Scenic Riverways (OZAR), under the Division of Resource Management, provides all aspects of fire management support to each NPS unit in the Missouri/Iowa Parks Fire Management Zone. Each individual unit maintains a small collateral-duty staff and/or general agreements with a local fire department or other agencies for initial response to a wildfire emergency.

The wildland fire management appropriation provides funding for necessary expenses related to fire planning and oversight functions, along with budgeted activities necessary to prepare for a normal fire season. It also oversees the development and implementation of the wildland fire facilities, aviation, emergency suppression, burned area rehabilitation, hazardous fuels reductions (non-WUI) and hazardous fuels reduction (WUI) budget activities.

Wildland fire management funds may not be diverted for non-fire program support. Budgets are maintained at OZAR and the local unit level, with close oversight from Fire Management Zone Staff, the Regional Fire Management Officer, and the National Fire Management Office.

### **Fire Organization Structure**

All positions will meet current, relevant Interagency Fire Program Management (IFPM) standards where applicable. For IFPM purposes, George Washington Carver and the associated parks in the Missouri/Iowa Parks Zone are a moderate complexity fire management program due to the Wildland Urban Interface and Fuels Management Programs.

### **Zone Fire Management Officer (FMO)**

Provides professional fire management support to the GWCA. The FMO is responsible for coordinating all wildland fire prevention, pre-attack, suppression, prescribed fire activities and fire management planning with the GWCA Superintendent and the Chief Ranger. The FMO acts as GWCA's representative for Memoranda of Understanding with other agencies regarding wildland fire. The FMO also coordinates in-park fire dispatches and out-of-park fire assignments through the Missouri Iowa Coordination Center in Rolla, MO. The FMO or delegate will coordinate budget requests and tracking and provide oversight for employee fire training, qualifications and planned prescribed fires.

### **Zone Assistant Fire Management Officer (AFMO)**

The AFMO assists with coordination and supervision of prevention, preparedness, writing/revision of prescribed fire burn plans, installation of control lines on prescribed burn units, managing wildland fire response, monitoring and post-fire activities on NPS lands. The AFMO also assists in coordination with other governmental, non-government organizations, and local landowners. Budget requests and monitoring of allocated funds may also be included in AFMO responsibilities. The AFMO assists with IQCS updates (listed above in FMO responsibilities) and can also serve as DO.

### **Zone Fire Budget Analyst/Fire Program Management Assistant (FPMA)**

The FPMA provides support services in terms of procurement, travel, budget, and other fiscal matters. The FPMA tracks expenditures against fire accounts for prescribed fire operations, suppression actions, mechanical fuel treatment projects, and preparedness activities for the park and maintains administrative files for recordkeeping.

### **Local Park Unit (GWCA) Fire Organization Structure**

#### **Park Superintendent**

The superintendent or agency administrator (AA) is responsible for the overall direction of the fire program. The superintendent has the final decision-making authority for fire management operations. The superintendent approves and signs interagency agreements

pertaining to GWCA and approves management decisions in the Wildland Fire Decision Support System (WFDSS) for unplanned wildfires or escaped prescribed fires. In addition, the superintendent delegates specific authorities for fire management operations to the Fire Management Officer as instructed in RM-18 and the Interagency Standards for Fire and Aviation Operations guidelines.

### **Supervisory Park Ranger (Interpretation)**

This position assists the FMO with the release of formal fire education and information materials to the media, the public, and NPS visitors. Submits annual press releases each burn season. Makes notifications to public of fire management activities.

### **Park Fire Coordinator**

Coordinates fuels treatments in consultation with the Zone FMO. Advises and informs the superintendent of all fire activity information. Ensures that both a briefing statement and delegation of authority are prepared for incoming resources. In cooperation with the FMO, the fire coordinator assists in the dispatching of park personnel for fire assignments and aids parks and agencies. Maintains technical references, maps, and aerial photos for the fire program. Coordinates cultural and resource management aspects of the fire management program such as environmental and cultural compliance, wildfire and prescribed fire planning, assignment of resources advisors, and coordination for burned area rehabilitation (if needed).

### **Heartland Network Inventory & Monitoring (I&M)**

Coordinates ecological monitoring activities and data analysis within the park and makes recommendations regarding fire effects to the zone FMO/AFMO and the park's fire coordinator.

### **Fire Duty Officer (FDO)**

This role may be filled by any qualified on-duty staff member. The FDO serves as the primary point of contact, organizer, and coordinator for all fire management activities within the unit.

## **1.2 Fire Management Actions**

All unplanned wildland fires will be suppressed. Suppression actions will consider firefighter and public safety, threat and potential damage to property, resources, and cost effectiveness.

### **Prescribed Fire:**

Prescribed fire may be used for protection of cultural resources, rehabilitation and maintenance of historic landscapes, reduction of hazard fuels, and achievement of natural resource objectives. A park level prescribed burn plan shall be written, in the most current format.

### **Non-Fire Applications:**

The reduction or removal of fuels by manual, mechanical, or chemical methods are options that may be used in the protection of cultural or natural resources, historic landscape restoration and maintenance, invasive species control, or any other park level objectives that

may occur. All non-fire projects will have an approved project plan in place, environmental compliance complete, and objectives for the project(s) stated.

### 1.3 Environmental Compliance

In compliance with the National Environmental Policy Act (NEPA), an Environmental Assessment (EA) and a Finding of No Significant Impact (FONSI) have been prepared for this Fire Management Plan.

The park's Cultural Landscape Report (CLR) has considered fire as a tool to achieve natural resource objectives.

To comply with provisions of the Endangered Species Act, the park has conducted an environmental review for actions in this Fire Management Plan that may affect threatened and endangered species. Although the Gray Bat is currently the only threatened or endangered species known to inhabit or occupy the park, fuel management actions will follow USFWS recommendations for restricted seasons to minimize potential impacts to the Gray Bat, Indiana Bat, and Northern Long Eared Bat as well as proposed endangered and candidate species Tri-Colored Bat and Monarch Butterfly. Updated information on changes to species status will be incorporated into fire planning as it becomes available through ongoing consultation with the Fish and Wildlife Service. GWCA will also adhere to USFWS recommendations for mitigations and required NEPA actions and include more detailed information on specific activities in prescribed fire and other non-fire action plans.

All lands and structures within the park, except for park operation facilities, are listed on the National Register of Historic Places. Proposed prescribed fire plans will be reviewed for compliance with Section 106 of the National Historic Preservation Act.

#### [Planning, Environment & Public Comment \(PEPC\)](#)

NEPA Document Name	Document Date Signed (month/day/year)	Project ID Number#
2010 Fire Management Plan Review and Update Categorical Exclusion (CE)	08/24/2010 Date of signed CE	<a href="#">#32397</a>
Fire Management Plan Environmental Assessment (EA) Finding of No Significant Impacts (FONSI)	09/28/2004 Date of signed FONSI	
Cultural Landscape Report/Environmental Assessment Finding of No Significant Impact	07/13/2015 Date of signed FONSI	<a href="#">#50956</a>
2023 Fire Management Plan Update (CE)		<a href="#">#118398</a>

*Table 1. NEPA documentation.*

### 1.4 Park Unit/Resource Management Planning

[Cultural Landscape Report](#) – 2015 (PEPC# 50956)



### **1.5 Collaborative Planning**

Agreements will be in place for state (Missouri Dept. of Conservation) and federal agencies (U.S. Forest Service, USFS) as well as the Diamond Area Fire Protection District.

An inter-park agreement will be in place between the Missouri/Iowa Parks Fire Management Zone and George Washington Carver National Monument. This agreement will also include a Delegation of Authority signed by the superintendent.

### **1.6 Communication and Education**

The park will work to cooperate with other agencies to develop and implement an active fire prevention program to protect human life and property and prevent damage to cultural resources or structures in and outside the park.

A program of public education regarding potential fire danger may be implemented when fire danger is elevated. Visitor contacts, bulletin board materials, handouts, and interpretive programs will be utilized to increase park visitor and neighbor awareness of fire hazards.

It is essential that park employees be well informed about fire prevention and the objectives of the fire management program. Further, employees must be kept informed about changes in conditions throughout the fire season.

Park interpretive staff should relate to the public the beneficial effects of prescribed fires as opposed to unplanned human-caused or wildfires. Information should be included to emphasize the potential severity of human-caused wildland fires and how to prevent them.

During periods of extreme or prolonged fire danger, fire prevention messages will be included in interpretive programs. Visitors will be informed of county burn bans and park restrictions, when imposed, will usually be consistent with those implemented by cooperators.

When prescribed fires are burning in the park, signs at the Visitor Center and bulletin boards will be used to supplement visitor contacts. These signs will be used to administratively direct, inform, guide, and caution visitors about existing fire conditions and prescribed fire activities.

Park staff will work with the Diamond Area Fire Protection District, Missouri Department of Conservation, and other agencies with fire management responsibilities to establish common protocols and procedures, identify training needs, cooperate on prevention, conduct joint training when possible, and develop strategies for safer and more efficient fire management operations.

## **2.0 WILDLAND FIRE PROGRAM MANAGEMENT GOALS AND OBJECTIVES**

### **2.1 Goals**

These goals are programmatic in direction and are intended to provide safe and effective implementation of the Fire Management Plan.

**Goal 1:** Make firefighter and public safety the highest priority of every fire management activity.

**Goal 2:** Suppress all unplanned wildland fires regardless of ignition source to protect the public, private property, and natural and cultural resources of the park.

**Goal 3:** Manage prescribed fires in concert with federal, state, and local air quality regulations.

**Goal 4:** Facilitate reciprocal fire management activities through the development and maintenance of cooperative agreements and working relationships with pertinent fire management entities.

**Goal 5:** Reduce wildland fire hazards around developed areas and areas adjacent to cultural and historic sites.

**Goal 6:** Use prescribed fire as a method of restoring and maintaining the cultural and natural landscape to meet resource objectives of the park.

## **2.2 Objectives**

This FMP, especially the prescribed fire components, provides a detailed action program that is consistent with NPS Management Policy and DO-18 (Wildland Fire Management). The plan will also assist the park in attaining the objectives of reconstructing the rural Missouri environment of Carver's childhood and creating a visitor understanding.

### **Operational objectives**

- Mitigate potential injuries to members of the public or firefighters during wildland and prescribed fire operations.
- 95% of all wildland fires are controlled during initial attack (24 hours or 10 acres).
- 100% of all prescribed fires are conducted consistent with Federal, State, and local smoke management requirements.
- Manage suppression actions so that rehabilitation costs are less than 10% of suppression costs.

### **Ecological objectives**

- Support native plant species richness in prairie restorations. Maintain at least 75 native species (prairie-wide richness) as measured in the Heartland monitoring sites (Leis and Short 2021).
- Maintain tree seedlings at less than 2000 stems/ha on average in prairie restorations. Ideally, trees as well as tree seedlings and saplings would be as low as possible. (Leis and Short 2021)
- Using a combination of prescribed fire, mechanical, and chemical treatments reduce woody plant cover from 2020 levels to about 10% cover on average in Heartland monitoring sites.
- Maintain at least 5% (+/- 1 SD) native woody plant cover on average (Leis and Short 2021).
- Use a combination of fire and mechanical thinning to reduce canopy cover of the woodlands to achieve an open woodland/savannah structure (30-80% canopy cover) rather than the closed woodland-forest levels present currently (Peitz and Reibold 2021).

## 3.0 WILDLAND FIRE OPERATIONAL GUIDANCE

### 3.1 Management of Wildfires

A wildfire is any unplanned, unwanted, non-structure fire, including escaped prescribed fires that occur in the wildland environment. All unplanned wildland fires will be effectively managed with a suppression strategy considering resource values to be protected while using the full range of strategic and tactical decisions to suppress the fire at the lowest cost with the fewest negative consequences with respect to firefighter and public safety.

#### 3.1.1 Wildfire Response Planning

##### Expected Fire Behavior

The fire behavior described below can be expected under average spring and fall fire season conditions. A combination of drought, high wind, low humidity, and high temperatures can greatly increase expected fire behavior. Fire spread in Fire Behavior Fuel Model GR2 is governed by the fine, very porous, and continuous herbaceous fuels that have cured or are nearly cured. Surface fires move rapidly through the cured grass and associated material. Generally, fires are of moderate intensity with average rates of spread of 50 to 80 chains/hour and flame lengths of 3 to 4 feet.

The most intense fires in the grass group are found in GR6. This grass group displays high rates of spread under the influence of wind. Fires in the grass group fuel model exhibit some of the faster rates of spread under similar weather conditions, averaging 104 chains/hour with flame lengths of 12 feet.

Slow-burning surface fires with low flame lengths are generally the case in TL2 as is evidenced by the one-foot flame lengths and average rate of spread of 1.6 chains/hour.

Fire is supported in the compact litter layer. This fuel model is typical for winter, spring, and summer periods where fuel compaction and moisture content are primary influences. The fuels pose fire hazards under severe weather conditions involving high temperatures, low humidity, and high winds.

In TL6, fires run through the surface litter faster than model TL2 (7.5 chains/hour) and have longer flame lengths (averaging 2.6 feet). Fall fires in hardwoods are predictable, but high winds may cause higher rates of spread than predicted because of spotting from rolling and blowing leaves. Concentrations of dead-down woody material will contribute to possible torching out of trees, spotting, and crowning. The slash group, represented by FBFM SB1, demonstrates fire behavior that can be active. However, depending on the location of the debris burning area, shading from the overstory, and aging of fine fuels, fire activity may decrease. As fine fuels burn and intensity builds up, and larger fuels start burning, active flaming will occur with the potential of generating firebrands. Care should be taken in windy and/or dry conditions to look for spot fires.

Table 3 illustrates the comparative rates of spread and flame lengths for different fuel models under average conditions (fuel moisture content of 8% and a mid-flame windspeed of 5 miles/hour).

FIRE BEHAVIOR FUEL MODEL	RATE OF SPREAD (Chains/Hour)	FLAME LENGTH (Feet)
GR2	2.3	40.7
GR6	15.4	4.4
TL2	1.2	0.7
TL6	5.3	3.0
SB1	5.5	2.8

*Table 2. Comparative Rates of Spread and Flame Lengths for Fuel Models using BehavePlus 5.0.5*

### Initial Response Procedures

All fires in the park will be suppressed. The strategy and tactics used will be commensurate to firefighter and public safety, values at risk (protection of cultural, historic, and private property), and cost.

No written or formal pre-attack plan exists for the park. Volunteer fire departments have developed their own protocols and procedures for initial attack of fires within the park boundary.

### Transition to Extended Response

Due to the small size of the park and the fuels involved, extended attack is unlikely. However, should this situation arise, 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.

### Minimum Impact Strategy and Tactics (MIST)

MIST is not intended to represent a separate or distinct classification of firefighting tactics but rather a mindset of how to suppress a wildfire while minimizing the long-term effects of the suppression action. MIST is the concept of using the minimum tool to accomplish the task safely and effectively. MIST should be considered for application on all fires in all types of land management.

While MIST emphasizes suppressing wildland fire with the least impact to the land, actual fire conditions and good judgment will dictate the actions taken. Consider what is necessary to halt fire spread and containment within the fireline or designated perimeter boundary, while safely managing the incident. Use of MIST **will not** compromise firefighter safety or the effectiveness of suppression efforts. Safety zones and escape routes will be a factor in determining fire line location.

All fire management activities in the park will rely on tactics that cause a minimum amount of resource damage while maintaining the safety of firefighters, personnel, and the public as the highest priority.

Superintendent approval is needed for off road use of vehicles, bulldozers, and mechanized equipment.

### **3.1.2 Wildland Fire Decision Support System (WFDSS)**

The Wildland Fire Decision Support System ([WFDSS](#)) will be used to document the management objectives and strategies if a wildfire escapes initial attack or exceeds initial attack response. Current direction on WFDSS pertaining to the NPS can be found in the [Interagency Standards for Fire and Fire Aviation Operations \(Red Book\) in Chapters 3 and 11.](#)

#### **Management Requirements (M.R) and Strategic Objectives (S.O.)**

[Management Requirements](#) and [Strategic Objectives](#) are derived from land and resource management plans, as well as related compliance documents, and provide the framework, and limitations/challenges for wildfire response. M.R. and S.O. provide the foundation of the WFDSS decision. In order to publish an Incident Decision in WFDSS, applicable fire related protection and resource management objectives and requirements must be incorporated pre-season into WFDSS. NPS recommends pre-loading M.R. and S.O. pre-season in the [WFDSS Production System \(Red Book, Incident Management and Response, Chapter 11\).](#)

#### **Management Requirements**

George Washington Carver National Monument was dedicated to memorializing and preserving the birthplace/home of George Washington Carver. Although the park consists of the entire original 240-acre homestead where Carver was born, only 210-acres were evaluated for prescribed fire in the 2004 Fire Management Plan EA/FONSI, and that same area will be covered in this plan.

The George Washington Carver National Register Nomination was updated in 2020, and this updated nomination recognizes the whole property as a cultural landscape. The entire area within the boundary is counted as a contributing site and within that site are located all the resources in the district. All told, there are 21 resources identified in this document; 11 are contributing and 10 are non-contributing. Contributing resources include four buildings, three structures, one site, and three objects. Non-contributing resources include three buildings and seven structures. The non-contributing buildings listed are the visitor center, former superintendent's residence, and former historian's residence. Well #2 Building is not listed on the nomination form. This classification necessitates constraints on the strategies that guide the management of suppression efforts and prescribed fire operations. These constraints include:

- No unacceptable impacts to cultural resources or threatened and endangered species are permitted.
- Ensure socio-political economic impacts, including wildland urban

interface (WUI), are considered in developing implementation plans.

- Ensure the public, organizations, and cooperating agencies are aware of any suppression or prescribed fire operation that may have an impact on them.
- Under no circumstance, except imminent loss of life, will the Carver family cemetery be damaged or altered.
- Archeological resources must be protected. Therefore, dozing, digging fire lines, ditching, or other earthwork activities will not take place over known sites. They will be evaluated on a case-by-case basis and must be monitored at all times by an archaeologist (or other qualified personnel). Disturbance of the soil below 5-6 inches in any location is prohibited without the approval of the superintendent.
- The only mechanized equipment allowed, unless otherwise authorized by the superintendent, will be chainsaws, portable and mobile pumps, backpack blowers, fire engines, utility task vehicles (UTVs), all-terrain vehicles (ATVs), and devices used for heat or fire detection.
- No retardant will be used without the consent of the superintendent.
- No new roads will be created.
- Dead or live standing trees will not be cut unless firefighter, public safety, or suppression actions are compromised.
- Operation of vehicles off existing roads will only be allowed in dry soil conditions.
- Human-caused fires will require an investigation and report by law enforcement and/or fire management personnel, preferably trained in wildland fire cause investigation.
- In the event of the threat of life or the potential for extensive property damage, the superintendent may amend these constraints.

### **Strategic Objectives**

- Ensure that wildland and prescribed fire operations sustain no injuries to members of the public or firefighters.
- 95% of all wildland fires are controlled during initial attack (24 hours or 10 acres).
- 100% of all prescribed fires are conducted consistent with Federal, State, and local smoke management requirements.
- Manage suppression actions so that rehabilitation costs are less than 10% of suppression costs.

## **3.2 Fuels Treatments**

Prescribed fire will be utilized to manage natural resources in support of the rehabilitation and interpretation of the historic cultural landscape. Prescribed fire will also be used to manage vegetation to produce healthier habitats. In addition, fuel management, both mechanical means and prescribed fire, can reduce the risk to the historic structures and the NPS infrastructure on the unit as well as adjacent to park lands.

## **Fuels Management Goals and Objectives**

The primary purpose of the program is to enhance natural resources in the park and protect NPS infrastructure. Due to the presence of wildland-urban interface conditions, prescribed fire will be carefully planned and executed.

Prescribed fire projects will be directed toward maintaining ecosystem health, cultural landscapes and protecting natural resources from catastrophic fires. Hazardous fuels reduction will be one of the desired results of prescribed fire. As specific needs are identified, project proposals will be prepared, and funding requested.

## **Fuels Treatments**

Prescribed fire will be utilized to manage natural resources in support of the rehabilitation of and interpretation of the historic cultural landscape. Prescribed fire will also be used to manage vegetation to produce healthier habitats. At the same time fuel management, using both mechanical means and prescribed fire, can reduce the risk to the historic structures and the NPS infrastructure on the unit as well as adjacent to park lands.

- Reduce grassland standing fuels by at least 50% of pre-burn levels in target burn units (Leis and Morrison 2017).
- Reduce woodland fuels by at least 5% of pre-burn levels. The woodlands at GWCA include dead and down woody material resulting from multiple ice and wind events.

## **General Fuels Management Implementation Procedures**

Activities proposed in the Fire Management Plan will be planned and implemented in accordance with [RM 18, Fuels Management Chapter 7](#), the [Interagency Prescribed Fire Implementation Guide](#), and the [Red Book, Fuels Management, Chapter 17](#).

The George Washington Carver National Monument Fire Program, administered by Ozark National Scenic Riverways fire staff, will utilize both fire and non-fire treatments. Prescribed fire and manual/mechanical projects will be selected in consultation with the park's fire coordinator. They will be entered in the park Planning, Environment & Public Comment (PEPC) site. Section 106 consultation will be completed prior to work on the ground. Any project may be implemented if it has an approved burn plan or project plan. This schedule will be reviewed annually to assess project funding, viability and to initiate planning with other agencies, as required.

Prescribed fire plan requirements at George Washington Carver National Monument are similar to the requirements at other NPS units. A detailed outline and discussion are found in RM-18, Chapter 10. Ozark National Scenic Riverways prescribed fire plans have the following specific requirements:

- |                              |                               |
|------------------------------|-------------------------------|
| • Signature Page             | • Complexity Analysis Summary |
| • Executive Summary          | • Description of Area         |
| • Agency Administrator       | • Goals and Objectives        |
| GO/NO-GO Pre-ignition        | • Funding                     |
| Approval.                    | • Prescription                |
| • Prescribed Fire Operations | • Scheduling                  |
| GO/NO-GO Checklist           |                               |

- Pre-burn Considerations and Weather
- Briefing Checklist
- Communication
- Public and Personnel Safety, Medical
- Test Fire
- Ignition Plan
- Holding Plan
- Contingency Plan
- Wildfire Declaration
- Smoke Management and Air Quality
- Monitoring
- Post-burn Activities
- Maps
- Technical Reviewers Checklist
- Complexity Analysis
- Fire Behavior Modeling Documentation
- Adequate Holding Resources Worksheet

A qualified Prescribed Burn Boss will conduct all prescribed fires with qualified support personnel to accomplish the objectives agreed upon in the plan. Qualified personnel will monitor fire behavior and fire effects, control hot spots and spot fires, support ignition needs, and complete initial attack on any escaped fires. Other qualified fire personnel from zone units may be asked to assist on an ad hoc basis. Resources will meet their own agencies' qualification requirements. Federal resources will meet the standards in the Wildland and Prescribed Fire Qualifications System Guide, PMS 310-1.

Some mechanical and/or manual hazard fuel reduction may be done in the woodland areas of the park. Normal grounds maintenance (mowing, raking, etc.) will also reduce risk of unwanted wildland fire but will not be project oriented. In addition, Wildland Urban Interface projects may be developed with cooperators and adjacent landowners.

### **Multi-year Fuels Treatment Plan**

The NPS Fuels Management Program will use the Bureau approved system for submitting proposed projects for approval, tracking accomplishments of the program, reporting performance, and measuring. A three-year Planned Program of Work (PPOW) can be found in that system. [The Active Management \(Fuels\) v 2.0 | Wildland Fire Risk Assessments](#) displays Fuels Treatments accomplished by the National Park Service's Wildland Fire Management program. A multi-year fuels treatment plan may be attached as an optional appendix. Additional information can be found in [RM 18, Fuels Management Chapter 7](#), the [Interagency Prescribed Fire Implementation Guide](#), and the Red Book, Fuels Management, Chapter 17.

### **Defensible Space**

The NPS has adopted the [International Code Council's \(ICC's\) International Urban-Wildland Interface Code](#) (2006; revised 2018) through the parameters described in [Executive Order Wildland-Urban Interface Federal Risk Mitigation](#) (May 18, 2016). Contained in the ICC's code ([sections 603 and 604](#)) are descriptions of defensible space and maintenance requirements for urban wildland interface areas. Reference [RM - 18, Fuels Management, Chapter 7](#) for additional information.

Current information on NPS Structure Protection needs can be found at NPS Wildland Fire Risk Assessment (WFRA). <https://wildfire-risk-assessments-nifc.hub.arcgis.com/>



### 3.3 Preparedness

The Annual Delegation of Authority, Inter-Park Agreement, Cooperative and Interagency Agreements, Fire Danger Operating Plan, Step-up Plan/Staffing Plan, and Initial Response Plan are found in the Appendix section of this FMP. Reference [Red Book, Preparedness, Chapter 10](#) for preparedness planning requirements.

The Zone FMO is currently coordinating with the Mark Twain National Forest to become signatories on the statewide Fire Danger Operating Plan (FDOP). The preparedness plan is linked below.



MONFDRS2021Preparedness plan\_2.docx

#### Preparedness Activities

An agreement has been signed with the Missouri Department of Conservation for the purposes of fire management. Separate agreements have been signed with the Diamond Area Fire Protection District for the purposes of fire management, fire suppression, and fire training. These agreements can be found in Appendix C. Contacts with these agencies should be made at least annually to discuss the aspects of these agreements and the park's fire management program.

Fire preparedness is the state of being ready to respond to wildfires based on identified objectives and is the result of activities that are planned and implemented prior to fire ignitions. Preparedness requires:

- Identifying necessary firefighting capabilities.
- Implementing coordinated programs to develop those capabilities.
- A continuous process of developing and maintaining firefighting infrastructure.
- Predicting fire activity.
- Implementing prevention activities.
- Identifying values to be protected.
- Hiring, training, equipping, pre-positioning, and deploying firefighters and equipment.
- Evaluating performance.
- Correcting deficiencies.
- Improving operations.

Preparedness activities should focus on developing interagency response capabilities that will result in safe, effective, and efficient fire operations aligned with risk-based fire management decisions.

#### Coordination and Dispatching

The park is part of the Missouri/Iowa Parks Fire Management Zone. The FMO is responsible for fire management activities at MO-OZP, MO-WCP, MO-GWP, IA-HHP and IA-EMP and tracks training and qualifications at MO-JEP. The Missouri/Iowa Coordination Center

(MOCC/Rolla Dispatch) is the contact for initial attack resources and for ordering resources as well as out of park assignments. The center contact number is (573) 341-7484.

### **Duty Officer**

The FMO is responsible for ensuring duty officer (DO) coverage during any period of predicted incident activities. DO's responsibilities may be performed by any individual with a signed delegation of authority from the local agency administrator. The DO may be in a location remote from the park but will be familiar with local incident response procedures, agreements, and resources. The required duties for all DOs are:

- Monitor unit incident activities for compliance with NPS safety policies.
- Coordinate and set priorities for unit suppression actions and resource allocation.
- Keep agency administrators, suppression resources, and information officers informed of the current and expected situation.
- Plan for and implement actions required for future needs.
- Document all decisions and actions.

DOs will provide operational oversight of these requirements as well as any specific duties assigned by fire managers through the fire operating plan. DOs will not fill any Incident Command System (ICS) functions connected to any incident. If the DO is required to accept an incident assignment, the FMO will ensure another authorized DO is in place prior to the departure of the outgoing DO.

### **Prevention**

Though GWCA does not meet the necessary criteria to mandate a formal fire prevention plan, it participates in numerous activities to support fire prevention.

The park will work to cooperate with other agencies to develop and implement an active fire prevention program to protect human life and property and prevent damage to cultural resources or physical facilities.

A program of public education regarding potential fire danger may be implemented when fire danger is elevated. Visitor contacts, bulletin board materials, handouts, and interpretive programs will be utilized to increase park visitor and neighbor awareness of fire hazards.

It is essential that park employees be well informed about fire prevention and the objectives of the fire management program. Further, employees must be kept informed about changes in existing conditions throughout the fire season.

Trained employees, such as park interpretive staff, should relay to the public the beneficial effects of prescribed fires as opposed to unplanned human-caused or lightning caused fires. Information must be included to emphasize the potential severity of human-caused wildland fires and how to prevent them.

During periods of extreme or prolonged fire danger, fire prevention messages will be included in interpretive programs. Emergency restrictions regarding fires or area closures

may become necessary. Such restrictions, when imposed, will usually be consistent with those implemented by cooperators.

When prescribed fires are burning in the park, signs at the visitor center and bulletin boards will be used to supplement visitor contacts. These signs will be used to administratively direct, inform, guide, and caution visitors about existing fire conditions and prescribed fire activities.

Park staff will work with the Diamond Area Fire Protection District, Missouri Department of Conservation, and other agencies with fire management responsibilities to establish common protocols and procedures, identify training needs, cooperate on prevention, conduct joint training when possible, and develop strategies for safer and more efficient fire management operations.

### **Safety Program / Plan**

The parkwide safety plan is located in the park.

The park's serious injury or death procedure is attached. The Law Enforcement division of the park will use the Leadership Notification Tool and assess further needs as situations dictate.



Leadership  
Notification Tool Meeting



LOHL\_Final\_8-21-20  
13\_508.pdf

### **Job Hazard Analysis**

Job hazard analysis have been established and included in the park wide burn plan. The Fire Management Officer is required to ensure completion of job hazard analysis (JHA) for fire and fire aviation activities so mitigation measures are taken to reduce risk. [Red Book, NPS Program Organization and Responsibilities Chapter 3.](#)

## **3.4 Post-Fire Programs and Response**

The park unit is responsible for taking prompt action after a wildfire to minimize threats to life or property, and to prevent unacceptable degradation to natural and cultural resources. Damages resulting from wildfires are addressed through four activities:

**Suppression Repair:** the intent is to repair suppression damages and is the responsibility of the Incident Commander. This activity is paid for from wildfire suppression funding.

**Emergency Stabilization:** the intent is to protect life and property and critical resource values and is the responsibility of the superintendent. This activity is paid for from Emergency Stabilization (ES) funding.

**Rehabilitation:** the intent is to repair wildfire damaged lands that are unlikely to recover naturally to management approved conditions, or to repair or replace minor facilities damaged by wildfire. This activity is paid for from Burned Area Rehabilitation (BAR) funds.

**Restoration:** the intent is to continue the rehabilitation efforts started in the BAR process beyond the time period limitation set by the department. This activity is paid for from regular program funds.

[RM - 18, Post Wildfire Programs, Chapter 18](#) and the [Red Book, Incident Management and Response, Chapter 11](#) provide direction on current processes and timeframes.

### **3.5 Air Quality/Smoke Management**

#### **3.5.1 Air Quality Issues**

The park is in a Class II air shed and is in an attainment area for all EPA nonattainment pollutants.

Fire management activities will follow the Clean Air Act. Missouri does not currently have a smoke permit requirement. The objectives for smoke management and compliance with the Clean Air Act are similar to those for fire management: to encourage a natural process so long as it does not endanger public health and safety.

Smoke levels become unacceptable when they impair visibility to such a degree that they detract from visitor enjoyment of the primary park resource, with emphasis on the vistas of the park. Dense smoke within the park is generally unacceptable, however, it may be tolerated for short periods if the winds ensure good mixing. The park will also evaluate the forecasted impact of smoke on local communities and visitor safety. All these considerations are difficult to quantify, monitor, and evaluate, and there will exist considerable room for discretion.

It may be necessary to aggressively control fires when smoke affects a sensitive area or creates a significant public response. All fire activities may have to be curtailed when an extended inversion or air pollution episode is in effect. Traffic control measures will be undertaken in conjunction with local law enforcement agencies when such episodes occur. Complaints regarding smoke will be documented and communicated to the superintendent.

#### **3.5.2 Smoke Management Activities**

The park will notify the Missouri Department of Conservation and surrounding assisting agencies at the time of any fire ignition.

The park fire coordinator will contact the National Weather Service (NWS), Springfield, MO to verify the smoke management forecast, and consult with the state during the initial fire assessment. Thereafter, smoke characteristics will be evaluated daily along with the NWS smoke management forecast during prescribed fires.

To minimize the effects of smoke the following guidelines will be required when planning a prescribed fire:

- Include a detailed smoke vector map in every prescribed fire plan to identify sensitive areas and expected directional flow of smoke.
- Burning will be conducted only when: visibility exceeds 5 miles or when the fire weather forecast indicates the presence of an unstable airmass, afternoon mixing heights are 500 meters or greater, and ventilation rates

(mixing height in meters X transport wind speed in meters per second) is 2000 or greater.

- Smoke Dispersal: Mixing heights equal to or greater than 500 meters.
- Use backing and flanking fires, when possible, to minimize particulate emissions.
- Mop-up stumps, snags, and other hot spots to reduce residual smoke.
- Obtain a spot fire weather forecast from the National Weather Service, Springfield, MO prior to ignition of the prescribed fire.
- Keep media and other public affairs offices informed of fire and smoke dispersal conditions throughout the duration of the project.
- Provide traffic control, and efforts with local police to mitigate traffic hazards from smoke.

### **3.6 Data and Records Management**

The FMO and/or AFMO will enter planned project geospatial data in the Bureau approved system for fuels projects and tracking. Once treatments are completed, the geospatial data for the completed projects will be entered into the same system. Data and records will be managed according to [RM-18, Chapter 19](#).

The FMO and/or AFMO will enter training and experience in IQCS. Individual responders will submit experience records annually and red cards will be printed yearly for each responder.

## **4.0 PROGRAM MONITORING AND EVALUATION**

### **4.1 Monitoring**

Monitoring of prescribed fires is intended to provide information for quantifying and predicting fire behavior and its ecological effects on the park resources while building a historical record. Monitoring measures the parameters common to all fires, fuels, topography, weather, and fire behavior. The complete program is detailed in Appendix E. The FMP identifies general fire management goals and objectives for the park. Addressing if, and how well, the management application of fire is meeting defined resource management objectives is addressed by the Fire Monitoring Plan.

#### **1. Short-term Monitoring**

The definition of short-term monitoring as used in this park as monitoring that is done to measure fire effects on vegetation, fuel reduction and other measurable changes occurring immediately following fire application.

#### **2. Long-term Monitoring**

Long-term monitoring at George Washington Carver is defined as that level of monitoring required to track changes in vegetative composition occurring over a multi-year period.

The prescribed fire burn boss will ensure that qualified personnel are assigned to monitor prescribed fires. The most efficient deployment of personnel for fires of low complexity will utilize individuals with multiple qualifications when possible (ignition, holding, and monitoring). An efficient and flexible monitoring program uses appropriate tactics and

assesses the potential ability to characterize and quantify the resulting effects. This is to determine if the fire is within prescription and is meeting identified resource goals and objectives.

Fire weather and fire behavior will be monitored on all prescribed fires. Operational monitoring provides a check to ensure that the fire remains in prescription and serves as a basis for evaluation and comparison of management actions.

The Heartland Inventory and Monitoring Network (HTLN) monitors both terrestrial and aquatic natural resources at the park. Plant communities, breeding birds and habitat, and nonnative plants are monitored every four years (Leis et al. 2022, Peitz et al. 2008, Kull et al. 2022). Aquatic resources are also monitored on a rotating basis. Monitoring protocols for each vital sign as well as network operations are available on the [IRMA portal](#) and via the [HTLN website](#). Reports are provided to the park and published in the [IRMA portal](#). Ecological changes such as species composition and vegetation structure are currently monitored on a regular four-year rotation. Plant communities are monitored at seven sites in the restored prairie. The vegetation monitoring protocol is available [here](#) (Leis et al. 2022). The long-term monitoring information has been very useful in adjusting the prescribed fire program to better meet short and long-term resource objectives.

As time and funding allows, additional vegetative response monitoring may be monitored using the Fire Monitoring Handbook (FMH) as established by the NPS. An adaptive monitoring approach will be used. Monitoring may consist of sampling permanent vegetation plots. In these plots some or all the following protocols may be used but are not limited to: overstory and pole-size tree measurements, seedling response; fuel loading; dead and down fuels, litter, and duff measurements; replicated photos; herbaceous lines; and nested frequencies. Monitoring should include pre-burn and post-burn conditions. Additional plot measurements in out years may be helpful.

## **4.2 Research**

No research activities have been planned at George Washington Carver National Monument.

Fire research describing likely effects of climate change on xeric oak woodland, mixed riparian woodlands, and restored tallgrass prairie communities will assist managers to implement conservation and restoration techniques. Research describing effects of the pest emerald ash borer (*Agrilus planipennis*) over short and long time periods for midwestern woodlands will provide insight as to how the riparian woodlands may change and what management actions are needed to maintain healthy woodlands. Presently, research describing best management practices for black berry species (*Rubus* spp.) is lacking. These problematic plants increase after fire, but frequent fire is needed to manage other species. Additional research into the best use of complementary control measures such as haying in addition to prescribed fire would be helpful for maintaining plant diversity and keeping visitors and staff safe.

As new research is completed, GWCA should use these findings to refine or modify management actions and/or treatment objectives as applicable. Refer to [RM - 18, Fire Research, Chapter 17](#) for more information.

### **4.3 Climate Change**

The latest climate change summary for George Washington Carver National Monument can be found at: [497742 \(nps.gov\)](https://www.nps.gov/497742)

Climate patterns for southwestern Missouri tend to be variable in nature obscuring long-term patterns. However, temperature and precipitation metrics at GWCA do not presently differ from the historical period, but increased temperatures especially warmer low temperatures are likely in the future (Monahan and Fisichelli 2014, US Federal Government 2016). Furthermore, phenology is shifting to earlier first leaf date and first bloom dates that are much earlier than in the past (Monahan et al. 2016). See also Leis and Short (2021) for a summary related to long-term monitoring. Increased growing days will favor undesirable species such as eastern redcedar and woody invaders in the prairies. Earlier phenology also may increase opportunities for cool season invasive plants to thrive. The earlier onset of spring flora suggests that prescribed fire strategies that utilize fuel moisture and weather parameters rather than seasonality as trigger points may allow for better identification of burn days for fuel reduction (Roberts et al. 1999). Grassland has adaptations for periodic drought conditions, but it is not well understood how climate change will affect these plant communities. Mesic riparian woodland species may not be as tolerant to increasing drought conditions.

The NPS Climate Change Response Program is continually contributing to and creating climate change resources for park scenario planning. Updated predictive models or other relevant climate change management ideologies will be incorporated into this FMP as appropriate, especially for topics pertaining to the development of collaborative strategies and fuels treatment plans.

### **4.4 Evaluations, Reviews and Updates**

#### **Fire Program Review**

Fire reviews will be conducted in accordance with Director's Orders #18 and Reference Manual #18. Each review will be documented and filed with the final fire report. The park fire coordinator will retain a copy for the park's files.

The FMO will be responsible for completing an annual fire summary report. The report will contain the number of fires by type, acres burned by fuel type, cost summary, personnel utilized, and fire effects.

The FMO and park staff will review the fire management plan annually for currency and incorporate changes into the appendices.

The incident commander or the prescribed burn boss will initially critique wildland and prescribed fires. This critique should take place with those directly involved in the management of the fire.

The fire coordinator should review prescribed and wildland fires of significant size, cost, or where minor safety issues or minimal levels of public concern occur. These findings should be forwarded to the Area Fire Management Office.

Prescribed or wildland fires involving an Incident Management Team, or fires involving significant political, safety, or public issues should be reviewed by the Regional Fire

Management Office. If a fire generates a major political or public concern, and/or involves multiple serious injuries or a fatality, the NPS Fire Management Program Center should conduct or participate in the review.

### **Wildland Fire Incident Review**

All wildland fires and fire-related incidents will be reviewed in accordance with [RM - 18, Evaluations, Reviews and Investigations, Chapter 16](#) and the [Red Book, Reviews and Investigations Chapter 18](#)

### **REQUIRED ANNUAL REGIONAL REVIEW PROCESS**

Follow the Fire Management Plan Regional Review Process outlined in [Reference Manual 18, Fire Management Plans, Chapter 4 \(2023\), Sections 3.0 and 3.1](#).

This FMP and its appendices will be reviewed annually and regionally following MWR specific deadlines that align with [RM - 18, Chapter 4](#) and replaced with current signed documents. Electronic copies of the FMP and required appendices with current ink or certified electronic signatures are uploaded to the [Wildland Fire A123 SharePoint](#) in addition to the [MWR Fire Planning SharePoint](#).

## **NWCG GLOSSARY**

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## REQUIRED APPENDICES

- A. Annual Delegation of Authority
- B. Inter-Park Agreement (where applicable)
- C. Cooperative and Interagency Agreements
- D. Preparedness Planning Documents
  - 1. Fire Danger Operating Plan (FDOP)
  - 2. Preparedness Level Plan
  - 3. Step-up Plan/Staffing Plan
  - 4. Initial Response Plan
- E. Fire Monitoring Plan
- F. Maps

### A. Annual Delegation of Authority



Dec 2023 GWCA  
Annual Delegation of Authority

### B. Inter-Park Agreement

The Inter-Park Agreement was executed 03/05/2024 between MO/IA Fire Management and OZAR, WICR, GWCA, HEHO and EFMO, and is valid for a period of 5 years. This agreement is uploaded as an appendix on the [Wildland Fire SharePoint](#).

### C. Cooperative and Interagency Agreements



MO 19FO241  
Executed 7.3.19.pdf

George Washington Carver National Monument has a formal agreement with Diamond Area Fire Protection District, they are often first to respond due to the 911 dispatch process and local response area. They will assist the park as needed and likely be the only initial attack resources.

**General Agreement  
between  
The United States Department of the Interior  
National Park Service  
and  
Diamond Area Fire Protection District**

This Agreement is entered into by and between the National Park Service (hereinafter “NPS”), United States Department of the Interior, acting through the Superintendent of George Washington Carver National Monument (hereinafter “GWCA”), and Diamond Area Fire Protection District (hereinafter “Fire Department”), acting through its Fire Chief.

**ARTICLE I - BACKGROUND AND OBJECTIVES**

The objective of the Agreement is to establish the terms and conditions under which the parties will provide mutual assistance in managing Emergency Medical Services “EMS”, Search and Rescue “SAR”, and Structure Fire and Wildland Fire Management actions on lands within and immediately outside NPS boundaries.

Both agencies recognize that the most effective method to respond to emergencies and prevent fires is through cooperative efforts. Accordingly, the NPS and the Fire Department do hereby enter into an agreement to provide emergency cooperative assistance to maintain public safety and welfare on lands and waters within and surrounding GWCA, as both parties can mutually benefit from the expertise and resources of their respective agencies.

**ARTICLE II - AUTHORITY**

Title 54 U.S.C. § 102712 authorizes the Secretary of the Interior, acting through the NPS, and administrators of GWCA, to render emergency assistance to visitors within areas of the National Park System.

Title 54 U.S.C. § 102711 authorizes the Secretary of the Interior to render “emergency rescue, fire fighting, and cooperative assistance to nearby law enforcement and fire prevention agencies and for related purposes outside of the National Park System.”

Title 42 U.S.C. § 1856A authorizes the United States to enter into reciprocal agreements with any fire organization maintaining fire protection facilities in the vicinity of such property, or mutual aid in furnishing fire protection for such property and for other property for which such organization normally provides fire protection.

The scope of this Agreement is defined by the authorities identified herein.

### **ARTICLE III - STATEMENT OF WORK**

#### **A. The NPS agrees to:**

##### **1. Within NPS Jurisdiction – Emergency Assistance Pursuant to 54 U.S.C. § 102712:**

- a. There are no NPS fire and emergency personnel duty-stationed at GWCA on a day-to-day basis, however when NPS fire or emergency personnel are available and on site they shall respond and provide emergency EMS, SAR, and Wildland Fire Management actions within GWCA.
- b. When NPS fire and emergency personnel are present, the NPS will retain primary control of incidents occurring on GWCA property. Incidents of a magnitude larger than NPS resources can manage effectively may require a cooperative effort with other Federal and local agencies. Due to the lack of emergency and fire personnel on site on a day-to-day basis, the Fire Department will assume command and control of its agency's response to any incident-in-progress at GWCA until relieved by qualified NPS personnel approved by the park superintendent; or, unless a decision is made jointly between the NPS and the Fire Department to manage the incident under Unified Command.
- c. The NPS may request Fire Department resources for incidents occurring within GWCA. The NPS will provide a liaison to the Fire Department in cases when resources have been requested. The NPS liaison will participate and work cooperatively with Fire Department resources until the incident has concluded.
- d. The NPS shall respond to fire alarms originating within the park for the purpose of protecting governmental interests and to identify the cause for the alarm in an attempt to reduce or eliminate the occurrence of false alarms. In the case of fire alarms, the NPS or its alarm monitoring service will request assistance from the Fire Department and NPS personnel will provide access to the buildings for the Fire Department personnel.

##### **2. Outside NPS Jurisdiction - Emergency Assistance Pursuant to 54 U.S.C. § 102711:**

- a. The NPS agrees to provide emergency EMS, SAR, and Wildland Fire Management actions as defined in this document to the Fire Department outside of GWCA. Due to the lack of NPS fire and emergency personnel duty-stationed at GWCA on a day-to-day basis, this emergency assistance would only be available during occasions when NPS fire or emergency personnel are on site.
- b. NPS emergency assistance outside the boundaries of GWCA generally stems from an unexpected occurrence that requires immediate action and may include responses for serious injury/fatality accidents, lost persons, wildfires, structure fires or other incidents directly affecting visitor safety and the protection of human life. The NPS may respond to emergency incidents outside GWCA providing:
  - The incident is an emergency.
  - The incident is in the vicinity or near the park.
  - That NPS personnel or resources have been requested.

- NPS personnel have the proper certification and authorizations to provide care.
- c. Upon receiving an official request from the Fire Department, the NPS shall render emergency EMS/SAR/Firefighting assistance (as defined in provision A.2.b above) to the Fire Department whenever possible. A request for such emergency assistance will be placed with directly through the Superintendent or the Fire Management officer, or their representative.
  - d. The NPS may render emergency assistance in those situations where a NPS Ranger or Wildland Firefighter, while in the course of his/her official duties, observes an emergency situation (as defined in provision A.2.b above), at which time the NPS shall secure and manage the scene. The NPS shall immediately notify the Fire Department of the emergency. Upon arrival of the first Fire Department responder on the scene, the NPS shall relinquish control; however, upon request, the NPS may assist the Fire Department for the duration of the emergency.
  - e. The NPS shall render assistance until such time as the Fire Department has enough resources on the scene to adequately control the emergency or until the emergency no longer exists, whichever comes first.
  - f. The on-scene commanding officer of the Fire Department shall be in primary control of all responders, including NPS personnel who are rendering emergency assistance, provided that the Fire Department on-scene commander shall exercise control of NPS personnel only through the highest ranking NPS Ranger or Firefighter on scene. The highest-ranking individual shall be identified by the NPS at the time of the emergency.
  - g. NPS Personnel will remain under the direction of the park EMS Medical Advisor and will follow NPS Field Manual protocols and procedures. NPS EMS providers will act within their scope of practice and certification.
  - h. For good cause the NPS Chief Ranger or the NPS Fire Management Officer, or their representative, may decide at any time to withdraw emergency assistance.
- 3. Outside NPS jurisdiction – Fire Protection Assistance pursuant to 42 U.S.C. § 1856a:**
- a. Upon request from Fire Department, and when GWCA operations allow, the NPS shall provide employees to assist in Wildland Fire Management actions within the jurisdiction of the Fire Department.

**B. The Fire Department agrees to:**

1. Respond and provide EMS, SAR, Wildland Fire Management actions, and Structure Fire Protection on NPS land, provided that it is within the Fire Department response area. The Fire Department may assist NPS efforts or respond independently within GWCA when service is requested.
2. The following incidents, when occurring within GWCA, must be reported to the NPS as soon as practical via verbal notification and/or written report:

- Incidents involving fatalities, serious injury, or injuries to multiple persons.
  - Incidents involving lost persons.
  - Incidents involving or with the potential to involve media interest.
  - Incidents involving motor vehicle accidents within the park.
  - Incidents involving damage to buildings, property, or resources.
  - Incidents involving structural or wildland fires.
3. To utilize “minimum impact suppression tactics (MIST)” when conducting Wildland Fire Management actions within GWCA.
    - When conducting Wildland Fire Management Actions outside of a designated wilderness area, no ground-disturbing heavy equipment such as graders or bulldozers shall be used without the permission of the GWCA Superintendent or his/her designee.
    - When conducting Wildland Fire Management Actions within a designated wilderness area, no mechanical devices such as chainsaws, leaf blowers, or ground-disturbing equipment such as graders or bulldozers shall be used without the permission of the GWCA Superintendent or his/her designee.
  4. For good cause the Fire Department may decide at any time to withdraw emergency assistance.

**C. The parties further agree as follows:**

1. To provide the other agency a list of responsible persons, with telephone numbers, to be contacted in an emergency. This list will be updated as needed to reflect personnel changes, but no less than an annual confirmation of assigned personnel.
2. NPS Personnel rendering assistance to the Fire Department pursuant to this Agreement shall be deemed to be acting within the scope of their Federal employment. Under no circumstances shall NPS personnel be deemed to be “borrowed servants” of the Fire Department.
3. NPS personnel rendering assistance to the Fire Department pursuant to this agreement shall wear the official NPS uniform or NPS required personal protective equipment and shall remain under the authority and command of NPS supervisors; shall be subject to the laws, regulations, and policies of the NPS and of the United States; and shall not receive any monetary compensation from any source other than the NPS.
4. Each party authorizes the other to utilize its radio frequency(s) as needed to carry out the provisions of this Agreement.
5. Each party shall provide to the other copies of current fire management, EMS, SAR, or other applicable emergency response plans and maps. Both parties shall consult with the other when developing these plans to determine/confirm agency capabilities and responsibilities.
6. Each party shall bear its own costs for furnishing services under this Agreement, and neither party shall claim reimbursement for those costs from the other.
7. To the extent authorized by applicable law, each party hereby waives any and all claims, demands, and causes of action against the other party and its employees, and releases the other party and its employees from any and all liability, arising out of or resulting from

activities under this Agreement. Each party shall be solely responsible for any and all claims, demands, and causes of action filed by third parties arising out of or resulting from the activities of its employees under this Agreement, including, but not limited to, the costs of investigating and defending against such claims, demands, and causes of action and the costs of paying any compromise settlements, judgments, assessed costs, or fees (including attorney's fees).

8. The parties shall coordinate all public information releases about emergency response incidents and other matters involving both parties. No public information release by one party shall refer to the other party or to any employee of the other party (by name or otherwise) without the other party's prior approval. Each party agrees not to comment to the media on incidents that occur in the other party's jurisdiction. All media inquiries will be directed to the respective agency's information officer or designee.
9. The parties will exercise their best efforts to perform their responsibilities under this Agreement in a timely and professional manner. However, nothing in this Agreement is intended to restrict either party's lawful discretion to act (or not to act) in the manner it deems most appropriate in a particular situation.

#### **ARTICLE IV - TERM OF AGREEMENT**

This Agreement shall be effective for a period of five years from the date of the final signature, unless it is terminated earlier by one of the parties pursuant to Article IX that follows. At the conclusion of that five-year term, this Agreement may be extended or renewed by written agreement of the parties.

#### **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  
George Washington Carver National Monument

2. **For Fire Department:**

Fire Chief,  
Diamond Area Fire Protection District

- B. **Communications** – The Fire Department will address any communication regarding this Agreement to the Superintendent or his/her designee. The NPS will address any communication regarding this Agreement to the Fire Department or his/her designee.
- C. **Changes in Key Officials** – Neither the NPS nor the Fire Department may make any permanent change in a key official without written notice to the other party reasonable 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.

## **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 - 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. To the extent authorized by law, any documents or data exchanged between the parties to this Agreement will not be released to a third party unless the designated key official of the party that generated the document or data, or his/her representative concurs that release is appropriate.

## **ARTICLE VIII - 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 Fire Department during the performance of this Agreement will be used and disposed of as set forth in NPS Property Management Regulations.

## **ARTICLE IX - 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 X - STANDARD CLAUSES**

### **A. Non-Discrimination**

All activities pursuant to or in association with this Agreement shall be conducted without discrimination on grounds of race, color, sexual orientation, national origin, disabilities, religion, age, or sex, as well as in compliance with the requirements of any applicable federal laws, regulations, or policies prohibiting such discrimination.

### **B. NPS Appropriations**

Pursuant to 31 U.S.C. § 1341, nothing contained in this Agreement shall be construed to obligate NPS, the Department, or the United States of America to any current or future expenditure of funds in advance of the availability of appropriations from Congress and their administrative allocation for the purposes of this Agreement, nor does this Agreement obligate NPS, the Department, or the United States of America to spend funds on any particular project or purpose, even if funds are available.

### **C. Prior Approval**

The Fire Department shall obtain prior written approval from the NPS before:



1. Holding special events within the Park;
2. Entering into third-party agreements of a material nature;
3. Assigning or transferring this Agreement or any part thereof;
4. Constructing any structure or making any improvements within the Park's boundaries;
5. Releasing any public information that refers to the Department, the NPS, the Park, any NPS employee (by name or title), this Agreement contemplated hereunder.

**D. Compliance with Applicable Laws**

This Agreement and performance hereunder is subject to all law, regulations and management policies including those governing the NPS property and resources, whether now in force or hereafter enacted or promulgated. Nothing in this Agreement shall be construed as in any way impairing the general powers of the NPS for supervision, regulation, and control of its property under such applicable laws, regulations, and management policies. Nothing in this Agreement shall be deemed inconsistent with or contrary to the purpose of or intent of any Act of Congress.

**E. Disclaimers of Government Endorsement**

The Fire Department will not publicize or circulate materials (such as advertisements, solicitations, brochures, press releases, speeches, pictures, movies, articles, manuscripts, or other publications), suggesting expressly or implicitly, that the Government, the Department, NPS, or Government employees endorse the Fire Department business, goods, or services. All materials referring to the Government must be approved by the NPS Key Official prior to publication. Nothing herein is intended to prevent the NPS or the Department of the Interior from recognizing the partnership or contributions made by the Partners to NPS, and from authorizing an inclusion of such recognition in materials generated by the [Partner or Partners] related to this Agreement.

**F. Modifications**

This Agreement may be extended, renewed, supplemented or amended only when agreed to in writing by the NPS and the Fire Department.

**G. Waiver**

No waiver of any provisions of this Agreement shall be effective unless made in writing and signed by the waiving party. No waiver of any provision of this Agreement shall constitute a waiver of any prior, concurrent or subsequent breach of the same or any other provisions hereof.

**H. No Agency**

The Fire Department are not agents or representatives of the United States, the Department of the Interior, or the NPS, nor will the Fire Department represent themselves as such to third parties. The NPS is not an agent or representative of the Fire Department nor will the NPS represent itself as such to third parties. Nothing in this Agreement shall at any time be construed so as to create the relationship of employer and employee, principal and agent, or joint venture as between Fire Department and the NPS.

**I. Officials Not to Benefit**

No Member of, Delegate to, Resident Commissioner in, Congress shall be admitted to any share or part of this Agreement or to any benefit to arise therefrom, unless the share or part benefit is for the general benefit of a corporation or company.

**J. Liability**

The Parties will be liable to the extent provided by law for any property damage, personal injury or death, caused by the negligent or wrongful acts or omissions of their respective employees, acting within the scope of their employment.

**K. Non-Exclusive Agreement**

This Agreement in no way restricts either the NPS or the Fire Department from entering into similar agreements, or participating in similar activities or arrangements, with other public or private agencies, organizations, or individuals.

**L. Partial Invalidity**

If any provision of this Agreement or the application thereof to any party or circumstance shall, to any extent, be held invalid or unenforceable, the remainder of this Agreement or the application of such provision to the parties or circumstances other than those to which it is held invalid or unenforceable, shall not be affected thereby and each provision of this Agreement shall be valid and be enforced to the fullest extent permitted by law.

**M. Freedom of Information Act**

Any information provided to the NPS under this Agreement is subject to the Freedom of Information Act, 5 U.S.C. § 552.

**ARTICLE XI - SIGNATURES**

**IN WITNESS WHEREOF**, the parties hereto have executed this Agreement as of the date of final signature.

**FOR NATIONAL PARK SERVICE**

Signature: Kevin D. Young

Name: Kevin D. Young Date: 1-9-24

Title: Superintendent, George Washington Carver National Monument

Signature: \_\_\_\_\_

Name: Herbert C. Frost, Ph.D. Date: \_\_\_\_\_

Title: Regional Director, Interior Regions 3, 4, 5

**FOR FIRE DEPARTMENT**

Signature: Gordon Skogsberg

Name: Gordon Skogsberg Date: 1-9-24

Title: Fire Chief, Diamond Area Fire Protection District

## D. Preparedness Planning Documents

1. [Fire Danger Operating Plan \(FDOP\)](#)

The U.S. Forest Service has created a Missouri statewide FDOP. The NPS is currently working with them to become part of this plan.

2. [Preparedness Level Plan](#)

The Preparedness Level is a five-tier (1-5) fire danger rating decision tool that is based on NFDRS output(s) and other indicators of fire business (such as projected levels of resource commitment). Preparedness Levels will assist fire managers with more long-term (seasonal) decisions with respect to fire danger.

3. [Step-up Plan/Staffing Plan](#)

Staffing Levels will be used to make daily internal fire preparedness and operational decisions. At the local level, the staffing level forms a basis for decisions regarding the “degree of readiness” for initial attack and support resources. Specific actions are defined at each staffing level. Although Staffing Level can be a direct output in WIMS, the WIMS output is only based upon weather observations and climatological percentiles. Local staffing levels are initially determined from climatological breakpoints, then adjusted based on local experience tied to an analysis of fire business.

4. **Initial Response Plan**

The MO/IA Interagency Coordination Center (Rolla Dispatch) is the Initial Attack dispatch for the zone. Initial response procedures will be tied to staffing and preparedness levels outlined in the Missouri Interagency Fire Danger Operating Plan (Appendix D). Red-carded, collateral duty park employees (if applicable) will respond to initial attacks as defined by their qualifications. Non-fire employees may be used as needed in support roles such as directing traffic, assisting with logistics, etc.

Local VFDs will respond to any wildland fire in the park in consultation with the park superintendent. Notification of any fire shall be made to the MO/IA Zone FMO, Duty Officer or AFMO at Ozark National Scenic Riverways. The MO/IA Zone personnel will assist with decisions, provide NPS fire support, or arrange for immediate resource support through Rolla Dispatch.

### **Response Times**

Typical fire response times from local cooperators are 15-30 minutes. NPS firefighters at GWCA are limited in number and qualifications. Zone fire staff from Ozark NSR can respond with firefighters, equipment, and command staff in 3 to 4 hours.

## E. Fire Monitoring Plan

The long-term plant community monitoring plan (Leis et. al. 2022) can be found at the following link: [Monitoring plan](#). Vegetation monitoring was designed based on one reference frame: restored tallgrass prairie. Sites within the reference frames were stratified by soil type, slope, and aspect. They were not deployed based on treatment units and are monitored every four years irrespective of treatments. Vegetation monitoring is deployed in a 20 x 50m site with 10 10m<sup>2</sup> subplots within each

site. Ground flora, ground cover, and trees (regeneration, mid- and overstory) (if present) are observed for each site. Cover class is recorded for ground cover and ground flora species. Tree species are tallied and DBH recorded for mid-and overstory stems. Previously, fuel load samples have been collected by clipping for the seven sites to monitor hazard fuel loads (Leis et. al. 2011). Fire perimeters are mapped and stored in a geodatabase. (See Leis et. al. 2022, linked above, and Leis et.al. 2011 for current and historical procedures respectively.)

Invasive plant monitoring is also deployed at the park. Sample design includes monitoring every four years using a park-wide, grid-based design. Abundance of target plants is estimated for the whole park irrespective of treatments. The protocol can be found [here](#).

## F. Threatened and Endangered Species List

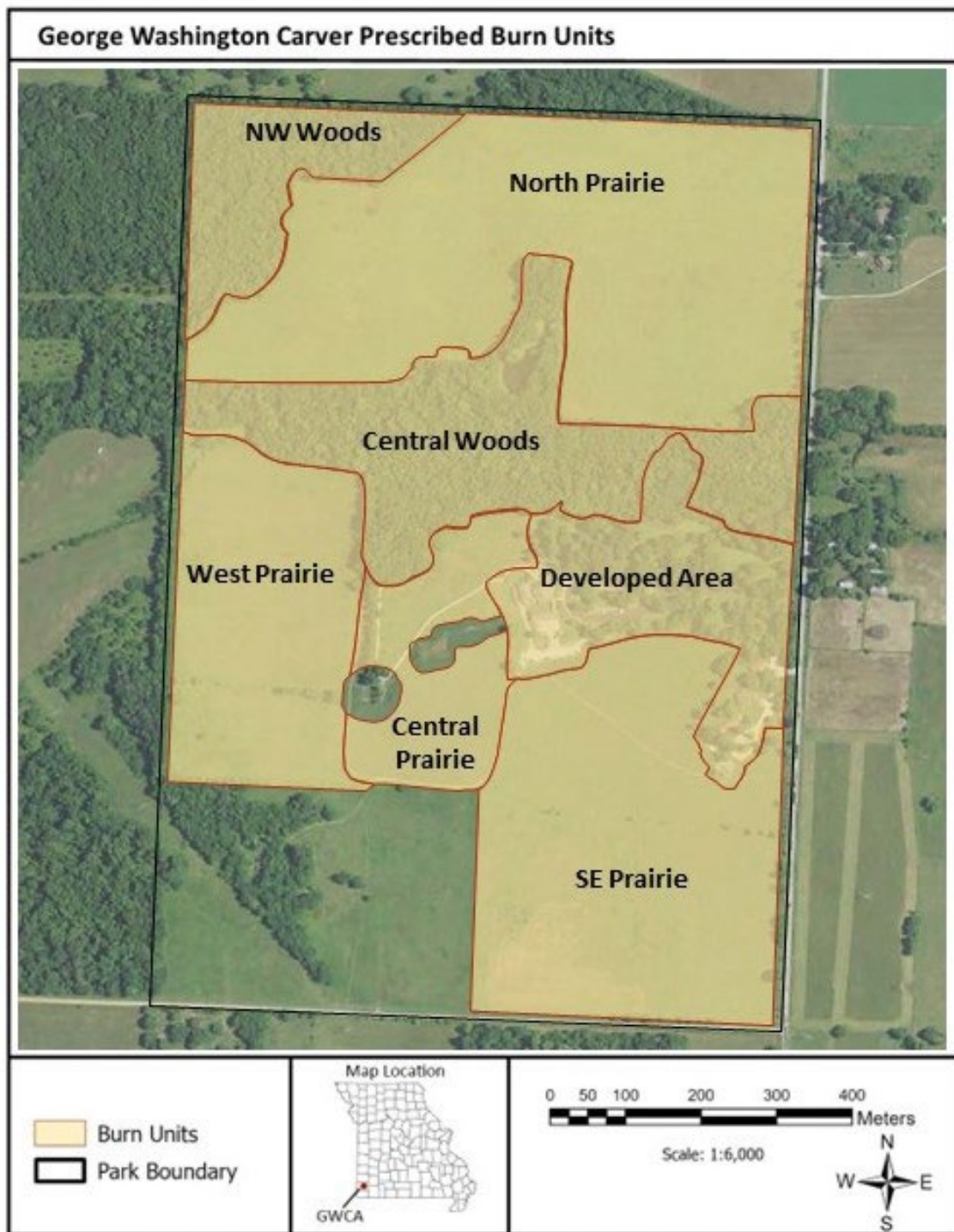
The species list below is generated by the U.S. Fish and Wildlife Service’s Information for Planning and Consultation (IPaC) database. Though Ozark Cavefish and Meads Milkweed are not present at GWCA, the USFWS recognizes that GWCA has the potential for these species to occur.

Gray Bat - Endangered	<i>Myotis grisescens</i>
Indiana Bat - Endangered	<i>Myotis sodalis</i>
Norther Long-eared Bat - Endangered	<i>Myotis septentrionalis</i>
Tricolored Bat – Proposed Endangered	<i>Perimyotis subflavus</i>
<sup>1</sup> Ozark Cavefish – Threatened	<i>Amblyopsis rosae</i>
Neosho Mucket - Endangered	<i>Lampsilis rafinesqueana</i>
Rabbitsfoot – Threatened	<i>Quadrula cylindrica</i>
Monarch Butterfly – Candidate	<i>Danaus plexippus</i>
<sup>1</sup> Meads Milkweed – Threatened	<i>Asclepias meadii</i>

Table 3. Threatened and endangered species in GWCA. <sup>1</sup>Not present at GWCA.

## G. Maps

### a. Burn Units Map



February 15, 2024

Figure 1. GWCA prescribed fire units.



b. Area Map

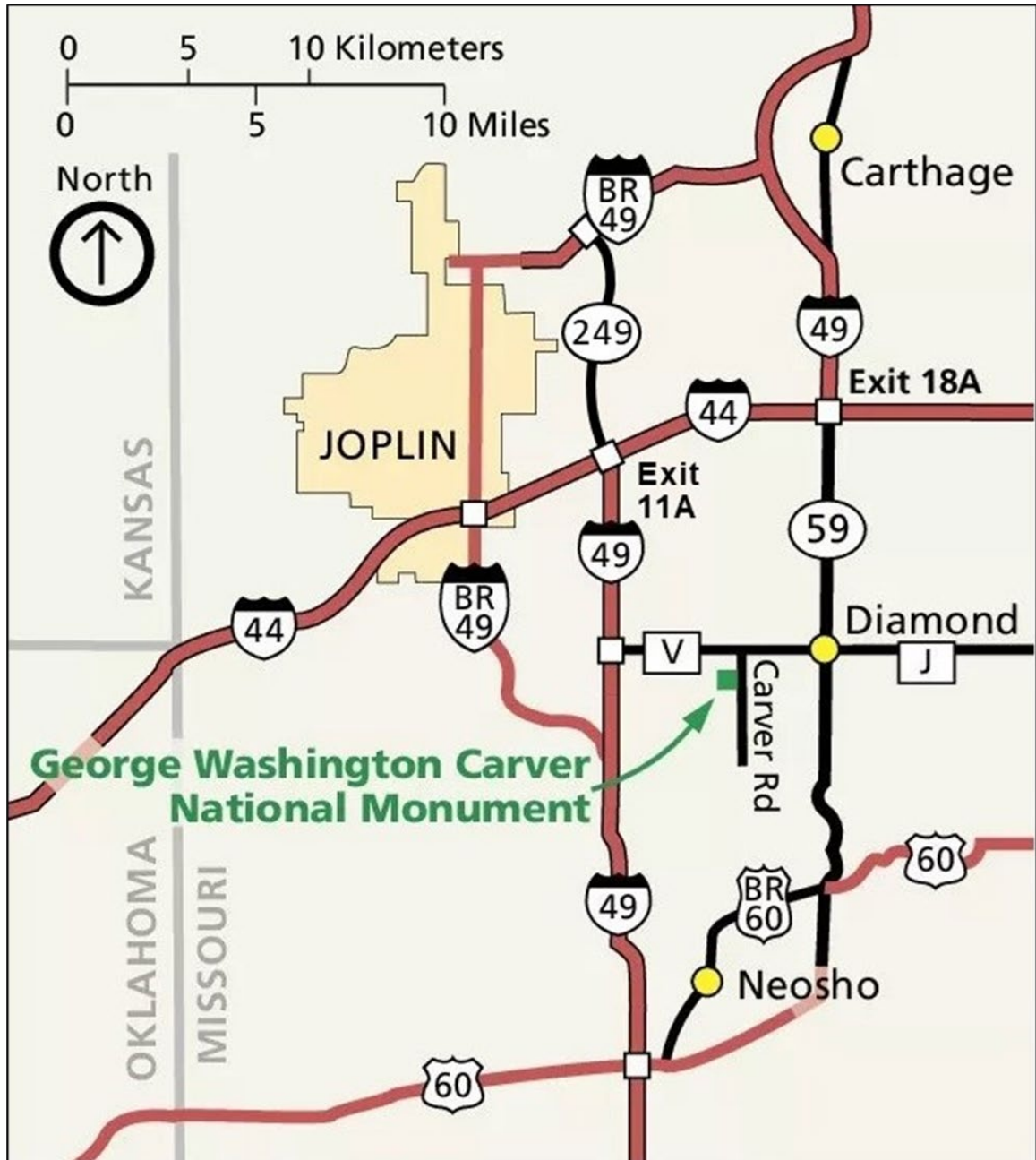


Figure 2. GWCA vicinity map

c. George Washington Carver Park Map



Figure 3. GWCA park map