Chapter 5: Treatment Alternatives

5.0 Introduction

The alternatives and treatment information that comprises this chapter was prepared to provide George Washington Carver National Monument with an overall vision for the park's cultural landscape that is intended to guide appropriate long-term management and interpretation. The vision is derived from consideration of a range of alternatives presented to the park, stakeholders, and the public that reflect park goals and address identified needs and concerns. Each of the alternatives presented herein was designed to address the park needs in a distinct manner, affording the park and its stakeholders an opportunity to evaluate a wide range of options and test them against factors such as the park's mission as articulated in foundational documents such as the General Management Plan (GMP), interpretive objectives, and sustainability. Each alternative addresses goals and need in a distinct way; through an evaluation process, the park selected a preferred alternative, the implementation of which is addressed in greater detail in later chapters of the Cultural Landscape Report (CLR)/Environmental Assessment (EA).

The information presented in this chapter arises from a synthesis of work undertaken by the project team to prepare this CLR/EA, including stakeholder meetings and workshops, input from NPS regional and park personnel, and comments received from partnering organizations. The treatment plan also reflects the overarching guidance afforded in the park's 1997 General Management Plan (GMP), Long-Range Interpretive Plan, and other foundational documents.

This treatment chapter is organized into the following eight sections:

1. **Park Management Issues, Goals, and Objectives** provides a summary of the management issues collected by the CLR team from various sources, including the GMP, various environmental assessments and planning documents, and park and regional personnel.

2. **Proposed Alternatives and Treatment Guidelines** provides the description of the no action alternative, the goals and objectives common to the action alternatives, treatment recommendations and guidelines common to the action alternatives, and the action alternatives developed through the CLR/EA planning process.

3. **Recommended Landscape Treatment Approach** outlines the four alternatives recognized by the Secretary of the Interior for treating historic landscapes and identifies the most appropriate approach for the park, and communicates an overarching philosophy that guides all treatment recommendations and guidelines for George Washington Carver National Monument developed as part of this CLR/EA.

4. **The Preferred Alternative** identifies the alternative selected for further consideration as the preferred alternative and the rationale for the selection.

5. **The Environmentally Preferred Alternative** identifies the alternative considered to afford the best protection of the natural environment, and that best protects, preserves,

and enhances historic, cultural and natural resources.

6. **Alternatives Considered but Dismissed** describes the treatment alternatives that were considered and dismissed through review, discussion, and analysis.

7. **Mitigation** ensures the protection of natural and cultural resources and the quality of the visitor experience. Measures would be implemented as part of the preferred alternative.

8. **Alternatives and Impact Comparisons** convey in table format the comparison of alternatives in relation to project goals and objectives and the summary of alternatives and potential impacts to park resources.

5.1 Park Management Issues, Goals, and Objectives

The CLR/EA focuses on addressing specific management issues, goals, and objectives identified by the NPS in several venues, including foundational documents, the project statement of work, a project pre-planning workshop, draft report comments, and stakeholder scoping sessions. The management issues, goals, and objectives that have been critical to the development of the treatment alternatives presented as part of this project are listed below.

- Of critical importance is the goal that the CLR develop an approach that suggests how the landscape might enhance, support, and provide for a visitor experience that is consistent with the desired futures identified in foundational park planning documents, such as the GMP and LRIP. The financial reality and relative sustainability of current versus proposed landscape treatments should be considered in discussing the approach.

- The 1997 GMP affords essential guiding principles for how the cultural landscape of George Washington Carver National Monument should be managed in the future, and indicates areas where further exploration of principles are needed to fulfill the park's mission and take full advantage of the site and its resources. The GMP indicates that the park needs to further consider ways of integrating commemoration, interpretation, and the treatment of the cultural landscape. Of particular importance is determining how the historic character of the landscape during George Washington Carver's time at the Carver farm should be used to tell the story of his life. The vision for what the woodlands, prairie, and manicured areas of the developed core should look like and how they should be used to tell George Washington Carver's life story has not been clearly articulated as of yet. The park has evolved to include more than 100 acres of restored native grassland prairie, which is managed as a natural area, woodlands, which are not necessarily managed, and a manicured developed area that has become increasingly ornamental in its character. Other interpretive aspects of the landscape, such as a persimmon grove and apple orchard are no longer extant. The park is interested in looking closely at all of these conditions and taking a proactive, justified approach to landcover management and its connection to interpretation and the visitor experience. Specific questions arising from this area of concern include: Should the entrance continue to present a stately feeling? Are the recently added small plantings appropriate? Should there be interpretive plantings that address some of the agricultural activities and native plants associated with Carver's life and work? Are the exhibit vegetable gardens around Moses Carver house appropriate? When considering future landcover types and management strategies, the park is also concerned that proposals take sustainability into consideration.

- Following up on the questions posed in the GMP, the park recognizes that the landscape is very different now than when Carver lived here. It is important for the CLR to consider whether historic aspects of the farm should be restored. Currently, the park explains these

differences as part of the interpretive program during tours and talks and exhibits. Because the park's enabling legislation indicates that this is a place to commemorate Carver's life, historic landscape restoration, particularly given the lack of specific knowledge of the farm during his lifetime, does not appear to be a necessity, or even a goal. However, the question repeatedly comes up, and the CLR will explore the question and provide guidance on an appropriate approach.

- The NPS has recognized the need to better integrate commemoration, interpretation/education, and the treatment of the cultural landscape. Commemoration is an integral part of the park mission. It is important that the CLR discuss what this means for the landscape, and preserves this value as part of the proposed visitor experience. The park recognizes that interpretation and the treatment of the cultural landscape are integrally linked. The role of the landscape in interpreting and honoring George Washington Carver's achievements should be an important component of the CLR treatment plan. Some of the ideas the park has considered in the past for using the landscape to better interpret Carver's life and achievements include the establishment of demonstration plots, including plots representative of his experiments while at Tuskegee, a greenhouse, restored orchards, and a restored persimmon grove.

- The themes and sub-themes explored in the LRIP should be an important consideration of the treatment plan alternatives presented in the CLR. Each alternative should explore how the park's landscape can fulfill the intent of a specific theme, goal, and visitor experience objective. The overarching principle interpretive theme and four primary interpretive themes to be considered include the following:

    - Principle Interpretive Theme: George Washington Carver's devotion to God, positive character traits, simplistic traits, simplistic lifestyle, inquisitive mind, and humanitarian spirit led him to become a role model for success.

    - Primary Theme A: Carver's Life Platform—He was born into slavery on a Southwestern Missouri farm amidst the tumultuous times at the end of the Civil War. Carver experienced racism, segregation, and other hardships, yet demonstrated an "I Can" attitude throughout his life.

    - Primary Theme B: Carver's Spirituality—George Washington Carver possessed deep Christian beliefs, combining his faith in God with science and crediting Divine revelation for his creative abilities.

    - Primary Theme C: Carver's Passion for Art—George Washington Carver possessed the soul of an artist, expressing himself artistically through his work, gaining personal rejuvenation through artistic pursuits, and encouraging others to incorporate beauty into their lives.

    - Primary Theme D: Carver's Life Work and Achievements—George Washington Carver's life of service led him to become a renowned scientist, educator, humanitarian, and example of interracial cooperation.

- The CLR will also consider how woodlands and open space and savanna areas might be managed to address differences between the contemporary landscape and the former spatial character of the property during the Carver period, which was more open and savanna-like. The CLR will also consider how plants relating to Carver's life and achievements might be featured within the park.

- The prairie restoration project began in the early 1980s and is currently being reconsidered. For the first fifteen years, the restoration program was well managed. After the development of the GMP in 1997, there

was an ongoing lack of consensus or decision-making on how best to manage the landscape. That was a major factor for the status quo management through the years. The park is interested in clarifying the role of the restored prairie, what type of prairie it should be, how much area should be maintained in prairie, and considerations for associated prairie restoration and management practices, including the relationship between prairie management and viewsheds. It is important to clearly articulate the role of the prairie in telling the story of George Washington Carver's life. For example, management through mowing to interpret former farm fields in some areas.

- Invasive plant control is part of the prairie management process. It is now needed in some woodland areas. More support will be needed to ensure the success of this initiative, including funding and personnel, which will be indicated in the CLR.

- The CLR will provide guidance to the park on the management and incorporation of the 30-acre parcel acquired in 2006. This land was once part of the Carver farm, but not part of the original park acquisition. The CLR/EA treatment alternatives should encompass this parcel. An EA has been prepared to address prairie management through prescribed burns. It is hoped that if the new parcel is recommended for conversion to native grassland prairie, that the existing EA can be used to support this action.

- The CLR/EA will also include recommendations for managing the approximately 20-acre developed area of the park, which requires intensive maintenance, and includes the visitor center/maintenance building complex, the picnic area, and the one-mile Carver Trail. For the picnic area, the CLR will consider vegetation management practices and a desired character as well as the consolidation of the picnic areas into one location. In association with the trail, the CLR will consider an overall justified approach to land cover management and its connection to interpretation and the visitor experience. For example, will trees be planted where the trail crosses open areas to enhance the comfort for visitors? The CLR should also evaluate the ornamental plantings at the park entrance, park site furnishings, rose beds, and plantings near the trailhead.

- The care of turf and goals for the appearance of high visitor use areas is a high priority for the park. The CLR will provide guidance and direction regarding treatment of turf and manicured areas within the developed core, and the interface of this area with the less managed prairie units and woodland areas.

- The Carver birthplace cabin exhibit structure appears to be located incorrectly. Archeologists have been conducting detailed investigations to locate the actual site of the Carver birthplace cabin. The CLR will consider how this information could be incorporated into the visitor experience.

- The Carver family cemetery requires special attention (Figure 231). The perimeter wall is in need of repair and the cemetery as a whole requires maintenance and appropriate management, including consideration of returning the opening to the eastern face of the wall where it originally was located. The CLR will also provide guidance on treatment of headstones and turf management within the cemetery wall.

FIGURE 231. Perimeter wall with mounded stones surrounds the Carver family cemetery.

- The late period Carver dwelling is not located on its original site. The CLR will discuss whether there are better methods for reconciling this discrepancy within the landscape.

- The CLR will also consider options for the treatment of Williams Pond and the associated contemplative trail around it (Figure 232). The pond does not contribute to the historic significance of the park, but it provides visual/sensory interest as well as plant and fish habitat. The contemplative loop trail is currently surfaced with mulch. The CLR will consider whether this is appropriate given that it does not meet universal accessibility guidelines.

FIGURE 232. Williams Pond and the surrounding trail.

- Accessibility is of concern to the park, and mentioned in the GMP. An accessibility evaluation of the park and the existing trail system was prepared in 2014. The CLR team will use this evaluation to develop recommendations for enhancing accessibility. Although the park feels that the trail is in fairly good shape, there are certain areas that may need to be adjusted due to steep slopes or loose surfacing material. Some portions of the trail have recently been resurfaced and regraded to improve accessibility.

- Stream bank restoration work was done along Carver Branch to abate erosion that was threatening the spring house and the historian's residence. In the 1970s, 200 feet of rip-rap was imbedded in the outside of a "meander bend" to prohibit channel migration (Figure 233).[550] The park would like the CLR to consider whether restoration of the stream banks currently covered with rip-rap is appropriate.

FIGURE 233. Stream flooding occurs along Carver Branch.

- Within the principal viewshed across the prairie below the visitor center is evidence of the park's leach field (Figure 234). The CLR will consider means for further disguising or limiting the visual impact of this feature as part of the visitor experience.

FIGURE 234. Leach field near the visitor center and fields west of the visitor center with potential for views.

- There is currently a problem accommodating parking associated with visitors during special events, such as Carver Day and Prairie Day. The CLR will consider where to accommodate overflow parking for special events, including

550. Krahe and Catton, 258, 301.

the size of the facilities, access to the facilities, and the potential surface material of the facilities. Presently, the park uses the grassy areas along the entrance road, parking area, and picnic area for this purpose (Figure 235).

FIGURE 235. Overflow parking area south of the entrance road to George Washington Carver National Monument.

- The former park housing area includes three structures that are being considered for disposal. These buildings are currently used for storage. The CLR will comment on the plan to demolish the buildings, and potentially suggest an alternative location for the materials stored in these buildings. The park has estimated the area needed for storage at approximately 1,200 square feet.

- The park has considered establishing an Environmental Trail within the Harkins Branch area (Figure 236 and Figure 237). The CLR will consider whether this is an appropriate addition to the cultural landscape of the park.

FIGURE 236. The south side of the site that is bordered by Elder Road is not accessible to visitors by trail.

FIGURE 237. A secondary access to the park might arise from Elder Road that could connect to new trails in the adjacent fields.

5.2 Alternatives and Treatment Recommendations

The alternatives that follow explore a range of options for the potential expansion and rehabilitation of the George Washington Carver National Monument that meet the park's purpose and objectives while protecting or minimizing impacts on its resources. Several alternatives were considered and dismissed because they did not meet project or park objectives or they had the potential to produce an unacceptable level of adverse impact on the natural and cultural resources and the overall visitor experience. The following draft alternatives developed for the national monument are consistent with applicable NPS laws, policies, and regulations, as summarized in Chapter 1. The alternatives under consideration are listed below:

- Alternative 1 (No Action): Preserve existing conditions and continue current management strategies
- Alternative 2: Rehabilitation of the Landscape, including Limited Restoration to Interpret and Memorialize the Life and Achievements of George Washington Carver
- Alternative 3: Interpreting and Celebrating the Life and Work of George Washington Carver using an Ethnobotanical Approach
- Alternative 4: Honor, Commemorate, and Interpret the Life and Legacy of George Washington Carver by Employing a Combination of Agricultural Heritage and Exhibits of Plantings known to Carver on the Farm and Crucial in His Later Scientific and Research Efforts.

Although the option of continuing current management (Alternative 1: No Action) does not solve the purpose and needs of the project as set forth in Chapter 1, it is examined here because current conditions are used as the baseline against which the action alternatives are analyzed. This is the context for determining the relative magnitude and intensity of impacts (NPS 2001). Three additional alternatives were considered but dismissed because they were determined to be unreasonable, as explained in section 5.7, "Alternatives Considered but Dismissed". Once the action alternatives were developed, reviewed, presented to stakeholders, and revised, the park further evaluated the alternatives, both advantages and disadvantages which led to the identification of the NPS Preferred Alternative.

5.2.1 Alternative 1. The No Action Alternative: Preserve existing conditions and continue current management strategies (No Action).

The No Action alternative focuses on preservation of the existing character of the George Washington Carver National Monument landscape and current interpretive programs. Under this alternative, there would be no changes to the facilities that currently accommodate visitor access and interpretation, or park administration or maintenance. Proposed changes that have already been approved, such as demolition of the park housing structures, would be permitted to proceed. The existing visitor center would continue to serve as the primary means for visitor contact and orientation. The entrance drive and associated parking lot would remain the primary vehicular access route for visitors to experience the park's resources. Visitors would also continue to gain the majority of their knowledge of the life and accomplishments of George Washington Carver through the exhibits located within the visitor center and along the mile-long Carver Trail. The picnic area would continue to support the visitor experience. No provision would be made to accommodate overflow parking beyond the use of current road margins and parking areas.

The current landscape patterns of spatial organization, composed of a developed subzone featuring ornamental plantings, shade trees, and turf, riparian woodlands along the stream corridors, and restored grassland prairie, will also be perpetuated. No further clearing would be undertaken and current mowing and vegetation management regimens would continue. The 30-

acre parcel would remain a fescue field. The Williams Pond would remain in its current configuration. No change would be made to the interpretation of the Carver birthplace cabin site.

Views identified as important interpretive vistas, such as from the visitor center environs across the prairie to the west, would continue to be managed for clear sight lines. Treatment would focus on stabilization and maintenance of the current landscape and preservation of the park's commemorative features as they exist today, including the Carver statue and bust, quote stones, and interpretive markers and monuments.

Major components of the alternative include:

- Maintenance of existing landcover character and patterns
- Maintenance of existing interpretive programs and media
- Maintenance of existing landscape features and systems
- Continued protection of natural and cultural resources
- Continued repair of deteriorated features and systems.

Selection of the No Action alternative would preclude the park from meeting some of the goals identified for consideration as part of the CLR treatment plan in the Purpose and Need statement and the list of management issues, such as expansion of visitor parking facilities to accommodate overflow needs during special events, conversion of fescue fields associated with the former mine site to another landcover type, and clarifications of inaccuracies, such as the current location of the birthplace cabin. No further exploration of ways to utilize the cultural landscape as a tool for interpreting Carver's life and accomplishments would be conducted. Selection of the No Action alternative would also limit the park in its ability to explain the historical context within which George Washington Carver grew up and his efforts to get an education and to rehabilitate the landscape and its associated structures to enhance the memorial nature of the site. Management concerns surrounding Williams Pond, the expansion of the area managed as woodland, consideration of the role of the prairie in site interpretation, and the inaccuracy of the location of the second Carver dwelling would also not be addressed.

Boundary marker
Carver Road
Entrance drive
Brick entrance piers
Former residences (now used for some storage)
Carver Road
Boundary marker
Carver Branch
7B
Picnic area
1
7
Storage shed and yard
Seasonal trail
5
Picnic area
Contemplative Loop Trail
Boy Carver Statue
7A
Visitor parking
Carver Spring
Visitor Center
Maintenance building and yard
Staff parking
Williams Pond
Carver bust
VIEW
4
Elder Road
Birthplace exhibit structure
Demonstration gardens
Carver Family Cemetery
Moses Carver House
Williams Branch
Carver Branch
7
Carver Trail
Replanted walnut fence row
3
Compost pile
Harkins Branch
Dry Branch
Harkins Woods
2
6
Former mine site
8
9
Slash pile
Woodland

This drawing was prepared to illustrate the Cultural Landscape Report/Environmental Assessment for George Washington Carver National Monument in 2015. This drawing is provided to illustrate potential treatment alternatives, and is not intended to serve as a design or construction document.

0' 400' 800'

SCALE 1" = 400'

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Environmental Assessment and Cultural Landscape Report

for

George Washington Carver National Monument

Prepared by JMA, a CCRG company

Drawing No. GWCA 397 127385

PMIS No. _____

Legend

- GWCA Boundary
- 1-foot contour
- Stream
- Paved road
- Trail
- Building
- Split-rail (worm) fence
- Core Developed Area 22± acres
- Restored Grassland Prairie 127± acres
- Woodlands 61± acres
- Former Mine Site 30 acres*
- 4 Management Units
- Wet Prairie Areas

*This acreage is included in prairie restoration as Unit 9

Sources:

National Park Service, Cultural Resource GIS office, CLI GIS conversion project, 2013.

Contours created from 7.5 minute digital elevation data, USGS, 1998, Newton County, MO (published Rolla, MO).

Heartland Network Inventory and Monitoring Program, "Vascular Plant Inventory, GWCA," 2004.

Figure 238.

Alternative 1 (No Action)

Preserve Existing Conditions and Continue Current Management Strategies

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5.2.2 Goals and Objectives Common to the Action Alternatives

The Action Alternatives within this chapter are intended to address the issues outlined above, while also meeting specific goals identified in foundational park planning documents and good historic landscape preservation practice. The goals and actions that are common to each of the action alternatives include the following:

Goals derived from the GMP

- Integrate interpretation with an approach to managing the cultural landscape.
- Memorialize the life of George Washington Carver as a distinguished African American, scientist, educator, humanitarian, Christian, artist, and musician.
- Preserve the agrarian setting of the Moses Carver farm and birthplace of George Washington Carver.
- Interpret the life, accomplishments, and contributions of George Washington Carver, using a museum, wayside exhibits, and other interpretive strategies.
- Manage cultural and natural resources to memorialize George Washington Carver's life in a dignified and inspirational setting.
- Encourage the public to develop a deep understanding of George Washington Carver's achievements and services to humanity.
- Explain the historical context in which George Washington Carver grew up and his efforts to get an education.
- Evaluate the human/natural/cultural resources and utilize them to a greater extent.
- Rehabilitate the landscape and its associated structures to enhance the memorial nature of the site.

Additional goals derived from the project scope, workshops, and NPS communications include:

- Utilize the LRIP visitor experience objectives and goals to form a justification for proposed introduction of elements of the historic landscape.
- Maintain and preserve George Washington Carver's birthplace, a place known to have been influential in shaping the personality of a man who played an important role in the social and agricultural history of twentieth century America.
- Manage the resources at the national monument to help interpret how the Moses Carver farm and surrounding area influenced George Washington Carver as an adult.
- Preserve the cultural landscape as the principal asset of the national monument, including the individual features and the overall historic character that help convey the story of George Washington Carver's life.
- Enhance the visitor experience by creating opportunities for engagement through interaction with and interpretation of both cultural and natural landscape features. This includes ease of access to historic buildings, structures, and features, as well as natural resources and spaces.
- Ensure treatment alternatives are consistent with the guidance afforded in the Secretary of the Interior's Standards for the Treatment of Historic Properties, including the four appropriate treatment approaches recognized for historic landscapes: preservation, rehabilitation, restoration, and reconstruction.

5.2.3 Treatment Recommendations Common to the Action Alternatives

Based upon the park's need to meet current and projected future interpretive, functional, and management goals, rehabilitation is recommended as the appropriate treatment alternative for the George Washington Carver National Monument

cultural landscape. Because rehabilitation is defined as "the act or process of making possible a compatible use for a property," this approach will allow for protection of the site's historic character and resources while carefully addressing the needs for enhancement of interpretive opportunities and circulation routes, ecological maintenance and restoration, and the improvement of visitor amenities as outlined in the GMP, LRIP, and other foundational park documents.

Under the rehabilitation treatment alternative, stabilization, protection, and preservation of historic and natural resources are actions that must occur in order to allow for the limited accommodation of new uses. As part of the preferred treatment alternative, those resources and systems at George Washington Carver National Monument that are to be the focus of stabilization, protection, and preservation are noted, as are the aspects or areas of the cultural landscape that are particularly sensitive to change and disturbance. Sensitive habitats and biotic resources, as well as sites of known and potential archeological resources, for example, should be treated with great care. In general, the CLR recommends preservation of archeological resources unless a compelling research question or informational need justifies disturbance or excavation or unless mitigation to accommodate unavoidable change is necessary.

In considering the other treatment alternatives recognized by the Secretary of the Interior for the George Washington Carver National Monument cultural landscape, the CLR found them inappropriate for the following reasons. Preservation is overly restrictive because it does not allow for the enhanced interpretation and site access recommended in the GMP and LRIP. Restoration and reconstruction are also inappropriate because they assume, as a prerequisite, that sufficient documentation exists to accurately portray a lost historic condition. At this time, it does not appear that documentary sources are detailed enough to support restoration or reconstruction of the George Washington Carver National Monument. Also, a mission of the park is to commemorate Dr. Carver, suggesting that the landscape convey information and qualities other than a strict historical presentation.

Natural Systems and Features

1) Retain and maintain the natural features and systems that contribute to the National Register significance of the park:
    - Carver Branch
    - Carver Spring
    - Dry Branch
    - Harkins Branch
    - Williams Branch
    - Drainage swale in the field south of the visitor center
    - Native successional woodlands
2) Preserve, manage, and interpret existing natural systems including Carver Spring and the three streams—Carver, Harkins, and Williams branches.
3) Retain, maintain, manage and interpret Harkin Woods as a natural and visual resource that contains plants of natural resource value not found elsewhere within the park.
4) Maintain and manage the wet prairie areas located in the southwest and south central areas of the national monument to promote continued diversity of species and community composition found only in seasonally wet areas.
5) Preserve the existing landforms and natural drainage patterns to the greatest extent possible.
6) Consider changing management of Unit 2, currently grassland prairie, to woodland. Based on analysis conducted in 2010 by MoRAP this is the only prairie unit that may be better suited to woodland than grassland. Unit 2 should potentially be considered for

conversion to white oak/burr oak-pecan, floodplain forest.

7) Convert the 30-acre parcel acquired by the park in 2006 to prairie to incorporate it into the overall approach to landcover management beyond the central interpretive area associated with the Carver Trail and the visitor center.

Responses to Natural Resources

1) Retain and maintain the responses to natural resources that contribute to the National Register significance of the park including:

   - Siting of the Moses Carver farm in close proximity to fresh water sources
   - Siting of the Carver Trail to take advantage of natural features, and inclusion of the Shartel-era Williams Pond
   - Use of bridges in association with park trail stream crossings
   - Removal of rip-rap imbedded in 1970 to prevent channel migration and reconstruction and re-vegetation the stream bank.
   - Siting of the picnic area in the deciduous shade tree grove
   - Siting of the visitor center on a ridge overlooking the fields associated with the Moses Carver farm
   - Use of swales and culverts along the entrance road for drainage

Patterns of Spatial Organization

1) Retain and maintain the patterns of spatial organization that contribute to the National Register significance of the park including:

   - Formal entrance road corridor
   - Visitor center environs
   - Shaded picnic grove
   - Linear and enclosed Carver Trail corridor
   - Linear walnut hedgerow separating open space
   - Moses Carver house area enclosed by woodland on the approach and the open space beyond extending visually to prairie fields and woodland in the distance.
   - Carver family cemetery, edged by a perimeter wall
   - Open fields that generally follow former field patterns used for agriculture during Carver ownership with edges defined by tree rows or woodlands.
   - Linear wooded and deeply shaded stream corridors

Land Uses and Activities

1) Retain and maintain the land uses that contribute to the National Register significance of the park including:

   - Cemetery
   - Commemoration
   - Commerce
   - Maintenance
   - Interpretive/museum/educational
   - Park administration
   - Recreational
   - Utility
   - Visitor services

2) Provide for visitor services to enhance the experience available at the national monument.

3) Retain and maintain utility land uses that are an essential component of park operations,

including water and sewer, gas, telephone, refuse collection, and electrical services.

4) Retain and maintain conservation land uses in order to protect natural resources of high quality and value, including native plant communities and water resources.

5) Convert the park housing area to overflow parking after planned demolition of structures has occurred. Retain the existing separate entrance to the area for access.

6) Consolidate the two picnic areas into one, in the location of the current picnic area in the grove of large deciduous trees, north of the main entrance road to the national monument.

Views and Viewsheds

1) Retain and maintain the views and viewsheds that contribute to the National Register significance of the park including:

   - Views into the park along the entrance road
   - Linear views along the Carver Trail
   - Views across the prairie through the hedgerow of walnut trees
   - Views across fields from the Moses Carver house area
   - Views of surrounding farmsteads

Topographic Modifications

1) Retain and maintain the topographic modifications that contribute to the National Register significance of the park including:

   - Grading to accommodate the entrance road and visitor parking area (northern)
   - Grading to accommodate the visitor center
   - Grading to construct the original Carver Trail
   - Excavation and grading in construction of the Williams Pond dam
   - Grading to accommodate the park housing complex

Circulation

1) Retain and maintain the circulation features that contribute to the National Register significance of the park:

   - Park entrance road and north parking area
   - Maintenance area access road and maintenance yard area parking
   - Access road leading southwest from the maintenance area through and around fields
   - Internal access roads, including North-South Road (west boundary)
   - Carver Trail
   - Concrete walks associated with the housing complex and visitor center

2) Enhance universal accessibility associated with the trail and other aspects of the park, ensuring that the entire trail meets the ABAAS (Architectural Barriers Act Accessibilities Standards of 1968) and the 2004 ADA-ABA Accessibility Guidelines by addressing any deficiencies identified in *George Washington Carver National Monument: Accessibility Debriefing Report and Final Report* (NPS 2014).

3) Remove the wood chip mulch surfacing on the Contemplative Loop Trail and replace with compacted crushed aggregate surface to create a firm and stable surface.

Cultural Vegetation

1) Retain and maintain the cultural vegetation that contributes to the National Register significance of the park including:

- Replanted walnut hedgerow along the Carver Trail near the Carver family cemetery
- Ornamental plantings at the park housing complex
- Picnic grove shade trees

2) Retain and maintain native tree plantings installed by the NPS in the 1960s and 1970s within the developed core area and in the vicinity of the visitor center.

3) Maintain and manage turf land cover in the 20 plus or minus acres comprising the Core Developed Area. Follow the guidance afforded in the National Park Service *Midwest Region Pilot Turf Stewardship Project* for the George Washington Carver National Historic Site. Turf in this area should be highly manicured and meticulously maintained, in contrast to the land cover character of the prairie grasses and the woodlands. The turf stewardship project provides supporting information for the development and implementation of a natural turf management program. The soil background, products, and cultural practices that are discussed all contribute to the underlying objective of creating a healthy turf system.

4) Maintain and manage the turf associated with the Moses Carver house yard, the Carver family cemetery, and the former park housing area. Management of the turf in these areas should also follow guidelines from the turf management project. Turf that is less meticulously maintained is envisioned for these areas. Once the former housing structures are removed, that area will be converted to overflow parking edged by prairie.

Buildings and Structures

1) Retain and maintain the buildings and structures that contribute to the National Register significance of the park:

- Moses Carver house
- Maintenance building
- Superintendent's residence, unless plans for demolition are realized
- Historian's residence, unless plans for demolition are realized
- Four-unit seasonal housing, unless plans for demolition are realized
- Stacked stone wall enclosing the Carver family cemetery
- Monument site boundary markers (2) along Carver Road
- Williams springhouse foundation

2) Stabilize and maintain, and consider restoring, the Carver family cemetery wall to reflect intended squared off stone stacking methods and the original eastern opening for access.

3) Repair features assessed in fair to poor condition:

- Elements of the Moses Carver house including porch floor transparent finish, repairs and sealing of gaps at wood siding and floor boards due to settlement, and repairs to worn and deteriorated entrance stairs.
- Low brick walls surrounding the maintenance yard.
- Superintendent's residence, unless plans for demolition are realized.
- Historian's residence, unless plans for demolition are realized.
- Four-unit seasonal housing, unless plans for demolition are realized.

4) Provide universal accessibility to all buildings and structures as well as features associated with the primary interpretive experience, following the guidelines set forth in the *George Washington Carver National Monument:*

Accessibility Debriefing Report and Final Report (NPS 2014).

5) Consider construction of a storage facility (approximately 1,200 square feet) in order to accommodate needs as outlined by the park. It is recommended that the facility form the western edge of the existing maintenance yard. The scale, form, materials, and massing of this facility should be compatible with the adjacent maintenance building (Building No. 22). Characteristic design elements include a simple one-story brick masonry rectangular form capped with a shingled gable roof with deep roof eaves.

Small-scale Features

1) Retain and maintain the small-scale features that contribute to the National Register significance of the park:

   - Boy Carver statue.
   - Bust of George Washington Carver.
   - Lighting at former park housing area. Lighting here appears to survive from the park establishment period.
   - Dedication plaque.

2) Retain, maintain, and interpret the bust of George Washington Carver.

3) Continue to mark the graves within the Carver family cemetery. The grave markers are replicas and contemporary features. When in poor condition they can be replaced.

Archeological resources

1) Avoid land use activities, permanent or temporary, which might threaten or impair known or potential archeological resources.

2) Initiate further archeological investigations in order to accurately locate features of the Moses Carver farm that might include the birthplace cabin site, the original site of the Carver house that was moved by the Shartels, the sites of the Williams and Gilmore cabins, the orchard, fields and fencelines, kitchen garden, roads, and outbuildings. Use this information to inform interpretation as well as resource management.

5.2.4 Action Alternatives Developed through the CLR/EA Planning Process

This section outlines the three cultural landscape treatment action alternatives explored by the CLR/EA and presented to the park and stakeholders for review and consideration.

Alternative 2. Rehabilitation of the Landscape, including Limited Restoration, to Interpret and Memorialize the Life and Achievements of George Washington Carver

Interpretation is considered a means of memorialization. Interpretation of George Washington Carver's life on the Moses Carver farm, the experience of his transition from slavery to freedom, and the influence of these experiences on his later notable work and career as a scientist are already a focus of the monument. As part of an overall strategy for managing the cultural landscape of the park, this alternative recommends developing additional connections between interpretive programming and what is known about the landscape that comprised the Moses Carver farm during George Washington Carver's time on the property.

This rehabilitation alternative suggests enhancing the ability of the park to tell the story of George Washington Carver's experience by re-establishing and interpreting missing nineteenth century features and lifeways. Rehabilitation of the landscape is intended to establish new areas within the park that afford additional opportunities for the public to reflect on Carver's life. Some of the new areas will focus on selective restoration of features for which documentation of the nineteenth century farmstead exists. Through these, visitors will learn first-hand about Carver's experience, and the influence of the natural environment on his later life and work. Limited restoration would also allow for more in-depth

exploration of how the postbellum landscape known to Carver likely reflected the evolving role of former slaves in a new economy.

The areas where limited restoration would occur would closely edge the route of park trails or be visible from the Carver Trail at interpreted vista points. The existing Carver Trail would remain in its current location and configuration. Features present during the third quarter of the nineteenth century would be revealed, as known, along the trail. They are anticipated to include the persimmon grove, walnut tree fencerows, savanna-like woodlands, the fruit orchard, the farmstead area, the rural agricultural setting, hayfields, and historic circulation features. A limited extension of the trail would be developed to provide connections with historic features not located along the existing trail, including sites where views would be afforded to more distant features. Wayside exhibits would convey information about historic farmstead features at specific locations and viewpoints, providing a clear connection between Carver's life and achievements and the historic landscape of the farm.

Archeological investigations would be employed to determine additional information about the farm in support of restoration efforts. Where insufficient information exists to guide accurate restoration of historic farmstead features, information would be conveyed and interpreted through means such as artist renderings, historic graphics, and marking sites on the ground using foundational outlines, mow patterns, and plantings. It is anticipated that the locations of such features as the Moses Carver dwellings, outbuildings, fencelines, roads, kitchen garden, fields, hedgerows, and pastures would be conveyed in this way.

The majority of the existing developed core of the park would remain similar to existing conditions today. The entrance drive, parking area, picnic area, visitor center, and maintenance area would continue to function and have a similar appearance to that present today. Current park concerns regarding screening of work areas, directing visitors to a single picnic area, and addressing overflow parking needs would be addressed to maximize visitor enjoyment and to limit views of incompatible activities from the core interpretive experience. The existing housing area would be converted to an overflow parking area, while the 30-acre parcel acquired in 2006 that was formerly used for zinc mining would be converted to prairie to incorporate it into the overall approach to landcover management beyond the central interpretive core. The ongoing efforts conducted by the park to manage natural resources for diversity and conservation, as evidenced through views to prairie communities from the trail, would serve as a foundation for interpreting Carver's work as a scientist.

The landscape beyond the developed core and interpreted area would feature either mown hay fields within the viewshed of interpreted vista points to convey the agricultural character of the landscape during the Carver period, or continued management of the restored native grassland prairie beyond designated viewsheds in order to promote conservation and the diminishment of mowing responsibilities. In areas where historic farming practices are proposed to be interpreted, the goal would be to present an agricultural character, while preserving the native grassland prairie plant composition. The Carver Branch woodland, through which the trail passes, would be managed to promote a savanna-like composition more consistent with that present during the nineteenth century. Use of the bottomlands for crop cultivation during the nineteenth century would be interpreted within this milieu. The beauty and serenity of the bottomland woodland community would afford opportunities to interpret Carver's spirituality.

The specific actions resulting from the implementation of this alternative are anticipated to include:

- Retention of the existing visitor services area core, including the picnic grove, visitor center, and parking area. This is a highly manicured area to be meticulously maintained.

- Establishment of overflow parking on the current site of the housing buildings proposed for removal.

- Interpretation of the accurate location of the birthplace cabin based on further research and investigation using foundation outlines and mow patterns; the approach of using foundation outlines and mowing patterns would need to be determined based on the distribution of archeological resources at the original farm area; the best approach for interpreting the birthplace cabin in its original location would need to be determined with direct input from an NPS archeologist.

- Interpretation of the accurate location of Moses Carver homestead based on further research and investigation using foundation outlines and mow patterns; the best approach for interpreting this building in its original location would need to be determined with direct input from an NPS archeologist.

- Interpretation of other former Moses Carver farm features, such as outbuildings, pastures, fields, and cultivated areas, fencelines, roads, hedgerows, the persimmon grove, and the nut and fruit orchard to depict the character of the Moses Carver farm and agricultural activities; the best approach for interpreting those buildings and features in their original locations would need to be determined with direct input from an NPS archeologist.

- Clearing of woodlands not present during the Carver period.

- Establishment of native warm-season grass fields and prairie communities following the recommended clearing of wooded areas. Development of appropriate seed mixes in concert with the Heartland Network Inventorying and Monitoring program personnel. Establishment of native warm-season grass fields and prairie should be preceded by clearing of woody growth, grubbing the soil, grading to prevent channelization, scarification of the soil, seeding and/or the planting of plugs or sod produced at the park, and covering with a light erosion control material, and watering.

- Management of bottomland woodlands to depict the historic savanna-like character, including thinning of trees and undergrowth.

- Expansion of the Carver Trail to provide access to viewsheds of the rural agricultural setting and fields managed to convey historic agricultural character.

- Development of interpreted vista overlooks along the existing and proposed expanded trail to interpret historic field patterns and farm features.

Manage Carver Branch woodlands to promote a pre-settlement savanna-like composition, consistent with that known to the Carvers when they settled the property

Manage and maintain viewshed from visitor center to prairie

Consolidate picnic areas to this location

Main entrance

New entrance road for overflow parking

Retain separate exit for overflow parking

Overflow parking (former housing quarters)

Carver Road

Carver Road

Interpretation of former farm features; birth place cabin; Moses Carver homestead and farm outbuildings

Expanded crushed aggregate trail loop around primary interpretive area

Expanded mown trail loop, with open views to rural setting of managed hayfields

Cleared woodland to expand views from trail; establish native warm-season grassfields and prairie communities

Manage and maintain Williams Pond

Replace mulch surfacing of Contemplative Loop Trail with crushed aggregate

Expanded mown trail loop, with open views to rural setting of managed hayfields

Manage Harkins Woods for perpetuation of healthy native plant communities and unique plants and natural resource conservation

Retain seasonal trail and resurface for accessibility

Proposed location of storage facility

Apple orchard restoration for interpretation of former farm features; also serves to screen staff parking area

Elder Road

Expanded mown trail loops, with open views to rural setting of managed hayfields

Mown-managed hayfields preserve agricultural character of landscape during Carver period

Interpretation expanded to include reclamation of former mine site

Expanded crushed aggregate trail and restoration of persimmon grove

Consider management of this prairie unit as woodland, with white oak/burr oak-pecan floodplain forest

Cleared woodland for partial restoration of historic character of land cover during Carver period; establish native warm-season grassfields and prairie communities

Manage woodlands for natural resource conservation

Carver Branch

Williams Branch

Harkins Branch

Dry Branch

7

7B

7A

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VIEW

This drawing was prepared to illustrate the Cultural Landscape Report/Environmental Assessment for George Washington Carver National Monument in 2015. This drawing is provided to illustrate potential treatment alternatives, and is not intended to serve as a design or construction document.

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SCALE 1" = 400'

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Environmental Assessment and Cultural Landscape Report

for

George Washington Carver National Monument

Prepared by JMA, a CCRG company

Drawing No. GWCA 397 127385

PMIS No. _____

Legend

- GWCA Boundary
- 1-foot contour
- Stream
- Paved road
- Trail
- Building
- Split-rail (worm) fence
- Core Developed Area 22± acres
- Restored Grassland Prairie/ Managed Hayfields 127± acres
- Managed Prairie Viewsheds 40± acres (of 127± acres)
- Managed Woodlands 49± acres
- Cleared Woodlands 12± acres
- Expanded Trails 4680 linear feet
- 4 Management Units
- Wet Prairie Areas

Sources:

National Park Service, Cultural Resource GIS office, CLI GIS conversion project, 2013.

Contours created from 7.5 minute digital elevation data, USGS, 1998, Newton County, MO (published Rolla, MO).

Heartland Network Inventory and Monitoring Program, "Vascular Plant Inventory, GWCA," 2004.

Figure 239.

Alternative 2

Rehabilitation of the Landscape, Including Limited Restoration, for Interpretation to Memorialize the Life and Achievements of George Washington Carver

DRAFT

Alternative 3. Interpreting and Celebrating the Life and Work of George Washington Carver using an Ethnobotanical Approach[551]

George Washington Carver developed a love of nature and plants during his youth on the Moses Carver farm. Throughout his career as a scientist, Carver promoted the value of and new uses for plants, including applications as food, medicines, dyes, and industrial products. During his tenure at Tuskegee Institute, Carver described the influence of his childhood, particularly his exploration of the fields and woods on the Moses Carver farm, on his interest in and knowledge of ethnobotany. Carver became known as the "plant doctor" due to his knowledge regarding medicinal uses of plants as a young boy. Carver expanded on his early knowledge in his scientific work later. This action alternative suggests connecting visitors with the range of plants available to Carver on the property during his youth that he later recommended for a variety of useful purposes, and expanding interpretation to discuss how these plants, and many others, were used in his later scientific work during his years at Tuskegee Institute.

The focus of this rehabilitation alternative would be the interpretation of Carver's work and career through plants known to have been the focus of his experiments and scientific exploration. Plants would be featured along park trails to enhance interpretation of Carver's achievements. They would include native species known to Carver during his youth on the farm that he used for food, art materials, and medicinal purposes, and native species featured in his experiments. The design of the interpretive journey would include existing stands of native plants, and other species planted by the park for interpretive purposes. The existing trail would form the basis for the new interpretive layer, but additional extensions would be added to provide access to areas of the property of interest, such as Harkins Woods. Demonstration plots would be developed as part of new interpretive elements along the trail. Existing plant communities would be managed for natural resource values and in accordance with scientific principles of conservation and species diversity, including the restored native grassland prairie. This use is consistent with Carver's conservation efforts and the belief that promoting diversity is critical to allow for future important ethnobotanical discoveries.

Like Alternative 2, the majority of the existing developed core of the park would remain similar to that present today. The entrance drive, parking area, picnic area, visitor center, and maintenance area would continue to function and have a similar appearance to that present today, although the theme of ethnobotanical interpretation would begin at the park entrance. All ornamental plantings present within the park would be considered for potential replacement with species known to have played a key role in Carver's work. Current park concerns regarding screening of work areas, directing visitors to a single picnic area, and overflow parking needs would be addressed by introducing plants known to have served Carver in his work.

The existing housing area would be converted to an overflow parking area, while the 30-acre parcel acquired in 2006 that was formerly used for zinc mining would be converted to native grassland prairie.

The specific actions resulting from the implementation of this alternative are anticipated to include:

- Retention of the existing visitor services area core, including the picnic grove, visitor center, and parking areas;

551. Ethnobotany is the study of people and plants, specifically how people interact with plants. This study may be approached from a variety of angles including ecological, pharmacological, anthropological, archaeological, and historical.

- Establishment of a wide variety of native plant species producing useful and edible fruits, nuts, dyes, and fibers known to have been a focus of Carver's work;

- Establishment of species such as a persimmon grove, known to Carver and used in his later scientific experiments

- Clearing of woodlands for views from the contemplative trail and establishing native warm season grass fields and prairie communities;

- Interpretation of Carver's contribution to improvements to postbellum Southern agricultural practices, and to natural sciences, and the application of scientific knowledge to improve the human condition through a lens of the various uses of plants to meet human needs;

- Interpretation of Carver's conservation ethic and recommendations to Southern farmers and others featuring the restored grassland prairie;

- Interpretation of the ways plant species served local residents in a variety of capacities during the nineteenth century; and the ways that Carver explored other uses of plants as a scientist during the first part of the twentieth century;

- Expansion of the trail system into additional areas of the property to provide access to ethnobotanical plantings;

- Continued natural resource management of restored grassland prairie and Harkins Woods, and interpretation of the approach.

Theme of ethno-botanical plantings would begin at entrance

New entrance road for overflow parking

Woodland clearing close to Carver Branch for enhanced interpretation of ethno-botanical plants

Consolidate picnic areas to this location

Maintain separate exit for overflow parking

Overflow parking

Restoration of grassland prairie and continued natural resource management

Carver Road

Carver Road

Continue natural resource management of grassland prairie

Carver Branch

7B

7

1

Retain seasonal trail and resurface for accessibility

Elder Road

Woodland clearing close to Carver Branch for enhanced interpretation of ethno-botanical plants

7A

Theme of ethno-botanical plantings; when opportunity exists, consider replacement for planting beds so any non-natives do not become invasive

5

Manage and maintain Williams Pond

Proposed location of storage facility

Node for ethno-botanical plantings (such as apple orchard) to also screen views to staff parking

Woodland clearing for plantings and more views from the Contemplative Trail; establish native warm-season grassfields and prairie communities

Crushed aggregated segment of trail through major interpretive area

Replace mulch surface of Contemplative Trail with crushed aggregate

VIEW

Mown trail expansion in the landscape follows existing mown corridors where possible

Manage and maintain viewshed from visitor center to prairie

4

Expand demonstration gardens

7

Williams Branch

Carver Branch

Restoration of grassland prairie and continued natural resource management

Expanded crushed aggregate trail and boardwalk or bridges across Harkins Branch to provide access to interpretive nodes associated with ethno-botanical plantings

Woodland clearing for ethno-botanical plantings/persimmon grove

3

8

Harkins Branch

Manage Harkins Woods to retain healthy native plant communities, to remove invasive species, and for enhanced interpretation from the expanded trail; continue natural resource management

2

6

9

Expanded crushed aggregate trail segment to provide access to interpretive nodes associated with ethno-botanical plantings

Dry Branch

Mown trail expansion for access to the landscape, follows existing mown corridors where possible

Manage woodlands to remove invasive species and to sustain ethno-botanical plantings for interpretation

Node for ethno-botanical plantings including shade trees for trail

Manage woodlands to remove invasive species and enhance interpretation from expanded trail

Consider management of this prairie unit as woodland with white oak/burr oak-pecan floodplain forest

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Environmental Assessment and Cultural Landscape Report

for

George Washington Carver National Monument

Prepared by JMA, a CCRG company

Drawing No. GWCA 397 127385

PMIS No. _____

Legend

- GWCA Boundary
- 1-foot contour
- Stream
- Paved road
- Trail
- Building
- Split-rail (worm) fence
- Core Developed Area 22± acres
- Restored Grassland Prairie 127± acres
- Managed Woodlands 51± acres
- Cleared Woodlands 10± acres
- Ethno-Botanical Plantings
- Expanded Trails 5400± linear feet
- 4 Management Units
- Wet Prairie Areas

Sources:

National Park Service, Cultural Resource GIS office, CLI GIS conversion project, 2013.

Contours created from 7.5 minute digital elevation data, USGS, 1998, Newton County, MO (published Rolla, MO).

Heartland Network Inventory and Monitoring Program, "Vascular Plant Inventory, GWCA," 2004.

Figure 240.

Alternative 3

Interpretation and Celebration of the Life and Work of George Washington Carver using an Ethno-Botanical Approach

Alternative 4. Honor, Commemorate, and Interpret the Life and Legacy of George Washington Carver by Employing a Combination of Agricultural Heritage and Exhibits of Plants Known to Carver (*Preferred Alternative*)

Based on the comments provided as part of the stakeholder scoping effort, the CLR team prepared a fourth alternative that blended the ethnobotanical[552] concept, with site-specific enhancement of the interpretive programming involving the nineteenth century Moses Carver farm known to George Washington Carver, and enhanced environmental education opportunities involving trail expansion and justification for ongoing prairie restoration activities to honor Dr. Carver's conservation work. This alternative features exhibits of plants known to Carver during his early years on the farm and used in traditional ways, as well as plants that were important to Carver's research and scientific efforts within the realm of economic botany.[553]

George Washington Carver National Monument is a historic designed landscape of commemoration and interpretation that also retains remnant elements of the historic vernacular landscape known to Carver during his formative years. The establishment of the Monument in the 1940s, 1950s, and 1960s to honor George Washington Carver was laid lightly on the land to preserve and protect the natural features of the environment and the agrarian character of the nineteenth century Moses Carver farm. Park features were also designed to convey a contemplative and aesthetically attractive character suitable to the task of honoring the distinguished scientist and humanitarian. Park planning efforts conducted since the 1960s have continually grappled with appropriate measures for enhancing interpretation of both the landscape that inspired Carver while living on the farm between 1865 and 1877, as well as his achievements in the arts and sciences.

Recognizing these needs, this treatment alternative focuses on the interpretation of several features known to have been present on the Moses Carver farm during George Washington Carver's boyhood. Since they are no longer extant, interpretation will help to convey the scale, arrangement, orientation, and elements of the historic farmstead. Features include field and pasture patterns of agricultural production, walnut hedgerows, the fruit and nut orchard, and a persimmon grove. The farm area would be addressed in part through physical means such as foundation outlines and mow patterns, as well as wayside exhibits and artistic renderings.

Coupled with interpretation of these historic farmstead features, would be interpretation of the plants that Dr. Carver incorporated into his work throughout his life. Elements for interpretation will include plants for food, industrial production, medicines, dyes, fibers, and other uses. Waysides or exhibits would be located within the developed core, particularly along principal visitor circulation routes. These plants familiar to Carver will trace the experience of Carver's youth through his scientific career, helping to knit together his early years when he developed a love of nature, plants, and science, with his life's work, including his promotion of soil and land conservation to Southern black farmers. Any present and future areas of restored prairie within the park managed to promote species diversity, and soil and water conservation, will be interpreted as a contemporary expression of Carver's early twentieth century activities. Priorities for proposed interpretation would be established by the park and guide the number of new exhibit features or wayside signs. Proposed interpretation can also be integrated into existing exhibits, signage, and brochures, retaining and supporting the established goals and objectives set forth in the park's *Long Range Interpretive Plan*. This combination would ensure that interpretive exhibits or signs do not visually intrude on the cultural landscape.

552. Ethnobotany is the study of people and plants, specifically, how people interact with plants.

553. Economic botany is the commercial exploitation of plants by people.

Like Alternatives 2 and 3, the majority of the existing developed core of the park would remain similar to that present today. The entrance drive, parking area, picnic area, visitor center, and maintenance area would continue to function and have a similar appearance to that present today. Plants that were familiar to Carver and played a key role in his work, would be established at the park entrance. Small discreet plant identification signs would be considered for these plants at the entrance. All ornamental plantings present within the park would be considered for potential replacement with these plant species. Current park concerns regarding screening of work areas, directing visitors to a single picnic area, and addressing overflow parking needs would be addressed through the introduction of these plant species or to interpret nineteenth century farming practices on the Carver farm.

The existing housing area would be converted to an overflow parking area with a new road connection from the entrance road to the parking area provided. Accommodation of the park's storage needs would occur through either adaptive reuse of one of the three housing buildings slated for demolition, or construction of a new 1,200 sf facility integrated into the maintenance yard and perimeter wall. The 30-acre parcel acquired in 2006 that was formerly used for zinc mining would be converted to prairie to incorporate it into the overall approach to landcover management beyond the developed and interpretive core.

The specific actions resulting from the implementation of this alternative are anticipated to include:

- Retention of the existing visitor services area core, including the picnic grove, visitor center, and parking areas.

- Interpretation of former farm features, birthplace cabin, Moses Carver homestead and farm outbuildings; the best approach for interpreting these buildings and features in their original locations would need to be determined with direct input from an NPS archeologist.

- Establishment of vistas along the Carver Trail to interpret the agrarian setting by mowing of some prairie units and areas.

- Management and maintenance of field spatial organization with hayfields, to reflect the agrarian setting of Carver's youth; consider the haying timing so existing plants in the strip along the trail can be seen to their best advantage.

- Management of riparian woodlands to remove invasive species and promote a pre-settlement savanna-like composition.

- Interpretation of the ways plant species served local residents in a variety of capacities during the nineteenth century; and the ways that Carver explored other uses of plants as a scientist during the first part of the twentieth century; this could also be interpreted as a museum exhibit.

- Establishment of a heritage fruit and nut orchard to interpret the Carver farm.

- Establishment of a persimmon grove to interpret one of the key features described by Carver from his childhood.

- Establishment of plants along trails and roads and interpretation of a wide variety of native species known to have been a focus of Carver's work including edible fruits, nuts, dyes, and fibers.

- Expansion of the trail system into additional areas of the property to provide access to interpretive nodes associated with plants familiar to Carver, and in a way that does not negatively impact the park's natural resources.

- Establishment of views by clearing woodlands north of Williams Pond and the contemplative trail and establishing native warm season grass fields and prairie communities.

- Development of a revised Fire Management Plan (FMP). The current FMP does not

address the abandoned mine or the woodlands.

- Development of appropriate seed mixes for establishing native warm season grass fields and prairie communities in concert with the Heartland Network Inventorying and Monitoring program personnel.

- Enhancement of natural resource management of restored grassland prairie and Harkins Woods for health, diversity, and soil and water conservation.

Implementation of this alternative, as well as Alternative 3, will involve development of a list of key species drawn from our knowledge of the experiences and work of George Washington Carver. The list of possible choices included below is derived from review of Peter Burchard Duncan's *George Washington Carver: For His Time and Ours. Special History Study: Natural History Related to George Washington Carver National Monument, Diamond, Missouri.* The recommended plants and related exhibits are organized by category and location:

- Moses Carver farm exhibit orchard: apple and peach trees, pecan, walnut, hazelnut trees. (Note that any interpretation of the exhibit orchard or other farm features must contain a disclaimer that they are not actual representations of anything that existed on the historic Moses Carver farm.)

- Moses Carver farm demonstration garden plots: watermelon, pumpkin, corn, Irish potatoes, sugar cane, flax, strawberries, herbs. (Note that any interpretation of the demonstration garden plots must contain a disclaimer that they are actual representations of anything that existed on the historic Moses Carver farm.)

- Forage plants mainly for humans along Carver Trail and extended the trail through mown fields: big bluestem, sedges, bottomland grasses, oak, hickory, walnut trees.

- Native wild foods and medicinal remedy plants along Carver trail and extended trail to and through Harkin's Woods: persimmon, wild onion, pine (needles), sumac (berries), pepper grass, wild lettuce, rabbit tobacco, liverwort, wild primrose, chufa nut grass, bur oak (nuts) evening primrose, sassafras, yarrow, Jerusalem artichoke, strawberries, fox grapes, service berries, dew berries, blackberries, huckleberries, fox grape, pawpaws, raspberries, spice bush, sassafras, wild ginger, fringed gentian, hickory, chinquapin. (Weed species, may want to interpret but not plant: sumac, amaranth, ragweed, pokeweed.)

- Within Harkins Woods, interpret Carver's ability to identify ferns, mosses, fungi, and his recognition of the importance of woods in protecting soil and water quality.

- Shade trees for walk from cemetery to visitor center noted in Carver's experiments: pecans, flowering trees for bees, catalpa, horse chestnut, persimmon; interpretation is not proposed for these plantings.

- Tuskegee demonstration plots: (food, fiber, dyes, chemurgy, green manure, natural pesticides, etc.) sweet potato, peanut, okra, cotton, pumpkin, persimmon, cowpeas, soy beans, peas, beans, clover, yucca, cotton, figs, grapes, sugar beets, corn, Jerusalem artichokes, hemp, garlic, onion; interpretation of the Tuskegee demonstration plots is recommended.

- Ornamental plantings: yaupon holly, lilies known to have hybridized, deodar cedar, silver maple, red maple, roses, yucca; replacement ornamental plantings are not recommended for specific outdoor interpretation.

1

Theme of plantings known to Dr. Carver would begin at entrance; when opportunity exists, consider replacement for planting beds so any non-natives do not become invasives

Manage and maintain viewshed from visitor center to prairie

Consolidate picnic area to this location

Moses Carver Farm exhibit orchard

New entrance road for overflow parking

Retain separate exit for overflow parking

Overflow parking; grass pavers stabilize area for vehicles

Manage and maintain restored grassland prairie; continue natural resource management

Carver Road

Carver Road

Interpretation of former farm features; accurate location of birthplace cabin, and original location of Moses Carver house

Retain existing interpretation along Carver Trail and enhance with plantings known to Dr. Carver, where appropriate

Manage and maintain Williams Pond

Replace mulch surfacing of Contemplative Trail with crushed aggregate

Clear woodlands for views, establish native warm-season grassfields and prairie communities

Moses Carver Farm garden plots (see plant list) reflect those present when Dr. Carver was a child on the the farm

Manage and maintain field spatial organization with hayfields, to reflect the agrarian setting of Dr. Carver's youth

Crushed aggregate trail expansion with boardwalks or bridges across streams to provide access to unique woodlands and associated interpretation

Mown trail expansion for access to more of the site; follow existing mown corridors where possible

Manage Harkins Woods to retain healthy native plant communities; continue natural resource management and remove invasive species

Consider management of this prairie unit as woodland with white oak/burr oak-pecan floodplain forest

Manage riparian woodlands to remove invasive species and promote a pre-settlement savanna-like composition

Clear woodlands and introduce plantings known to Dr. Carver

Plant persimmon grove and interpret as a key feature of Dr. Carver's childhood on the farm

Crushed aggregate trail through primary interpretive area

Preserve wet prairie areas and associated plant material

Manage and maintain existing trees

Manage woodlands to remove invasive species, continue natural resource management, and perpetuation of native species

Preserve wet prairie areas and associated plant material

Mown trail expansion for access to more of the site and enhanced interpretation; follow existing mown corridors where possible

Manage viewshed from former farmstead site to Carver Family Cemetery

Additional tree plantings for shade along the trail (see plant list)

Manage and maintain tree line along trail to the cemetery

Retain seasonal trail and resurface for accessibility

Proposed location of storage facility

Install new plantings to screen staff parking and the maintenance area

Tuskegee demonstration plots (see plant list)

Mown trail

VIEW

Carver Branch

Williams Branch

Harkins Branch

Dry Branch

Elder Road

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7A

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Environmental Assessment and Cultural Landscape Report

for

George Washington Carver National Monument

Prepared by JMA, a CCRG company

Drawing No. GWCA 397 127385

PMIS No. _____

Legend

- GWCA Boundary
- 1-foot contour
- Stream
- Paved road
- Trail
- Building
- Split-rail (worm) fence
- Core Developed Area 22± acres
- Restored Grassland Prairie 87± acres
- Managed Hayfields 40± acres
- Managed Woodlands 51± acres
- Cleared Woodlands 10± acres
- Plantings Known to Carver
- Expanded Trails 4140± linear feet
- 4 Management Units
- Wet Prairie Areas

Sources:

National Park Service, Cultural Resource GIS office, CLI GIS conversion project, 2013.

Contours created from 7.5 minute digital elevation data, USGS, 1998, Newton County, MO (published Rolla, MO).

Heartland Network Inventory and Monitoring Program, "Vascular Plant Inventory, GWCA," 2004.

Figure 241.

Alternative 4 (Preferred Alternative)

Honor, Commemorate, and Interpret the Life and Legacy of George Washington Carver by Employing a Combination of Agricultural Heritage and Exhibits of Plants Known to Dr. Carver

5.3. Recommended Treatment Guidelines Associated with the George Washington Carver National Monument Cultural Landscape

The following section provides general guidelines for the treatment of the George Washington Carver National Monument cultural landscape that are intended to support the recommended rehabilitation approach as well as all treatment recommendations and alternatives developed in support of this CLR. These guidelines relate to a philosophy of cultural landscape treatment based on the Secretary of the Interior's "Standards for the Treatment of Historic Properties and the Guidelines for the Treatment of Cultural Landscapes," and a comprehensive view of the national monument as a whole. They should be used when planning for any and all landscape changes, and should be considered in connection with any treatments implemented in the future.

Land Use

- Avoid land use activities, permanent or temporary, that threaten or impair known or potential archeological resources.
- Monitor and regulate use of the landscape to minimize immediate and long-term damage to cultural resources.
- Consider equally both natural and cultural features in treatment decisions.

Buildings and Structures

- Consider the interpretive value of non-intrusive, non-contributing buildings and structures, and retain when possible.
- Consider the removal of non-contributing structures that are intrusive to the historic landscape only if they are found to be without historical or functional merit or value.
- Avoid conjectural reconstruction of historic buildings and structures.

Circulation

- Minimize the visual impacts of vehicles and vehicular access systems. Consider the impact on views when proposing new circulation systems. Also consider noise and other impacts that parking will have on the visitor experience and historic resources.
- Encourage pedestrian circulation as an alternative to vehicular circulation throughout the park.
- Minimize the visual impacts of new pedestrian access systems.
- Address the need to provide universal access to all visitor use areas of the park. Universally-accessible paths should follow the guidance afforded in Americans with Disabilities Act Accessibility Guidelines.
- Ensure that all paths are wide enough for two people to walk comfortably side by side, and evenly graded, and well-drained to prevent trampling of vegetation, soil compaction, and erosion of the path margins.

Sustainability

- Institute cultural and natural resource treatment and maintenance methods that are environmentally and culturally sensitive and sustainable over the long term.
- Minimize the extent of any ground disturbance, earth grading, compaction, and drainage pattern alteration.
- Promote biodiversity and native plant species.
- Limit the use of mitigating devices such as retaining walls, closed drainage systems, and grading.
- Implement the least-intrusive measures and those involving stabilization first, and subsequently proceed to the most invasive as necessary. Limit major new interventions to areas that have previously been disturbed.

- Emphasize landform-based solutions, such as grading, over hardscape solutions, such as retaining walls to address concerns relating to circulation, drainage, and new construction.

- Take into consideration life-cycle costing of materials, including their long-term wearing capacity and maintenance costs when evaluating options. Always consider materials that are non-toxic, durable, long-lived, and low-maintenance.

Topography

- Minimize soil disturbance and grading.

- Preserve existing landforms and natural drainage patterns to the greatest extent possible.

- Avoid attempts to reconstruct or restore historic grades unless supported by clear documentary evidence of their appearance or original design during a specific period.

Land Cover Management

- Encourage best management practices (BMPs), integrated pest management (IPM), and soil and erosion control measures in all maintenance and management practices in order to minimize water pollution and degradation of natural systems.

- Establish native vegetative cover when addressing the need for erosion control. Consider planting species that are suited to the local soil and moisture conditions.

New Design and Construction

- Avoid altering existing features or adversely affecting the landscape's historic character when adding new features to support interpretive, management, and visitor access functions. Features that facilitate access and interpretation should be designed to minimize adverse impacts on the character and features of the landscape. Design larger facilities to be as non-intrusive as possible while allowing for accessibility and safety. Limit the construction of new facilities to those that are absolutely necessary. Consider the use of temporary structures that do not require founding in the ground, or involve soil disturbance.

- Site necessary new buildings and structures out of key viewsheds. Consider designing necessary new facilities as low buildings situated in such a way as to be screened from view from primary visitor use areas. A cluster of smaller buildings that are tightly grouped and follow a consistent orientation is preferable to the establishment of one very large building. As possible, situate new structures relatively close to existing road corridors to limit the establishment of new roads. New buildings and structures should be compatible with local traditions of design and constructed of locally-available and indigenous materials such as stone and wood. The design of new buildings and structures should also be sympathetic to local traditions in terms of scale, massing, roof form, and details. New buildings and structures should be situated to lie lightly on the land, minimizing soil disturbance, particularly cut and fill. Sustainability should be considered in the choice of materials and energy use. Consider incorporating passive solar energy conservation strategies into the design of new buildings and structures. Also consider the local climate in the siting and design of buildings and their relationship to solar orientation, heat gain, shading, prevailing winds, and seasonal average temperatures to minimize energy costs. Limit the footprints of new buildings and structures by optimizing use and flexibility of both indoor and outdoor spaces.

- Avoid adding new features or altering existing features in ways that adversely affect the landscape's historic character. Introduce features to facilitate access and interpretation in ways that minimize adverse impacts. New construction should be limited to those alterations and additions that are necessary for visitor access, interpretation, and management. This might include vehicular,

pedestrian, and interpretive systems such as trails and paths, parking areas, and unobtrusive and minimal wayside, informational, identity, and regulatory sign systems. The new or altered features should be as unobtrusive as possible while allowing for accessibility and safety. Whenever possible, and taking into consideration the visitor experience without compromising visitor safety, utilize off-site facilities to accommodate contemporary uses.

- Evaluate all proposed new uses in consultation with a historical landscape architect and other appropriate professionals.

- Undertake sufficient study and recordation of landscape features requiring modification, repair, or replacement before work is performed to protect research and interpretive values.

- Protect and preserve archeological resources in place. If such resources must be disturbed, undertake mitigation measures such as recovery, curation, and documentation.

- Limit the use of destructive techniques, such as archeological excavation, to providing information required to support research, interpretation, and management goals.

- Retain and maintain historic materials, features, finishes, construction techniques, spaces, and spatial relationships when changes to the cultural landscape are considered.

- Design and site new additions or alterations to the landscape in such a way that they do not destroy historic materials, features, and spatial relationships that characterize the cultural landscape. Design all new additions and alterations to be a product of their time, and compatible with the historic resources in materials, size, scale and proportion, and massing. Differentiate new work from historic resources.

- Design and site new additions and alterations to the landscape in such a way that, if removed in the future, the essential form and integrity of the cultural landscape would be unimpaired.

- Retain and maintain changes to the cultural landscape that have acquired historic significance in their own right.

- Repair, rather than replace, deteriorated historic features. Replacement of severely deteriorated features should be based on archeological, documentary, or physical evidence. Such new features should also be based on archeological, documentary, or physical evidence; the new feature should match the old in design, color, texture, and, where possible, materials.

- Avoid landscape changes that create a false sense of historical development, including the addition of conjectural, typical, or representative features. Consider interpretation of typical features in cases where restoration is not possible but providing the information is important to the visitor experience.

- Design new features, systems, and programs to be as accessible as possible.

- Establish new wayside exhibits in the least intrusive manner possible to fulfill proposed new interpretive goals.

- Avoid the use of chemical or physical treatments that cause damage to cultural resources and natural systems. Undertake the surface cleaning of structures using the gentlest means possible.

- Minimize disturbance associated with the installation of visitor access facilities.

Adjacent Lands and Visual Quality

- Monitor local zoning and planning activities related to nearby adjacent development that may adversely impact the character and cultural resources within the viewshed of the park. Consider participating in the early stages

of any development plans for adjacent sites by working with developers during the planning process, suggesting increased setbacks and the least intrusive siting and character for new structures and roads.

- Coordinate with planning authorities on the development and construction of new features within view of the park that may impact the park visually or physically such as roads, zoning changes that may result in higher density residential or non-residential uses, sale of land to non-governmental entities, and cell towers or antennae.

- Work with neighbors and community groups to develop a program of monitoring unauthorized access to the park and destruction of resources.

- Educate adjacent property owners regarding resources located on their lands. Work with these owners to develop programs for the protection of the resources.

- Develop or maintain visual buffers along property lines abutting development. Develop relationships with adjacent landowners to determine the need for establishing additional buffers.

- Utilize screening methods that blend with the surrounding character of the site, such as planting native vegetation, and do not become a secondary visual intrusion.

- Coordinate with adjacent and nearby property owners to determine if they are amenable to selling or donating scenic easements for all adjacent property that will remain visible from the park.

- Work with owners of adjacent roads and other properties to ensure that historic resources and park character are considered in the development of any changes to the adjacent features, especially those directly within the view sheds of the park.

Access to Resources

- Develop an interpretive program that addresses cultural resources, natural systems, and their interrelationships, as well as layers of landscape history.

- Minimize the visual and physical impacts of interpretive and visitor access facilities on cultural resources and natural systems.

- Erect the minimal number of signs necessary to meet identity, directional, interpretive, and regulatory needs.

- Develop interpretive programs and media to be as accessible as possible for the widest range of visitors.

Role of Preservation Specialists

- Undertake all treatment projects under the direction of appropriate specialists, including historical landscape architects, historical architects, archeologists, conservators, natural resource management specialists, and qualified technicians and artisans.

Documentation

- Document, through drawings, photographs, and notes, all changes and treatments. Maintain records of treatments and preserve this documentation according to professional archival standards.

Secretary of the Interior's Standards for Rehabilitation

The following section summarizes the standards for rehabilitation espoused by the Secretary of the Interior for historic properties. The ten basic principles that comprise the standards are intended to help preserve the distinctive character of a site, while also allowing for reasonable change to meet new needs. The standards (36 CFR Part 67) apply to historic properties of all periods, locations, sizes, conditions, and uses. These standards create a baseline of guidance to which intended changes to the historic landscape must be compared. These standards are neither technical

nor prescriptive, but promote responsible preservation practices as follows:

1. A property will be used as it was historically, or be given a new use that requires minimal change to its distinctive materials, features, spaces, and spatial relationships.

2. The historic character of a property will be retained and preserved. The removal of distinctive materials or alteration of features, spaces, and spatial relationships that characterize a property will be avoided.

3. Each property will be recognized as a physical record of its time, place, and use. Changes that create a false sense of historical development, such as adding conjectural features or elements from other historic properties, will not be undertaken.

4. Changes to a property that have acquired historic significance in their own right will be retained and preserved.

5. Distinctive materials, features, finishes, and construction techniques or examples of craftsmanship that characterize a property will be preserved.

6. Deteriorated historic features will be repaired rather than replaced. Where the severity of deterioration requires replacement of a distinctive feature, the new feature will match the old in design, color, texture, and, where possible, materials. Replacement of missing features will be substantiated by documentary and physical evidence.

7. Chemical or physical treatments, if appropriate, will be undertaken using the gentlest means possible. Treatments that cause damage to historic materials will not be used.

8. Archeological resources will be protected and preserved in place. If such resources must be disturbed, mitigation measures will be undertaken.

9. New additions, exterior alterations, or related new construction will not destroy historic materials, features, and spatial relationships that characterize the property. The new work will be differentiated from the old and will be compatible with the historic materials, features, size, scale and proportion, and massing to protect the integrity of the property and its environment.

10. New additions and adjacent or related new construction will be undertaken in such a manner that, if removed in the future, the essential form and integrity of the historic property and its environment would be unimpaired.

5.4 Selection of the Preferred Alternative

The preferred alternative emerged from presentation of the no action alternative and two action alternatives during two public scoping sessions on May 14, 2014. Stakeholders notified and invited included agencies, NPS Midwest Region representatives, the State Historic Preservation Officer, Tribal Historic Preservation Officers, Heartland Network, volunteers, former park staff, friends, historians, politicians and other professionals. Comments from those two sessions suggested the development of a third action alternative to blend particular elements of the first two. Additional meetings on the same day with park staff and the THPO representative for the Osage Nation also engendered comments suggesting the development of a third action to blend desired elements. Most stakeholders and park staff involved in the public scoping session were in favor of Alternative 3, with modifications.

Alternative 4 was developed in response to these comments. An initial version of Alternative 4 was provided to the park for consideration. Based on their feedback and comment, additional refinements were made to Alternative 4. The refined version was again reviewed by the park. The park's response suggested that Alternative 4 would best meet the identified goals and objectives, including restoration of several lost features of the cultural landscape, enhancing interpretation through more trails and exhibit nodes related to George Washington Carver and plants from his early years on the farm as well as his work at Tuskegee, adding more of an agricultural appearance with the proposed haying in some of the prairie units, providing for overflow parking, and more. The alternative was seen as providing for a more optimum visitor experience if/when the park is able to implement, and the CLR will provide a sound vision and serve as a guide for future management. Concerns remain, however, regarding the increasing footprint on the landscape and the potential implementation costs.

The new alternative was also provided to several stakeholders for consideration. All parties were in support of selecting the preferred alternative over the other action alternatives as well as the no action alternative. In their response, the Heartland Network indicated:

> We generally applaud the park's effort to resolve the long standing debate regarding the appropriate memorialization of Carver's life at the monument. We believe the desired alternative achieves a reasonable balance between restoration of important cultural landscape features and ongoing management and interpretation of important natural resources. Overall, we think the design concepts will improve the connection of the landscape and interpretive themes at the park.

5.5 The Environmentally Preferred Alternative

As required under CEQ regulations 40 CFR 1502.2(d), NEPA documents must include a section stating how each alternative analyzed in detail would or would not achieve the requirements of sections 101 and 102(1) of NEPA and other environmental laws and policies. In the park service, this requirement is met by 1) disclosing how each alternative, one of which is identified as the environmentally preferable, meets the criteria set forth in section 101 (b) of NEPA; and 2) any inconsistencies between the alternatives analyzed in detail and other environmental laws and policies.

The environmentally preferable alternative is the alternative that will promote the national environmental policy expressed in the National Environmental Policy Act (NEPA). Section 101 (b) defines the environmentally preferable alternative as the alternative that causes the least amount of damage to the biological and physical environment and that best protects, preserve, and enhances historic, cultural, and natural resources, while attaining the widest range of beneficial uses of the environment. The criteria are as follows:

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

The Council on Environmental Quality (CEQ) provides additional direction in its guidance *Forty Most Asked Questions Concerning CEQ's National Environmental Policy Act Regulations* (1981):

> The environmentally preferable alternative is the alternative that will promote the national environmental policy as expressed in NEPA's Section 101. Ordinarily, this means that the alternative which causes the least damage to the biological and physical environment; it also means the alternative which best protects, preserves, and enhances historic, cultural, and natural resources.

Alternative 4 honors, commemorates, and interprets the life and legacy of George Washington Carver by employing a combination of agricultural heritage and ethnobotanical exhibits. Park planning efforts conducted since 1960s have continually grappled with appropriate measures for enhancing interpretation of both the landscape that inspired Dr. Carver while living on the farm, as well as his achievements in the arts and sciences. This treatment alternative focuses on the interpretation of several additional features known to have been present on the Moses Carver farm during George Washington Carver's boyhood, including an indication of the scale, arrangement, orientation, and elements that comprised the farmstead area, field and pasture patterns of agricultural production, walnut hedgerows, the fruit and nut orchard, and persimmon grove. Coupled with interpretation of these features, the plants that Carver is known to have incorporated into his work throughout his life for food, industrial production, medicines, dyes, fibers, and other ethnobotanical uses will be planted along park circulation features and interpreted. These ethnobotanical elements will trace Carver's youth through his scientific career, helping to knit together his early years when he developed a love of nature, plants, and science,

with his life's work. Areas of restored grassland prairie within the park that help to promote species diversity and soil and water conservation, will be interpreted as a contemporary expression of Carver's early twentieth century activities. This alternative also focuses on enhancing natural resource management of the restored grassland prairie and Harkins Woods for health, diversity, and soil and water conservation. Overall this alternative will improve and enhance the connection of the landscape and interpretive themes at the park.

Therefore, Alternative 4 best addresses all the criteria presented in Section 101 (b) for the environmentally preferable alternative. Alternative 4 is the environmentally preferable alternative.

While the no action alternative (alternative 1) would maintain existing conditions, it would not be considered the environmentally preferable alternative because it would not meet the widest range of beneficial uses of the environment without degradation nor does it enhance the quality of renewable resources and approach the maximum attainable recycling of depletable resources. The no action alternative would not improve or enhance the connection of the landscape and interpretive themes at the park. The other action alternatives, while somewhat similar to Alternative 4, do not combine the aspects of agricultural heritage and ethnobotanical exhibits related to the landscape to convey the full story of the life and legacy of Dr. George Washington Carver.

5.6 Alternatives Considered but Dismissed

Five action alternatives were developed by the CLR/EA team for consideration by the park as part of the 75 percent draft report. They include the following:

- Limited Restoration for Interpretation of the Landscape during George Washington Carver's life on the farm
- Interpreting the Life and Work of George Washington Carver Through Ethnobotany
- Exploration of Topics in Environmental Stewardship and Scientific Education based on the Principles of George Washington Carver.
- Expanding Recreational Opportunities.
- Full Restoration of the Landscape Present during George Washington Carver's Life on the farm.

Following review of the 75 percent draft by the park and the region, the CLR/EA team convened by conference call to discuss all of the action alternatives prior to the planned stakeholder scoping meeting. Based on discussions among team members, three of the action alternatives were dismissed prior to presentation to stakeholders. The first—Exploration of Topics in Environmental Stewardship and Scientific Education based on the Principles of George Washington Carver—was dismissed due to the fact that it concentrated too heavily on Carver's later career and did not encompass the experience of his youth on the Moses Carver farm. The second—Expanding Recreational Opportunities—was found to be inconsistent with the goals and mission of the park. The third—Full Restoration of the Landscape Present during George Washington Carver's Life on the farm—was considered to be impossible to implement and it denied the expression of the memorial mission of the park, while also precluding interpretation of Carver's later accomplishments.

Each of the action alternatives considered but dismissed are conveyed below for reference. Despite the fact that each of these was dismissed, it was agreed that aspects of each afforded valuable ideas that might be considered for inclusion in the preferred alternative.

Exploration of Topics in Environmental Stewardship and Scientific Education

George Washington Carver was particularly concerned with environmental stewardship. His work in the Southern United States involved helping farmers to protect against soil loss associated with cotton farming techniques that led to devastating results for sharecropping farmers and others after Reconstruction. Carver worked with farmers to save and conserve soil, and to protect water resources. He also taught farmers to work with native plant communities, which offered a source of nutritious and abundantly available food that was often overlooked. An environmental stewardship ethic similar to that practiced by Carver is present at the park, manifested in the restoration of native grassland prairie and efforts to control and eradicate invasive species, protect water quality, and identify and protect wildlife habitat.

This rehabilitation alternative explores expanding the use of the park to practice and teach environmental stewardship to visitors through interpretation and exhibits, as well as land stewardship practices. This alternative additionally explores the role of scientific research and inquiry at the national monument. Specific additions and changes to the park environment resulting from this alternative might include:

- identification of best management practices for the landscape that support sustainable treatment of natural resources. The resulting Best Management Practices (BMPs) would be intended to support soil and water conservation, with particular emphasis on establishing native plant communities that support a healthy ecosystem, including pollinators and wildlife, with the least input of non-renewable energy. BMPs would consider the role of vegetative cover in conserving soil, and the ecological implications of maintaining healthy plant communities, including the associated need for water resource protection, and diversity of good quality wildlife habitat;

- use of BMPs to protect the park's natural resources could be explored as an interpretive theme within the visitor center and in park interpretive programs;

- updating of existing landscape features, such as the entrance road and parking to promote sustainability through the use of green infrastructure such as filter strips, pervious pavements, rain barrels, and rain gardens;

- continued interpretation within the visitor core to feature cultural evidence of the Carver farm;

- expansion of the existing trail system to include a perimeter trail for additional opportunities for environmental education;

- creation of a scientific research center in the area where the housing buildings are currently located, either by adaptive reuse or full replacement. The center would be developed through partnerships with other educational institutions and offer housing, classroom, research and laboratory facilities, as well as field areas for use by students.

- maintenance of a separate access and parking for the center;

- development of experimental field areas to include the former mine site and to augment scientific research by students participating in programs at the center.

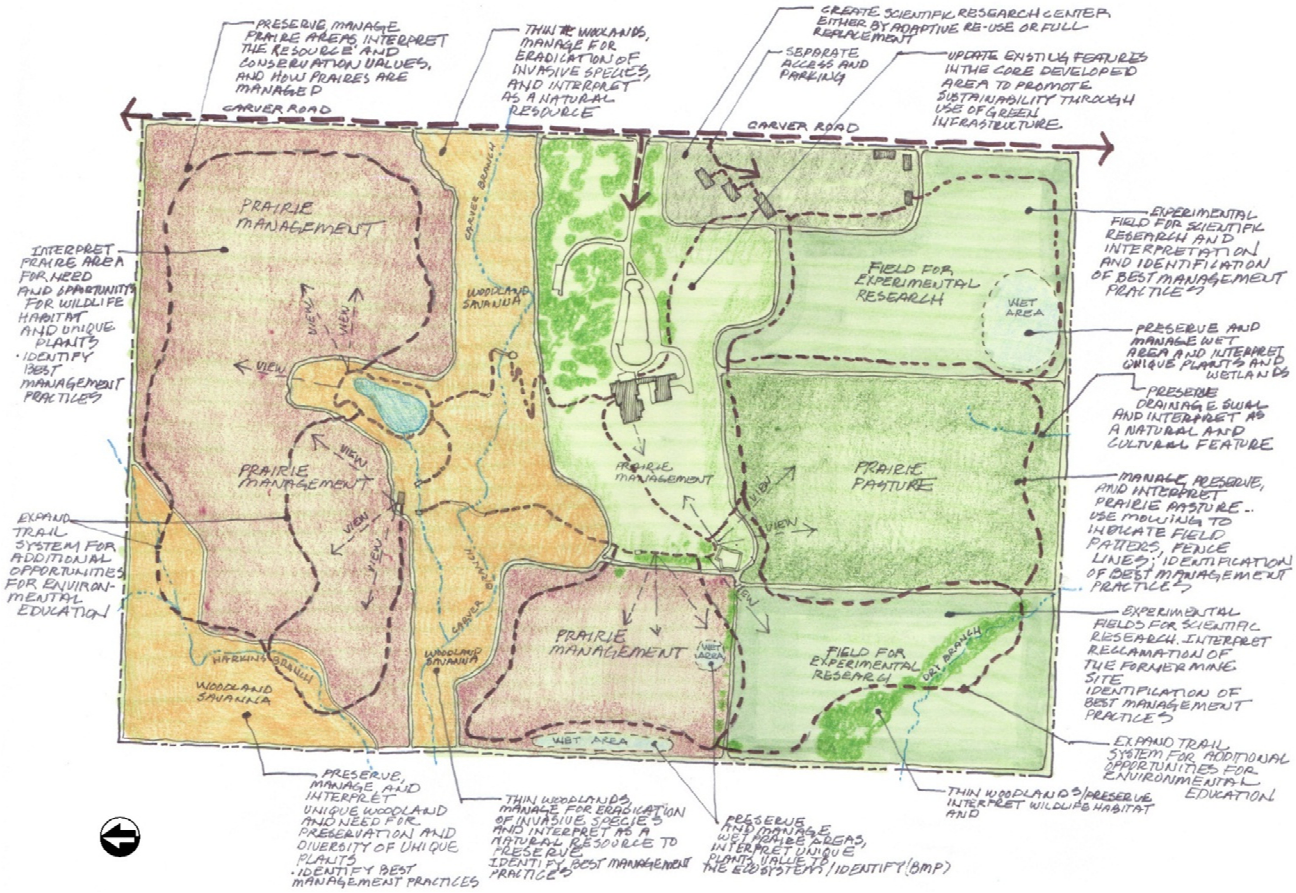

FIGURE 242. Exploration of topics in environmental stewardship and scientific education.

Expanding Recreational Opportunities

George Washington Carver National Monument extends over 240 acres in a rural area with few outdoor recreational facilities. The current park trail system traces a one-mile route of historical importance. Visitors currently use the trail for both educational and recreational purposes. Visitors also travel to the park to enjoy the recreational amenities afforded as part of the existing picnic area. Regional organizations have expressed the need for more recreational opportunities for local residents as well as visitors to the area.

This rehabilitation alternative suggests establishing new trails on the property as a recreational amenity for the benefit of all visitors. Specific additions and changes to the park environment resulting from this alternative might include:

- design of trails to accommodate passive recreational activities such as walking and running;
- design of the trail system as a series of loops that extend through the fields and woods to the south of the visitor center;
- development of the former mine site to accommodate more active recreation in the form of paved multi-use trails that might accommodate bicyclists.
- provision of a separate entrance and access along Elder Road or Carver Road;
- demolition of the park housing buildings and conversion of the area into a staging space for recreational activities and parking.