National Park Service
US Department of the Interior
Great Smoky Mountains National Park
North Carolina and Tennessee

FINDING OF NO SIGNIFICANT IMPACT
Gatlinburg Spur Improvements

Recommended:

CASSIUS CASH Digitally signed by CASSIUS CASH
Date: 2023.06.01 10:36:47 -04'00'

Cassius M. Cash — Date
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INTRODUCTION

In compliance with the National Environmental Policy Act (NEPA), the National Park Service (NPS) prepared an environmental assessment (EA) to examine alternatives and environmental impacts associated with proposed improvements along the Gatlinburg Spur (the Spur) at Great Smoky Mountains National Park (the Park), Sevier County, Tennessee. The purpose of the project is to improve the level of service (LOS) in consideration of future traffic volumes along the Spur in a manner that retains the parkway character of the road. The project is needed to address high traffic volumes, delays, and LOS concerns identified in a 2019 traffic study of the corridor. Traffic volumes along the Spur have increased in recent years in response to increased visitation to the Park and population growth. The number of visitors to the Park increased 30% from 2010 to 2019, and the population of Sevier County increased 9.3% over this timeframe. The 2019 traffic study identified intersections where congestion is expected to increase, and the Park has identified several improvements to address this congestion.

The EA analyzed four alternatives: the no action alternative, which provides a basis for comparing environmental impacts of the action alternatives, and three action alternatives for construction of corridor-wide and intersection improvements.

The statements and conclusions reached in this finding of no significant impact (FONSI) are based on documentation and analysis provided in the *Gatlinburg Spur Improvements Environmental Assessment* (May 2022) and its associated decision file. The EA was made available for public review from May 6, 2022, through June 5, 2022. Seven pieces of correspondence were received.

Attachment A provides the errata that clarifies and amends the EA in response to Tennessee State Historic Preservation Officer (SHPO) consultation, Attachment B summarizes the public comments, including NPS responses to substantive comments, received on the EA. No changes to the EA were necessary as a result of public comments received. As required by NPS *Management Policies 2006* (NPS 2006), a finding of non-impairment is included as Attachment C and Floodplains Statement of Findings is provided in Attachment D.

SELECTED ALTERNATIVE AND RATIONALE FOR THE DECISION

Based on the analysis presented in the EA and after considering public comments, NPS selected alternative 2 (Proposed Action and NPS preferred alternative). Under the selected alternative, NPS will implement several corridor-wide improvements: installation of curb and gutter treatments, shoulder hardening, rockfall mitigation, intelligent transportation systems, and pull-off areas. Where appropriate, additional project-specific NEPA reviews will be completed for corridor-wide improvements to supplement the programmatic analysis provided in the EA.

Improvements under the selected alternative will also include intersection improvements at each of the three project study areas. At subarea 1 (Gum Stand Road/King Branch Road/Gnatty Branch Road), the Park will convert the existing bridge to a contra-flow bridge where vehicles travel to the left of opposing traffic, making left-turn movements to and from the bridge via free-flow movements into an acceleration lane. At subarea 2 (Huskey Grove Road/Flat Branch Road), the Park will extend the acceleration lanes along the west side of both the southbound and northbound Spur to allow traffic entering the Spur to yield to oncoming traffic instead of coming to a full stop. At subarea 3 (Wiley Oakley Drive), the Park will construct a flyover bridge to provide a grade-separated interchange to eliminate vehicles crossing both lanes of the Spur, reduce the number of left-hand turn movements, and allow motorists to merge onto the Spur more easily. The flyover bridge will be approximately 450 feet long and will provide at least 16 feet of clearance over the Spur for larger vehicles. Full details of the improvements at each subarea are provided in chapter 2 of the EA.

The corridor-wide improvements and intersection improvements will require work outside of the existing road prism of the existing Spur for safe operations. Establishing this work zone may include temporary realignment of the Spur (lane shifts), shoulder closures (cones or Jersey barriers), temporary single lane closures (cones and barrels) and fixed lane closures (Jersey barriers), detours, changes to two-way traffic, and nighttime work.

Tasks involving work over an open roadway such as lifting bridge beams into place and placing concrete to construct bridge decks over the Spur may require rolling roadblocks where traffic is held temporarily to maintain public safety while materials are moved over the roadway.

The proposed subarea improvements will be implemented in phases as funding allows. Corridor-wide improvements could be implemented over the next five or more years. While the duration of construction is not possible to determine at this early stage of design, NPS will seek to schedule traffic disruptions at a time of day or during a season of the year when impacts will be minimized on motorists traveling on the Spur and intersecting roadways.

The selected alternative includes permanent disturbance of 4.5 acres and temporary disturbance of 6.5 acres. The permanent disturbance will affect 2.8 acres of vegetation and 1.3 acres of floodplain. The permanent disturbance footprint includes 2.0 acres of new impervious surface.

RATIONALE

NPS selected alternative 2 (preferred alternative) because:

- It satisfies the purpose and need by improving projected LOS without restricting or rerouting traffic patterns.
- It improves LOS through intersection improvements and corridor-wide improvements at select locations while maintaining the free-flow and natural parkway character of the road.
- It includes mitigation measures and construction methods that minimize disturbance to wildlife, cultural resources, and environmentally sensitive areas.

MITIGATION MEASURES

Under its Organic Act, the NPS has the authority to develop and direct mitigation for impacts to resources under its jurisdiction. This is in addition to the requirements that may be created through the need to comply with laws and regulations managing resource impacts that are overseen by other agencies. To meet these obligations, the NPS has developed Management Policies and Director's Orders that identify the authorities (laws, regulations, and executive orders) directing how impacts to resources and mitigation shall be managed, as well as identify the policies and procedures by which the NPS shall comply with these authorities. A full listing of the NPS policies is available from the NPS Office of Policy website at: https://npspolicy.nps.gov/index.cfm. The selected alternative includes the following mitigation measures.

- Conduct tree and vegetation clearing between November 15 and March 31 to avoid impacts to federally listed bats and nesting birds.
- Remove as few trees as possible. Avoid and minimize impacts on retained trees adjacent to the area of disturbance by using management practices such as tree protection fencing, root pruning, and preventing compaction of soil over root systems. Avoid damage to and properly prune damaged limbs on retained trees using standard arboricultural standards.
- Perform surveys for nesting bald eagles prior to commencing project construction and adhere to all appropriate measures recommended by the 2007 National Bald Eagle Guidelines.
- Perform site inspections for potential bat roosting prior to any bridge removal. If bats are using the bridge, demolition work will be initiated between November 15 and March 31 to avoid and

minimize disturbance. If a maternity colony is present, construction work will not be initiated between May 15 and August 15.

- Direct temporary construction lighting away from suitable bat habitat during the active season (April 1 through November 14).
- Implement sediment and erosion-control measures consistent with the requirements and recommendations contained in the Tennessee Department of Environment and Conservation's (TDEC) *Tennessee Erosion and Sediment Control Handbook* (TDEC 2012). File a Notice of Intent with TDEC to obtain coverage under the General National Pollutant Discharge Elimination System (NPDES) Permit for Discharges of Stormwater Associated with Construction Activities (Permit Number TNR100000). Develop a site-specific stormwater pollution prevention plan in accordance with Part 3 of the General Permit that will:
    - Specify erosion-control materials that are weed-free, pest-free, and do not pose an entanglement risk to wildlife. Use natural fiber logs or fascines and natural fiber blankets that are certified as weed-free. Prohibit specific materials in the Park, including (1) imported hay bales, straw bales, wood chips, or mulch; and (2) all forms of plastic/synthetic mesh netting, including those labeled as biodegradable or photodegradable.
    - Include provisions for removal of temporary erosion and sediment control measures after vegetation is established and the site is stable.
- Implement a project-specific revegetation plan for areas temporarily disturbed during construction, including:
    - Conduct pre-construction surveys in the area of disturbance to identify native saplings, shrubs, and herbaceous plants for salvage.
    - Return temporarily disturbed areas to original grade or final grade as soon as practical and reseed with a Park-approved seed mix. Aerate or scarify compacted soils prior to seeding to improve germination.
    - Where appropriate, replant salvaged vegetation in selected areas to facilitate and accelerate natural restoration.
    - Establish and maintain permanent grass cover in appropriate areas to meet road safety requirements (e.g., the roadside mow zone).
- Require the contractor to develop and adhere to a spill prevention control and countermeasures plan during construction.
- Adhere to the best management practices and conditions included in appendix 2 of NPS Procedural Manual 77-1 (NPS 2016) and the terms and conditions of the TDEC Aquatic Resource Alternation Permit (TDEC n.d.), if applicable, to minimize any potential impacts on streams and wetlands during any in-water work, including potential bridge removal.
- Require proper disposal of fill or slide materials and avoid disposal into a river or stream. Use crushed aggregate from an approved source when not underneath paved surfaces.
- Cease all work in the immediate area if archeological materials are inadvertently discovered. Notify Park Dispatch immediately and do not proceed with work until authorized by the Superintendent, in consultation with the Park Cultural Resources Program Manager or the Park Archeologist. Apply the discovery process defined by 36 Code of Federal Regulations (CFR) 800.13, the implementing regulations for the National Historic Preservation Act (16 United States Code [USC] 470). Evaluate any discovery's significance in consultation, as appropriate, with the state historic preservation office (SHPO), the Advisory Council on Historic

Preservation, and all Tribes associated with the Park. If human remains, funerary objects, sacred objects, or objects of cultural patrimony are discovered, the process defined by 43 CFR 10.4-5, the implementing regulations of the Native American Graves Protection and Repatriation Act (25 USC 3001), will be applied.

- Require the contractor to remove food trash daily.
- Implement the following measures to avoid introduction of new invasive plant species to the project area and minimize the spread of existing invasive plants:
    - Clean all earthmoving and seeding equipment prior to entering the Park. Cleaning will include wheels, undercarriages, dozer belly pans, bumpers, and all parts of heavy equipment.
    - Use only topsoil, rock, sand, gravel, or other natural materials from Park-inspected and approved sources.
    - Conduct pre-construction surveys in the area of disturbance to determine if pre-construction invasive plant controls will be appropriate and effective. Treat priority invasive plant infestations prior to construction in selected areas based on survey findings. Focus on areas that will be restored to forested vegetation after construction, as opposed to areas that will be paved, hardened, or converted to maintained grass road shoulder. Monitor and retreat areas as appropriate following construction.
- Develop area-specific stormwater drainage plans and stormwater management practices to minimize potential long-term impacts on water quality from impervious surfaces and other changes to stormwater drainage. Design stormwater management practices to treat, store, and infiltrate runoff on-site before reaching the West Prong of the Little Pigeon River (West Prong), when practicable. Examples of stormwater management practices that will be considered during design include grassed swales, infiltration basins, infiltration trenches, and bioretention (rain gardens).
- Implement mitigations detailed in the Memorandum of Agreement (MOA) with the Tennessee SHPO to resolve adverse effects on the Gatlinburg Spur (Attachment E), which is eligible for listing in the National Register of Historic Places (NRHP).

OTHER ALTERNATIVES ANALYZED IN THE EA

In addition to the NPS selected alternative described above (alternative 2), the EA analyzed a no action alternative and two action alternatives with variations on the proposed improvements at subarea 3 (pages 5–15 of the EA). Action alternative 3 was not selected because it would require a larger footprint and would replace the existing bridge with two bridges, which would have greater impacts on Park resources, a larger construction budget, and would not improve the LOS as well as alternative 2. While alternative 4 would limit impacts on Park resources, it was not selected because it would adversely alter the existing traffic patterns and would not improve the LOS as well as the selected alternative. The no action alternative would not meet the purpose and need in taking action, as the LOS would not be improved.

FINDING OF NO SIGNIFICANT IMPACT

As described in the EA and Statement of Findings for Floodplains, which considered the degree of effects against the affected environment, the selected alternative has the potential for adverse and beneficial impacts on Park resources, including visitor use and experience, visual resources, floodplains, and surface waters. However, under the selected alternative, no significant adverse impacts were identified. The signed Floodplains Statement of Findings is provided in Attachment D.

VISITOR USE AND EXPERIENCE

The implementation of proposed intersection improvements under the selected alternative will generally improve LOS at the subareas. The improvements will also benefit visitor safety by providing a longer line of sight for merging onto the Spur at subarea 2. The most noticeable beneficial impact will be at subarea 3, where at-grade travel between the northbound and southbound Spur will be removed and replaced with a grade-separated flyover bridge. This change from existing traffic patterns will allow drivers to traverse the Spur more quickly. Delays and queuing associated with existing conditions will be reduced, and visitors who are not as familiar with the Spur will be able to access the welcome center more easily. Motorists may experience localized, short-term impacts during the construction period from increased congestion when lane closures are needed, including the potential for short-term closures of the Spur during construction tasks that involve work over an open roadway such as lifting bridge beams into place and placing concrete to construct bridge decks. These impacts will occur only during the construction period.

In addition to the intersection-specific improvements, shoulder hardening, new pull-offs, and curb and gutter treatments in selected locations will more clearly delineate where it is safe and appropriate for drivers to pull over and exit the roadway prism. These designated pull-off locations are intended to provide a temporary location for drivers to review directions/confirm their route or handle a vehicle issue (e.g., flat tire). However, without discouragement by Park law enforcement, these areas could potentially be used as a parking location for fishing or enjoying the West Prong. Pulling over during heavy traffic periods could have adverse effects on traffic if other motorists are unaware of the potential for slower vehicles. Proper pull-off siting and signage will be used to reduce this potential impact. Similarly, preventing rockfall into the roadway will improve the visitor experience of the Spur by reducing the potential for rockfalls in the roadway that create traffic delays. Intelligent transportation systems will alert drivers to their driving speed compared to the posted speed limit and may serve to slow down drivers along the well-traveled roadway. Intelligent transportation systems will also inform drivers of bear activity along the Spur, which may reduce bear-vehicle collisions.

In summary, the selected alternative will have long-term, beneficial impacts on visitor use and experience including:

- Reduced congestion and delays amid anticipated population and visitor growth.
- Longer line of sight when merging onto the Spur at subarea 2.
- Corridor improvements that more clearly delineate where it is appropriate and safe to pull over, speed and wildlife alerts, and reduced potential for adverse impacts from rockfalls.

VISUAL RESOURCES

While the selected alternative will enhance the visitor experience by improving LOS, it will also alter the existing visual character of the Spur because of tree removal, construction of a new bridge, increases in paved surfaces, modification of existing bridges, and construction of new retaining walls. Specifically, modifying the existing bridge at subarea 1 to a contra-flow pattern will require widening the existing bridge and turning lanes on either end to accommodate the turning radii of larger vehicles, including emergency vehicles. This change will increase paved surfaces by less than 1 acre, although most of this change will occur on flat grassy areas adjacent to the Spur. The bridge will include two retaining walls, one each on the inside of the north and southbound Spur, between the river and the road. These retaining walls will be approximately 775 to 840 feet long and 9 to 10 feet tall. Minor tree removal will occur on both sides of the Spur across approximately half an acre. Visitors will likely be able to see the retaining walls on the opposite side of their travel lane, and the walls will be more noticeable during leaf-off conditions. The walls will be most visible to visitors fishing on this section of the West Prong, but there are no existing pull-offs or parking to facilitate visitor use in this location.

Similarly, a retaining wall of approximately 775 feet long and 25 feet tall will be required at subarea 2 to extend the southbound Spur acceleration lane. The retaining wall will be within the line of site of drivers traveling southbound and will be a noticeable departure from the existing conditions, which includes an exposed rockface, vegetated cut slope, and forested slopes. Similar to subarea 1, a below-grade retaining wall will be built on the northbound Spur at subarea 2; however, this wall will be approximately 160 feet long and less than 8 feet tall. Impacts on the visual character from this retaining wall will be similar to those described for subarea 1, with the biggest potential impact on visitors fishing in this section of the West Prong. While there are no pull-offs in this location, some visitors could park along Huskey Grove Road adjacent to the northbound Spur to access the river. Approximately 2 acres of vegetation will be removed between the two retaining walls, and the acceleration lanes will contribute approximately 0.5 acres of new roadway.

The construction of a new flyover bridge at subarea 3 will also introduce a new visual element to the Spur. The bridge will be approximately 410 feet long with at least 16 feet of vertical clearance over the existing Spur. A small retaining wall, approximately 30 to 40 feet long and 5 to 7 feet high, will also be required. Impacts on the visual character from the retaining walls will be similar to those described for subarea 1, again with the biggest potential impact on visitors fishing in this section of the West Prong. The additional on- and off-ramps associated with the bridge will contribute less than 1 acre of new road surface, and the overall bridge construction will remove less than half an acre of vegetation (the predominately impacted land use is already developed land).

The implementation of corridor-wide improvements will also alter the existing visual character of the Spur. While shoulder hardening, curbs and gutters, and pull-off locations will introduce new pavement or hardened areas, these improvements will be in existing grassy areas that are flat with a clear sightline, so impacts will be a noticeable departure but limited to localized areas along the Spur.

Rockfall mitigations could also alter the visual character of Spur. While some mitigation options, such as scaling loose rock material and installing anchors may not be readily noticeable by visitors, others could have a larger visual intrusion, such as altering the road alignment, installing barriers, or applying shotcrete. The methods applied for rockfall mitigation will be specific to individual locations and will prioritize safety while accommodating aesthetics as much as possible. Tailoring rockfall mitigation to each individual location using context-sensitive design and materials consistent with existing materials will minimize adverse impacts on visual character.

In summary, the selected alternative will have long-term, adverse impacts on visual resources, but NPS has determined that the impacts will not be significant because:

- The Spur will retain its overall vegetated existing character.
- All retaining walls and bridge alterations or construction will use materials to match the existing visual character of the Spur.
- Vegetation and topography will be maintained, where possible, to help limit visual impacts.
- Improvements will be consistent with the design of existing bridges over the Spur, the Foothills Parkway Master Plan, and the vision of the Spur as a limited-access road.

FLOODPLAINS

Corridor-wide improvements will not be located within a floodplain and will not directly impact the floodplain. The intersection-specific improvements will affect the floodplain in all three subareas. Ground disturbance and vegetation clearing in and adjacent to the floodplain during construction will temporarily increase stormwater runoff volume, soil erosion, and sediment transport, which will affect floodplain values. Construction will affect approximately 1.3 acres of vegetation in the floodplain, including both grass and riparian vegetation along the river. Of the approximately 1.3 acres, approximately 0.25 acres will be permanently removed. Vegetated areas that are temporarily disturbed during construction,

including those in the floodplain, will be reseeded with a Park-approved seed mix following construction and restored in accordance with a project-specific revegetation plan. In addition to temporary impacts during construction, removal of vegetation and creation of approximately 2 acres of new impervious surface will result in long-term impacts on floodplain values including natural flood control, erosion control, and habitat. Attachment D provides the floodplains statement of findings.

No in-water work will be required for the construction of the flyover bridge except for the removal of the existing Wiley Oakley Drive bridge and the relocation of existing utilities. Two smaller piers, approximately 6-feet in diameter, will be located within the 100-year floodplain but outside the West Prong, reducing the amount of infrastructure within the floodplain. After bridge removal and utility relocation are complete, the bottom of the river will be restored to natural or existing conditions. Applicable permits from the US Army Corps of Engineers and TDEC will be obtained prior to conducting instream work. Utility lines will be encased in concrete beneath the river bottom to ensure durability. As a result, over the long term, utility relocation will not alter the floodplain functions or values.

Together with the corridor-wide improvements, the three subareas will contribute approximately 2 acres of new impervious surface in the project area, including approximately 0.25 acres of impervious surface within the floodplain, which will be within or adjacent to the existing Spur. While new impervious surface will be added, the project will also remove approximately 1 acre of impervious surface associated with the removal of existing roads (including on-ramps and turning lanes) and the bridge, resulting in a net increase of approximately 1 acre of new impervious surface. The project design phase will include development of stormwater drainage plans and stormwater management practices to minimize potential impacts on floodplain values from impervious surfaces.

NPS will implement sediment and erosion-control measures consistent with the requirements and recommendations contained in the *Tennessee Erosion and Sediment Control Handbook* (TDEC 2012). In addition, NPS will file a Notice of Intent with TDEC to obtain coverage under the General NPDES Permit for Discharges of Stormwater Associated with Construction Activities (Permit Number TNR100000). A site-specific stormwater pollution prevention plan will be developed in accordance with Part 3 of the General Permit, as required. For long-term impacts, NPS will implement a project-specific revegetation plan for areas disturbed during construction. Construction of retaining walls, bridges, and the addition of cut or fill in each subarea will not constrict flow or increase water surface elevations upstream and will have minimal long-term impacts on floodplains.

In summary, the selected alternative will have long-term, adverse impacts on floodplains, but NPS has determined that the impacts will not be significant because:

- Additional impervious surface under the selected alternative will not represent a significant departure from existing conditions.
- Additional point sources for stormwater runoff will be limited and spread across the 4-mile corridor.
- Impervious surface will be removed, where possible, including the existing bridge piers from the waterway at subarea 3.
- Mitigation measures will minimize, and where possible, avoid impacts.

SURFACE WATERS

Corridor-wide and intersection-specific improvements will occur in all three subareas. Ground disturbance and vegetation clearing of up to 11 acres across the project area during construction will temporarily increase stormwater runoff volume, soil erosion, and sediment transport, which may affect water quality in the West Prong. Potential impacts include intermittent and localized increases in turbidity, sediment loading, and nutrient (e.g., nitrogen and phosphorus) loading, primarily during heavy

rain events. Short-term impacts on water quality will be minimized during construction by implementing sediment and erosion-control measures consistent with the requirements and recommendations contained in the *Tennessee Erosion and Sediment Control Handbook* (TDEC 2012). NPS will file a Notice of Intent with TDEC to obtain coverage under the General NPDES Permit for Discharges of Stormwater Associated with Construction Activities (Permit Number TNR100000). A site-specific stormwater pollution prevention plan will be developed in accordance with Part 3 of the General Permit.

Instream work associated removal of the Wiley Oakley Bridge and relocation of existing utilities from the bridge to beneath the West Prong will also cause intermittent and localized increases in turbidity. After bridge removal and utility relocation are complete, the bottom of the river will be restored to natural or existing conditions with no long-term impacts on water quality. Applicable permits from the US Army Corps of Engineers and TDEC will be obtained in accordance with sections 404 and 401 of Clean Water Act prior to conducting instream work. Compliance with permit conditions and implementation of best management practices outlined in appendix 2 of NPS Procedural Manual 77-1 (NPS 2016) will minimize potential impacts on surface waters. Utility lines will be encased in concrete beneath the river bottom to ensure durability.

In addition to temporary impacts during construction, removal of up to approximately 3 acres of forest vegetation and creation of new impervious surfaces will result in long-term changes to stormwater runoff patterns and runoff quantity and quality. Together, proposed improvements in the three subareas will contribute approximately 2 acres of new impervious surface in the project area. Construction of pull-offs, shoulder hardening, and curb and gutter treatments will result in approximately 1 acre of new impervious surfaces and alter stormwater drainage patterns. While new impervious surface will be added, the project will also remove approximately 1 acre of impervious surface associated with the bridge removal, resulting in a net increase in impervious surface of 1 acre.

In summary, the selected alternative will have long-term, adverse impacts on surface waters, but NPS has determined that the impacts will not be significant because:

- Development of area-specific stormwater drainage plans and stormwater management practices will minimize potential water quality impacts.
- Stormwater drainage infrastructure will treat, store, and infiltrate runoff on-site.
- New impervious surface is expected to be minimal in the context of the existing developed area.

CULTURAL RESOURCES-HISTORIC PROPERTIES

After consultation with the Tennessee SHPO, the NPS determined that the Spur is eligible for listing in the National Register of Historic Places. The analysis in the EA did not reflect this finding, so an erratum to the EA has been prepared to detail the anticipated effects to eligible historic properties from implementation of this project, along with the details of consultation and subsequent MOA (Attachment E). The selected alternative will adversely affect two built features that contribute to the Spur's historic significance-the Wiley Oakley Bridge and one culvert with stone-headwall. These two structures will be removed. Construction of the new flyover bridge will also have an adverse effect on the historic character of Subarea 3. However, the Spur will maintain its overall integrity in terms of location, design, setting, materials, workmanship, feeling, and association and its eligibility for listing in the NRHP. The Spur will continue to be used as it was historically, as a multipurpose, limited access parkway accommodating local, commercial, and park visitor traffic. The proposed improvements will better accommodate high traffic volumes with minimal changes to the roadway's distinctive materials, features, spaces, circulation patterns, and spatial relationships. The original four-lane roadway alignment connecting Pigeon Forge and Gatlinburg will be unaltered. Although the existing Wiley Oakley Bridge will be removed and replaced with a new flyover bridge in the same general location, no new road connections will be made, thus preserving the limited-access parkway design. Distinctive stone architectural treatments will be retained on the existing Gum Stand Road Bridge and relocated culvert headwalls. Compatible stone treatments

will also be incorporated in the design of new additions such as the flyover bridge and the southbound retaining wall in Subarea 2.

Although the project will adversely affect some of the Spur's contributing resources, the NPS intends to minimize the adverse effects by ensuring design consistency with existing bridges over the Spur, the Foothills Parkway Master Plan, and the vision of the Spur as a limited-access road. With this approach, the Spur will maintain its overall integrity in terms of location, design, setting, materials, workmanship, feeling, and association, therefore retaining its eligibility for listing in the NRHP.

The MOA between the NPS and Tennessee SHPO, which includes mitigation measures to resolve adverse effects on the Gatlinburg Spur, is provided in Attachment E.

AGENCY AND TRIBAL CONSULTATION

In accordance with section 7 of the Endangered Species Act, NPS initiated informal consultation with the US Fish and Wildlife Service (USFWS) on June 6, 2022. On July 5, 2022, USFWS concurred that the selected alternative may affect but is not likely to adversely affect Indiana bats and northern long-eared bats. USFWS also concurred that the selected alternative may affect but is not likely to adversely affect the little brown bat, tri-colored bat, and monarch butterfly and will avoid disturbance to bald eagles. As noted above, specific mitigation measures for threatened and endangered species include:

- Conduct tree and vegetation clearing between November 15 and March 31 to avoid impacts on federally listed bats and nesting birds.
- Perform surveys for nesting bald eagles prior to commencing project construction and adhere to all appropriate measures recommended by the 2007 National Bald Eagle Guidelines.
- Perform site inspections for potential bat roosting prior to any bridge removal. If bats are using the bridge, demolition work will be initiated between November 15 and March 31 to avoid and minimize disturbance. If a maternity colony is present, construction work will not be initiated between May 15 and August 15.
- Direct temporary construction lighting away from suitable bat habitat during the active season (April 1 through November 14).

NPS consulted TDEC for comments on May 10, 2022. A response was received on May 17, 2022, confirming a need for a construction stormwater permit with a site-specific surface water pollution prevention plan and an Aquatic Resource Alteration Permit for the bridge and utilities removal and relocation, as noted under mitigation measures.

The National Historic Preservation Act section 106 consultation process was initiated with the Tennessee SHPO. NPS provided the draft area of potential effect and survey methodology on December 15, 2020. On December 18, 2020, the Tennessee SHPO concurred with the proposed area of potential effect and survey methodology.

Letters were also sent to four Native American Tribes on December 15, 2020, describing the draft area of potential effect and survey methodology. These Tribes included: Eastern Band of the Cherokee Indians, Cherokee Nation, United Keetoowah Band of Cherokee Indians in Oklahoma, and Chickasaw Nation. No responses were received.

On May 27, 2022, the Phase I report and associated Assessment of Effect letter was submitted to the Tennessee SHPO and the Tribes listed above as well as to the Catawba Indian Nation, Eastern Shawnee Tribe of Oklahoma, Muscogee (Creek) Nation, and the Poarch Band of Creek Indians. On June 3, 2022, the Tennessee SHPO replied via email and requested additional information regarding the history of the Foothills Parkway and photographs of bridges and culverts that may be altered under the proposed action.

On August 25, 2022, the Park provided additional information for SHPO review. On September 23, 2022, the SHPO provided a second response, which requested that the Gatlinburg Spur be evaluated within the local context of Gatlinburg, specifically how the road may have contributed to the city's growth patterns or development as a tourist center. On December 5, 2022, NPS responded that they had considered the Spur within the local context of Gatlinburg but did not feel additional analysis was warranted and confirmed a determination of no adverse effect and requested concurrence. On January 12, 2023, the SHPO provided its determination that the Gatlinburg Spur is eligible for listing in the NRHP under Criterion A for its role in Mission 66 era improvements and that the proposed project will adversely affect properties eligible for listing in the NRHP.

SHPO consultation continued through May 25, 2023 and resulted in determination that the Gatlinburg Spur is eligible for listing in the NRHP. The NPS developed a MOA with the SHPO to resolve the adverse effect through the completion of photographic documentation of the contributing features of the Spur, a Historic Resource Study for the Spur, a Cultural Landscape Inventory along the contributing length of the Spur. The NPS will also provide as-built drawings of the new flyover bridge and the modified Gum Stand Road Bridge to the SHPO and nominate the Spur to the NRHP. Changes to the EA after SHPO consultation is included in the errata at Attachment A. The MOA is included as Attachment E.

PUBLIC INVOLVEMENT

The NPS held three public comment periods, which were announced through news releases, to obtain input on the Spur Improvements Project:

- Civic Engagement (April 20 - May 22, 2020) – The NPS published a newsletter and held a civic engagement comment period for four transportation and access projects in the Tennessee portion of the Park, including the action proposed in the *Gatlinburg Spur Improvements Environmental Assessment*. Comments received from the public were considered in developing a range of concepts and preliminary alternatives for the Spur Improvements Project.
- Scoping (August 27 - September 26, 2021) – The NPS published a newsletter and held a public scoping period. The public provided 64 pieces of correspondence, which were considered in developing the proposed action and alternatives.
- Environmental Assessment Comment (May 6 - June 5, 2022) – The NPS published the EA on May 6, 2022 and held a virtual public meeting May 16, 2022. The public provided seven pieces of correspondence, which included four substantive comments. Attachment B of this FONSI summarizes public comments received on the EA and includes NPS responses to substantive comments. Comments did not result in changes to the EA, but an errata is provided at Attachment A as a result of edits due to results of consultation.

CONCLUSION

As described above, the selected alternative does not constitute an action meeting the criteria that normally requires preparation of an environmental impact statement. The selected alternative will not have a significant effect on the human environment in accordance with section 102(2)(c) of NEPA.

Based on the foregoing, it has been determined that an environmental impact statement is not required for this project and, thus, will not be prepared.

REFERENCES

National Park Service (NPS)

2006 NPS *Management Policies 2006*.

2016 *Procedural Manual #77-1: Wetland Protection*. Reissued June 21, 2016. https://www.nps.gov/policy/DOrders/Procedural_Manual_77-1_6-21-2016.pdf

2022 Great Smoky Mountains National Park. *Gatlinburg Spur Improvements Environmental Assessment*.

Tennessee Department of Environment and Conservation (TDEC)

n.d. "Aquatic Resource Alteration Permit." https://www.tn.gov/environment/permit-permits/water-permits1/aquatic-resource-alteration-permit--arap-.html

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ATTACHMENT A – ERRATA INDICATING TEXT CHANGES TO THE GATLINBURG SPUR IMPROVEMENTS EA

Together with the FONSI and the EA, the following errata describe the NPS's final decision for the Gatlinburg Spur Improvements EA. The errata clarify and amend the EA in response to SHPO consultation during the development of this project. Original text from the EA is included below to provide context and present changes. Removed text is shown in ~~strikethroughs~~ and new text is shown as underlined.

ERRATA

Corrections and revisions to the EA are in response to SHPO consultation conducted between December 15, 2020 and April 3, 2023. No changes to the EA were necessary as a result of public comments received.

These errata will be attached to the Gatlinburg Spur Improvements EA (NPS 2022) published in May 2022.

CHAPTER 3: AFFECTED ENVIRONMENT AND ENVRIONMENTAL CONSEQUENCES

Issues and Impact Topics, page 18

- Historic Properties

Issues and Impact Topics, Issues and Impact Topics Dismissed from Detailed Analysis, page 19

~~**Cultural Resources**~~

Archeological Resources

~~No historic properties (historic sites, structures, districts, or archeological resources) eligible for listing on the National Register of Historic Places (National Register) are found in the project area.~~ A Phase 1 archeological survey was completed for the project area in January 2021. No archeological resources eligible for listing on the National Register were identified. Based on these findings, NPS has made a preliminary determination that alternatives would have no effect on archeological resources. ~~For aboveground historic resources, the Foothills Parkway itself, including the Spur, has been evaluated for National Register eligibility and was recommended not eligible for listing on the National Register (NPS 2015b).~~

Issues and Impact Topics, Issues and Impact Topics Dismissed from Detailed Analysis, page 20

~~One aboveground historic resource was identified outside of the project area but in the vicinity of the intersection improvements at subarea 2. The National Register-listed Perry's Camp property, also known as Flat Branch Court, flanks both sides of Flat Branch Road, immediately west of its intersection with Husky Grove Road. Constructed between 1928 and 1935, Perry's Camp is significant under Criterion A for entertainment/recreation and Criterion C for architecture. Although several buildings and features associated with the property were demolished in 1957 as part of improvements to US 321, the resource, as listed in 1992, has not been altered and continues to include a large cabin on the south side of Flat Branch Road consisting of an 1850s core structure remodeled with additions in 1928, and four smaller cabins built shortly afterward, arranged to its west along the north side of Flat Branch Road. The resource is an intact surviving example of a roadside motor court that exemplifies an early era of automobile tourism. The buildings retain a high level of architectural integrity through their use of rustic, natural materials and~~

~~linear roadside grouping in a wooded setting (NPS 1992). Because of the heavily wooded and mountainous terrain, the construction of an acceleration lane on the southbound Spur would not have a direct effect on the resource or alter its viewshed. Temporary construction noise would occur but would not result in any permanent impact on the resource.~~

Because there would be no permanent impacts on ~~cultural~~ archeological resources listed or eligible for listing in the National Register, this resource topic was dismissed from further analysis.

General Methodology for Establishing and Assessing Impacts, Page 39

Historic Properties

Affected Environment

The project area includes the Gatlinburg Spur which is eligible for listing in the NRHP.

The NRHP-listed Perry's Camp property, also known as Flat Branch Court, is in the vicinity of the project.

Gatlinburg Spur

Road systems in the park conform to one of two property subtypes: Pre-NPS Community Roads or Great Smoky Mountains National Park Roads. Built during the Mission 66 era, the Spur is classified within the Park Road subtype and is an important component of the park's vehicular circulation system. This property type includes the major park roads designed to provide entry to the park and access to the park's scenic features and recreational areas, as well as to connect other components of the park such as campgrounds and administrative/public contact areas.

Road systems constructed during the initial park development period (1926-1942) unobtrusively follow the topography of river valleys and ridge sides; provide access to trailheads, scenic overlooks, campgrounds, and administrative and visitor contact areas; and offer striking vistas of mountains and river valleys to the traveling motorist. The consistent use of stone and stone-faced road structures—bridges, culverts, retaining walls, guardrail, and tunnel portals—aesthetically unifies the road systems. The three major park roads entirely or substantially developed before 1942—Newfound Gap Road, Clingmans Dome Road, and Little River/Laurel Creek Road (including the Townsend Entrance Road and the Elkmont Spur)—exhibit all facets of the 1930s NPS design philosophy. Mission 66 park road design and construction policy in the park continued to emphasize the principles established during the 1930s, while adhering to updated engineering standards and accommodating increased amounts of traffic.

The Spur is a unique multipurpose park road that provides access to the park via the Gatlinburg Bypass and a scenic driving experience along the West Prong Little Pigeon River as part of the Foothills Parkway. The Spur is also an important component of the regional transportation network, providing the primary connection between Pigeon Forge and Gatlinburg for local and commercial traffic. The Spur is the only park road open to commercial traffic, which reflects the road's existence as US 441 prior to transfer of the right-of-way from Tennessee to the federal government. Except for an approximate 0.5-mile segment of Newfound Gap Road near the Cherokee, North Carolina entrance, the Spur is the only four-lane road in the park.

The necessary legislation to establish the Foothills Parkway was signed into law on February 22, 1944. It authorized the Secretary of the Interior to accept donations of land from the state of Tennessee as an addition to the park for the construction of a scenic parkway generally paralleling the park and connecting with the park. In 1945, the Tennessee legislature authorized the Tennessee Department of Highways and Public Works to acquire the necessary right-of-way by donation, purchase, or condemnation. Two years later, the state legislature passed another bill that authorized the state to transfer the property to the United States prior to any construction of the parkway by the federal government. The laws also provided for the

reconstruction of a section of US 441 between Pigeon Forge and Gatlinburg and the construction of a limited-access bypass around Gatlinburg into the park. Known respectively as the Gatlinburg Spur and the Gatlinburg Bypass, these additions amounted to approach roads although they were treated administratively as part of the Foothills Parkway.

As early as 1961, NPS and Tennessee began discussions about the possible transfer of the Spur from the federal government to the state following completion of construction. An agreement for the transfer was signed in December 1962 and Congress passed Public Law 91-57 in August 1969 authorizing reconveyance of the Spur to Tennessee. The legislation stipulated that the state would preserve the existing parkway character of the conveyed lands. In February 1973, the Tennessee Department of Transportation informed the Park Superintendent that the state was declining to accept the Spur "in its present condition." In May 1973, the Park Superintendent informed the Department of Transportation of his decision to retain ownership and jurisdiction of the Spur.

The Spur's design reflects its unique multipurpose functions and was likely influenced by interests of the NPS, Federal Highway Administration, and Tennessee Department of Transportation. The road design reflects the need to expand US 441 to four lanes to accommodate increased traffic, but also incorporates Park Service parkway design principles, which emphasize creating harmony between built structures and their surroundings and offering visitors a journey through nature by integrating roadways, vistas, and natural features to encourage a deep connection with the environment.

The Spur's four-lane configuration reflects the need that existed in the 1950s to accommodate increased local, commercial, and park visitor traffic volume between Pigeon Forge and Gatlinburg. The specific alignment of the Spur was largely dictated by the alignment of US 441, which already existed, and environmental constraints such as the rocky mountainous terrain and the West Prong Little Pigeon River. Construction of the four-lane road required substantial cuts and fills to navigate the relatively narrow river canyon, had an extensive environmental footprint, and was plagued by substantial rockslides.

Although some impacts from the original construction persist, the landscape has largely recovered and the Spur provides a scenic driving experience, particularly when contrasted with areas outside the park. Parkway design principles evident on the Spur include construction of a tunnel on the northbound lanes to minimize rock cuts, incorporation of riverside pull-offs, use of at-grade intersections and river crossings, use of grassy rather than paved shoulders, and limiting access points along the road. Incorporation of stone accents on bridges, culverts, retaining walls, and the tunnel emphasize the road principles established for the park during the 1930s, and represent a character defining design feature of the Spur. One of the park's primary goals is to ensure that these influences are carried through the design and ultimate construction associated with the proposed project.

A comprehensive inventory of the contributing features of a possible Gatlinburg Spur Historic District has not yet been completed but is proposed as mitigation. Contributing features of road systems often include bridges, culverts, tunnels, retaining walls, and pull-offs, all of which are present along the Spur. As part of the design and section 106 process for this project, NPS staff conducted an inventory of all built features that would be altered by the proposed project. For section 106 consultation purposes, NPS considers the following as contributing features to a potential Gatlinburg Spur Historic District:

- The four-lane roadway alignment consisting of two southbound and two northbound lanes on either side of West Prong Little Pigeon River.
- Gum Stand Road Crossover Bridge (built in 1960).
- Wiley Oakley Drive Crossover Bridge (built in 1960, reconstructed in 1980). The existing Wiley Oakley Bridge retains a high degree of integrity in location, design, materials, and workmanship.
- Twelve culverts with stone headwalls. Most of the culverts were constructed in the 1960s, but it is possible that the two culverts with corrugated metal pipes were constructed in the 1970s. Some of the

stone masonry headwalls were rehabilitated in 2007 as part of a pavement rehabilitation project, but they retain integrity.

Perry's Camp Property

One aboveground historic resource was identified outside of the project area but in the vicinity of the intersection improvements at subarea 2. The NRHP-listed Perry's Camp property, also known as Flat Branch Court, flanks both sides of Flat Branch Road, immediately west of its intersection with Husky Grove Road. Constructed between 1928 and 1935, Perry's Camp is significant under Criterion A for entertainment/recreation and Criterion C for architecture. Although several buildings and features associated with the property were demolished in 1957 as part of improvements to US 321, the resource, as listed in 1992, has not been altered and continues to include a large cabin on the south side of Flat Branch Road consisting of an 1850s core structure remodeled with additions in 1928, and four smaller cabins built shortly afterward, arranged to its west along the north side of Flat Branch Road. The resource is an intact surviving example of a roadside motor court that exemplifies an early era of automobile tourism. The buildings retain a high level of architectural integrity through their use of rustic, natural materials, and linear roadside grouping in a wooded setting. Because of the heavily wooded and mountainous terrain, the construction of an acceleration lane on the southbound Spur would not have a direct effect on the resource or alter its viewshed. Temporary construction noise would occur but would not result in any permanent impact on the resource.

Trends

Cultural resources can be affected by climate change. Climate-related impacts on historic properties and cultural landscapes include both the built environment and the ecosystem (when it is part of the landscape). Changes in temperature and precipitation patterns may stress road and building materials or favor different vegetation species patterns for historic or culturally significant vegetation.

In addition to changes from climate change, planned actions have the potential to affect the cultural landscape. Actions that affect the cultural landscape are those that add new structures into or can be seen from within the historic landscape boundaries. NPS actions that may occur in the project area in the future include the development of the Foothills Parkway Section 8D. NPS has reinitiated the planning process for the 9.8-mile Section 8D, which would connect the Gatlinburg Spur with Wears Valley and the western sections of the Foothills Parkway. This project has the potential to adversely affect the viewshed of the NRHP-eligible Spur. Similarly, the Gatlinburg Spur Greenway project will explore the development of a multiuse (pedestrian and bicycle) trail between Gatlinburg and Pigeon Forge to connect with existing and future greenways in these gateway communities.

Environmental Consequences

For aboveground historic resources, the Foothills Parkway itself, including the Spur, has been evaluated for NRHP eligibility and was recommended not eligible for listing in the NRHP (NPS 2015b). However, during consultation with the Tennessee SHPO from December 15, 2020 and April 3, 2023, it was determined that the Gatlinburg Spur is eligible for listing in the NRHP under Criterion A for its role in Mission 66 era improvements. The SHPO disagreed with NPS's determination that the Spur was not eligible for listing due to the fact the Foothills Parkway is still under construction. During continued consultation with SHPO, the NPS has determined that while the Gatlinburg Spur was planned as part of the still-under-construction Foothills Parkway, the Spur was completed in its entirety more than 50 years ago and historically functions as a separate, geographically distinct entity.

Based on internal and external scoping, Park staff identified the following cultural resources issues for analysis in the EA:

Issue-Contributing Features: Proposed improvements and elements to the road have the potential to alter the historic features of the Gatlinburg Spur that maintain the historic integrity and eligibility for listing on the NRHP.

Alternative 1-No Action

Under the no action alternative, there would be no change to the existing corridor and intersections along the Spur. The park would continue to implement routine maintenance on the Spur and the contributing elements would remain unaltered. As a result, impacts would be the same as described above in the "Affected Environment" section. Because the no-action alternative would result in no impacts on historic resources, there would be no cumulative effects. Past, present, and reasonably foreseeable actions and their impacts would be the same as those describe in the "Trends" section.

Alternative 2-NPS Preferred Alternative

Under alternative 2, the proposed improvements would implement corridor-wide improvements and specific improvements at three subareas along the Spur:

Up to a 3,000 total linear feet of curbs and gutters would be installed at individual locations along the Spur where rutting provides evidence of tires dropping off the edge of the pavement or areas where there is evidence of roadside parking. The curb and gutter treatments would be approximately 2.5 feet wide. Materials (tinted concrete, stone curbs, and asphalt) would be consistent with similar existing treatments and would be compatible with the existing parkway design aesthetic. Curb and gutter treatments would have no adverse effect on the historic character of the Spur.

Shoulder hardening could also be used in areas where vehicles leave paved areas and create ruts. In areas where curb and gutter treatments may not be appropriate, approximately 5,000 linear feet of shoulder hardening may be completed and would involve installation of approximately 2.5 feet of asphalt to the existing road edge. Limited shoulder hardening would be compatible with the existing parkway design aesthetic and would have no adverse effect on the historic character of the Spur.

Options for rockfall mitigation under consideration may include slope stabilization techniques such as scaling loose rock material, installing anchors, and applying shotcrete, as well as rockfall protection measures such as creating rockfall catchment zones on shoulders, installing barriers (including retaining walls) in strategic locations, and altering the vertical or horizontal road alignment away from the catchment zones. These actions could occur anywhere exposed rock faces exist along the Spur, up to approximately 5,000 linear feet. Minor alterations to the vertical or horizontal road alignment would occur in areas where there is repeated rockfall. The specific rockfall mitigation measure implemented would be tailored to individual locations along the Spur. Scaling loose rock would have no adverse effect on the historic character of the Spur. If the other potential rockfall mitigations become necessary, they would require further section 106 consultation pending project-specific design.

The installation of additional pull-offs in selected areas would improve emergency vehicle access and provide space for disabled vehicles or motorists to pull safely off the roadway. Pull-off areas would be in locations that are already flat and vegetated with mowed grass that could accommodate 150 to 200-foot-long and 15-footwide paved areas. Up to four pull-offs could be installed. Materials would include stone curbs and asphalt, which would be consistent with existing pull-offs. These new additions would be compatible with the existing parkway design aesthetic and would have no adverse effect.

Subarea 1 Improvements (Gum Stand Road Contra-flow Bridge) - The existing bridge would be modified into a contra-flow pattern. To accommodate larger vehicles' turning radii, both ends of the bridge would be widen slightly (total of 128 square feet), which would also require minor changes to wingwall

geometry and widening of the existing abutments. The section of the bridge deck above the river would not be widened. Existing stone treatments on the wingwalls/abutments are considered a distinctive feature of the bridge. Existing stone would be retained to the extent possible and, where necessary, new stone would match the old in design, color, texture, and materials. While the footprint of the bridge would increase slightly, changes to the overall scale, proportion, and massing of the bridge would be insignificant. Therefore, proposed rehabilitation of the Gum Stand Road Bridge would have no adverse effect on the integrity of the Spur.

Acceleration/deceleration lanes would also be widened to accommodate larger vehicles' turning radii, which would require two retaining walls, one on the interior of the Spur in each direction. These retaining walls would be approximately 775 to 840 feet long and 9 to 10 feet tall. The retaining walls would use materials that complement the existing aesthetic of the Spur and Parkway. Specific material selections would be made during design and would be based in part on the anticipated visibility of the walls from the Spur. On highly visible wall sections, preference would be given to stone that matches existing stonework in design, color, texture, and materials, while other options such as stamped concrete or modular block would be considered for less visible sections. The widened acceleration/deceleration lanes and new retaining walls would be compatible additions to the Spur and would not destroy historic materials, features, or spatial relationships that characterize the property. Therefore, proposed widened acceleration/deceleration lanes and new retaining walls in Subarea 1 would have no adverse effect on the integrity of the Spur.

Subarea 2 Improvements (Huskey Grove Road Acceleration Lane) - Acceleration lanes along the west side of both the southbound and northbound Spur would be extended to allow traffic entering the Spur to yield to oncoming traffic. Currently, the lanes are not long enough to allow motorists to efficiently accelerate to reach the speed limit. Extending the northbound acceleration lane by approximately 820 feet would require 1 acre of disturbance and removal of existing vegetated areas, including grass and several small trees. A retaining wall between the road and river, approximately 160 feet long and 8 feet tall, would be needed. Extending the southbound acceleration lane by approximately 800 feet would require approximately 1.4 acres of disturbance, including cutting into the rockface to accommodate a maximum 775-foot-long and 25-foot-tall retaining wall adjacent to the roadway. The size of the southbound wall is based on a conceptual design. During the design process additional surveys, including geotechnical analysis, may determine that the existing geology is competent to support vertical cuts, possibly eliminating the need for a retaining wall or reducing the size of the wall. If built, the upslope southbound wall would be visible from the road and the wall would be faced with stone veneer that matches existing stonework on the Spur and other sections of the Foothills Parkway in design, color, texture, and materials. The northbound wall would be downslope and would be less visible; therefore, other compatible options such as stamped concrete or modular block would be considered. The extended acceleration lanes and new retaining walls in Subarea 2 would be compatible additions to the Spur and would not destroy historic materials, features, or spatial relationships that characterize the property. Therefore, proposed improvements in Subarea 2 would have no adverse effect on the integrity of the Spur.

Subarea 3 Improvements (Wiley Oakley Bridge Replacement) - The existing Wiley Oakley Bridge would be removed and replaced with a new flyover bridge to provide a grade-separated interchange that eliminates the need for vehicles to cross both lanes of the Spur. The existing Wiley Oakley Bridge is an original feature of the Spur and retains integrity. Removal of this contributing feature would be an adverse effect. As discussed in the Project Purpose, Need, and Alternatives section of the EA, NPS considered alternatives to removing the bridge and believes that it is in the public's interest to remove the bridge should a decision be made to construct a new bridge.

The new flyover bridge and associated infrastructure (on-ramps, off-ramps, and retaining walls) would be in the same general location as the existing bridge and would make use of existing onramps and off-ramps to the extent possible. Although similar flyover bridges do not currently exist on the Spur, the bridge at Flat Branch/Huskey Grove is elevated above the southbound Spur but does not cross over the northbound Spur. The new bridge design and materials would be compatible with existing design themes and materials, including stone treatments, of other bridges along the Spur, Foothills Parkway, and Gatlinburg Bypass. Despite its compatible design and consistency with the parkway aesthetic, the new bridge would be a substantial departure from the existing at-grade Wiley Oakley Crossover Bridge and would have an adverse effect on the historic character of Subarea 3.

After the removal of the existing Wiley Oakley Bridge and construction of the new flyover bridge, however, the overall Spur corridor would still retain integrity in terms of location, setting, and association. The proposed flyover bridge will resemble other existing bridges along the Parkway and blend with the surrounding natural environment and preserve the Spur's historic character. The new flyover bridge would not substantially alter spatial relationships that characterize the property (e.g., overall roadway alignment and the number and general location of access points) and the new work would be differentiated from the old and would be compatible with the historic materials, features, size, scale, proportion, and massing.

Twelve Culverts with Stone Headwalls – The project would affect a total of 12 culverts. One culvert would be demolished and would not be relocated or replaced. Removal of the culvert would have an adverse effect on this contributing resource. The remaining 11 culverts would be altered by extending the inlet or outlet pipes and relocating the affected inlet or outlet structures or stone headwalls. In cases where stone masonry headwalls need to be relocated, the headwall would be dismantled, and the stones would be numbered and stored for construction of the relocated headwall. New stone that matches the color and texture of the existing stone would be used if the integrity of existing stone is compromised or if additional stone is required based on design/structural considerations. As such, alteration of the 11 stone headwalls would have no adverse effect on the Spur's integrity.

Alternative 3

Impacts on cultural resources under alternative 3 would be the same as those described under alternative 2, but the Wiley Oakley Bridge would be replaced with two at-grade contra-flow bridges rather than one grade separated flyover bridge. The two contra-flow bridges would be located approximately 1,400 feet north and south of the existing bridge along the Spur and would create intersections where vehicles could turn but could not continue straight.

Alternative 4

Like alternative 3, impacts on cultural resources under alternative 4 would be the same as those described for alternative 2, except the existing Wiley Oakley Bridge would not be removed, and a new bridge would not be constructed. Rather, specific turning movements would be restricted to improved safety.

ATTACHMENT B - PUBLIC COMMENT RESPONSE REPORT

US Department of the Interior
National Park Service
Great Smoky Mountains National Park
Tennessee

Great Smoky Mountains National Park

Gatlinburg Spur Improvements Environmental Assessment

Public Comment Response Report

July 2022

CONTENTS

LIST OF TABLES

INTRODUCTION

Great Smoky Mountains National Park (the Park) initiated a 30-day public comment period for the *Gatlinburg Spur Improvements Environmental Assessment* (EA) on May 6, 2022, and the public was invited to provide feedback on the document. The public was encouraged to submit comments through the National Park Service's (NPS) Planning, Environment, and Public Comment (PEPC) website (https://parkplanning.nps.gov/SpurImprovements). Comments were also accepted by US mail. Seven pieces of correspondence were received during the comment period. This report describes how NPS considered the public comments and provides the responses to substantive comments, which are grouped together by area of concern.

PUBLIC OUTREACH DURING THE COMMENT PERIOD

NPS issued a press release on May 6, 2022, announcing the availability of the EA. NPS also sent the press release to more than 200 interested individuals and organizations notifying them of the opportunity to comment. On that date, the NPS PEPC website http://parkplanning.nps.gov/SpurImprovements) was opened for the public to submit comments. One virtual public meeting was held over Zoom on May 16, 2022, during which the public was encouraged to ask questions over a live question-and-answer platform following an overview presentation about the EA. NPS reviewed the information obtained during this public comment period and prepared responses to substantive comments.

CONCERN RESPONSE REPORT

This report summarizes the comments received during the public comment period. Table 1 provides summaries of substantive comments and NPS responses to comments received during the EA public review period.

Seven correspondences were received during the public review process for the *Gatlinburg Spur Improvements Environmental Assessment*. In general, commenters supported the proposed improvements, including the NPS preferred alternative. Several commenters also supported the proposed improvement at subarea 3 under alternative 3. Summaries of substantive public comments as well as NPS responses are provided below.

TABLE 1. SUMMARY OF SUBSTANTIVE PUBLIC COMMENTS

Concern ID 1: One commenter suggested that the resort community located at subarea 3 be provided a different entrance than the one they currently use at subarea 3 due to the volume of traffic associated with the community.
NPS Response: Access is a key need for multiple users including those who live, work, and visit this area including those who live along Wiley Oakley Drive. Alternative access would be constrained by topography and the existing transportation network and a new entrance onto the Spur would not be consistent with the limited-access parkway concept. As a result, it would not be feasible to provide reasonable alternative routes to access these areas that serve residents and visitors.
Concern ID 2: Several commenters suggested additional alternatives for consideration at subarea 3, including an all-way stop sign and a traffic light. One commenter suggested that alternative 3 move the two proposed bridges closer to the existing intersection and that new on- and off-ramps

could be roundabouts. An additional commenter requested the utilities be located beneath the flyover over instead of under the river to avoid impacts on natural resources.
NPS Response: The installation of an all-way stop sign at subarea 3 would not meet the purpose and need for taking action because it would not improve level of service. As noted in chapter 2 of the EA, traffic lights are not compatible with the parkway aesthetic and would not improve the level of service. As a result, they were dismissed from consideration during the development of the EA. **Regarding the location of the bridges under alternative 3, the locations were approximate and were located far enough from existing roads to the Spur to allow vehicles enough time to cross lanes. Ultimately, this alternative was not selected for implementation due to the higher cost and natural resource impacts from the construction of two bridges. During the design of the new flyover bridge included in the selected alternative, NPS will review the potential locations for the relocated utilities in consultation with utility owners. Locating the utilities beneath the river was analyzed in the EA to analyze the option with the greatest potential for environmental impacts to ensure a conservative analysis.**
Concern ID 3: One commenter suggested a traffic signal at subarea 1.
NPS Response: As noted in chapter 2 of the EA, traffic lights are not compatible with the parkway aesthetic, night sky protections, and may affect bat foraging behavior. As a result, they were dismissed from consideration during the development of the EA.
Concern ID 4: Commenters provided several suggestions for improvements along the Spur. One commenter suggested installing a sign at subarea 1 at the intersection of King Branch Road the Spur noting "Gatlinburg Only – No Right Turn" to encourage drivers to use the second access point to head to Pigeon Forge, and the installation of streetlights for better visibility. Another commenter suggested the travel lanes be easily distinguishable from shoulders and pull-offs.
NPS Response: Design specifics will be considered and developed during the design phase.

ATTACHMENT C - FINDING OF NON-IMPAIRMENT

NON-IMPAIRMENT DETERMINATION FOR THE GATLINBURG SPUR IMPROVEMENTS

THE PROHIBITION ON IMPAIRMENT OF PARK RESOURCES AND VALUES

National Park Service (NPS) *Management Policies 2006*, section 1.4.4, explains the prohibition on impairment of park resources and values:

> While Congress has given NPS the management discretion to allow impacts within parks, that discretion is limited by the statutory requirement (generally enforceable by the federal courts) that the NPS must leave park resources and values unimpaired unless a particular law directly and specifically provides otherwise. This, the cornerstone of the Organic Act, establishes the primary responsibility of the NPS. It ensures that park resources and values will continue to exist in a condition that will allow the American people to have present and future opportunities for enjoyment of them.

WHAT IS IMPAIRMENT?

NPS *Management Policies 2006*, section 1.4.5, What Constitutes Impairment of Park Resources and Values, and section 1.4.6, What Constitutes Park Resources and Values, provide an explanation of impairment.

Impairment is an impact that, in the professional judgment of the responsible NPS manager, would harm the integrity of park resources or values, including the opportunities that otherwise would be present for the enjoyment of those resources or values.

Section 1.4.5 of NPS *Management Policies 2006* states:

> An impact to any park resource or value may, but does not necessarily, constitute impairment. An impact would be more likely to constitute impairment to the extent that it affects a resource or value whose conservation is:
>
> - Necessary to fulfill specific purposes identified in the establishing legislation or proclamation of the park;
> - Key to the natural or cultural integrity of the park or to opportunities for enjoyment of the park; or
> - Identified as a goal in the park's general management plan or other relevant NPS planning documents as being of significance.
>
> An impact would be less likely to constitute an impairment if it is an unavoidable result of an action necessary to preserve or restore the integrity of park resources or values and it cannot be further mitigated.

Per section 1.4.6 of NPS *Management Policies 2006*, park resources and values that may be impaired include:

- the park's scenery, natural and historic objects, and wildlife, and the processes and condition that sustain them, including, to the extent present in the park: the ecological, biological, and physical processes that created the park and continue to act upon it; scenic features; natural visibility, both in daytime and at night; natural landscapes; natural soundscapes and smells; water and air resources; soils; geological resources; paleontological resources; archeological resources; cultural landscapes; ethnographic

resources; historic and prehistoric sites, structure, and objects; museum collections; and native plants and animals;

- appropriate opportunities to experience enjoyment of the above resources, to the extent that can be done without impairing them;
- the park's role in contributing to the national dignity, the high public value and integrity, and the superlative environmental quality of the national park system, and the benefit and inspiration provided to the American people by the national park system; and
- any additional attributes encompassed by the specific values and purposes for which the park was established.

Impairment may result from NPS activities in managing the park, visitor activities, or activities undertaken by concessioners, contractors, and others operating in the park. Impairment may also result from sources or activities outside the park, but this would not be a violation of the Organic Act unless the NPS was in some way responsible for the action.

HOW IS AN IMPAIRMENT DETERMINATION MADE?

Section 1.4.7 of NPS *Management Policies 2006*, states, "[I]n making a determination of whether there would be an impairment, an NPS decision maker must use his or her professional judgment." This means that the decision maker must consider any environmental assessments or environmental impact statements required by the National Environmental Policy Act of 1969; consultations required under section 106 of the National Historic Preservation Act; relevant scientific and scholarly studies; advice or insights offered by subject matter experts and others who have relevant knowledge or experience; and the results of civic engagement and public involvement activities relating to the decision.

NPS *Management Policies 2006*, further define "professional judgment" as "a decision or opinion that is shaped by study and analysis and full consideration of all the relevant facts, and that takes into account the decision maker's education, training, and experience; advice or insights offered by subject matter experts and others who have relevant knowledge and experience; good science and scholarship; and, whenever appropriate, the results of civic engagement and public involvement activities in relation to the decision."

NON-IMPAIRMENT DETERMINATION FOR THE SELECTED ALTERNATIVE

This determination on impairment has been prepared for the selected alternative (alternative 2) described starting on page 5 of the *Gatlinburg Spur Improvements Environmental Assessment*, May 2022. A non-impairment determination is made for all resource impact topics analyzed in detail for the selected alternative with the exception of visitor use and experience because impairment findings relate back to park resources and values. Visitor use and experience are not generally considered to be park resources or values according to the Organic Act and cannot be impaired in the same way that an action can impair park resources and values.

Non-Impairment Findings for Visual Resources

Visual resources are fundamental to Great Smoky Mountains National Park's purpose and value in contributing to the many scenic qualities found within the Park, including sweeping mountain vistas, the tapestry of colors throughout the seasons, and the natural "smoke" of the Great Smoky Mountains. The Park's commitment to the ability to view these visual resources is evidenced by the change in visibility on the haziest days improving from 12 to 32 miles from 1999 to 2014. In the long term, tree removal, construction of a new bridge, increases in impervious surfaces, modification of existing bridges, and construction of new retaining walls will affect visual resources. Construction will temporarily affect visual resources. While about 3 acres of vegetation will be removed, the Spur will retain its overall vegetated existing character and remaining vegetation and topography help limit the visual impacts. Implementation of mitigation measures will minimize impacts. Because impacts will be minimized by

designing bridges and retaining walls that match the visual character of Gatlinburg Spur (the Spur), maintaining the parkway aesthetic, scheduling traffic disruptions at a time/season with minimal impacts on motorists/visitors, and the localized nature of tree removal and corridor-wide improvements and because the affected area represents a relatively small portion of the existing developed transportation zone. For these reasons, the selected alternative will not result in impairment of visual resources.

Non-Impairment Findings for Floodplains

Floodplains are fundamental to the Park's purpose and value in providing clean streams to contribute to the ecological health of the Park's flora and fauna. Intersection-specific improvements from the selected alternative will temporarily increase stormwater runoff volume and soil erosion, affecting floodplain values. Impacts will be minimized by reseeding and restoring disturbed vegetated areas and using stormwater drainage plans and stormwater management best practices to minimize potential impacts on floodplain values from impervious surfaces. Because effects to floodplains will be minimized through restoration of the area and use of best management practices and the affected area is relatively small (less than 4 acres), the selected alternative will not result in impairment of floodplains.

Non-Impairment Findings for Surface Waters

Surface waters are fundamental to the Park's purpose and value in supporting native populations of flora and fauna through the more than 2,900 miles of streams located in the Park. Clean streams contribute to ecological health and are critical to maintaining high quality visitor experiences. The waters of the Park enjoy elevated protections from both Tennessee and North Carolina—both states recognize that the waters should not be allowed to degrade and should continue to support their designated beneficial uses. As an impaired waterway, the main sources of water quality degradation for the West Prong of the Little Pigeon River (West Prong) will continue to be from nonpoint sources associated with existing residential septic systems, sanitary sewer overflows, and stormwater runoff. During construction, ground disturbance and vegetation clearing associated with the selected alternative may increase turbidity, sediment loading, and nutrient loading. Additionally, intersection-specific and corridor-wide improvements will add 1 net acre of impervious surface. Short-term impacts will be minimized during construction by implementing sediment and erosion-control measures. Long-term impacts will be minimized through use of area-specific stormwater drainage plans and stormwater management practices as well as revegetation with native plants. Because stormwater drainage infrastructure will be designed to treat, store, and infiltrate runoff on-site before reaching the West Prong and impacts will be minimized through the use of stormwater management practices and revegetation and the affected area is relatively small (less than 4 acres), the selected alternative will not result in impairment on surface waters.

Non-Impairment Findings for Cultural Resources

Protecting cultural resources is fundamental to the Park's mission. The selected alternative will result in long-term changes to contributing features of the Gatlinburg Spur, which is considered an adverse effect per the NHPA and its implementing regulations (36 CFR Part 800). However, because the impacts will be resolved through the implementation of a Memorandum of Agreement with the Tennessee SHPO and the Spur will maintain its overall integrity in terms of location, design, setting, materials, workmanship, feeling, and association, and its eligibility for listing in the NRHP, the selected alternative will not result in impairment of cultural resources.

Conclusion

NPS has determined that implementation of the selected alternative will not constitute an impairment of the resources or values of the Park. This conclusion is based on consideration of the Park's purpose and significance; a thorough analysis of the environmental impacts described in the environmental assessment; comments provided by the public and other agencies; and the professional judgment of the decision maker guided by the direction of NPS *Management Policies 2006*.

REFERENCES

National Park Service, US Department of the Interior (NPS)

2006 *Management Policies*. US Department of the Interior, National Park Service, Washington, DC. https://www.nps.gov/policy/MP_2006.pdf.

2016 *Foundation Document, Great Smoky Mountains National Park, North Carolina and Tennessee*. US Department of Interior, National Park Service, Gatlinburg, TN.

2022 *Gatlinburg Spur Improvements Environmental Assessment.* US Department of Interior, National Park Service, Gatlinburg, TN.

ATTACHMENT D – FLOODPLAINS STATEMENT OF FINDINGS

United States Department of the Interior
National Park Service
Great Smoky Mountains National Park

Gatlinburg Spur Improvements

Statement of Findings for Floodplains

July 2022

Recommended: ALAN SUMERISKI Digitally signed by ALAN SUMERISKI Date: 2022.09.02 12:17:40 -04'00'

Superintendent, Date

Great Smoky Mountains National Park

Certification of
Technical Adequacy and
Servicewide Consistency: FORREST HARVEY Digitally signed by FORREST HARVEY Date: 2022.09.12 14:14:45 -06'00'

Chief, Date

Water Resources Division

Approved: MARK FOUST Digitally signed by MARK FOUST Date: 2023.06.16 12:13:06 -04'00'

Director, Date

Region 2

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STATEMENT OF FINDINGS

Introduction

The National Park Service (NPS) is proposing to implement improvements along the Gatlinburg Spur (the Spur), a road between Pigeon Forge and Gatlinburg in Sevier County, Tennessee. The Spur is part of the Foothills Parkway and Great Smoky Mountains National Park (the Park). The Spur, a segment of US 441/US 321, comprises approximately 4.2 miles of four-lane divided urban parkway (figure 1), serving more than 49,000 vehicles per day between Pigeon Forge and Gatlinburg. The West Prong Little Pigeon River (West Prong) runs between the northbound and southbound lanes, with bridges connecting intersections on either side. Portions of the Spur are in the 100-year floodplain of the West Prong.

Executive Order 11988, "Floodplain Management," and Executive Order 13690, "Establishing a Federal Flood Risk Management Standard and a Process for Further Soliciting and Considering Stakeholder Input," require NPS and other federal agencies to evaluate the likely impacts of actions in floodplains and to improve the nation's resilience to flood risk. The objective of Executive Order 11988 is to avoid, to the extent possible, the long- and short-term, adverse impacts associated with the occupancy and modification of floodplains and to avoid direct or indirect support of floodplain development wherever there is a practicable alternative. Executive Order 13690 was issued to establish a Flood Risk Management Standard for federally funded projects to improve the nation's resilience to floods and to ensure new federal infrastructure will last as long as intended. NPS requirements for complying with the floodplain executive orders are outlined in NPS Procedural Manual 77-2 and Director's Order 77-2. This Statement of Findings (SOF) documents compliance with these NPS floodplain management procedures. The SOF will be published and made available for public review with the environmental assessment (EA).

Project Description

PROPOSED ACTION (PREFERRED ALTERNATIVE)

The purpose of the action is to improve level of service (LOS) in consideration of future traffic volumes along the Spur in a manner that retains the parkway character of the road. Alternative 2 analyzed in the EA prepared for the project is the NPS preferred alternative (NPS 2022). The proposed action would implement corridor-wide improvements and specific improvements at three intersections (i.e., subareas) along the Spur. As described in chapter 2 of the EA, corridor-wide improvements include installation of curb and gutter treatments, shoulder hardening, rockfall mitigation, intelligent transportation systems, and pull-off areas. These improvements could be implemented at selected locations as needed along the Spur. All corridor-wide improvements would occur outside the floodplain. Therefore, this SOF does not address corridor-wide improvements further.

The project area, the preferred alternative (alternative 2 in the EA), and associated subarea improvements are described below.

SITE DESCRIPTION

The project area is located along a 4.2-mile segment of the Spur (figure 1). The Spur serves local communities/commuters and Park visitors and staff. The roadway also connects to the Gatlinburg Bypass, providing an alternate route to the Park without traveling through downtown Gatlinburg. The corridor serves as a primary route to reach North Carolina to the south and the Knoxville area to the northwest. Increases in Park visitation and growth in the local population have increased traffic volumes. Volumes are particularly high during daily peak commuting hours and during the Park's peak visitation seasons.

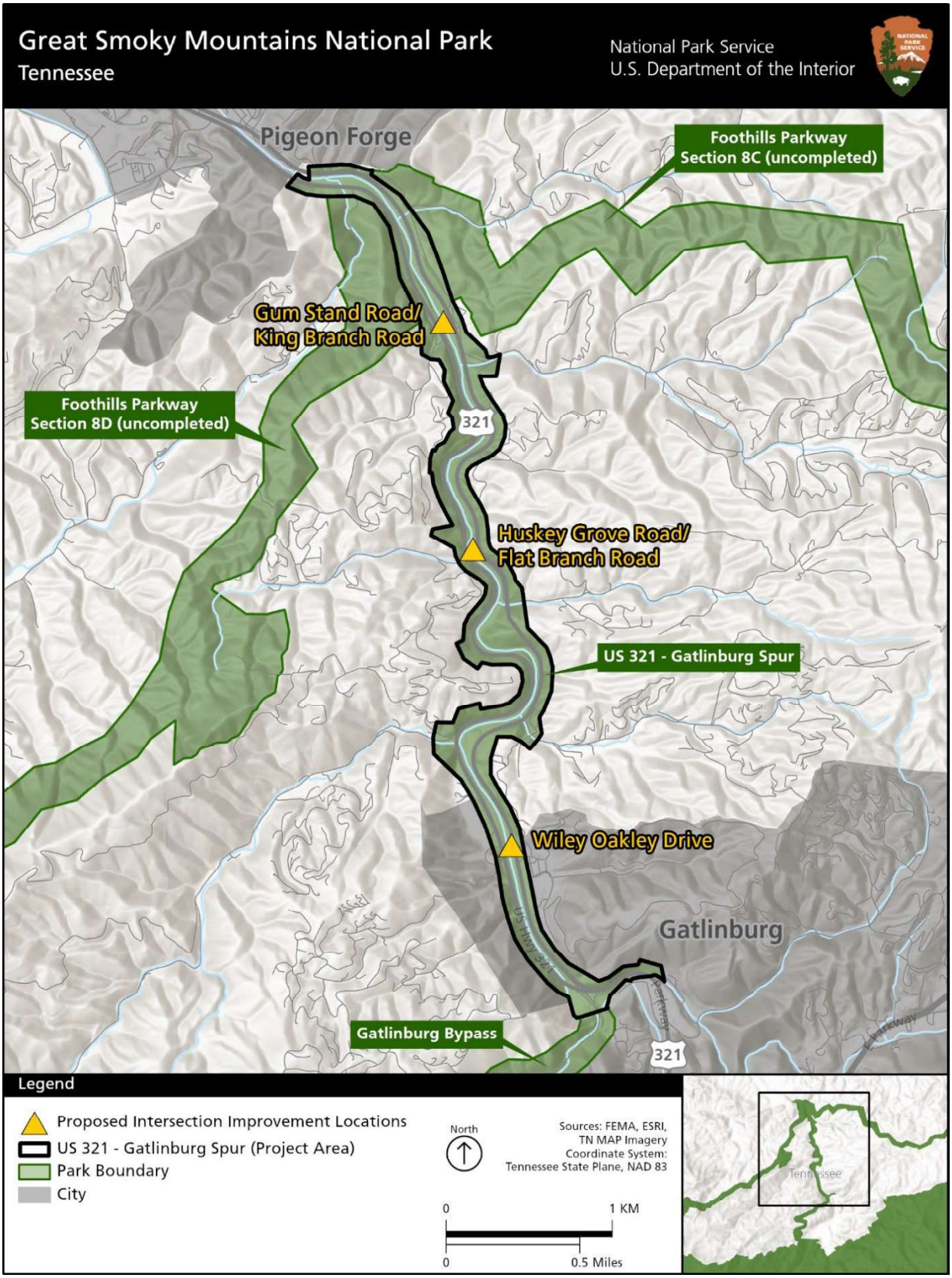

FIGURE 1: PROJECT AREA

SUBAREA 1 – GUM STAND ROAD / KING BRANCH ROAD/GNATTY BRANCH ROAD

The first subarea is the Spur's intersection with Gum Stand Road/King Branch Road/Gnatty Branch Road (figure 1). Gum Stand Road is located west of the Spur and provides access to/from the Spur southbound. King Branch Road and Gnatty Branch Road are located east of the Spur with on-ramps to the northbound Spur. A bridge across the river, located between the Spur lanes, provides access to the Spur north from Gum Stand Road and to the Spur south from King Branch Road and Gnatty Branch Road. The location of the bridge creates a difficult pattern for drivers entering and exiting the bridge (e.g., a driver on the bridge attempting to turn north onto the Spur needs to be aware of vehicle traffic traveling northbound, including those drivers turning left in front of them onto the bridge). A similar situation exists in the southbound. Similarly, motorists on the bridge attempting to access Gum Stand, King Branch, or Gnatty Branch Roads are forced to quickly merge across two lanes to depart the Spur.

In subarea 1, the Park would convert the existing bridge to a contra-flow bridge where vehicles travel to the left of opposing traffic, making left-turn movements to and from the bridge via free-flow movements into an acceleration lane (see figure 2). This design would allow vehicles crossing the bridge to turn left onto the Spur without having to stop or cross oncoming traffic. Vertical separation (including concrete islands or delineators) would be installed along the northbound Spur's acceleration lane between the bridge and King Branch Road/Gnatty Branch Road to prevent vehicles from entering the bridge into the wrong lane. The same separation would occur southbound. Signage would alert motorists to the new bridge pattern. Road striping would also indicate the proper lanes to use. To accommodate larger vehicles' turning radii, the acceleration lanes would also be widened. Two retaining walls, one on the interior of the Spur in each direction, would also be required. These retaining walls would be approximately 775 to 840 feet long and 9 to 10 feet tall. Any retaining walls required would use materials that complement the existing aesthetic of the Parkway.

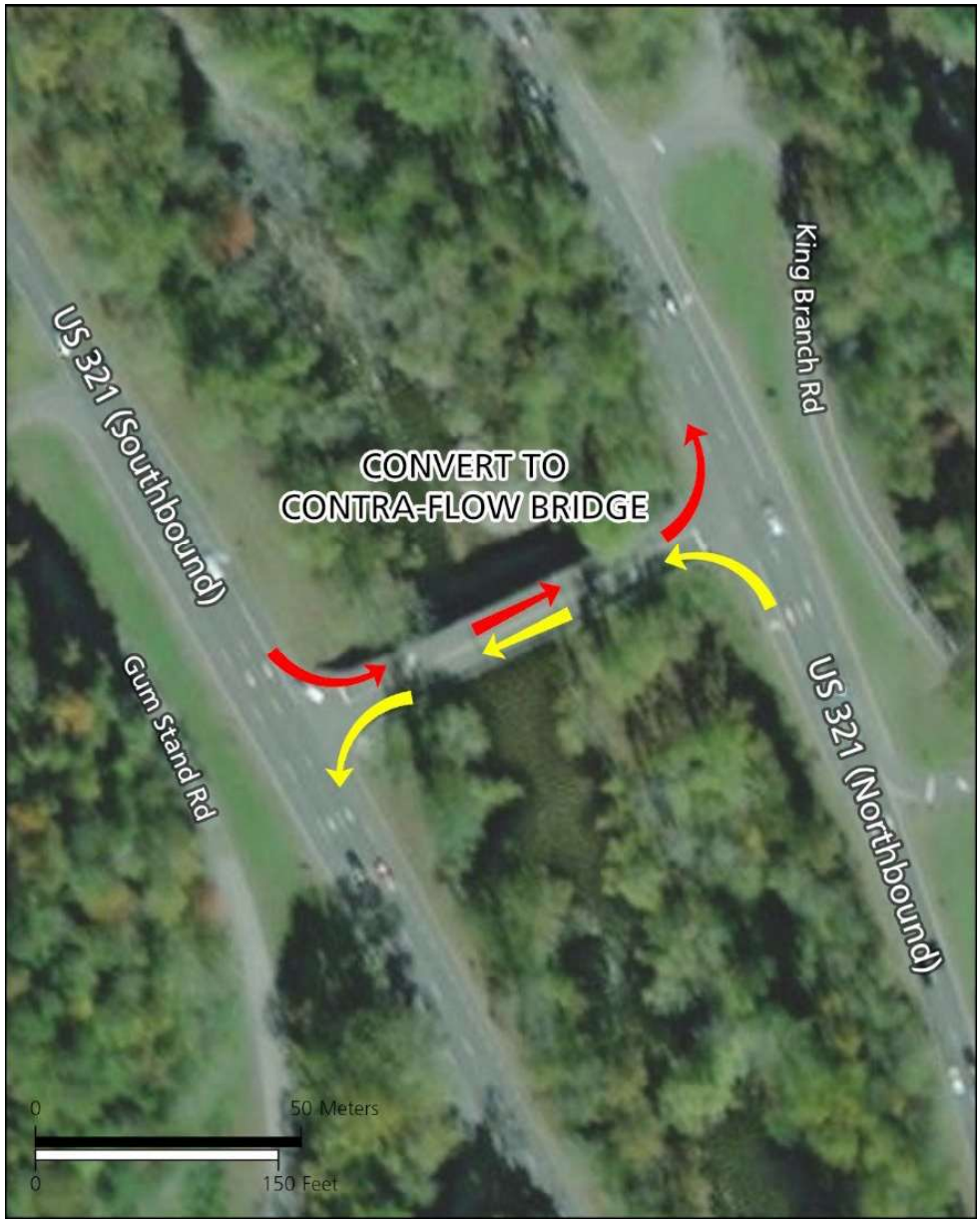

FIGURE 2: ALTERNATIVE 2—SUBAREA 1 PROPOSED CONTRA-FLOW BRIDGE

SUBAREA 2 – HUSKEY GROVE ROAD / FLAT BRANCH ROAD

Subarea 2 is located at the intersection of the Spur with Huskey Grove Road and Flat Branch Road (figure 1). Huskey Grove Road travels along a bridge over the West Prong and the southbound Spur. It connects to Flat Branch Road at an intersection 200 feet west of the southbound Spur where an on/off-ramp to the Spur is provided. East of the West Prong, Huskey Grove Road continues south, paralleling the Spur and north to on/off-ramps connecting with the northbound Spur. Existing on-ramps and acceleration lanes at Huskey Grove Road and Flat Branch Road are shorter than required for the speed limit on the Spur. This results in vehicles stopping on the on-ramps, instead of yielding, and creates unsafe traffic conditions.

At subarea 3, the Park would extend the acceleration lanes along the west side of both the southbound and northbound Spur (figure 3) to allow traffic entering the Spur to yield to oncoming traffic instead of coming to a full stop. Extending the acceleration lanes would allow vehicles additional time to increase their speed to meet the flow of traffic while increasing their line of sight to merge into traffic. Extending the northbound acceleration lane by approximately 820 feet would require 1 acre of disturbance and removal of existing vegetated areas, including grass and several small trees. A retaining wall, approximately 160 feet long and 8 feet tall, would be needed. Extending the southbound acceleration lane by approximately 800 feet would require approximately 1.4 acres of disturbance, including cutting into the rockface to accommodate a 775-foot-long and 25-foot-tall retaining wall adjacent to the roadway.

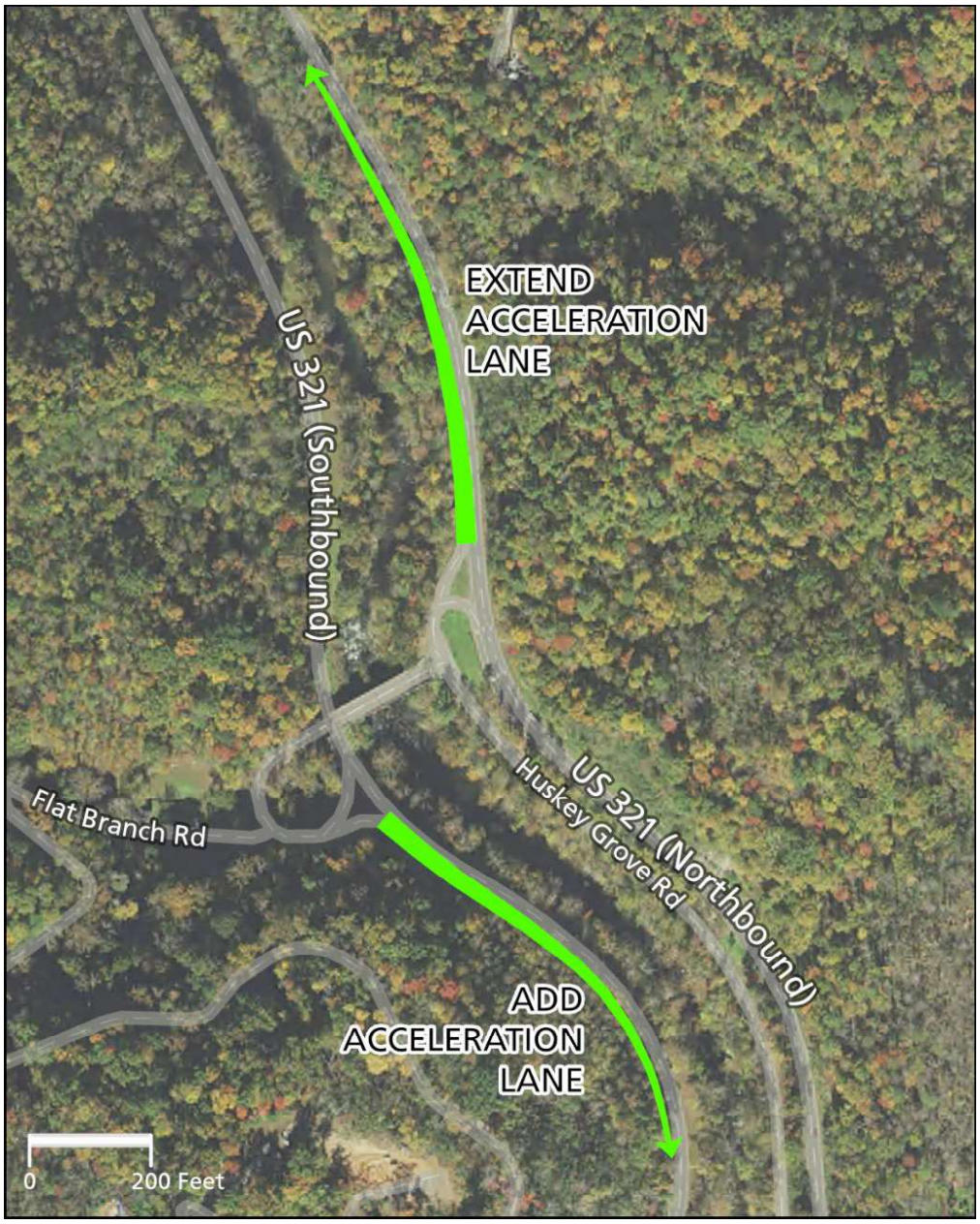

FIGURE 3: ALTERNATIVE 2—SUBAREA 2 PROPOSED ACCELERATION LANES

SUBAREA 3 – WILEY OAKLEY DRIVE

Subarea 3 includes the intersection of the Spur with Wiley Oakley Drive, which runs perpendicular to the Spur across West Prong (figure 1). The Gatlinburg Welcome Center is about 200 feet west of this intersection. East of the Spur, the roadway continues as Little Smoky Road and intersects with North Mountain Trail. The Wiley Oakley Drive bridge is heavily used because of the location of the welcome center on one side and a private resort development on the other. Traffic backups on the bridge can be significant for motorists turning left or continuing straight.

At subarea 3, the Park would construct a flyover bridge to provide a grade-separated interchange to eliminate vehicles crossing both lanes of the Spur, reduce the number of left-hand turn movements, and allow motorists to merge onto the Spur more easily. Figure 4 displays the location of the flyover bridge and alterations to the existing traffic patterns. The flyover bridge would be approximately 450 feet long and would provide at least 16 feet of vertical clearance over the Spur for larger vehicles. A retaining wall, approximately 30 to 40 feet long and 5 to 7 feet tall, would be needed.

The flyover bridge would eliminate turning movements from the Spur mainline in this subarea, and all turns would instead use the flyover bridge with associated acceleration lanes. The existing bridge structure would be removed. The existing bridge currently includes local utilities, including a 4-inch gas line, an 8-inch sewer line, and up to an 8-inch water line. The utilities would be relocated under the river using open-trench construction near the existing bridge. The water and sewer lines would be placed approximately 20-feet apart from each other with the gas line between. Open-trench construction would be used to install concrete encased pipes across approximately 75 linear feet of the river crossing. Instream work would be conducted in-the-dry, using coffer dams or a similar solution for temporary water diversion. The total width of the disturbance for all three lines combined would be approximately 45 feet, for a total disturbance of 3,375 square feet or 0.08 acres. Directional boring of the river crossing was considered but determined not to be feasible because of the presence of large boulders/aggregate. The existing sewer line is a gravity line that flows from east to west to the sewer plant. As a result of the relocation, the sewer line would also require construction of a new pump station, which would disturb up to 2,500 square feet near the intersection of Little Smoky Road and Westgate Resorts Roads adjacent to the northbound Spur. The pump station could be located in or outside the Park boundary; however, NPS prefers to have non-park infrastructure located outside the Park boundary. The pump station would be located outside the 100-year floodplain.

FIGURE 4: ALTERNATIVE 2—SUBAREA 3 PROPOSED FLYOVER BRIDGE

CONSTRUCTION

Table 1 provides the total area of disturbance for the proposed action. Overall, the proposed action would require approximately 7.5 to 8 acres of disturbance during the construction period. While the proposed elevated bridge in subarea 3 would span the 100-year floodplain of the West Prong, the road/bridge footprint and potential impacts on floodplains in this area would be minimized by using relatively steep side slopes, engineered fill, or other structural design elements. In addition to the acres of disturbance provided in table 1, under the proposed action, NPS would remove the existing bridge at Wiley Oakley Drive, which would remove 0.67 acres of existing road and bridge infrastructure in the floodplain, although a portion of that disturbance includes the elevated bridge structure. The piers on the existing bridge would require approximately 0.088 acres of temporary disturbance within the floodplain to remove.

TABLE 1: AREA OF DISTURBANCE FOR THE PROPOSED ACTION

Location	Area of Disturbance (acres)[3]		
	Temporary[1]	Permanent[2]	Total
Floodplain			
Subarea 1	0.69	0.02	0.71
Subarea 2	0.01	0	0.01
Subarea 3	0.36	0.2	0.56
Bridge and Road Removal in Subarea 3 (not included in total)		-0.67	-0.67
Floodplain Total	**1.06**	**0.22**	**1.28**
Non-Floodplain			
Subarea 1	0.81	1.17	1.98
Subarea 2	1.84	0.6	2.43
Subarea 3	1.27	1.71	3.73
Non-floodplain Total	**3.91**	**3.48**	**7.39**
Project Total			
Subarea 1	1.5	1.19	2.69
Subarea 2	1.84	0.6	2.44
Subarea 3	1.63	1.91	3.54
Project Total	**4.97**	**3.7**	**8.66**

(1) Temporary disturbance includes areas disturbed by earth-moving activities (cut and fill), vegetation clearing, and equipment operation during construction that would be revegetated in accordance with a project-specific restoration plan once construction is complete.
(2) Permanent disturbance includes areas that would be paved (road and bridge surfaces) or hardened (retaining walls, riprap) during construction.
(3) Area of disturbance does not include corridor-wide improvements because they would all be located outside of the floodplain.

Floodplains and Existing Site-Specific Flood Risks

The project area is located within the Lower French Broad River (06010107) Hydrologic Unit Code (HUC) watershed (509,776 acres). At a finer scale, the project area is within the West Prong Little Pigeon River subwatershed (12-digit HUC 060101070206) between Gatlinburg, Tennessee, and Pigeon Forge, Tennessee (NWQMC 2021). Beyond Pigeon Forge, the West Prong merges with the main stem of the Little Pigeon River in Sevierville and then flows until it meets the French Broad River below Douglas Lake. The West Prong can overflow its bank during localized high flow events. Floodplain values include the ability of the floodplain to absorb increased water flows, recharge groundwater, and provide floodplain habitat. Floodplains in the project area provide wildlife habitat for wetland and riparian species, allow for flood storage, and facilitate conveyance.

The Federal Emergency Management Agency (FEMA) defines Zone A and Zone AE floodplains as areas with a 1% annual chance of flooding (i.e., located within the 100-year floodplain), but notes Zone A lacks detailed analyses defining base flood elevations while base flood elevations are defined in Zone AE

(FEMA 2020). Portions of the existing southbound Spur are located within the West Prong floodplain classified as Zones A and AE (figure 1). The proposed action would affect floodplain areas classified as Zone A and Zone AE, as displayed in figures 5 through 7. The portions of the project area outside the West Prong Zone A and Zone AE floodplains are classified as Zone X. These areas have minimal flood hazard and are above the 500-year flood level (FEMA 2019). Landcover upstream of the project area includes developed areas of medium to high density (Gatlinburg) and steep areas of deciduous and evergreen forest (USGS 2021). Floods of potential consequence at the West Prong generally occur with some warning. In general, a prolonged period of intense rain for about 12 to 24 hours could create extreme flood conditions. USGS gage 03469251 West Prong Little Pigeon River near Gatlinburg, TN, records flow conditions within the West Prong just above the project area (USGS 2022). Although the West Prong has not flooded onto the Spur roadway in recent memory, Gatlinburg city officials maintain the city's emergency siren system for extreme flooding conditions.

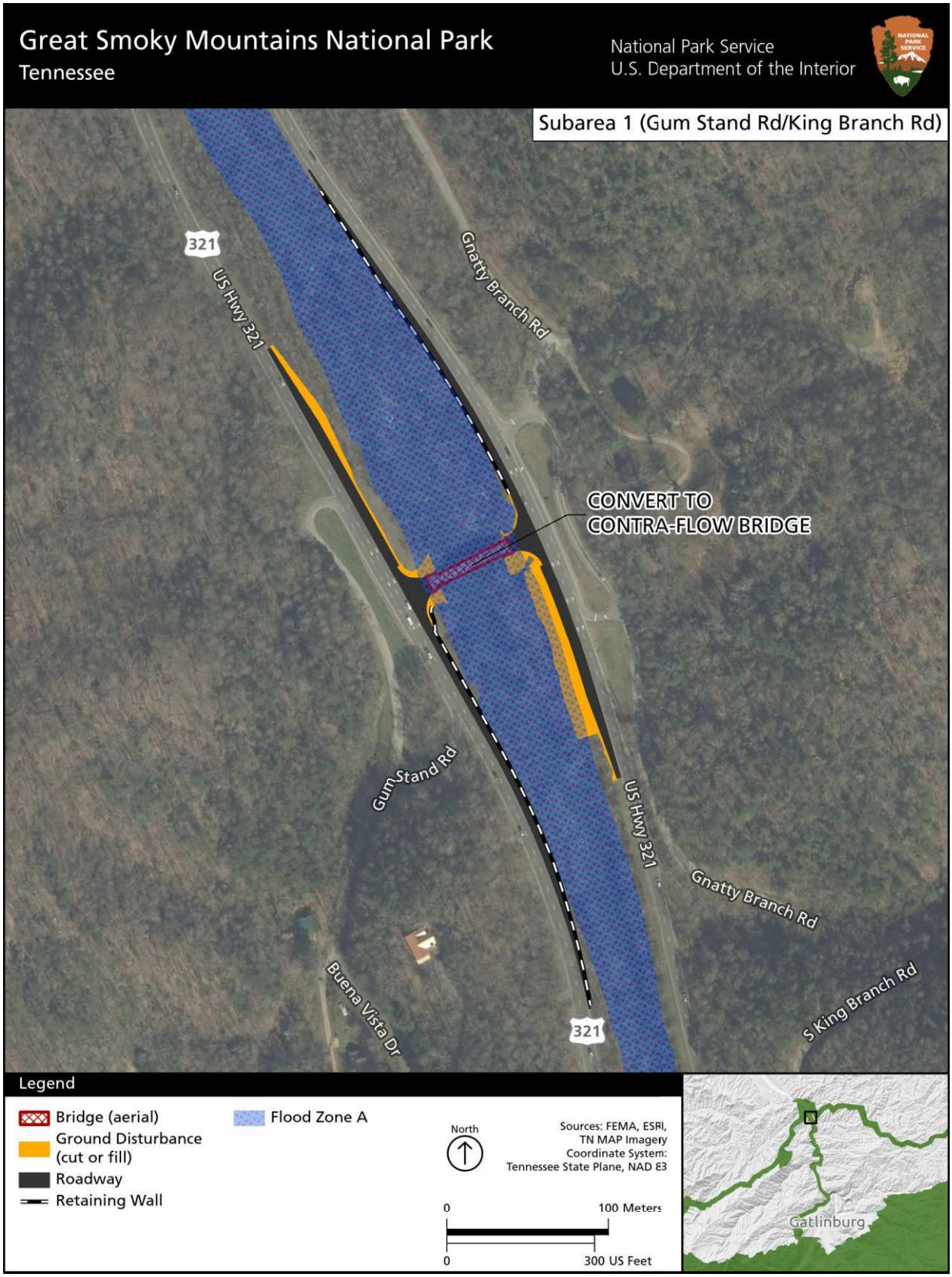

FIGURE 5: ALTERNATIVE 2—SUBAREA 1 FLOODPLAIN AND PROPOSED ACTION

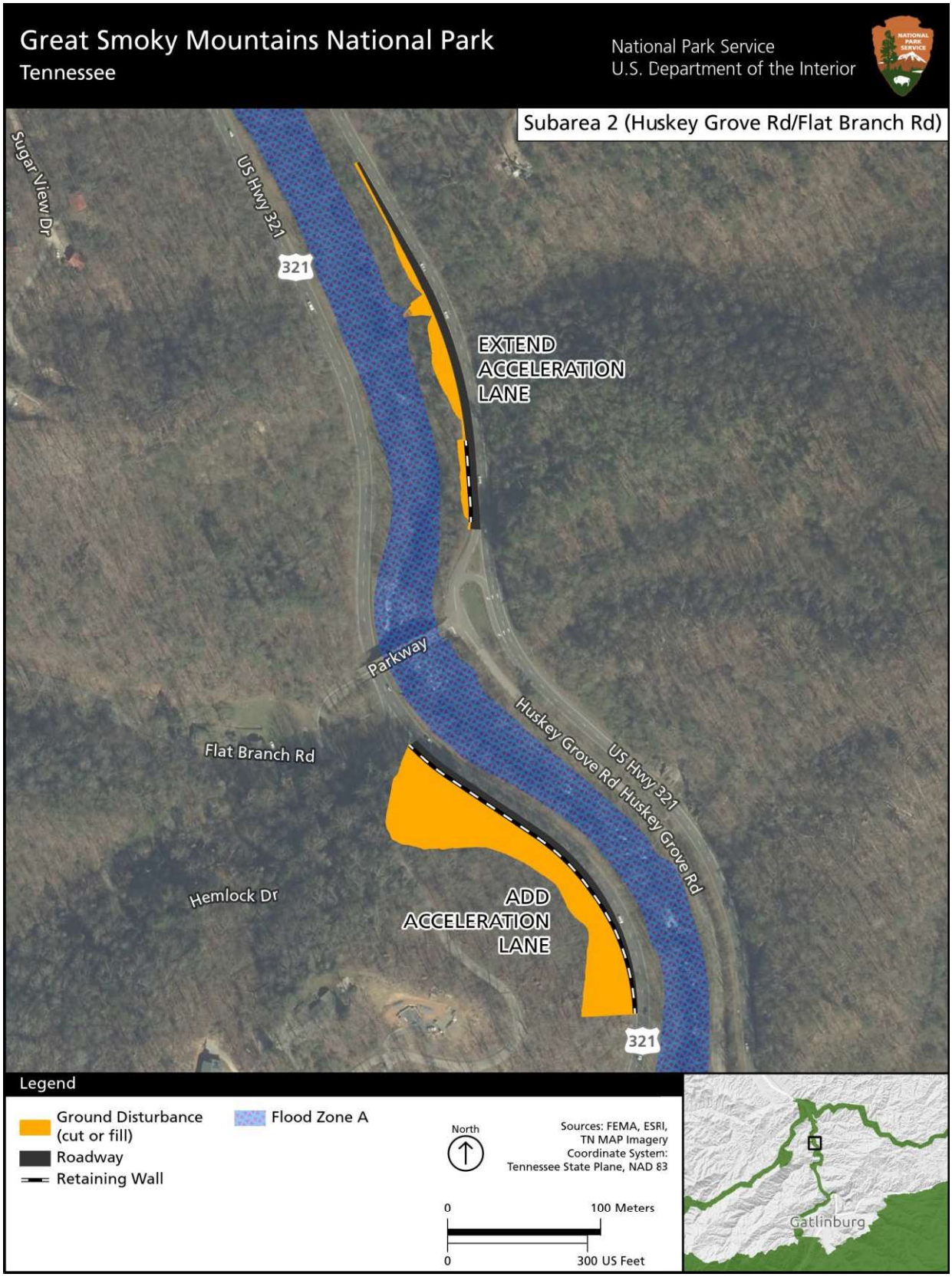

FIGURE 6: ALTERNATIVE 2—SUBAREA 2 FLOODPLAIN AND PROPOSED ACTION

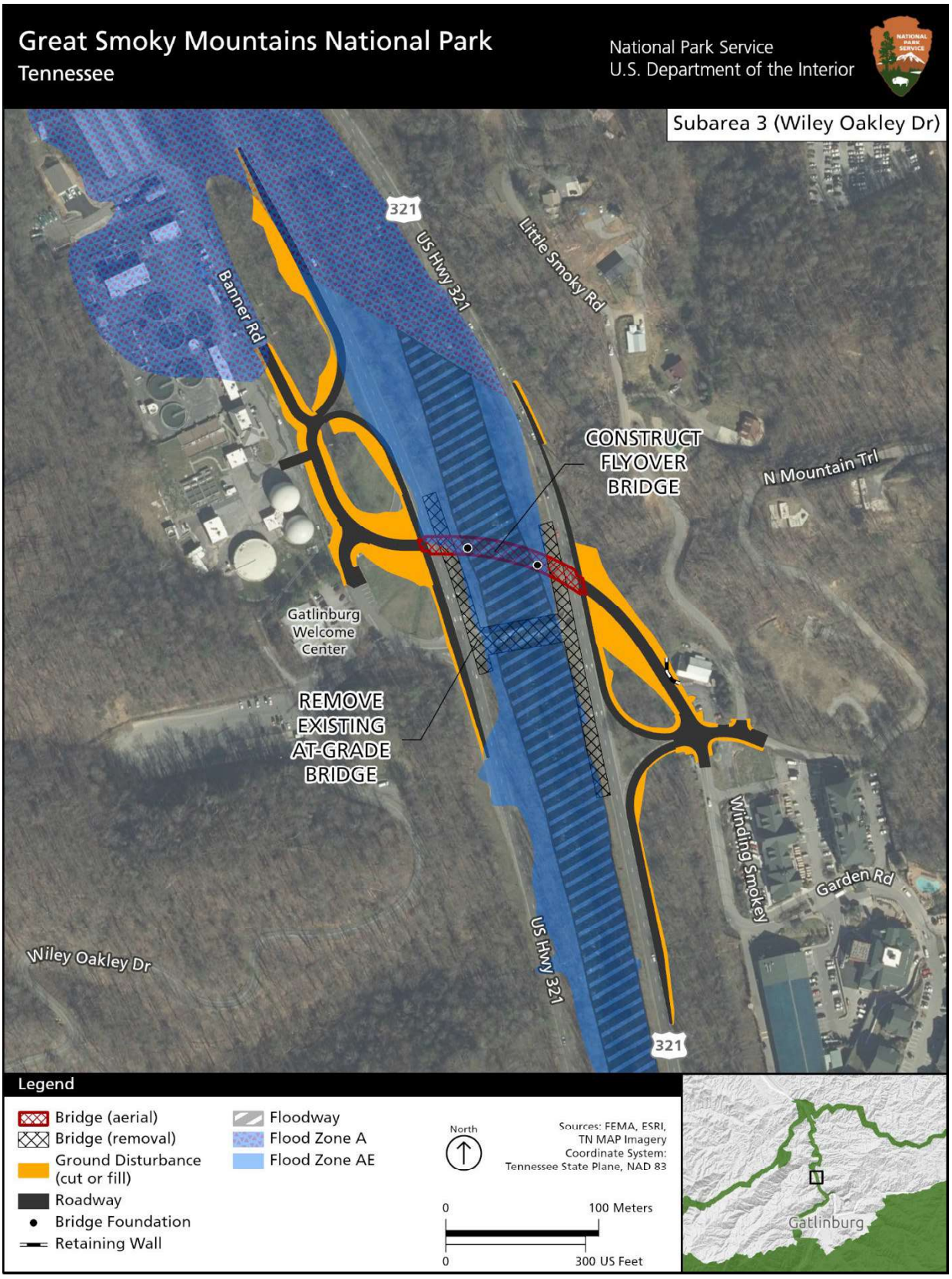

FIGURE 7: ALTERNATIVE 2—SUBAREA 3 FLOODPLAIN AND PROPOSED ACTION

Justification for the Use of the Floodplain

The potential impact on floodplains under the proposed action is justified because none of the other proposed alternatives would eliminate impacts on floodplains. The narrow transportation corridor and the Foothills Parkway boundary make construction of improvements at the three identified intersections along the Spur impossible without the use of floodplains. In addition, as noted above, a portion of the southbound Spur at subarea 3 was constructed in floodplain Zones A and AE. As such, any roadway improvements in this area would result in impacts on the floodplain. Ultimately, improvements are needed to reduce cross-traffic turning movements and congestion and improve flow. Given the location of the West Prong between the north and southbound lanes and the fact that portions of the southbound Spur are already located within the floodplain, it is not feasible to improve LOS while completely avoiding the floodplain.

Alternatives

The EA prepared for this project considered four alternatives, including the no action alternative (alternative 1), the proposed action described above (alternative 2), and two other action alternatives (alternative 3 and alternative 4). While the action alternatives included the development of the same corridor-wide improvements and improvements at subareas 1 and 2, the specific improvements in subarea 3 varied. Impacts on floodplains would be the same across all alternatives for subareas 1 and 2, because there is only one action alternative in those locations. As a result, every action alternative would have potential impacts on floodplains, but these impacts would vary slightly across the three action alternatives at subarea 3.

Under the no action alternative, there would be no change to the existing corridor or intersections along the Spur. Congestion and safety concerns are expected to continue. Alternatives 3 and 4 are described in chapter 2 of the EA. Compared to the proposed action, floodplain impacts would be 0.90 acres greater under alternative 3 and 0.56 acres lower under alternative 4. Alternative 4, however, would only address a reduction in unsafe turning movements and would not reduce congestion. Furthermore, it would increase travel time and distances, including for emergency vehicles.

Floodplain Impacts

Potential Risks to Human Health and Safety

The proposed action does not include construction of habitable structures in the floodplain and is not expected to change or increase the use of the floodplain. The new flyover bridge in subarea 3 would be higher than the existing bridge, and the old bridge and associated piers would be removed, resulting in less infrastructure within the West Prong. Additionally, these improvements would reduce congestion and improve access for emergency response, which could reduce overall risk to human health and safety. The proposed bridge over the West Prong at subarea 3 would be designed to ensure it is not over topped during a 100-year flood event and would span the 100-year floodplain. Two smaller piers, approximately 6 feet in diameter, would be located within the 100-year floodplain but outside the West Prong. Construction of retaining walls, bridges, and the addition of fill in each subarea would not constrict flow or increase water surface elevations upstream. Flood risks to human health and safety would not change from existing conditions under the proposed action.

Potential Risks to Property

In accordance with NPS Director's Order 77-2 and *Procedural Manual 77-2*, the proposed action constitutes a Class I Action (location or construction of administrative, residential, warehouse, and

maintenance buildings and non-excepted [overnight] parking lots, or other human-made features if they lie within the 100-year floodplain). Specific project elements that would be in the floodplain and potentially damaged by a flood include retaining walls, cut and fill, and roadway improvements, as detailed below.

Subarea 1

- Cut and fill: No cut within the floodplain. Addition of 0.69 acres of fill within the floodplain.
- Retaining walls: Northbound, the 840-foot retaining wall would be located on the boundary with the floodplain. Southbound, the 840-foot retaining wall would be located just outside the floodplain boundary, except for the northern-most 20 feet, which would be adjacent to the bridge wingwall.
- New roadway: 0.02 acres of permanent infrastructure for the bridge wall widening, where the Spur is already located within the floodplain.

Subarea 2

- Cut and fill: No fill within the floodplain. Removal of 0.01 acres of cut within the floodplain.
- Retaining walls: None within the floodplain.
- New roadway: None within the floodplain.

Subarea 3

- Cut and fill: No fill within the floodplain. Removal of 0.36 acres of cut within the floodplain located adjacent to the existing road but not adjacent to the river prism.
- Retaining walls: None within the floodplain.
- New roadways: 0.20 acres within the floodplain, which is within or adjacent to the existing roadway and includes approximately 0.01 acres for two bridge foundations which would be located outside of the river prism but within the floodplain.

Specific new capital investments within the floodplain under the proposed action would be limited to the roadway. NPS would place the new bridge above the floodplain and remove the existing at-grade bridge. The flyover bridge would be higher than the existing bridge and would use piers within the floodplain, which would minimally restrict flood conveyance compared to the existing in-water piers and would likely be an improvement from existing conditions and reduce risks to property. Additionally, increased flooding at the proposed bridge location at subarea 3 is not expected to occur because the bridge would be designed to ensure a "no-rise condition" in upstream water surface elevations. As such, risks to property would be minimized by following Federal Highway Administration *Design Standards for Highways in National Flood Insurance Program Mapped Floodplains* (FHWA 1986).

POTENTIAL RISKS TO FLOODPLAIN VALUES

Floodplains provide an array of natural and physical resource values in the Park, including natural flood control, erosion control, groundwater recharge, habitat for vegetation and wildlife, and recreational opportunities. Ground disturbance and vegetation clearing in and adjacent to the floodplain during construction would temporarily increase stormwater runoff volume, soil erosion, and sediment transport, which would affect floodplain values. Including potential disturbance associated with the corridor-wide improvements, the total area of disturbance for the proposed action would be 10.67 acres; 1.28 acres of disturbance would be in the floodplain (table 1). Short-term impacts on floodplain values would be minimized during construction by implementing sediment and erosion control measures consistent with the requirements and recommendations contained in the Tennessee Department of Environment and Conservation's (TDEC) *Tennessee Erosion and Sediment Control Handbook* (TDEC 2012). NPS would file a Notice of Intent with TDEC to obtain coverage under the General National Pollutant Discharge Elimination System Permit for Discharges of Stormwater Associated with Construction Activities (Permit

Number TNR100000). A site-specific stormwater pollution prevention plan would be developed in accordance with Part 3 of the General Permit.

Instream work associated with the removal of the Wiley Oakley Bridge and relocation of existing utilities from the bridge to beneath the West Prong would also cause intermittent and localized increases in turbidity. After bridge removal and utility relocation are complete, the bottom of the river would be restored to natural or existing conditions. Applicable permits from the US Army Corps of Engineers and TDEC would be obtained in accordance with sections 404 and 401 of Clean Water Act prior to conducting instream work. Compliance with permit conditions and implementation of best management practices outlined in appendix 2 of NPS *Procedural Manual 77-1* (NPS 2016) would minimize potential impacts on surface waters. Utility lines would be encased in concrete beneath the river bottom to ensure durability.

In addition to temporary impacts during construction, removal of vegetation and creation of new impervious surfaces would result in long-term impacts on floodplain values including natural flood control, erosion control, and habitat. Construction would affect approximately 1.28 acres of vegetation in the floodplain (table 1), including both grass and riparian vegetation along the river. Of the 1.28 acres, 0.22 acres would be permanently removed. Floodplain areas temporarily disturbed during construction (1.06 acres) would be reseeded with a Park-approved seed mix following construction and restored in accordance with a project-specific revegetation plan.

Together with the corridor-wide improvements, the three subareas would contribute 2.04 acres of new impervious surface in the project area, including 0.22 acres of impervious surface within the floodplain, which would be within or adjacent to the existing Spur. While new impervious surface would be added, the project would also remove 0.92 acres of impervious surface associated with the removal of existing roads and bridge, resulting in a net increase of 1.07 acres. The project design phase would include development of stormwater drainage plans and stormwater management practices to minimize potential impacts on floodplain values from impervious surfaces.

Mitigation

FLOODPLAIN RISK MITIGATION

The following floodplain risk mitigation measures would be implemented under the proposed action:

- Potential risks to human health and safety would be mitigated with bridge design to ensure the bridge is above the level of a 100-year flood event. Further, the Park may monitor weather data from the National Weather Service and existing weather stations in the Park during forecasted flood events. The existing streamflow gage on the West Prong above Gatlinburg (continuous gage approximately 3.25 miles upstream of the subarea 3, US Geological Survey station 03469251) would be used to monitor stream levels, forecast potential flooding, and inform flood evacuation stages. The US Geological Survey gage has a feature called WaterAlert that can be set to send flow and gage height data via text or email to a user-defined address. If a pre-flood evacuation of the area becomes necessary, the Park's Incident Command System may be activaitred to implement closures. The existing emergency notification system public warning sirens located in Gatlinburg and the Park would continue to operate as part of the city of Gatlinburg's all hazard notification system.
- Potential risks to property would be mitigated by following the Federal Highway Administration's *Design Standards for Highways in National Flood Insurance Program Mapped Floodplains* (FHWA 1986).
- Risks to floodplain values would be minimized during construction by implementing sediment and erosion control measures consistent with the requirements and recommendations contained in the *Tennessee Erosion and Sediment Control Handbook* (TDEC 2012). NPS would file a Notice of Intent

with TDEC to obtain coverage under the General National Pollutant Discharge Elimination System Permit for Discharges of Stormwater Associated with Construction Activities (Permit Number TNR100000). A site-specific stormwater pollution prevention plan would be developed in accordance with Part 3 of the General Permit.

- Risks to floodplain values associated with instream water work would be mitigated by restoring any disturbed areas to natural or existing conditions and complying with applicable permits and best management practices.
- Risks to floodplain values associated with clearing of riparian forest vegetation would be mitigated by developing and implementing a revegetation plan.
- Risks to floodplain values associated with impervious surfaces would be mitigated through design of stormwater management practices to minimize stormwater runoff quantity and improve stormwater runoff quality.
- The structures and facilities would be designed to be consistent with the intent of the standards and criteria of the National Flood Insurance Program (44 Code of Federal Regulations Part 60).

Conclusions

The proposed action would include safety improvements to the Spur, and some of the improvements would be within the regulatory 100-year floodplain of the West Prong. The proposed action would not alter flood elevations or increase flood risks to human health and safety. Portions of the existing roadway are within the floodplain, and no practical alternatives exist for non-floodplain sites. NPS concludes that mitigation measures contained in this document would minimize risk and that there would be no unacceptable risk to human health and safety, unacceptable impacts on property, or substantial long-term adverse impacts on floodplain values. Therefore, NPS finds the proposed action would be consistent with Executive Order 11988: *Floodplain Management* and NPS Director's Order 77-2: *Floodplain Management*.

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Acronyms

EA	environmental assessment
FEMA	Federal Emergency Management Agency
HUC	Hydrologic Unit Code
NPS	National Park Service
Park	Great Smoky Mountains National Park
SOF	Statement of Findings
Spur	Gatlinburg Spur
TDEC	Tennessee Department of Environment and Conservation
West Prong	West Prong of the Little Pigeon River

ATTACHMENT E - MEMORANDUM OF AGREEMENT

MEMORANDUM OF AGREEMENT
BETWEEN THE
NATIONAL PARK SERVICE AND
TENNESSEE HISTORICAL COMMISSION

PURSUANT TO 36 CFR § 800.6
regarding the
IMPROVEMENTS TO THE GATLINBURG SPUR,
GREAT SMOKY MOUNTAIN NATIONAL PARK, SEVIER COUNTY, TENNESSEE
Project#: SHPO0001128, PEPC #91632

WHEREAS, the National Park Service (NPS) proposes corridor-wide and intersection-specific improvements of the Gatlinburg Spur (Spur) as described in Appendix A (Section 106 Consultation Correspondence), and has consulted with the Tennessee Historical Commission/Tennessee State Historic Preservation Officer (SHPO) in accordance with Section 106 of the National Historic Preservation Act (NHPA), as amended (54 USC §306108), and its implementing regulations found in 36 CFR Part 800 (56 USC §306108); and

WHEREAS, the NPS in consultation with the SHPO has defined the area of potential effects (APE) as depicted in Appendix A (Section 106 Consultation Correspondence), which encompasses the potential for direct, indirect, and cumulative effects associated with all components of the undertaking; and

WHEREAS, the APE includes the Spur which the NPS and SHPO determined to be eligible for listing in the National Register of Historic Places (NRHP) as a historic district under Criterion A (property is associated with events that have made a significant contribution to the broad patterns of our history); and

WHEREAS, the archeological survey of the APE has been conducted to Tennessee state standards, and the SHPO has concurred with the survey, which identified no archeological sites within the APE that are eligible for listing in the NRHP; and

WHEREAS, the NPS and SHPO concur that the undertaking will adversely affect contributing features of the Gatlinburg Spur Historic District; and

WHEREAS, the NPS invited the Eastern Band of Cherokee Indians, Cherokee Nation, United Keetoowah Band of Cherokee Indians in Oklahoma, Eastern Shawnee Tribe of Oklahoma, Muscogee (Creek) Nation, Poarch Band of Creek Indians, and Catawba Indian Nation to participate in the NHPA Section 106 process, to which no request to participate in the Section 106 process as a consulting party was provided; and

WHEREAS, the NPS sought and considered the views of the public on the proposed undertaking during three 30-day public comment periods (April to May 2020, August to September 2021, and May to June 2022) and all comments received were considered during continued planning for the undertaking; and

WHEREAS, in compliance with Section 106 of the National Historic Preservation Act (54 U.S.C. § 306108) and its implementing regulations, 36 CFR Part 800, the NPS has consulted with the SHPO to develop this Memorandum of Agreement (MOA) as the means to resolve adverse effects on historic properties; and

WHEREAS, in accordance with 36 CFR § 800.6(a)(1), NPS has notified the Advisory Council on Historic Preservation (ACHP) of its adverse effect determination with specified documentation on April 28, 2023, to which no request to participate pursuant to 36 CFR § 800.6(a)(1)(iii), was provided; and

NOW, THEREFORE, the NPS and the SHPO agree that the undertaking shall be implemented in accordance with the following stipulations that consider the effects of the undertaking on historic properties.

STIPULATIONS

I. MITIGATION MEASURES

A. **Photographic Documentation:** Photographic documentation will be prepared to record the existing conditions of the Spur prior to the undertaking, including the potentially contributing features described herein that may be altered. This documentation will provide a description of each feature, its condition, and its relationship to other features along the Spur. The documentation will be detailed enough to record the Spur's existing conditions. Documentation will be submitted to the Tennessee SHPO within 45 days of acceptance by NPS.

B. **Historic Resource Study for the Spur:** This documentation will consist of an in-depth investigation into the Spur's history, design, and cultural significance. The study will cover various aspects, such as the assessment of the Spur's character-defining features, identification of associated historical events or persons, and an analysis of architectural styles and construction techniques used. The study will also provide sufficient information to understand the Spur's historical context, chronological development, and distinctive attributes. Additionally, the documentation will incorporate a visual record, photographic documentation, maps, and plans, of the character-defining features and any associated landscape elements of the Spur. A Draft Historic Resource Study will be submitted to the Tennessee SHPO for a 30-day review and comment period and the Final Historic Resource Study will be submitted to Tennessee SHPO within 45 days of acceptance by NPS.

C. **Cultural Landscape Inventory (CLI):** The NPS will survey the landscape to identify and document the natural and built features along the entire length of the Spur that contribute to the road's historic significance. The CLI will also include a detailed description of the character-defining features of the Spur and their significance in the history of the region. A Draft CLI will be submitted to the Tennessee SHPO for a 30-day review and comment period and the Final CLI will be submitted to Tennessee SHPO within 45 days of acceptance by NPS.

D. **As-built Drawings:** The NPS will submit as-built drawings for the new flyover bridge and the modified Gum Stand Road Bridge to Tennessee SHPO within 45 days of acceptance by NPS.

E. **Nomination to the National Register of Historic Places:** The NPS will nominate the Spur to the National Register of Historic Places in accordance with Tennessee Historical Commission procedures.

F. **Professional Qualifications and Standards:** The NPS will ensure that all work carried out in accordance with this agreement shall be done by or under the direct supervision of appropriate historic preservation professionals who, at a minimum, meet the *Secretary of the Interior's Professional Qualifications Standards* for archaeology, history, architectural history, or historic architecture, as appropriate (48 FR 44738-44739). All actions taken shall meet the Secretary of Interior's Standards for that activity consistent with 36 CFR § 800.2(a)(1). The NPS will ensure that contractors retained for services also meet these professional qualifications standards.

II. INADVERTENT DISCOVERY

If previously unknown cultural resources are discovered during construction, all work in the immediate vicinity of the discovery shall be halted and the SHPO and Tribal Historic Preservation Officers (THPOs) shall be notified immediately. Work shall not resume until the NPS determines the resources have been identified and documented and an appropriate mitigation strategy developed, if necessary, in accordance with pertinent laws and regulations.

III. DISPUTE RESOLUTION

Should any Signatory to this MOA object within 30 calendar days to actions or plans for review pursuant to this MOA or dispute the completion of the terms of this agreement, NPS shall consult with the objecting party to resolve the objections. If NPS determines that the objection cannot be resolved, NPS shall forward all documentation relevant to the objection to the ACHP and request the ACHP's comments pursuant to 36 CFR 800.2(b)(2).

ACHP comments provided in response to such a request shall be considered by the NPS before NPS reaches a final decision on the dispute. If the ACHP does not provide comments regarding the dispute within 30 calendar days after receipt of a request for assistance pursuant to 36 CFR 800.2(b)(2), NPS may implement its proposed resolution or render a decision regarding the dispute.

IV. AMENDMENT

Any Signatory to this agreement may request that the other Signatories consider amending it if circumstances change over time and warrant revision of the stipulations. Except in the case of amendments addressing resolution of disputes pursuant to Section III of this MOA, amendments shall be executed in writing and shall be signed by all Signatories in the same manner as the original MOA.

V. DURATION

This MOA shall be in effect for a period of ten (10) years from the date of its execution, unless extended in writing by the Signatories before its expiration.

VI. TERMINATION

If any Signatory determines that the terms of this MOA cannot be met or are not being carried out, the Signatory making the determination shall consult with the other Signatory to seek a resolution. If the Signatories cannot agree on a resolution, either may terminate this MOA by providing written notice to the other Signatory and the ACHP. In the event of termination, the NPS shall consult with the SHPO and the ACHP to develop a new agreement or take other appropriate actions in accordance with 36 CFR § 800.6(c) to resolve the undertaking's adverse effects on historic properties.

VII. ANTI-DEFICIENCY ACT

The NPS's obligations under this MOA are subject to the availability of appropriated funds, and the stipulations of this MOA are subject to the provisions of the Anti-Deficiency Act (31 USC Section 1341). The NPS will make reasonable and good faith efforts to secure the necessary funds to implement this MOA in its entirety. If compliance with the Anti-Deficiency Act alters or impairs the NPS's ability to implement the stipulations of this MOA, the NPS will consult in accordance with the amendment and termination procedures found in Stipulations VII and VIII of this agreement.

Execution of this MOA and implementation of its terms evidence that the NPS has considered the effects of this undertaking on historic properties and has afforded the ACHP an opportunity to comment on the undertaking and its effect on historic properties. In witness whereof, the Signatories to this MOA through their duly authorized representatives have executed this MOA on the dates set out below, and certify that they have read, understood, and agreed to the terms and conditions of this MOA as set forth herein. The effective date of this MOA is the date of the last Signatory signature affixed to these pages.

SIGNATORIES:

National Park Service, Great Smoky Mountains National Park

ALAN SUMERISKI Digitally signed by ALAN SUMERISKI Date: 2023.05.22 16:15:30 -04'00'

For Cassius M. Cash, Superintendent Date

Tennessee Historical Commission

E. Patrick McIntyre, Jr. Digitally signed by E. Patrick McIntyre, Jr. Date: 2023.05.25 13:15:55 -05'00'

E. Patrick McIntyre, Jr., State Historic Preservation Officer Date