

Adverse impacts associated with the partial-build and build alternatives to TCPs would likely be avoided or minimized through design modifications, such as modifications to roadway designs to provide bridges over existing access routes, realignment of sections of the intersecting access routes to accommodate vehicular access, or by the addition of steps along grade changes between the roadway and access routes and/or the addition of parking areas.

Adverse impacts associated with the partial-build and build alternatives to the AT, a potential historic property, would be reduced, but not entirely eliminated, with the two southern options at the three embayments, elimination of the Southern Option Crossing Fontana Dam, and use of appropriate design practices to minimize road visibility from the trail.

4.2.8.5 Impairment Evaluation

Impairment to the cultural resources of GSMNP and the AT would not occur under the No-Action Alternative, Monetary Settlement Alternative, Laurel Branch Picnic Area, and the Partial-Build Alternative to Bushnell. The Northern Shore Corridor is not likely to impair the cultural resources of GSMNP or the AT based on the information obtained to date. Due to the magnitude of this alternative, it is likely that additional NEPA documentation would be required to address site specific impacts not currently known and to determine detailed mitigation measures as they relate to final design. The impairment determination related to cultural resources would be re-evaluated in such documentation.

4.2.9 Public Health and Safety

Within GSMNP, the Ranger Activities Division oversees all aspects of law enforcement. In addition to law enforcement, rangers provide search and rescue and emergency medical services (EMS); manage the campgrounds, backcountry campsites, and group camping areas; monitor road conditions; and provide fire protection. There are 15 rangers for the North Carolina side of the Park (Dutton 2005). These rangers provide coverage from 7:00 a.m. to midnight during the summer months, with rangers called out to after-hours incidents as needed. No ranger stations are in the study area. Two are in the vicinity of Bryson City, at Oconaluftee and Deep Creek, and another is at Twentymile, west of the study area along NC 28.

Although some rangers are certified emergency medical technicians (EMTs), GSMNP has mutual aid agreements with local responders for medical evacuations. These agreements allow the responders to cross county, but not state, lines.

4.2.9.1 Summary of Impacts

4.2.9.1.1 No-Action

The No-Action Alternative is not expected to have an impact on the public health and safety of GSMNP or the local area surrounding GSMNP.

Clarification of the term "baseline" for this project:

The Partial-Build Alternative to Bushnell and the Northern Shore Corridor include a baseline route, as well as options to that route. Baseline routes and options are detailed in Section 2.5 and shown on Figure 2-8. Baseline routes have been compared to existing conditions. Impact analyses for the options are shown as a difference from the associated baseline route.

4.2.9.1.2 Monetary Settlement

The Monetary Settlement Alternative may impact local police, fire, and EMS protection needs, although impacts would depend on the use of local funds.

4.2.9.1.3 Laurel Branch Picnic Area

Currently, there are some problems with vandalism at the tunnel. The increased use of the day-use area could lead to additional vandalism. The Laurel Branch Picnic Area Alternative would require one additional part-time ranger to assist existing staff with patrol of the day-use area. The cost of this additional staff has been included in operations and maintenance costs, Section 2.10.2. During the summer, there could be a strain on the existing staff due to higher visitation, especially on the weekends. No impacts to public health and safety in the local area surrounding GSMNP are expected.

4.2.9.1.4 Partial-Build Alternative to Bushnell (Primitive and Principal Park Roads)

The occurrences of crimes such as arson, vandalism, the release of live animals, poaching, and drug activity likely would increase with this alternative (Illegal Activities, Section 4.2.5.2.13). The Partial-Build Alternative to Bushnell would require two additional full-time rangers and one seasonal ranger for patrol. The cost of this additional staff has been included in operations and maintenance costs, Section 2.10.2. Public health and safety in the local area surrounding GSMNP might be impacted due to modifications of the mutual aid agreements for medical evacuations.

4.2.9.1.5 Northern Shore Corridor (Primitive and Principal Park Roads)

The Northern Shore Corridor would have the most impact on the public health and safety operations of GSMNP. The increased access would result in visitors getting further into the backcountry, resulting in longer response times for medical emergencies and evacuations. The frequency of crimes, including vandalism to vehicles at the parking areas/pull-offs, likely would increase. The likely popularity of the route among motorcyclists and the low posted speed limit would require speed enforcement. More vehicle accidents likely would occur, requiring rangers to respond and investigate. The western end of this alternative would pose the most problems due to response times. Six additional full-time rangers would be needed to patrol the area. A new ranger station may be required along the new roadway to reduce response times and make patrol of the area easier. The cost of this additional staff has been included in Operations and Maintenance Costs, Section 2.10.2. For the Primitive Park Road, additional full-time rangers might be reduced to three. However, the use of street-legal dirt bikes, which likely would be taken off-road inside GSMNP, would increase with the Primitive Park Road. Public health and safety in the local area surrounding GSMNP might be impacted due to modifications of the mutual aid agreements for medical evacuations.

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4.2.9.1.6 Cumulative Impacts

As mentioned above, poaching, vandalism at the tunnel and other illegal activities have occurred and continue to occur in the Park. As tourism increases and residential populations in the study area surrounding GSMNP continue to grow, these activities would be likely to continue and potentially increase. The limited impacts to public health and safety from the proposed alternatives would have a slight cumulative effect on public health and safety in the study area when added to the effects of past, present and reasonably foreseeable actions in the area.

4.3 Impacts to the Physical Environment

4.3.1 Topography, Geology, and Soils

4.3.1.1 Methodology for Assessing Impacts to Topography, Geology, and Soils

The following paragraphs summarize the impact topics, thresholds and durations as defined for topography, geology, and soils. A more detailed report is included in Appendix I.

To develop the impact thresholds related to the topography, geology, and soils, the following topics were reviewed for each alternative corridor.

- Topographic relief
- Engineering aspects
- Site layout
- Natural drainage patterns
- Views and vistas
- Uniqueness and historical significance
- Environmental aspects
- Rock and soil types and mineral assemblages
- Similar projects occurring under the same geologic conditions

Type

In regards to geology, topography, and soil resources, any disturbance of the existing geology, topography, and soils as a result of the proposed project is considered to be an adverse impact.

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