Mitigation Techniques

Embankment slopes subject to overtopping or otherwise exposed to swiftly moving flood waters may be protected by armoring or vegetative plantings. Higher embankments may be considered to preclude overtopping of roadways. However, any roadways subject to inundation would require warning signs.

4.3.2.4 Impairment Evaluation

Impairment to the floodplains and floodways 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 floodplains and floodways 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 floodplains and floodways would be re-evaluated in such documentation.

4.3.3 Hazardous Materials and Underground Storage Tanks

The No-Action Alternative is not expected to have an impact on the hazardous material and waste sites identified and discussed in Section 3.3.3.

The Monetary Settlement Alternative may impact hazardous material and waste sites; however, impacts are not known because they would depend on the use of local funds.

The Laurel Branch Picnic Area, Partial-Build Alternative to Bushnell, and the Northern Shore Corridor could impact these sites because the alternatives would require construction activities. However, because these three alternatives are entirely within GSMNP and none of the known hazardous material or waste sites are within GSMNP, impacts are unlikely.

Illegal drug activity, especially the manufacturing and dumping of methamphetamine, is a concern. Although made mostly by mixing common household ingredients, a potentially harmful chemical is produced in the process. Therefore, a drug production and dump site would be a potential hazardous waste site. Increased access to GSMNP with the Partial-Build Alternative to Bushnell or the Northern Shore Corridor would increase the potential for manufacturing methamphetamine within the Park.

These assessments are preliminary and are not intended to stand in place of more detailed studies of subsurface soils and groundwater, if warranted, at a later date. Furthermore, if a partial-build or build alternative were chosen, site conditions would be thoroughly assessed prior to construction to ensure that no hazardous materials or waste sites are encountered.

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.

Due to the low potential for impacts to underground storage tanks and most hazardous materials, few cumulative effects were identified. The Partial-Build Alternative to Bushnell and Northern Shore Corridor would provide new access into the Park and add to the total number of potential locations for illegal drug activity, including the manufacturing and dumping of methamphetamines. However, since these alternatives would extend existing Lake View Road and would not connect to other roadways in the Park network they would not increase the occurrence of those illegal activities on other Park roads.

4.3.4 Air Quality

Air quality impacts are likely to occur during construction for the proposed partial-build and build alternatives as a result of the actions of disturbing soil, clearing timber, and paving. Concurrently, the internal combustion engines in the construction equipment used for the project, such as excavators, dozers, and dump trucks, would also contribute emissions of regulated air pollutants within the area of construction. Emissions from these activities are estimated to produce localized impacts on air quality, especially for particulate matter (dust). These impacts were estimated for each partial-build and build alternative using emission rate calculations, emission rate models and dispersion modeling techniques.

Air quality impacts from construction activities are expected to be major and adverse for particulate matter with aerodynamic diameters of up to 10 microns (PM_{10}) sulfur dioxide (SO_2), moderate and adverse for nitrogen oxides (NO_x), minor and adverse for carbon monoxide (CO) and volatile organic compounds (VOC), and negligible and adverse for benzene at various locations for each of the partial-build and build alternatives. These activities may cause reductions in visibility and increased pollutant deposition that are considered major. The location of the highest impacts is likely to occur predominantly within the immediate vicinity of the active construction area (approximately 1,000 feet [300 m]), dissipating rapidly with distance. Consequently, as the active construction area would proceed over the length of the project for the 5-year and 15-year construction periods for the Partial-Build Alternative to Bushnell and the Northern Shore Corridor, respectively, so too would the location of the maximum air quality impacts of these pollutants. Generally, the areas requiring the greatest volume of earthwork (i.e., highest intensity of construction activity) were found to have the highest impacts of these pollutants to air quality. Impacts to visibility would be major and adverse at low elevations near the construction area, but are expected to decline rapidly with height. Impacts to sulfur and nitrogen deposition would be minor and adverse for every partial-build and build alternative.

Once the roadway is open to traffic, the internal combustion engines in the vehicles traversing the road would produce emissions of regulated air pollutants. Emissions of NO_x, VOC and CO from motor vehicles have the greatest potential to impact the local air quality. Using projected traffic volume information, emission rate models, and air dispersion and deposition modeling techniques, the potential concentration impacts from tail-pipe emissions are shown to be negligible for the partial-build and build alternatives. Potential impacts of NO_x and VOC on the total annual emissions in the Park are minor for the full-build Northern Shore Corridor (Primitive and Principal Park Roads) and negligible for all other alternatives. Potential impacts of CO on the total annual emissions in the Park are minor for the full-build Northern Shore

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