

Construction Impacts

108. The assumed length of construction for the Northern Shore Corridor should be 30 years, rather than 15 years.

“Arcadis has at its disposal sufficient information to project a 30 year timeline for construction and not one speck of data to suggest a 15 year timeline. That makes the economic comparisons of the alternatives a complete disaster.”

(Form Letter 14)

“The other shortcoming that I’d like to point out is that the model used for the financial and economic benefits on the alternatives needs to be more reality-based. It’s inadequate to quantify the predictions by simply stating the assumptions on which the predictions rely. For example, a 15-year time line for building the road. The assumption is stated but that doesn’t make it reality-based. . . . There has to be more than one chance in a million that there is some reason to use the assumptions that are used.”

(Individual, Bryson City, NC, Comment 2872 [at the Asheville Public Hearing])

Response: The assumed project time lines for all of the alternatives have been developed to reflect reasonably achievable scenarios and to provide a basis for comparing the alternatives. For the partial-build and build alternatives, factors taken into consideration include the design and engineering, the terrain/topography, the challenges of constructing within a limited width corridor to minimize environmental impacts, and climate factors. For the Northern Shore Corridor, it is assumed that construction would proceed from both ends; therefore, the construction of this alternative would average about 2.5 mi (4 km) of completed road per year, which was deemed reasonable given other roadway project construction experience in the region. The actual schedule for any action alternative may vary as a result of “on the ground” experience or funding.

If a partial-build or build alternative is selected for implementation, the availability of funding is the single most significant factor ultimately determining how quickly construction could be completed. It has been assumed for purposes of this analysis that corresponding funding would be available for all of the alternatives (partial-build, build, and monetary settlement). An accelerated or delayed schedule for any alternative would impact the timing of the onset of long-term tourism and economic benefits for that alternative; however, the assumed schedules provide a reasonable basis for the comparison of economic impacts.

109. The construction footprint for the Northern Shore Corridor is underestimated and the proposed retaining walls are not capable of being constructed.

“The road footprint will occupy far more than the 400 acres estimated by the study team. They have optimistically calculated they can limit the footprint by constructing retaining walls where cuts and fills extend more than 100 feet from the roadway. The steep terrain will make such walls common, and we do not believe [a] wall high enough can be constructed using known construction techniques.”

(Organization [Harvey Broome Group - Tennessee Chapter - Sierra Club], New Market, TN, Comment 3312)

Response: With regard to fill slopes, at the preliminary design stage numerous walls were included, some of substantial height. As more advanced design is undertaken, it may be determined to be more cost effective and environmentally sound to bridge areas that would require unusually high walls. Bridging would not

increase the construction footprint. There are many more deep fills than deep cuts throughout the length of the corridor. In those places where high retaining walls were assumed, additional geologic investigations would be undertaken and it is highly likely that many of the assumed retaining walls would not be required as the cuts would be through rock. It is anticipated that in utilizing a combination of walls, bridging, and rock cuts, the project construction would be contained within a 200-foot footprint.

110. The DEIS does not mention excess rock volumes or adequately evaluate impacts and costs for potential encapsulation sites.

“The DEIS makes no mention of the rock volumes that may need to be moved nor where they might have to be housed. Will such materials be put i[n] storage on NPS lands o[r] outside of the Park area?”
(Individual, Cullowhee, NC, Comment 1839)

“[The DEIS] projects an encapsulation site north of Bryson City. The DEIS writers apparently have not visited or looked at a map of the area north of Bryson City. The area is thickly settled, and it is doubtful that any encapsulation sites could be obtained, except through the exercise of eminent domain. The DEIS casually leaves it to the road building contractor to identify the dump site(s) and get the permits to use them. . . . The DEIS should identify proposed dump sites, estimate their necessary size, and estimate the cost of obtaining them. There is no road network in place for use in hauling waste to a dump site north of Bryson City. The cost of building or re-building a road access has not been calculated.”
(Individual, Walhalla, SC, Comment 1723)

“Moreover, no estimate has been made of the time necessary to obtain dump sites, obtain permits for them, or to build or rebuild the necessary access roads.”
(Individual, Walhalla, SC, Comment 1723)

“The cost estimates prepared for the DEIS do not reflect the cost of acquiring that landfill capacity or the premium that will be required for disposing of potentially hazardous material in a commercial or municipal landfill.”
(Organization [Southern Environmental Law Center], Asheville, NC, Comment 3319)

Response: Embankment fills and excavation volumes are based on calculations using the proposed road design and assuming that all of the excavated material is AP. The present design assumes using as much of the excavated material as possible within onsite encapsulating embankments. However, present calculations indicate a surplus of excavated material over that which can be used in embankments for the Partial-Build Alternative to Bushnell and the Northern Shore Corridor, necessitating location of other sites for wasting or burial (depending on the quality of the material). The Laurel Branch Picnic Area alternative is not projected to generate a surplus volume. Surplus volumes are projected to range from 282,300 yd³ (215,900 m³) for the Partial-Build Alternative to Bushnell (Principal Park Road) to 414,800 yd³ (317,100 m³) for the Northern Shore Corridor (Primitive Park Road). Text discussing the use of excavated soil in encapsulated embankment fills and noting the excess volumes that would be handled offsite for the partial-build and build alternatives has been added to Section 4.3.1.2.

During the final design phase, road alignments and slope configurations may be modified to lessen the impacts associated with the AP rocks as well as to balance the volumes of cut and fill material. While the

surplus volumes may be minimized, as discussed in Section 4.2.1.2.5, it is likely that encapsulation sites would be needed north of Bryson City and possibly an additional site on the western end of the project for the Northern Shore Corridor to reduce construction traffic impacts and costs based on the anticipated amount of excess rock to be hauled off. Should the material designated for offsite disposal be identified as AP, the material will be placed using a design similar to the encapsulating embankment on the roadway. Such sites would be located outside of GSMNP.

Project-specific off-site locations, such as borrow and waste sites, can not be further evaluated until they are specifically identified. Such sites are usually located by the construction contractor. Once such a site has been identified by the contractor, it is the contractor's responsibility to ensure that the site meets all environmental requirements and obtain permits. Costs for the off-site encapsulation, including any required access drives, cannot be meaningfully quantified at this stage of design and are not separately identified in the capital or operations and maintenance cost estimates for the project. Engineering and contingencies have been included in the capital cost estimates for the partial-build and build alternatives. According to FHWA guidance on estimating costs for major projects, "The purpose of design contingencies is to account for items not included in the current estimate" (FHWA 2004b).

111. The DEIS fails to take into account off-site impacts for construction materials associated with the Northern Shore Corridor.

"All environmental impact statements are useless unless they take into account off site impacts from the sources of materials for the project. Dumptrucks use fuel oil from Iraq which causes depleted uranium, asphalt too. Lime comes from a lime quarry. Steel for bridges come from steel mills, asphalt from asphalt plants. All these things have adverse environmental impacts not accounted for in this, or any EIS."
(Individual, City Unknown, NC, Comment 1)

Response: NPS is concerned about protecting resources, both natural and human. All efforts will be made to utilize resources in an efficient and prudent manner. The manufacturing of materials utilized by NPS, but generated by commercial entities, is not subject to NEPA compliance requirements for this project. Thus, manufacturing impacts are not discussed as part of this document. Commercial manufacturing operations that provide products for many projects are subject to various federal, state, and local regulations and permitting. Impacts from these commercial operations are accounted for and mitigated for as needed in accordance with these regulations under associated permitting instruments.

112. The DEIS inadequately analyzes impacts during the construction of the Northern Shore Corridor.

"The analysis of damage to local populations and to their roads by the hauling of extraordinary amounts of acid bearing rock over a period of 15 years, alongside the County High School and through downtown Bryson City is woefully inadequate."
(Form Letter 25)

"A look at the USGS topographic map shows the most likely available dump sites for acid producing rock are south of Bryson City. Hauling it would involve use of city streets. There would be two impacts, which have not been studied: (a) increased traffic past the Swain County High School, and (b) increased traffic and traffic congestion in Bryson City. Nor is there any mention of what entity would be responsible for keeping

the roads and streets in repair to withstand this heavy traffic. The effects of such heavy and destructive truck traffic, continuously, over a period of at least fifteen years, have not been addressed. Yet, such traffic through or near Bryson City would have a serious detrimental effect on the local economy.”
(Individual, Walhalla, SC, Comment 1723)

“The DEIS fails to adequately address the fact that dump trucks hauling this material would subject downtown Bryson City to major traffic jams and regular toxic dust storm[s] during the many years of construction.”
(Individual, Bellevue, WA, Comment 1705)

Response: As discussed in Sections 4.2.1.2.5 and 4.2.1.2.7, construction traffic is anticipated to adversely affect streets in Bryson City and surrounding areas. Section 4.2.1.2.7.5 identifies the potential for moderate, adverse impacts during construction of the Northern Shore Corridor, specifically noting that, “The additional traffic generated by the Northern Shore Corridor and during its construction would increase traffic in downtown Bryson City, which currently experiences some congestion during peak periods and will experience natural growth . . . as well as added traffic once the GSMR relocates its headquarters to Bryson City. . . . Access to Swain County High School along Fontana Road would be impacted, primarily during morning and afternoon peak periods while school is in session, by the additional traffic traveling on the Northern Shore Corridor, as well as traffic during construction.”

To reduce impacts during construction for the partial-build and build alternatives, work will be undertaken to reduce the amount of excavation and balance earthwork during future design, to identify and secure an encapsulation site north of Bryson City (and on the western end of the project for the Northern Shore Corridor), and to develop alternate hauling routes that avoid congested roadways. In addition, engineering and contingencies have been included in the capital cost estimates for the partial-build and build alternatives. According to FHWA guidance, construction contingencies on major projects may provide for various items including protection of the traveling public through various measures which may include “incident management, public information and communication efforts, transit demand management and improvements to the local area network, which help improve safety and traffic flow through the project during construction” (FHWA 2004b). If a partial-build or build alternative were implemented, the contractor would be required to adhere to the load and other restrictions on area roadways.

AP rock and soil in transit should not pose a hazard to health and human safety if properly secured in trucks to prevent spillage and dispersal of dust.

Mitigation

113. The DEIS does not adequately discuss the mitigation plans or evaluate the potential success of mitigation measures.

“The [DEIS] document is nearly Orwellian in that the content explains significant negative impacts that would occur if the road were built and yet it concludes that significant negative impacts will not occur because they will be taken care of in the design phase. This is a ridiculous over-statement of our ability to mitigate effects.”
(Individual, Asheville, NC, Comment 1695)

“The DEIS is inadequate because NPS has not considered foreseeable impacts or the effectiveness of proposed avoidance, minimization or mitigation measures. . . . Throughout the DEIS, NPS suggests that avoidance, minimization or mitigation might be employed and that it might be effective, without confirming what mitigation measures will be used or analyzing their effectiveness.”

(Organization [Southern Environmental Law Center], Asheville, NC, Comment 3319)

“The theoretical provision of culverts with natural floors, and animal culverts and overpasses is not adequate, and does little to mitigate the effects of severance of this habitat. There has been no design of these mitigation measures into the plans.”

(Organization [Harvey Broome Group - Tennessee Chapter - Sierra Club], New Market, TN, Comment 3312)

“The DEIS does not reveal any well thought out plan to avoid damage to these waters.”

(Form Letter 25)

“Throughout the DEIS, NPS suggests that avoidance, minimization or mitigation might be employed and that it might be effective, without confirming what mitigation measures will be used or analyzing their effectiveness. . . . The mere listing of possible mitigation measures is generally an insufficient basis for drawing policy conclusions based on the promise of reduced impacts.”

(Organization [Southern Environmental Law Center], Asheville, NC, Comment 3319)

Response: NPS is committed to limiting impacts to human and natural resources. In general, the mechanism for limiting impacts is a three-step process: avoidance, minimization and compensatory mitigation (such as wetland restoration). Avoidance of impacts will have the highest priority. Techniques to avoid, minimize and mitigate for impacts are provided by resource topic in their respective sections in Chapter 4. These techniques would be applied as appropriate during final design if a partial-build or build alternative were selected for implementation. Section 4.1 states “Detailed mitigation plans would be developed before implementation of an alternative.” Analysis of the effectiveness of an appropriate mitigation technique cannot be completed until additional design has identified the specifics of the mitigation required. For example, the potential effectiveness/functionality of restoring an open water wetland, like a beaver marsh primarily consisting of herbaceous vegetation, is different than restoring a forested wetland, which to be fully functioning requires mature trees.

If a partial-build or build alternative were selected for implementation, final design and detailed mitigation could reveal site-specific impacts that are not currently known. Additional NEPA analysis would be required if impacts were found to be greater than identified in this EIS for any of the partial-build or build alternatives.

114. Various specific mitigation costs have not been incorporated into the cost estimate.

“NPS has underestimated the cost of constructing the North Shore Road and Bushnell alternatives by excluding substantial mitigation costs. . . . [T]he NPS must calculate and include the cost of reasonably foreseeable mitigation measures in its cost estimate for construction of the North Shore Corridor and Bushnell alternatives.”

(Organization [Southern Environmental Law Center], Asheville, NC, Comment 3319)

“The DEIS also notes that wildlife impacts could be avoided through the use of retaining walls or a viaduct, but that such costs have not been included in the cost estimate. Because these structural mitigation elements are clearly anticipated throughout the corridor, NPS has a reasonable basis for creating an estimate of the additional cost attributable to these measures.”

(Organization [Southern Environmental Law Center], Asheville, NC, Comment 3319)

“The DEIS also recognizes that mitigation and avoidance measures will be required to address rare vegetation communities. . . . Nonetheless, the costs of ‘such additional structures, especially viaducts, has not been calculated, but could be significant.’”

(Organization [Southern Environmental Law Center], Asheville, NC, Comment 3319)

“Similarly, NPS policy requires the Park Service to avoid and minimize impacts to floodplains. . . . [T]hose costs, which can add substantially to the cost of the project, have been excluded from the cost estimate.”

(Organization [Southern Environmental Law Center], Asheville, NC, Comment 3319)

“Nor does the DEIS account for the additional construction and mitigation costs associated with unstable geological conditions in the project area. . . . Relocation of the corridor to avoid unstable geology, structural measures to protect against rock falls and slides, and delays and damage caused by slides during the 15 year construction process are all foreseeable costs.”

(Organization [Southern Environmental Law Center], Asheville, NC, Comment 3319)

“The cost estimates prepared for the DEIS do not reflect the cost of acquiring that landfill capacity or the premium that will be required for disposing of potentially hazardous material in a commercial or municipal landfill.”

(Organization [Southern Environmental Law Center], Asheville, NC, Comment 3319)

Response: The capital cost estimates are intended to reflect the program costs for all aspects of construction of the partial-build or build alternatives. A description of the development of construction costs is provided in Appendix E, Capital Cost Estimates Assumptions. The cost estimates include anticipated mitigation, encapsulation and treatment of embanked pyritic soil, and requirements for construction in National Parks. The cost estimates reflect the unique characteristics of the project site, including remote access and steep terrain. Those design elements/mitigation measures that can be meaningfully quantified at this time have been explicitly calculated for the capital cost estimates. Several viaducts have been included in the design. Text in Section 4.4.5.3 has been corrected to reflect that the current design includes several viaducts. According to FHWA guidance on estimating costs for major projects, “Costs to mitigate impacts to natural resources, cultural resources, neighborhoods, etc., must either be individually estimated or included in a contingency amount.” The capital cost estimates for the partial-build and build alternatives include an allowance for engineering and contingencies that has been established at a level that reflects the unique requirements of the study area, as well as project unknowns or uncertainties.

Impairment Analysis and Determinations

115. The environmental impacts disclosed in the DEIS for the alternatives that propose road construction would impair GSMNP and AT resources.

“None of the alternatives that propose construction of roads comply with the Organic Act for Parks. The mandate of that law, that park resources be kept ‘unimpaired for the enjoyment of future generations’ is not met by this DEIS.”

(Form Letter 25)

“With the National Park Service’s current regulations, you are obligated to conserve the Park’s natural resources and leave them unimpaired for the enjoyment of future generations. Cutting a road through the largest undeveloped portion of the Park and indeed the largest roadless tract in the Appalachian Mountains, is simply inconsistent with those guidelines.”

(Individual, Knoxville, TN, Comment 1690)

“Page 4-10 [of the DEIS] defines ‘impairment’ as an action that ‘would harm the integrity of the park resources or values.’ This definition is followed by page after page describing serious negative impacts, each harmful to the integrity of the park, of all alternatives except for No Action and Monetary Settlement. Finally on page 4-82 it is stated that there would be no impairment!!”

(Individual, Oberlin, OH, Comment 58)

“The DEIS contains page after page of findings that the proposed road would have major, long term environmental impacts on the park. Yet, it concludes ‘The Northern Shore Corridor is not anticipated to cause impairment to either GSMNP or the Appalachian Trail based on the information obtained to date.’ . . . What possible [sic] could lead you to such a conclusion? The ‘not’ in that statement should be removed from the DEIS.”

(Individual, Bristol, TN, Comment 1710)

“Your own analysis details major and abiding impairment of every single park resource and value you examined, as well as visitors’ enjoyment of them. Inexplicably, your summary contradicts the very evidence of your analysis.”

(Form Letter 11)

“[I]t is important to object to the serious and onerous contradictions by the NPS stated in the DEIS conclusion below. There simply is no articulation by NPS of its logic or rationale for this conclusion. ‘The Northern Shore Corridor is not anticipated to cause impairment to either GSMNP or the AT based on the information obtained to date.’”

(Individual, Bellevue, WA, Comment 1705)

“The EIS must . . . explain how road construction will not impair the park through negatively impacting this endangered species of bat.”

(Organization [National Parks Conservation Association], Knoxville, TN, Comment 3311)

“Carolina Mountain Club members are users of backcountry campsites, trails, and visual resources that would be adversely affected by the partial or full build options. The DEIS fully documents the extent of these impacts and the fact that the integrity of the area north of Fontana Lake would be severely harmed. If you look at a large enough area, the impacts to a small area can be trivialized. We believe that this is

the wrong approach. The integrity of each area of GSMNP must be protected. The Park is the sum of its component areas.”

(Organization [Carolina Mountain Club], Asheville, NC, Comment 1697)

“Any reasonable person equipped with commonsense and a capacity to understand the basic definitions of words like adverse, major, long-term and permanent would most likely conclude that the North Shore Road at the very least would impair the Park. Yet despite this simple exercise in logic, the DEIS, in a bold and dismissive conclusion, declares, and I quote, ‘None of the alternatives would harm the integrity of the park. The Northern Shore Corridor is not anticipated to cause impairment.’ Well, those of us who value the natural environment and resources of our parks have reached a very different conclusion. This project will destroy the ecological integrity of a global treasure, considered by many as the crown jewel of the Southern Appalachians.”

(Individual, Asheville, NC, Comment 2861)

“The determination of nonimpairment for the North Shore Road build alternatives does not serve the interests of the people of the United States. The responsibility of the National Park Service is clearly articulated in the Organic Act of 1916. It requires that the National Park Service promote and regulate the use of the national parks by such means and measures as conform to the fundamental purpose of the parks. The purpose of the national parks is to conserve the scenery and the natural and historic objects and wildlife therein. The Department of Interior is directed to provide for the enjoyment of the resources in the parks in such a manner and by such means as will leave them unimpaired for the enjoyment of future generations. . . . Through the Organic Act, the National Park Service is prohibited from exercising its authority in derogation of the values and purposes for which the national parks have been established. . . . Building a road on the North Shore area fits all of the provisions of these guidelines constituting impairment, and none of the provisions leading to the judgment that actions do not constitute impairment. It is clear that many of the park resources would be impaired by building a road. The Draft EIS contains page after page documenting major adverse, long-term or permanent impairments to numerous park values. It’s not a responsible, reasonable position for the Park Service to claim that this does not constitute impairment.”

(Organization [Southern Appalachian Forest Coalition], Asheville, NC, Comment 2911-2, [at the Asheville Public Hearing])

“An impact to a park resource is more likely to constitute impairment if it affects a resource that is necessary to fulfill specific purposes of the Park’s establishing legislation, key to the natural or cultural integrity of the Park, or identified as a goal in the Park’s General Management Plan. See NPS MP at 1.4.5. The North Shore Road and Bushnell alternatives would constitute prohibited impairment under this standard both because of their effects on key park resources and because of their adverse impact on the fundamental wilderness character of the Park. Construction of the North Shore Road and Bushnell alternatives would significantly impair resources that are key to the natural and cultural integrity of the Park as identified by establishing legislation and the General Management Plan. . . . The cumulative effect of . . . impacts to individual resources constitutes a prohibited impairment of the core nature and significance of the Park.”

(Organization [Southern Environmental Law Center], Asheville, NC, Comment 3319)

“In addition to a collective impact on individual park resources, the North Shore Road and Bushnell alternatives would significantly impair the backcountry and wilderness resource values that are fundamental to the Park’s character and purpose, as recognized by the General Management Plan, the NPS wilderness recommendation for this area, and the Park’s designation as a Biosphere Reserve. The North Shore Road and Bushnell alternatives would degrade this core value of the Park by segmenting one of the largest, unfragmented tracts of mountain terrain in the eastern United States.”

(Organization [Southern Environmental Law Center], Asheville, NC, Comment 3319)

“NPS purports to make its impairment evaluation based on unmitigated impacts identified by the DEIS. If that is true, then the finding of no impairment is not only wrong, it is outrageous. . . . [T]he unmitigated impacts of acid drainage from acid-producing rock in the park have sterilized all life from affected streams for decades. The land scar and habitat fragmentation of a road constructed through the Park without mitigation, would present an impassable barrier to wildlife resources. . . . If indeed, NPS has based its finding of no impairment at least in part on the presumed reduction in impacts that might result from the implementation of avoidance mitigation and minimization strategies, then the DEIS is entirely inadequate in that NPS repeatedly declines to analyze the potential effectiveness of such mitigation or the extent to which such strategies could effectively reduce impacts anticipated from road construction.”
(Organization [Southern Environmental Law Center], Asheville, NC, Comment 3319)

“The current Memorandum of Understanding for the Appalachian National Scenic Trail within the GSMNP among GSMNP, the NPS A.T. Park Office, ATC, and the Smoky Mountains Hiking Club states that the GSMNP agrees ‘to establish an ‘Appalachian Trail Corridor’ surrounding the A.T. footpath, to assure the maximum protection of a primitive-recreation experience for both the A.T. and GRSM. . . . Contrary to the proposed North Shore Road Corridor project, it is ATC’s interpretation that, under this MOU, no impact of any significant magnitude would be permissible to the A.T. within the GSMNP . . . [Given] the Park’s commitments to ‘assure maximum retention of the primitive-recreation experience’ of the A.T. in the GSMNP, we find it extraordinary that the Park Service could conclude, as it does in the DEIS, that ‘the Northern Shore Corridor is not likely to impair the aesthetic and visual resources of GSMNP or the A.T.’”
(Organization [Appalachian Trail Conservancy], Harpers Ferry, WV, Comment 3318)

“Simply put, the no-impairment conclusion cited in the DEIS is flatly wrong and should be corrected. Construction of a road within the Northern Shore Corridor would cause significant, adverse impacts to the Appalachian Trail viewed along a ten-mile-plus segment in the GSMNP and would seriously undermine the aesthetic and recreational experience of thousands of annual visitors in the largest roadless area along the entire 2,175-mile Appalachian National Scenic Trail.”
(Organization [Appalachian Trail Conservancy], Harpers Ferry, WV, Comment 3318)

“Despite the weight of its own measurements and estimates as well as other relevant sound impact analyses . . . the DEIS concludes that the impacts of noise generated by the construction and use of the North Shore Road project would ‘not likely impair the existing soundscape of GSMNP or the A.T.’ We fundamentally disagree. Construction of either of the proposed Northern Shore Corridor routes will have a significant adverse impact on the A.T. and its users – both during the protracted construction phase and for many years thereafter – and will impair the soundscape values that are fundamental to the remote, backcountry experience along the affected segment of the Appalachian Trail through the Great Smoky Mountains National Park.”
(Organization [Appalachian Trail Conservancy], Harpers Ferry, WV, Comment 3318)

Approximately 53 individuals or form letters included impairment concerns covering a variety of resource topics, including geology and soils, water resources (surface water, water quality, and floodplains), natural resources (wildlife resources, aquatic ecology, migratory birds, wetlands and special habitats, and protected species), air quality, land use, visitor use and experience, aesthetic resources, soundscapes, and cultural resources (archaeological sites and historic structures).

Response: NPS Management Policies define “impairment” as “an impact that, in the professional judgment of a 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” (NPS 2006b). NPS policies require an analysis of impairment to resources as part of the environmental impact analysis

process. Impairment determinations are treated as separate findings from impact thresholds. NPS policy guidance does not define “impairment” as equivalent to a “major” adverse impact.

In determining whether an impact would be likely to cause impairment, the NPS manager must consider the extent that the impact 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 significant in the park’s general management plan or other relevant NPS planning documents. The impairment analysis is not a NEPA requirement, but a DO-12 requirement. While impairment is discussed in the EIS, it is a separate evaluation based on the components previously listed and in consideration of the impacts noted in the EIS.

As noted in Section S-6 of the Summary, “The DEIS concluded that, as planned, the proposed alternatives were not likely to harm the integrity of GSMNP or AT resources or values, including the opportunities that otherwise would be present for the enjoyment of those resources or values. Based on both individual resource and cumulative environmental impacts identified, it is anticipated that any alternative being considered could be implemented without creating impairment to GSMNP or the AT. For the partial-build and build alternatives, there is a potential for impairment should best management practices as related to a context sensitive design that minimizes and mitigates impacts fail, specifically in the area of natural and cultural resources. However, NPS policy guides park managers to make a determination of impairment based on the action, not for the potential of a failure of the action. That is the basis of the no impairment decision for these alternatives. NPS fully comprehends the magnitude of the impacts that would be created by any of the partial-build and build alternatives and the potential for impairment to GSMNP or AT resources should best efforts fail.”

Environmental Consequences – General

116. The statement that the Monetary Settlement Alternative would not irreversibly or irretrievably commit Park resources is incorrect.

“The Monetary Settlement Alternative would not irreversibly or irretrievably commit Park resources.’ The statement above is incorrect. The money spent on the Monetary Settlement could instead be spent on such projects as park management, maintenance or improvement. Its expenditure on the Monetary Settlement IS an irreversible commitment as this money will not be available for these other purposes.”

(Individual, Saginaw, MI, Comment 1707-31)

Response: Section 4.8.2, Irreversible or Irretrievable Commitment of Resources states that “Federal money would be committed to the county” for the Monetary Settlement. However, it is currently assumed that the Monetary Settlement would be provided to Swain County and would not become available to GSMNP for other purposes such as Park management, maintenance, or improvement if an alternative other than the monetary settlement is implemented.

117. The DEIS understates the impacts to the Park.

“The physical damage to the environment of the Park is substantial and understated in the DEIS.”

(Individual, Knoxville, TN, Comment 1690)

“[T]he biological implications of building the road are devastating to the park. The EIS should reflect this.”

(Individual, Asheville, NC, Comment 1695)

Response: The EIS covers the full range of impact topics as suggested by NPS policy in DO-12 and as outlined in CEQ's NEPA guidelines. The topics are listed in Section 1.7 and they include: "community, economic, land use, visitor use and experience, environmental justice, cultural resources, public health and safety, geology, floodplains, air quality, soundscapes, wetlands (jurisdictional and special aquatic habitats), streams and lakes, water quality, aquatic ecology, vegetation communities, terrestrial wildlife, black bears, migratory birds, invasive exotics, federally protected species, and visual resources. Other topics with discussions of effects in Chapter 4 include utilities, hazardous materials, energy, indirect and cumulative effects, private in-holdings, and sustainability and long-term management."

The project study alternatives were analyzed for their potential to impact each of these resource topics, as applicable. Section 4.1.1 states the general methodology for analyzing potential impacts. It states that "DO-12 requires that an EIS must discuss the impacts of each reasonable alternative under consideration and must quantify the impacts in terms of their type, context, duration, and intensity. This section defines the type, context, duration, and intensity for impacts based upon NPS technical guidance and internal documents. Methodologies, detailed guidance and regulations, and tailored definitions of impact intensity are provided for each resource, or group of resources, in the corresponding section in this chapter."

Chapter 4 documents all identified impacts, including numerous moderate and major, adverse impacts to resources. The Summary presents the impacts by topic by alternative, focusing on those that were determined to have at least a moderate or major impact on the identified resource.

118. The DEIS does not adequately consider environmental amenities and values.

"The DEIS does not adequately (if at all) give appropriate consideration to these unquantified environmental amenities and values: a. Solitude; b. Beauty; c. The fact that the north shore is a part of the largest unbroken tract of mountain land in the eastern United States in federal ownership; d. The ongoing processes of evolution in this area of the Great Smoky Mountains National Park; e. The gene pools of the unbroken north shore tract; f. Species that may become endangered or become rare due to road construction on the north shore; g. Destruction or diminution of Wilderness values."

(Organization [Southern Appalachian Forest Coalition], Asheville, NC, Comment 3314)

Response: As described in the response to Concern No. 117, the EIS covers a full range of impact topics following CEQ's NEPA guidelines. The selection of the final impact topics addressed in the EIS was an iterative process that began with project scoping, where the study team presented the initial impact topics and requested input on issues and concerns within the study area that the public wanted the EIS to evaluate and analyze. As described below, the impact topics evaluated in the EIS address the above referenced environmental amenities and values, many of them in specific detail.

Solitude impacts are addressed in Section 4.2.5.2.9 and are recognized in Section 4.2.2, which evaluates social impacts to individuals focused on various issues, including "the solitude of this region of the Park." Impacts to aesthetics and visual resources are presented in Section 4.5, detailed in Appendix O, and discussed along with impacts to general scenic views in Section 4.2.5.10. The review of cumulative impacts in Section 4.1.2 includes discussion of the size of land within GSMNP without roads that have public vehicular access and the urbanization trends in the eastern United States (Section 4.1.2.17). Impacts to natural resources are presented in Section 4.4, which evaluates impacts to wetlands, lakes, rivers, and streams, water quality,

aquatic ecology, vegetation communities, terrestrial wildlife, black bears, migratory birds, invasive exotics, and protected species. Impacts to evolution and gene pools of the project study area are not explicitly evaluated; however, the analysis recognizes that a road may impede movement of animals between habitats. Sections 4.4.4.3 and 4.4.6.3 suggest several methods that could be utilized to promote connectivity if a partial-build or build alternative were implemented. The response to Concern No. 94 discusses how impacts to species that may become endangered or rare due to construction are reflected in the protected species evaluations presented in Section 4.4.10 and Appendix N. More than a dozen visitor use impact subtopics representing wilderness experience and values were evaluated, including fishing, hiking, camping, horse use, solitude, and other visitor experiences (including wildlife viewing, photography, nature study and nostalgia/refuge). In addition, wilderness values are recognized in Section 4.2.2 where community impacts are identified for individuals focused on “leaving an undisturbed environment and potential wilderness designation.” Impacts to land available for potential wilderness designation are presented in Section 4.2.4, Land Use.

119. The DEIS fails to address the impacts to the status of GSMNP as a World Heritage Site and as an International Biosphere Reserve.

“The GSMNP is a World Heritage Site and the DEIS fails to address the failure to live up to the prior representations regarding such designation.”
(Individual, Knoxville, TN, Comment 1690)

“In its nomination of the Park for World Heritage status, the Department of the Interior represented: ‘Many plant and animal species which are uncommon, endemic, or exist outside the park only as fragmented populations, are preserved here in perpetuity, thus giving long-term research opportunities not assured elsewhere. They are essentially free from major human interference, interruption by roads, and impairment by such things as housing areas or industrial developments. The value of the gene pools thus protected is beyond estimation.’ The Department added that the Park had ‘the most diverse salamander fauna in the world.’ The DEIS does not mention this promise by the United States to the United Nations, or explain how it can justify reneging on its promise.”
(Individual, Kernersville, NC, Comment 1724)

“The DEIS fails entirely to consider the impact of the land use reclassifications required for implementation of the North Shore Road and Bushnell alternative on the Park’s status and management as the core area of a Biosphere Reserve or the implications of the proposed land use for the obligations of the United States under international treaties.”
(Organization [Southern Environmental Law Center], Asheville, NC, Comment 3319)

Response: As detailed in the responses to Concern Nos. 118 and 119, the EIS covers a full range of impact topics following CEQ’s NEPA guidelines and these topics were developed in an iterative public process that began with project scoping. While impacts to the status of GSMNP as a World Heritage Site and an International Biosphere Reserve are not identified as separate topics, the impact topics evaluated in the EIS address the resources and values represented in the World Heritage Site and International Biosphere Reserve designations. Impacts of any of the detailed study alternatives on the project study area are not anticipated to affect the status of the entire Park as a World Heritage Site and International Biosphere Reserve.

120. The DEIS provides inadequate detail on impacts and has not disclosed all information or reports that were utilized in analyzing impacts.

“NEPA regulations require that the ‘environmental impact statement shall succinctly describe the environment of the area(s) to be affected.’ The regulations also require that ‘[t]he information must be of high quality.’ The information in the DEIS is limited, summarized from other reports and analyses not disclosed in the DEIS or to requesting members of the public. . . . Both the NPS and the FHWA have largely refused to make those documents available to the public, despite numerous informal and formal requests (via the FOIA). Failure to make the decision-making process ‘transparent’ and making the underlying and/or supporting information which purportedly helped the agencies form their decisions and conclusions in the DEIS is improper, and renders the DEIS deficient and contrary to law. . . .

Congress passed the so-called ‘Data Quality Act’. . . . The main intent of the legislation appeared to require that data used by Federal agencies was presented in a complete, unbiased, accurate, and reliable way; in other words, objective. Objective information is further required to be transparent or capable of being reproduced or able to be independently reanalyzed by a qualified member of the public. The DEIS fails to meet these simple requirements. Among other failures, the NPS and FHWA have refused to make available the data they allegedly compiled to form the bases for the various technical reports. The reports that are part of the DEIS and referenced throughout the document are merely interpretations, summaries, or other distillations and conclusions drawn from these reports. . . .

The ARCADIS report, Cherohala Skyway and Evaluation of Construction Techniques, Water Quality and Similarity with the North Shore Road, is not yet available to the public, but it apparently shows that Cherohala did result in damage to some area streams. . . .

This DEIS is replete with such conclusory statements, to wit: ‘Based on the information obtained to date, which is presented in the impact analysis, none of the alternatives would harm the integrity of GSMNP or AT resources or values, including the opportunities that otherwise would be present for the enjoyment of those resources or values.’ However, as stated above, the ‘impact analysis’ is deficient in that it fails to adequately disclose or fails to fully disclose to the public and to the other interested agencies and parties, the actual reports and information which have apparently formed the basis for the ‘impact analysis.’”
(Organization [WildLaw], Asheville, NC, Comment 3310)

Response: As detailed in the responses to Concern Nos. 117 and 118, the EIS covers a full range of impact topics developed in an iterative public and agency scoping process following CEQ’s NEPA guidelines. As discussed in the response to Concern No. 117, the impact analysis methodologies are tailored for each resource and follow appropriate guidelines and regulations including CEQ’s NEPA guidelines and NPS guidance.

Details on the analysis of impacts for each resource are presented in Chapter 4 or summarized in Chapter 4 from a corresponding appendix. Technical reference materials have been used by professional staff to assist in impact evaluations and are cited throughout Chapter 4, as well as in various appendices. CEQ regulations allow agencies to “identify any [scientific] methodologies used and . . . make explicit reference by footnote to the scientific and other sources relied upon for the conclusions” (1502.24). The regulations state that material incorporated by reference must be made “reasonably available for inspection” (1502.21). The appendices and their technical attachments were provided with the public distribution of the DEIS. Cited reference materials including research papers, technical papers, published guidelines, newspaper articles, etc., are listed in Chapter 7 or in the appropriate reference list within each appendix. The majority of these reference materials are publicly available and the information required to locate the item has been provided along with the

reference, including internet, library, or other locations where appropriate. The report “*Cherochala Skyway – An Evaluation of Construction Techniques, Water Quality, and Similarities with the North Shore Road Project*” was provided as Appendix L and distributed with the DEIS. The data presented to the public in the EIS and its appendices provide a comprehensive presentation of impacts of the project alternatives and allow for public review of the basis for those impact determinations following NEPA guidelines and NPS guidance.

The conclusory statements as presented in the quote above are excerpted from the impairment analysis and determinations. As stated in the response to Concern No. 115, the impairment analysis is not a NEPA requirement, but is required by DO-12 as part of the environmental impact analysis process. Impairment determinations are treated as separate findings from impact thresholds and a “major” adverse impact is not equivalent to “impairment.” While the impairment determinations are based on the information provided in the EIS, detailed in the appendices, or supported by the technical references, NPS managers must consider factors associated with various NPS policies and the individual Park unit. A discussion of these considerations is presented in the response to Concern No. 115.

121. NPS may not defer consideration of environmental impacts to a later stage.

“A critical flaw in the DEIS is the stated intent to postpone full consideration of the impacts of the various alternatives until later in the process. . . . The current DEIS looks at the general impacts of various road-building alternatives on a broad and largely abstract level. As discussed herein, the DEIS fails to include detailed data and analysis regarding the impacts to fish and wildlife associated with the various alternatives, or even details about what is actually involved in each alternative. The DEIS and other documents indicate that a more detailed description of the chosen alternative, and closer and more detailed analysis of impacts, will be provided at a later date, most likely during project-level NEPA/SEPA evaluation. This is unacceptable and inconsistent with NEPA. . . . The DEIS’s statement that its analysis essentially approves the project now and asks the hard questions later is precisely the type of environmentally blind decision-making NEPA was designed to avoid.”

(Organization [WildLaw], Asheville, NC, Comment 3310)

“By the time such impacts have been disclosed, however, the opportunity to make such broad-scale decisions will have long past. By deciding upon any build alternative outlined by the DEIS, the NPS will have irretrievably committed itself to a course of action in violation of NEPA.”

(Organization [WildLaw], Asheville, NC, Comment 3310)

Response: The EIS provides sufficient information to review the potential impacts of the detailed study alternatives and support decision-making regarding those alternatives. As detailed in the responses to Concern Nos. 118 and 119, the EIS covers a full range of impact topics developed in an iterative public and agency scoping process following CEQ’s NEPA guidelines. As discussed in the response to Concern No. 117, the impact analysis methodologies are tailored for each resource and follow appropriate CEQ and NPS guidelines and regulations. Details on the analysis of impacts for each resource are presented in Chapter 4 or summarized in Chapter 4 from a corresponding appendix. The impact threshold determinations presented in Chapter 4 have been made on a worst-case/maximum impact basis (e.g., maximum acreages affected/ assumption that 100 percent of disturbed rock and soil would have the potential to produce acid). Notwithstanding, if a partial-build or build alternative were selected for implementation, final design would include further avoidance and minimization measures and could include shifts in alignment. While analysis is not likely to reveal an increased level of magnitude of impacts, final design and detailed mitigation could reveal site-specific impacts that are not currently known. Additional NEPA analysis would be required if

impacts were found to be greater than impacts identified in this EIS for any of the partial-build or build alternatives.

Agency Coordination

122. The EIS must explain why North Carolina Department of Environment and Natural Resources (NCDENR) was not included as a Cooperating Agency; Swain County should be invited to participate as a cooperating agency.

“Finally, why was the North Carolina Department of Environment and Natural Resources (NCDENR) not included in the list of cooperating agencies? Under the Clean water Act (CWA) Section 401 requires the state to issue a Water Quality Certification. . . . The EIS must explain why NCDENR was not included as a cooperating agency given the fact that any additional road construction north of Fontana Lake will require action by the state of North Carolina.”

(Organization [National Parks Conservation Association], Knoxville, TN, Comment 3311)

“Finally, the Department of Interior should give great weight to the prerogative of Swain County and invite the County to participate as a cooperating agency.”

(Organization [WildLaw], Asheville, NC, Comment 3310)

Response: Per 40 C.F.R. 1501.6, “Upon request of the lead agency, any other Federal agency which has jurisdiction by law shall be a cooperating agency. In addition, any other Federal agency which has special expertise with respect to any environmental issue, which should be addressed in the statement may be a cooperating agency upon the request of the lead agency.”

At the Interagency Kick-off Meeting on March 12, 2003, as documented in the meeting minutes, and as reiterated in the cover letter (June 26, 2003) sent with the meeting minutes, an invitation was issued jointly by FHWA and NPS that agencies interested in becoming cooperating agencies should write a letter to the lead agencies and request cooperating agency status for the project. The representatives of NCDENR and of many of its divisions either attended the Kick-off Meeting and/or received a copy of the cover letter and meeting minutes. To date, NCDENR has not requested cooperating agency status for this project. Interagency coordination is discussed in Section 5.

Coordination with other entities, such as Swain County, has been ongoing throughout the process of developing the EIS. As noted in Section 5.12 (previously Section 5.11), “GSMNP has encouraged all interested parties to review project update materials, provide comments, request meetings, and discuss the project.” In October 2004, GSMNP sent a letter to the Swain County Commissioners and it noted that “we [GSMNP] would welcome the opportunity to meet with the Swain County Commissioners to openly discuss your concerns regarding the project.” To date, correspondence and resolutions have been received from the Swain County Commissioners regarding the project; however, they have not requested a meeting. Also, as noted in Section 5.12 (previously Section 5.11), “Neither FHWA nor GSMNP has been delegated the authority from the DOI to meet with the signatories in an effort to resolve the 1943 Agreement.”

Public Involvement

123. The DEIS should include statistics regarding pro-road versus anti-road comments.

“Why is there no compilation of pro road vs. anti-road comments or meeting participation in the DEIS?”
(Individual, Knoxville, TN, Comment 1277)

Response: Section 6.5.2 includes a brief summary of comments collected during the project and refers to Appendix J (Public Involvement Comment Summary) and the Errata and Addenda to Appendices, Appendix J. The Public Involvement Comment Summary (Appendix J) provided an overview of comments collected during the Public Scoping Phase, Existing Conditions Phase, and the Alternatives Development Phase. The Errata and Addenda to Appendix J includes comment summaries for the Impact Analysis Phase and summaries for comments submitted following the release of the DEIS. Information is provided in the comment summaries regarding public sentiment for the alternatives development phase, preliminary study alternatives, final study alternatives, as well as preferences for alternative combinations and/or suggested alternatives. Table 6-3 in Section 6.4 shows public meeting attendance.

In describing the content analysis process, “It is important to recognize that the consideration of public comment is not a vote-counting process in which the outcome is determined by the majority opinion. Relative depth of feeling and interest among the public can serve to provide a general context for decision-making. However, it is the appropriateness, specificity, and factual accuracy of comment content that serve to provide the basis for modifications to planning documents and decisions. Further, because respondents are self-selected, they do not constitute a random or representative public sample. The National Environmental Policy Act (NEPA) encourages all interested parties to submit comments as often as they wish regardless of age, citizenship, or eligibility to vote. Respondents may therefore include businesses, people from other countries, children, and people who submit multiple responses. Therefore, caution should be used when interpreting comparative terms in the summary document. Every substantive comment and suggestion has value, whether expressed by one respondent or many. All input is read and evaluated and the analysis team attempts to capture all relevant public concerns in the analysis process” (CEQ 2002).

124. The DEIS does not contain a public comment summary for the impact analysis phase.

“Page 6-8 states that ‘Public comment summaries from the first four phases of the Draft EIS planning process are included in this report as Appendix J.’ But in fact Appendix J contains public comment summaries from only the first three phases, and on page 36 says that there is no summary for the impact analysis phase but that one would be ‘included in the DEIS to be released to the public in fall 2005.’”
(Individual, Oberlin, OH, Comment 58)

Response: The public comment summary for the Impact Analysis Phase has been added to Appendix J, and appropriate text has been added to Chapter 6.

Miscellaneous

125. The DEIS does not analyze the appropriation of funds for the partial-build or build alternatives.

“Any analysis of whether the expenditure of any funds on any construction alternatives must consider the following factors. . . . The DEIS does not analyze the probabilities that Congress will or will not appropriate funds.”

(Organization [Smoky Mountain Hiking Club], Knoxville, TN, Comment 3309)

Response: As stated in Section 1.4.3, “In October 2000, Congress budgeted \$16 million of U.S. Department of Transportation appropriations ‘for construction of, and improvements to North Shore Road in Swain County, North Carolina.’ Because the road would be constructed on federal land with federal money, the Federal Highway Administration-Eastern Federal Lands Highway Division (FHWA-EFLHD) and the NPS are preparing an EIS in accordance with Section 102(2)(C) of the NEPA.” Details on the availability or phasing of funds are not typically included in an EIS.

126. The DEIS does not evaluate the contingencies that could affect the partial-build or build alternatives.

“The DEIS does not tabulate, much less analyze, the contingencies that could affect any of the build alternatives. Some of these factors that have been ignored include: (1) Estimated time that could be consumed in any legal contest of the final Environmental Impact Statement; (2) Estimated time to obtain all construction permits; (3) Estimated time to obtain bids on construction and award contracts; (4) Estimated number of times NPS will have to seek additional appropriations for any construction. It is obvious that the length of time needed to complete any build alternative is a factor in determining whether it is reasonable and prudent. Failure to analyze factors that can delay the project is necessary to rational decision-making.”

(Individual, Walhalla, SC, Comment 1723)

Response: As detailed in the responses to Concern Nos. 118 and 119, the EIS covers a full range of impact topics developed in an iterative public and agency scoping process following CEQ’s NEPA guidelines. Issues associated with environmental requirements/permitting, construction bidding/award, and potential schedule impacts are reflected in terms of costs in the cost estimates for the partial-build and build alternatives, which include an allowance for engineering and contingencies that has been established at a level that reflects the unique requirements of the study area, as well as project unknowns or uncertainties. Details on the permitting process and construction bidding process are not typically included in an EIS. It is beyond the scope of this NEPA analysis to evaluate the potential for litigation or the availability/appropriation of funds for any of the alternatives. The assumed project timelines have been developed to reflect reasonably achievable scenarios and provide a basis for comparing the alternatives. The response to Concern No. 108 discusses some of the schedule assumptions, including the assumption for purposes of this analysis that corresponding funding would be available for all of the alternatives (partial-build, build, and monetary settlement).

127. The DEIS does not adequately discuss the impact to private boat enterprises in the area.

“Building a road to (and then a marina at) Bushnell would involve the Park Service in running a boat dock – a completely random insertion of complexity considering none of the original signatories contemplated nor desired public provision of this service. . . . This service is already provided in the area by private enterprises, the impact to which was not adequately discussed in the DEIS.”

(Organization [WildLaw], Asheville, NC, Comment 3310)

Response: The Partial-Build Alternative to Bushnell would include a day use area with various amenities, including a boat launching ramp and a restricted boat dock. However, the boat ramp and dock associated with this alternative do not provide boating services on the scale of a marina, nor would boating supplies typically available at marinas be provided. As stated in Section 2.5.4, “The dock would be used to house NPS or concession-operated boats that would provide transportation on cemetery decoration days from Bushnell or Cable Cove, as appropriate. The boat dock would also be used for scenic boat tours and would be available to the public for temporary docking to access concessions, restrooms, and other facilities.” NPS currently operates boats to provide transportation to cemetery decoration days on the northern side of the lake. In addition, boats pull up along the shore of several creeks where there is trail access (including Hazel, Eagle, and Forney creeks) for fishing, as well as backcountry camping or hiking. The impact of the Partial-Build Alternative to Bushnell on private enterprises in the area was considered in the economic analysis presented in Appendix F. While the facility would have the potential to redirect some boats that may have had destinations elsewhere on the lake inside and outside GSMNP, the boat ramp and dock would also generate additional business for private enterprises from individuals who want to visit the Bushnell facilities by boat.

As discussed in the response to Concern No. 9, the 1943 Agreement is a conditional agreement and there is the potential for there to be a range of alternatives that could satisfy the agreement. The selection of the six alternatives (including the No-Action Alternative), and their features, recommended for detailed study in the EIS was an iterative process that began with project scoping. Combining previously suggested ideas with input from the public, as well as state and federal agencies, the project study team screened approximately 100 initial concepts. The screening of concepts and development of the alternatives recommended for detailed study in the EIS are documented in the *Preliminary Alternatives Report* (ARCADIS 2005b).

128. Appendix Q ‘GSMNP Enabling Legislation’ contains text discussing geology.

“Appendix Q claims to contain ‘GSMNP Enabling Legislation.’ And it starts out that way. But on page 2 the Act of May 22, 1926 abruptly ends and is continued by a discussion of pyritic rock and the Cherohala Skyway.”

(Individual, Oberlin, OH, Comment 58)

Response: Extraneous text was inserted in Appendix Q on pages Q-2 and Q-3. This text has been deleted. See the Errata and Addenda to the Appendices, Appendix Q.