

**Draft Environmental Assessment for an Air Tour  
Management Plan for  
Mount Rushmore National Memorial**

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# 1 PURPOSE AND NEED

## 1.1 Introduction

The Federal Aviation Administration (FAA) and the National Park Service (NPS) (collectively, “the agencies”) are working together to develop an air tour management plan (ATMP) pursuant to the National Parks Air Tour Management Act of 2000 (the Act) and an Environmental Assessment (EA) for Mount Rushmore National Memorial (hereafter referred to as the “Park”). The Act was signed into law on April 5, 2000. The Act applies to all commercial air tour operations over a unit of the National Park System.

The Act requires the FAA, in cooperation with the NPS, to develop an ATMP or voluntary agreement for parks and tribal lands where operators have applied to conduct commercial air tours. The Act provided for existing commercial air tour operations occurring at the time the law was enacted to continue until an ATMP for the Park was implemented by expressly requiring the FAA to grant interim operating authority (IOA) to existing operators.<sup>1,2</sup> Currently, there are two air tour operators conducting air tours over the Park with combined IOA for 5,608 commercial air tours annually. IOA includes only an annual cap on the number of commercial air tours that may be conducted by an operator, but does not designate the routes, time-of-day, altitudes, or other conditions for such tours.

The objective of the ATMP, under the Act, is to develop acceptable and effective measures to mitigate or prevent significant adverse impacts, if any, of commercial air tour operations on the Park’s natural and cultural resources, tribal sacred sites and ceremonial areas, and visitor experience, as well as Wilderness character within the ATMP planning area. The regulations implementing the Act are found in Title 14, Code of Federal Regulations (CFR), Part 136, *Commercial Air Tours and National Parks Air Tour Management* (14 CFR Part 136). This draft EA is being prepared in accordance with the National Environmental Policy Act of 1969 (NEPA) (42 United States Code (U.S.C.), 4321 et seq.), Council on Environmental Quality (CEQ) NEPA implementing regulations (40 CFR Parts 1500-1508), the 2015 FAA 1050.1F Order, *Environmental Impacts: Policies and Procedures*, and NPS NEPA policies and procedures (2015 NPS NEPA Handbook and 2015 NPS NEPA Handbook Supplemental Guidance - *Writing Impact Analysis Sections for EAs and EISs*).

The term commercial air tour operation is defined as any flight conducted for compensation or hire in a powered aircraft, where a purpose of the flight is sightseeing over a park or within ½-

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<sup>1</sup> 49 U.S.C. § 40128(c)(2)(A)(i-ii).

<sup>2</sup> 70 FR 58,778 (Oct. 7, 2005).

mile outside the park's boundary during which the aircraft flies below 5,000 feet (ft.) above ground level (AGL). This area is referred to as the ATMP planning area (Figure 1).

## 1.2 Background

On February 14, 2019, Public Employees for Environmental Responsibility and Hawai'i Coalition Malama Pono filed a petition in the United States (U.S.) Court of Appeals for the District of Columbia Circuit requesting that the Court order the agencies to complete ATMPs for seven parks including Mount Rushmore National Memorial. On May 1, 2020, the Court granted the petition and ordered the agencies to submit a schedule for bringing 23 eligible parks (based on reported air tour data from 2018) into compliance with the Act within two years or to show specific, concrete reasons why doing so will take longer. Consistent with the Court's order, agencies submitted a proposed plan and schedule (Compliance Plan) on August 31, 2020. On June 21, 2022, the Court ordered the agencies to file a joint supplemental report and propose firm deadlines for bringing each of the parks included in the Compliance Plan into compliance with the Act. On July 21, 2022, the agencies filed their report and provided a deadline of December 31, 2023, to complete the ATMP for the Park.

In order to conduct planning processes consistent with the Court's decision, the agencies formally terminated longstanding ATMP planning processes for several parks via a September 3, 2020 Federal Register notice.<sup>3</sup> The previous planning process for an ATMP for the Park was initiated in 2003. In 2004, the FAA published a notice of the agencies' intent to prepare an EA for that ATMP.<sup>4</sup> Due to the passage of the 2012 amendments to the Act, work on the previous planning process was paused until the time it was terminated in order to initiate the current planning process.

On September 6, 2022, the FAA and the NPS initiated a 30-day NEPA public scoping process and put forth four potential ATMP alternatives for public and stakeholder review and comment. The comments received were used to further refine or dismiss alternatives as described in this draft EA and were also used to inform the environmental analysis. Refer to Appendix J, *Public Scoping Newsletter and Comment Summary Report*, for more information.

## 1.3 Proposed Action

The proposed action is to implement an ATMP for the Park. The Act defines an ATMP as a plan used to develop acceptable and effective measures to mitigate or prevent the significant

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<sup>3</sup> Termination of Previously Initiated Processes for the Development of Air Tour Management Plans and Environmental Assessments/Environmental Impact Statements for Various National Park Units and Notice of Intent to Complete Air Tour Management Plans at 23 National Park Units, 85 FR 55,060 (Sept. 3, 2020).

<sup>4</sup> Environmental Assessment for the Air Tour Management Plan Program at Mount Rushmore National Memorial, 69 FR 20660 (April 16, 2004).

adverse impacts, if any, of commercial air tour operations upon natural and cultural resources, Wilderness character, visitor experiences, and tribal lands. An ATMP describes conditions for the conduct of air tour operations over a park, including routes, altitudes, time-of-day restrictions, restrictions for particular events, maximum numbers of flights, or other provisions. The Act and implementing regulations found in 14 CFR Part 136 state that the ATMP for a park:

- May prohibit commercial air tour operations over a national park in whole or in part;
- May establish conditions for the conduct of commercial air tour operations, including, but not limited to, commercial air tour routes, maximum number of flights per unit of time, maximum and minimum altitudes, time-of-day restrictions, restrictions for particular events, intrusions on privacy on tribal lands, and mitigation of noise, visual, or other impacts;
- Shall apply to all commercial air tour operations over a national park or within ½-mile outside the park's boundary;
- Shall include incentives (such as preferred commercial air tour routes and altitudes, relief from caps and curfews) for the adoption of quiet aircraft technology by commercial air tour operators conducting commercial air tour operations at the park;
- Shall provide for the initial allocation of opportunities to conduct commercial air tour operations if the plan includes a limitation on the number of commercial air tour operations for any time period; and
- Shall justify and document the need for measures taken pursuant to the items above and include such justifications in the record of decision.

The ATMP will prescribe operating parameters to mitigate impacts from commercial air tours on Park resources. Four alternatives for the Park's ATMP are considered and evaluated in this draft EA.

## **1.4 Purpose and Need**

Purpose: The purpose of the ATMP is to comply with the Act and other applicable laws, consistent with the *Plan and Schedule for Completion of Air Tour Management Plans at Twenty-Three Parks* approved by the U.S. Court of Appeals for the District of Columbia Circuit on November 20, 2020, in Case No. 19-1044, *In Re Public Employees for Environmental Responsibility and Hawai'i Coalition Malama Pono* (Compliance Plan).

Need: The Act requires an ATMP or voluntary agreement to be developed for the Park. Air tours have the potential to impact natural and cultural resources, tribal sacred sites and ceremonial areas, Wilderness character, and visitor experience. The Act requires that the FAA and the NPS develop acceptable and effective measures to mitigate or prevent significant adverse impacts, if any, of commercial air tour operations on natural and cultural resources, tribal sacred sites and ceremonial areas, Wilderness character, and visitor experience.

## 1.5 Environmental Impact Categories Not Analyzed in Detail

The following environmental impact categories were considered but not analyzed in detail in this draft EA because:

- The topics do not exist in the analysis area, or would not be affected by the ATMP; or
- The likely impacts are not reasonably expected.

### ***Biological Resources (Fish, Invertebrates, and Plants)***

The ATMP would not result in ground disturbance or in-water activities that could affect plants or fish. The proposed minimum altitudes (900 ft. to 1,400 ft. AGL) included in both of the action alternatives under which commercial air tours would be permitted within the ATMP planning area would create sufficient separation between commercial air tours and fish such that impacts are not expected to occur, either directly or indirectly.

Noise from aircraft have been demonstrated to influence the behavior of ecologically significant pollinators and seed dispersers in natural and human altered landscapes (Francis et al., 2012; Gallardo Cruz et al., 2021). Specifically, Francis et al. (2012) studied the effect of compressor noise running continuously and generating noise at high amplitudes (greater than 95 decibels (dBA) at a distance of 1 meter). Within the study, experimental sites were established 125 to 150 meters from the noise source. Noise exposure had an indirect positive effect on pollination by hummingbirds, but an indirect negative effect on piñon pine seedling establishment by altering the composition of animals preying upon or dispersing seeds. In contrast to the experimental design of this study, commercial air tours do not generate continuous noise, and minimum altitudes considered by the alternatives (900 ft. to 1,400 ft. AGL) provide much greater spatial separation compared to the study sites. Therefore, the agencies have determined that noise associated with the ATMP is unlikely to result in impacts to plants or plant pollination.

Native invertebrates in the Park are largely restricted to areas of predominantly native vegetation, including shaded draws, open meadows, and areas with elevated moisture levels such as springs and streams. The proposed altitudes included in each of the alternatives under which air tours would be permitted (900 ft. to 1,400 ft. AGL) would create sufficient separation between commercial air tours and invertebrates such that impacts are not expected to occur, either directly or indirectly.

Air tours could result in some effects on air quality, such as emissions or the potential for low-flying aircraft to generate dust, which could indirectly affect plants. While air quality is a topic that is analyzed in detail in this draft EA, the minimum altitudes considered by the alternatives under which air tours would be permitted within the ATMP planning area (900 ft. to 1,400 ft. AGL) create sufficient separation between plants and aircraft such that it is unlikely that the dust or changes in air quality would have a meaningful effect on plants. Through tribal

consultation, tribes have conveyed to the agencies that natural resources, including plants, are considered cultural resources by the tribes. Since impacts on plant biology are not expected, plants have been dismissed from further analysis as a biological resource and are analyzed as a cultural resource (see Section 3.4, Cultural Resources). In summary, for these reasons, the agencies have dismissed this impact topic from further analysis as a biological resource.

### ***Children's Environmental Health and Safety Risks***

The ATMP would not affect products or substances that a child would be likely to come into contact with, ingest, use, or be exposed to, and would not result in environmental health and safety risks that have the potential to lead to a disproportionate health or safety risk to children. Therefore, this topic has not been analyzed in detail in this draft EA.

### ***Hazardous Materials, Solid Waste, and Pollution Prevention***

Applicable FAA air tour regulations include restrictions to protect individuals and property on the ground, and prevent collisions between aircraft, land or water vehicles, and airborne objects. The FAA has issued safety standards for safe air tour operations to reduce the potential for air tour crashes. Even so, there are various circumstances that can lead to an air tour crash or emergency landing, including but not limited to poor weather, mechanical failure, or faulty maintenance. The agencies acknowledge that in the unlikely event of an accident, there could be potential impacts to Park resources from associated debris and aircraft fuel. Consistent with 43 CFR Part 1502.21(c)(1)-(4), the agencies are disclosing that information necessary to analyze site-specific impacts from an air tour crash is not available. The agencies cannot speculate if, where, or when an air tour accident or incident may occur or the degree of Park resource damage.

In the event of an emergency landing inside the Park (regardless of whether the aircraft intended to fly over the Park), once the aircraft has safely landed and any medical or other emergency issues have been addressed, the operator would need to immediately notify the NPS through Park dispatch of the incident and location. Prior approval from the Park superintendent or designee is required for the removal or take off of the landed aircraft in order to coordinate joint resources for the safety of visitors and Park resources (36 CFR Part 2.17). Prior approval from the Park superintendent or designee is required for any non-emergency landing of aircraft within the Park boundaries, including replacement aircraft deployed to retrieve passengers who are not able to exit via ground transportation (36 CFR Part 2.17).

If an air tour crash occurs, the NPS Northern Great Plains Fire Management Office or a cooperating emergency response agency would respond as soon as possible to provide life-saving search and rescue efforts. If the crash resulted in fire or hazardous materials contamination, responding personnel would attempt to secure the area and control the fire or

contain potential contaminants while mitigating impacts to Park resources to the greatest extent possible. The Park's Fire Monitoring Handbook (NPS, 2003) would guide fire response and associated resource protection. Assessment of resource damage, initiation of restoration, and financial compensation sought would be guided by the System Unit Resource Protection Act, 54 U.S.C. § 100721 et seq.

Air tour operators must comply with all applicable federal, state, and local rules and regulations pertaining to the proper storage, handling, and use of hazardous materials. The ATMP would not result in impacts regarding hazardous materials, solid waste, and pollution prevention because it would not 1) violate laws or regulations regarding hazardous materials and/or solid waste management; 2) involve a contaminated site; 3) produce an appreciably different quantity or type of hazardous waste; 4) generate an appreciably different quantity or type of solid waste or use a different method of collection or disposal; 5) exceed local capacity; or 6) adversely affect human health and the environment. Therefore, the ATMP is not expected to result in impacts related to hazardous materials and this topic has not been analyzed in detail in this draft EA.

### ***Farmlands***

The ATMP planning area, as described in Section 2.3, The ATMP Planning Area for Development of the Alternatives does not contain soils that are designated as prime/unique farmland soils. Additionally, the ATMP would not involve ground disturbance that would have the potential to convert farmland to non-agricultural uses. Therefore, this resource has not been analyzed in detail in this draft EA.

### ***Land Use***

Land use refers to the general characteristics of how land is allocated among various administrative, preservation, recreational, and development needs. The ATMP would not result in ground disturbing activities within the ATMP planning area. The impacts to land use are not reasonably expected; therefore, land use is not analyzed in detail in this draft EA.

### ***Natural Resources and Energy Supply***

Commercial air tours have been ongoing within the ATMP planning area prior to enactment of the Act. The ATMP would not result in the extraction of resources or cause measurable increases in the consumption of energy resources that would exceed available or future supplies of natural or energy resources. Therefore, this topic is not analyzed in detail in this draft EA.

### ***Visual Effects – Light Emissions***

Commercial air tours do not fly at night as it creates safety concerns when flying in areas with little artificial light on the ground surface, and points of interest that could otherwise be seen



from an air tour are not visible at night. Any lights from commercial air tour aircraft are not likely to be noticeable during the daytime. Therefore, light emissions are not expected to occur as a result of the ATMP and this topic has not been analyzed in detail in this draft EA.

***Water Resources (Including Wetlands, Floodplains, Surface Waters, Groundwater, and Wild and Scenic Rivers)***

Due to the absence of Wild and Scenic Rivers within the ATMP planning area, absence of ground disturbing activities, and the minimum altitudes in the alternatives that would permit commercial air tours within the ATMP planning area, the ATMP is unlikely to directly or indirectly adversely affect water resources. As noted above in the analysis for Hazardous Materials, Solid Waste, and Pollution Prevention, the agencies are unable to speculate if, where, or when an air tour accident or incident could occur and the Park resource damage that could result, including those related to hazardous material entering water resources within the ATMP planning area. Therefore, water resources are not expected to be impacted as a result of the ATMP and have not been analyzed in detail in this draft EA.

***Coastal Resources***

The ATMP planning area does not include coastal areas or coastal zones. Therefore, coastal resources have not been analyzed in detail in this draft EA.

## 2 ALTERNATIVES

### 2.1 Alternatives Development

Prior to public scoping, the preliminary ATMP alternatives were developed primarily by an NPS interdisciplinary team comprised of subject matter experts from the NPS's Natural Sounds and Night Skies Division, Environmental Quality Division, Midwest Regional Office, and the Park. Because land managed by the U.S. Forest Service (USFS) is inside the ATMP planning area, the USFS was invited to be a cooperating agency in accordance with 40 CFR Part 1501.8, by letter dated December 9, 2021, in the development of the alternatives and this draft EA. The USFS agreed to be a cooperating agency and has participated in the development of the draft ATMP, draft EA, and associated documents. In developing the alternatives, the team considered the noise impacts of existing routes and operations, the Park's cultural and natural resources, the Park's existing and natural acoustic environment, visitor experience, visual resources, and the Wilderness character of the adjacent Black Elk Wilderness, as well as potential protective measures that could be included in an ATMP. The alternatives identified by the interdisciplinary team and justifications for restrictions on commercial air tours were reviewed by the FAA, including the FAA's local Flight Standards District Office (FSDO) who noted any aviation safety concerns.

The agencies also conducted a preliminary environmental analysis earlier in the planning process to identify the appropriate level of NEPA review for a draft ATMP. In 2020, using routes, altitudes, reporting data provided by commercial air tour operators, and other relevant information, the agencies modeled existing air tour conditions over the Park using the FAA's Aviation Environmental Design Tool (AEDT), a software system that models aircraft performance in space and time to estimate fuel consumption, emissions, noise, and air quality. This information was then considered, in addition to acoustic monitoring information, and analyzed by the interdisciplinary planning team. The FAA, in coordination with the NPS, also initiated consultation pursuant to Section 106 of the National Historic Preservation Act (NHPA) (54 U.S.C. §§ 300101 et seq.), including consultation with Native American Tribes. The input from consultation and preliminary environmental analysis was used to further refine or dismiss potential alternatives prior to the public scoping period. Ultimately, there are four potential alternatives: Alternative 1 which serves as the No Action Alternative, Alternative 2 which would prohibit air tours within the ATMP planning area, Alternative 3 which would permit (3,657 annual and up to 25 daily) air tours with additional operational modifications in the ATMP planning area, and Alternative 4 which would permit (1,833 annual and up to 13 daily) air tours with additional operational modifications within the ATMP planning area. These alternatives were released for review and comment during the public scoping period in September 2022. Refer to the public scoping newsletter in Appendix J, *Public Scoping Newsletter and Comment Summary Report* for details on the alternatives included in public scoping.

2.4 Alternative 1 (No Action Alternative) As a result of the agencies' consideration of the comments received from the September 2022 public scoping period, the agencies advanced all four alternatives for analysis in this draft EA. As a result of the comments received from the September 2022 public scoping period, the agencies refined the annual and daily number of flights, seasonal restrictions, and time-of-day restrictions in Alternative 4. There were no changes made to Alternatives 1, 2, or 3 following public scoping. Alternatives may be further developed or modified through the NEPA process in response to public, consulting party, and agency comments on this draft EA and draft ATMP.

As part of the alternatives development process the interdisciplinary team considered other existing planning documents when developing the management objectives for the ATMP, including the Foundation Document (NPS, 2015) which states:

*The purpose of Mount Rushmore National Memorial is to commemorate the founding, expansion, preservation, and unification of the United States by preserving, protecting, and interpreting the mountain sculpture in its historic, cultural, and natural setting while providing for the education, enjoyment, and inspiration of the public.*

The following Park management objectives relate to the development of the ATMP for the Park:

- The Park's acoustic environment supports an outstanding visitor experience and opportunities to hear and enjoy natural sounds.
- Park staff are able to conduct, and visitors are able to experience, interpretive programming with minimal interference due to noise.
- Natural sounds are protected to conserve healthy and robust wildlife populations; biological and ecological processes prevail.
- Traditional and cultural resources are preserved to facilitate ongoing connection with and use of these resources by associated Tribal Nations and traditionally associated communities.

## **2.2 Alternatives Considered but Eliminated from Further Study**

### **2.2.1 Air Tours at or above Existing Levels**

The agencies considered but eliminated alternatives that would allow air tour operations at or above existing numbers. These alternatives were eliminated from further study because the NPS determined they would result in unacceptable impacts to the Park's natural and cultural resources, and visitor enjoyment (NPS Management Policies § 1.4.7.1, 2006), and do not meet the purpose and need for the ATMP. The NPS determined the existing level of air tours is

inconsistent with the Park's purpose and values, as described in its Foundation Document (NPS, 2015).

Noise and visual effects from air tours negatively impact existing cultural sites within the Park associated with Native American Tribes. The NPS Management Policies direct the NPS to avoid adversely affecting physical integrity of sacred sites to the extent practicable (NPS Management Policies § 5.3.5.3.2, 2006). Additionally, culturally appropriate sounds are important elements of the national park experience in many parks, and therefore, the NPS is directed to "prevent inappropriate or excessive types and levels of sound (noise) from unacceptably impacting the ability of the soundscape to transmit the cultural and historic resource sounds associated with park purposes" (NPS Management Policies § 5.3.1.7, 2006). Tribes and individual tribal members have consistently noted that air tours over the Park unreasonably interfere with their connections to the sacred landscape of the Black Hills, including within the ATMP planning area.

Existing air tours over the Park also directly interfere with activities such as interpretive programs and visitor activities at many sites, including the Park amphitheater, Presidential Trail, Youth Exploration Area, and Old Baldy. The existing level of air tours diminishes visitor opportunities to learn about and be inspired by the Park's resources and values, and the NPS has determined that it unreasonably interferes with the atmosphere of peace and tranquility in the Park. The interdisciplinary team also concluded that the existing levels of air tours diminishes Wilderness character due to its effects on natural soundscapes in adjacent Wilderness managed by the USFS.

Therefore, authorizing commercial air tours at or above the existing level of operations would not meet the objectives of an ATMP. The NPS has determined that the existing level of air tours cannot be mitigated to avoid or prevent unacceptable impacts and therefore any alternative that would maintain or increase the current number of air tours within the ATMP planning area does not meet the purpose and need for the ATMP. For all of these reasons, the agencies have considered but eliminated alternatives that would continue air tours at or above existing air tour numbers.

### **2.3 The ATMP Planning Area for Development of the Alternatives**

An ATMP regulates commercial air tours over a national park or within ½-mile outside the park's boundary during which the aircraft flies below 5,000 ft. AGL. This is referred to as the ATMP planning area in this draft EA and as the ATMP boundary in the ATMP itself. Air tours outside of the ATMP planning area are not subject to the Act and are therefore not regulated under the ATMP. As air tours outside of the ATMP planning area are outside the jurisdiction of the ATMP, there would be no limitations on the annual number of such air tours that could occur, and no designated routes could be set outside the ATMP planning area under any alternative. Refer to Figure 1 for a graphic depiction of the ATMP planning area. Although they may occur within the ATMP planning area, general aviation flights, overflights by commercial

airlines, and military flights would not be regulated by the ATMP because they are not commercial air tours subject to regulation under the Act.

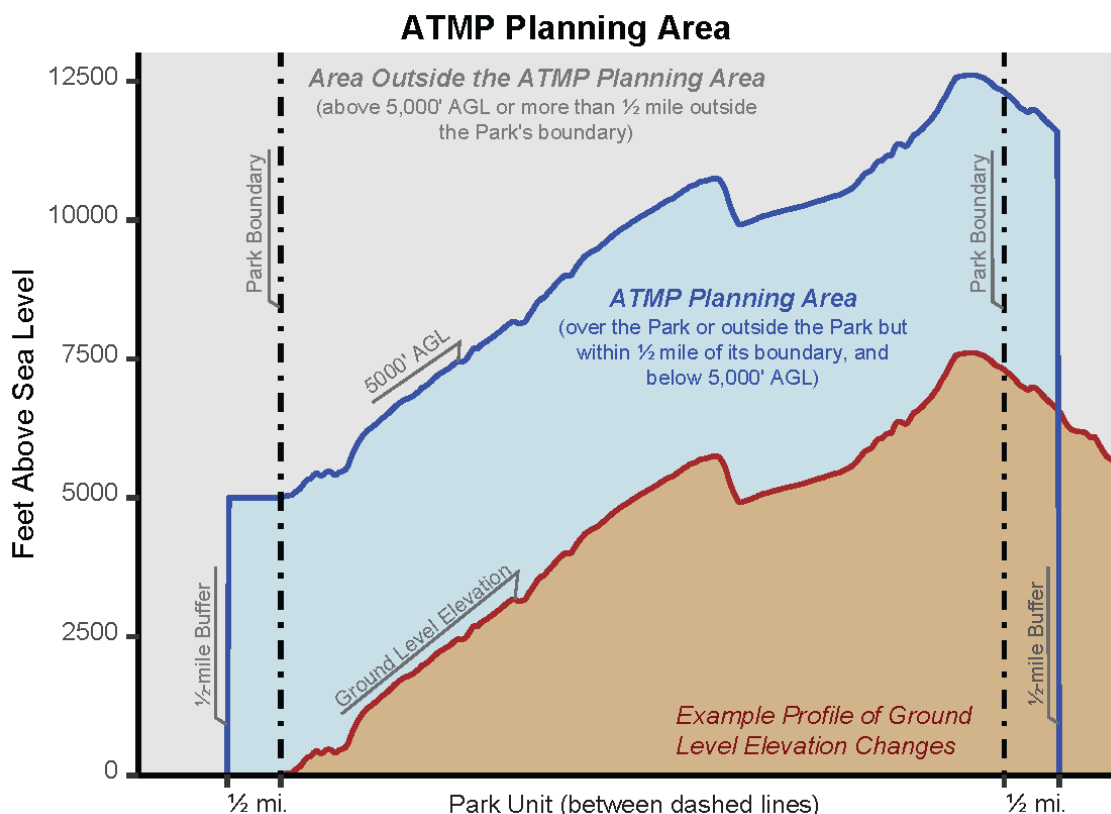


Figure 1. Graphic Depiction of the ATMP Planning Area.

## 2.4 Alternative 1 (No Action Alternative)

The No Action Alternative represents the yearly average number of commercial air tours over the Park from 2017-2019 across the two current operators, with the possibility of operators flying up to their IOA. Operators must comply with applicable regulations that govern aviation safety (14 CFR Part 136, Appendix A (formerly Special Federal Aviation Regulation 71)) and fly in accordance with FAA Advisory Circular 91-36D *Visual Flight Rules Flight Near Noise Sensitive Areas* (FAA, 2004) and the Memorandum of Understanding (MOU) between Ellsworth Airforce Base and the Park dated September 1, 2022.<sup>5</sup>

The No Action Alternative provides a basis for comparison but is not a selectable alternative because it does not meet the purpose and need for the ATMP (refer to Section 1.4, Purpose and Need).

<sup>5</sup> Department of Defense Document Number: FB4460-22XXX-002

#### **2.4.1 Commercial Air Tours per Year**

Two commercial air tour operators currently hold IOA to fly up to a combined total of 5,608 commercial air tours per year over the Park (see Table 1). The yearly average number of commercial air tours conducted over the Park from 2017-2019 across both of these operators is 3,914. The agencies consider the 2017-2019 three-year average the existing baseline for the purposes of understanding the existing number of commercial air tours over the Park. The requirement for commercial air tour operators to report annual commercial air tour operations to the agencies was implemented in 2013. Reporting data from 2013 and 2014 are considered incomplete as reporting protocols were not fully in place at that time and likely do not accurately reflect actual number of air tours conducted. Flight numbers from a single year were not chosen as the existing baseline because the three-year average accounts for both variation across years and takes into account the most recent pre-pandemic years. Reporting data from 2020 was not used because the 2020 COVID-19 pandemic resulted in abnormalities in travel patterns across the U.S., which does not represent the conditions in a typical year. The agencies also decided against using 2021 or 2022 data due to continued abnormalities associated with the COVID-19 pandemic and the unavailability of reporting data for 2021 or 2022 during most of the planning effort.

The agencies also decided against using IOA as the baseline because IOA was based on numbers reported by operators more than 20 years ago and does not represent the most current or reliable operational data. The three-year average of commercial air tours from 2017-2019 is 3,914 tours per year, which is approximately 70% of IOA. Under the No Action Alternative, operators could fly additional air tours up to their IOA, or they may fly fewer air tours. The No Action Alternative represents a continuation of existing conditions and for the purposes of analysis uses the three-year average of flights from 2017 to 2019. The impacts of IOA are not analyzed nor included as the baseline condition for this alternative, though in any given year operators could conduct additional air tours up to their IOA or they may fly fewer air tours than in the period from 2017 to 2019.

#### **2.4.2 Commercial Air Tour Routes and Altitudes**

There are no designated flight routes or no-fly zones under the No Action Alternative. The figure for this alternative (Figure 2) depicts general route information provided by current commercial air tour operators over and adjacent to the Park. Commercial air tour operations are likely dispersed around the generalized routes provided by operators depicted in Figure 2. Routes and altitudes may change, depending on an operator's preference to change routes or to fly higher or lower than they currently are flying. For purposes of defining the No Action

Alternative, the operator-provided route information depicted in Figure 2 is considered in this draft EA.<sup>6</sup>

Under the No Action Alternative, commercial air tours on routes Keystone 1, Keystone 2, Keystone 3/4/5, and Custer 4/5/6 would likely continue to be conducted at an operator-reported altitude of 900 ft. AGL, except during takeoff and landing from the privately owned and operated heliport on the boundary of the ATMP planning area, or as necessary for safe operation of an aircraft as determined under Federal Aviation Regulations. An altitude of 900 ft. AGL results in the mean sea level (MSL) altitude callouts on Figure 2 that range from 5,500 ft. to 7,000 ft. MSL.<sup>7</sup> Commercial air tours on route Eagle MRU would likely continue to be conducted at an operator-reported altitude of 6,500 ft. MSL as shown in Figure 2, which results in altitudes that range from 1,300 ft. to 2,100 ft. AGL.

All air tour operators are required to report to the FAA and the NPS, on a semi-annual basis, the number of commercial air tour operations they have conducted within the ATMP planning area.<sup>8</sup> The operators must provide the date and time each tour occurred, the make/model of aircraft used, and the route on which the tour was conducted.

### **2.4.3 Commercial Air Tour Operators and Aircraft Types**

The two commercial operators that hold IOA for the Park reported flying commercial air tours over the Park between 2013 and 2020. Dakota Rotors LLC (Black Hills Aerial Adventures, Inc., and Rushmore Helicopters) flies helicopters, and Eagle Aviation, Inc. flies fixed-wing aircraft. Table 1 summarizes each operator's aircraft type, IOA, reported tours, and 2017-2019 average number of reported tours over the Park:

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<sup>6</sup> In accordance with FAA Advisory Circular 91-36D Visual Flight Rules Flight Near Noise-Sensitive Areas, a 2022 MOU between the Park and Ellsworth Air Force Base was established with one of the main recommendations for pilots to make every effort to fly a lateral distance of 2,000 ft. AGL from noise sensitive areas.

<sup>7</sup> Altitude expressed in units AGL is a measurement of the distance between the ground surface and the aircraft, whereas altitude expressed in MSL refers to the altitude of an aircraft above sea level, regardless of the terrain below it. Aircraft flying at a constant MSL altitude would simultaneously fly at varying AGL altitudes, and vice versa, assuming uneven terrain is present below the aircraft.

<sup>8</sup> See *Air Tour Reporting Guidance*

Memo (2020), [https://www.faa.gov/about/office\\_org/headquarters\\_offices/ara/programs/air\\_tour\\_management\\_plan/program\\_information](https://www.faa.gov/about/office_org/headquarters_offices/ara/programs/air_tour_management_plan/program_information)

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Table 1. Commercial Air Tour Operators, Aircraft Type, Reported Tours, and IOA.

Operator	Aircraft Type	2013	2014	2015	2016	2017	2018	2019	2020 <sup>9</sup>	2017-2019 Avg.	IOA
Dakota Rotors LLC (Black Hills Aerial Adventures, Inc., and Rushmore Helicopters)	BHT-206B, BHT-47-G3B1, R-44-II, R-66-66 (helicopter)	0	3,639	4,348	4,002	3,730	3,782	4,202	4,860	3,905	5,563
Eagle Aviation, Inc.	Cessna 172, Cessna 206 (fixed-wing)	9	9	15	9	19	6	2	0	9	45
<b>TOTAL</b>		<b>9</b>	<b>3,648</b>	<b>4,363</b>	<b>4,011</b>	<b>3,749</b>	<b>3,788</b>	<b>4,204</b>	<b>4,860</b>	<b>3,914</b>	<b>5,608</b>

Source: 2013-2019 Annual Reports, "Reporting Information for Commercial Air Tour Operations over Units of the National Park System."  
See <https://www.nps.gov/subjects/sound/airtours.htm>.

<sup>9</sup> Based on unpublished reporting data.



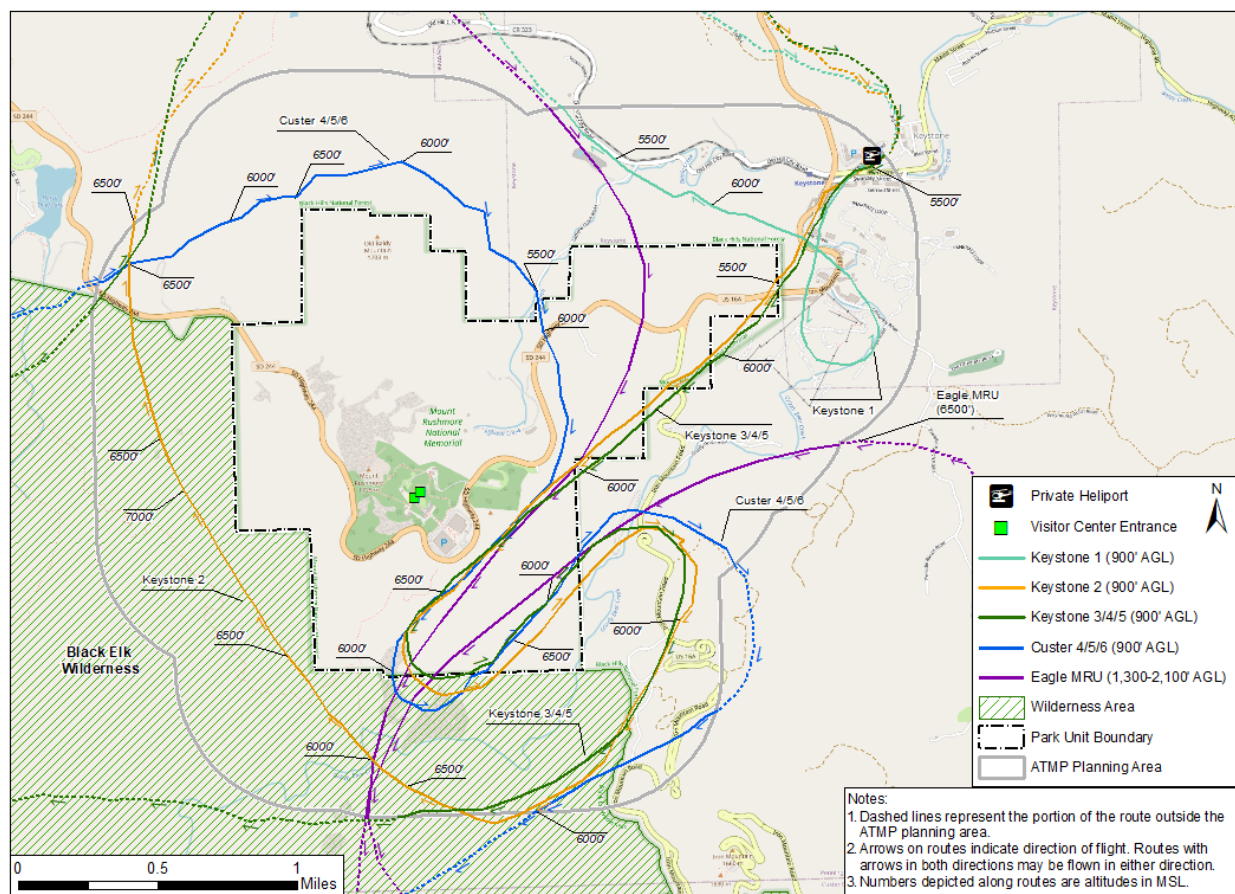


Figure 2. Alternative 1 (No Action).

## 2.5 Alternative 2 (Preferred Alternative)

Alternative 2 provides the greatest level of protection for the purpose, resources, and values of the Park.

Alternative 2 would prohibit commercial air tours within the ATMP planning area no later than 180 days after the ATMP is signed by all required signatories from both agencies (the ATMP's effective date). Except when necessary for takeoff or landing from the privately owned and operated heliport on the boundary of the ATMP planning area, or as necessary for safe operation of an aircraft as determined under Federal Aviation Regulations requiring the pilot-in-command to take action to ensure the safe operation of the aircraft, or unless otherwise authorized for a specified purpose, commercial air tours would not be allowed to enter the ATMP planning area. Operators will be permitted to continue to conduct air tours within the ATMP planning area up to the limit of their IOA until their Operations Specifications are rescinded or amended to incorporate the ATMP's operating parameters, which will occur no later than 180 days after the effective date of the ATMP. Refer to Figure 3 for a depiction of this alternative.

Air tours outside of the ATMP planning area (i.e., at or above 5,000 ft. AGL or more than ½-mile outside the Park boundary) are not subject to the Act and are therefore not regulated under the ATMP. Thus, there would be no limitations on the number of air tours that could occur outside of the ATMP planning area.

All IOA for the Park would terminate by operation of law 180 days after the establishment (effective date) of the ATMP, 49 U.S.C. § 40128(c)(2)(E), after which time no operator could continue to rely on any Operations Specifications issued under IOA as authority to conduct commercial air tours within the ATMP planning area. Operations Specifications will be rescinded or amended to incorporate the operating parameters set forth in the ATMP within 180 days after the effective date of the ATMP.

The FAA reviewed the alternative to ensure it is safe (see Section 2.1, Alternatives Development). The FAA will evaluate the establishment of an operational plan in the area to enhance safety. As noted below, the pilot-in-command is always required to take action to ensure the safe operation of the aircraft.

#### **2.5.1 Commercial Air Tour Routes and Altitudes**

Air tours could be conducted only outside the ATMP planning area. Currently, air tours outside of the ATMP planning area are known to occur. An unknown number of air tours may continue to fly more than ½-mile outside of the Park's boundary, or above the ATMP planning area at or above 5,000 ft. AGL. Because air tours outside of the ATMP planning area are not regulated by the ATMP, air tour routes outside of this area are difficult to predict with specificity. Operators may continue to fly to points of interest outside of the ATMP planning area where they already fly, or they may fly routes over or around the ATMP planning area similar to existing flights paths but outside of the ATMP planning area. Some air tour operators may choose to move their air tours just outside or above the ATMP planning area, as tours just outside the ATMP planning area still offer a good view of the sculpture. However, if operators chose to fly above the ATMP planning area, they would be required to maintain altitudes at or above 5,000 ft. AGL while over the ATMP planning area. This may be impractical due to the high elevation of the terrain because it would require operators to fly above 10,000 ft. MSL. Supplemental oxygen use is required in unpressurized aircraft flying at altitudes over 10,000 ft. MSL for more than 30 minutes (14 CFR Parts 135.89, 135.157); therefore, it is unlikely air tours would fly above the ATMP planning area for extended periods of time. Additionally, flights at 5,000 ft. AGL or higher would provide limited value to a sightseeing operation of the sculpture. The actual flight path of air tours outside the ATMP planning area would vary due to operator preference and weather conditions at the time of the air tour. Based on current air tour activity, numbers of flights displaced outside the planning area would be expected to be similar to the number of flights currently operating within the ATMP planning area. The preciseness of routes and altitudes for tours flown on alternative routes are generally subject to Visual Flight Rules, which is based on the principle of "see and avoid," and therefore may vary.

## 2.5.2 Monitoring and Enforcement

Aircraft monitoring and enforcement would occur to ensure that commercial air tour operators are complying with the terms and conditions of the ATMP. This could be conducted by using Automatic Dependent Surveillance-Broadcast aircraft monitoring when possible (and if all operators utilize the technology) or other tracking technology (e.g., radar). The NPS would work with the FAA to identify and respond to any instances of noncompliance. The agencies would both be responsible for the monitoring and oversight of the ATMP. If the NPS identifies instances of noncompliance, the NPS would report such findings to the FAA's South Dakota FSDO. The FSDO would investigate and respond to all written reports consistent with applicable FAA guidance. The public may also report allegations of noncompliance with the ATMP to the FSDO, which may result in an FAA investigation. FAA determination of noncompliance may result in legal enforcement actions. Any violation of operations specifications would be treated in accordance with FAA Order 2150.3, *FAA Compliance and Enforcement Program*.

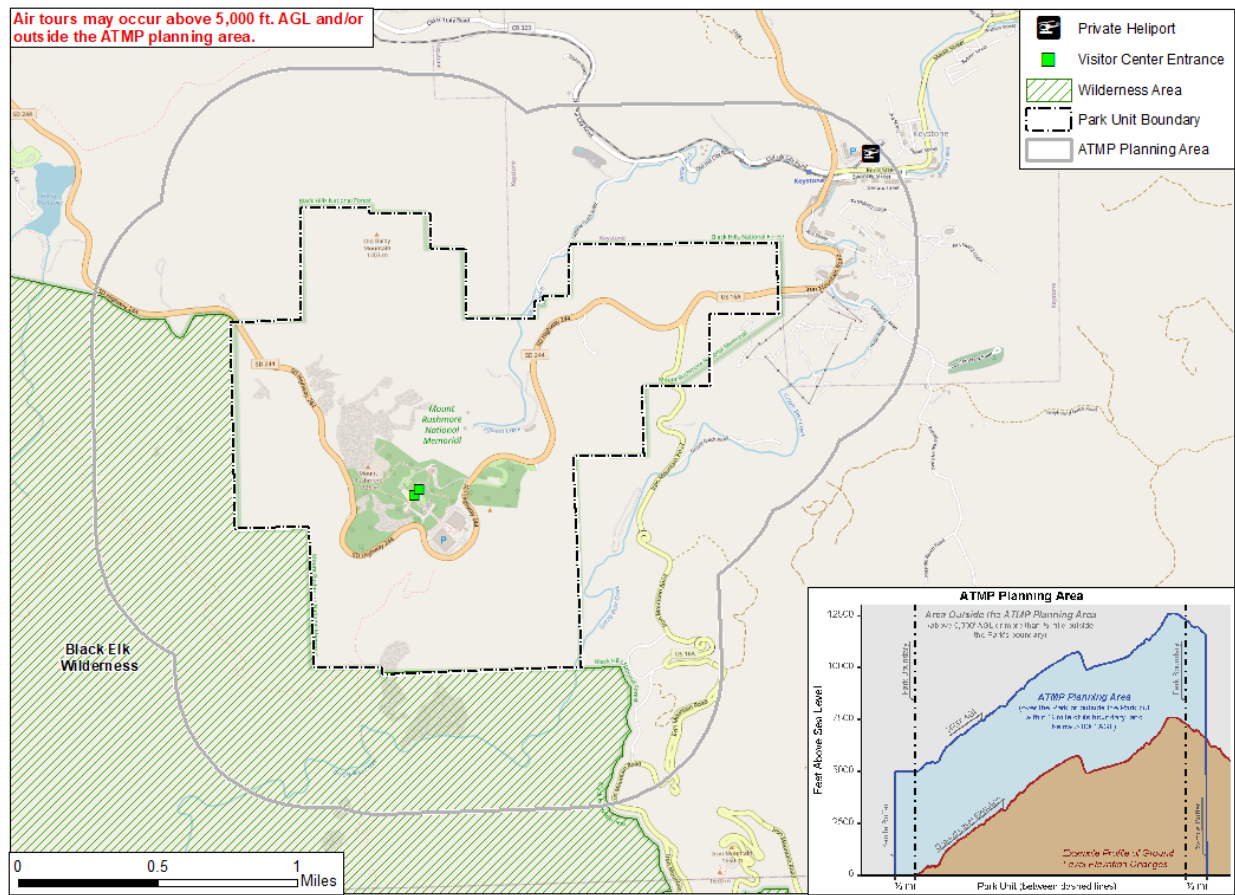


Figure 3. Alternative 2.

## **2.6 Alternative 3**

The NPS developed Alternative 3 to provide opportunities for air tours to occur within the ATMP planning area, with mitigations to avoid or minimize impacts to the Park's natural and cultural resources and visitor experience. Compared to existing conditions, Alternative 3 would restrict and reduce air tour operations within the ATMP planning area to reduce impacts on nesting birds and bighorn sheep lamb rearing. Primarily, the conditions in this alternative include annual and daily caps, designated routes, required minimal altitudes, and seasonal restrictions.

Refer to Figure 4 for a depiction of this alternative. The FAA reviewed the alternative to ensure it is safe (see Section 2.1, Alternatives Development). The FAA will evaluate the establishment of an operational plan in the area to enhance safety. As noted below, the pilot-in-command is always required to take action to ensure the safe operation of the aircraft.

### **2.6.1 Commercial Air Tours per Year**

Alternative 3 would authorize 3,657 commercial air tours per year within the ATMP planning area. Thus, it would authorize approximately 93% of the existing number of flights based on the three-year average of reporting data from 2017-2019 (see Table 2). The number of flights authorized per year was selected to avoid unacceptable impacts to the Park's cultural resources, the natural soundscape and acoustic environment, wildlife, and visitor experience as well as impacts to Wilderness character within the ATMP planning area.

The ATMP would be established and effective as of the date it is signed by all required signatories from both agencies. No later than 180 days after the effective date of the ATMP, the number of flights authorized each year would be proportionally allocated to the two operators that reported operations over the Park in the period from 2017-2019. Each operator's initial allocation would reflect the proportion of their average number of reported flights from 2017-2019 as compared to all operators that reported flying over the Park during this period. The initial allocation would remain in place until a competitive bidding process could occur.

All IOA for the Park would terminate by operation of law 180 days after the establishment (effective date) of the ATMP, 49 U.S.C. § 40128(c)(2)(E), after which time no operator could continue to rely on any Operations Specifications issued under IOA as authority to conduct commercial air tours within the ATMP planning area. Operations Specifications that incorporate the operating parameters set forth in the ATMP shall be issued within 180 days of the effective date of the ATMP.

Table 2. Initial Allocation of Air Tour Operations by Operator under Alternative 3.

<b>Air Tour Operator</b>	<b>3-year Reported Average No. of Air Tours (2017-2019)</b>	<b>Annual Operations</b>	<b>Number of Routes</b>
Dakota Rotors, LLC (Black Hills Aerial Adventures, Inc., and Rushmore Helicopters)	3,905	3,648	4
Eagle Aviation, Inc.	9	9	1
<b>TOTAL</b>	<b>3,914</b>	<b>3,657</b>	<b>5</b>

### 2.6.2 Commercial Air Tour Routes and Altitudes

Alternative 3 includes four routes for the helicopter operator (Dakota Rotors, LLC) and one route for the fixed-wing operator (Eagle Aviation, Inc.), all with varying distances and altitudes across the ATMP planning area (see Table 3). These five routes are consistent with what operators reported that they currently fly within the ATMP planning area.

Under Alternative 3, commercial air tours on routes Keystone 1, Keystone 2, Keystone 3/4/5, and Custer 4/5/6 would be conducted at the MSL altitude callouts on Figure 4 which range from 5,500 ft. to 7,000 ft. MSL and which result in a minimum altitude 900 ft. AGL. These altitudes would be required except when necessary for takeoff and landing from the privately owned and operated heliport on the boundary of the ATMP planning area, or as necessary for safe operation of an aircraft as determined under Federal Aviation Regulations requiring the pilot-in-command to take action to ensure the safe operation of the aircraft, or unless otherwise authorized for a specified purpose. Commercial air tours on route Eagle MRU would be conducted at a minimum altitude of 6,500 ft. MSL which results in minimum altitudes that range from 1,300 ft. to 2,100 ft. AGL. Refer to Figure 4 for details.

Under Alternative 3, no air tours could occur within the ATMP planning area, except air tours authorized on the designated routes and designated altitudes described above. Refer to Figure 4 for a depiction of the flight routes and altitudes. Because air tours outside of the ATMP planning area are not regulated by the ATMP, air tour routes outside of this area are difficult to predict with specificity. Operators could fly routes over the ATMP planning area at or above 5,000 ft. AGL, or outside the ATMP planning area similar to existing flight paths, or routes could vary greatly from those currently flown and would depend on operator preference and weather conditions at the time of the tour.

Table 3. Alternative 3 Operator Routes, Altitudes, and Aircraft Type and Operator.

Route Name	Altitude	Aircraft Type	Operator
Keystone 1	N/A	Helicopter	Dakota Rotors
Keystone 2	5,500 - 7,000 ft. MSL (900 ft. AGL)	Helicopter	Dakota Rotors
Keystone 3/4/5	5,500 - 7,000 ft. MSL (900 ft. AGL)	Helicopter	Dakota Rotors
Custer 4/5/6	5,500 - 7,000 ft. MSL (900 ft. AGL)	Helicopter	Dakota Rotors
Eagle MRU	6,500 ft. MSL (1,300 – 2,100 ft. AGL)	Fixed-wing	Eagle Aviation

### 2.6.3 Commercial Air Tour Aircraft Type

Each operator's aircraft types would reflect those reported in the period from 2017-2019 (see Table 1). Any new or replacement aircraft must not exceed the noise level produced by the aircraft being replaced. Operators would notify the FAA and the NPS in writing of any prospective new or replacement aircraft and obtain concurrence before initiating air tours with the new or replacement aircraft.

### 2.6.4 Commercial Air Tour Day/Time and Seasonal Restrictions

Flights would be permitted to operate one hour after sunrise until one hour before sunset, as defined by the National Oceanic and Atmospheric Administration (NOAA). Exceptions to these parameters for quiet technology aircraft are noted below. Sunrise and sunset data are available from the NOAA Solar Calculator.<sup>10</sup> Air tours would be permitted to occur between May 1 through September 30. This would mean that air tours would be allowed to occur on up to 153 total days each year. Air tours could occur any day of the week.

Additionally, to reduce the potential for disruptions to tribal ceremonies there would be designated days when no air tours would be permitted within the ATMP planning area. These days would be selected collaboratively through consultation with associated Tribal Nations.

### 2.6.5 Restrictions for Particular Events

In addition to the seasonal and time-of-day restrictions described above, the NPS would be able to establish temporary no-fly periods in one-hour increments that apply to commercial air tours for special events or planned Park management. Absent exigent circumstances or emergency operations, the NPS would provide a minimum of 30 days' notice to the operators in writing in advance of the no-fly period. Events may include naturalization ceremonies, wildlife surveys, tribal ceremonies, or other similar events.

<sup>10</sup> <https://www.esrl.noaa.gov/gmd/grad/solcalc/>

### 2.6.6 Additional Requirements

- Daily Caps: Alternative 3 would limit the number of commercial air tours within the ATMP planning area to no more than 25 tours per day across all operators and limit the number of tours each operator could conduct per day on the days when air tours are permitted. The operator-specific limits are based on the proportional number of reported total flights per year conducted by each of the two active operators compared to the total number of air tours reported from 2017-2019 and the operators' annual allocations. The maximum numbers of commercial air tours that could be conducted on a single day for each operator are as follows:
  - Dakota Rotors – 24
  - Eagle Aviation – 1
- Hovering/Circling: This alternative would prohibit hovering and circling because it could negatively impact visitors, cultural, and natural resources, including sensitive sites.
- Adaptive Management: Adaptive management is a systematic approach for improving resource management and ensuring the continued effectiveness of the ATMP over time through the monitoring of Park conditions and by learning from management actions or choices. Adaptive management is also used to address changed conditions such as if the breeding habitat of a sensitive species moves to a new area. Adaptive management of the route, frequency, and timing will be considered, analyzed, and included in this alternative for the protection of species and habitat shifts over time due to climate change, Wilderness, and cultural resource condition, and visitor experience impacted by air tours. The NPS would conduct monitoring to ensure that the terms and conditions of the ATMP remain consistent with Park management objectives. The FAA and the NPS will provide additional information for interested parties about the notice and process for adaptive management changes.
- Interpretive Training and Education: When made available by Park staff, the NPS would provide mandatory training for air tour pilots regarding Park resources. Such trainings would occur no more than once per year. The training would include the Park information that operators could use to further their own understanding of Park priorities and management objectives as well as enhance the interpretive narrative for air tour clients and increase understanding of the Park by air tour clients.
- Annual Meeting: At the request of either agency, the Park staff, the local FAA FSDO, and all operators would be required to meet once per year to discuss the implementation of the ATMP and any amendments or other changes to the ATMP.
- Monitoring and Enforcement: Operators would be required to equip all aircraft used for air tours with flight monitoring technology, to use flight monitoring technology during all air tours under the ATMP, and to report flight monitoring data as an

attachment to the operator's semi-annual reports. FAA determination of noncompliance may result in loss of authorization to conduct commercial air tours authorized by the ATMP. Any violation of operations specifications shall be treated in accordance with FAA Order 2150.3, *FAA Compliance and Enforcement Program*.

- **Bird Aircraft Strike Reporting:** Operators would report all bird strikes that occur during commercial air tours within the ATMP planning area per FAA Advisory Circular 150/5200-32B, Reporting Wildlife Aircraft Strikes, using OMB approved form No. 2120-0045, and include these reports in their semi-annual reports.

#### **2.6.7 Quiet Technology Incentives**

The Act requires that the ATMP include incentives for the adoption of quiet technology by commercial air tour operators. This alternative incentivizes the use of quiet technology aircraft by relaxing time-of-day restrictions to allow quiet technology aircraft to fly beginning at sunrise or ending at sunset on all days that flights are authorized.

#### **2.6.8 Initial Allocation and Competitive Bidding**

The Act states whenever an ATMP limits the number of commercial air tour operations during a specified time frame, a competitive bidding process must occur pursuant to the criteria set forth in 49 U.S.C. § 40128(a)(2)(B). Since the number of flights would be limited under Alternative 3, competitive bidding would be required. Initially, commercial air tour operators would be allocated a certain number of commercial air tours within the ATMP planning area, referred to as the initial allocation as described in Section 2.6.1, Commercial Air Tours per Year, until a competitive bidding process can be conducted. Based on the proportional number of reported total flights per year for each of the two operators from 2017-2019, the air tours would be allocated among the two air tour operators who have conducted air tours over the Park since 2017 as follows:

- Dakota Rotors – 3,648
- Eagle Aviation – 9

Competitive bidding may also be appropriate to address, for example, a new entrant application; a request by an existing operator for authority to conduct additional air tours per year; or consideration by the agencies of Park-specific resources, impacts, or safety concerns. The Act directs the agencies to consider various factors during the competitive bidding process including known resource issues, reporting, and compliance concerns. Competitive bidding may necessitate an amendment to the ATMP, additional environmental review, and/or the issuance of new or amended operations specifications. If operations specifications are required, they would be issued by the FAA.



## 2.7 Alternative 4

Refer to Figure 4 for a depiction of this alternative. The FAA reviewed the alternative to ensure it is safe (see Section 2.1, Alternatives Development). The FAA will evaluate the establishment of an operational plan in the area to enhance safety. As noted below, the pilot-in-command is always required to take action to ensure the safe operation of the aircraft.

Alternative 4 would authorize 751 commercial air tours per year within the ATMP planning area. Thus, it would authorize 19% of the existing number of flights based on the three-year average of reporting data from 2017-2019 (see Table 4). The number of flights authorized per

year was selected to further reduce impacts to Wilderness character, cultural resources, natural soundscape and acoustic environment, wildlife, and visitor experience.

The ATMP would be established and effective as of the date it is signed by all required signatories from both agencies. No later than 180 days after the effective date of the ATMP, the number of flights authorized each year would be proportionally allocated to each of the two operators that reported operations over the Park in the period from 2017-2019. Each operator's initial allocation would reflect the proportion of their average number of reported flights from 2017-2019 as compared to all operators that reported flying over the Park during this period. The initial allocation would remain in place until a competitive bidding process could occur.

All IOA for the Park would terminate by operation of law 180 days after the establishment (effective date) of the ATMP, 49 U.S.C. § 40128(c)(2)(E), after which time no operator could continue to rely on any Operations Specifications issued under IOA as authority to conduct commercial air tours within the ATMP planning area. Operations Specifications that incorporate the operating parameters set forth in the ATMP would be issued within 180 days of the effective date of the ATMP.

*Table 4. Initial Allocation of Air Tour Operations by Operator Under Alternative 4.*

<b>Air Tour Operator</b>	<b>3-year Reported Average No. of Air Tours (2017-2019)</b>	<b>Annual Operations</b>	<b>Number of Routes</b>
Dakota Rotors, LLC (Black Hills Aerial Adventures, Inc., and Rushmore Helicopters)	3,905	742	4
Eagle Aviation, Inc.	9	9	1
<b>TOTAL</b>	<b>3,914</b>	<b>751</b>	<b>5</b>

## 2.7.2 Commercial Air Tour Routes and Altitudes

Alternative 4 includes routes for the helicopter operator (Dakota Rotors, LLC) and one route for the fixed-wing operator (Eagle Aviation, Inc.), all with varying distance and altitudes across the ATMP planning area (see Table 5). These five routes are consistent with what the operators currently fly within the ATMP planning area.

Under Alternative 4, commercial air tours on routes Keystone 1, Keystone 2, Keystone 3/4/5, and Custer 4/5/6 would be conducted at the MSL altitude callouts on Figure 4 which range from 5,500 ft. to 7,000 ft. MSL and which result in a minimum altitude 900 ft. AGL. These altitudes would be required except when necessary for takeoff and landing from the privately owned and operated heliport on the boundary of the ATMP planning area, or as necessary for safe

operation of an aircraft as determined under Federal Aviation Regulations requiring the pilot-in-command to take action to ensure the safe operation of the aircraft, or unless otherwise authorized for a specified purpose. Commercial air tours on route Eagle MRU would be conducted at a minimum altitude of 6,500 ft. MSL which results in minimum altitudes that range from 1,300 ft. to 2,100 ft. AGL. Refer to Figure 4 for details.

Under Alternative 4, no air tours could occur within the ATMP planning area, except air tours authorized on the designated routes at the designated altitudes described above. Refer to Figure 4 for a depiction of the flight routes and altitudes. Because air tours outside of the ATMP planning area are not regulated by the ATMP, air tour routes outside of this area are difficult to predict with specificity. Operators could fly routes over the ATMP planning area at or above 5,000 ft. AGL, or outside the ATMP planning area similar to existing flight paths, or routes could vary greatly from those currently flown and would depend on operator preference and weather conditions at the time of the tour.

*Table 5. Alternative 4 Operator Routes, Altitudes, and Aircraft Type and Operator.*

Route Name	Altitude	Aircraft Type	Operator
Keystone 1	N/A	Helicopter	Dakota Rotors
Keystone 2	5,500 - 7,000 ft. MSL (900 ft. AGL)	Helicopter	Dakota Rotors
Keystone 3/4/5	5,500 - 7,000 ft. MSL (900 ft. AGL)	Helicopter	Dakota Rotors
Custer 4/5/6	5,500 - 7,000 ft. MSL (900 ft. AGL)	Helicopter	Dakota Rotors
Eagle MRU	6,500 ft. MSL (1,300 – 2,100 ft. AGL)	Fixed-wing	Eagle Aviation

### 2.7.3 Commercial Air Tour Aircraft Type

Each operator's aircraft types would reflect those reported in the period from 2017-2019 (see Table 4). Any new or replacement aircraft must not exceed the noise level produced by the aircraft being replaced. Operators would notify the FAA and the NPS in writing of any prospective new or replacement aircraft and obtain concurrence before initiating air tours with the new or replacement aircraft.

### 2.7.4 Commercial Air Tour Day/Time and Seasonal Restrictions

Flights would be permitted between the hours of 9:00 AM – 5:00 PM local time. Exceptions to these parameters for quiet technology aircraft are noted below. Air tours would be permitted to occur between June 16 through September 30. This would mean that air tours would be allowed to occur on up to 107 total days each year. Air tours could occur any day of the week.

Additionally, to reduce the potential for disruptions to tribal ceremonies there would be designated days when no air tours would be permitted within the ATMP planning area. These days would be selected collaboratively through consultation with associated Tribal Nations.

### **2.7.5 Restrictions for Particular Events**

In addition to the seasonal and time-of-day restrictions described above, the NPS would be able to establish temporary no-fly periods in one-hour increments that apply to commercial air tours for special events or planned Park management. Absent exigent circumstances or emergency operations, the NPS would provide a minimum of 30 days' notice to the operators in writing in advance of the no-fly period. Events may include naturalization ceremonies, wildlife surveys, tribal ceremonies, or other similar events.

### **2.7.6 Additional Requirements**

- Daily Caps: Alternative 4 would limit the number of commercial air tours within the ATMP planning area to no more than eight tours per day across all operators and limit the number of tours each operator could conduct on the days where air tours are permitted. The operator-specific limits are based on the proportional number of reported total flights per year conducted by each of the two active operators compared to the total number of air tours reported from 2017-2019 and the operators' annual allocations. The maximum numbers of commercial air tours that could be conducted on a single day for each operator are as follows:
  - Dakota Rotors – 7
  - Eagle Aviation – 1
- Hovering/Circling: This alternative would prohibit hovering and circling because it could negatively impact visitors, cultural, and natural resources, including sensitive sites.
- Adaptive Management: Adaptive management is a systematic approach for improving resource management and ensuring the continued effectiveness of the ATMP over time through the monitoring of Park conditions and by learning from management actions or choices. Adaptive management is also used to address changed conditions such as if the breeding habitat of a sensitive species moves to a new area. Adaptive management of the route, frequency, and timing will be considered, analyzed, and included in this alternative for the protection of species and habitat shifts over time due to climate change, Wilderness, and cultural resource condition, and visitor experience impacted by air tours. The NPS would conduct monitoring to ensure that the terms and conditions of the ATMP remain consistent with Park management objectives. The FAA and the NPS will provide additional information for interested parties about the notice and process for adaptive management changes.
- Interpretive Training and Education: When made available by Park staff, the NPS would provide mandatory training for air tour pilots regarding Park resources. Such trainings would occur no more than once per year. The training would include the Park information that operators could use to further their own understanding of Park

priorities and management objectives as well as enhance the interpretive narrative for air tour clients and increase understanding of the Park by air tour clients.

- Annual Meeting: At the request of either agency, the Park staff, the local FAA FSDO, and all operators would be required to meet once per year to discuss the implementation of the ATMP and any amendments or other changes to the ATMP.
- Monitoring and Enforcement: Operators would be required to equip all aircraft used for air tours with flight monitoring technology, to use flight monitoring technology during all air tours under the ATMP, and to report flight monitoring data as an attachment to the operator's semi-annual reports. FAA determination of noncompliance may result in loss of authorization to conduct commercial air tours authorized by the ATMP. Any violation of operations specifications shall be treated in accordance with FAA Order 2150.3, *FAA Compliance and Enforcement Program*.
- Bird Aircraft Strike Reporting: Operators would report all bird strikes that occur during commercial air tours within the ATMP planning area per FAA Advisory Circular 150/5200-32B, Reporting Wildlife Aircraft Strikes, using OMB approved form No. 2120-0045, and include these reports in their semi-annual reports.

#### **2.7.7 Quiet Technology Incentives**

The Act requires that the ATMP include incentives for the adoption of quiet technology by commercial air tour operators. This alternative incentivizes the use of quiet technology aircraft by relaxing time-of-day restrictions to allow quiet technology aircraft to fly beginning at sunrise or ending at sunset on all days that flights are authorized.

#### **2.7.8 Initial Allocation of Air Tours and Competitive Bidding**

The Act states whenever an ATMP limits the number of commercial air tour operations during a specified time frame, a competitive bidding process must occur pursuant to the criteria set forth in 49 U.S.C. § 40128(a)(2)(B). Since the number of flights would be limited under Alternative 3, competitive bidding would be required. Initially, commercial air tour operators would be allocated a certain number of commercial air tours within the ATMP planning area, referred to as the initial allocation as described in Section 2.6.1, Commercial Air Tours per Year, until a competitive bidding process can be conducted. Based on the proportional number of reported total flights per year for each of the two operators from 2017-2019, the air tours would be allocated among the two air tour operators who have conducted air tours over the Park since 2017 as follows:

- Badger Helicopters – 742
- Eagle Aviation – 9

Competitive bidding may also be appropriate to address, for example, a new entrant application; a request by an existing operator for authority to conduct additional air tours per year; or consideration by the agencies of Park-specific resources, impacts, or safety concerns. The Act directs the agencies to consider various factors during the competitive bidding process

including known resource issues, reporting, and compliance concerns. Competitive bidding may necessitate an amendment to the ATMP, additional environmental review, and/or the issuance of new or amended operations specifications. If operations specifications are required, they would be issued by the FAA.

## 2.8 Summary Comparison of the ATMP Alternatives

Table 6. Summary Comparison of the ATMP Alternatives.

Alternative Attributes	Alternative 1 (No Action)	Alternative 2 (Preferred)	Alternative 3	Alternative 4
General Description and Objectives	Allows a continuation of air tours without implementation of an ATMP or voluntary agreement. Does not meet the purpose and need for the ATMP.	Prohibits air tours within the ATMP planning area to maximize Park resource protection. Air tours could continue to fly outside the ATMP planning area (i.e., at or above 5,000 ft. AGL or more than ½-mile outside of the Park's boundary).	Restricts air tour operations within the ATMP planning area to reduce impacts on nesting birds and bighorn sheep lamb rearing. Primarily, the conditions in this alternative include annual and daily caps, designated routes, required minimal altitudes, and no-fly periods for tribal ceremonies or special events.	Restricts and reduces air tour operations within the ATMP planning area to minimize impacts on nesting birds and bighorn sheep lamb rearing. Primarily, the conditions in this alternative include annual and daily caps, designated routes, required minimal altitudes, and no-fly periods for tribal ceremonies or special events.
Annual/Daily Number of Flights	Considers the three – year average of 3,914 flights per year (based on 2017-2019 reporting) as the existing condition.	None in ATMP planning area.	Authorizes 3,657 flights per year.  Daily limit of 25 flights per day on those days where flights are allowed.	Authorizes 751 flights per year.  Daily limit of eight flights per day on those days where flights are allowed.
Routes	No mandatory routes or no-fly zones. See Figure 2 for depiction of reported routes and actual operations.	None in ATMP planning area. Operators may continue to fly to points of interest in the area outside of the ATMP planning area where they already fly, fly around the ATMP planning area similar to existing flights, or above the ATMP planning area (above 5,000 ft. AGL).	Four routes for the helicopter operator and one route for the fixed-wing operator all with varying distances and altitudes.	Same as Alternative 3.

Alternative Attributes	Alternative 1 (No Action)	Alternative 2 (Preferred)	Alternative 3	Alternative 4
Minimum Altitudes	No mandatory minimum altitudes. See map for depiction of reported operations. Flights range from 6,000 ft. MSL (900 ft. AGL) to 6,500 ft. MSL (1,400 ft. AGL).	No minimum altitude would be set. However, air tours above the ATMP planning area (at or above 5,000 ft. AGL) could occur. Air tours outside of the ATMP planning area (more than ½-mile outside the Park boundary) could also continue to occur.	Minimum 6,000 ft. MSL (900 ft. AGL) for helicopter aircraft, and minimum 6,500 ft. MSL (1,400 ft. AGL) for fixed-wing aircraft.	Same as Alternative 3.
Time of Day	No restrictions.	N/A	On days where air tours are permitted, non-quiet technology tours may operate from one hour after sunrise until one hour before sunset.	On days where air tours are permitted, non-quiet technology tours may operate from 9:00 AM to 5:00 PM local time.
Day of Week	No restrictions.	N/A	Air tours may operate any day of the week.	Same as Alternative 3.
Seasonal Restrictions	No restrictions.	N/A	Air tours would be permitted from May 1 through September 30 (153 total days each year).  NPS may designate no fly periods or no fly days in consultation with Tribal Nations.	Air tours would be permitted from June 16 through September 30 (107 total days each year).  NPS may designate no fly periods or no fly days in consultation with Tribal Nations.
Hovering/Circling	No restrictions.	N/A	Not Permitted.	Same as Alternative 3.
Quiet Technology Incentives	None.	N/A	Quiet technology flights may fly from sunrise until sunset.	Same as Alternative 3.
Interpretive Training and Education	None.	N/A	When made available by Park staff, the NPS would provide mandatory training for air tour pilots regarding Park resources.	Same as Alternative 3.
Annual Meeting	None.	N/A	At the request of either agency, the Park staff, the local FAA FSDO, and all operators would be	Same as Alternative 3.

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Alternative Attributes	Alternative 1 (No Action)	Alternative 2 (Preferred)	Alternative 3	Alternative 4
			required to meet once per year.	
Restrictions for Particular Events	None.	N/A	The NPS can establish temporary no-fly periods and must provide 30 days' notice to operators of the no-fly periods. Events may include tribal ceremonies or other similar events.	Same as Alternative 3.
Adaptive Management	None.	N/A	Adaptive management actions may be taken as long as their impacts are within the impacts already analyzed by the agencies.	Same as Alternative 3.
Operators, Initial Allocation of Air Tours, and Aircraft Types	Reflects existing conditions of two operators with reported data from 2017-2019.	The establishment of the ATMP would result in the termination of IOA for the operators	<p>Dakota Rotors: 3,648 flights annually; BHT-206B, BHT-47- G3B1, R-44-II, R-66- 66</p> <p>Eagle Aviation: Nine flights annually; Cessna 172, Cessna 206</p> <p>Competitive bidding would occur and could change air tour allocations.</p> <p>The establishment of the ATMP would result in the termination of IOA for the operators.</p>	<p>Dakota Rotors: 742 flights annually; BHT-206B, BHT-47-G3B1, R-44-II, R-66- 66</p> <p>Eagle Aviation: Nine flights annually; Cessna 172, Cessna 206</p> <p>Competitive bidding would occur and could change air tour allocations.</p> <p>The establishment of the ATMP would result in the termination of IOA for the operators.</p>



### **3 AFFECTED ENVIRONMENT AND ENVIRONMENTAL CONSEQUENCES**

This chapter includes a description of the current condition of each environmental impact category and the existing environmental setting for each category. This chapter also includes the environmental consequences of the alternatives and evaluates how the direct, indirect, and cumulative impacts on those environmental impact categories may change by implementing the No Action Alternative or an action alternative. The analysis methodology for assessing impacts for each environmental impact category is in Appendix E, *Environmental Impact Analysis Methods*.

As described in Section 1.1, Introduction, under the Act and its implementing regulations, an ATMP regulates commercial air tours over a national park or within ½-mile outside the park's boundary during which the aircraft flies below 5,000 ft. AGL (ATMP planning area). Air tours outside of the ATMP planning area are not regulated under the ATMP. Unless otherwise noted, the study area, referred to as the ATMP planning area, for each environmental impact category includes the Park and areas outside the Park within ½-mile of its boundary. Environmental impact categories (Cultural Resources, Wilderness, Environmental Justice and Socioeconomics, Visual Effects, and Department of Transportation (DOT) Act Section 4(f) Resources) that considered a study area different from the ATMP planning area are noted as such in the respective resource section.

This draft EA analyzes the following environmental impact categories in detail: Noise and Noise-Compatible Land Use; Air Quality and Climate Change; Biological Resources; Cultural Resources; Wilderness; Visitor Use and Experience and Other Recreational Opportunities; Environmental Justice and Socioeconomics; Visual Effects; and DOT Act Section 4(f) Resources. The FAA, in cooperation with the NPS, considered the impact categories specified in FAA Order 1050.1F, *Environmental Impacts: Policies and Procedures* (FAA, 2015) and NPS Director's Order #12 Conservation Planning, Environmental Impact Analysis, and Decision-making, and other categories identified during the agency and public scoping process. See Section 1.5, Environmental Impact Categories Not Analyzed in Detail.

#### **3.1 Noise and Noise-Compatible Land Use**

FAA Order 1050.1F, Appendix B, paragraph B-1.3, Affected Environment, requires the FAA to identify the location and number of noise sensitive uses in addition to residences such as schools, hospitals, parks, and other recreation areas, that could be significantly impacted by noise. As defined in Paragraph 11-5.b(10) of FAA Order 1050.1F, a noise sensitive area is "[a]n area where noise interferes with normal activities associated with its use. Normally, noise sensitive areas include residential, educational, health, and religious structures and sites, and parks, recreational areas, areas with Wilderness characteristics, wildlife refuges, and cultural and historical sites." Noise sensitive areas within the ATMP planning area include the Park, cultural resources discussed in Section 3.4, Cultural Resources, parks and recreational areas

discussed in Section 3.9, Department of Transportation (DOT) Act Section 4(f) Resources, as well as residential areas outside of the Park boundary but within the ½ mile buffer.

Section 4.9, Soundscape Management, of NPS Management Policies (2006) directs the NPS to preserve the Park's natural soundscape and acoustic environment which refer to the combination of all the natural sounds occurring within the Park, absent the human-caused sounds, as well as the physical capacity for transmitting those natural sounds and the interrelationships among Park natural sounds of different frequencies and volumes. This management policy directs the NPS to preserve soundscapes and the acoustic environment to the greatest extent possible and restore these resources to their natural condition wherever they have become degraded by noise and unwanted sounds. The NPS defines the acoustic environment as the aggregate of all sounds within an area; it is the total acoustic environment in the Park. The soundscape is the human perception of the acoustic environment. In a national park setting, the soundscape can be composed of both natural ambient sound and a variety of human-made sounds.

### **3.1.1 Affected Environment**

The NPS defines acoustic resources as physical sound sources, including both natural sounds (wind, water, wildlife, vegetation) and cultural and historic sounds (battle reenactments, tribal ceremonies, quiet reverence) (NPS, 2006). The acoustic environment includes both natural and human generated sounds and the physical capacity for transmitting those natural sounds and the interrelationships among Park natural sounds. Within the Park, natural sounds are considered part of the biological or other physical resource components. Examples of natural sounds include:

- Sounds produced by birds, chipmunks, frogs, mountain lions, mountain goats, and bighorn sheep to define territories or aid in attracting mates;
- Sounds produced by bats to locate prey or navigate;
- Sounds received by mice or deer to detect and avoid predators or other danger; and
- Sounds produced by physical processes, such as wind in the trees, claps of thunder, or falling water.

One of the natural resources of the Park is the natural soundscape, also referred to as the natural ambient or "natural quiet." The natural ambient includes all naturally-occurring sounds, as well as the quiet associated with still nights and certain seasons. It excludes all mechanical, electrical and other human-caused sounds. An important part of the mission of the NPS is to preserve or restore the natural soundscapes associated with units of the National Park System (NPS, 2006).

The term existing ambient refers to the sound level of all sounds in a given area, and includes all natural sounds as well as all mechanical, electrical, and other human-caused sounds. Human-generated noise sources may include wheeled vehicles on roads, such as passenger vehicles and tour buses, and cyclists, and aircraft overflights consisting of high-altitude commercial jet aircraft, NPS flights for research or other purposes, commercial air tour operations, and private general aviation aircraft. On the ground, human-generated noise within the Park is typically concentrated in areas of high visitor use, such as the amphitheater and Highway 244.

To characterize the natural and existing ambient (both with and without air tours), detailed sound level measurements were conducted at two locations across the Park in 2003 (Lee et al., 2016). From the detailed data collected in 2003, an ambient “map” of the natural soundscape of the ATMP planning area was developed to be used in computer modeling (Figure 5). For more explanation for how sound is described, see the *Noise Technical Analysis* (Appendix F, Table 1). These acoustic sampling locations were chosen to be representative of the natural ecological zones or broad ecosystems of the Park and ATMP planning area. These locations were not chosen to specifically measure the amount of air tour noise. The median or  $L_{50}$  sound level (in decibels) is the sound level exceeded 50 percent of the daytime hours. Median daytime natural ambient ( $L_{50}$ ) sound levels<sup>11</sup> measured 34 decibels in both the Park Development Zone and the Historic Zone. Median existing ambient ( $L_{50}$ ) sound levels measured 48.2 decibels in the Park Development Zone and 40 decibels in the Historic Zone (Lee et al., 2016). Table 3 in the *Noise Technical Analysis* (Appendix F) contains additional breakdown of the ambient sound level data by zone.

Additional acoustic monitoring was conducted by the NPS in 2007 and 2012. The 2007 study was intended to record current conditions at a backcountry location in the Park. The natural ambient sound level at this location was approximately 22 dBA. The purpose of the 2012 study was to characterize existing sound levels during a time of unusually high Park visitation.

The contribution of aircraft noise during sound level measurements only provides a snapshot in time at a particular location and is not necessarily a representative characterization of current conditions. Current conditions were determined by adding the noise exposure due to air tours ( $L_{Aeq, 12h}$ ), based on a peak month average day and modeled using the FAA AEDT Version 3e, to

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<sup>11</sup> Natural Ambient ( $L_{50}$ ): The sound level exceeded 50 percent of the time determined from the natural sound conditions found in a study area, including all sounds of nature (i.e., wind, streams, wildlife, etc.), and excluding all human and mechanical sounds. Ambient data were based on a 12-hour, daytime, time period, 7:00 AM to 7:00 PM, typical operating hours for air tours.

the Existing Ambient without Air Tours ( $L_{50}$ )<sup>12</sup> (see Appendix F, *Noise Technical Analysis*). The result of this process is the Cumulative Existing Ambient, Figure 6.

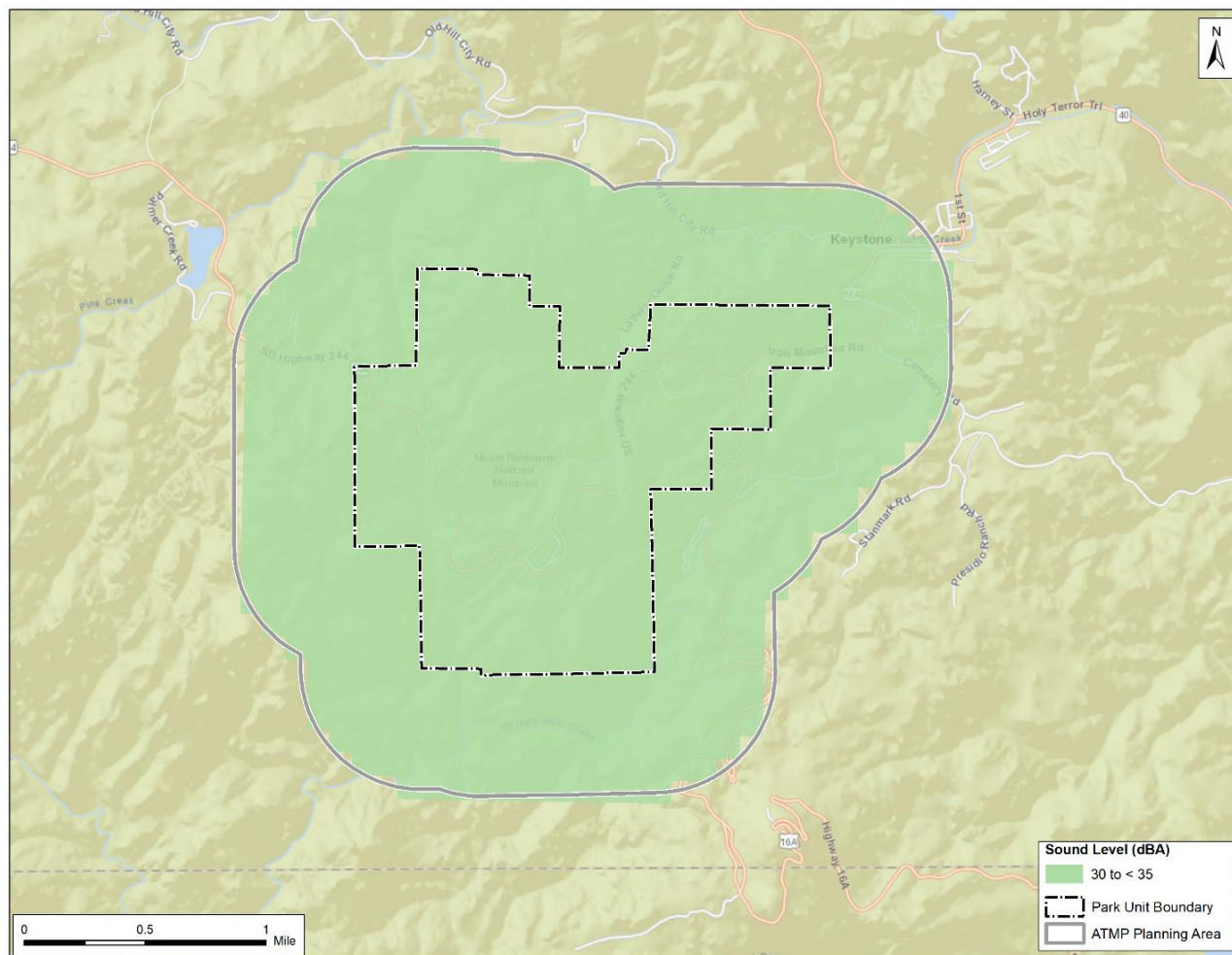


Figure 5. Natural Ambient  $L_{50}$ .

<sup>12</sup> The Existing Ambient without Air Tours ( $L_{50}$ ) is defined as the composite, all-inclusive sound associated with a given environment, excluding the sound source of interest, in this case, commercial air tour aircraft. It does include all other human-caused sound sources that were audible at the measurement site; hikers, visitor centers, commercial jets, general aviation aircraft, military aircraft, and administrative aircraft operations. Ambient data were based on a 12-hour, daytime, time period, 7:00 AM to 7:00 PM, typical operating hours for air tours.

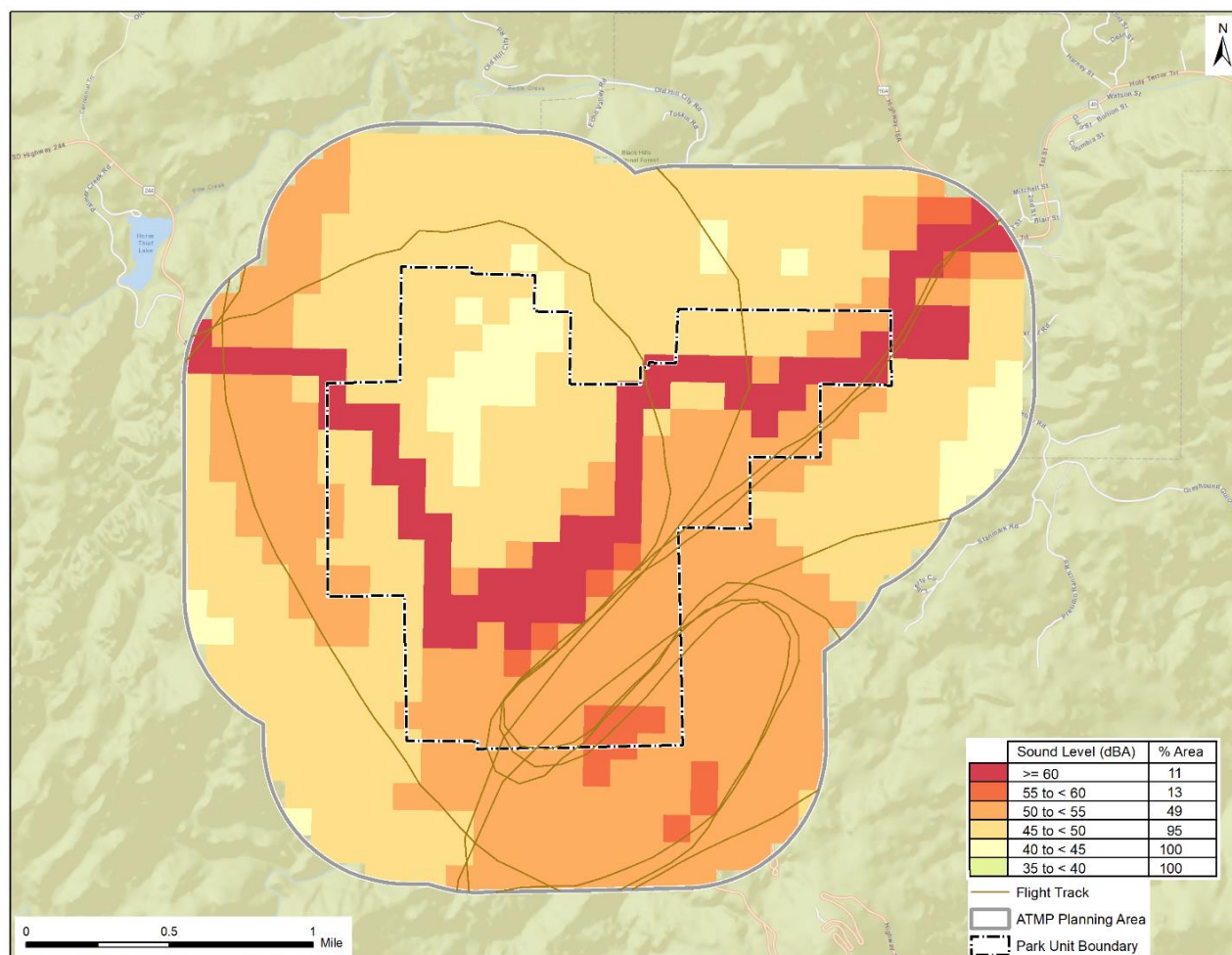


Figure 6. 12-hour Cumulative Existing Ambient Sound Level (Daytime) for Current Conditions.

### 3.1.2 Environmental Consequences

There are numerous ways to measure the potential impacts of noise from commercial air tours on the acoustic environment, including intensity, duration, and spatial footprint of the noise. The affected environment and impact analysis uses noise metrics consistent with both FAA and NPS noise guidance. The FAA's primary noise metric established in FAA Order 1050.1F is the yearly day-night average sound level (DNL, denoted by the symbol  $L_{dn}$ ) metric; the cumulative noise energy exposure from aircraft over 24 hours. The NPS considers various metrics to analyze impacts to Park resources and values from noise, including equivalent continuous sound level ( $L_{Aeq}$ ), time audible (the amount of time you can hear air tour aircraft noise), the amount of time that the noise from a commercial air tour operation would be above specific sound levels that relate to different Park management objectives (e.g., 35 dBA and 52 dBA), and maximum sound level ( $L_{max}$ ). These metrics are discussed further in Table 7; a comparison of the sound levels noted in Table 7 to values for a range of everyday sounds can be found in Figure 1 of the *Noise Technical Analysis* (Appendix F).

Table 7. Primary Metrics Used for the Noise Analysis.

Metric	Relevance and Citation
Equivalent sound level, $L_{Aeq, 12\text{ hr}}$	The logarithmic average of commercial air tour sound levels, in dBA, over a 12-hour day. The selected 12-hour period is 7:00 AM to 7:00 PM to represent typical daytime commercial air tour operating hours.
Day-night average sound level, $L_{dn}$ (or DNL)	<p>The logarithmic average of sound levels, in dBA, over a 24-hour day, DNL takes into account the increased sensitivity to noise at night by including a 10 dB penalty on noise events occurring between 10:00 PM and 7:00 AM local time.</p> <p>Note: Both <math>L_{Aeq, 12\text{ hr}}</math> and DNL characterize:</p> <ul style="list-style-type: none"> <li>Increases in both the loudness and duration of noise events</li> <li>The number of noise events during specific time period (12-hours for <math>L_{Aeq, 12\text{ hr}}</math> and 24-hours for DNL)</li> </ul> <p>If there are no nighttime events, then <math>L_{Aeq, 12\text{ hr}}</math> is arithmetically three dBA higher than DNL, as noise is averaged over a 24-hour, rather than a 12-hour, time period and none of the events include the 10 dB penalty.</p> <p>The FAA's (2015, Exhibit 4-1) indicators of significant impacts are for an action that would increase noise by DNL 1.5 dB or more for a noise sensitive area that is exposed to noise at or above the DNL 65 dB noise exposure level, or that will be exposed at or above the DNL 65 dB level due to a DNL 1.5 dB or greater increase, when compared to the no action alternative for the same timeframe.</p>
Time Audible Natural Ambient	<p>The total time (in minutes) that aircraft noise levels are audible to an attentive listener with normal hearing under natural ambient conditions.</p> <p>The natural ambient is the sound level exceeded 50 percent of the time <math>L_{50}</math>, determined from the natural sound conditions found in a ATMP planning area, including all sounds of nature (i.e., wind, streams, wildlife, etc.), and excluding all human and mechanical sounds. Time audible does not indicate how loud the event is, only if it might be heard.</p>
Time Above 35 dBA	<p>The amount of time (in minutes) that aircraft sound levels are above a given threshold (i.e., 35 dBA).</p> <p>In quiet settings, outdoor sound levels exceeding this level degrade experience in outdoor performance venues (American National Standards Institute (ANSI), 2007); blood pressure increases in sleeping humans</p>

	(Haralabidis et al., 2008); maximum background noise level inside classrooms (ANSI/Acoustical Society of America S12.60/Part 1-2010, 2007).
Time Above 52 dBA	<p>The amount of time (in minutes) that aircraft sound levels are above a given threshold (i.e., 52 dBA).</p> <p>At this background sound level, normal voice communication at five meters (two people five meters apart), or a raised voice to an audience at ten meters would result in 95% sentence intelligibility (U.S. Environmental Protection Agency, Office of Noise Abatement and Control, 1974). This metric represents the level at which one may reasonably expect interference with park interpretive programs, activities that require communication from a distance and other general visitor communication.</p>
Maximum sound level, $L_{max}$	The loudest sound level, in dBA, generated by the loudest event; it is event-based and is independent of the number of operations. $L_{max}$ does not provide any context of frequency, duration, or timing of exposure.

Acoustic metrics were modeled using the FAA's AEDT, Version 3e and results are described below for each alternative. The *Noise Technical Analysis* in Appendix F contains figures and tables showing the detailed noise results for two types of analyses: 1) contour analysis and 2) representative location point analysis. A noise contour presents a graphical illustration or "footprint" of the area potentially affected by the noise. Location point results present the metric results at specific points of interest.

The FAA's AEDT, Version 3e (Lee et al., 2022) is the FAA-approved computer program for modeling noise under Appendix A of FAA's Part 150 Airport Noise Compatibility Planning (14 CFR Part A150.103(a)). Requirements for aircraft noise modeling are defined in FAA Order 1050.1F, Environmental Impacts: Policies and Procedures, and in Federal Aviation Regulations 14 CFR Part 150, Airport Noise Compatibility Planning.

The noise model requires detailed information regarding the aircraft source, operational, and flight route information (obtained from the air tour operators), as well as other information<sup>13</sup> to compute various noise metrics that can be used to assess the potential impacts of noise from commercial air tours on the acoustic environment of a park.

<sup>13</sup> The noise model accounts for a number of effects over the propagation path between the aircraft source and receptor. Attenuation due to line-of-sight blockage from terrain features is computed utilizing terrain data obtained from the U.S. Geological Survey along with algorithms documented in Society of Automotive Engineers (SAE) Aerospace Information Report 6501. Atmospheric absorption is based on the 2012-2021 average temperature of 76 degrees Fahrenheit and 71% relative humidity and computed according to SAE-ARP-5534.



The tour aircraft types identified for modeling are the Robinson R-44 and Cessna 206 aircraft. The flight routes used for modeling the alternatives are shown in Figure 7.

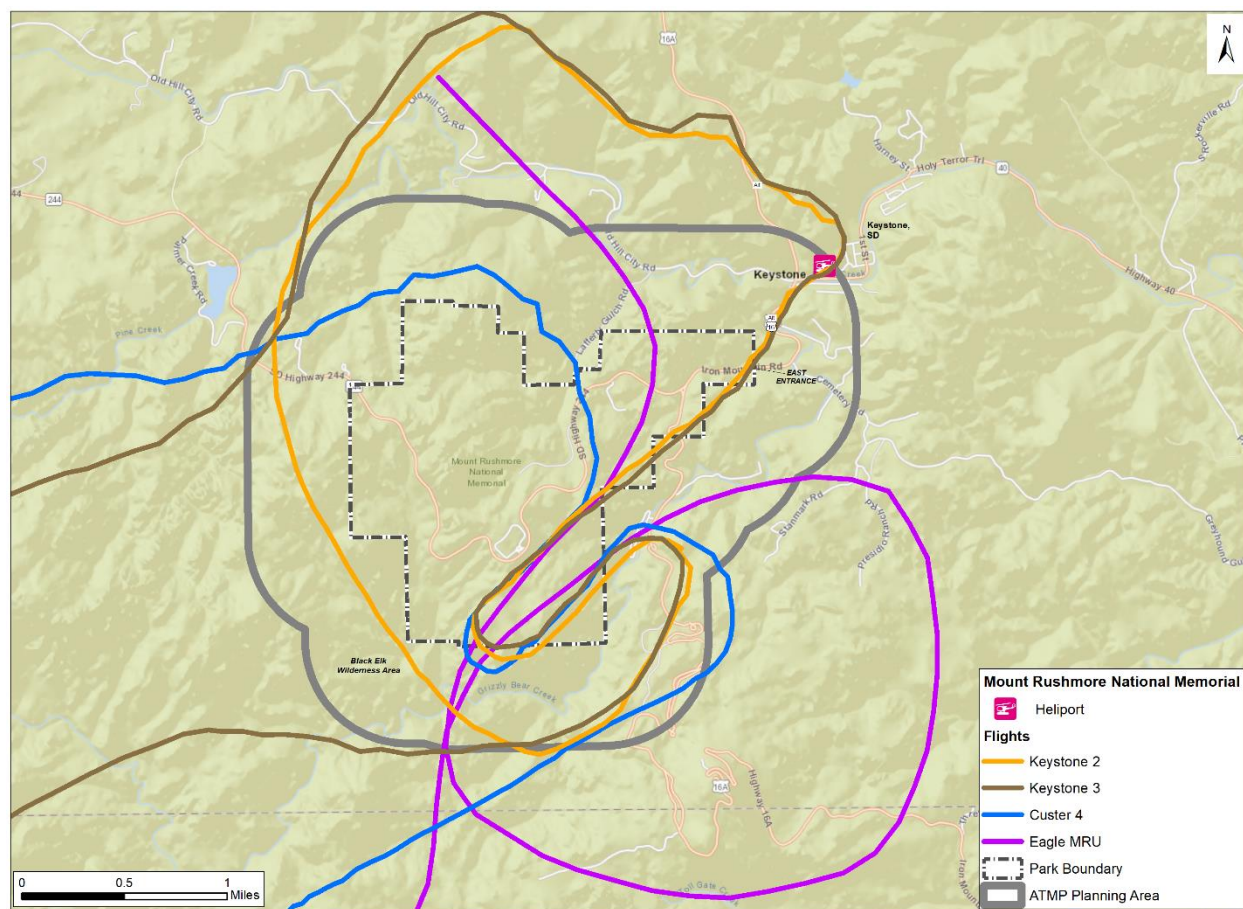


Figure 7. Air Tour Routes Modeled.

A unique noise modeling profile was developed for each modeled aircraft and route combination based on typical aircraft climb rates, descent rates, power settings and speeds during the different phases of flight (cruise, climb, and descent).

The No Action Alternative represents a continuation of existing conditions and for the purposes of analysis uses the three-year average of flights from 2017 to 2019. The analysis for the No Action Alternative is based on a peak month, average day<sup>14</sup> of commercial air tour activity. For the three-year average of commercial air tour activity from 2017-2019, the peak month average day was identified in terms of number of operations, and then further assessed for the type of aircraft and route flown to ensure it is a reasonable representation of the commercial air tour

<sup>14</sup> As required by FAA policy, the FAA typically represents yearly conditions as the Average Annual Day (AAD). However, it was determined that a peak month average day representation of the operations would more adequately allow for disclosure of any potential impacts. Peak month average day has therefore been used as a conservative representation of assessment of AAD conditions.



activity over the Park. For the ATMP planning area, the peak month average day was identified as summarized in Table 8. Altitudes were modeled based on information provided by the operators.

The analyses for Alternatives 3 and 4 are based on the number of aircraft operations for each aircraft and route combination identified and are summarized in Table 8.

Table 8. Aircraft, Routes and Number of Operations Modeled.

Route	Aircraft	No Action Alternative (2017- 2019 Peak Month Average Day)	Alternative 3	Alternative 4
<b>Keystone 2</b>	Robinson R-44	18	12	4
<b>Keystone 3</b>	Robinson R-44	12	8	2
<b>Custer 4</b>	Robinson R-44	7	4	1
<b>Eagle MRU</b>	Cessna 206	1	1	1
	<b>Total</b>	38	25	8

### **Alternative 1: No Action**

Under the No Action Alternative, the acoustic conditions described in the affected environment would be expected to continue. Air tour noise would vary depending on how many commercial air tours are flown (refer to Section 2.4, Alternative 1 (No Action Alternative), and the *Noise Technical Analysis* in Appendix F for additional details on the No Action Alternative). Modeling results for the No Action Alternative are presented in Table 9 below. See Figure 8 and Figure 9 for noise metrics results that would be experienced within the ATMP planning area under the No Action Alternative. This analysis is based on the three-year average of flights between 2017-2019. The impacts could be greater than disclosed here if air tour numbers up to IOA occur which the NPS has already found to result in unacceptable impacts.

Table 9. Summary of Noise Modeling Metric Results Under the No Action Alternative.

Metric	No Action Alternative
12-hour Equivalent Sound Level	<ul style="list-style-type: none"> <li>Values would not exceed 60 dBA, with the exception of a very small area in the immediate vicinity of the heliport.</li> <li>43% of the ATMP planning area would continue to experience levels between 50 and 55 dBA.</li> <li>The entire ATMP planning area would continue to experience levels between 40 and 45 dBA.</li> </ul>

Metric	No Action Alternative
Day-night Average Sound Level	<ul style="list-style-type: none"> <li>DNL would be 3 dB less than the 12-hour equivalent sound level, and therefore less than 60 dB.</li> </ul>
Time Audible Natural Ambient	<ul style="list-style-type: none"> <li>More than half (56%) of the ATMP planning area would continue to experience audible air tour noise for up to 345 minutes a day* (non-contiguous).</li> <li>100% of the ATMP planning area would continue to experience audible air tour noise for between 210 and 480 minutes a day (non-contiguous).</li> </ul>
Time Above 35 dBA	<ul style="list-style-type: none"> <li>70% of the ATMP planning area would experience air tour noise above 35 dBA for greater than 315 minutes a day.</li> <li>The entire ATMP planning area would experience air tour noise above 35 dBA for between 210 and 330 minutes a day.</li> </ul>
Time Above 52 dBA	<ul style="list-style-type: none"> <li>The maximum time any of the modeled points would experience noise above 52 dBA would be 104.9 minutes at Location #14 (Undeveloped Park land-goat habitat).</li> <li>For interpretive programs at the Amphitheater, noise above 52 dBA would be 49 minutes.</li> <li>For climbing areas, noise above 52 dBA would occur for between 6 and 58 minutes a day</li> </ul>
Maximum Sound Level	<ul style="list-style-type: none"> <li>The maximum sound level (i.e., the loudest sound level generated by the loudest event independent of the number of operations) within the ATMP planning area would be 73.7 dBA at Location #17 (No name pullout). At Location #33 (Keystone School), outside the ATMP planning area, the maximum sound level is estimated to be 77 dBA. See Appendix F, <i>Noise Technical Analysis</i>.</li> </ul>

\* For the noise analysis, 'day' refers to the 12-hour period 7:00 AM to 7:00 PM, selected to represent typical daytime commercial air tour operating hours.

For purposes of assessing noise impacts from commercial air tours on the acoustic environment under FAA's policy for NEPA, the analysis indicates that the resultant DNL is expected to be below 60 dB.

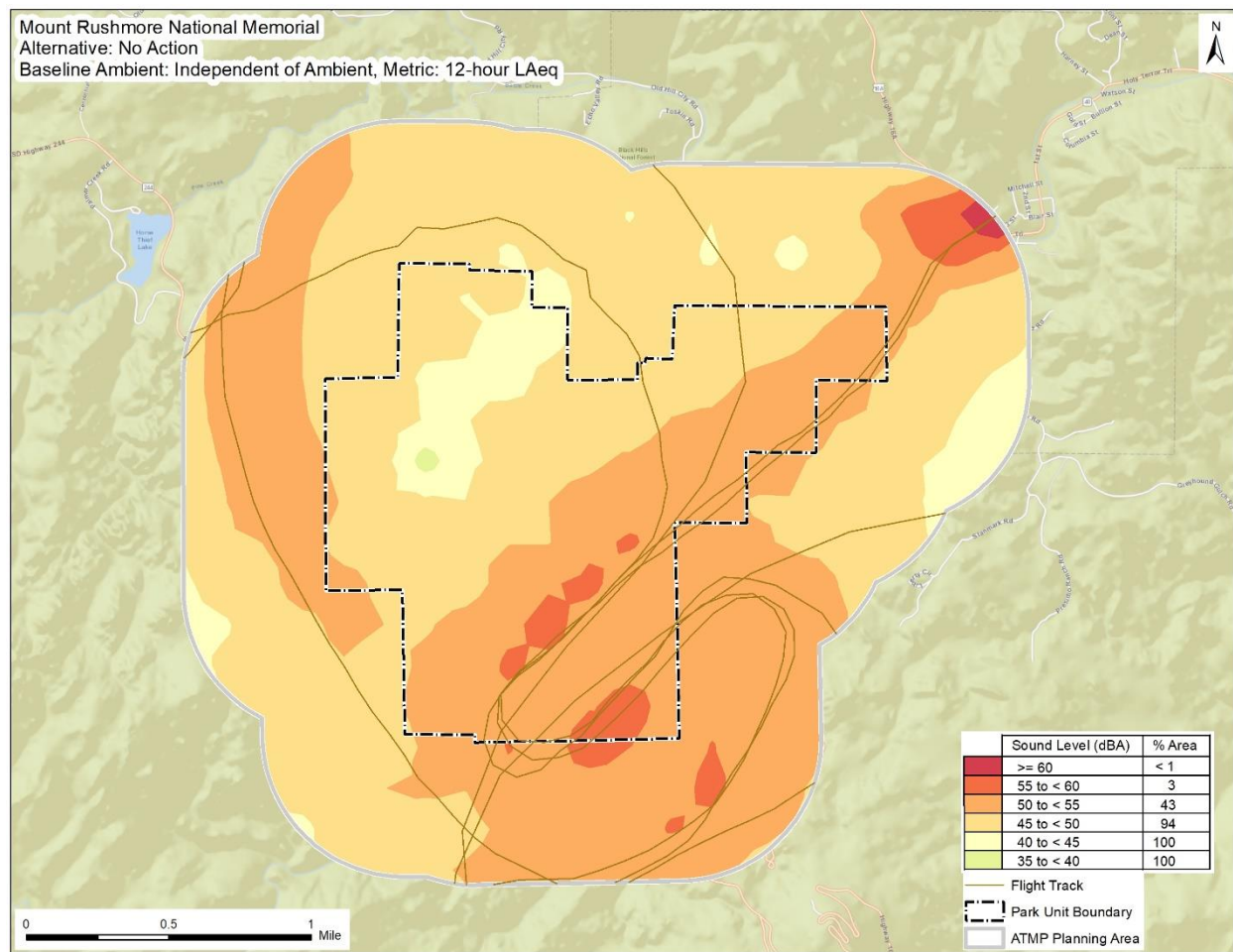


Figure 8. 12-hour Equivalent Sound Level ( $L_{Aeq,12h}$ ) for Alternative 1 (No Action).

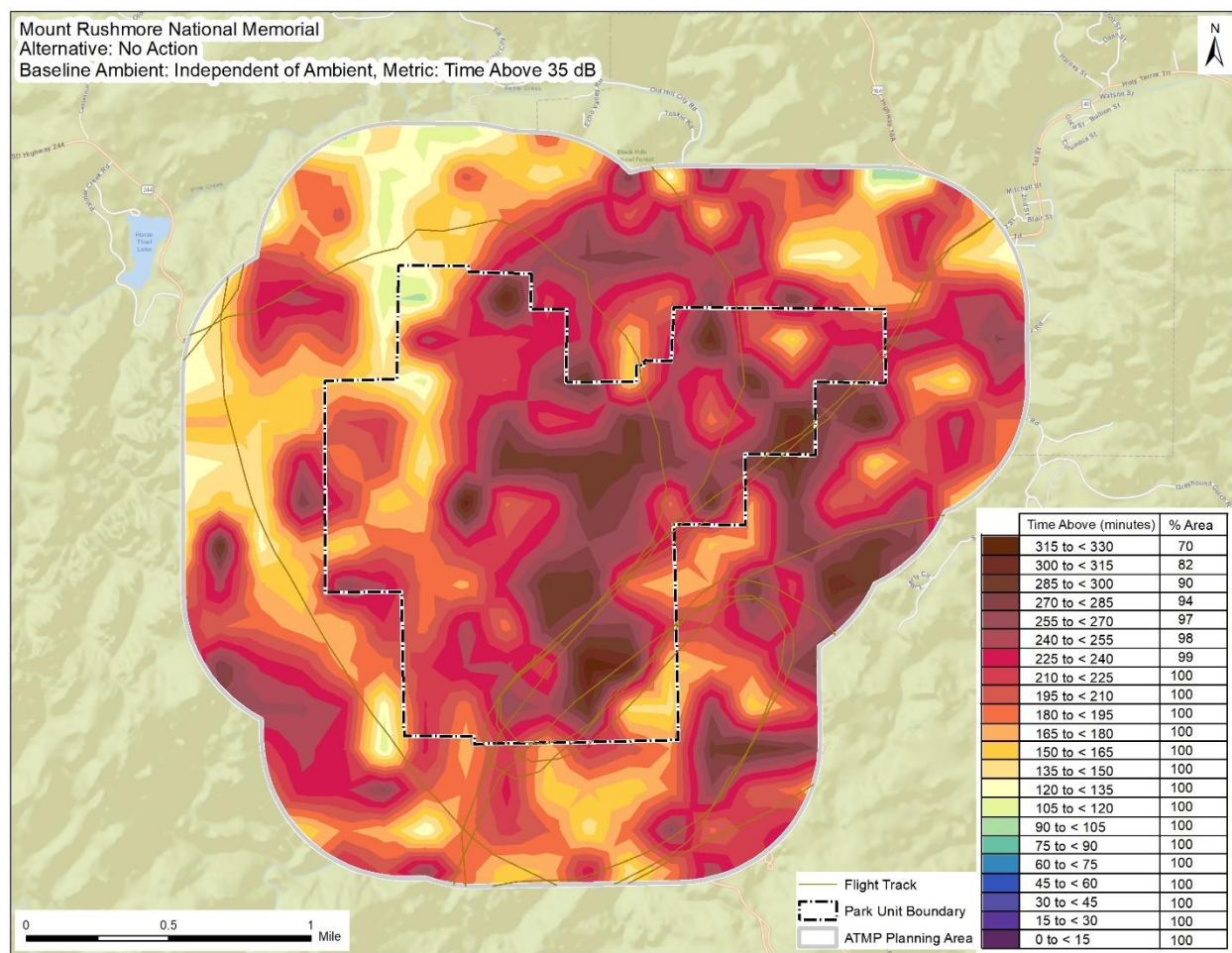


Figure 9. Time Above 35 dBA for Alternative 1 (No Action).

## Alternative 2

Under Alternative 2, commercial air tours would not be permitted within the ATMP planning area, except during takeoff and landing from the privately owned and operated heliport on the boundary of the ATMP planning area. Compared to existing conditions, Alternative 2 would result in direct beneficial effects on the Park's acoustic environment. The acoustic impacts of Alternative 2 cannot be modeled because, although some speculation about air tour routes can be made, it is unknown where air tours would fly when outside the ATMP planning area or over the ATMP planning area at or above 5,000 ft. AGL. Alternative 2 would provide 365 days per year without air tours within the ATMP planning area and would reduce noise in the most noise sensitive regions of the Park. This would result in direct beneficial effects compared to existing conditions.

**Alternative 3**

Compared to existing conditions (see Section 2.4.1, Commercial Air Tours per Year), Alternative 3 would result in direct beneficial effects on the Park's acoustic environment. This alternative would provide 212 days per year during which air tours would not be conducted within the ATMP planning area and a reduction in the overall noise footprint (average sound level over a 12-hour day) compared to existing conditions. Table 10 summarizes the modeled noise metric results and Figure 10 and Figure 11 display noise metrics results that would be experienced within the ATMP planning area under Alternative 3.

*Table 10. Summary of Noise Modeling Metric Results for Alternative 3.*

<b>Metric</b>	<b>Alternative 3</b>
12-hour Equivalent Sound Level	<ul style="list-style-type: none"> <li>• Values would not exceed 60 dBA, with the exception of a very small area in the immediate vicinity of the heliport. This area is outside the Park boundary.</li> <li>• Affected portions of the ATMP planning area would generally experience noise levels more than 45 dBA, representing 74% of the total area.</li> </ul>
Day-night Average Sound Level	<ul style="list-style-type: none"> <li>• DNL would be 3 dB less than the 12-hour equivalent sound level, and therefore less than 60 dB.</li> </ul>
Time Audible Natural Ambient	<ul style="list-style-type: none"> <li>• 66% of the ATMP planning area would experience audible air tour noise between 210 and 300 minutes a day*.</li> <li>• The entire ATMP planning area would experience audible air tour noise for between 135 and 300 minutes a day (non-contiguous).</li> </ul>
Time Above 35 dBA	<ul style="list-style-type: none"> <li>• 55% of the ATMP planning area would experience noise above 35 dBA for between 135 and 225 minutes a day (non-contiguous).</li> <li>• The entire ATMP planning area would experience air tour noise above 35 dBA for between 75 and 225 minutes a day (non-contiguous).</li> </ul>
Time Above 52 dBA	<ul style="list-style-type: none"> <li>• The maximum time any of the modeled points would experience noise above 52 dBA would be 68.1 minutes at Location #14 (Undeveloped Park land-goat habitat).</li> <li>• For interpretive programs at the Amphitheater, the time above 52 dBA would be 32 minutes.</li> </ul>

Metric	Alternative 3
	<ul style="list-style-type: none"> <li>For climbing areas, noise above 52 dBA would occur for between 4 and 38 minutes a day.</li> </ul>
Maximum Sound Level	<ul style="list-style-type: none"> <li>The maximum sound level (i.e., the loudest sound level generated by the loudest event independent of the number of operations) within the ATMP planning area would be 73.7 dBA at Location #17 (No name pullout). At Location #33 (Keystone School), outside the ATMP planning area, the maximum sound level is estimated to be 77 dBA. See Appendix F, <i>Noise Technical Analysis</i>.</li> </ul>

\* For the noise analysis, 'day' refers to the 12-hour period 7:00 AM to 7:00 PM, selected to represent typical daytime commercial air tour operating hours.

The resultant DNL within the ATMP planning area for Alternative 3 is expected to be below 60 dB. Refer to the *Noise Technical Analysis* in Appendix F for more information.



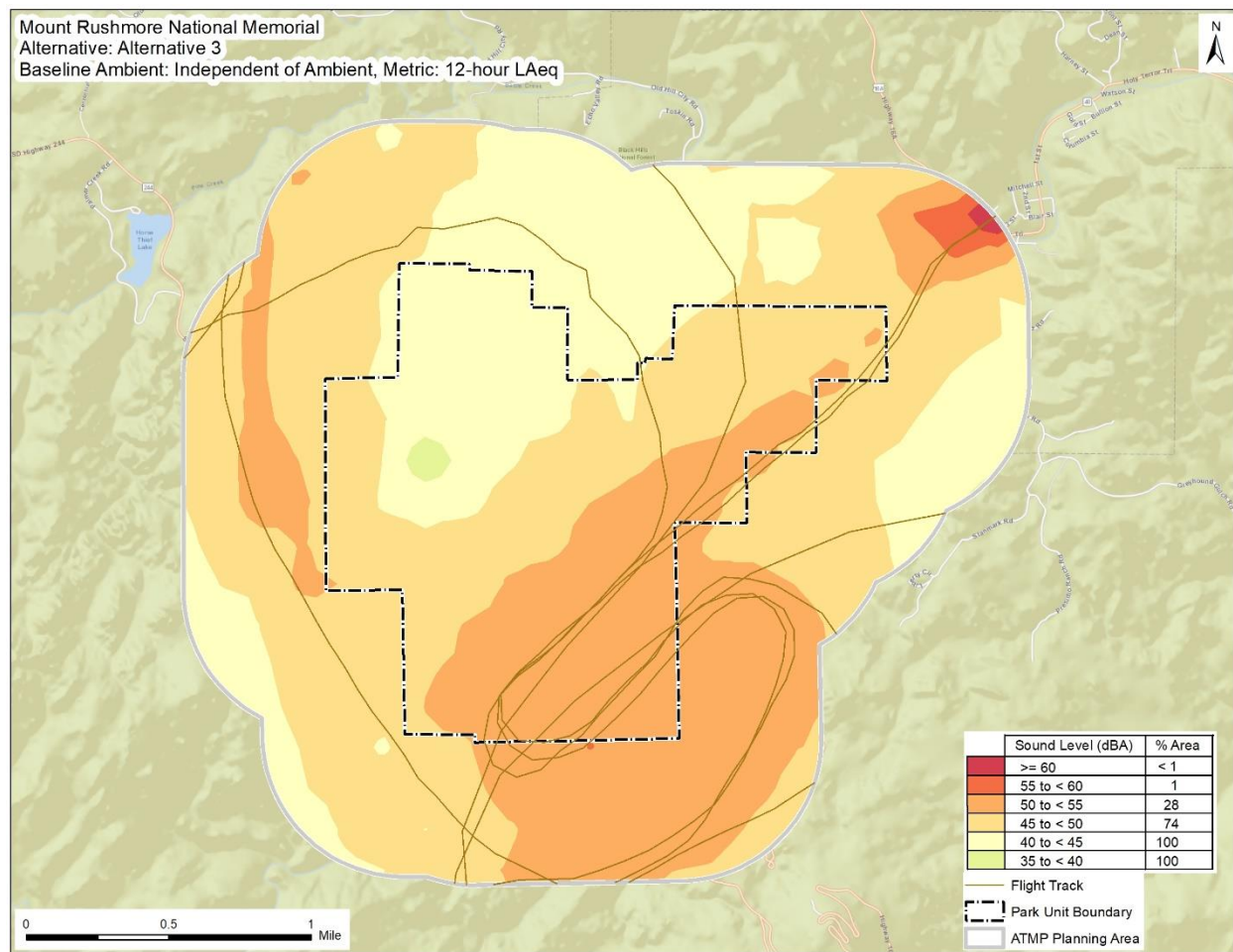


Figure 10. 12-hour Equivalent Sound Level ( $L_{Aeq,12h}$ ) for Alternative 3.

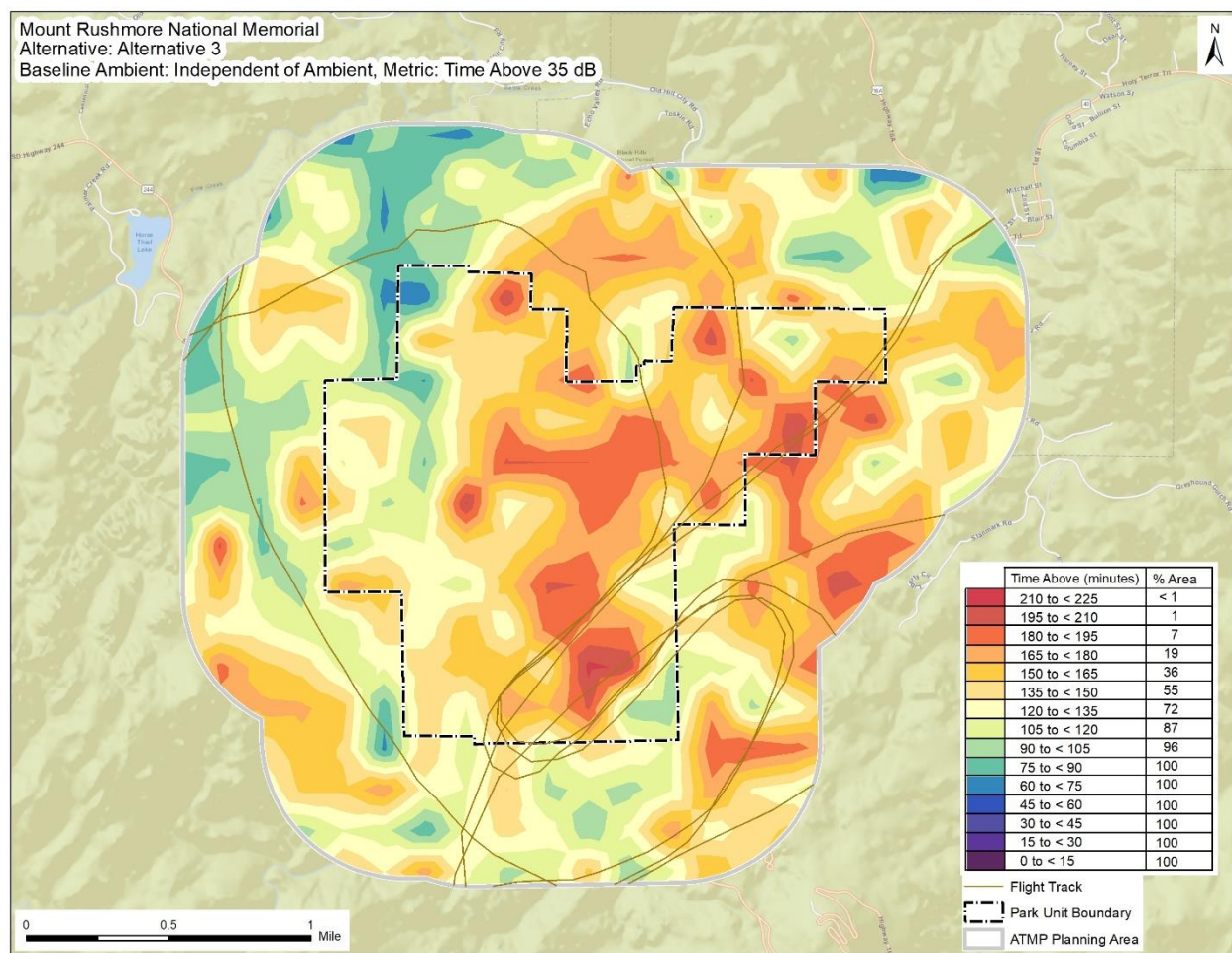


Figure 11. Time Above 35 dBA for Alternative 3.

A comparison of impacts to noise and noise-compatible land use between Alternative 3 and existing conditions is provided below:

- 12-hour Equivalent Sound Level: Compared to existing conditions, the average sound levels under Alternative 3 would be lower.
  - Compared to existing conditions, Alternative 3 would represent a 34% reduction in number of modeled daily operations, equivalent to a decrease of approximately 2 dBA.
  - With the exception of a small area (less than 1% of the ATMP planning area) within the immediate vicinity of the privately owned and operated heliport, Alternative 3 would eliminate areas with 12-hour average noise levels over 55 dBA.
- Time Audible Natural Ambient: Compared to existing conditions, under Alternative 3 the time audible number of minutes would be 34% less, equivalent to 100-120 minutes at most locations.



- Time Above 35 dBA: Compared to existing conditions, the time above 35 dBA under Alternative 3 would be less at all modeled locations.
  - The time above 35 dBA under Alternative 3 would range from 28 (Location 3) to 114 minutes less (Location 24).
- Time Above 52 dBA: Compared to existing conditions, the time above 52 dBA under Alternative 3 would be less at all modeled locations.
  - The time above 52 dBA under Alternative 3 would range from 2 (Location 3) to 37 minutes less (see Location 24).
- Maximum Sound Level: Since this metric represents the loudest sound level, in dBA, generated by the loudest event and is independent of the number of operations, there would be no change in the maximum sound levels between Alternative 3 and existing conditions.

#### **Alternative 4**

Compared to existing conditions, Alternative 4 would result in direct beneficial effects on the Park's acoustic environment. This alternative would provide 258 days per year during which air tours would not be conducted within the ATMP planning area and a reduction in the overall noise footprint (average sound level over a 12-hour day) compared to existing conditions. Table 11 summarizes the modeled noise metric and Figure 12 and Figure 13 display noise metrics results that would be experienced within the ATMP planning area under Alternative 4.

*Table 11. Summary of Noise Modeling Metric Results for Alternative 4.*

<b>Metric</b>	<b>Alternative 4</b>
12-hour Equivalent Sound Level	<ul style="list-style-type: none"> <li>• Values would not exceed 50 dBA, with the exception of a very small area in the immediate vicinity of the heliport where values are between 50 and 60 dBA. This area is outside the Park boundary.</li> <li>• Affected portions of the ATMP planning area would be greater than 40 dBA, representing 76% of the total area.</li> </ul>
Day-night Average Sound Level	<ul style="list-style-type: none"> <li>• DNL would be 3 dB less than the 12-hour equivalent sound level, and therefore less than 60 dB.</li> </ul>
Time Audible Natural Ambient	<ul style="list-style-type: none"> <li>• The entire ATMP planning area would experience audible air tour noise for between 45 and 90 minutes a day (non-contiguous).</li> </ul>

Metric	Alternative 4
Time Above 35 dBA	<ul style="list-style-type: none"> <li>The entire ATMP planning area would experience noise above 35 dBA for between 15 and 60 minutes a day (non-contiguous).</li> </ul>
Time Above 52 dBA	<ul style="list-style-type: none"> <li>The maximum time any of the modeled points would experience noise above 52 dBA would be 21.1 minutes at Location #14 (Undeveloped Park land-goat habitat).</li> <li>For interpretive programs at the Amphitheater, the time above 52 dBA would be 10 minutes.</li> <li>For climbing areas, noise above 52 dBA would occur for between 1 and 13 minutes a day.</li> </ul>
Maximum Sound Level	<ul style="list-style-type: none"> <li>The maximum sound level (i.e., the loudest sound level generated by the loudest event independent of the number of operations) within the ATMP planning area would be 73.7 dBA at Location #17 (No name pullout). At Location #33 (Keystone School), outside the ATMP planning area, the maximum sound level is estimated to be 77 dBA. See Appendix F, <i>Noise Technical Analysis</i>.</li> </ul>

The resultant DNL within the ATMP planning area for Alternative 4 is expected to be below 60 dB. Refer to the *Noise Technical Analysis* in Appendix F for more information.

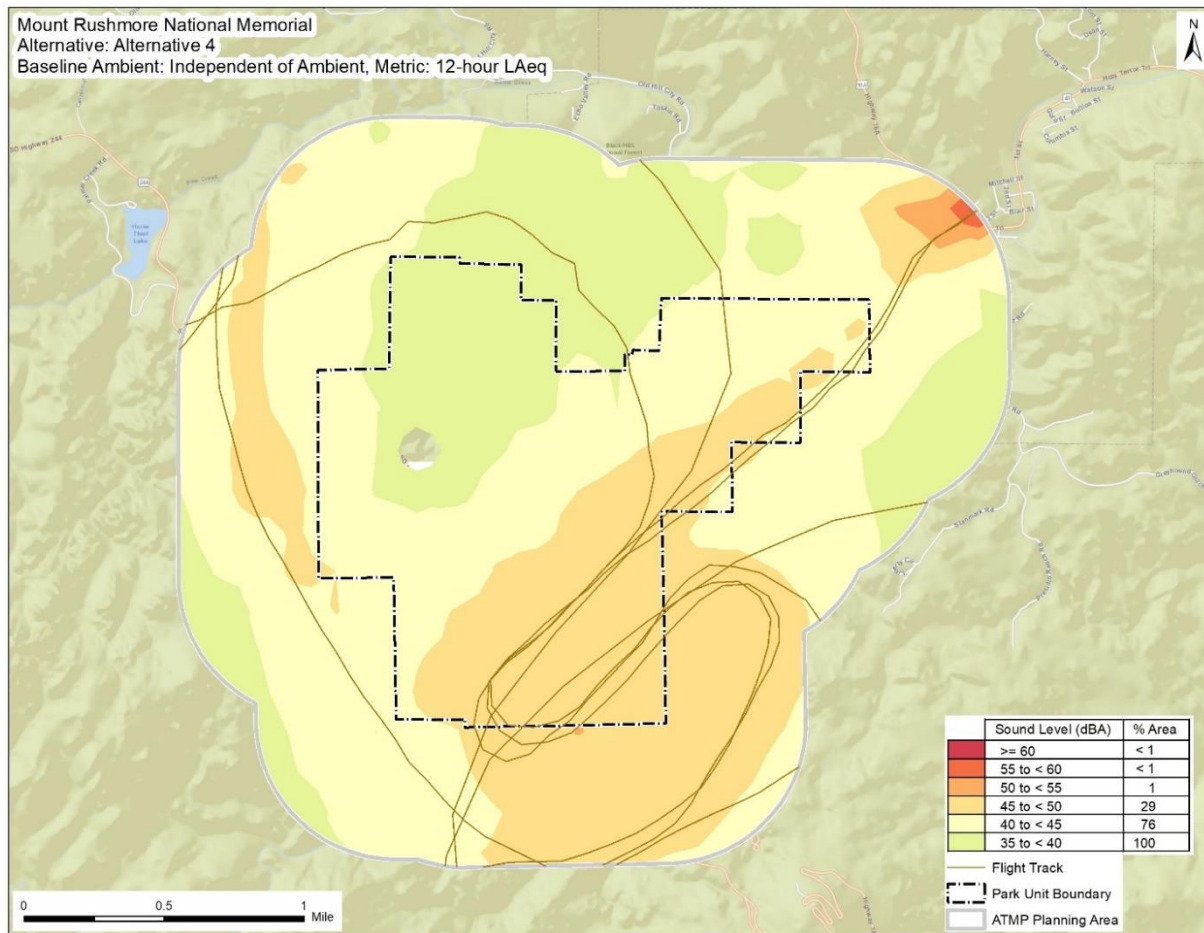


Figure 12. 12-hour Equivalent Sound Level ( $L_{Aeq,12h}$ ) for Alternative 4.

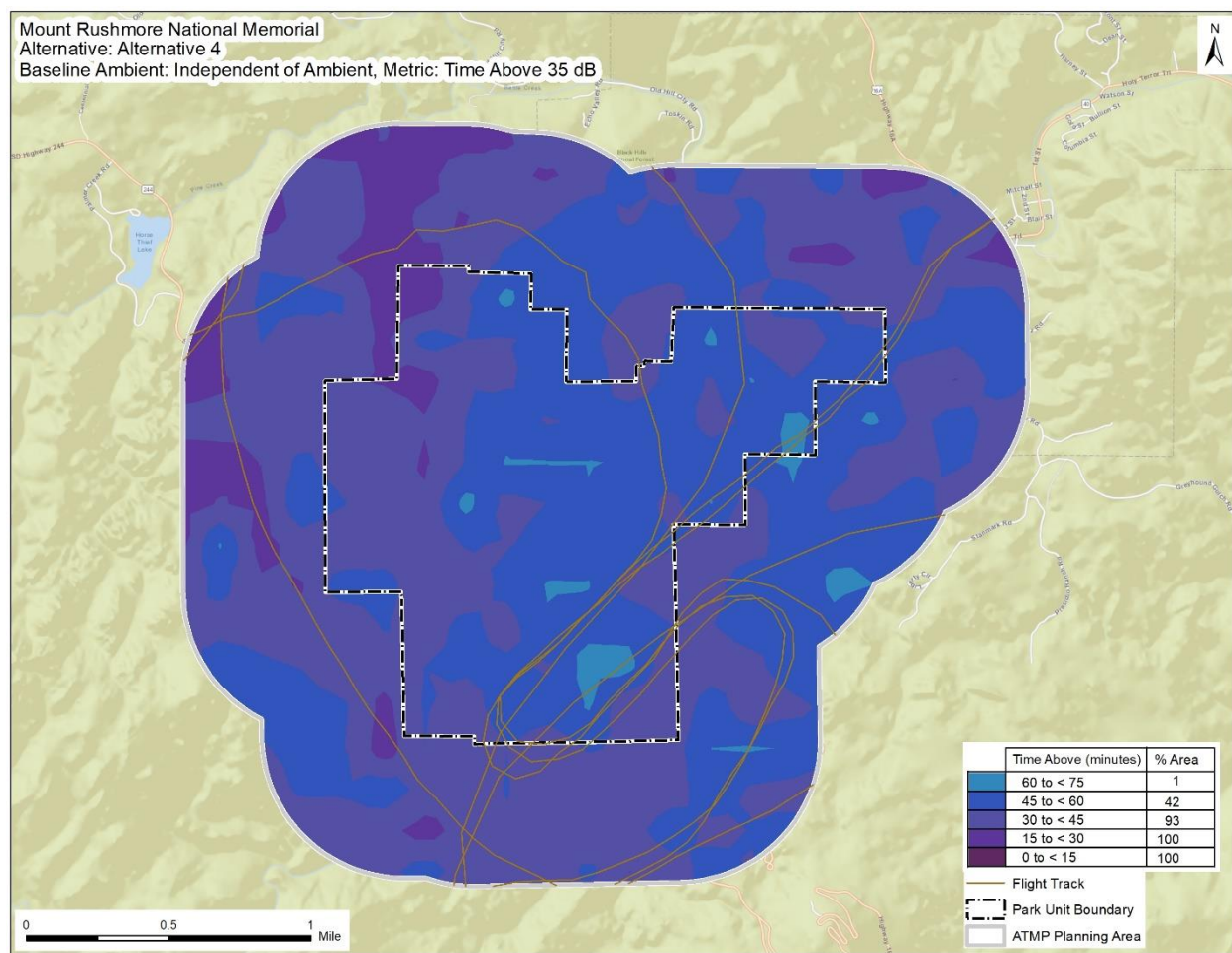


Figure 13. Time Above 35 dBA for Alternative 4.

A comparison of impacts to noise and noise-compatible land use between Alternative 4 and existing conditions is provided below:

- 12-hour Equivalent Sound Level: Compared to existing conditions, the average sound levels under Alternative 4 would be lower.
  - Compared to existing conditions, Alternative 4 would represent a 79% reduction in number of modeled daily operations, equivalent to a decrease of approximately 7 dBA. With the exception of a small area (less than 1% of the ATMP planning area) within the immediate vicinity of the heliport, Alternative 4 would eliminate areas with 12-hour average noise levels over 50 dBA.
- Time Audible Natural Ambient: Compared to existing conditions, the time audible natural ambient under Alternative 4 would be less.
  - Compared to existing conditions, under Alternative 4 the time audible number of minutes would be potentially 79% less, equivalent to 160-350 minutes at most locations.

- Time Above 35 dBA: Compared to existing conditions, the time above 35 dBA under Alternative 4 would be less at all modeled locations.
  - Under Alternative 4 the time above 35 dBA would be between 64 minutes (Location #3) and 266 minutes less (Location #24).
- Time Above 52 dBA: Compared to existing conditions, the time above 52 dBA under Alternative 4 would be less at all modeled locations.
  - Under Alternative 4, the time above 52 dBA would range from 5 (Location #3) to 84 minutes less (Location #24).
- Maximum Sound Level: Since this metric represents the loudest sound level, in dBA, generated by the loudest event and is independent of the number of operations, there would be no change in the maximum sound levels between Alternatives.

### ***Indirect and Cumulative Effects***

**Indirect Effects:** Under the No Action Alternative, commercial air tour operations within the ATMP planning area would remain consistent with existing conditions. Although the number of air tour operations could increase up to IOA, no indirect impacts would be expected to occur under this alternative.

For any alternative (Alternatives 2, 3, and 4) that limits the number of flights per year to a level below existing conditions (3,914 flights per year) and caps the number of flights per day (25 flights per day for Alternative 3 and eight flights per day for Alternative 4) within the ATMP planning area, it is reasonably foreseeable that current air tour operators could seek to make up lost revenue in other ways. While a complete discussion of the socioeconomic effects of the alternatives is provided in Section 3.7, Environmental Justice and Socioeconomics, one of the ways that operators could potentially generate revenue is by offering air tours outside of the ATMP planning area, as the areas outside this area would not be regulated by the ATMP. This type of shift in air tour activity is referred to as “air tour displacement,” and could consist of air tour operators shifting routes or altitudes to just outside the ATMP planning area, some of which could result in impacts to resources to the extent that they are present near the locations where the displaced air tours would occur.

It is difficult to predict with specificity if, where, and to what extent any air tours would be displaced to areas outside the ATMP planning area, including at altitudes at or above 5,000 ft. AGL. The preciseness of routes and altitudes for air tours flown on any possible displaced air tours around the ATMP planning area would be generally subject to Visual Flight Rules which is based on the principle of “see and avoid” and may vary. It is reasonably foreseeable that operators would continue to fly to points of interest outside of the ATMP planning area where they already fly, or fly routes around the Park similar to existing flight paths but outside of the ATMP planning area. Operators may also choose to fly just outside the perimeter of the ATMP planning area to view the sculpture. Operators, both with and without IOA for the Park,

currently conduct air tours in this area as routes in this area still afford views of the sculpture. Operators may also offer new or increased tours to other points of interest in the region such as the Crazy Horse Monument, Iron Mountain Road, Horsethief Lake, Black Elk Peak, and Sylvan Lake, which are known points of interest for current air tour clients. It is reasonably foreseeable that if operators are unable to fly within the ATMP planning area, the implementation of Alternatives 2, 3, or 4 may result in more flights in these areas as they may be able to view the sculpture or other regional points of interest. Displaced air tours could continue to take off and land at the privately owned and operated heliport that is on the boundary of the ATMP planning area. However, air tours leaving this heliport would need to depart the ATMP planning area immediately as is safe.

If operators chose to fly above the ATMP planning area, they would be required to maintain altitudes at or above 5,000 ft. AGL while over the ATMP planning area. This may be impractical due to the high elevation of the terrain because it would require operators to fly above 10,000 ft. MSL at some points. Supplemental oxygen use is required in unpressurized aircraft flying at altitudes over 10,000 ft. MSL for more than 30 minutes (14 CFR Parts 135.89, 135.157); therefore, it is unlikely air tours would fly higher for extended periods of time. Additionally, flights at 5,000 ft. AGL or higher would provide limited value to a sightseeing operation.

The exactness of routes and altitudes for displaced air tours flown at altitudes below 5,000 ft. AGL flying Visual Flight Rules could vary depending on safety, client demand, weather, fuel load, and other costs. Specific routes, altitudes and numbers would be relevant in assessing noise and other potential indirect and cumulative impacts associated with eliminating air tours within the ATMP planning area. Consistent with the CEQ regulations, the agencies are disclosing that specific air tour routes, altitudes, and numbers of tours are not available with enough specificity to assess noise and other potential indirect and cumulative impacts associated with reducing or eliminating air tours within the ATMP planning area. In addition, because specific air tour routes are not available, it is not possible to identify all the other potential noise sources that might contribute to the acoustic conditions outside the ATMP planning area where operators may fly. Agencies are not required to conduct new scientific or technical research to analyze impacts and may rely on existing information to assess impacts. See 40 CFR Part 1502.21(c). For the purposes of disclosing the potential indirect effects of these alternatives, the agencies have considered the potential noise effects of operations above or along the perimeter of the ATMP planning area.

Displaced air tours, if any, above the ATMP planning area (at or above 5,000 ft. AGL) would result in noise within the ATMP planning area. Compared to current conditions, the noise would be spread over a larger geospatial area and would be audible for a longer period, but at lower intensity. Thus, under Alternatives 2, 3, and 4 some locations within the ATMP planning area may experience less intense noise but for a longer period when compared to current conditions. Additionally, other locations within the ATMP planning area not currently

experiencing air tour noise may experience some noise under these alternatives when compared to current conditions. However, in both cases, the intensity of noise would likely be low given the aircraft altitude; any noise that might result could also be more easily masked by opportunistic sounds such as wind and various anthropogenic noise sources. In summary, while the area of noise could be greater under these alternatives, the intensity of noise, especially when compared to current conditions at locations near or directly below existing air tour routes, would be less.

Displaced air tours have the potential to affect noise sensitive locations outside the ATMP planning area. However, it is unlikely that displaced air tours would generate noise at or above DNL 65 dB. To illustrate this, the agencies conducted a conservative, screening-level noise analysis (refer to Appendix F, *Noise Technical Analysis*, Section 8 for more information). The analysis indicates that it would be highly unlikely that air tours that are displaced outside the ATMP planning area under these alternatives would generate noise at or above DNL 65 dB.

**Cumulative Effects:** The cumulative impact of an alternative is the overall acoustic condition of the environment including existing and future noise from sources other than air tours plus anticipated noise from air tours under the alternative. The existing ambient condition of the acoustic environment is disclosed in Section 3.1, Affected Environment for Noise and Noise-Compatible Land Use.

As part of the cumulative effects assessment, the FAA and the NPS considered other ongoing and planned actions. There are other ongoing uses of aircraft that contribute noise to the Park's acoustic environment. The NPS occasionally approves military flyovers for patriotic ceremonies, observances, and photo shoots in coordination with Ellsworth Air Force Base. Impacts on the Park's soundscape from military flyovers vary depending on the type of aircraft used, but usually last less than ten minutes and may occur a couple of times per year. During fire season, fire managers arrange detection flights at times of high and extreme fire danger. These fixed-wing flights routinely avoid the airspace over the Park but do fly over areas within the ATMP planning area and generally occur at an altitude greater than 2,000 ft. AGL. Firefighting aircraft are flown at lower altitudes than this when battling wildfires. South Dakota Game, Fish, and Parks also conduct aerial helicopter surveys for big game species that may include short periods of time when aircraft fly over the Park. Surveys for elk typically take place every four years in January or February, and mountain goat surveys take place every two years in June. The average amount of time spent over the Park is less than ten minutes per survey. Both surveys are planned to occur in 2024. In 2023, the Park will partner with the South Dakota National Guard to use a helicopter to remove debris from a remote, inaccessible part of the Park. The cleanup event is expected to last less than one hour. As described above for indirect effects, air tours flown just outside the ATMP planning area are currently offered by operators both with and without IOA for the Park as air tours in this area still affords views of the

sculpture. Noise from these air tours that is experienced within the ATMP planning area also contributes to the cumulative effects analysis.

In addition to aircraft noise, Park maintenance activities may contribute noise to the Park's acoustic environment. A major reconstruction project is planned for the Park's wastewater treatment plant. This is a large project that will likely take place from October 2023-2026. Earth-moving activities and heavy equipment use will result in a temporary increase in noise levels near the Park's treatment plant during the construction period.

For all planned actions, the Park and regional partners would continue current management actions and respond to future needs and conditions without major changes in the present course.

Alternatives 2, 3, and 4 would likely result in a noticeable beneficial effect on the overall acoustic environment of the Park from reducing or eliminating air tours within the ATMP planning area since the intensity of noise directly around and below existing air tour routes will decrease as described above. Alternative 2 would result in less cumulative noise in the ATMP planning area than Alternatives 3 or 4 given the reduced number of air tours authorized in the ATMP planning area. Ongoing present and future Park management actions by the NPS would continue to occur under any of the alternatives.

## **3.2 Air Quality and Climate Change**

### **3.2.1 Affected Environment**

#### ***Air Quality***

The Clean Air Act divides federal lands into different classifications based on acreage. The Park is classified as a Federal Class II Area. Under the Regional Haze Rule, Federal Class II Areas are subject to a non-degradation standard (EPA, 2003). Class II areas of the country have somewhat less stringent protection from air pollution damage than Class I areas. Historically, air quality at the Park has been considered excellent. Maintaining good air quality is of utmost importance to the NPS because it affects the visibility of the monument. Wildfires are a potential source of particulates (i.e., smoke) that affect visibility, but can also potentially violate one of the National Ambient Air Quality Standards (NAAQS) for particulate matter (PM) under certain wind conditions. The NPS has taken measures to mitigate this risk, such as creating a fire management program for the Park, and limiting sources of fuel through means like prescribed fire and pile burning (NPS, 2002).

The National Ambient Air Quality Standards (NAAQS) determine whether a region is in an air quality attainment or nonattainment area. An area is considered to be in attainment if it meets the federal standard for all criteria pollutants. Subsequently, an area is in nonattainment if it does not meet (or contributes to ambient air quality in a nearby area that does not meet) the standard. When this occurs, states must submit implementation plans to the Environmental



Protection Agency (EPA) discussing programs to improve air quality within that region. The Park is currently in an area of attainment for all NAAQS.

The Clean Air Act also requires that each state create a network of air monitoring stations, known as State and Local Air Monitoring Stations (SLAMS). SLAMS is a network of over 4,000 monitors nationwide. Data recorded by SLAMS monitors are reported and stored in the Air Quality System database and are maintained by the EPA (EPA, 2008). National Air Monitoring Systems are a subset of SLAMS, which follow stricter requirements for quality assurance criteria and equipment type. South Dakota's air quality monitoring network is maintained by the South Dakota Department of Environment and Natural Resources. While there are no monitors within the Park, monitors in proximity of the Park report levels of nitrogen dioxide (NO<sub>2</sub>), sulfur dioxide (SO<sub>2</sub>), and both PM sized 2.5 micrometers in aerodynamic diameter or less (PM<sub>2.5</sub>) and 10 micrometers in aerodynamic diameter or less (PM<sub>10</sub>) (EPA, 2022).

### ***Greenhouse Gases***

The Intergovernmental Panel on Climate Change (IPCC) estimates that aviation accounted for 4.1% of global transportation greenhouse gas (GHG) emissions (FAA, 2020). GHGs are gases that trap heat in the Earth's atmosphere. Naturally occurring and anthropogenic (human-made) GHGs include carbon dioxide (CO<sub>2</sub>), water vapor (H<sub>2</sub>O), methane (CH<sub>4</sub>), nitrous oxide (N<sub>2</sub>O), and ozone (O<sub>3</sub>). The EPA data indicates that commercial aviation contributed to 6.6% of CO<sub>2</sub> emissions in 2013 in the U.S. (EPA, 2016).

In response to the increasing need for understanding and action related to climate change impacts in the parks, the NPS launched the Climate Friendly Parks program in 2002, creating opportunities to educate staff about climate change issues, assess each park's contribution to GHG emissions, create short and long-term strategies for reducing emissions, determine potential effects of climate change on park resources, and develop skills and strategies for communicating these effects to the public (NPS, 2016). As a part of the Park's participation in this program, the Park staff developed a long-term Climate Action Plan (NPS, 2016) that involved analyzing the anthropogenic carbon footprint of the Park using the EPA's Greenhouse Gas Equivalencies Calculators. Data used to perform the calculations included the amount of electricity purchased, waste sent to the landfill, and fuels consumed.

Initial findings by the NPS (NPS, 2016) show that the largest single source of GHG emissions was visitor travel in the Park (vehicles), comprising approximately 27% of total emissions (NPS, 2016). These findings provide an initial overview of the carbon footprint of the Park. Further monitoring and analysis will track progress in reducing the Park's carbon footprint into the future.

### 3.2.2 Environmental Consequences

#### ***Alternative 1: No Action***

The No Action Alternative represents existing air tour conditions, which is analyzed as the three-year average number of flights from 2017-2019. The impacts could be greater than disclosed here if air tour numbers up to IOA occur. Modeling results for existing conditions are presented in Table 12 for the criteria pollutants. Note that ozone is not reported as it is not directly emitted in aircraft exhaust. Pollutant emissions are based on annual flight miles and routes for each aircraft type operating within the ATMP planning area. The emission rates (pounds of emissions per mile flown) used in modeling are aircraft engine and fuel-specific. The results in Table 12 describe baseline emissions under existing conditions; emissions under alternatives can be compared to baseline emissions to indicate potential impacts on air quality within the ATMP planning area.

*Table 12. Summary of Criterial Pollutant Annual Emissions in Tons per Year (TPY) Under Existing Conditions.*

<b>Criteria Pollutant</b>	<b>Total Annual Emissions (TPY)</b>
Carbon monoxide (CO)	53.9
Lead (Pb)	0.025
Nitrogen dioxide (NO <sub>2</sub> )	0.009
Particulate matter: Aerodynamic diameter ≤ 2.5 µm (PM <sub>2.5</sub> )	0.003
Particulate matter: Aerodynamic diameter ≤ 10 µm (PM <sub>10</sub> )	0.003
Sulfur dioxide (SO <sub>2</sub> )	0.040

Total annual GHG emissions for existing conditions are modeled to be 97.5 metric tons (MT) of CO<sub>2</sub>. The analysis for existing conditions would not cause pollutant concentrations to exceed one or more of the NAAQS for any of the time periods analyzed. These modeling results for existing conditions represent the impacts of the No Action Alternative, though impacts could increase if flights up to IOA occurred (see Section 2.4.1, Commercial Air Tours per Year for the No Action Alternative).

#### ***Alternative 2***

Under Alternative 2, commercial air tours would not be conducted within the ATMP planning area which would eliminate direct emissions from air tours within the planning area and would not cause pollutant concentrations to exceed one or more of the NAAQS for any of the time periods analyzed. Therefore, Alternative 2 would result in direct beneficial effects on air quality compared to existing conditions due to lower commercial air tour emissions within the ATMP planning area (Table 12). Direct emissions in the ATMP planning area would be expected to decrease by the amount reported under existing conditions (Table 12) and would result in zero

emissions from the elimination of commercial air tours within the ATMP planning area. The direct effects of this alternative would be the reduction of the emissions within the ATMP planning area reflected in Table 12; however, emissions could still be generated from displaced air tours (refer to indirect effects analysis below).

### **Alternative 3**

Under Alternative 3, commercial air tours would still be conducted within the ATMP planning area; however, the total number of flights per year would be reduced and required routes would be established as compared to existing conditions. Direct emissions in the ATMP planning area would be expected to decrease by the amount reported in Table 13 as compared to the No Action Alternative Table 12 and would result in reduced emissions from the reduction of commercial air tours within the ATMP planning area. The direct effects of this alternative would be the reduction of the emissions within the ATMP planning area reflected in Table 13; however, emissions could still be generated from displaced air tours (refer to indirect effects analysis below). Modeling results for Alternative 3 are presented in Table 13 for the criteria pollutants in terms of change in emissions as compared to existing conditions. Note that ozone is not reported as it is not directly emitted in aircraft exhaust. Similar to existing conditions, these results are based on annual flight miles and routes for each aircraft type and the emission rates used in modeling are aircraft engine and fuel-specific. The results in Table 13 show that emissions from air tours for all criteria pollutants would decrease or remain unchanged under Alternative 3.

*Table 13. Summary of Change in Criterial Pollutant Annual Emissions in TPY Under Alternative 3 as Compared to Existing Conditions.*

<b>Criteria Pollutant</b>	<b>Change in TPY as Compared to Existing Conditions *</b>
Carbon monoxide (CO)	-3.37
Lead (Pb)	-0.002
Nitrogen dioxide (NO <sub>2</sub> )	-0.001
Particulate matter: aerodynamic diameter ≤ 2.5 µm (PM <sub>2.5</sub> )	0.000
Particulate matter: aerodynamic diameter ≤ 10 µm (PM <sub>10</sub> )	0.000
Sulfur dioxide (SO <sub>2</sub> )	-0.002

\*Negative values represent a reduction in total emissions.

The total change in annual GHG emissions for Alternative 3 as compared to existing conditions is modeled to be a reduction of 6.09 MT CO<sub>2</sub> within the ATMP planning area. Alternative 3 would not cause pollutant concentrations to exceed one or more of the NAAQS for any of the time periods analyzed. Compared to existing conditions, Alternative 3 would result in beneficial impacts to air quality due to lower commercial air tour emissions within the ATMP planning

area. Alternative 3 would result in an approximately 6.3% reduction in both criteria pollutant and GHG emissions as compared to existing conditions. This represents the direct effects of this alternative within the ATMP planning area; however, emissions could still be generated from displaced air tours (refer to indirect effects analysis below).

#### **Alternative 4**

Under Alternative 4, commercial air tours would still be conducted within the ATMP planning area; however, the total number of tours per year would be reduced and establish required routes as compared to existing conditions. Direct emissions in the ATMP planning area would be expected to decrease by the amount reported in Table 14 as compared to the No Action Alternative and would result in reduced emissions from the reduction of commercial air tours within the ATMP planning area. The direct effects of this alternative would be the reduction of the emissions within the ATMP planning area reflected in Table 14; however, emissions could still be generated from displaced air tours (refer to indirect effects analysis below). Modeling results for Alternative 4 are presented in Table 14 for the criteria pollutants in terms of change in emissions as compared to existing conditions. Note that ozone is not reported as it is not directly emitted in aircraft exhaust. Similar to existing conditions, these results are based on annual flight miles and routes for each aircraft type and the emission rates used in modeling are aircraft engine and fuel-specific. The results in Table 14 show that emissions from air tours for all criteria pollutants would decrease or remain unchanged under Alternative 4.

*Table 14. Summary of Change in Criterial Pollutant Annual Emissions in TPY Under Alternative 4 as Compared to Existing Conditions.*

<b>Criteria Pollutant</b>	<b>Change in TPY as Compared to Existing Conditions*</b>
Carbon monoxide (CO)	-43.3
Lead (Pb)	-0.020
Nitrogen dioxide (NO <sub>2</sub> )	-0.007
Particulate matter: aerodynamic diameter ≤ 2.5 µm (PM <sub>2.5</sub> )	-0.003
Particulate matter: aerodynamic diameter ≤ 10 µm (PM <sub>10</sub> )	-0.003
Sulfur dioxide (SO <sub>2</sub> )	-0.032

\*Negative values represent a reduction in total emissions.

The total change in annual GHG emissions for Alternative 4 as compared to existing conditions is modeled to be a reduction of 78.4 MT CO<sub>2</sub> within the ATMP planning area. Alternative 4 would not cause pollutant concentrations to exceed one or more of the NAAQS for any of the time periods analyzed. Compared to existing conditions, Alternative 4 would result in beneficial impacts to air quality due to lower commercial air tour emissions within the ATMP planning area. Alternative 4 would result in an approximately 80% reduction in both criteria pollutant

and GHG emissions as compared to existing conditions. This represents the direct effects of this alternative within the ATMP planning area; however, emissions could still be generated from displaced air tours (refer to indirect effects analysis below).

### ***Indirect and Cumulative Effects***

**Indirect Effects:** For any alternative that limits the number of flights per year to a level below existing conditions (3,914 flights per year) within the ATMP planning area as described above, it is reasonably foreseeable that operators could potentially generate revenue by offering air tours outside of the ATMP planning area, or over the ATMP planning area at or above 5,000 ft. AGL, as the areas outside the ATMP planning area would not be regulated by the ATMP. Some of this displaced activity could result in impacts to air quality although it is difficult to predict with specificity if, where, and to what extent any displaced air tours would result in impacts in different and/or new areas. The preciseness of routes and altitudes for tours flown on displaced routes are generally subject to Visual Flight Rules and may vary.

Under the No Action Alternative, commercial air tour operations within the ATMP planning area would remain consistent with existing conditions. Although operations could increase up to IOA no indirect impacts would be expected to occur under this alternative.

Alternatives 2, 3, and 4 would limit the number of flights per year as compared to existing conditions and would therefore have the potential to result in some displacement of air tours outside the ATMP planning area. Air tours occurring outside the ATMP planning area, if any, would not result in direct effects from emissions within the ATMP planning area. However, prevailing winds may transport some of the emissions outside the ATMP planning area to within the ATMP planning area (i.e., indirect effects), including for air tours that utilize the heliport that is on the boundary of the ATMP planning area. Additionally, some areas that are not currently exposed to emissions from air tours (outside the ATMP planning area) may be exposed to emissions in these scenarios thus affecting the air quality in these areas.

For purposes of assessing indirect air quality and GHG impacts that would occur as a result of Alternatives 2, 3, and 4, this analysis considers whether aircraft currently operating over the Park would generate significant emissions to affect the attainment status of the Park. Based on the analysis, the emissions of all criteria pollutants (excluding ozone) and GHGs from the current number of air tours flown over the Park are minimal. Operations that may occur outside the ATMP planning area as a result of Alternatives 2, 3, or 4 may shift where emissions occur but the total annual emissions are not likely to change substantially.

Because of both the number of air tours and the likely dispersal of air tours outside the ATMP planning area, it is unlikely that air tours that are displaced to outside the ATMP planning area under these alternatives would result in air quality impacts or change the current attainment

status of the Park. Changes in air tour operations under these alternatives would also likely have minimal impact, if any, to regional air quality.

**Cumulative Effects:** The cumulative impact of an alternative is the overall air quality of the environment including existing and future emissions from sources other than air tours plus anticipated emissions from air tours under the alternative. The existing air quality in the Park is disclosed in Section 3.2.1, Affected Environment for Air Quality and Climate Change. Other ongoing actions related to air quality and GHGs include fire management activities and continued work related to the Climate Action Plan (NPS, 2016). Alternatives 2, 3, and 4 would likely result in no noticeable change to a slight improvement in overall air quality in the Park, with no change in the current NAAQS attainment status. Ongoing present and future Park management actions by the NPS, such as helicopter flights for maintenance, flyovers, and aircraft used for firefighting activities may also contribute emissions that will affect air quality within the ATMP planning area. Ongoing present and future Park management actions by the NPS would continue to occur under any of the alternatives.

### 3.3 Biological Resources

The area of analysis for biological resources, including but not limited to species listed as threatened or endangered, in this draft EA includes the ATMP planning area. This area encompasses all effects of the proposed action for biological resources. To the extent that habitat and species occurrences correlate, impacts to biological resources are expected to be similar within the ATMP planning area. Therefore, if habitat exists for a species but occurrence is unknown, the assumption is that the species could be present and will be analyzed accordingly.

The environmental effects of commercial air tour operations are evaluated for biological resources and their habitats. The analysis discloses the context of natural variability and ecosystem integrity, as well as effects on individuals and populations. Some impacts are species specific and are identified accordingly.

The Endangered Species Act (ESA) is the primary federal statute regulating federally listed threatened and endangered species and critical habitat. The U.S. Fish and Wildlife Service (USFWS) is the federal agency responsible for administration of the ESA, the Bald and Golden Eagle Protection Act, and the Migratory Bird Treaty Act (MBTA). The NPS Management Policies (2006) direct the NPS to meet its obligations under the NPS Organic Act and the ESA to both proactively conserve listed species and prevent detrimental effects on these species (NPS Management Policies § 4.4.2.3, 2006).

A threatened species is defined under the ESA as “any species which is likely to become an endangered species within the foreseeable future throughout all or a significant portion of its range.” An endangered species is defined under the ESA as “any species which is in danger of

extinction throughout all or a significant portion of its range.” Species designated as threatened or endangered are collectively referred to as listed species in this draft EA.

### **3.3.1 Affected Environment**

A diversity of wildlife is native to the region surrounding the Park. The backcountry areas of the Park (wetlands, old growth forest, rock outcrops) provide a diverse and abundant habitat for many species of mammals, invertebrates, reptiles, amphibians, vegetation, and birds. Wildlife habitat in the ATMP planning area is dominated by ponderosa pine, along with common juniper and granite rock outcrops. See Figure 14 for a depiction of the affected environment for biological resources.

The biological resources analyzed in this section include both listed and non-listed wildlife most likely to be affected by the alternatives. Wildlife populations are managed through a series of Parks, wildlife preserves, and Wilderness areas in the greater region such as the Norbeck Wildlife Preserve, which was established in 1920 “for the protection of game animals and birds and to be recognized as a breeding place therefor.”<sup>15</sup> The Norbeck Wildlife Preserve is an interagency (federal, state, and local non-government) collaboration that strives to preserve wildlife in the Black Hills area across jurisdictional boundaries. No designated critical habitat for listed species occurs within the ATMP planning area. The federally listed species described in this section are also state listed species. As discussed in Section 1.5 Environmental , Environmental Impact Categories Not Analyzed in Detail, it is unlikely that fish and plant species would be affected by air tours, therefore they are not considered for further analysis under biological resources in this draft EA. Through tribal consultation, tribes have conveyed to the agencies that natural resources, including plants, are considered cultural resources by the tribes. Therefore, plants are analyzed as a cultural resource (see Section 3.4.1, Affected Environment for Cultural Resources).

#### **Birds**

There have been over 50 species of birds documented within the Park. According to landbird surveys, the most common bird within the Park was the red crossbill (*Loxia curvirostra*), followed by the yellow-rumped warbler (*Dendroica coronate*), red-breasted nuthatch (*Sitta canadensis*), and American robin (*Turdus migratorius*) (National Park Service and Northern Great Plains Network, 2017). Important nesting periods for birds extend from mid-June to late September. See additional bird species of concern below.

#### **Mammals**

The Park was surveyed for terrestrial mammals during the summer of 2002, and the Park conducts periodic bat surveys and monitoring. The 2002 terrestrial mammal survey

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<sup>15</sup> <https://www.fs.usda.gov/detail/blackhills/specialplaces/?cid=fseprd821462>

documented over 22 native species including bats, deer, and the bushytailed woodrat, among others (Schmidt et al., 2004). Prior to a study conducted by Schmidt et al. (2004), the mountain goat was the only mammal formally documented within the Park. Therefore, population trends of most species are unknown.

The Park supports an abundant and diverse community of bats. The species of bats that have been commonly documented in the Park include Townsend's big-eared bat (*Coryrhinus townsendii*), eastern red bat (*Lasiurus borealis*), hoary bat (*L. cinereus*), small-footed bat (*Myotis ciliolabrum*), long-eared bat (*M. evotis*), little brown bat (*M. lucifugus*), long-legged myotis (*M. volans*), fringed myotis (*M. thysanodes*), northern long-eared bat (*M. septentrionalis*), silver-haired bat (*Lasionycteris noctivagans*), big brown bat (*Eptesicus fuscus*), and the tricolored bat (*Perimyotis subglavus*) (Schmidt et al., 2004; Maddox, 2022). During winter acoustic bat monitoring, over 10,300 bat calls were detected, the most frequent of which belonged to silver-haired bats and hoary bats (Maddox, 2022). Activity levels of bats within the Park increase with warmer temperatures, and activity levels peak shortly after sunset, around 6:00 PM (Maddox, 2022). Water resources within the Park, notably the open pools in Starling Gulch, provide bats with water and foraging habitat with a sufficient prey base, while granite outcrops and old growth ponderosa pine provide suitable habitat (Schmidt et al., 2004). Bats are considered indicator species due to their habitat requirements and sensitivity to anthropogenic disturbance. Threats to bats include direct strikes, non-native plants, white nose syndrome, and wildfires.

Ungulates, or mammals with hooves, within the Park include mule deer (*Odocoileus hemionus*), white-tailed deer (*O. virginianus*), bighorn sheep (*Ovis canadensis*), and mountain goats (*Oreamnos americanus*). White tailed-deer and mule deer both forage at dusk and dawn throughout the Park. During the winter season, they become more active during warmer daylight hours (NPS, 2022a). Mule deer are one of the most populous mammals within the Park (Schmidt et al., 2004). Several locations within the Park serve as congregation areas for mountain goats and bighorn sheep; the Park has identified these areas as sensitive, and the State of South Dakota has a policy to maintain the mountain goat herd population. These congregation areas have sufficient habitat for calving, feeding, and provide a stable water source. Mountain goats occupy the granite formations of Black Hills National Forest and other Wilderness areas (see Section 3.5.1, Affected Environment for Wilderness, for additional information). Their soft hooves allow them to be excellent climbers and traverse steep terrain. In 1924, this species was introduced to the Park after six goats escaped from their pens in the nearby Custer State Park and their population within the ATMP planning area has increased to over 200 individuals (NPS, 2022a).



### ***Federally Listed Species***

A list of threatened and endangered species that may occur within the ATMP planning area was obtained through the USFWS Information Planning and Consultation tool. Based on this information, and the absence of habitat, the red knot (*Calidris canutus rufa*) and the monarch (*Danaus plexippus*) were not included in this draft EA discussion; for more information on these species, see the *Section 7 No Effect Memo* in Appendix H. The following species that are known to occur within the ATMP planning area are described below.

#### **Northern Long-eared Bat**

The northern long-eared bat (*Myotis septentrionalis*) is listed as endangered under the ESA (87 FR 73488) and is one of several bat species present within the Park. Northern long-eared bats are nocturnal and emerge at dusk to forage for insects in the understories of trees. Their breeding season occurs from late summer to fall; northern long-eared bats hibernate in caves in the winter months and reproduce in spring where they spend the remainder of the year in forested habitat. According to acoustic surveys conducted within the Park, the area of greatest winter bat activity occurs in the western region of the Park, at a clearing between two tall granite cliffs by Highway 244 near pine snags (Maddox, 2022).

The most significant threat to this species is white-nose syndrome, followed by collisions with wind turbines, climate change, and habitat loss. White nose syndrome disrupts hibernation and has caused populations of northern long-eared bats to decline 97-100% across 79% of their range, while mortality from wind turbines posed a risk northern long-eared bats across almost half of their range (USFWS, 2022a).

Stressors to this species, compounded with their low reproduction rate of one pup per year, are expected to cause a 95% decline of northern-long ear bat abundance throughout their range by 2030. As such, the USFWS uplisted this species from threatened to endangered in 2023. Although there have been no detections of white nose syndrome at the Park, it has been detected in bats at nearby Wind Cave National Park and Jewel Cave National Monument.

Anthropogenic noise has been found to reduce foraging success of bats (Siemers and Schaub, 2011; Luo et al., 2015). When exposed to played-back traffic and gas compressor station noise at 58-76 dBA and low-level amplified noise at 35 dBA, pallid bats (*Antrozous pallidus*) experienced increases in the amount of time it took to locate prey-generated sounds (Bunkley and Barber, 2015). The greater mouse-eared bat (*Myotis myotis*) had showed decreased foraging efficiency when exposed to broadband computer-generated noise at a sound pressure level of 80 dB (which corresponds to sounds occurring 10 meters to 15 meters (33 ft. to 49 ft.) away); bats will avoid foraging areas with these conditions in favor for quieter foraging areas (Schaub et al., 2008).

### Tricolored Bat

The tricolored bat (*Perimyotis subflavus*) is an insectivore that is distinguished by its tricolored fur that appears darker at the base and top of its body and lighter in the middle. The tricolored bat was one of several bat species that were relatively recently detected at the Park and is proposed to be listed as endangered under the ESA (87 FR 56381). They are nocturnal mammals that forage at treetop level or over waterways and forest edges at dusk with slow, erratic flight patterns. Similar to other bat species, the tricolored bat winters in caves or mines and roosts in forested habitats during other parts of the year. Tricolored bats mate during the fall and winter seasons, hibernate throughout the winter, and migrate to their summer habitat where females form maternity colonies to birth their young (USFWS, 2022b). Once juveniles can fly, the bats disperse and return to their winter habitats to swarm, mate, and hibernate. Tricolor bats demonstrate site fidelity to their winter and summer roost habitats (USFWS, 2022b).

Threats to tricolored bats include white nose syndrome, collisions with wind turbines, habitat loss and disturbance, and climate change. Similar to the northern long-eared bat, small colonies of tricolored bats are vulnerable to extirpations from white noise syndrome and other stressors due to their low reproduction rate of two pups per year and high philopatry (tendency to return to or remain near a particular site or area). White nose syndrome is the most prominent threat to this species, and it is estimated that abundance of tricolored bats will decrease by 81% across their range over the next ten years (USFWS, 2022b). Low abundances also increase the loss of genetic diversity which will further lessen the ability of the tricolored bat to adapt to changes in their environment.

According to acoustic surveys conducted at several locations in the Park, the area of greatest winter bat activity occurs in the western region of the Park, at a clearing between two tall granite cliffs by Highway 244 near pine snags (Maddox, 2022).

### ***Other Species of Concern***

Within the ATMP planning area, there are two other bird species of conservation concern: the bald eagle (*Haliaeetus leucocephalus*) and the peregrine falcon (*Falco peregrinus*).

### Bald Eagle

Bald eagles are birds of prey with large wingspans. They are considered carnivores, with a diet that consists primarily of rodents. Bald eagles inhabit seacoasts, forest valleys, mountain regions, lakes, and rivers, and are occasionally present within the Park and greater ATMP planning area. Bald eagles mate for life and aggressively defend nests during the breeding season. Nests are typically constructed in trees near water sources or along cliffs. The clutch size is one to three eggs, and adults will use the same nests each year. Chicks hatch and fledge throughout the spring.

In 2007, the USFWS estimated there were 9,789 breeding pairs across the southern U.S., which led to the delisting of the bald eagle from the ESA in those regions and later removed from the federal list of endangered species. The population size of this species has increased since 2007, and continues to increase, as bald eagles are provided protection under the MBTA and the Bald and Golden Eagle Protection Act.

In 2007, the USFWS prepared National Bald Eagle Management Guidelines, and in 2016 USFWS released the Final Programmatic Environmental Impact Statement for the Eagle Rule Revision<sup>16</sup>, which analyzed the effects of revised incidental take permit regulations. In 2022, USFWS published a proposed rule<sup>17</sup> and draft EA proposing additional changes to the eagle incidental take permitting program. USFWS guidelines provide landowners, land managers, and others who share public and private lands with bald eagles with guidance on when and under what circumstances the Bald and Golden Eagle Protection Act applies to project activities. Additionally, the guidelines include standoff distances of 1,000 ft. for aircraft at nests during the breeding season, foraging areas, and communal roost sites. Threats to bald eagles include habitat loss from development in coastal areas, pesticide poisoning, and illegal shooting.

### Peregrine Falcon

The peregrine falcon is a carnivorous bird with a diet that consists primarily of other birds and is augmented by rare intakes of small mammals, reptiles, or insects. This species nests along remote cliffs and ledges, where their nests, called scrapes, are just small depressions in gravel. Nesting occurs in the spring and their clutch size is two to three eggs.

Pollutants such as dichloro-diphenyl-trichloroethane (DDT) caused egg-shell thinning, resulting in the listing of this species as endangered under the ESA in 1973 (NPS, 2021a). Limiting the use of DDT allowed populations to recover, and this species was delisted in 1999, where their populations have since slowly increased and are now considered to be stable. Despite population recovery, the peregrine falcon is still listed as threatened at the state level in South Dakota (South Dakota Department of Game, Fish, and Parks, 2022). Threats to peregrine falcons include poisoning from DDT-based pesticides and illegal shooting.

This species is an uncommon migrant of South Dakota but has been observed in the Black Hills during the summer season. Surveys in 2017 documented two peregrine falcon nest locations in the northern and central Black Hills (South Dakota Department of Game, Fish, and Parks 2022). In 2020, the NPS observed a pair of nesting peregrines in the Park (though the four chicks did not survive), and in 2022, a pair was observed flying over the sculpture. Peregrine falcons have

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<sup>16</sup> <https://www.fws.gov/media/final-programmatic-environmental-impact-statement-eagle-rule-revision>

<sup>17</sup> <https://www.federalregister.gov/documents/2022/09/30/2022-21025/permits-for-incidental-take-of-eagles-and-eagle-nests>

also been observed in portions of the ATMP planning area outside the Park, but no nests have been documented in these locations.

When peregrine falcons were exposed to helicopters and fixed-wing aircraft overflights from 1,000 meters (3,281 ft.) or less, or at slant distances of 550 meters (1,804 ft.), 2-3% of individuals had in-flight responses; when active nests were approached at the same slant distances, peregrine falcons have been observed attacking these aircraft (Nordmeyer, 1999). Studies suggest that although peregrine falcons have shown reactions to aircraft, they display stronger reactions and are therefore more sensitive to disturbance from humans, other animals, and boats than they were to overflights from helicopters or fixed-wing aircraft. (Nordmeyer, 1999; Roby et al., 2002; Palmer et al., 2003). Studies recommend a standoff distance of 2,640 ft. between from active nest for human activities (Richardson and Miller, 1997; Colorado Division of Wildlife, 2020).

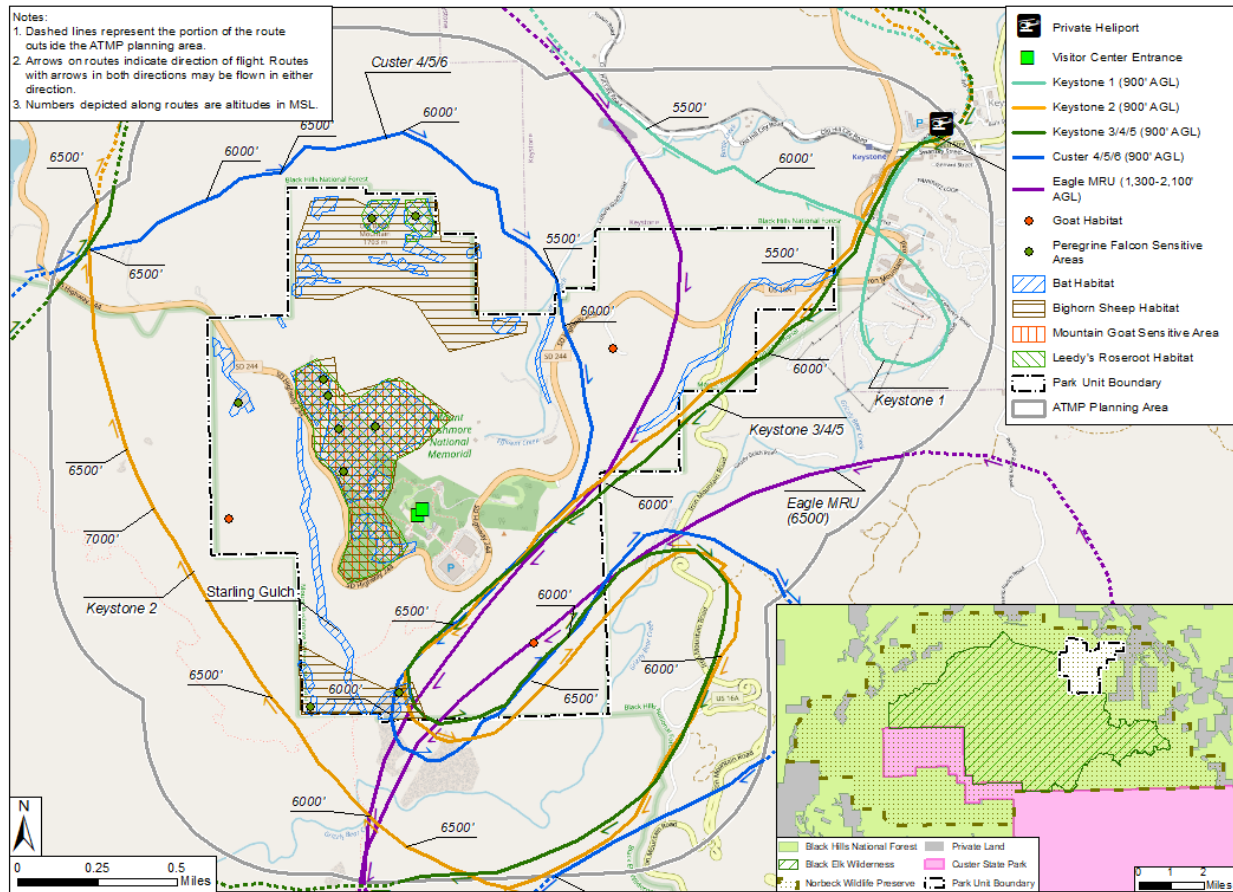


Figure 14. Affected Environment for Biological Resources and Environmental Consequences for Alternatives 1, 3 and 4.

### **3.3.2 Environmental Consequences**

Noise from commercial air tours may impact wildlife in a number of ways, including altered vocal behavior, breeding relocation, changes in vigilance and foraging behavior, and impacts on individual fitness and the structure of ecological communities to name a few (Shannon et al., 2016; Kunc et al., 2016; Kunc and Schmidt, 2019). Understanding the relationships between noise attributes (e.g., timing, intensity, duration, and location) and ecosystem responses is essential for understanding impacts to these species and developing management actions to address them (Gutzwiller et al., 2017). To capture how noise may affect quieter natural sounds or conversations, the resource impacts analysis below examines the time above 35 dBA (for quieter natural sounds and impacts to natural resources). Refer to the *Noise Technical Analysis* in Appendix F for more information.

The agencies are currently conducting analysis for those federally listed species described in Section 3.3.1, Affected Environment for Biological Resources, in accordance with 50 CFR Part 402.02. The FAA and the NPS initiated technical assistance with the USFWS on February 7, 2023 during which all four alternatives were reviewed. Based on this discussion and the agencies' ongoing analysis, the agencies have determined that the preferred alternative (Alternative 2) would have *no effect* on federally listed threatened or endangered species. See Appendix H, *Section 7 No Effect Memo* for additional analysis.

#### ***Alternative 1: No Action***

Under the No Action Alternative, noise from commercial air tours would continue to affect biological resources throughout the ATMP planning area. Noise from commercial air tours currently disturbs the Park's wildlife and could result in changes in wildlife behavior, such as vocal behavior, or other effects that cause wildlife to change their behavior or avoid an area, such as breeding relocation or changes in foraging behavior.

Existing commercial air tour routes are present over known habitat for bats and bighorn sheep within the Park (see Figure 14) which would increase the likelihood of these behavioral effects occurring. The *Noise Technical Analysis* (Appendix F) shows that on days when air tours occur, noise above 35 dBA would occur for less than 330 minutes across the majority (70%) of the ATMP planning area. This noise may interfere with wildlife behavior as described above.

Raptor species within the ATMP planning area, including bald eagles and peregrine falcons, are especially sensitive to low flying aircraft and their associated noise. In consideration of the effects of aircraft on bald eagles, when helicopters flew at altitudes from 60 meters to 120 meters (197 ft. to 394 ft.), bald eagles flushed from perching or nesting about half of the time, with juveniles flushing more often than adults, and eagles feeding or standing on the ground flushed more often than perched eagles (Stalmaster and Kaiser, 1997). Eagles rarely flushed when helicopter overflights were conducted at altitudes greater than 300 meters (984 ft.) (Stalmaster and Kaiser, 1997). Nesting eagles were more likely to flush than non-nesting eagles

during helicopter overflights (Watson, 1993), but nesting eagles rarely responded to fixed-wing aircraft at altitudes of 50 meters to 150 meters (164 ft. to 492 ft.) (Watson, 1993). Scientific and national level guidance recommends a minimum aircraft standoff of 1,000 ft. for communal roost sites and during nesting for bald eagles (USFWS, 2007) and 2,600 ft. for peregrine falcons during the nesting season to minimize noise impacts (Colorado Parks and Wildlife, 2020). The current altitudes reported by air tour operators over the ATMP planning area (minimum 900 ft. to 1,400 ft. AGL) are not in compliance with these recommended buffer zones and may impact bald eagles and peregrine falcons in the ATMP planning area in the form of nest flushing due to noise or collisions with aircraft. These effects which are currently occurring under existing conditions would continue to occur under the No Action Alternative. This analysis of existing conditions represents the impacts of the No Action Alternative to biological resources, though impacts could increase if flights up to IOA occurred (see Section 2.4.1, Commercial Air Tours per Year for the No Action Alternative).

### ***Alternative 2***

Under Alternative 2, commercial air tours would not be conducted within the ATMP planning area which would eliminate this source of noise from the ATMP planning area. Therefore, there would be a direct beneficial effect on biological resources since the intensity and likely presence of noise from commercial air tours would be less than under existing conditions. The impacts described above under the No Action Alternative would be less likely to occur as a result of air tours since they would no longer be flying within the ATMP planning area, except as necessary for takeoff and landing at the privately owned and operated heliport on the boundary of the ATMP planning area.

### ***Alternative 3***

Under Alternative 3, the types of effects to biological resources would be similar to the No Action Alternative as air tours would still be conducted within the ATMP planning area on the same routes and altitudes as existing conditions (Figure 14). However, the likelihood of these effects occurring to biological resources would decrease since Alternative 3 would authorize fewer air tours per year than existing conditions (approximately 7% reduction as compared to existing conditions). The *Noise Technical Analysis* (Appendix F) shows that on days when air tours occur, noise above 35 dBA would occur for less than 225 minutes a day across the ATMP planning area, which represents a reduction of 105 minutes a day compared to existing conditions.

Similar to the altitudes under existing conditions, the altitudes for Alternative 3 (minimum 900 ft. to 1,400 ft. AGL) are not in compliance with the recommended buffer zones for bald eagles and for peregrine falcons during the nesting season and may impact bald eagles and peregrine falcons in the ATMP planning area in the form of nest flushing due to noise or collisions with aircraft.

Alternative 3 would provide protection to species that are active during dawn and dusk, which includes listed and non-listed bat species, by restricting the time frame during which air tours could be conducted using non-quiet technology aircraft from one hour after sunrise until one hour before sunset. The requirement to report bird strikes in Alternative 3, described in Section 2.6.6, Additional Requirements, would allow the agencies to assess the effectiveness of these protections, and to modify them in the event that unanticipated impacts are observed.

#### ***Alternative 4***

Under Alternative 4, the types of effects to biological resources would be similar to the No Action Alternative as air tours would still be conducted within the ATMP planning area on the same routes and altitudes as existing conditions (Figure 14). However, the likelihood and intensity of these effects occurring to biological resources would decrease as compared to both existing conditions and Alternative 3 since Alternative 4 would authorize fewer air tours per year (approximately 81% reduction compared to existing conditions). Additionally, compared to Alternative 3, Alternative 4 would further reduce and restrict seasonal air tour operations within the ATMP planning area to minimize impacts on nesting birds and bighorn sheep lamb rearing. Air tours would be permitted to occur between June 16 through September 30 (107 total days each year). The *Noise Technical Analysis* (Appendix F) shows that on days when air tours occur, noise above 35 dBA would occur for less than 75 minutes a day across the ATMP planning area, which represents a reduction of 255 minutes a day compared to existing conditions and would be 150 minutes less than Alternative 3.

Similar to the altitudes under existing conditions, the altitudes for Alternative 4 (minimum 900 ft. to 1,400 ft. AGL) are not in compliance with the recommended buffer zones for bald eagles and for peregrine falcons during the nesting season and may impact bald eagles and peregrine falcons in the ATMP planning area in the form of nest flushing due to noise or collisions with aircraft.

Alternative 4 would provide increased protection to species that are active during dawn and dusk, which includes listed and non-listed bat species, by restricting the time frame during which air tours conducted using non-quiet technology aircraft could occur from 9:00 AM to 5:00 PM local time. In the event that operators request and are authorized to use the quiet technology incentive, those air tours would result in the possibility of noise during the sunrise/sunset time periods when bat species are more active. The requirement to report bird strikes in Alternative 4, described in Section 2.7.6, Additional Requirements, would allow the agencies to assess the effectiveness of these protections, and to modify them in the event that unanticipated impacts are observed.

### ***Indirect and Cumulative Effects***

**Indirect Effects:** Indirect effects to biological resources could occur because of noise caused by air tours flying outside of the ATMP planning area. As noted in Section 3.1.2, Indirect and Cumulative Effects for Noise and Noise-Compatible Land Use, indirect noise impacts would have the potential to occur under Alternatives 2, 3, and 4 as these alternatives could result in the displacement of air tours outside the ATMP planning area. Operators may choose to fly along existing flight paths but at or above 5,000 ft. AGL. This may be impractical due to the high elevation of the terrain because it would require operators to fly above 10,000 ft. MSL. Supplemental oxygen use is required in unpressurized aircraft flying at altitudes over 10,000 ft. MSL for more than 30 minutes (14 CFR Parts 135.89, 135.157); therefore, it is unlikely air tours would fly higher for extended periods of time. Additionally, flights at 5,000 ft. AGL or higher would provide limited value to a sightseeing operation. For air tours conducted at or above 5,000 ft. AGL, the increase in altitude would likely decrease impacts on ground level resources as compared to current conditions.

Operators could also choose to fly to points of interest elsewhere in the region outside the ATMP planning area where they already fly (such as the Crazy Horse Monument, Iron Mountain Road, Horsethief Lake, Black Elk Peak, and Sylvan Lake), or operators could fly routes just outside of the ATMP planning area that provide views of the sculpture.

Operators, both with IOA for the Park and without IOA, conduct air tours in the Black Hills area as routes just east of the Park still afford views of the sculpture and there are other locations of interest in the area for air tours. It is difficult to predict with specificity if, where, and to what extent any displaced air tours would result in impacts in different and/or new areas under Alternatives 2, 3, and 4. The preciseness of routes and altitudes for air tours flown on displaced routes are generally subject to Visual Flight Rules and may vary. However, the heliport on the boundary of the ATMP planning area is used for tours over the Park as well as other nearby parks and attractions. It is reasonably foreseeable that air tour operations displaced from flying within the ATMP planning area under Alternatives 2, 3, or 4 would continue to utilize this heliport to conduct tours over other areas that are outside the ATMP planning area. If air tour displacement occurred, the number of tours offered from this heliport could increase if operators chose to offer more tours over the other regional points of interest which could result in indirect noise effects to biological resources outside of the ATMP planning area. Alternative 2 would prohibit air tours from being conducted within the ATMP planning area, whereas Alternative 3 which would limit them to no more than 3,657 tours per year and Alternative 4 which would limit them to no more than 751 per year. Alternative 2 has the most potential to result in the displacement of air tours and could result in more indirect effects to biological resources from air tours flying outside of the ATMP planning area. Alternative 3 and Alternative 4 also have the potential for indirect impacts due to displacement of air tours.



**Cumulative Effects:** The NPS would continue current management actions and respond to future needs and conditions for biological resources without major changes in the present course. The aircraft used for Park flyovers, firefighting activities, wildlife surveys, and Park maintenance and their associated noise levels (see Section 3.1.1, Affected Environment for Noise and Noise-Compatible Land Use for more information) and wildlife disturbance risks within the ATMP planning area would likely continue at current levels. There are no anticipated changes to public access within the ATMP planning area, so ongoing impacts to wildlife from visitors would remain unchanged in the foreseeable future. As described above for indirect effects, air tours flown just outside the ATMP planning area are currently offered by operators both with and without IOA for the Park as air tours in this area still afford views of the sculpture. Noise from these air tours that is experienced within the ATMP planning area also contributes to the cumulative effects analysis.

Changes in environmental conditions in the ATMP planning area that may ensue from global climate change include increasing temperatures, decreasing precipitation, increasing storm intensities, and increasing variability in weather patterns (Thomas et al., 2004; EPA, 2006). However, it is well documented that stress from different sources is cumulative having a combined effect on the health of wildlife (Tyack et al., 2022). Alternatives 3 and 4 would result in less cumulative noise and wildlife disturbance in the ATMP planning area than the No Action Alternative, given the reduced number of flights, designated routes, and other ATMP conditions. However, these alternatives could allow for more cumulative noise and associated wildlife disturbance than Alternative 2, where flights would not be authorized in the ATMP planning area. Ongoing present and future Park management actions by the NPS would continue to occur under any of the alternatives.

### 3.4 Cultural Resources

The NHPA (54 U.S.C. §§ 300101 et seq.) is comprehensive federal preservation legislation intended to protect cultural resources. Section 106 of the NHPA (54 U.S.C. § 306108), as implemented in 36 CFR Part 800, requires federal agencies to consider the effects of undertakings on historic properties, should any such properties exist. Historic property is defined in 54 U.S.C. § 300308 and 36 CFR Part 800.16(l)(1) as any prehistoric or historic district, site, building, structure, or object included in, or eligible for inclusion in, the National Register of Historic Places (the National Register). This term includes artifacts, records, and remains that are related to and located within such properties. The term includes properties of traditional religious and cultural importance to an Indian tribe and that meet the National Register criteria. The FAA's environmental impact category discussing Cultural Resources is titled as Historical, Architectural, Archeological and Cultural Resources in FAA Order 1050.1F. These categories include historic properties as well as any cultural resources identified that may not be eligible for listing in the National Register but are otherwise protected as tribal resources or by local and state laws. Sacred sites, for example, are considered significant cultural resources and are

also protected under the American Indian Religious Freedom Act. The methodology in Appendix E, *Environmental Impact Analysis Methods*, as well as the Section 106 documentation in Appendix G, *Cultural Resources Consultation and Summary*, further describe the identification and treatment of cultural resources for the project.

In addition to Section 106 of the NHPA, the NPS's Organic Act and Section 110 of the NHPA apply to and provide for the preservation of historic, ethnographic and cultural resources on parkland. NPS policies and directives also apply to park cultural and ethnographic resources, and provide direction for their management including the NPS Management Policies (2006), Chapter 5 and Director's Order 28: Cultural Resource Management. Executive Order (EO) 13007 (*Indian Sacred Sites*, dated May 24, 1996) provides direction regarding Indian Sacred Sites. NPS Management Policies (2006) § 5.3.1.7, Cultural Soundscape Management, also acknowledges that culturally appropriate sounds are important elements of the national park experience in many parks, and that the NPS will preserve soundscape resources and values of the parks to the greatest extent possible to protect opportunities for appropriate transmission of cultural and historic sounds that are fundamental components of the purposes and values for which the parks were established. NPS Management Policies (2006) identify and define five types of cultural resources for consideration in NEPA evaluation: Archeological Resources, Cultural Landscapes, Ethnographic Resources, Historic and Prehistoric Structures, and Museum Collections. These resource types correlate generally with the FAA categories as described further below. Museum Collections is dismissed from consideration due to the nature of the project.

Section 106 consultation with the South Dakota State Historic Preservation Office (SHPO), consulting parties, and tribes was initiated via formal letters dated April 12, 2021 and April 15, 2021. Tribal consultation meetings were held on March 30, 2021, June 14, 2021, October 19, 2021, January 28, 2022, May 12, 2022, and November 17, 2022, where participants discussed background information about ATMPs, the ATMP development process, consultation framework, and the format and times of future consultation meetings. Action items and meeting transcripts were circulated to tribes, agency members, and all meeting participants. A letter dated October 1, 2021, was sent to the Secretary of Oglala Sioux Tribe formally requesting government-to-government consultation under EO 13175 (*Consultation and Coordination with Indian Tribal Governments*, dated November 9, 2000), in accordance with the tribe's consultation procedures. The agencies initiated Section 106 consultation with consulting parties in three phases in order to include additional parties that were identified as the process moved forward (see Appendix G, *Cultural Resources Consultation and Summary*, for correspondence and list of consulting parties). These letters were dated April 12, 2021, April 15, 2021, and August 6, 2021.

The NEPA study area for cultural resources corresponds with the Area of Potential Effects (APE) identified as part of the Section 106 process and encompasses the potential effects of all

alternatives under consideration. An APE as defined at 36 CFR Part 800.16(d) is the geographic area or areas within which the undertaking may directly or indirectly cause alterations in the character or use of any historic properties, if any such properties exist. The proposed undertaking does not require land acquisition, construction, or ground disturbance, and the agencies anticipate no physical effects to historic properties. The APE therefore includes areas where any historic property present could be affected by the potential introduction of visual or audible elements that could diminish the integrity of any identified significant historic properties. The APE has been defined to include the ATMP planning area, plus a two-mile buffer around this area. Refer to Figure 15 for a depiction of the APE identified for the undertaking.

The agencies developed draft alternatives for the undertaking, which were discussed with tribes during a meeting held January 28, 2022. The agencies, in consultation with the SHPO, determined the APE and completed a preliminary identification of historic properties. An Undertaking/APE letter dated October 28, 2022, was sent to the SHPO, federally recognized tribes, and consulting parties. The APE and a preliminary list of historic properties were discussed during meetings held on October 31, 2022, and November 17, 2022.

### **3.4.1 Affected Environment**

The affected environment includes prehistoric or historic districts, sites, buildings, structures, and/or objects, as well as traditional cultural properties (TCPs) (inclusive of ethnographic resources and sacred sites), and cultural landscapes that have been previously documented in the APE or identified through consultation. Under existing conditions, based on reported routes, the heaviest concentrations of commercial air tours fly near the sculpture.

Throughout the Section 106 process, the agencies requested consulting party input to help identify historic properties within the APE. The agencies provided an initial historic property identification list to consulting parties in an October 2022 letter and at the October 31, 2022, and November 17, 2022, Section 106 Consulting Party meetings and requested further input on the identification of historic properties within the proposed APE. Consulting parties provided comments during the meeting regarding the identification of historic properties, and the agencies took into consideration the input from the consulting parties in identifying additional historic properties. A final historic properties list was provided in the March 14, 2023, finding of effects letter.

Identification of historic properties relied upon data submitted by NPS Park staff about known historic properties within the Park and from data received by the NPS Midwest Archeological Center, the Black Hills National Forest (USFS), the South Dakota SHPO's Cultural Resource Geographic Research Information Display (CR GRID) database, and the South Dakota Archaeological Research Center. Tribal consultation meetings were held in which the FAA heard from the Fort Peck Assiniboine and Sioux Tribes, Upper Sioux Community, Santee Sioux

Nation, Rosebud Sioux Tribe, Cheyenne River Sioux Tribe, Northern Arapaho, and others that the Black Hills, including Badlands National Park and the Park, are part of a continuous landscape that is sacred to them and that they view as a single landscape and TCP.

***Cultural Resources (including Ethnographic Resources, Sacred Sites and Traditional Cultural Properties)***

Ethnographic resources are resources that are associated with the customs, habits, or behaviors of a cultural group, including those that possess religious and cultural significance. A sacred site, as defined in EO 13007, is any specific location that is identified to be an appropriately authoritative representative of an indigenous religion, as sacred by virtue of its established religious significance to, or ceremonial use by, an indigenous religion. A TCP is a property significant due to its association with past and continuous cultural practices or beliefs of a living community that are rooted in that community's history and are important in maintaining the continuing cultural identity of the community. TCPs possess traditional cultural significance derived from the role the property plays in a community's historically rooted beliefs, customs and practices (NPS, 1992). TCPs are treated as historic properties for the purpose of evaluating impacts under Section 106 and NEPA (FAA, 2020).

The Lakota and many other tribes consider the Black Hills sacred; Bear Butte at the northeast edge of the Black Hills is a popular worship site. The region was used by numerous Native American groups for resource gathering, including food, medicine, and timber, and for religious purposes. A TCP survey of the Park was conducted in 2021 by a team of Cultural Specialists and Tribal Historic Preservation Officers. Over 90 new cultural sites were identified within the Park boundary. Additional surveys are forthcoming as the 2021 survey was not comprehensive across the entire Park. For the purposes of this draft EA, the agencies assume that all lands within the Park have spiritual and sacred qualities and consider the entire Park a TCP.

Through consultation, the agencies have heard from several tribes that the natural resources within the APE are also considered to be cultural resources by the tribes, with particular emphasis on plants, animals, and the sky. The landscape and TCP are significant for the preservation of natural resources and the natural setting of the Black Hills. Many of these natural resources are contributing features to the cultural resources detailed throughout.

***Archeological Resources***

Archeological resources are the physical evidence of past human activity, including evidence of the effects of that activity on the environment. Eight archaeological sites within the Park were discovered during a 1973 archeological survey of the entire Park, and include the following: a pine, aspen, and birch log structure located just outside the Park boundaries likely dating from the 1950s; a rock shelter site on the side of the Park that formed when a boulder fell across a large drainage ditch; cultural material such as a cobble fireplace and metal grill, tin cans, and several hearth areas; and a scatter of Woodland pottery found just west of the Park, the only

piece of prehistoric evidence. Five sites are historic trash dumps associated with the creation of the sculpture, most of which contain evidence of logging operations. The final site is an abandoned mica quarry and several test holes, which are remains of a Park concessionaire that attempted to establish a claim in the area (Anderson, 1974).

Approximately 120 additional below-ground archeological sites were identified within the APE; however, these below-ground archeological resources are not further discussed because feeling and setting are not characteristics that make these properties eligible for listing on the National Register and there is no potential for the undertaking to affect these resources.

***Historical and Architectural Resources (including Cultural Landscapes and Prehistoric/Historic Structures)***

A cultural landscape is a reflection of human adaptation and use of natural resources and is often expressed in the way land is organized and divided. Cultural landscapes are geographic areas associated with specific cultures or historical events, and they help illustrate how humans have adapted to and altered their surroundings. The NPS recognizes four cultural landscape categories: historic designed landscapes, historic vernacular landscapes, historic sites, and ethnographic landscapes.

The primary historic architectural significance of the Park lies in the sculpture and historic structures and artifacts associated with the carving. The Mount Rushmore National Memorial Historic District (MRNMHD) was listed in the National Register in 1986 based on its significance at the national level as the Shrine of Democracy. The sculpture is significant because: 1) it commemorates an important theme in our nations' history; 2) it is associated with the lives of the four presidents represented; and 3) it represents the work of a master and possesses artistic values. As such, the Park has engineering, historical, and artistic importance.

The original idea for a massive sculpture in the Black Hills belonged to Doane Robinson, South Dakota State Historian. Robinson enlisted sculptor Gutzon Borglum, aided by his son Lincoln, who carved the sculpture in the southeastern face of the granite upthrust from 1927 to 1941. Many of the original elements of Borglum's plan, such as the Hall of Records, remained unfinished. The MRNMHD includes many contributing elements like the sculpture itself as well as structures and features associated with the creation of the sculpture, including the Hall of Records, the Sculptor's Studio, the residence, the Borglum View Terrace, and other facilities affiliated with the creation of the sculpture, as shown in Figure 15. The NPS took control of the Park in 1933 and had full administrative control by 1941.

In recognition of the historic significance of the sculpture and associated facilities, the Park created a Historic Zone for management purposes, where physical development is limited. This zone includes lands managed primarily to preserve the sculpture and historic features related to the sculptor's operations. Activities in this zone are limited to interpretation, viewing, and

study of the sculpture. Within the Historic Zone, the sculpture and immediate surrounding lands are defined as the Outstanding Historic Feature Subzone. The Outstanding Historic Feature Subzone is managed in the same way as the Historic Zone, with an emphasis on preservation and interpretation of the sculpture.

There are other historic properties within the APE for which setting and feeling may be characteristics contributing to the property's National Register eligibility (see Table 15). These include historic structures, objects, bridges, linear properties, and districts within the APE, which relate to themes associated with Depression-era recreation development, early railway design, engineering, commerce, and vernacular architecture.

### ***Cultural Resources List***

There are 17 cultural resources within the APE, listed in Table 15 and depicted in Figure 15. The locations of some sites are considered sensitive information and are therefore not included in Figure 15. Descriptions of each can be found in Appendix G, *Cultural Resources and Consultation Summary*.

*Table 15. National Register Listed, Eligible, and Potentially Eligible Properties within the APE and Section 4(f) Resources.*

<b>Property Name</b>	<b>Property Type</b>	<b>Eligibility Status</b>
Black Hills	TCP	Recommended Eligible/undetermined
Mount Rushmore Developed Area	Structures	Listed
Mount Rushmore National Memorial	Site	Listed
Burlington & Quincy Highline Hill City to Keystone Bridge	District	Eligible
Bridge 52-312-448	Structure	Eligible
Highway 16A Tunnel	Structure	Eligible
Iron Mountain Road (Highway 16A)	Structure	Eligible
Tunnels on Iron Mountain Road	Structure	Eligible
Serolod	Structure	Eligible
Keystone School	Structure	Eligible
Halley's Store	Structure	Eligible
Historic Keystone Sign	Object	Eligible
39CU3069*	Site	Eligible
39PN3239*	Site	Eligible
39CU3873*	Site	Eligible

Property Name	Property Type	Eligibility Status
Scott Family Summer Cabin (also known as Lafferty Gulch Summer Home)*	Structure	Eligible
Otho Mining District	District	Eligible

\*Location is restricted and therefore cannot be shown on figures.

Sources: NPS Cultural Resource Managers, NPS Midwest Archeological Center, the USFS Black Hills National Forest, the South Dakota SHPO's CR GRID database, and the South Dakota Archaeological Research Center.

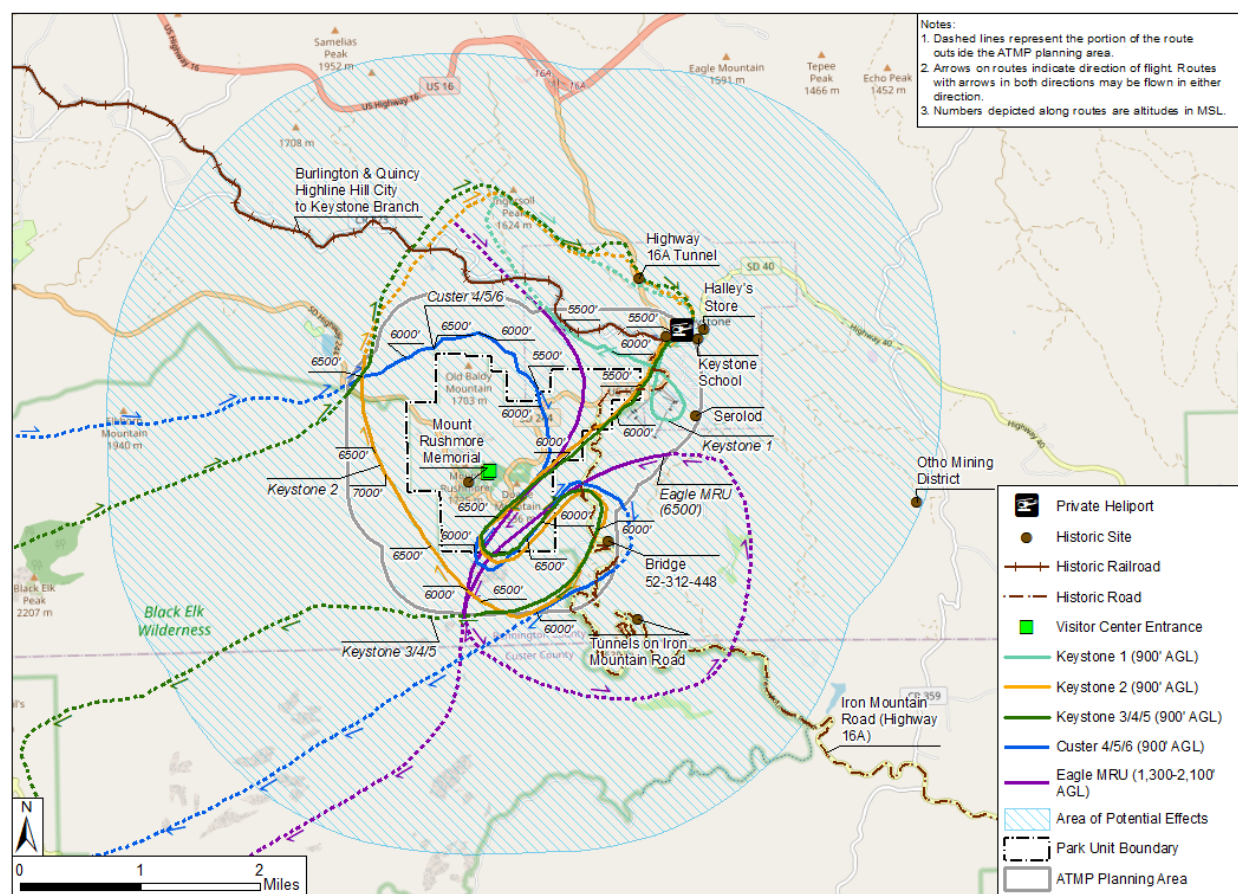


Figure 15. Affected Environment for Cultural Resources and Environmental Consequences for Alternatives 1, 3 and 4.

### 3.4.2 Environmental Consequences

Cultural resources within the APE include Historic, Architectural, Archeological and Cultural Resources, inclusive of ethnographic resources, TCPs, sacred sites, cultural landscapes, historic districts, and prehistoric and historic buildings and structures. Adverse impacts to these resources would occur if the alternative would alter the characteristics of a cultural resource that contribute to its significance in a manner that diminishes the integrity of the resource's location, design, setting, materials, workmanship, feeling, or association. Commercial air tours,

by their nature, have the potential to impact resources for which feeling and setting are contributing elements.

For all alternatives, the proposed action would not limit access to or change ceremonial use of tribal sacred sites on federal lands. Sacred ceremonies or other tribal activities which occur without notice to the NPS may be interrupted by noise; however, commercial air tours have no effect on tribal access. Additionally, the proposed action would not involve any ground disturbing or other activities that would adversely affect the physical integrity of sacred sites.

The agencies requested and received consulting party input on the potential effects of the alternatives on historic properties throughout the Section 106 process, including at the October 31, 2022, and November 17, 2022, Section 106 Consulting Party meetings. Consulting parties provided comments during the meetings, and the agencies took into consideration the input from the consulting parties in evaluating the effects of the preferred alternative on historic properties.

#### ***Alternative 1: No Action***

Under the No Action Alternative, some cultural resources within the APE would continue to be impacted by air tours, as noise and visual effects would impact the feeling and setting of those resources. As described in Section 2.2.1, Air Tours at or above Existing Levels, noise and visual effects from existing air tours negatively impact cultural sites within the Park associated with Native American Tribes. Tribes and individual tribal members have consistently noted that persistent air tours over the Park unreasonably interfere with their connections to the sacred landscape of the Black Hills. Tribes and individual tribal members have emphasized that air tours over the Park have negative impacts on the ecosystem (including plants, animals, and the sky) as a cultural resource, as well as the continuous landscape, both of which are considered a sacred landscape and TCP. Air tours could result in some effects on air quality, such as emissions or low-flying aircraft could potentially generate dust, which could indirectly affect plants. However, the minimum altitudes considered by the action alternatives (900 ft. to 2,600 ft. AGL) create sufficient separation between plants and aircraft that cross into the ATMP planning area; therefore it is unlikely that the dust or changes in air quality would have a meaningful effect on plants.

Reporting data from 2017-2019 indicates that on a peak month average day, air tours fly over the APE approximately 39 times per day, creating potential for multiple audible intrusions of tribal ceremonial practices when noise from those air tours is audible. Based on the *Noise Technical Analysis* (see Appendix F, Section 6), air tour noise above 35 dBA occurs for less than 330 minutes a day across the ATMP planning area. For example, the time above 35 dBA under the No Action Alternative would be 96.9 minutes at the Highway 16A tunnel (Location #37) and 152 minutes at the Keystone School (Location #33). The 12-hour equivalent sound level would only exceed 60 dBA within the ATMP planning area near the heliport, and across the modeled



location points, the highest 12-hour equivalent sound level would be 54.2 dBA just east of the MRNMHD near State Highway 224, at Locations #17 (No name pullout) and #24 (Lot 6). These noise effects would continue to occur under the No Action Alternative, including those that interrupt tribal cultural practices and ceremonies, and connections to the sacred landscape of the Black Hills.

Air tours within the APE may also impact the Park's historical, architectural, and archeological resources, including cultural landscapes, and prehistoric and historic structures when air tour noise and visual effects detract from the feeling and setting of those resources. Under existing conditions, the cultural resources that experience the most air tours flying directly over or near them are the Historic Keystone Sign, Bridge 52-312-448, Burlington & Quincy Highline Hill City to Keystone Branch railroad, and the MRNMHD (refer to Figure 15). Based on the significant characteristics that make them eligible for the National Register, the Mount Rushmore Developed Area, Keystone School, Iron Mountain Road (Highway 16A), Highway 16A Tunnel, Mount Rushmore National Memorial, and the TCP encompassing the Park currently have their feeling or setting impacted by the noise and visual impacts of air tours. These impacts would continue to occur under the No Action Alternative. Collectively, this analysis of impacts to cultural resources based on the three-year average number of air tours flown from 2017-2019 represents the impacts of the No Action Alternative, though impacts could increase more than disclosed here if flights up to IOA occurred (see Section 2.4.1, Commercial Air Tours per Year for the No Action Alternative).

### ***Alternative 2***

Under Alternative 2, commercial air tours would not be conducted within the ATMP planning area, except during takeoff and landing from the privately owned and operated heliport on the boundary of the ATMP planning area. The elimination of commercial air tours from the ATMP planning area would reduce the direct noise and visual intrusions on feeling and setting of cultural resources within the APE and result in beneficial impacts to ethnographic resources and sacred sites, TCPs, archeological resources, cultural landscapes, historic districts, and prehistoric and historic buildings and structures compared to existing conditions.

The agencies continued consultation under Section 106 with an evaluation of the effects of Alternative 2, as the preferred alternative, on historic properties. A letter was sent on March 14, 2023, to the South Dakota SHPO and all consulting parties outlining the Section 106 process, including a description of the undertaking, delineation and justification of the APE, identification of historic properties and an evaluation and proposed finding of effects. Based on this consultation, the FAA proposes a finding that the ATMP will not adversely affect historic properties. See Appendix G, *Cultural Resources Consultation and Summary*, for more information.

### **Alternative 3**

Alternative 3 would authorize commercial air tours to be conducted on the same routes and altitudes as existing conditions, but it would authorize fewer air tours per year than existing conditions (approximately 7% reduction as compared to existing conditions), which would reduce direct noise and visual impacts that could detract from the feeling and setting of cultural resources within the APE (see Figure 15). Alternative 3 would not introduce new audible and visual elements into the APE because air tours are currently occurring in this area. The annual (3,657) and daily (25) limits on the number of air tours within the ATMP planning area would also reduce the likelihood that an air tour would interrupt tribal ceremonies or the sanctity of tribal sites.

Under Alternative 3, the *Noise Technical Analysis* (Appendix F, Section 6) indicates that on days when air tours occur, portions of the APE within the ATMP planning area would experience noise above 35 dBA for less than 225 minutes a day, which is 105 minutes less than existing conditions. The time above 35 dBA under Alternative 3 would stay the same or be reduced at all the identified cultural resources. For example, time above 35 dBA at the Highway 16A Tunnel (Location #37) would be reduced by 32 minutes and at the Keystone School (Location #33) time above 35 dBA would be reduced by 51 minutes as compared to existing conditions. Time above 52 dBA at the Highway 16A Tunnel (Location #37) would be reduced by 14 minutes and 18 minutes at the Keystone School (Location #33) as compared to existing conditions. The 12-hour equivalent sound level would only exceed 60 dBA within the ATMP planning area near the heliport. Across the modeled location points, the highest 12-hour equivalent sound level would be 52.4 dBA just east of the MRNMHD near State Highway 224, at Location #17 (No name pullout), which represents a reduction of 1.8 dBA as compared to existing conditions.

### **Alternative 4**

Similar to Alternative 3, Alternative 4 would authorize commercial air tours to be conducted on the same routes and altitudes as existing conditions. Under Alternative 4, up to eight air tours per day could be flown within the ATMP planning area, as compared to existing conditions (38 air tours on a peak month average day) as well as Alternative 3 (25 air tours per day). Alternative 4 would authorize fewer air tours per year than existing conditions as well as Alternative 3 (approximately 81% reduction as compared to the existing conditions), which would reduce direct noise and visual impacts that could detract from the feeling and setting of cultural resources within the APE (see Figure 15).

Alternative 4 would not introduce new audible and visual elements into the APE because air tours are currently occurring in this area. The annual (751) and daily (8) limits on the number of air tours within the ATMP planning area would also reduce the likelihood that an air tour would interrupt tribal ceremonies or the sanctity of tribal sites.

Under Alternative 4, the *Noise Technical Analysis* (Appendix F, Section 6) indicates that on days when air tours occur, portions of the APE within the ATMP planning area would experience noise above 35 dBA for less than 75 minutes a day, which represents a reduction of 255 minutes a day compared to existing conditions and 150 minutes less than Alternative 3. The time above 35 dBA under Alternative 4 would stay the same or be less at all identified cultural resources. For example, time above 35 dBA at the Highway 16A Tunnel (Location #37) would be reduced by 76 minutes and at the Keystone School (Location #33) time above 35 dBA would be reduced by 121 minutes as compared to existing conditions. Time above 52 dBA at the Highway 16A Tunnel (Location #37) would be reduced by 35 minutes and 42.6 minutes at the Keystone School (Location #33) as compared to existing conditions. The 12-hour equivalent sound level would only exceed 60 dBA within the ATMP planning area near the heliport. Across the modeled location points, the highest 12-hour equivalent sound level would be 47.5 dBA just east of the MRNMHD near State Highway 224, at Location #17 (No name pullout), which represents a reduction of 6.7 dBA as compared to existing conditions.

### ***Indirect and Cumulative Effects***

**Indirect Effects:** Indirect noise and visual effects to cultural resources could occur as a result of air tours flying outside of the ATMP planning area but within the APE, including those above 5,000 ft. AGL. As noted in Section 3.1.2, Indirect and Cumulative Effects for Noise and Noise-Compatible Land Use, indirect noise impacts would have the potential to occur under Alternatives 2, 3, and 4 as these alternatives could result in the displacement of air tours outside the ATMP planning area. The No Action Alternative is not expected to result in indirect effects to cultural resources within the APE.

For air tours displaced under Alternatives 2, 3, and 4, operators may choose to fly along existing flight paths but at or above 5,000 ft. AGL. This may be impractical due to the high elevation of the terrain because it would require operators to fly above 10,000 ft. MSL. Supplemental oxygen use is required in unpressurized aircraft flying at altitudes over 10,000 ft. MSL for more than 30 minutes (14 CFR Parts 135.89, 135.157); therefore, it is unlikely air tours would fly higher for extended periods of time. Additionally, flights at 5,000 ft. AGL or higher would provide limited value to a sightseeing operation. For air tours conducted at or above 5,000 ft. AGL, the increase in altitude would likely decrease impacts on ground level resources as compared to current conditions because the noise would be spread over a larger geographical area. Noise from air tours conducted at or above 5,000 ft. AGL would be audible for a longer period, but at lower intensity. Similarly, aircraft are transitory elements in a scene and visual impacts tend to be relatively short, especially at higher altitudes.

Operators could also choose to fly to points of interest elsewhere in the region outside the ATMP planning area where they already fly (such as the Crazy Horse Monument, Iron Mountain Road, Horsethief Lake, Black Elk Peak, and Sylvan Lake), or operators could fly routes just

outside of the ATMP planning area but within the APE that provide views of the sculpture. Operators with IOA for the Park currently conduct air tours just outside the ATMP planning area as do operators that do not have IOA for the Park as routes in this area still afford views of the sculpture. It is difficult to predict with specificity if, where, and to what extent any displaced air tours would result in impacts in different and/or new areas under Alternatives 2, 3, and 4. The preciseness of routes and altitudes for air tours flown on displaced routes are generally subject to Visual Flight Rules and may vary. However, the heliport on the boundary of the ATMP planning area is used for tours over the Park as well as other nearby Parks and attractions. It is reasonably foreseeable that air tour operations displaced from flying over the Park under Alternatives 2, 3, or 4 would continue to utilize this heliport to conduct tours over other areas that are outside the ATMP planning area. If air tour displacement occurred, the number of tours offered from this heliport could increase if operators chose to offer more tours over the other regional points of interest which could result in indirect noise effects to cultural resources in this area which includes the Historic Keystone Sign and Highway 16A Tunnel.

Alternative 2 would prohibit air tours from being conducted within the ATMP planning area, whereas Alternative 3 would limit them to no more than 3,657 tours per year and Alternative 4 would limit them to no more than 751 per year. Alternative 2 has the most potential to result in the displacement of air tours and could result in more indirect effects to cultural resources from air tours flying outside of the ATMP planning area. Alternative 3 and Alternative 4 also have the potential for indirect impacts due to displacement of air tours.

While these alternatives could result in some indirect noise and visual impacts to cultural resources within the APE for flights along the perimeter but outside or above the ATMP planning area, these impacts are not anticipated to result in adverse effects to cultural resources as those that may experience an increase in noise and/or visual effects are already experiencing noise coming from vehicles using the highway or noise and visual effects coming from aircraft using the nearby heliport and/or quiet or natural settings are not significant characteristics that make them eligible for listing in the National Register. Indirect effects under Alternative 2 were assessed in the Finding of Effects letter for Section 106. See Appendix G, *Cultural Resources Consultation and Summary*, for more information.

**Cumulative Effects:** Other ongoing sources of noise within the APE include Park maintenance and management actions such as aircraft for wildlife monitoring, firefighting, mechanized equipment for Park maintenance, and flyovers for special events (see Section 3.1.1, Affected Environment for Noise and Noise-Compatible Land Use for more information on the existing ambient for current conditions). Ongoing visual impacts within the APE include general aviation flights, overflights by commercial airlines, flyovers for special events, and aircraft used for resource monitoring or Park maintenance, which would likely continue in the same frequency and manner under any of the alternatives, as they occur independently of air tours. As described above for indirect effects, air tours flown just outside the ATMP planning area are

currently offered by operators both with and without IOA for the Park as air tours in this area still afford views of the sculpture. Noise from these air tours that is experienced within the ATMP planning area also contributes to the cumulative effects analysis.

The potential for cumulative noise and visual effects of these actions along with those from commercial air tours would be the greatest under the No Action Alternative, especially if the number of air tours per year reached IOA. The cumulative effects would be fewer for Alternatives 3 and 4, which limit the number of air tours that would occur as compared to the No Action Alternative, and the fewest under Alternative 2 as there would be no tours permitted within the ATMP planning area. Ongoing present and future Park management actions by the NPS would continue to occur under any of the alternatives.

### 3.5 Wilderness

While Wilderness is not an impact category the FAA traditionally examines, the Black Elk Wilderness to the south and west of the Park is managed by the USFS and is inside the ATMP planning area. The USFS agreed to be a cooperating agency and has participated in the development of the draft ATMP, this draft EA, and associated planning efforts.

The Wilderness Act of 1964 is the primary federal legislation regulating the management of Wilderness areas. The USFS has agency-wide management directives (USFS, 2021) and unit specific management plans for managing designated Wilderness areas in the National Forest system. The Forest Service Manual 2300 (USFS, 2021) states,

*Wilderness is a unique and vital resource. In addition to offering primitive recreation opportunities, it is valuable for its scientific and educational uses, as a benchmark for ecological studies, and for the preservation of historical and natural features*

The USFS manages Wilderness for the following qualities of Wilderness character (USFS, 2021):

- **Untrammeled:** Unhindered and free from the actions of modern human control or manipulation.
- **Natural:** Ecological systems are substantially free from the effects of modern civilization.
- **Undeveloped:** Retaining primeval character and influence without permanent improvements or modern human occupation.
- **Solitude or Primitive and Unconfined Recreation:** Ability to provide outstanding opportunities for solitude or primitive and unconfined type of recreation.
- **Other features of value:** Wilderness preserves other features of value that are of scientific, educational, scenic, or historical value.

Since commercial air tours do not land within Wilderness in the ATMP planning area, the undeveloped quality of Wilderness is not discussed. Additionally, the authorization of commercial air tours is not an intentional manipulation of the environment and therefore the untrammelled quality of Wilderness is also not discussed. Other features of value within the Wilderness in the ATMP planning area including historical and scenic resources are discussed in other sections of this draft EA (cultural and ethnographic resources are discussed in Section 3.4, Cultural Resources; scenic resources are discussed in Section 3.8, Visual Effects); therefore, the other features of value have not been discussed in this section.

The study area for Wilderness includes Congressionally designated Wilderness managed by the USFS within the ATMP planning area (Figure 16).

### **3.5.1 Affected Environment**

The Black Elk Wilderness is part of Black Hills National Forest, and thus is managed by the USFS. The Black Elk Wilderness borders the Park to the south and west, and a portion of the Black Elk Wilderness is within the ATMP planning area and shares a 2.6-mile boundary with the Park. The Black Elk Wilderness was Congressionally designated as Wilderness in 1980 and spans 13,426 acres in the central Black Hills. An important feature of the Black Elk Wilderness is Black Elk Peak. At 7,242 ft. above sea level, it is the highest point in the U.S. east of the Rocky Mountains. From the historic lookout tower on Black Elk Peak, there is a panoramic view of four states, and the surrounding granite formations and cliffs.

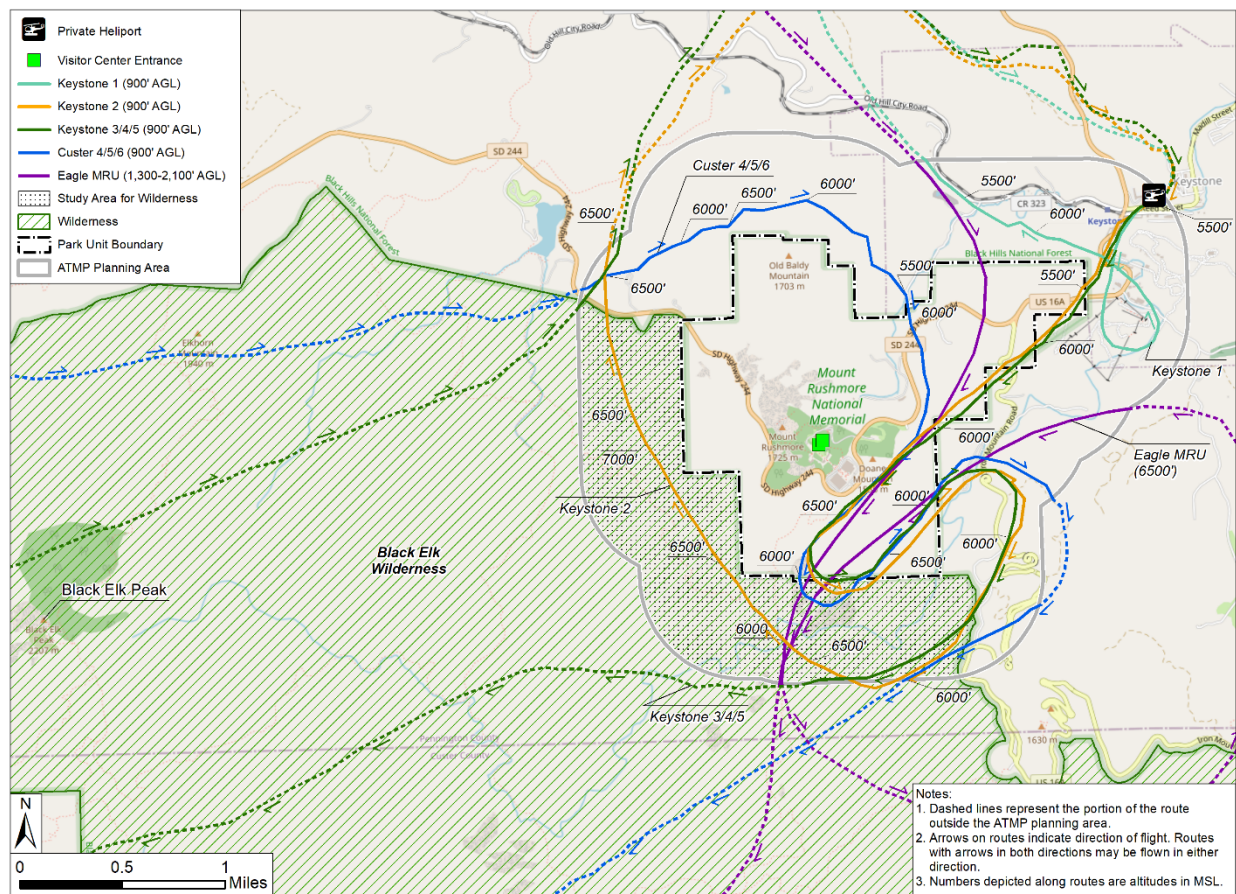


Figure 16. Affected Environment for Wilderness and Environmental Consequences for Alternatives 1, 3 and 4.

## Natural

A natural Wilderness is one where ecological systems are substantially free from the effects of modern civilization. The natural quality is preserved when indigenous species and ecological processes are intact. When the effects of modern civilization impact Wilderness, the natural quality is degraded.

The Black Elk Wilderness is composed of Rocky Mountain Coniferous Forests, Boreal Forests, Eastern Deciduous Forests, and Northern Great Plains; ponderosa pine is the dominant tree species in this area (USFS, 2006).

Within the Black Elk Wilderness, the diverse community of trees supports an array of bird species, while caves, granite outcrops, and riparian areas provide habitat for bats, mountain goats, and other mammals, respectively. Several mammal and bird species are used as indicator species to evaluate overall changes to the forest ecosystem (USFS, 2006). Non-native species are present in the Black Elk Wilderness and have populations that are maintained by the State of South Dakota. These species include bighorn sheep, mountain goats, and Merriam's

turkey (*Meleagris gallopavo merriami*), all of which were introduced to the region prior to the 1950s (Mejicano, 2013). Little data on these non-native species is available, but their impacts on the vegetation and natural quality of Wilderness are generally considered to be low (Mejicano, 2013). See Section 3.3.1, Affected Environment for Biological Resources, for additional information on wildlife.

Non-native plants are also a threat to the natural quality of Wilderness due to their tenacity and ability to spread. Non-native plants are treated with granular herbicides by foot, liquid spraying of herbicides by horseback, and other bio-control techniques (Mejicano, 2013). These actions are taken in order to preserve the natural quality of Wilderness that supports native plant communities that are adapted to the local environmental conditions, help maintain the local community structure, and are provided refuge in Wilderness areas. Trailheads to Wilderness are monitored annually for non-native species, several of which have been observed at the Norbeck Wildlife Preserve, trailheads, and areas near the Wilderness boundary.

Other goals and management actions implemented by the USFS that promote the natural quality of Wilderness include restoring fire in Wilderness to its natural role in the ecosystem; managing Wilderness within the context of larger landscapes to protect the integrity of natural processes; and improving conditions in situations where natural processes are not operating freely (USFS, 2006).

### ***Solitude***

The ability to experience solitude is an integral component of Wilderness character. In preserving this Wilderness quality, the USFS places importance on considering the value of maintaining these places where present and future generations have the opportunity to feel free, at peace, self-reliant, and observe landscapes without modern human effects.

The Black Elk Wilderness contains over 30 miles of hiking and horseback trails which lead from almost any direction to the top of Black Elk Peak. Management concerns identified by the USFS within the Black Elk Wilderness include conflicts among trail user groups, specifically hikers and horseback riders on the existing trails, trail congestion, and trail damage. One of the most prevalent signs of human impact that can degrade opportunities for solitude in Wilderness is recreation at campsites. All campsites in the Black Elk Wilderness are user-created and range in degree of development (Mejicano, 2013).

### **3.5.2 Environmental Consequences**

Section 2(a) of the Wilderness Act states that Wilderness areas “shall be administered for the use and enjoyment of the American people in such manner as will leave them unimpaired for future use and enjoyment as Wilderness, and so as to provide for the protection of these areas, the preservation of their Wilderness character.” The USFS manages Wilderness to preserve qualities of Wilderness character consistent with the Wilderness Act and generally manages for



the natural, untrammelled, undeveloped, solitude and unconfined recreation, and other features of value Wilderness character qualities. Commercial air tours may impact the following qualities of Wilderness character, including the opportunity for solitude, the natural quality, and other features of value (e.g., cultural resources). Aircraft that land in Wilderness detract from the undeveloped quality of Wilderness. Because commercial air tours do not land in Wilderness within the ATMP planning area, the undeveloped quality of Wilderness is not considered here.

As described above, forested areas within the Black Elk Wilderness contribute to the natural quality of these areas' Wilderness character. However, as noted in Section 1.5, Environmental Impact Categories Not Analyzed in Detail for Biological Resources (Fish, Invertebrates, and Plants), the agencies have determined that the noise or dust generated as a result of commercial air tours are unlikely to impact plants, including those that are present within the Wilderness inside the ATMP planning area under any of the alternatives. Therefore, impacts to the natural quality of Wilderness character have not been discussed here.

*Keeping it Wild 2, An Updated Interagency Strategy to Monitor Trends in Wilderness Character Across the National Wilderness Preservation System, 2015* (Landres et al., 2015) notes that Wilderness has traditionally been associated with protecting ecological systems from human impacts. Therefore, "the natural quality is preserved when there are only indigenous species and natural ecological conditions and processes" taking place or by the restoration of those ecological conditions and that "natural quality is preserved when Wilderness ecological systems are substantially free from the effects of modern civilization" (Sutter, 2004, p.34). The natural quality of Wilderness may be impacted by actions both outside and inside Wilderness (Sutter, 2004, p.34). Effects on the natural quality are established by determining the effects from human actions on ecological systems (Sutter, 2004, p.34).

Solitude includes attributes such as "separation from people and civilization, inspiration (an awakening of the senses, connection with the beauty of nature and the larger community of life), and a sense of timelessness (allowing one to let go of day-to-day obligations, go at one's own pace, and spend time reflecting) (Sutter, 2004, p. 51). A review of research suggests that solitude encapsulates a range of experiences, including privacy, being away from civilization, inspiration, self-paced activities, and a sense of connection with times past (Borrie and Roggenbuck, 2001). Generally, solitude improves when sights and sounds of human activity are remote. Commercial air tours can represent both a sight and sound of human activity and therefore detract from this quality of Wilderness character.

### ***Alternative 1: No Action***

Based on operator provided information, under existing conditions the heaviest concentrations of air tours over the Black Elk Wilderness are located immediately east of the USFS Centennial #89 Trail, south of the Park. There is also one air tour route, Keystone 2, that flies adjacent to

the Park's southern and western boundaries over the Black Elk Wilderness as part of its flight path within the ATMP planning area (see Figure 16). Under the No Action Alternative, the existing flight routes, altitudes, number of tours per year, and other parameters described in Section 2.4, Alternative 1 (No Action Alternative) would continue to occur. The interdisciplinary team has determined that persistent noise within Wilderness under the No Action Alternative would continue to unreasonably interfere with the opportunity for solitude within Wilderness. The No Action Alternative would continue to adversely impact Wilderness character, as the current level of air tour noise and visibility within and near Wilderness detracts from the opportunity for solitude as described in detail below.

The presence of noise and visual intrusion of commercial air tours is a human activity that detracts from the opportunity for solitude in Wilderness. Noise from commercial air tours disrupts Wilderness visitors seeking an opportunity for solitude in Wilderness inside the ATMP planning area and would continue to occur under the No Action Alternative. The *Noise Technical Analysis* (Appendix F, Section 6) provides context for the noise effects that would occur under the No Action Alternative and that would detract from the opportunity for solitude within Wilderness areas within the ATMP planning area. This analysis shows that on days when air tours occur, the maximum time that air tours could be audible within the Wilderness is up to 480 minutes a day (non-contiguous), which would occur in portions of the Black Elk Wilderness that are located inside the ATMP planning area. All Wilderness inside the ATMP planning area would experience audible air tour noise. This noise would continue to detract from the opportunity for solitude in Wilderness as it introduces sounds of human activity and therefore detracts from this quality of Wilderness character. This analysis is based on the three-year average of flights between 2017-2019. The impacts could be greater than disclosed here if air tour numbers up to IOA occur which the NPS has previously determined to result in unacceptable impacts to Wilderness character in the Black Elk Wilderness.

### ***Alternative 2***

Under Alternative 2, commercial air tours would not be conducted within the ATMP planning area, except during takeoff and landing from the privately owned and operated heliport on the boundary of the ATMP planning area, which would offer the greatest protection to Wilderness within the ATMP planning area. Compared to existing conditions, this would enhance Wilderness character by reducing the intensity of noise and number of noise events over Wilderness areas. There would be direct beneficial impacts to opportunities for solitude under Alternative 2.

### ***Alternative 3***

Alternative 3 would authorize commercial air tours to be conducted on the same routes and altitudes as existing conditions, but it would authorize fewer air tours per year than existing conditions (approximately 7% reduction). Compared to existing conditions, this would enhance

qualities of Wilderness character by reducing the intensity of noise, noise footprint, and number of noise events over Wilderness areas. However, noise from air tours within the ATMP planning area could still affect Wilderness areas.

Impacts to opportunities for solitude would be less than existing conditions because the intensity and duration of air tour noise and visibility would be reduced, which would result in less impacts to this quality of Wilderness character. The *Noise Technical Analysis* (Appendix F, Section 6) shows that on days when air tours occur, the maximum time that air tours could be audible within Wilderness is less than 300 minutes a day (non-contiguous). In the Black Elk Wilderness, the highest durations of audible air tour noise are the areas near the Park's western boundary. The entire Wilderness inside the ATMP planning area would experience at least 150 minutes of audible air tour noise per day on days when air tours occur. This noise detracts from the opportunity for solitude as it introduces sounds of human activity and therefore detracts from this quality of Wilderness character, although it would be less compared to existing conditions.

#### ***Alternative 4***

Similar to Alternative 3, Alternative 4 would authorize commercial air tours to be conducted on the same routes and altitudes as existing conditions. Under Alternative 4, up to eight air tours per day could be flown within the ATMP planning area, which is fewer compared to existing conditions (38 air tours on a peak month average day) as well as Alternative 3 (25 air tours per day). Alternative 4 would authorize fewer air tours per year than existing conditions as well as Alternative 3 (approximately 81% reduction as compared to existing conditions. Compared to existing conditions, this would enhance qualities of Wilderness character by reducing the intensity of noise, noise footprint, and number of noise events and visual sightings of air tour aircraft over Wilderness areas. Alternative 4 would also result in fewer impacts to the opportunity for solitude than Alternative 3. However, noise from air tours in the ATMP planning area could still affect Wilderness under this alternative, as described below.

Impacts to opportunities for solitude would be less than existing conditions because the intensity and duration of air tour noise and visibility would be less. The *Noise Technical Analysis* (Appendix F, Section 6) shows that on days when air tours occur, the maximum time air tours could be audible within Wilderness is less than 90 minutes a day (non-contiguous). In the Black Elk Wilderness, the highest durations of audible air tour noise are the areas near the Park's western boundary. Wilderness areas within the ATMP planning area would experience at least 45 minutes of audible air tour noise per day on days when air tours occur. This noise detracts from the opportunity for solitude as it introduces sounds of human activity, although it would be less compared to existing conditions.

### ***Indirect and Cumulative Effects***

**Indirect Effects:** Under the No Action Alternative, commercial air tour operations within the ATMP planning area would remain consistent with existing conditions. Although they could increase up to IOA, no indirect impacts would be expected to occur under this alternative.

Alternatives 2, 3, and 4 would limit the number of flights per year as compared to existing conditions and would therefore have the potential to result in some displacement of air tours outside the ATMP planning area. Air tours occurring outside the ATMP planning area, or over the ATMP planning area at or above 5,000 ft. AGL, may result in noise that could affect qualities of Wilderness character to the extent that Wilderness is present in areas near where those air tours would be occurring. The Black Elk Wilderness is present to the south and east of the ATMP planning area (see Figure 16). For areas of the Black Elk Wilderness outside the ATMP planning area, FAA Advisory Circular No: 91-36D encourages pilots flying Visual Flight Rules near noise sensitive areas to fly at altitudes higher than the minimum permitted by regulations and on flight paths that will reduce aircraft noise, specifically requesting pilots fly higher than 2,000 ft. AGL. Therefore, displaced air tours that fly more than ½ mile outside the Park's boundary over the Black Elk Wilderness would likely fly at or above 2,000 ft. AGL.

Operators may also choose to fly along existing flight paths but above 5,000 ft. AGL. This may be impractical due to the high elevation of the terrain because it would require operators to fly above 10,000 ft. MSL. Supplemental oxygen use is required in unpressurized aircraft flying at altitudes over 10,000 ft. MSL for more than 30 minutes (14 CFR Parts 135.89, 135.157); therefore, it is unlikely air tours would fly higher for extended periods of time. Additionally, flights at 5,000 ft. AGL or higher would provide limited value to a sightseeing operation. For air tours conducted at or above 5,000 ft. AGL, the increase in altitude would likely decrease impacts on ground level resources compared to current conditions.

Operators could also choose to fly to points of interest elsewhere in the region outside the ATMP planning area where they already fly (such as the Crazy Horse Monument, Iron Mountain Road, Horsethief Lake, Black Elk Peak, and Sylvan Lake), or operators could fly routes just outside of the ATMP planning area that provide views of the sculpture. Operators, both with and without IOA for the Park, currently conduct air tours just outside the ATMP planning area as routes in this area still afford views of the sculpture. It is difficult to predict with specificity if, where, and to what extent any displaced air tours would result in impacts in different and/or new areas under Alternatives 2, 3, and 4. The preciseness of routes and altitudes for air tours flown on displaced routes are generally subject to Visual Flight Rules and may vary. However, the privately owned and operated heliport on the boundary of the ATMP planning area is used for tours over the Park as well as other nearby parks and attractions. It is reasonably foreseeable that air tour operations displaced from flying over the Park under Alternatives 2, 3, or 4 could continue to utilize this heliport to conduct tours over areas that are outside the

ATMP planning area. If air tour displacement occurred, the number of tours offered from this heliport could increase if operators chose to offer more tours over the other regional points of interest which could result in indirect noise or visual effects to Wilderness. Alternative 2 would prohibit air tours from being conducted within the ATMP planning area, whereas Alternative 3 would limit air tours to no more than 3,657 tours per year, and Alternative 4 would limit air tours to no more than 751 tours per year. Alternative 2 has the most potential to result in the displacement of air tours and could result in more indirect effects to Wilderness from air tours flying outside of the ATMP planning area. Alternative 3 and Alternative 4 also have the potential for indirect impacts due to displacement of air tours.

**Cumulative Effects:** Solitude in the Black Elk Wilderness is impacted by aircraft used for fire management activities and noise from commercial air tours which audibly and visually detract from the primitive Wilderness experience. Fire managers arrange detection flights at times of high and extreme fire danger in Black Hills National Forest and its Wilderness areas. Fire detection flights use fixed-wing aircraft and routinely avoid the airspace over the Park but fly over adjacent Wilderness and forested areas at 2,000 ft. AGL or higher. Firefighting aircraft are flown at lower elevations when battling wildfires that require the use of firefighting tools. When wildfires occur that require the use of aerial resources, temporary flight restrictions are established in order to maintain safety for firefighting aircraft. As described above for indirect effects, air tours flown just outside the ATMP planning area are currently offered by operators both with and without IOA for the Park as air tours in this area still afford views of the sculpture. Noise from these air tours that is experienced within the ATMP planning area also contributes to the cumulative effects analysis. Under the No Action Alternative these conditions would continue, resulting in limited opportunities to experience solitude in Wilderness. Under Alternatives 2, 3, and 4 fire management activities that impact the opportunity for solitude would continue, but impacts from commercial air tours would be less frequent since commercial air tours would be prohibited from flying directly over Wilderness areas below 5,000 ft. AGL. Therefore, the No Action Alternative would result in no cumulative change in the opportunity for solitude, while Alternatives 2, 3, and 4 would likely result in a net beneficial effect to the opportunity for solitude. However, Alternatives 3 and 4 would offer less overall net benefit to the natural quality of Wilderness character than Alternative 2. Ongoing present and future Park management actions by the NPS would continue to occur under any of the alternatives.

### **3.6 Visitor Use and Experience and Other Recreational Opportunities**

While visitor experience is not an impact category the FAA traditionally examines, the NPS has agency wide (NPS Management Policies § 8.2, 2006) and Park-specific guidelines (NPS, 2015) for managing visitors within the National Park System. This section also examines impacts to air tour customers.

### **3.6.1 Affected Environment**

#### ***Trends in Visitation and Visitor Demographics***

Visitors come to the Park from all around the U.S. and the world to view the 60 ft. tall granite faces of four American presidents carved out of Mount Rushmore and framed by the natural scenery of the Black Hills. Between 2017 and 2019, the Park averaged 2.2 million visitors annually. Visitation was approximately 2.5 million in 2021 (NPS, 2021b). Nearly 500,000 visitors participate in interpretive programs at the Park each year, representing a substantial portion of the Park's overall visitation. In addition to the sculpture, Park attractions include the Lincoln Borglum Museum, Sculptor's Studio, and climbing areas. The most common activities include visiting the sculpture, shopping at the gift shop, walking the Presidential Trail, and learning about the four Presidents (Littlejohn and Le, 2014). Approximately 90% of visitors remain within the immediate vicinity of the sculpture and visitor services, while 10% explore the backcountry areas (Littlejohn and Le, 2014).

#### ***Visitor Experience***

The character and quality of the visitor experience influences perception of natural areas, providing a unique encounter with a place that differentiates it from other areas. Public enjoyment of resources is a fundamental purpose of all national Parks (NPS, 2006). Visitor use and experience is focused on ways to view the sculpture and learn about the architectural and artistic undertaking, which is reflected in the facilities and programs provided at the Park. Both ranger-led and self-guided walks offering different viewing perspectives are available, in addition to informational videos. Key visitor facilities include the following:

- **The information center**, located beyond the main parking structures inside the Park's main entrance off South Dakota Route 244, is staffed by Park rangers and has exhibits and historic photos describing the Park's construction and contextual information about the Park and surrounding Black Hills.
- **The Lincoln Borglum Museum**, located between the sculpture and the parking structures, is staffed by Park rangers and includes interactive displays about Borglum and his assistants, historical films, models and tools used during construction, and exhibits about the four presidents and the sculpture's dedication.
- **The Sculptor's Studio** displays artifacts and historic photos and has a 1:12 scale model used by the Park's sculptor. Rangers use the model to describe the techniques and tools used for carving the sculpture.
- **The Amphitheater**, which is adjacent to the museum and faces the sculpture, accommodates 2,500 people and is used for ranger-led programs that run primarily from April through October. In the evening, approximately 30-minute ranger-led interpretive programs in the Amphitheater culminate in the lighting of the sculpture and singing of the national anthem.

- **Avenue of the Flags**, lined by the 56 state, territory, commonwealth, and district flags of the U.S., links the museum to the gift shop and snack/restaurant facilities and leads visitors to the Grand View Terrace.
- **The climbing areas** make the Park an internationally known world-class sport climbing area. There are six climbing areas within the northwest portion of the Park, with the three most popular locations being South Seas, Middle Marker, and Chopping Block.
- **The Park's trail system** is composed of three trails totaling 1 ½ miles. The Presidential Trail, a 0.6-mile trail that is partially handicapped-accessible, allows visitors to stand within 600 ft. of the sculpture. The Nature Trail offers views of the sculpture, plants, and wildlife, and connects the Parking structures directly to the Borglum View Terrace and the Sculptor's Studio. There are other trails that lie partially within the Park but begin in other locations such as the Black Hills National Forest. For example, the USFS Centennial #89 Trail traverses the Black Hills and is connected to the Park by a spur trail known as the Blackberry Trail.

The Park is open year-round with varying daily and seasonal hours. Generally, the Lincoln Borglum Visitor Center is open from 8:00 AM to 5:00 PM during fall, winter and spring seasons and will stay open as late as 10:00 PM during the summer season (NPS, 2022b).

The Park is divided into four management zones (Natural, Park Development, Historic, and Special Use) that were created to designate specific management strategies, fulfill management objectives, and support identified uses. The Natural Zone is managed for the protection of natural resources and processes, and developments in this zone are limited to actions that are essential for the management and appreciation of natural resources (NPS, 1980).

The Park Development Zone includes parking lots, public roads, buildings, and Park utilities. Lands in this zone are managed to support non-historic Park development and public use. Within the Park, this zone spans 120 acres and is restricted to the smallest area necessary to accommodate required major development and intensive use (NPS, 1980).

The Historic Zone includes lands managed primarily to preserve the sculpture and historic features. Development in this zone is only permitted when necessary for the preservation and interpretation of Park resources. Activities in this zone are limited to interpretation activities, viewing the sculpture, and adaptive management. Although the entire Park is listed on the National Register and is therefore considered to be a part of the Historic Zone, only a small area of the Park is managed as such. Within the Historic Zone, the Commemorative Subzone, which includes the sculpture and the immediate lands surrounding it that form its setting, are managed under the same guidelines as the Historic Zone (NPS, 1980).

The Special Use Zone includes undeveloped lands within the Park owned by the state of South Dakota. This zone spans 32.5 acres and could be transferred between the state of South

Dakota, USFS, or the Park via land exchange. A parcel of land managed by the USFS but located between the Park boundary and the nearby town of Keystone can be managed under the Black Hills National Forest Land Management Plan, but could also be managed as a buffer zone to the Park if acquired by NPS (NPS, 1980).

### Other Recreational Opportunities

This category applies to persons recreating within the ATMP planning area through the experience of air tours. An average of 19,570 air tour customers per year are currently able to experience the Park from another viewpoint.<sup>18</sup> The air tour experience generally focuses on viewing the sculpture from a variety of angles. Existing air tour routes within the ATMP planning area are shown in Figure 17.

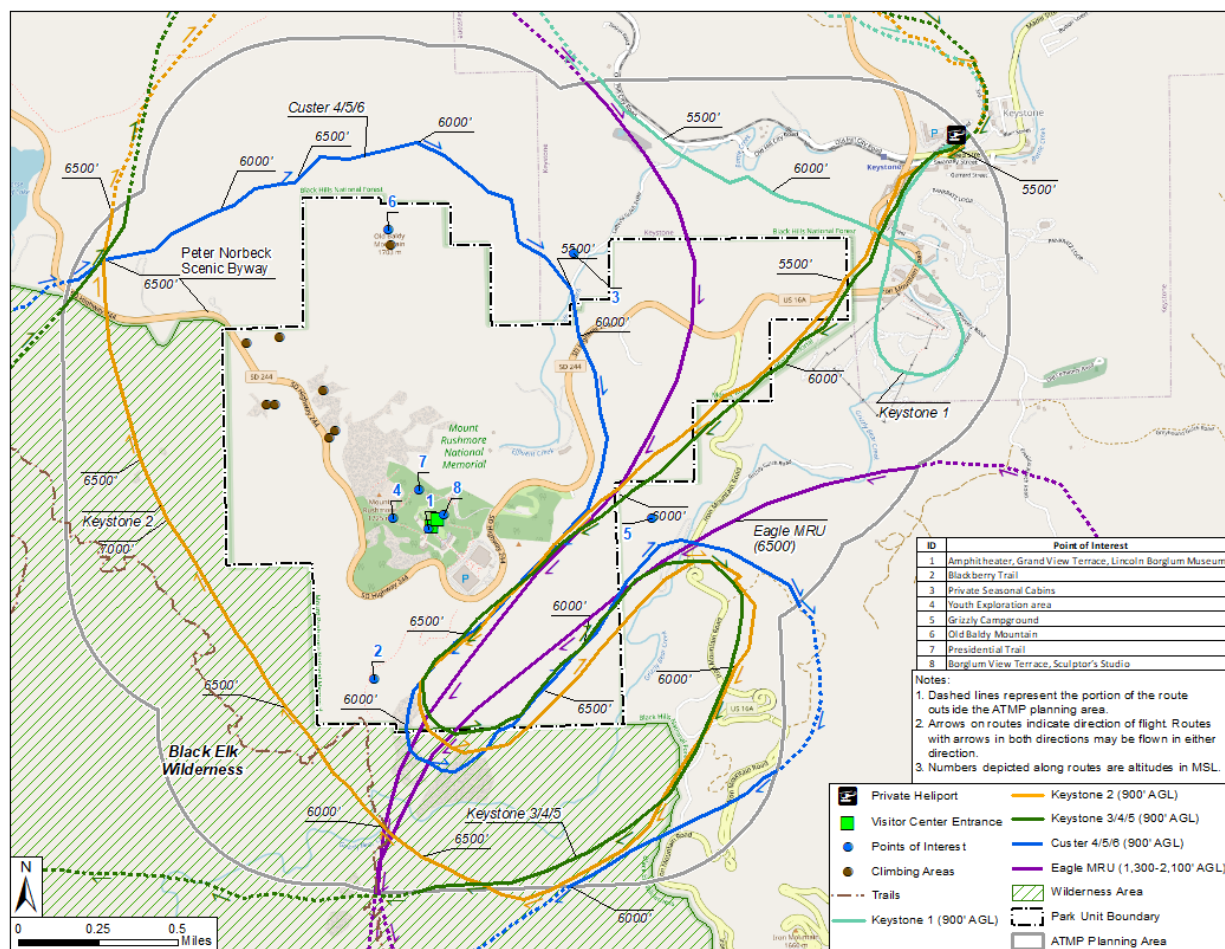


Figure 17. Affected Environment for Visitor Use and Experience and Environmental Consequences for Alternatives 1, 3 and 4.

<sup>18</sup> The estimated 19,570 air tour visitors is based on reported air tours from 2017-2019 (3,914), multiplied by an estimated 5 passenger seats per aircraft. The number of air tours visitors likely overestimates the actual number since it assumes every passenger seat is occupied.



### **3.6.2 Environmental Consequences**

The NPS allows visitor uses that are appropriate to the purpose for which the park was established and can be sustained without causing unacceptable impacts to park resources or values. Unacceptable impacts are impacts that, individually or cumulatively, would unreasonably interfere with park programs or activities including interpretive programs, or the atmosphere of peace and tranquility, or the natural soundscape maintained in Wilderness and natural, historic, or commemorative locations within the park (NPS, 2006).

Effects of commercial air tours on park visitor experience have been well documented over many years. One example is the *Report on the Effects of Aircraft Overflights on the National Park System* (Department of Interior and NPS, 1995). The primary effect of commercial air tours is the introduction of noise into the acoustic environment of the park. Numerous studies have identified the value and importance of soundscapes as one of the motivations for visiting parks (McDonald et al., 1995; Haas and Wakefield, 1998; Merchan et al., 2014; Miller et al., 2018), including in a cross-cultural context (Miller et al., 2018). Other studies have focused specifically on the effects of aircraft on the visitor experience both in parks and protected areas, and a laboratory setting, indicating that aircraft noise negatively impacts the visitor experience (Anderson et al., 2011; Mace et al., 2013; Rapoza et al., 2015; Ferguson, 2018).

Some Park visitors may hear noise from commercial air tours, which may disrupt visitors or degrade the visitor experience at the Park by disturbing verbal communications and masking the sounds of nature. For example, noise from commercial air tours may disrupt visitors during interpretive and educational programs at historical sites or while hiking, camping or participating in other activities. Visitors respond differently to noise from commercial air tour overflights – noise may be more acceptable to some visitors than others. Visitors in backcountry and Wilderness areas often find commercial air tours more intrusive than visitors in developed and frontcountry areas where noise from commercial air tours may not be as audible (Anderson et al., 2011; Rapoza et al., 2015).

As noted above, a majority of visitors come to the Park to view the sculpture. Visual effects, including those experienced by visitors, are described in Section 3.8, Visual Effects. Effects to visitor experience at the Park other than visual effects, including the acoustic environment of the Park in the context of the Park's visitor facilities and interpretive programs, are described below.

#### ***Alternative 1: No Action***

Under existing conditions, air tours are concentrated near visitor points of interest including the Blackberry Trail and visitor facilities off of South Dakota Route 244. The 3,914 air tours conducted in the ATMP planning area each year would continue under the No Action Alternative and could increase up to each operator's IOA for the Park. NPS interpretive programs offered at the Amphitheater from April to October would continue to be impacted by

air tours under this alternative due to the noise from air tours resulting in speech interference. The Amphitheater was one of the modeled location points selected by NPS for analysis in the *Noise Technical Analysis* (Location #1, see Appendix F), which indicates that on days that air tours occur, noise above 52 dBA, which corresponds with speech interference, would occur for 49 minutes a day. Impacts to speech interference in this location, one of the primary locations for programming, would affect the Park's interpretive programs which may impede visitors from enjoying and learning about existing Park resources. Part of the Park's purpose as stated in its Foundation Document includes "interpreting the mountain sculpture in its historic, cultural, and natural setting" (NPS, 2015), so impacts to this aspect of visitor experience would not allow the Park to fulfill its purpose and values for which it was established. Approximately 500,000 Park visitors participate in these interpretive programs each year (of the Park's approximately 2.2 million visitors each year) which represents a substantial portion of the overall Park visitation that would experience noise impacts from air tours during their visit.

Visitor experience in natural areas of the Park which are used by visitors for hiking and rock climbing may be impacted by air tour noise since visitors engaging in these activities value natural quiet and made need to communicate at distance of ten meters or more. The time audible natural ambient metric provides context for the total time that aircraft noise levels would be audible to an attentive listener with normal hearing under natural ambient conditions. Based on the *Noise Technical Analysis* (Appendix F, Section 6), 23% of the ATMP planning area would experience audible air tour noise for between 360 and 480 minutes a day (non-contiguous) under current conditions, and 100% of the ATMP planning area would experience audible air tour noise for at least 210 minutes a day, which includes areas in the Park's Natural Environment Zone. In these areas where visitors would generally expect to hear natural sounds prevail during their visit, noise from commercial air tours under this alternative would result in impacts to visitor experience. Visitors who come to the Park to rock climb could also experience impacts if noise from air tours resulted in speech interference that affected their ability to communicate. The modeled location points in the *Noise Technical Analysis* (Locations #3-8, 20, and 21) correspond to climbing areas within the Park and indicate that on days that air tours occur, noise above 52 dBA, which corresponds with speech interference, would occur in these locations for between 6 and 58 minutes a day. These impacts would continue to occur under the No Action Alternative. These modeling results for existing conditions represent the impacts of the No Action Alternative, though impacts such as interference with Park interpretive programs could increase if flights up to IOA occurred (see Section 2.4.1, Commercial Air Tours per Year for the No Action Alternative).

Commercial air tours offer a recreational experience for those who wish to view the Park from a different vantage point. Commercial air tour pilots may provide education to commercial air tour customers about the region and its history. Because the number of commercial air tours under the No Action Alternative would be consistent with the average number of flights from

2017-2019, or could increase up to IOA, there would be no, or minimal, changes anticipated to the availability of this recreational experience under this alternative.

### ***Alternative 2***

Under Alternative 2, commercial air tours would not be conducted within the ATMP planning area, except during takeoff and landing from the privately owned and operated heliport on the boundary of the ATMP planning area, which would eliminate this source of noise from the ATMP planning area for approximately 2.2 million Park visitors per year. Therefore, there would be a direct beneficial impact to visitor use and experience within the ATMP planning since the intensity and presence of noise from commercial air tours would be less than under existing conditions. Therefore, Alternative 2 would offer the greatest protection of visitor use and experience.

Alternative 2 would not allow commercial air tours within the ATMP planning area, so those (up to an average of 19,570 passengers per year) who wished to would not be able to view the Park from tours conducted within the ATMP planning area. This would be an adverse effect on those seeking that experience within the ATMP planning area, though they will likely take air tours of other areas or just outside the ATMP planning area while still viewing the sculpture, mitigating this adverse effect.

### ***Alternative 3***

Alternative 3 would authorize commercial air tours to be conducted on the same routes and altitudes as those flown under existing conditions, but it would authorize fewer air tours per year than existing conditions (approximately 7% reduction) which would reduce noise and corresponding impacts to visitor use and experience.

For interpretive programs at the Amphitheater, the time above 52 dBA metric from the *Noise Technical Analysis* (see Appendix F, Section 6) provides context for impacts to interpretive programs that would occur under Alternative 3, and indicates that noise above 52 dBA would occur for up to 32.1 minutes a day.

Elsewhere throughout the Park in areas managed as a Natural Environment Zone where visitors would expect to hear natural sounds, the *Noise Technical Analysis* (Appendix F) indicates that under Alternative 3, the maximum time that air tours could be audible by an attentive visitor would be less than 300 minutes a day. Areas used for rock climbing by Park visitors, as indicated by the modeled location points, would experience noise above 52 dBA (which corresponds with speech interference) for between 4 and 38 minutes a day. This noise may impact visitor experience across the Park, but it would represent a reduction in impacts compared to existing conditions.

Alternative 3 would limit the availability of air tours for those who wish to view the Park from the air within the ATMP planning area to no more than 3,657 tours per year. This would result in an adverse effect on those seeking that experience beyond the allowable number of flights within the ATMP planning area to the extent they could not be accommodated on the air tours authorized. However, they would likely be able to take air tours in other areas of the Black Hills or just outside the ATMP planning area while still viewing the sculpture, which would mitigate this adverse effect.

#### **Alternative 4**

Similar to Alternative 3, Alternative 4 would authorize commercial air tours to be conducted on the same routes and altitudes as those flown under existing conditions. Under Alternative 4, up to eight air tours per day could be flown within the ATMP planning area, as compared to existing conditions (38 air tours on a peak month average day) as well as Alternative 3 (25 air tours per day). Alternative 4 would authorize fewer air tours per year than existing conditions and Alternative 3 (approximately 81% reduction as compared to existing conditions which would reduce noise and corresponding impacts to visitor use and experience). For interpretive programs at the Amphitheater, the time above 52 dBA metric from the *Noise Technical Analysis* (Appendix F, Section 6) provides context for impacts to interpretive programs that would occur under Alternative 4, and indicates that noise above 52 dBA would occur for up to 10.3 minutes a day.

Elsewhere throughout the Park in areas managed as a Natural Environment Zone where visitors would expect to hear natural sounds, the *Noise Technical Analysis* (Appendix F, Section 6) indicates that under Alternative 4, the maximum time that air tours could be audible by an attentive visitor would be less than 105 minutes a day. Areas used for rock climbing by Park visitors, as indicated by the modeled location points, would experience noise above 52 dBA (which corresponds with speech interference) for between 1 and 13 minutes a day. This noise may impact visitor experience across the Park, but it would represent a reduction in impacts compared to existing conditions and would also be less than noise experienced under Alternative 3.

Alternative 4 would limit the availability of air tours for those who wish to view the Park from an aerial vantage point within the ATMP planning area to no more than 751 tours per year. This would be an adverse effect on those seeking that experience within the ATMP planning area to the extent they could not be accommodated on the authorized air tours, though they would likely take air tours of other areas or just outside the ATMP planning area while still viewing the sculpture, mitigating this adverse effect.

### ***Indirect and Cumulative Effects***

**Indirect Effects:** Under the No Action Alternative, commercial air tour operations within the ATMP planning area would remain consistent with existing conditions. Although they could increase up to IOA, no indirect impacts would be expected to occur under this alternative.

Alternatives 2, 3, and 4 would limit the number of flights per year as compared to existing conditions and would therefore have the potential to result in some displacement of air tours outside the ATMP planning area. Air tours occurring outside the ATMP planning area, or over the ATMP planning area at or above 5,000 ft. AGL, may result in noise that could affect visitor use and experience in areas near where those air tours would be occurring. Operators may choose to fly along existing flight paths but above 5,000 ft. AGL. This may be impractical due to the high elevation of the terrain because it would require operators to fly above 10,000 ft. MSL. Supplemental oxygen use is required in unpressurized aircraft flying at altitudes over 10,000 ft. MSL for more than 30 minutes (14 CFR Parts 135.89, 135.157); therefore, it is unlikely air tours would fly higher for extended periods of time. Additionally, flights at 5,000 ft. AGL or higher would provide limited value to a sightseeing operation. For air tours conducted above 5,000 ft. AGL, the increase in altitude would likely decrease impacts on ground level resources as compared to current conditions.

Operators could also choose to fly to points of interest elsewhere in the region outside the ATMP planning area where they already fly (such as the Crazy Horse Monument, Iron Mountain Road, Horsethief Lake, Black Elk Peak, and Sylvan Lake), or operators could fly routes just outside of the ATMP planning area that provide views of the sculpture. Operators, both with and without IOA for the Park, currently conduct air tours in the area just outside the ATMP planning area as routes in this area still afford views of the sculpture. It is difficult to predict with specificity if, where, and to what extent any displaced air tours would result in impacts in different and/or new areas under Alternatives 2, 3, and 4. The preciseness of routes and altitudes for air tours flown on displaced routes are generally subject to Visual Flight Rules and may vary. However, the privately owned and operated heliport on the boundary of the ATMP planning area is used for tours over the Park as well as other nearby Parks and attractions. It is reasonably foreseeable that air tour operations displaced from flying over the Park under Alternatives 2, 3, or 4 would continue to utilize this heliport to conduct tours over areas that are outside the ATMP planning area. If air tour displacement occurred, the number of tours offered from this heliport could increase if operators chose to offer more tours over the other regional points of interest which could result in indirect noise effects to visitor use and experience in this area, including nearby cabins and campgrounds.

**Cumulative Effects:** As part of the cumulative effects assessment, the FAA and NPS considered other ongoing and planned actions that may impact visitor use and experience. The noise from aircraft used for wildlife monitoring, firefighting, mechanized equipment for Park maintenance,

and flyovers for special events occasionally disrupts visitors. Because these flights generally occur throughout the ATMP planning area and are not concentrated in any one area, they are not a source of consistent disruption on the visitor experience. These flights are anticipated to continue to facilitate Park maintenance and resource management under any of the alternatives. Other noise from building maintenance and construction activities occasionally disrupts visitors, but these activities are temporary and short-term in nature. Alternatives 3 and 4 would result in less cumulative noise that could affect the visitor experience in the ATMP planning area than the No Action Alternative, given the reduced number of flights, designated routes, and other ATMP conditions. However, they could allow for more cumulative noise impacting the experience than Alternative 2, where flights are not authorized in the ATMP planning area. As described above for indirect effects, air tours flown just outside the ATMP planning area are currently offered by operators both with and without IOA for the Park as air tours in this area still afford views of the sculpture. Noise from these air tours that is experienced within the ATMP planning area also contributes to the cumulative effects analysis. Ongoing present and future Park management actions by the NPS would continue to occur under any of the alternatives.

### **3.7 Environmental Justice and Socioeconomics**

As mandated by EO 12898 (*Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations*, dated February 11, 1994), “each federal agency shall make achieving environmental justice part of its mission by identifying and addressing as appropriate, disproportionately high and adverse human health or environmental effects of its programs, policies, and activities on minority populations and low-income populations.” In addition to EO 12898, DOT Order 5610.2c, Final Order to Address Environmental Justice in Low-Income and Minority Populations, requires the FAA to incorporate environmental justice (EJ) principles in project development and provide meaningful public involvement opportunities to minority and low-income populations, known as “EJ populations.” For the purposes of this EJ analysis, the FAA will use the minority and low-income definitions provided in DOT Order 5610.2c.

Socioeconomics is an umbrella term used to describe aspects of a project that are either social or economic in nature, or a combination of the two. A socioeconomic analysis evaluates how elements of the human environment such as population, employment, housing, and public services might be affected by the proposed action and alternative(s) (FAA, 2020). The CEQ regulations for implementing NEPA, 40 CFR Part 1500, direct economic analyses of federal actions that will affect local or regional economies. The policies and rationale associated with including an evaluation of socioeconomic impacts in the NEPA process are found in NPS Management Policies § 1.4.7.1 (2006). The factors of socioeconomic discussed in this draft EA include the tourism industry. U.S. Census Bureau data was used to evaluate social and economic factors of the study area.

The combination of all the other relevant impact categories represents the potential EJ impact because EJ impacts may be realized in conjunction with impacts to any other impact category. Section 3.7.2, Environmental Consequences for Environmental Justice discusses the relevant resources that may have impacts considered in conjunction with EJ for this draft EA. Refer to each environmental impact category's respective section in this draft EA for a description of the study area limits and Figure 18 for a depiction of the study area used for the EJ and socioeconomic analyses. The analysis incorporates data presented at the county level and from census block groups that are within and adjacent to the study area.

### **3.7.1 Affected Environment**

#### ***Environmental Justice***

The most recent minority and low-income information were analyzed through 2020 U.S. Census Bureau data sets. U.S. Census Bureau data is collected in five descending groupings corresponding to geographic area. The groupings are as follows: state, county, tract, block group, and block. Block groups is the smallest unit for which income and poverty level information is available. Block level data is the smallest unit for which race and minority information is available. The agencies used data from the American Community Survey (ACS) to determine socioeconomic and racial characteristics of the population. AEDT Version 3e was used to screen for potential EJ populations. The analysis includes selecting a unit of analysis and comparing it to an appropriate reference community. If the percentage of minority or low-income populations in the unit of analysis exceed the reference community threshold, then those geographic units are populations of EJ concern. In this case, the agencies identified block level data within the study area (unit of analysis) and compared that data to the County (appropriate reference community). Data from the block group level was then compared to county level data to determine populations of EJ concern.

For this analysis, a minority census block group of EJ concern is a census block group (unit of analysis) with a minority population percentage greater than the average minority population percentage in the county (reference community). The average percentage of minority populations at the block group level residing in the county was 23% (ACS, 2016-2020). Therefore, every census block group with a percentage of minority population greater than the average minority population of approximately 23% is designated a census block group of EJ concern. For this analysis, a low-income population census block group of EJ concern is a census block group with a greater percentage of low-income population than the average percentage of low-income population in the county. The average percentage of low-income populations at the block group level residing in the county was 16% (ACS, 2016-2020). Therefore, every census block group with a low-income population greater than 16% is designated a census block group of EJ concern.

Figure 18 depicts locations of EJ concern by block group within the study area. The entire Park falls within Pennington County. Most block groups within the study area do not exceed the low-income or minority thresholds to be designated as block groups of environmental concern, but there is one block group in the northern section of the study area that is a low-income population census block group of EJ concern. See Figure 18 for a map of the block groups within the study area. Table 16 shows the minority and low-income data for Pennington County and block groups within the study area.

Table 16. Minority and Low-income Population Data within Pennington County and the Study Area.

Area	Population	Minority	Low-Income
Pennington County	111,806	19,566	13,529
Block Groups within Study Area	1,022	196	92

Source: ACS, 2016-2020

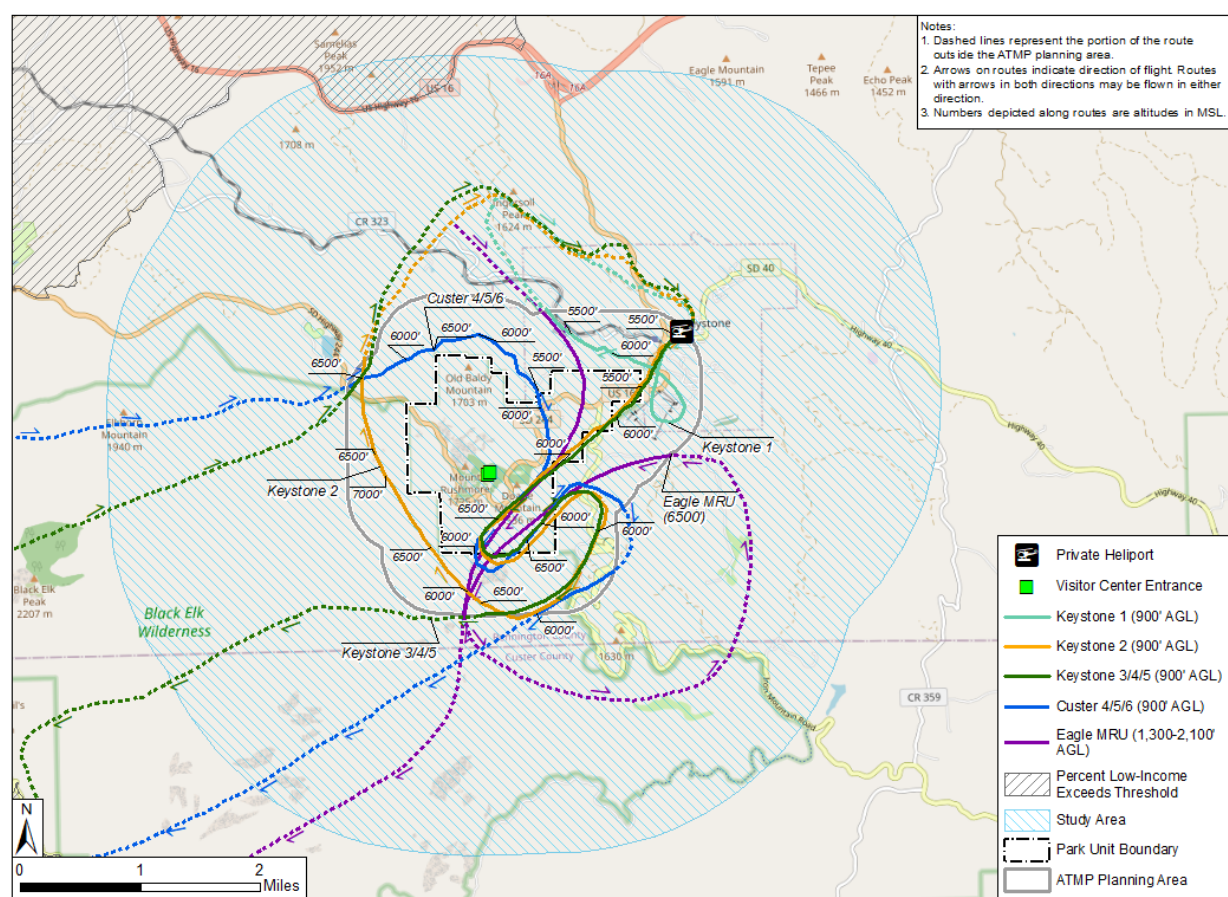


Figure 18. Affected Environment for Environmental Justice and Environmental Consequences for Alternatives 1, 3 and 4.



### ***Socioeconomics***

This section describes the socioeconomic conditions that may be affected by the alternatives. Socioeconomic impacts of the alternatives include the potential impacts commercial air tour operations have on two interest groups: 1) local residents living in close proximity to the Park, who may be affected by both the number of air tours and the manner in which they are conducted; and 2) air tour operators in South Dakota, specifically the two air tour operators with IOA for the Park and their employees, and the associated tourism industry. The factors of socioeconomic that will be discussed in this draft EA include population demographics, industry, employment and income.

### **Industry**

Pennington County is rural county in South Dakota and is known for the Black Hills National Forest and the Park. The leading industry in South Dakota is agriculture with the principle agricultural products in the state being soybeans and wheat (U.S. Department of Agriculture, 2021). Despite the importance of agriculture throughout the state, the industry accounts for only a small percentage of the total jobs in Pennington County, with the largest sources of employment being service-based jobs, such as health care and social assistance, retail and accommodation, and food services.

The Park also plays an important role in the industry and employment of the area and is often the top visited site in the state of South Dakota. The Park provides seasonal, term, permanent full-time, and part-time positions as well as volunteer opportunities. In 2021, visitor and Park payroll spending supported 2,321 local jobs, \$164,428,000 in total visitor spending, with \$118,436,000 value added to the local economy (Thomas and Koontz, 2020). NPS employs approximately 50 permanent positions at the Park. Other sources of employment include concessionaire Xanterra Parks and Resorts (a gift shop and restaurant), that employ approximately 32 permanent positions and 200 seasonal positions; concessionaire Mount Rushmore National Memorial Society (a parking facility) that employs approximately 17 full-time staff; and the Mount Rushmore History Association (bookstores) that employs approximately three permanent and 15 seasonal positions (NPS, 2008).

The Money Generation Model, managed by NPS and Michigan State University, is a conservative peer-reviewed tool used by the NPS Social Science Program to estimate the contribution of visitor and Park payroll spending to gateway economies within a 50-mile radius of Parks. According to the FY 2005 Money Generation Model Briefing Statement, the Park visitor and payroll spending in 2005 supported 1,602 local jobs, created \$32.36 million in personal income, and \$70.46 million in spending. In 2019, the Park visitor and payroll spending supported 1,717 local jobs, \$116,789,000 (in 2019 dollars) in total visitor spending, with \$82,558,000 value added to the local economy (Thomas and Koontz, 2020). This represents a 66% increase in growth over 14 years.

The tourism industry in western South Dakota is sustained by a number of attractions. In addition to the Park, nearby Custer State Park, Wind Cave National Park, the town of Deadwood, the Black Hills, and the Crazy Horse Memorial attract tourists to the area. Badlands National Park, Wall Drug, and Devils Tower National Monument in Wyoming are more distant attractions that also draw visitors to the region (NPS, 2022c). National parks specifically generate more than four dollars in value to the public for every tax dollar invested. National parks support \$21 billion of local private-sector economic activity and 278,000 private-sector jobs (NPS, 2020). National parks attract businesses and individuals to the local area, resulting in economic growth in areas near parks that is an average of 1% per year greater than statewide rates over the past three decades.

#### Commercial Air Tours

Commercial air tour operators currently fly an average of 3,914 air tours per year (based on 2017-2019 reporting) over the Park. The air tour industry operates scenic flights over the Park and several other area attractions.

The price per person for each air tour varies by company and can range from \$59 to \$700 per person (Eagle Aviation, Inc., 2022). The air tour industry employs pilots, mechanics, office administrators, and other types of jobs to conduct business. In 2021, 279 individuals worked in the air transportation industry in Pennington County (which includes both the air tour industry plus commercial airlines and airport employees), representing less than 1% of the county's total employment (ACS, 2016-2020). In addition to people directly employed by air tour operators, others indirectly involved with the industry include hotel staff, tour booking agents, and advertising and marketing professionals. Employment supported by the air tour industry provides income to workers and indirectly provides revenue to local businesses as a result of employee and operator spending.

#### **3.7.2 Environmental Consequences**

In accordance with FAA Order 1050.1F, the following factors were considered to determine if the action would have a disproportionately high and adverse impact to an environmental justice population (i.e., a low-income or minority population):

- Significant impacts in other environmental impact categories; or
- Impacts on the physical or natural environment that affect an EJ population in a way that the FAA determines are unique to the EJ population and significant to that population.

This assessment is provided for each alternative below. As shown in Figure 18, low-income populations of EJ concern are present within the northern extent of the study area. Specific impacts associated with each alternative are discussed in more detail below.

For socioeconomic impacts, FAA considers the following factors when evaluating the severity of impacts which include the potential to:

- Induce substantial economic growth in an area, either directly or indirectly (e.g., through establishing projects in an undeveloped area);
- Disrupt or divide the physical arrangement of an established community;
- Cause extensive relocation when sufficient replacement housing is unavailable;
- Cause extensive relocation of community businesses that would cause severe economic hardship for affected communities;
- Disrupt local traffic patterns and substantially reduce the levels of service of roads serving an airport and its surrounding communities; or
- Produce a substantial change in the community tax base.

Consideration of these factors for each alternative are provided below. The analysis below reflects the results of the impact analysis for noise, visual, and air quality effects as they are the impact categories that would be reasonably expected to affect EJ populations, though impact conclusions for other environmental impact categories are reflected in other sections of this draft EA.

### ***Alternative 1: No Action***

A census block group containing EJ populations is located approximately 1.5 miles from the Park but within the boundary of the study area. While under existing conditions, air tours are conducted within the ATMP planning area according to the operator-reported routes and altitudes depicted in Figure 18, air tour routes and altitudes outside the ATMP planning area are not subject to the Act and are flown in accordance with Visual Flight Rules. EJ populations within the study area may currently experience impacts from noise, air quality, and visual effects associated with air tours conducted within the ATMP planning area under current conditions. These effects are described in more detail below.

The noise impacts of the No Action Alternative (see Section 3.1.2, Environmental Consequences for Noise and Noise-Compatible Land Use) indicate that the No Action Alternative would not result in noise impacts that would exceed DNL 65 dB. The DNL is expected to be below 60 dB under the No Action Alternative.

For air quality impacts (see Section 3.2.2, Environmental Consequences for Air Quality and Climate Change), the No Action Alternative would not cause pollutant concentrations to exceed one or more of the NAAQS for any of the time periods analyzed, or to increase the frequency or severity of any such existing violations. The total amount of annual GHG emissions resulting from commercial air tours in the ATMP planning area is 97.5 MT CO<sub>2</sub>.

Under the No Action Alternative, impacts to viewsheds would primarily occur along the Blackberry Trail and atop Old Baldy (see Section 3.8.2, Environmental Consequences for Visual Effects). Impacts would continue to occur to visual resources under the No Action Alternative as commercial air tours would continue to contrast the scenic vistas and natural areas in the study area, but the visual resources within the study area would still be viewable at times of the day when commercial air tours were not present within the ATMP planning area (on average, air tours were conducted within the ATMP planning area 38 times per day in a peak month average day).

In summary, the modeled impacts of the No Action Alternative show that it would not result in disproportionately high and adverse noise, air quality, or visual effects to EJ populations.

Under the No Action Alternative, the number of commercial air tours conducted by operators would vary from year to year but would likely be consistent with the number of tours reported in the timeframe from 2017-2019. Therefore, the amount of income generated for air tour operators and other ancillary businesses as well as employment would likely be consistent with income generated during that timeframe. Although under No Action Alternative flight numbers up to IOA could occur, it would not induce substantial economic growth, disrupt or divide physicality of community, cause extensive relocation, disrupt traffic patterns, or produce a substantial change in the community tax base.

### ***Alternative 2***

Under Alternative 2, commercial air tours would not be conducted within the ATMP planning area. Therefore, there would be direct beneficial impacts on noise, air quality, and viewsheds within the study area as a result of the elimination of commercial air tours in the ATMP planning area (see Section 3.1.2, Environmental Consequences for Noise and Noise-Compatible Land Use; Section 3.2.2, Environmental Consequences for Air Quality and Climate Change; and Section 3.8.2, Environmental Consequences for Visual Effects). Alternative 2 would result in a reduction in direct noise, air quality, and visual impacts compared to those currently occurring under existing conditions, therefore, this alternative would result in a benefit to EJ populations within the study area, and Alternative 2 would not result in disproportionately high and adverse noise, air quality, or visual impacts to EJ populations.

Alternative 2 would not induce substantial economic growth, disrupt or divide physicality of community, cause extensive relocation, or disrupt traffic patterns. Alternative 2 could result in some impacts to employment or the amount of income that air tour operators and other ancillary businesses could generate from conducting air tours within the ATMP planning area. However, the air transportation industry represents 1% of Pennington County's total employment, and the limits on air tours within the ATMP planning area would not preclude operators from making up this revenue generation in other ways such as using their aircraft for other business ventures or conducting air tours elsewhere within the region (see below for a

discussion of indirect socioeconomic effects). Therefore, it is unlikely that Alternative 2 would result in large socioeconomic impacts to the community, including those associated with a change in the community tax base.

### ***Alternative 3***

Alternative 3 would authorize 3,657 air tours per year and 25 air tours per day within the ATMP planning area on the same routes and altitudes as existing conditions. Compared to existing conditions, Alternative 3 would result in fewer direct noise, air quality, and visual impacts as described for each environmental impact category below.

Specifically, for noise impacts (see Section 3.1.2, Environmental Consequences for Noise and Noise-Compatible Land Use), the DNL analysis indicates that Alternative 3 would not result in noise impacts that would exceed DNL 65 dB. The resultant DNL is expected to be below 60 dB under Alternative 3.

For air quality impacts (see Section 3.2.2, Environmental Consequences for Air Quality and Climate Change), Alternative 3 would not cause pollutant concentrations to exceed one or more of the NAAQS for any of the time periods analyzed, or to increase the frequency or severity of any such existing violations. Alternative 3 is modeled to result in a reduction of 6.09 MT CO<sub>2</sub> resulting from existing commercial air tours within the ATMP planning area.

Under Alternative 3, impacts to viewsheds would primarily occur along the Blackberry Trail and atop Old Baldy (see Section 3.8.2, Environmental Consequences for Visual Effects), but those impacts under Alternative 3 would be fewer than existing conditions as a result of the annual (3,657) and daily (25) limits on the number of air tours conducted within the ATMP planning area. Impacts would occur because commercial air tours would contrast the scenic vistas and natural areas in the study area, but the visual resources within the study area would still be viewable at times of the day when commercial air tours were not present within the ATMP planning area (air tours would occur up to 25 times per day).

In summary, Alternative 3 would not result in disproportionately high and adverse noise, air quality, or visual effects to EJ populations.

The same socioeconomic effects stated under Alternative 2 would occur under Alternative 3, but those effects would be fewer (including the potential for impacts associated with changes to the community tax base), as some air tours would still occur within the ATMP planning area. Alternative 3 would not induce substantial economic growth, disrupt or divide physicality of community, cause extensive relocation, disrupt traffic patterns, or produce a substantial change in the community tax base.

#### **Alternative 4**

Alternative 4 would authorize 751 air tours per year and eight air tours per day within the ATMP planning area on the same routes and altitudes as existing conditions. Compared to existing conditions, Alternative 4 would result in fewer direct noise, air quality, and visual impacts as described for each environmental impact category below.

Specifically, for noise impacts (see Section 3.1.2, Environmental Consequences for Noise and Noise-Compatible Land Use), the DNL analysis indicates that Alternative 4 would not result in noise impacts that would exceed DNL 65 dB. The resultant DNL is expected to be below 60 dB under Alternative 4.

For air quality impacts (see Section 3.2, for Air Quality and Climate Change), Alternative 4 would not cause pollutant concentrations to exceed one or more of the NAAQS for any of the time periods analyzed, or to increase the frequency or severity of any such existing violations. Alternative 4 is modeled to result in a reduction of 78.4 MT CO<sub>2</sub> resulting from existing commercial air tours within the ATMP planning area.

Under Alternative 4, impacts to viewsheds would primarily occur along the Blackberry Trail and atop Old Baldy (see Section 3.8.2, Environmental Consequences for Visual Effects), but those impacts under Alternative 4 would be fewer than existing conditions as a result of the annual (751) and daily (8) limits on the number of air tours conducted within the ATMP planning area. Impacts would occur because commercial air tours would contrast the scenic vistas and natural areas in the study area, but the visual resources within the study area would still be viewable at times of the day when commercial air tours were not present within the ATMP planning area (air tours would occur up to eight times per day).

In summary, Alternative 4 would not result in disproportionately high and adverse noise, air quality, or visual effects to EJ populations.

The same socioeconomic effects stated under Alternative 2 would occur under Alternative 4, but those effects would be fewer (including the potential for impacts associated with changes to the community tax base), as some air tours would still occur within the ATMP planning area. Socioeconomic effects under Alternative 4 would be expected to be greater than those under Alternative 3 because it would limit the number of air tours conducted within the ATMP planning area to fewer air tours per year. Alternative 4 would not induce substantial economic growth, disrupt or divide physicality of community, cause extensive relocation, produce a substantial change in the community tax base.

### ***Indirect and Cumulative Effects***

**Indirect Effects:** Under the No Action Alternative, commercial air tour operations within the ATMP planning area would remain consistent with existing conditions. Although they could increase up to IOA, no indirect impacts would be expected to occur under this alternative.

The limited number of flights permitted by Alternatives 2, 3, and 4 could limit the potential future economic growth for commercial air tour operators and other ancillary businesses. Because of the capital investment air tour operators have in aircraft, facilities, and equipment, operators could seek to make up lost revenue from air tours within the ATMP planning area by conducting air tour operations outside of the ATMP planning area, or over the ATMP planning area at or above 5,000 ft. AGL, to the extent possible. Operators may also choose to retire, surrender their operating certificates, or use their aircraft for other businesses or operations such as search and rescue, fire protection, resource mapping and assessment, and flight for life operations. Therefore, although Alternatives 2, 3, and 4 would limit the opportunities for air tour operators and ancillary businesses to generate revenue from tours conducted within the ATMP planning area, these alternatives would not preclude operators from making up this revenue generation in other ways such as using their aircraft for other business ventures or conducting air tours elsewhere within the region.

Under Alternatives 2, 3, and 4, it is difficult to predict with specificity if, where, and to what extent any air tours that were displaced to outside the ATMP planning area would result in indirect noise, air quality, or visual impacts to EJ populations within the study area. Operations that may occur outside the ATMP planning area, or over the ATMP planning area at or above 5,000 ft. AGL, as a result of Alternatives 2, 3, and 4 may shift where noise, air quality emissions, and visual effects occur, but the effects are not likely to change substantially as compared to current conditions. Therefore, disproportionately high or adverse indirect noise, air quality, or visual impacts to EJ populations are not expected to occur.

**Cumulative Effects:** The cumulative effects to EJ populations reflect those analyzed in other sections of this draft EA for noise, air quality, and visual effects. In summary, ongoing present and future Park management actions by the NPS within the ATMP planning area including aircraft used for Park flyovers, firefighting activities, wildlife surveys, and Park maintenance and their associated noise levels may contribute noise and air quality emissions that would continue to negatively affect the acoustic environment and air quality within the study area. Those effects would be greatest under the No Action Alternative and fewest under Alternative 2 based on the number of flights authorized per year. These activities would continue in the same frequency and manner under any of the alternatives, as they occur independently of air tours. The cumulative effects to viewsheds, including those experienced by EJ populations, would be greatest under the No Action Alternative and fewest under Alternative 2 based on the number of flights authorized per year.

The agencies are unaware of other ongoing planned or connected actions related to socioeconomic effects of the alternatives. Therefore, cumulative socioeconomic effects are not expected to occur under any of the alternatives.

### **3.8 Visual Effects**

Visual resources include buildings, sites, traditional cultural properties, and other natural or manmade landscape features that are visually important or have unique characteristics. In addition, visual resources can include the cohesive collection of various individual visual resources that can be viewed at once or in concert from the area surrounding the site of the alternatives. Visual character refers to the overall visual makeup of the existing environment where the alternatives would be located. For example, areas in close proximity to densely populated areas generally have a visual character that could be defined as urban, whereas less developed areas could have a visual character defined by the surrounding landscape features, such as open grass fields, forests, mountains, or deserts, etc. Visual effects generally describe the extent to which the proposed action or alternatives would either produce light emissions that create annoyance or interfere with activities; or contrast with, or detract from, the visual resources and/or the visual character of the existing environment. Although there are no federal special purpose laws or requirements specific to light emissions and visual effects, there are special purpose laws and requirements that may be relevant, such as those relating to cultural resources or Section 4(f) resources. Additionally, NPS Management Policies § 1.4.6 (2006) states that scenic views and vistas are Park resources that are subject to protection under the NPS Organic Act.

The study area for visual effects includes ATMP planning area as well as areas within the cultural resources APE that are outside of the ATMP planning area. Refer to Figure 19 for a depiction of the visual effects study area.

#### **3.8.1 Affected Environment**

Within the Park, visual resources include the sculpture and forested areas. Viewer sensitivity to the carving is very high due to the massiveness of the sculpture and the historical and social significance of Presidents Washington, Jefferson, Roosevelt, and Lincoln, as these leaders are personifications of American ideals such as independence, freedom, justice, equality, self-reliance, and individuality (Harpers Ferry Design Center, 2018). Along South Dakota Route 244 within the Park, there are five places where cars can pull out to stop and view the sculpture, in addition to designated overlooks such as the Norbeck Memorial Overlook. Distant or aerial views of the sculpture are sometimes obscured by haze caused by wildfires (refer to Section 3.2, Air Quality).

Visual resources associated with the Park's natural areas are characterized by massive granite outcrops intermingled with ponderosa pine (NPS, 2015). South Dakota Route 244, within the



Park, is part of the 70-mile Peter Norbeck Scenic Byway, providing views of the sculpture, Black Hills, and panoramic views of various landscapes and vegetation in the region. Other popular viewpoints within the Park include the Amphitheater and Grand View Terrace, the First Jefferson Overlook, the Northeast Pullout, the Blackberry Trail, and Old Baldy. Many of the visual resources within the Park also have a high degree of cultural significance (refer to Section 3.4, Cultural Resources).

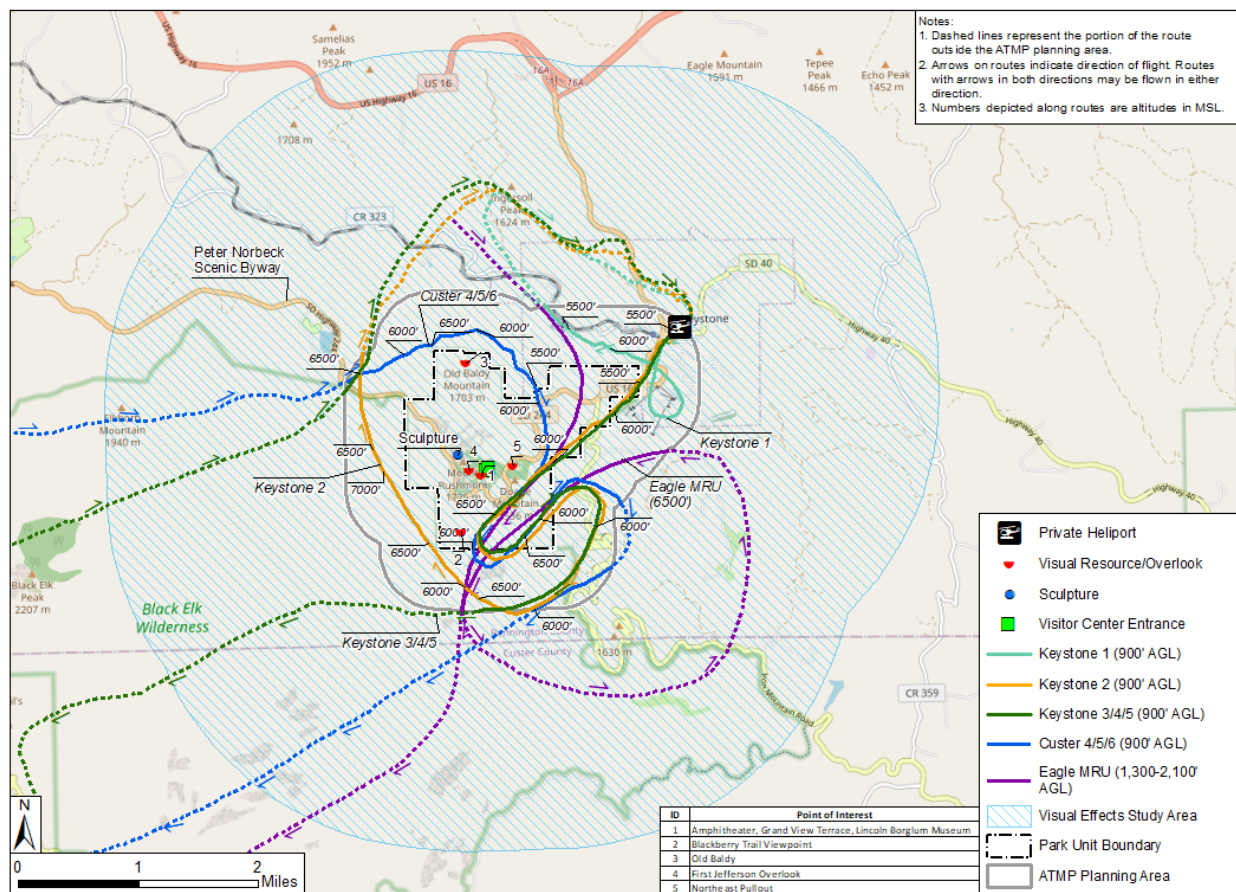


Figure 19. Affected Environment for Visual Effects and Environmental Consequences for Alternatives 1, 3 and 4.

### 3.8.2 Environmental Consequences

Studies indicate that aircraft noise in national parks can impact human perceptions of aesthetic quality of viewsheds (Weinzimmer et al., 2014; Benfield et al., 2018).

Impacts to visual resources and visual character relate to a decrease in the aesthetic quality of the Park resulting from air tours. FAA Order 1050.1F provides factors to consider in evaluating the severity of impacts, including the extent that the action would have the potential to:

- Affect the nature of the visual character of the area, including the importance, uniqueness, and aesthetic value of the affected visual resources;

- Contrast with the visual resources and/or visual character in the study area; and
- Block or obstruct the views of visual resources, including whether these resources would still be viewable from other locations.

***Alternative 1: No Action***

Reporting data from 2017-2019 indicates that on a peak month average day, air tours fly over the ATMP planning area approximately 38 times per day. Based on reported data, the existing air tours occur for up to eight to 12 hours a day. The altitudes reported near viewsheds in the ATMP planning area range from a minimum 900 ft. to 1,400 ft. AGL, so the aircraft are visible in these areas. Refer to Figure 19 for a depiction of existing air tour conditions in the context of visual points of interest and viewsheds within the visual effects study area.

Under existing conditions, the heaviest concentrations of commercial air tours are flown over or near the sculpture to the southeast of South Dakota Route 244. Based on operator reported data, commercial air tour routes maintain at least a 2,000 ft. lateral separation from the sculpture and stay to the southeast of South Dakota Route 244 (whereas the sculpture is located to the northwest). Most visitors view the sculpture from pull-off points along the roadway, as the routes do not bisect the viewer's line of sight to the sculpture. Other viewpoints of the sculpture, including those along South Dakota Route 244, the Amphitheater and Grand View Terrace, the First Jefferson Overlook, the Northeast Pullout, the Blackberry Trail, and Old Baldy, are not bisected by commercial air tours within the viewer's line of sight to the sculpture according to operator reported routes.

In the context of the Park's natural scenery consisting of forested areas, in some locations when commercial air tours are visible to Park visitors, they would contrast with the natural scenery in these areas. The viewpoints where this would be most likely to occur are the terminus of the Blackberry Trail and atop Old Baldy. Existing commercial air tour routes are located near these viewpoints and would be seen by visitors overlooking natural scenic areas, which would continue to occur under the No Action Alternative. Since much of the Park consists of a natural landscape, the encroachment of commercial air tour aircraft on these viewsheds would continue to detract from the visitor's opportunity to observe these scenic natural resources when commercial air tours are present (which occurs 38 times per day during a peak month average day). However, the greater Black Hills region provides opportunities to view similar natural landscape features and viewsheds as those found within the visual effects study area, and the visual resources of the Park would still be viewable at times of the day when commercial air tours were not present within the ATMP planning area. Collectively, these effects represent the impacts of the No Action Alternative, though impacts could increase if flights up to IOA occurred (see Section 2.4.1, Commercial Air Tours per Year for the No Action Alternative).

### ***Alternative 2***

Under Alternative 2, commercial air tours would not be conducted within the ATMP planning area which would result in fewer effects to visual resources in the visual effects study area. Visual resources would experience direct beneficial impacts throughout the Park under Alternative 2 and visual character would improve compared to current conditions. Alternative 2 would provide the greatest protection to Park viewsheds across the four alternatives.

### ***Alternative 3***

Alternative 3 would authorize commercial air tours to be conducted on the same routes and altitudes as those flown under existing conditions, but it would authorize fewer air tours per year than existing conditions (approximately 7% reduction) which would reduce impacts to visual resources within the visual effects study area. As with the No Action Alternative, visual impacts would primarily be associated with air tour aircraft contrasting natural scenery rather than blocking visitors' views of the sculpture since the air tour routes would not bisect the visual line of sight to this area at sculpture viewpoints.

Commercial air tours would still be visible from the Blackberry Trail and Old Baldy, but Alternative 3 would authorize fewer air tours in the ATMP planning area as compared to existing conditions, so the likelihood that a visitor would see a commercial air tour contrasting natural scenery would be less. Under Alternative 3, up to 25 air tours per day could be flown within the ATMP planning area, which represents a reduction in the number of times that viewers would potentially see an air tour as compared to existing conditions (38 air tours on a peak month average day). Therefore, this alternative would result in direct beneficial impacts to Park viewsheds.

### ***Alternative 4***

Similar to Alternative 3, Alternative 4 would authorize commercial air tours to be conducted on the same routes and altitudes as those flown under existing conditions, but it would authorize fewer air tours per year than existing conditions as well as Alternative 3 (approximately 81% reduction as compared to existing conditions) which would reduce impacts to visual resources throughout the visual effects study area. Under Alternative 4, up to eight air tours per day could be flown within the ATMP planning area, which represents a reduction in the number of times that viewers would potentially see an air tour as compared to existing conditions (38 air tours on a peak month average day) as well as Alternative 3 (25 air tours per day). Therefore, this alternative would result in direct beneficial impacts to Park viewsheds.

### ***Indirect and Cumulative Effects***

**Indirect Effects:** Under the No Action Alternative, commercial air tour operations within the ATMP planning area would remain consistent with existing conditions. Although they could increase up to IOA, no indirect impacts would be expected to occur under this alternative.

Under Alternatives 2, 3, and 4 since commercial air tour operations would be limited or prohibited within the ATMP planning area, it could result in the displacement of tours outside of this area. Operators may choose to fly along existing flight paths but above 5,000 ft. AGL. This may be impractical due to the high elevation of the terrain because it would require operators to fly above 10,000 ft. MSL. Supplemental oxygen use is required in unpressurized aircraft flying at altitudes over 10,000 ft. MSL for more than 30 minutes (14 CFR Parts 135.89, 135.157); therefore, it is unlikely air tours would fly higher for extended periods of time. Additionally, flights at 5,000 ft. AGL or higher would provide limited value to a sightseeing operation. For air tours conducted at or above 5,000 ft. AGL, the increase in altitude would likely decrease impacts on ground level resources as compared to current conditions.

Operators could also choose to fly to points of interest elsewhere in the region outside the ATMP planning area where they already fly (such as the Crazy Horse Monument, Iron Mountain Road, Horsethief Lake, Black Elk Peak, and Sylvan Lake), or operators could fly routes just outside of the ATMP planning area that provide views of the sculpture. Operators, both with and without IOA for the Park, currently conduct air tours in this area as routes in this area still afford views of the sculpture. It is difficult to predict with specificity if, where, and to what extent any displaced air tours would result in impacts in different and/or new areas under Alternatives 2, 3, and 4. The preciseness of routes and altitudes for air tours flown on displaced routes are generally subject to Visual Flight Rules and may vary. However, the heliport on the boundary of the ATMP planning area is used for tours over the Park as well as other nearby Parks and attractions. It is reasonably foreseeable that air tour operations displaced from flying over the Park under Alternatives 2, 3, or 4 could continue to utilize this heliport to conduct tours over areas that are outside the ATMP planning area. If air tour displacement occurred, the number of tours offered from this heliport could increase if operators choose to offer more tours over the other regional points of interest which could result in indirect effects to visual resources in this area. Alternative 2 would prohibit air tours from being conducted within the ATMP planning area, whereas Alternative 3 would limit air tours to no more than 3,657 tours per year and Alternative 4 would limit air tours to no more than 751 tours per year. Alternative 2 has the most potential to result in the displacement of air tours and could result in more indirect effects to visual resources from air tours flying outside of the ATMP planning area. Alternative 3 and Alternative 4 also have the potential for indirect impacts due to displacement of air tours.

**Cumulative Effects:** Other sources of ongoing visual impacts within the ATMP planning area include aircraft for wildlife monitoring, firefighting, mechanized equipment for Park maintenance, and flyovers for special events, which would likely continue in the same frequency and manner under any of the alternatives, as they occur independently of air tours.

The cumulative visual effects of these ongoing flights along with those from commercial air tours under the No Action Alternative would have the greatest potential for impacts within the

visual effects study area. The cumulative effects would be fewer for Alternatives 3 and 4, which limit the number of air tours that would occur as compared to the No Action Alternative, and the fewest under Alternative 2 as there would be no tours permitted within the ATMP planning area. Ongoing present and future Park management actions by the NPS would continue to occur under any of the alternatives.

### **3.9 Department of Transportation (DOT) Act Section 4(f) Resources**

Section 4(f) of the Department of Transportation Act of 1966, which was recodified and renumbered as Section 303(c) of 49 U.S.C., provides that the Secretary of Transportation will not approve any program or project that requires the use of any publicly owned land from a public park, recreational area, or wildlife and waterfowl refuge of national, state or local significance; or land from an historic site of national, state or local significance, as determined by the officials having jurisdiction over the land, unless 1) there is no feasible and prudent alternative to the use of such land; and 2) such program or project includes all possible planning to minimize harm resulting from such use. Where federal lands are administered for multiple uses, the federal official having jurisdiction over the lands shall determine whether the subject lands are in fact being used for park, recreational, wildlife, waterfowl, or historical purposes. National Wilderness areas may serve similar purposes and shall be considered subject to Section 4(f) unless the controlling agency specifically determines that, for Section 4(f) purposes, the lands are not being used.

Appendix B of FAA Order 1050.1F describes the FAA's procedures for complying with Section 4(f). Federal Highway Administration/Federal Railroad Administration/Federal Transit Administration regulations and policy are not binding on the FAA; however, the FAA may use them as guidance to the extent relevant to aviation projects.<sup>19</sup> According to FAA Order 1050.1F, significance of impacts is determined based on if the action involves more than a minimal physical use of a Section 4(f) resource or constitutes a "constructive use" based on an FAA determination that the aviation project would substantially impair the Section 4(f) resource.

The study area for considering Section 4(f) resources in this draft EA is inclusive of the APE used for compliance with Section 106 of the NHPA. Refer to Figure 20 for a depiction of the Section 4(f) study area.

#### **3.9.1 Affected Environment**

Section 4(f) resources including parks, recreational areas, and wildlife and waterfowl refuges were identified using public datasets from federal, state, and local sources. Historic properties were identified as part of the Section 106 consultation process (refer to Section 3.4, Cultural

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<sup>19</sup> See 1050.1F Desk Reference, Section 5-3.

Resources). Each resource that intersected the Section 4(f) study area (i.e., some portion of the property fell within the Section 4(f) study area) was included in the Section 4(f) analysis (see Appendix I, *Section 4(f) Analysis*).

Table 17 shows Section 4(f) parks, recreational areas, and wildlife refuges identified in the Section 4(f) study area. Section 3.4.1, Affected Environment for Cultural Resources, lists historic resources that qualify under Section 4(f). Except in unusual circumstances, Section 4(f) protects only those historic sites that are listed in or eligible for listing in the National Register.<sup>20</sup> Figure 20 shows a map of the Section 4(f) resources analyzed in this chapter, within the Section 4(f) study area.

*Table 17. Section 4(f) Parks, Recreational Resources, and Wildlife/Waterfowl Refuges in the Section 4(f) Study Area.*

<b>Property Name</b>	<b>Property Type</b>
Mount Rushmore National Memorial	National Park
Black Hills National Forest	National Forest
Norbeck Wildlife Preserve	National Wildlife Refuge

Sources: U.S. Geological Survey Protected Areas Database of the U.S.

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<sup>20</sup> If a historic site is not on the National Register (listed or eligible), a state or local official may formally provide information to the FAA to indicate that a historic site is locally significant. The responsible FAA official may then determine it is appropriate to apply Section 4(f). See FAA Order 1050.1F for further detail.

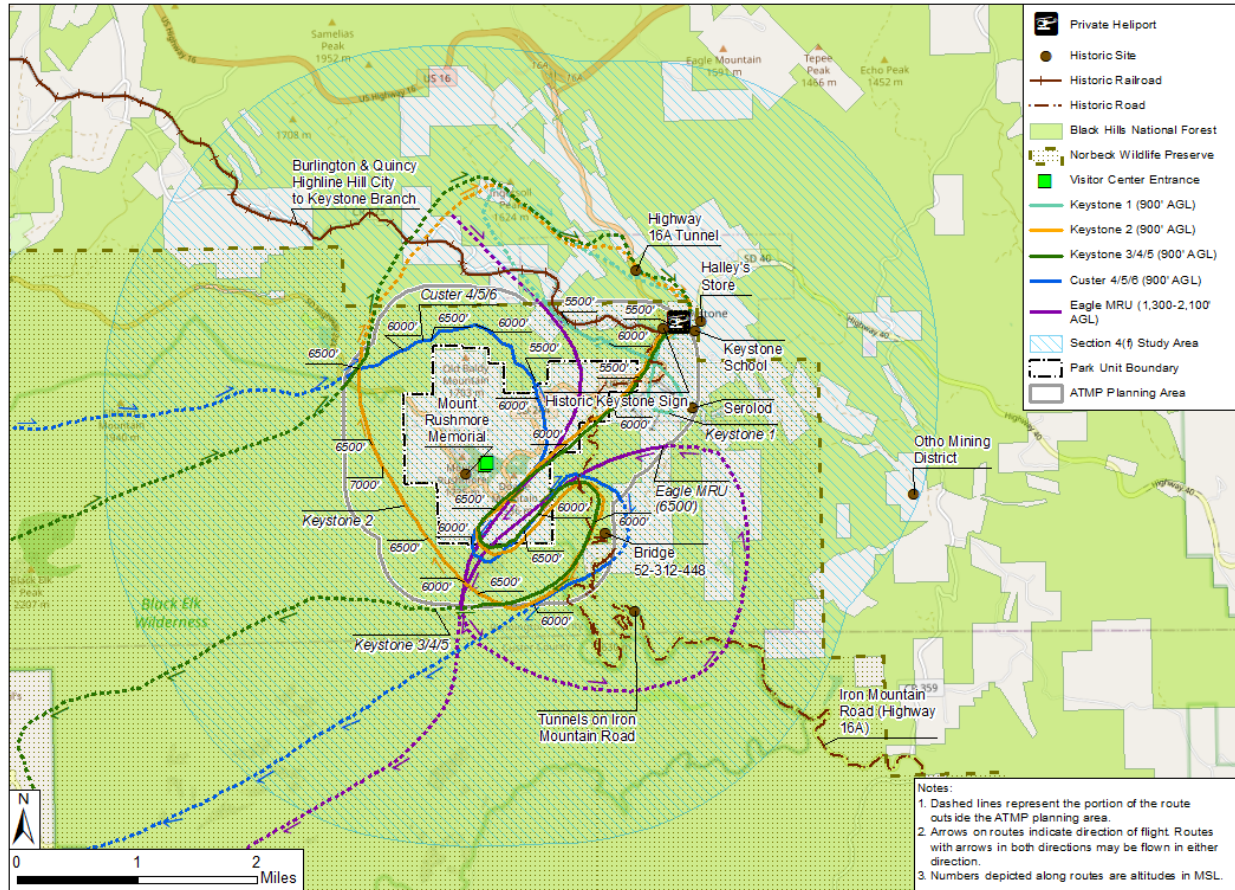


Figure 20. Affected Environment for Section 4(f) Resources.

### 3.9.2 Environmental Consequences

In the context of Section 4(f) resources, the term “use” refers to both physical and constructive impacts to Section 4(f) resources. A physical use involves the physical occupation or alteration of a Section 4(f) resource, while constructive use occurs when a proposed action results in substantial impairment of a resource to the degree that the activities, features, or attributes of the resource that contribute to its significance or enjoyment are substantially diminished. In consideration of potential impacts that could result in substantial impairment to Section 4(f) resources in the Section 4(f) study area, the analysis is limited to identifying impacts that could result in a constructive use, as the alternatives would not have the potential to cause a direct impact to a Section 4(f) resource. Potential impacts to Section 4(f) resources from commercial air tours may include noise from aircraft within the acoustic environment, as well as visual impacts.

The FAA considered the potential for constructive use of Section 4(f) resources under all alternatives. In accordance with FAA Order 1050.1F, the FAA determined through an initial assessment if the Proposed Action and alternatives would result in use of any of the properties

to which Section 4(f) applies. As noted in Section 2.4, Alternative 1 (No Action Alternative), the No Action Alternative provides a basis for comparison within this draft EA but is not a selectable alternative because it does not meet the purpose and need for the ATMP (refer to Section 1.4, Purpose and Need). Furthermore, the FAA consulted with the NPS on the potential for substantial impairment to Section 4(f) resources that would occur under the No Action Alternative, and the NPS determined that the No Action Alternative cannot be mitigated to avoid or prevent unacceptable impacts to the Park's natural and cultural resources and visitor experience. The *Noise Technical Analysis* (Appendix F) also demonstrates that the existing level of air tours is inconsistent with the Park's purpose and values. Therefore, the FAA did not advance the No Action Alternative for detailed Section 4(f) analysis as the NPS does not consider it a selectable alternative.

In order to assess noise impacts to Section 4(f) resources, the land use compatibility guidelines in 14 CFR Part 150 assist with determining whether a proposed action would constructively use a Section 4(f) resource. These guidelines rely on the DNL, which is considered the best measure of impacts to the quality of the human environment from exposure to noise. The FAA acknowledges that the land use categories in 14 CFR Part 150 may not be sufficient to determine the noise compatibility of Section 4(f) properties (including, but not limited to, noise sensitive areas within national parks and wildlife refuges), where a quiet setting is a generally recognized purpose and attribute. Visual impacts are assessed in accordance with the framework identified in Section 3.8.2, Environmental Consequences for Visual Effects.

### ***Alternative 2***

Under Alternative 2, commercial air tours would not be conducted within the ATMP planning area which would reduce this source of noise originating from within the Section 4(f) study area. The acoustic impacts of Alternative 2 cannot be modeled because, although some speculation about air tour routes can be made, it is unknown where air tours would fly when outside the ATMP planning area (see below for a discussion of indirect effects), so data on the resultant DNL for this alternative is not available. Alternative 2 would provide 365 days per year without air tours within the ATMP planning area and would reduce noise at Section 4(f) resources.

The FAA also considered the potential for vibrational or visual effects on Section 4(f) resources under Alternative 2. However, since Alternative 2 would not authorize commercial air tours to be conducted within the ATMP planning area, vibrational or visual effects would not occur and there would be no constructive use from vibrational or visual effects of Section 4(f) resources.



As a result, FAA concludes there would be no substantial impairment<sup>21</sup> of Section 4(f) resources from noise, visual, or vibrational related effects caused by air tours in the Section 4(f) study area under Alternative 2. This Section 4(f) determination for historic properties is based on 14 CFR Part 150 Appendix A and is also consistent with the Section 106 no adverse effect determination at the Park (see Section 3.4.2, Environmental Consequences for Cultural Resources).

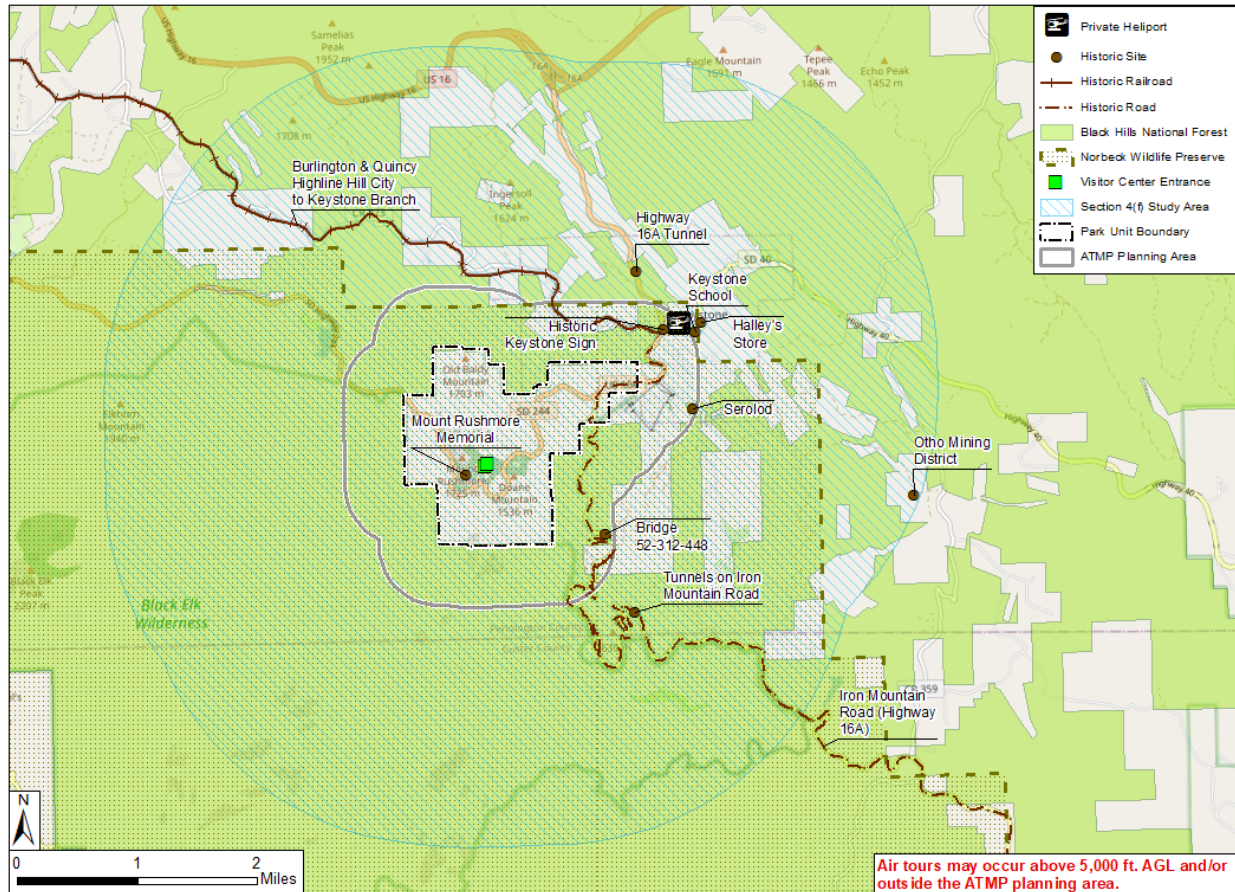


Figure 21. Section 4(f) Environmental Consequences for Alternative 2.

### Alternative 3

The FAA evaluated Alternative 3 for potential impacts to Section 4(f) resources. The noise analysis in Section 3.1.2, Environmental Consequences for Noise and Noise-Compatible Land Use, indicates that the resultant DNL due to Alternative 3 is expected to be less than 60 dB and

<sup>21</sup> Substantial impairment would occur when impacts to section 4(f) lands are sufficiently serious that the value of the site in terms of its prior significance and enjoyment are substantially reduced or lost.

there would be a reduction in the overall noise footprint (average sound level over a 12-hour day) compared to existing conditions.

Under Alternative 3, 3,657 air tours, 93% of the existing number of flights based on the three-year average of reporting data from 2017-2019, would be authorized to fly within the ATMP planning area along routes consistent with those currently flown over the ATMP planning area. Refer to Figure 22 for a depiction of air tour routes under Alternative 3 in the context of Section 4(f) properties. Because the number of authorized flights under Alternative 3 would be less than existing conditions and air tours would be limited to flying on designated routes within the ATMP planning area, evaluation of NPS supplemental metrics<sup>22</sup> show that impacts to Section 4(f) resources would be less than impacts currently occurring within the ATMP planning area:

- On days when commercial air tours would occur, noise levels above 35 dBA (an indicator used by the NPS to assess the potential for degradation of the natural sound environment) would occur for at least 75 minutes in the ATMP planning area, including between 180 and 225 minutes in small areas (<9 %) below flight routes, up to 180 minutes in 19% of the ATMP planning area, and between 120 and 135 minutes in 55% of the ATMP planning area (see Appendix F, *Noise Technical Analysis*, Figure 12).
- On days when commercial air tours would occur, noise levels above 52 dBA (which is associated with speech interference) are not anticipated to exceed 68.1 minutes in the ATMP planning area. Location points (provided by the NPS) are specific points of interest geographically located across the entire ATMP planning area where noise levels were evaluated (see Appendix I, *Section 4(f) Analysis*, for a summary of the reported ranges of time above 52 dBA for location points within 1.5 miles of each Section 4(f) property).

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<sup>22</sup> Noise contours were produced for the time above 35 dBA metric, but not the time above 52 dBA metric. For time above 52 dBA, location points across the Section 4(f) study area were used to assess impacts on Section 4(f) resources. See Appendix F, *Noise Technical Analysis*, for further detail.

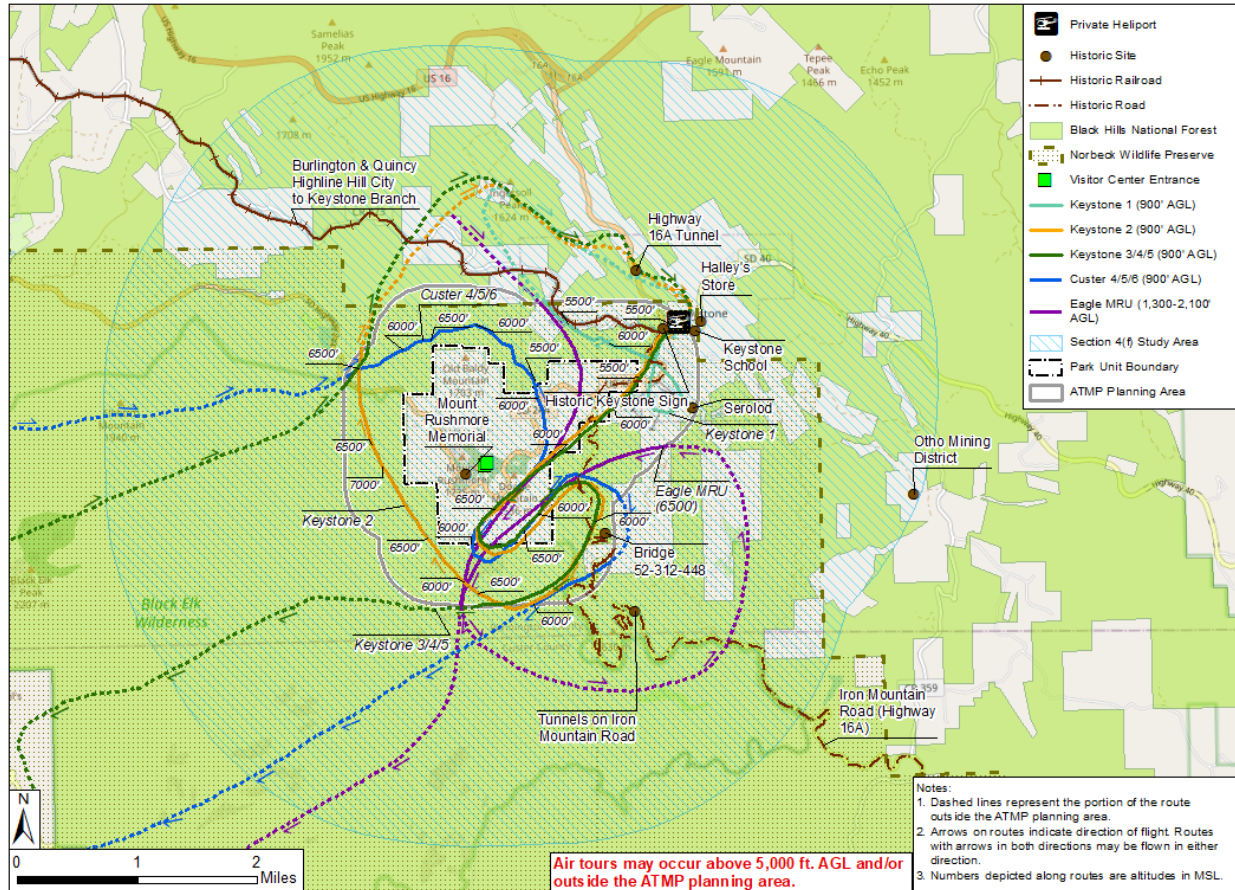


Figure 22. Section 4(f) Environmental Consequences for Alternative 3 and Alternative 4.

In addition, Alternative 3 would limit the operation of commercial air tours to one hour after sunrise until one hour before sunset or beginning at sunrise and ending at sunset for operators that have converted to quiet technology aircraft. These time restrictions provide times when visitors seeking solitude may experience the Section 4(f) resources without disruptions from commercial air tours. The altitudes required by Alternative 3, which would limit minimum altitudes to no lower than 900 ft. AGL for helicopters and no lower than 1,400 ft. AGL for fixed-wing aircraft, would reduce the maximum noise levels at sites directly below the air tour routes. In addition, Alternative 3 would limit the number of commercial air tours within the ATMP planning area to no more than 25 tours per day across all operators and limit the number of tours each operator could conduct on the days where air tours are permitted. Alternative 3 also prohibits hovering and circling by air tours.

As a result, FAA concludes there would be no substantial impairment<sup>23</sup> on Section 4(f) resources in the Section 4(f) study area from noise-related effects under Alternative 3. This conclusion supports the FAA's determination that Alternative 3 would not constitute constructive use of Section 4(f) resources in the Section 4(f) study area. This Section 4(f) determination for historic properties is based on 14 CFR Part 150 Appendix A and is also consistent with the impact discussion at the Park for cultural resources (see Section 3.4.2, Environmental Consequences for Cultural Resources).

The FAA also considered the potential for vibrational impacts on Section 4(f) resources under Alternative 3. A review of the potential for vibrational impacts on sensitive structures such as historic buildings suggests that the potential for damage resulting from helicopter overflights is minimal, as the fundamental blade passage frequency is well above the natural frequency of these structures. Additionally, the vibration amplitude of these overflights at the altitudes prescribed in Alternative 3 would be well below recommended limits.<sup>24, 25</sup> Vibrational impacts are not anticipated to affect surrounding parkland and National Forest areas given that aircraft overflights do not contain vibrational energy at levels which would affect outdoor areas or natural features and there is no substantial change from existing conditions.

Recognizing that some types of Section 4(f) resources may be affected by visual effects of commercial air tours, the FAA and the NPS considered the potential for the introduction of visual elements that could substantially diminish the significance or enjoyment of Section 4(f) resources in the Section 4(f) study area. Alternative 3 would limit the number of commercial air tours per year to 3,657 flights and would require operators to fly along five designated flight paths over the ATMP planning area, which would result in fewer areas of the ATMP planning area, and therefore, fewer Section 4(f) properties, from which a commercial air tour could be visible. Alternative 3 would not introduce visual elements or result in visual impacts that would substantially diminish the activities, features or attributes of a Section 4(f) resource. Therefore, there would be no constructive use from visual impacts of Section 4(f) resources.

#### ***Alternative 4***

The FAA evaluated Alternative 4 for potential impacts to Section 4(f) resources. The noise analysis in Section 3.1.2, Environmental Consequences for Noise and Noise Compatible Land Use, indicates that the resultant DNL due to Alternative 4 is expected to be less than 60 dB and

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<sup>23</sup> Substantial impairment would occur when impacts to section 4(f) lands are sufficiently serious that the value of the site in terms of its prior significance and enjoyment are substantially reduced or lost.

<sup>24</sup> Hanson, C.E., King, K.W., et al. (1991). Aircraft noise effects on cultural resources: review of technical literature. NPOA Report No. 91-3 (HMMH Report No.290940.04-1).

<sup>25</sup> Volpe National Transportation Systems Center, Department of Transportation. (2014). Literature review: vibration of natural structures and ancient/historical dwellings, internal report for National Park Service, Natural Sounds and Night Skies Division.

there would be a reduction in the overall noise footprint (average sound level over a 12-hour day) compared to existing conditions.

Under Alternative 4, 751 air tours, or 19% of the existing number of flights based on the three-year average of reporting data from 2017-2019, would be authorized to fly within the ATMP planning area along routes consistent with those currently flown over the ATMP planning area. Refer to Figure 22 for a depiction of air tour routes under Alternative 4 in the context of Section 4(f) properties. Because the number of authorized flights under Alternative 4 would be substantially less than existing conditions, evaluation of NPS supplemental metrics<sup>26</sup> show that impacts to Section 4(f) resources would be less than impacts currently occurring:

- On days when commercial air tours would occur, noise levels above 35 dBA (an indicator used by the NPS to assess the potential for degradation of the natural sound environment) would occur for at least 15 minutes in the ATMP planning area, including between 45 and 60 minutes in 42% of the ATMP planning area, up to 75 minutes in small regions (1%) below flight routes (see Appendix F, *Noise Technical Analysis*, Figure 15).
- On days when commercial air tours would occur, noise levels above 52 dBA (which is associated with speech interference) are not anticipated to exceed 21.1 minutes in the ATMP planning area. Location points (provided by the NPS) are specific points of interest geographically located across the ATMP planning area where noise levels were evaluated (see Appendix I, *Section 4(f) Analysis*, for a summary of the reported ranges of time above 52 dBA for location points within 1.5 miles of each Section 4(f) property).

In addition, Alternative 4 would limit the operation of commercial air tours to between the hours of 9:00 AM and 5:00 PM, or beginning at sunrise and ending at sunset for operators that have converted to quiet technology aircraft. These time restrictions provide times when visitors seeking solitude may experience the Section 4(f) resources without disruptions from commercial air tours. Alternative 4 would limit minimum altitudes at least 900 ft. AGL for helicopters and at 1,400 ft. AGL for fixed-wing aircraft, and prohibit air tours below 5,000 ft. AGL within the ATMP planning area except those conducted on the authorized routes. These altitude restrictions would reduce the maximum noise levels at sites directly below the air tour routes. Alternative 4 would also limit the number of commercial air tours within the ATMP planning area to no more than eight tours per day across all operators and limit the number of tours each operator could conduct on the days where air tours are permitted. In addition, Alternative 4 would prohibit hovering and circling by air tours.

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<sup>26</sup> Noise contours were produced for the time above 35 dBA metric, but not the time above 52 dBA metric. For time above 52 dBA, location points across the Section 4(f) study area were used to assess impacts on Section 4(f) resources. See Appendix F, *Noise Technical Analysis*, for further detail.

As a result, FAA concludes there would be no substantial impairment<sup>27</sup> of Section 4(f) resources in the Section 4(f) study area from noise-related effects under Alternative 4. This conclusion supports the FAA's determination that Alternative 4 would not constitute constructive use of Section 4(f) resources in the Section 4(f) study area. This Section 4(f) determination for historic properties is based on 14 CFR Part 150 Appendix A and is also consistent with the impact discussion at the Park for cultural resources (see Section 3.4.2, Environmental Consequences for Cultural Resources). The FAA also considered the potential for vibrational impacts on Section 4(f) resources under Alternative 4. A review of the potential for vibrational impacts on sensitive structures such as historic buildings suggests that the potential for damage resulting from helicopter overflights is minimal, as the fundamental blade passage frequency is well above the natural frequency of these structures. Additionally, the vibration amplitude of these overflights at the altitudes prescribed in Alternative 4 would be well below recommended limits.<sup>24, 25</sup> Vibrational impacts are not anticipated to affect surrounding Parkland and National Forest areas given that aircraft overflights do not contain vibrational energy at levels which would affect outdoor areas or natural features and there is no substantial change from existing conditions.

Recognizing that some types of Section 4(f) resources may be affected by visual effects of commercial air tours, the FAA and the NPS considered the potential for the introduction of visual elements that could substantially diminish the significance or enjoyment of Section 4(f) resources in the Section 4(f) study area. Alternative 4 would limit the number of commercial air tours per year to 751 flights and would require operators to fly along five designated flight paths over the ATMP planning area, which would result in fewer areas of the ATMP planning area, and therefore, fewer Section 4(f) properties, from which a commercial air tour could be visible. Alternative 4 would not introduce visual elements or result in visual impacts that would substantially diminish the activities, features or attributes of a Section 4(f) resource. Therefore, there would be no constructive use from visual impacts of Section 4(f) resources.

### ***Indirect and Cumulative Effects***

**Indirect Effects:** The indirect effects of Alternatives 2, 3, and 4 on Section 4(f) properties reflect those analyzed in the sections for noise and visual effects. Since commercial air tour operations would be limited or prohibited within the ATMP planning area under Alternatives 2, 3, and 4, these alternatives could result in the displacement of tours outside of this area.

The indirect effects analysis conducted for Noise and Noise-Compatible Land Use (see Section 3.1.2, Environmental Consequences for Noise and Noise-Compatible Land Use) indicates that it is highly unlikely that the air tours that are displaced to outside the ATMP planning area under

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<sup>27</sup> Substantial impairment would occur when impacts to section 4(f) lands are sufficiently serious that the value of the site in terms of its prior significance and enjoyment are substantially reduced or lost.

Alternatives 2, 3, and 4 would generate a noise exposure level at or above DNL 65 dB in a single location in accordance with FAA Order 1050.1F, including those that overlap with Section 4(f) properties. The indirect effects analysis for Visual Effects (see Section 3.8.2, Environmental Consequences for Visual Effects) identifies that some indirect visual impacts could occur if flights were displaced to outside the ATMP planning area. Air tour operators would likely continue to fly to points of interest outside of the ATMP planning area elsewhere in the region, such as Crazy Horse Monument, Iron Mountain Road, Horsethief Lake, Black Elk Peak, and Sylvan Lake, or would conduct tours just outside of the perimeter of the ATMP planning area since the sculpture would still be visible from this area. Section 4(f) resources are present in these areas and could experience visual effects if air tours were visible from those resources. However, it is difficult to predict with specificity if, where, and to what extent any displaced air tours would result in visual impacts in different and/or new areas, including Section 4(f) resources.

**Cumulative Effects:** The cumulative effects to Section 4(f) properties reflect those analyzed in the sections for noise and visual effects (see Section 3.1.2, Environmental Consequences for Noise and Noise-Compatible Land Use and Section 3.8.2, Environmental Consequences for Visual Effects). The cumulative effects would be fewer for Alternatives 3 and 4, which limit the number of air tours that would occur as compared to existing conditions, and the fewest under Alternative 2 as there would be no tours permitted within the ATMP planning area. Under Alternatives 2, 3, and 4, ongoing present and future Park management actions by the NPS within the ATMP planning area, including the use of aircraft for wildlife monitoring, firefighting, mechanized equipment for Park maintenance, and flyovers for special events, would continue to negatively affect the acoustic environment of Section 4(f) properties within the ATMP planning area. Other sources of ongoing visual impacts that may affect Section 4(f) properties within the ATMP planning area include general aviation flights or overflights by commercial airlines, which would likely continue under Alternatives 2, 3, and 4, as they occur independently of air tours. As described above for indirect effects, air tours flown just outside the ATMP planning area are currently offered by operators both with and without IOA for the Park as air tours in this area still afford views of the sculpture. Noise from these air tours that is experienced within the ATMP planning area also contributes to the cumulative effects analysis. Ongoing present and future Park management actions by the NPS would continue to occur under any of the alternatives.

#### ***Section 4(f) Recommended Finding***

In summary, the FAA has preliminarily determined that there would be no constructive use to Section 4(f) properties under Alternatives 2, 3, and 4 because noise, vibrational, and visual impacts from commercial air tours under this alternative would not constitute a substantial impairment of Section 4(f) resources in the Section 4(f) study area. As part of the draft ATMP and draft EA development, the FAA consulted with the NPS and through the release of the draft



ATMP and draft EA and consulted with the NPS and other Officials with Jurisdiction over Section 4(f) resources in the Section 4(f) study area regarding FAA's preliminary finding of no substantial impairment, and hence, the FAA's proposed no constructive use determination. The FAA has sent letters to each Section 4(f) property's Official with Jurisdiction with this preliminary finding concurrent with the release of this draft EA for public review. Refer to Appendix I, *Section 4(f) Analysis*, for additional details on this coordination.

### 3.10 Summary of Environmental Consequences

Table 18 summarizes the environmental consequences described above for each of the alternatives considered across each environmental impact category.

Table 18. Summary of Environmental Consequences of the ATMP Alternatives.

Environmental Impact Category	Alternative 1 (No Action)	Alternative 2 (Preferred)	Alternative 3	Alternative 4
Noise and Noise-Compatible Land Use	<ul style="list-style-type: none"> <li>• 12-hr equivalent sound level: ≤60 dBA except for small area near heliport; 50-55 dBA in 43% of ATMP planning area; 40-45 dBA in entire ATMP planning area.</li> <li>• DNL: &lt;60 dB</li> <li>• Time audible natural ambient: Up to 345 minutes in 56% of ATMP planning area; 210-480 minutes in entire ATMP planning area.</li> <li>• Time above 35 dBA: &gt;315 minutes in 70% of the ATMP planning area; 210-330 minutes in entire ATMP planning area.</li> <li>• Maximum time above 52 dBA: 104.9 minutes at Location #14 (Undeveloped Park land-goat habitat).</li> <li>• Maximum sound level in ATMP planning area: 73.7 dBA at Location #17</li> </ul>	<ul style="list-style-type: none"> <li>• 365 days per year without air tours within the ATMP planning area and would reduce noise in the most noise sensitive regions of the Park.</li> <li>• Indirect noise impacts may occur due to air tours displaced to outside the ATMP planning area.</li> </ul>	<ul style="list-style-type: none"> <li>• 12-hr equivalent sound level: ≤60 dBA except for small area near heliport; generally &gt;45 dBA in 74% of the ATMP planning area; 40-45 dBA in entire ATMP planning area.</li> <li>• DNL: &lt;60 dB</li> <li>• Time audible natural ambient: 150-210 minutes in 66% of the ATMP planning area; 150-300 minutes in entire planning area.</li> <li>• Time above 35 dBA: 135-225 minutes in 55% of ATMP planning area; 75-225 minutes in entire ATMP planning area.</li> <li>• Maximum time above 52 dBA: 68.1 minutes at Location #14 (Undeveloped Park land-goat habitat).</li> <li>• Maximum sound level in ATMP planning area: 73.7 dBA at Location #17 (No name pullout).</li> </ul>	<ul style="list-style-type: none"> <li>• 12-hr equivalent sound level: ≤50 dBA except for small area near heliport; &gt;40 dBA in 76% of the ATMP planning area; 35-40 dBA in entire ATMP planning area.</li> <li>• DNL: &lt;60 dB</li> <li>• Time audible natural ambient: 45-90 minutes in entire ATMP planning area.</li> <li>• Time above 35 dBA: 15-60 minutes in entire ATMP planning area.</li> <li>• Maximum time above 52 dBA: 21.1 minutes at Location #14 (Undeveloped Park land-goat habitat).</li> <li>• Maximum sound level in ATMP planning area: 73.7 dBA at Location #17 (No name pullout).</li> <li>• Indirect noise impacts may occur due to air tours being displaced to outside the ATMP planning area.</li> </ul>



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Environmental Impact Category	Alternative 1 (No Action)	Alternative 2 (Preferred)	Alternative 3	Alternative 4
	<ul style="list-style-type: none"> <li>No indirect effects expected.</li> </ul>		<ul style="list-style-type: none"> <li>Indirect noise impacts may occur due to air tours being displaced to outside the ATMP planning area.</li> </ul>	
Air Quality	<ul style="list-style-type: none"> <li>Criteria pollutants: 54 TPY</li> <li>GHG emissions: 97.5 MT of CO<sub>2</sub> per year</li> <li>Would not cause NAAQS exceedance or increase the frequency or severity of any existing violations.</li> <li>No indirect effects expected.</li> </ul>	<ul style="list-style-type: none"> <li>Reduction in criteria pollutants: 54 TPY</li> <li>Reduction in GHG emissions: 97.5 MT CO<sub>2</sub> per year</li> <li>Would not cause NAAQS exceedance or increase the frequency or severity of any existing violations.</li> <li>Indirect impacts may occur due to air tours outside the ATMP planning area if winds transport emissions to within the ATMP planning area, and some areas not currently exposed to emissions from air tours (outside the ATMP planning area) may be exposed to emissions.</li> <li>Highly unlikely that air tours displaced to outside the ATMP planning area would result in air quality impacts or change the current attainment status of the Park.</li> </ul>	<ul style="list-style-type: none"> <li>Reduction in criteria pollutants: 3.4 TPY</li> <li>Reduction in GHG emissions: 6.09 MT CO<sub>2</sub> per year</li> <li>Would not cause NAAQS exceedance or increase the frequency or severity of any existing violations.</li> <li>Indirect impacts may occur due to air tours outside the ATMP planning area if winds transport emissions to within the ATMP planning area, and some areas not currently exposed to emissions from air tours (outside the ATMP planning area) may be exposed to emissions.</li> <li>Highly unlikely that air tours displaced to outside the ATMP planning area would result in air quality impacts or change the current attainment status of the Park.</li> </ul>	<ul style="list-style-type: none"> <li>Reduction in criteria pollutants: 43.4 TPY</li> <li>Reduction in GHG emissions: 78.4 MT CO<sub>2</sub> per year</li> <li>Would not cause NAAQS exceedance or increase the frequency or severity of any existing violations.</li> <li>Indirect impacts may occur due to air tours outside the ATMP planning area if winds transport emissions to within the ATMP planning area, and some areas not currently exposed to emissions from air tours (outside the ATMP planning area) may be exposed to emissions.</li> <li>Highly unlikely that air tours displaced to outside the ATMP planning area would result in air quality impacts or change the current attainment status of the Park.</li> </ul>
Biological Resources	<ul style="list-style-type: none"> <li>Commercial air tour noise would continue to affect wildlife within the ATMP planning area.</li> <li>Time above 35 dBA: &lt;330 minutes in 70% of ATMP planning area.</li> </ul>	<ul style="list-style-type: none"> <li>Direct beneficial effects to biological resources are expected. No direct impacts to biological resources within the ATMP planning area but could result in some indirect impacts</li> </ul>	<ul style="list-style-type: none"> <li>Time-of-day restrictions: 1 hour after sunrise to 1 hour before sunset (non-quiet technology aircraft) to protect species active during dawn and dusk.</li> <li>Time above 35 dBA:</li> </ul>	<ul style="list-style-type: none"> <li>Time-of-day restrictions: 9:00 AM to 5:00 PM (non-quiet technology aircraft) to protect species active during dawn and dusk.</li> <li>Seasonal restrictions: Air tours permitted June 16 through Sept.</li> </ul>

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Environmental Impact Category	Alternative 1 (No Action)	Alternative 2 (Preferred)	Alternative 3	Alternative 4
	<ul style="list-style-type: none"> <li>• Not expected to result in indirect effects to wildlife.</li> </ul>	<ul style="list-style-type: none"> <li>• due to air tour displacement outside the ATMP planning area.</li> </ul>	<ul style="list-style-type: none"> <li>• &lt;225 minutes a day in entire ATMP planning area.</li> <li>• Could result in indirect effects to wildlife due to air tour displacement outside the ATMP planning area.</li> </ul>	<ul style="list-style-type: none"> <li>• 30 to minimize impacts on nesting birds and bighorn sheep lamb rearing.</li> <li>• Time above 35 dBA: &lt;75 minutes in entire ATMP planning area.</li> <li>• Could result in indirect effects to wildlife due to air tour displacement outside the ATMP planning area.</li> </ul>
Cultural Resources	<ul style="list-style-type: none"> <li>• Cultural resources would continue to be impacted by air tours, as noise and visual effects would impact the feeling and setting of cultural resources.</li> <li>• Time above 35 dBA: &lt;330 minutes in entire the ATMP planning area.</li> <li>• Not expected to result in indirect effects to cultural resources within the APE.</li> </ul>	<ul style="list-style-type: none"> <li>• Would reduce the noise and remove visual intrusions from the setting of cultural resources within the APE.</li> <li>• Could result in some indirect impacts to cultural resources within the APE.</li> </ul>	<ul style="list-style-type: none"> <li>• Would reduce noise and visual impacts that could detract from the feeling and setting of cultural resources within the APE.</li> <li>• Annual (3,657) and daily (25) limits for air tour operations within the APE would reduce the likelihood that an air tour would interrupt tribal practices.</li> <li>• 12-hr equivalent sound level: 52.4 dBA</li> <li>• Time above 35 dBA: &lt;225 minutes in portions of ATMP planning area.</li> <li>• Could result in air tour displacement outside the ATMP planning area.</li> </ul>	<ul style="list-style-type: none"> <li>• Would reduce noise and visual impacts that could detract from the feeling and setting of cultural resources within the APE.</li> <li>• Annual (751) and daily (8) limits for air tour operations within the APE would reduce the likelihood that an air tour would interrupt tribal practices.</li> <li>• 12-hr equivalent sound level: 47.5 dBA</li> <li>• Time above 35 dBA: &lt;75 minutes in portions of ATMP planning area.</li> <li>• Could result in air tour displacement outside the ATMP planning area.</li> </ul>
Wilderness	<ul style="list-style-type: none"> <li>• Air tour noise within and near Wilderness detracts from the natural quality and opportunity for solitude.</li> <li>• Time audible within Wilderness &lt;480 minutes a day.</li> </ul>	<ul style="list-style-type: none"> <li>• Offers the greatest protection to Wilderness since commercial air tours would not be able to fly over Wilderness.</li> <li>• Could result in indirect impacts to Wilderness areas associated with</li> </ul>	<ul style="list-style-type: none"> <li>• Annual (3,657) limits for air tours within the ATMP planning area would enhance Wilderness character.</li> <li>• Would reduce noise impacts that would detract from the natural quality and</li> </ul>	<ul style="list-style-type: none"> <li>• Annual (751) limits for air tours within the ATMP planning area would enhance Wilderness character.</li> <li>• Would reduce noise impacts that would detract from the natural quality and</li> </ul>

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Environmental Impact Category	Alternative 1 (No Action)	Alternative 2 (Preferred)	Alternative 3	Alternative 4
	<ul style="list-style-type: none"> <li>No indirect effects expected.</li> </ul>	<p>the sights and sounds of air tours if tours were displaced to outside the ATMP planning area.</p>	<p>opportunities for solitude within Wilderness.</p> <ul style="list-style-type: none"> <li>Time audible within Wilderness: &lt;300 minutes a day</li> <li>Could result in some indirect impacts to Wilderness areas if tours were displaced to outside the ATMP planning area and the sights and sounds of those tours affected Wilderness areas.</li> </ul>	<p>opportunities for solitude within Wilderness.</p> <ul style="list-style-type: none"> <li>Time audible within Wilderness: &lt;90 minutes a day</li> <li>Could result in some indirect impacts to Wilderness areas if tours were displaced to outside the ATMP planning area and the sights and sounds of those tours affected Wilderness areas.</li> </ul>
Visitor Use and Experience and Other Recreational Opportunities	<ul style="list-style-type: none"> <li>Impacts to interpretive programs at the Amphitheater due to sound levels from air tours resulting in speech interference and inability to hear natural sounds.</li> <li>Impacts to visitor experience in natural areas of the Park related to the intrusion of audible air tour noise where visitors would expect natural sounds to prevail during their visit to the Park.</li> <li>Maintains the current availability of air tours for those that wanted to view the Park from an aerial vantage point.</li> <li>Audible air tour noise: at least 210 minutes a day</li> <li>Time above 52 dBA: 49 minutes a day</li> <li>No indirect effects expected.</li> </ul>	<ul style="list-style-type: none"> <li>Offers the greatest protection to visitor use and experience by eliminating air tours within the ATMP planning area.</li> <li>Air tours occurring outside the ATMP planning area may result in noise in other areas near those flights which could affect the visitor experience.</li> <li>Indirect impacts to visitor experience and points of interest could occur if flights were displaced to outside the ATMP planning area.</li> </ul>	<ul style="list-style-type: none"> <li>Annual (3,657) and daily (25) limits on air tours within the ATMP planning area would reduce impacts.</li> <li>Indirect impacts to visitor experience and points of interest could occur if flights were displaced to outside the ATMP planning area.</li> <li>Limits the availability of air tours for those interested in viewing the Park from an aerial perspective.</li> <li>Time audible: &lt;300 minutes a day</li> <li>Time above 52 dBA: up to 32.1 minutes a day</li> </ul>	<ul style="list-style-type: none"> <li>Annual (751) and daily (8) limits on air tours within the ATMP planning area would reduce impacts.</li> <li>Indirect impacts to visitor experience and points of interest could occur if flights were displaced to outside the ATMP planning area.</li> <li>Limits the availability of air tours for those interested in viewing the Park from an aerial perspective.</li> <li>Time audible: &lt;105 minutes a day</li> <li>Time above 52 dBA: up to 10.3 minutes a day</li> </ul>

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Environmental Impact Category	Alternative 1 (No Action)	Alternative 2 (Preferred)	Alternative 3	Alternative 4
Environmental Justice and Socioeconomics	<ul style="list-style-type: none"> <li>• Would not result in disproportionately high or adverse impacts to EJ populations or impact those populations in ways that are unique to those EJ populations.</li> <li>• DNL &lt;60 dB</li> <li>• 97.5 MT CO<sub>2</sub></li> <li>• Peak month average day: 38 tours</li> </ul>	<ul style="list-style-type: none"> <li>• Would not result in disproportionately high or adverse impacts to EJ populations or impact those populations in ways that are unique to those EJ populations.</li> <li>• Could impact employment or the amount of income that air tour operators and other ancillary businesses generate from conducting air tours within the ATMP planning area.</li> </ul>	<ul style="list-style-type: none"> <li>• Annual (3,657) and daily (25) limits on air tours within the ATMP planning area would reduce impacts.</li> <li>• Would not result in disproportionately high or adverse impacts to EJ populations or impact those populations in ways that are unique to those EJ populations.</li> <li>• DNL &lt;60 dB</li> <li>• Reduction in GHG emissions: 6.09 MT CO<sub>2</sub> per year</li> <li>• Could impact employment or the amount of income that air tour operators and other ancillary businesses generate from conducting air tours within the ATMP planning area.</li> </ul>	<ul style="list-style-type: none"> <li>• Annual (751) and daily (8) limits on air tours within the ATMP planning area would reduce impacts.</li> <li>• Would not result in disproportionately high or adverse impacts to EJ populations or impact those populations in ways that are unique to those EJ populations.</li> <li>• DNL &lt; 60 dB</li> <li>• Reduction in GHG emissions: 78.4 MT CO<sub>2</sub> per year</li> <li>• Could impact employment or the amount of income that air tour operators and other ancillary businesses generate from conducting air tours within the ATMP planning area.</li> </ul>
Visual Effects	<ul style="list-style-type: none"> <li>• Air tours would continue to impact viewsheds primarily near Blackberry Trail and Old Baldy.</li> <li>• No indirect effects expected.</li> <li>• Peak month average day: 38 tours</li> </ul>	<ul style="list-style-type: none"> <li>• Alternative 2 would provide the greatest protection to Park viewsheds and would benefit visual resources and visual character within the Park.</li> <li>• Indirect impacts to viewsheds could occur if flights were displaced to outside the ATMP planning area.</li> </ul>	<ul style="list-style-type: none"> <li>• Annual (3,657) and daily (25) limits would reduce the likelihood of visual impacts compared to current conditions.</li> <li>• Indirect impacts to viewsheds could occur if flights were displaced to outside the ATMP planning area.</li> </ul>	<ul style="list-style-type: none"> <li>• Annual (751) and daily (8) limits would reduce the likelihood of visual impacts compared to current conditions.</li> <li>• Indirect impacts to viewsheds could occur if flights were displaced to outside the ATMP planning area.</li> </ul>
DOT Section 4(f) Resources	<ul style="list-style-type: none"> <li>• FAA consulted with NPS, who determined that the No Action Alternative would result in substantial impairment to Section</li> </ul>	<ul style="list-style-type: none"> <li>• No substantial impairment of Section 4(f) resources in the ATMP planning area.</li> <li>• No “constructive use” to any Section 4(f)</li> </ul>	<ul style="list-style-type: none"> <li>• Annual (3,657) and daily (25) limits would reduce the likelihood of impacts.</li> <li>• No substantial impairment of Section</li> </ul>	<ul style="list-style-type: none"> <li>• Annual (751) and daily (8) limits would reduce the likelihood of impacts.</li> <li>• No substantial impairment of Section</li> </ul>

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<b>Environmental Impact Category</b>	<b>Alternative 1 (No Action)</b>	<b>Alternative 2 (Preferred)</b>	<b>Alternative 3</b>	<b>Alternative 4</b>
	4(f) resources.	properties.	4(f) resources in the ATMP planning area. <ul style="list-style-type: none"> <li>•No “constructive use” to any Section 4(f) properties.</li> <li>•DNL &lt;60 dB</li> <li>•Time above 35 dBA: ≥ 75 minutes</li> <li>•Time above 52 dBA: ≤68.1 minutes per day.</li> </ul>	4(f) resources in the ATMP planning area. <ul style="list-style-type: none"> <li>•No “constructive use” to any Section 4(f) properties.</li> <li>•DNL &lt;60 dB</li> <li>•Time above 35 dBA: ≥ 15 minutes</li> <li>•Time above 52 dBA: ≤ 21.1 minutes per day.</li> </ul>

**Appendices for the Draft Environmental  
Assessment for an Air Tour Management  
Plan for  
Mount Rushmore National Memorial**

## **List of Appendices**

Appendix A: References

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Appendix I: Section 4(f) Analysis

Appendix J: Public Scoping Newsletter and Comment Summary Report

# **APPENDIX A**

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## **APPENDIX B**

### List of Acronyms, Abbreviations, and Glossary



## Acronyms and Abbreviations

AAD	Average Annual Day
The Act	National Parks Air Tour Management Act of 2000
ACS	American Community Survey
AEDT	Aviation Environmental Design Tool
AGL	Above Ground Level
ANSI	American National Standards Institute
APE	Area of Potential Effects
ATMP	Air Tour Management Plan
ATMP planning area	The area within which an ATMP regulates commercial air tours over a national Park or within ½-mile outside the Park's boundary during which the aircraft flies below 5,000 ft. AGL.
CEQ	Council on Environmental Quality
CFR	Code of Federal Regulations
CH <sub>4</sub>	Methane
CO	Carbon Monoxide
CO <sub>2</sub>	Carbon Dioxide
CR GRID	Cultural Resource Geographic Research Information Display
dB	Decibels
dBA	Decibels (A-weighted scale)
DDT	Dichloro-diphenyl-trichloroethane
DNL	Day-night Average Sound Level (denoted by the symbol $L_{dn}$ )
DOT	United States Department of Transportation
EA	Environmental Assessment
EJ	Environmental Justice
EO	Executive Order
EPA	Environmental Protection Agency
ESA	Endangered Species Act
FAA	Federal Aviation Administration
ft.	Feet
FR	Federal Register
FSDO	Flight Standards District Office
GHG	Greenhouse Gas
H <sub>2</sub> O	Water Vapor
IOA	Interim Operating Authority
IPCC	Intergovernmental Panel on Climate Change
L <sub>50</sub>	The median or L <sub>50</sub> sound level (in decibels) is the sound level exceeded 50 percent of the day
L <sub>Aeq</sub>	Equivalent Continuous Sound Level
L <sub>dn</sub>	Day-night Average Sound Level
L <sub>max</sub>	The loudest sound level, in dBA, generated by the loudest event
MBTA	Migratory Bird Treaty Act
MOU	Memorandum of Understanding

MRNMHD	Mount Rushmore National Memorial Historic District
MSL	Mean Sea Level
MT	Metric Tons
N <sub>2</sub> O	Nitrous Oxide
NAAQS	National Ambient Air Quality Standards
The National Register	The National Register of Historic Places
NEPA	National Environmental Policy Act
NHPA	National Historic Preservation Act
NO <sub>2</sub>	Nitrogen Dioxide
NOAA	National Oceanic and Atmospheric Administration
NPS	National Park Service
O <sub>3</sub>	Ozone
The Park	Mount Rushmore National Memorial
Pb	Lead
PM	Particulate Matter
PM <sub>2.5</sub>	Particulate matter sized 2.5 micrometers in aerodynamic diameter or less
PM <sub>10</sub>	Particulate matter sized 10 micrometers in aerodynamic diameter or less
SHPO	State Historic Preservation Office
SLAMS	State and Local Air Monitoring Stations
SO <sub>2</sub>	Sulfur Dioxide
TCP	Traditional Cultural Properties
TPY	Tons per Year
U.S.	United States
U.S.C.	United States Code
USFS	United States Forest Service
USFWS	United States Fish and Wildlife Service

# **APPENDIX C**

## List of Preparers

Appendix C lists the names of the principal persons contributing information to this draft EA.

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# **APPENDIX D**

## Distribution List

The agencies have sent the following agencies and parties copies of this draft EA and draft ATMP documents for participation in the NEPA process.

### **Federal Agencies**

- Bureau of Indian Affairs
- Bureau of Land Management
- Federal Emergency Management Agency
- Federal Highway Administration
- Federal Railroad Administration
- National Park Service
- Rep. Dusty Johnson – U.S. Representative from South Dakota
- Sen. John Thune – U.S. Senator from South Dakota
- Sen. Mike Rounds – U.S. Senator from South Dakota
- U.S. Army Corps of Engineers
- U.S. Department of Agriculture – Natural Resources Conservation Service
- U.S. Department of Commerce
- U.S. Department of Energy – Western Area Power Administration
- U.S. Department of Housing and Urban Development
- U.S. Department of the Interior
- U.S. Environmental Protection Agency Region VIII
- U.S. Fish and Wildlife Service
- U.S. Geological Survey – Dakota Water Science Center
- USDA Forest Service

### **South Dakota State Agencies**

- Governor of South Dakota
- South Dakota Bureau of Finance and Management
- South Dakota Department of Agriculture
- South Dakota Department of Agriculture and Natural Resources - Air Quality Program
- South Dakota Department of Agriculture and Natural Resources – Surface Water Quality Program
- South Dakota Department of Game, Fish, and Parks – Division of Parks and Recreation
- South Dakota Department of Game, Fish, and Parks – Division of Wildlife
- South Dakota Department of Health
- South Dakota Department of Human Services
- South Dakota Department of Public Safety
- South Dakota Department of Tourism
- South Dakota Department of Transportation – Division of Planning and Engineering
- South Dakota Geological Survey
- South Dakota Governor's Office of Economic Development
- South Dakota Office of Emergency Management
- South Dakota Office of School and Public Lands

- South Dakota Public Utilities Commission
- South Dakota Secretary of State
- South Dakota Secretary of Transportation
- South Dakota State Historical Society

### **Pennington County and Local Agencies**

- Mayor of Keystone, South Dakota
- Pennington County
- Pennington County Commission
- Pennington County Emergency Management Department
- Pennington County Fire Department
- Pennington County Highway Department
- Pennington County Planning Department
- Pennington County Sheriff

### **Community Organizations, Associations, Businesses, and Interest Groups**

- South Dakota Wing – Civil Air Patrol

### **Tribal Nations**

- Assiniboine and Sioux Tribes of the Fort Peck Indian Reservation
- Cheyenne and Arapaho Tribes of Oklahoma
- Cheyenne River Sioux Tribe (of the Cheyenne River Reservation, South Dakota)
- Crow Creek Sioux Tribe (of the Crow Creek Reservation, South Dakota)
- Crow Tribe of Montana
- Eastern Shoshone Tribe of the Wind River Reservation, Wyoming
- Flandreau Santee Sioux Tribe of South Dakota
- Fort Belknap Indian Community of the Fort Belknap Reservation
- Kiowa Indian Tribe of Oklahoma
- Lower Brule Sioux Tribe of the Lower Brule Reservation
- Northern Arapaho Tribe of the Wind River Reservation, WY
- Northern Cheyenne Tribe of the Northern Cheyenne Indian Reservation
- Oglala Lakota Nation
- Ponca Tribe of Nebraska
- Rosebud Sioux Tribe of the Rosebud Indian Reservation
- Santee Sioux Nation, Nebraska
- Sisseton-Wahpeton Oyate of the Lake Traverse Reservation
- Spirit Lake Tribe
- Standing Rock Sioux Tribe of North & South Dakota
- Three Affiliated Tribes of the Berthold Reservation, North Dakota (Mandan, Hidatsa and Arikara)



- Nation)
- Turtle Mountain Band of Chippewa Indians of North Dakota
- Upper Sioux Community, Minnesota
- Yankton Sioux Tribe of South Dakota

### **Public Review**

Copies of the draft EA are available for public review and comment. The full document is available via the following:

**NPS Planning, Environmental and Public Comment website:**

<https://parkplanning.nps.gov/MountRushmoreATMP>

## **APPENDIX E**

### **Environmental Impact Analysis Methods**

# **Draft Environmental Assessment for an Air Tour Management Plan for Mount Rushmore National Memorial**

## **Environmental Impact Analysis Methodologies**

### **1.0 Introduction and Overview**

The Federal Aviation Administration (FAA), in cooperation with the National Park Service (NPS) (the agencies), are working together to develop an Air Tour Management Plan (ATMP) for Mount Rushmore National Memorial (Park). In compliance with the National Environmental Policy Act (NEPA), the agencies prepared a draft Environmental Assessment (EA) for the Park's ATMP. The proposed action is to implement an ATMP for the Park and is described in Section 1.3 of the draft EA. This technical appendix describes the methodologies used for evaluating the potential for environmental impacts to occur from the alternatives considered in the draft EA.

The agencies have identified environmental impact categories that require detailed analysis in the draft EA due to the potential environmental impacts resulting from implementing the alternatives (refer to Section 1.5 of the draft EA for a discussion of the environmental impact categories not analyzed in detail). The methodologies in this document reflect the analysis that has been performed by environmental impact category for each of the alternatives. The results of these analyses are described in the Environmental Consequences sections of the draft EA. This methodology is based on the 2015 FAA 1050.1F Order and Desk Reference - *Environmental Impacts: Policies and Procedures*, and NPS NEPA policies and procedures (2015 NPS NEPA Handbook, 2015 NPS NEPA Handbook Supplemental Guidance - *Writing Impact Analysis Sections for EAs and EISs*).

Under the National Parks Air Tour Management Act of 2000 (the Act) and its implementing regulations an ATMP regulates commercial air tours over a national park or within ½-mile outside the Park's boundary during which the aircraft flies below 5,000 feet (ft.) above ground level (AGL) (ATMP planning area). Air tours outside of the ATMP planning area are not regulated under the ATMP. Unless otherwise noted, the study area for each environmental impact category is the ATMP planning area.

### **2.0 Environmental Baseline and Impact Analysis for the No Action Alternative**

For all environmental impact categories described herein, impact analysis for each alternative discloses how environmental conditions would change relative to current conditions, which serves as the environmental baseline for this analysis. Impacts are analyzed relative to current conditions, so that they can be described and measured relative to a level for which data exists. Each analysis provides a comparative analysis between alternatives for each environmental impact category.

Existing conditions for air tour activity is defined as the three-year average of commercial air tours conducted over the Park from 2017-2019, along with operator-provided route and altitude information. Reporting data from 2013 and 2014 are considered incomplete as reporting protocols were not fully in place at that time and likely do not reflect actual flights. The agencies consider the 2017-2019, three-year average, existing conditions for the purposes of understanding both the existing number of commercial air tour flights over the Park and impacts from that activity. Flight numbers from a single year were not chosen as the existing condition because the three-year average accounts for both

variation across years and takes into account the most recent years prior to the COVID-19 pandemic. The 2020 COVID-19 pandemic resulted in atypical commercial air tour operations, which does not represent the conditions in a typical year. The agencies also decided against using 2021 or 2022 data due to continued abnormalities associated with the COVID-19 pandemic and the unavailability of reporting data for 2021 or 2022 during most of the planning effort.

The No Action Alternative represents the yearly average number of commercial air tours over the Park from 2017-2019 across the two current operators, with the possibility of operators flying up to their interim operating authority (IOA). The Act allowed existing commercial air tour operations occurring at the time the law was enacted to continue until an ATMP for the Park was implemented by expressly requiring the FAA to grant IOA to existing operators.<sup>1,2</sup> The impacts of IOA are not analyzed nor included as the baseline condition for this alternative, though in any given year operators could conduct additional air tours up to their IOA or they may fly fewer air tours than in the period from 2017 to 2019. The affected environment for each environmental impact category discloses existing conditions of commercial air tours over the Park as it relates to resources within the study area for each category. Impact analysis for the No Action Alternative discloses the effects on the environment that would occur with existing conditions carried into the future. There are no designated routes under the No Action Alternative, but for the purpose of defining the No Action Alternative for analysis, route information provided by operators and flight tracking data, as available, are used to define the routes for this alternative. There are no altitude restrictions under the No Action Alternative.

### **3.0 Impacts Considered**

The analysis considers direct, indirect, and cumulative effects of each alternative described in Chapter 3 of the draft EA. The methodologies used in considering these effects to environmental impact categories are described by category in Section 4.0 of this document.

#### **3.1. Direct Effects**

Direct effects are those caused by the alternative and occur at the same time and place as implementation of the alternative. Direct effects consider the change from current resource condition, which is described in the affected environment, on environmental resources within the study area resulting from implementation of that alternative.

#### **3.2. Indirect Effects**

Indirect effects are those which are caused by the alternative and occur later in time or are farther removed in distance but are still reasonably foreseeable.

It is reasonably foreseeable that because of the capital investment air tour operators have in aircraft, facilities, and equipment, operators could seek to make up lost revenue from air tours over the Park resulting from a reduction in air tours by conducting air tour operations outside of the ATMP planning area, including over the ATMP planning area at or above 5,000 ft. AGL, to the extent possible. In accordance with Section 1508.1(g)(2) of Council on Environmental Quality (CEQ) NEPA regulations, the

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<sup>1</sup> 49 U.S.C. § 40128(c)(2)(A)(i-ii)

<sup>2</sup> Federal Register, Vol. 70, No. 194, October 7, 2005, page 58778

agencies considered reasonably foreseeable actions that could occur as a result of the alternative in the indirect effects analysis for each environmental impact category. The indirect effects analyses consider potential shifts in air tour operations resulting from implementation of each alternative and the potential for displacement of air tours outside of the ATMP planning area due to a reduction in the number of authorized flights per year compared to existing conditions.

Consistent with Section 1502.21 of CEQ NEPA regulations, the agencies have disclosed that specific air tour routes, altitudes, and numbers of tours are not available to assess impacts that would occur from air tours that are displaced outside the ATMP planning area, including over the ATMP planning area at or above 5,000 ft. AGL, and the resultant environmental effects that would occur. In addition, because specific air tour routes are not available, it is not possible to identify all the other potential noise sources or sources of visual effects that might contribute to the acoustic or visual conditions if operators were to fly just outside the ATMP planning area. It is difficult to predict whether any displaced air tours would result in operations on alternative routes that could have effects within or outside the ATMP planning area. This is because the airspace outside of the ATMP planning area is uncontrolled airspace, and operators fly under Visual Flight Rules (VFR). VFR is based on the principle of “see and avoid,” and does not require specific routes or altitudes, excepting weather minimums (see 14 Code of Federal Regulations (CFR) § 91.155).<sup>3</sup> Therefore, the exactness of routes and altitudes for air tours outside of the ATMP planning area flying VFR could vary depending on client demand, weather, fuel load, and other costs. See 40 CFR § 1502.21 (c)(1). Agencies are not required to conduct new scientific or technical research to analyze impacts and may rely on existing information to assess impacts.

For the purposes of disclosing the potential indirect effects of each alternative, the agencies have considered operator websites, the current availability of air tours over other lands outside the ATMP planning area, and the proximity of operator facilities to other airports or heliports. The analysis considers current and historical flight patterns, the prevalence of features outside the ATMP planning area that may attract air tours (such as known points of interest), and the potential for operators to fly along the perimeter of the ATMP planning area and/or above 5,000 ft. AGL over the ATMP planning area to continue to observe features within the ATMP planning area. Indirect effects analyses consider the number of air tours proposed in each alternative and the likely displacement of air tours outside the ATMP planning area. The draft EA qualitatively discusses what potential shifts in air tour operations would mean for resources within or outside of the ATMP planning area to the extent that they are present.

### 3.3. Cumulative Effects

Cumulative effects are effects on the environment that result from the incremental effects of the action when added to the effects of other past, present, and reasonably foreseeable actions regardless of what agency (federal or non-federal) or person undertakes such other actions. Based on local knowledge from NPS staff, the agencies have identified other ongoing and reasonably foreseeable actions to consider within each environmental impact category.

The cumulative effects analysis qualitatively considers the effects of each alternative along with any known past, present, or future actions that would contribute to environmental effects to resources in

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<sup>3</sup> <https://www.faa.gov/files/gslac/courses/content/25/185/vfr%20weather%20minimums.pdf>

the ATMP planning area. The draft EA presents this analysis in a comparative manner across all alternatives and describes the context of the effect in terms of other environmental effects that are present or likely to occur within the ATMP planning area.

#### 4.0 Analysis Methodology by Environmental Impact Category

The section presents the impact analysis methodologies used in development of the draft EA for each environmental impact category considered.

##### 4.1. Noise and Noise-Compatible Land Use

The impact analysis for noise and noise-compatible land use discloses the noise generated from air tours under each alternative as modeled. The analysis also includes a comparison of the effects across alternatives. The methods used for the noise modeling are presented below and also described in the *Noise Technical Analysis*, Appendix F of the draft EA.

###### 4.1.1. Noise Modeling

There are numerous ways to measure the potential impacts of noise from commercial air tours on the acoustic environment of a park, including intensity, duration, and spatial footprint of the noise. The ambient sound level data and air tour operational data are used as inputs into the FAA's Aviation Environmental Design Tool (AEDT) to compute the following metrics to be used for the noise technical analysis (Table 1).

*Table 1. Primary Metrics Used for the Noise Technical Analysis*

Metric	Relevance and citation
Equivalent sound level, $L_{Aeq, 12\text{ hr}}$	The logarithmic average of commercial air tour sound levels, in dBA, over a 12-hour day. The selected 12-hour period is 7 AM to 7 PM to represent typical daytime commercial air tour operating hours.
Day-night average sound level, $L_{dn}$ (or DNL)	<p>The logarithmic average of sound levels, in dBA, over a 24-hour day, DNL takes into account the increased sensitivity to noise at night by including a 10 dB penalty on noise events occurring between 10 PM and 7 AM local time.</p> <p>Note: Both <math>L_{Aeq, 12\text{ hr}}</math> and DNL characterize:</p> <ul style="list-style-type: none"> <li>Increases in both the loudness and duration of noise events</li> <li>The number of noise events during specific time period (12-hours for <math>L_{Aeq, 12\text{ hr}}</math> and 24-hours for DNL)</li> </ul> <p>If there are no nighttime events, then <math>L_{Aeq, 12\text{ hr}}</math> is arithmetically three dBA higher than DNL as the events are averaged over 24 hours instead of 12 hours.</p> <p>The FAA's (2015, Exhibit 4-1) indicators of significant impacts are for an action that would increase noise by DNL 1.5 dB or more for a noise sensitive area that is exposed to noise at or above the DNL 65 dB noise exposure level, or that will be exposed at or above the DNL 65 dB level due to a DNL 1.5 dB or greater increase, when compared to the No Action Alternative for the same timeframe.</p>

Time Audible Natural Ambient	<p>The total time (in minutes) that aircraft noise levels are audible to an attentive listener with normal hearing under natural ambient conditions.</p> <p>The natural ambient is the sound level exceeded 50 percent of the time <math>L_{50}</math>, determined from the natural sound conditions found in a ATMP planning area, including all sounds of nature (i.e., wind, streams, wildlife, etc.), and excluding all human and mechanical sounds. Time audible does not indicate how loud the event is, only if it might be heard.</p>
Time Above 35 dBA	<p>The amount of time (in minutes) that aircraft sound levels are above a given threshold (i.e., 35 dBA).</p> <p>In quiet settings, outdoor sound levels exceeding this level degrade experience in outdoor performance venues (American National Standards Institute (ANSI), 2007)<sup>4</sup>; blood pressure increases in sleeping humans (Haralabidis et al., 2008)<sup>5</sup>; maximum background noise level inside classrooms (ANSI/Acoustical Society of America S12.60/Part 1-2010)<sup>6</sup>.</p>
Time Above 52 dBA	<p>The amount of time (in minutes) that aircraft sound levels are above a given threshold (i.e., 52 dBA).</p> <p>At this background sound level, normal voice communication at five meters (two people five meters apart), or a raised voice to an audience at ten meters would result in 95% sentence intelligibility (United States Environmental Protection Agency, Office of Noise Abatement and Control, 1974)<sup>7</sup>. This metric represents the level at which one may reasonably expect interference with Park interpretive programs, activities that require communication from a distance and other general visitor communication.</p>

<sup>4</sup> American National Standards Institute, Inc. (2007). Quantities and procedures for description and measurement of environmental sound — Part 5: Sound level descriptors for determination of compatible land use. ANSI/ASA S12.9-2007/PART 5 (R2020), 1-20. <https://webstore.ansi.org/Standards/ASA/ANSIASAS122007PartR2020>

<sup>5</sup> Haralabidis A.S., Dimakopoulou, K., Vigna-Taglianti, F., Giampaolo, M., Borgini, A., Dudley, M., & Jarup, L. (2008). Acute effects of night-time noise exposure on blood pressure in populations living near airports. *European Heart Journal Advance Access*. <https://academic.oup.com/eurheartj/article/29/5/658/440015>

<sup>6</sup> American National Standards Institute, Inc. (2002). Acoustical performance criteria, design requirements, and guidelines for schools, Part 1: Permanent schools. *Acoustical Society of America*, ANSI/ASA S12.60-2002/Part 1. <https://webstore.ansi.org/Standards/ASA/ANSIASAS1260Part2010R2020>.

<sup>7</sup> United States Environmental Protection Agency, Office of Noise Abatement and Control (1974). Information on levels of environmental noise requisite to protect public health and welfare with an adequate margin of safety. NPC Online Library, 550/9-74-004, 1-78. <https://www.nrc.gov/docs/ML1224/ML12241A393.pdf>

Maximum sound level, $L_{max}$	The loudest sound level, in dBA, generated by the loudest event; it is event-based and is independent of the number of operations. $L_{max}$ does not provide any context of frequency, duration, or timing of exposure.
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#### 4.1.2. Indirect Effects

The indirect effects analysis for noise and noise-compatible land use considers potential shifts in air tour operations resulting from implementation of an alternative within the ATMP planning area and the potential for displacement of air tours outside of the ATMP planning area, or over the ATMP planning area at or above 5,000 ft. AGL, due to a reduction in the number of authorized flights per year compared to existing conditions. FAA considers that noise levels are generally significant if aircraft activity under the alternative would increase noise by annual DNL 1.5 dB or more for a noise sensitive area that is exposed to noise at or above the DNL 65 dB noise exposure level, or that would be exposed at or above the DNL 65 dB level due to a DNL 1.5 dB or greater increase, when compared to the existing conditions for the same timeframe (FAA Order 1050.1F, Exhibit 4-1).

The analysis consists of two separate components:

- A noise analysis that, for the aircraft currently operating at the Park, assesses the activity threshold that would generate a noise exposure level at or above DNL 65 dB in a single location. Use of the DNL 65 dB threshold speaks to whether or not noise from air tours operating outside the ATMP planning area under the alternative would result in levels incompatible with noise-sensitive land use (i.e., DNL 65 dB), but the threshold of significance is a 1.5 dB or more increase at or above the resulting DNL 65 dB level as defined in FAA Order 1050.1F and 14 CFR Part 150.1.
  - The noise analysis considers the activity threshold two ways:
    - For the aircraft type with the loudest noise level, what is the activity level that would generate a noise level at or above DNL 65 dB?
    - For the aircraft types and fleet mix distribution within the 2017-2019 peak month average day (PMAD), what is the activity level that would generate a noise level at or above DNL 65 dB?
- An activity assessment that describes the potential number of aircraft operations that may occur at a given point outside the ATMP planning area over a 24-hour period due to a no air tour alternative or additional flights outside the ATMP planning area resulting from a decrease in annual operations.
  - The analysis assumed air tour operations would comply with applicable aviation safety regulations.

The results of this analysis are described in the indirect effects analysis in the environmental consequences discussion of the draft EA for Noise and Noise-Compatible Land Use.

#### 4.1.3. Cumulative Effects

The impacts analysis for cumulative effects to noise and noise-compatible land use discloses the likely changes to the ambient condition (not natural ambient, which is disclosed in the Affected Environment section of the draft EA) as modeled for each alternative. The qualitative discussion includes mention of



whether the overall soundscape would become louder, quieter, or stay the same. The cumulative impact analysis includes the noise from air tours plus other noise sources. The section also provides discussion of differences between alternatives.

## 4.2. Air Quality and Climate Change

### 4.2.1. Air Quality Analysis

The Environmental Protection Agency (EPA) has established the National Ambient Air Quality Standards (NAAQS) (40 CFR Part 50) for six criteria air pollutants which can be harmful to human health and the environment.<sup>8</sup> Primary standards protect public health, including sensitive populations such as children and the elderly, while secondary standards protect public welfare, including visibility impairment and damage to animals, vegetation, and buildings. The six criteria pollutants are:

- Carbon monoxide (CO)
- Lead (Pb)
- Nitrogen dioxide (NO<sub>2</sub>)
- Ozone (O<sub>3</sub>)<sup>9</sup>
- Particulate matter: aerodynamic diameter  $\leq 2.5 \mu\text{m}$  (PM<sub>2.5</sub>)<sup>10</sup> and aerodynamic diameter  $\leq 10 \mu\text{m}$  (PM<sub>10</sub>)
- Sulfur dioxide (SO<sub>2</sub>)

The EPA designates geographic areas<sup>11</sup> based on their relation to the NAAQS by pollutant:

- Nonattainment Area: Areas of the country where air pollution levels persistently exceed one or more of the national ambient air quality standards.
- Attainment Area: Any area that meets the standard for all criteria pollutants.
- Maintenance Area: Any area that was formerly in nonattainment status for one or more criteria pollutants, but currently meets the standard for all criteria pollutants.

The General Conformity Rule (40 CFR Part 93) ensures that federal actions do not cause or contribute to new violations of the NAAQS, worsen existing NAAQS violations, or delay attainment of the NAAQS. Federal agencies are required to work with state, tribal, and local governments in nonattainment or maintenance areas to ensure their actions conform to relevant air quality plans.<sup>12</sup>

### 4.2.2. Study Area and Data Sources

The study area for the air quality analysis corresponds with the ATMP planning area. The study area is compared with geographic information systems (GIS) data in EPA's Green Book<sup>13</sup> to confirm attainment status (attainment, nonattainment, or maintenance by pollutant). The FAA's AEDT is used to derive

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<sup>8</sup> NAAQS Table: <https://www.epa.gov/criteria-air-pollutants/naaqs-table>

<sup>9</sup> Nitrogen oxides (NOX) and volatile organic compounds (VOC) are considered precursors to ground-level ozone and may be closely monitored in areas with ozone concerns.

<sup>10</sup> Sulfur dioxide (SO<sub>2</sub>), NOX, VOC, and ammonia are considered precursors to PM<sub>2.5</sub>.

<sup>11</sup> Current Nonattainment Counties for All Criteria Pollutants:

<https://www3.epa.gov/airquality/greenbook/ancl.html>

<sup>12</sup> General Conformity: <https://www.epa.gov/general-conformity>

<sup>13</sup> Nonattainment Areas for Criteria Pollutants (Green Book): <https://www.epa.gov/green-book>

emission rates for aircraft used in air tours over the Park. The route lengths by aircraft type and number of annual operations by aircraft type are derived from operator reporting data.

#### 4.2.3. Methodology for Analyzing Air Quality Impacts

The impact analysis for air quality consists of five steps:

**1. Calculate annual flight miles for each aircraft type operating over the ATMP planning area.**

Annual flight miles over the ATMP planning area are calculated for each aircraft type by multiplying the total number of air tour operations by each route flown over the ATMP planning area.

**2. Calculate emission rates for each aircraft used in air tours over the ATMP planning area.**

The latest version of FAA's AEDT is used to develop emission rates (pounds of emissions per mile flown) for each aircraft. Emission rates for non-jet engines (i.e., those most likely conducting air tours) are based on emission factors in AEDT, which are primarily derived from the EPA's AP-42: Compilation of Emission Factors. Although the AP-42 emission factors represent the best available data, they have not been updated since the 1990s and most aircraft engines in use today are likely to be cleaner due to less-polluting fuels and improvements in engine emissions controls. Therefore, the calculated emission rates should be considered a conservative estimate of emission rates for aircraft used in air tours.

**3. Calculate emissions from air tours over the ATMP planning area.**

For each aircraft type operating over the ATMP planning area, emissions (tons per year) are calculated by multiplying the annual flight miles (step 1) by the aircraft-specific emission factor (step 2). The sum of emissions across all aircraft types represents the total emissions (by alternative) for the ATMP planning area.

**4. If the ATMP planning area is located in EPA's nonattainment and/or maintenance areas, compare emissions with *de minimis* thresholds.**

To highlight the potential impacts to ambient air quality for all criteria pollutants, the emissions results are compared with the EPA's General Conformity *de minimis* thresholds for the most stringent<sup>14</sup> nonattainment areas. EPA's General Conformity *de minimis* thresholds represent a surrogate for impacts to ambient air quality. If emissions estimates for all pollutants in the ATMP planning area are below *de minimis* thresholds, the proposed air tours are expected to result in negligible impacts to air quality.

**5. If the ATMP planning area is located in EPA's attainment areas, disclose ATMP emissions to fulfill NEPA requirements.**

Per the requirements of NEPA, disclosure of both baseline emissions and any change in emissions (comparison between the No Action Alternative and the action alternatives) shall be provided in the draft EA to understand the potential consequences to air quality. Since the ATMP planning area is located in an area of the U.S. that is in attainment for all regulated pollutants, there are no regulatory

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<sup>14</sup> The most stringent non-attainment areas (i.e., lowest *de minimis* thresholds) are categorized as "extreme" for ozone (VOCs or NOX) and "serious" for particulate matter (PM<sub>10</sub>, PM<sub>2.5</sub>, NOX, VOC, and SO<sub>2</sub>; ammonia is not considered for aircraft emissions as they relate to ATMPs).

thresholds to compare that indicate the potential air quality impacts of said emissions. Rather, the reported emissions provide a basis of acknowledgement as to what the proposed project may contribute to the attainment air shed. For the purposes of ATMPs, only emissions changes from aircraft operations for each alternative are considered.

If adverse effects on air quality are predicted, the final step of the analysis is to determine whether:

- There are any practicable mitigation measures or alternatives that would avoid or reduce impacts to air quality; and
- a substantial need for action exists, and if other alternatives with less adverse impacts on air quality will still satisfy the purpose and need without resulting in exorbitant costs.

#### *4.2.4. Climate Change Analysis*

In February 2021, the CEQ rescinded the 2019 Draft NEPA Guidance on Consideration of Greenhouse Gas Emissions and is reviewing, for revision and update, the 2016 Final Guidance on Consideration of Greenhouse Gas Emissions and the Effects of Climate Change. CEQ directs agencies to consider: 1) the potential effects of a proposed action on climate change as indicated by assessing greenhouse gas (GHG) emissions (e.g., to include, where applicable, carbon sequestration); and 2) the effects of climate change on a proposed action and its environmental impacts. Federal agencies are advised to use projected GHG emissions as a proxy for assessing an action's impact on climate change. The difference in GHG emissions between alternatives, as well as the total GHG emissions of the No Action Alternative, should be provided as part of the NEPA analysis. The 2016 CEQ guidance does not establish any particular quantity of GHG emissions as significant.

#### *4.2.5. Study Area and Data Sources*

The study area for GHG emissions from reflects the ATMP planning area. FAA's AEDT is used to derive emission rates for aircraft used in air tours over the ATMP planning area. The route lengths by aircraft type and number of annual operations by aircraft type are derived from operator reporting data.

#### *4.2.6. Methodology for Analyzing Greenhouse Gas Impacts*

The GHG analysis includes the following four steps:

##### **1. Calculate annual fuel burn for each aircraft type operating over the ATMP planning area.**

Annual fuel burn (for use with fuel burn-based emission factors in step 2) are calculated from the annual flight miles using conversion factors given in FAA's AEDT. Annual flight miles over the ATMP planning area are calculated for each aircraft type by multiplying the total number of air tour operations by each route flown within the ATMP planning area.

##### **2. Calculate GHG emission factors for each aircraft used in air tours in the ATMP planning area.**

The latest version of AEDT is used to develop a CO<sub>2</sub> equivalents (CO<sub>2</sub>e) emission factor in metric tons of emissions per gallon of fuel (MT CO<sub>2</sub>/gal) for each aircraft. CO<sub>2</sub>e emission factors in AEDT are calculated

based on the quantity of aircraft fuel burned. Since the proposed action involves only aircraft operations, MT CO<sub>2</sub>e will be assumed to be the same as the aircraft MT CO<sub>2</sub>.<sup>15</sup>

### **3. Calculate GHG emissions from air tours over the ATMP planning area.**

For each aircraft type operating over the ATMP planning area, the CO<sub>2</sub>e emissions (MT per year) are calculated by multiplying the annual fuel burn (step 1) by the aircraft-specific emission factor (step 2). The sum of emissions across all aircraft types represents the total emissions (by alternative) for the ATMP planning area.

GHG emission inventory results are not compared to the NAAQS nor any other significant criteria. The results are provided for informational purposes as a means of disclosing the project's potential effects on GHGs and climate change.

If an increase in GHG emissions is predicted, the final step of the analysis involves considering whether there are areas within the scope of the project where such emissions could be reduced through mitigation measures such as changes to more fuel-efficient aircraft, use of renewable fuels, and operational changes.

### **4.3. Biological Resources**

The study area for biological resources includes the ATMP planning area. To the extent that habitat and species occurrences correlate, impacts to biological resources are expected to be similar within the ATMP planning area. Therefore, if habitat exists for a species but occurrence is unknown, the assumption is that the species could be present and has been analyzed accordingly.

The agencies have identified federally listed species, special status species, and any critical habitats within the Affected Environment discussion of the draft EA. For any species for which habitat does not encompass the entire ATMP planning area, habitat areas for these species are identified in order to connect data on effects of air tours, such as noise contours, to potential effects on species that utilize those areas. Based on the results of this review, the Park's natural resource managers and biologists have confirmed species within the ATMP planning area that have the potential to be affected by commercial air tours based on their knowledge of wildlife responses to commercial air tours.

For special status species and/or critical habitats which have the potential to be affected by commercial air tours, the agencies have performed a literature review for species-specific management guidelines such as recommended noise limits, time of year restrictions, aircraft standoff distances, or other mitigation measures that could be feasibly addressed by the ATMP parameters. The agencies have also sought technical assistance from the U.S. Fish and Wildlife Service for species-specific management guidelines and recommendations, the results of which have been integrated into the draft EA.

The draft EA includes a qualitative analysis of the effects to biological resources that could result from each alternative. The analysis discloses how ATMP operating parameters and the resultant resource conditions would change by comparing existing conditions to the parameters proposed for each alternative. For example, the draft EA identifies areas where noise levels would change, if routes had been shifted closer or further from sensitive habitat attributes, or if altitudes would increase or decrease

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<sup>15</sup> FAA 1050.1F Desk Reference. February 2020. Section 3.3 Environmental Consequences – Climate.

as compared to existing conditions, and qualitatively discloses how that could affect biological resources. The analysis also discloses the effects of the use itself by analyzing the impacts of each alternative in the context of any documented management guidelines (as available). Based on this analysis, the agencies have also proposed an effect determination for the preferred alternative and will consult with the U.S. Fish and Wildlife Service in accordance with Section 7 of the Endangered Species Act.

#### 4.4. Cultural Resources

The analysis methodology for cultural resources (inclusive of Historical, Architectural, Archeological and Cultural Resources) consists of evaluating the potential impacts of each alternative under consideration on cultural resources identified within the NEPA study area. Section 106 of the National Historic Preservation Act (NHPA Section 106) as set forth in 36 CFR Part 800 provides the framework for gathering the information needed to assess impacts on cultural resources under NEPA, per FAA's 1050.1F Desk Reference. The NEPA study area for cultural resources corresponds with the Area of Potential Effects (APE) identified as part of the Section 106 process and encompasses the potential effects of all alternatives under consideration. The APE may be revised and refined based on the preferred alternative or the consultation process. Cultural Resources within the APE are identified in the Affected Environment of the draft EA.

Section 106 considers effects to properties (districts, sites, buildings, structures, or objects) that are listed in or eligible for listing in the National Register of Historic Places (National Register). The Section 106 process for the Park includes prehistoric or historic districts, sites, buildings, structures, and/or objects, as well as traditional cultural properties (TCPs) (inclusive of ethnographic resources and sacred sites) and cultural landscapes that have been previously documented in the APE or identified through consultation. NPS Management Policies (2006) define five types of cultural resources for consideration – archeological resources, cultural landscapes, ethnographic resources, historic and prehistoric structures, and museum collections. Because of the nature of the alternatives (i.e., no ground disturbance or physical incursion), the cultural resource identification focuses on resources that could be affected visually or by noise from aircraft. The focus of cultural resources identification is on those resources for which feeling and setting contribute to the properties' significance, including TCPs and other properties of cultural and religious significance to Native American Tribes, as identified by Native American Tribes and other consulting parties with relevant expertise. This analysis in the draft EA considers potential beneficial and adverse impacts to all cultural resources within the APE, including resources identified by the Park that may not fall under the Section 106 process, if present.

Park staff have provided information about cultural resources located within the Park boundaries and the consulting parties and Tribes have identified TCPs and sacred sites within the APE. Additional records have been gathered from the Midwest Archeological Center, the U.S. Forest Service Black Hills National Forest, Cultural Resource Geographic Research Information Display (GRID), South Dakota Archeological Research Center, and through a records request of the South Dakota State Historic Preservation Office (SHPO) to identify any additional cultural resources within the APE. Historic property identification includes previously documented properties with no formal National Register evaluation as well as those previously listed or determined eligible for listing in the National Register. No additional survey will be conducted; unevaluated or undetermined properties will be treated as eligible for the purposes of Section 106 consultation and NEPA evaluation. Using this information, a list

of cultural resources located within the APE is generated and those with unrestricted location data are mapped (any individual TCPs, sites of cultural or religious significance or boundaries of archeological districts included in the study area maps depict only general buffered areas to protect the location of sensitive sites).

The agencies have reviewed the alternatives and determined if any of the cultural resources within the APE may be affected by each alternative and evaluated the magnitude of those impacts. The analysis includes a qualitative assessment of how the ATMP operating parameters for each alternative may affect resource conditions compared to current conditions. The agencies use the time above 35 dBA metric, time above 52 dBA metric, and 12-hour equivalent sound level metric from the *Noise Technical Analysis* (Appendix F) to quantitatively assess potential noise impacts to cultural resources from Alternatives 3 and 4 as compared to the No Action Alternative. Noise data is used to identify where audible impacts may increase, decrease, or be introduced. Metrics used for this analysis included point data that is specific to cultural resources and included areas outside of the ATMP planning area that may be within the APE. Alternative 2 was not modeled, so the same data is not available for Alternative 2.

The impacts analysis considers the context and significant features of the resources as well as the nature of the impacts that may result from the action, including the intensity and severity of the impact. Effects to cultural resources would occur if implementation of the alternative would alter the characteristics of the resource that make it eligible for listing in the National Register or otherwise culturally significant. Examples of effects that adversely impact cultural resources are noted in 36 CFR 800.5(a). An adverse effect finding under Section 106 does not automatically trigger a significant impact under NEPA. The analysis of impacts will incorporate any measures developed through the Section 106 process to avoid, minimize or mitigate adverse effects. The relative effects to cultural resources is also qualitatively compared across all alternatives. The NEPA documentation will report consultation conducted as relevant to the delineation of the APE and affected environment. The results of Section 106 consultation and the FAA's proposed finding of effect will also be included for the preferred alternative when available. Relevant documentation of the Section 106 process will be included in the appendix for reference.

#### 4.5. Wilderness

An evaluation of impacts to Wilderness character includes a qualitative analysis of how each alternative would affect the Natural and Solitude or Primitive and Unconfined Recreation qualities of Wilderness character.

The results of the biological resources analysis are utilized to identify Wilderness areas that may experience potential impacts to the natural quality of Wilderness character.

To identify potential impacts to solitude within Wilderness areas, the time audible natural ambient metric from the *Noise Technical Analysis* (Appendix F) is utilized.

The analysis also considers the change in Wilderness character between current conditions and each alternative, as well as provides qualitative comparison across all alternatives.

#### 4.6. Visitor Use and Experience and Other Recreational Opportunities

The impact analysis for visitor use and experience and other recreational opportunities is analyzed for visitors and air tour clients. The visitor analysis focuses effects on visitor points of interest and how visitors use those areas, interpretive programs, and Park management objectives related to visitor use and experience, as identified in the Affected Environment of the draft EA. The Affected Environment also identifies any Park management zones and objectives that would apply to the management of commercial air tours. The environmental impact analysis quantitatively analyzes how the ATMP operating parameters and the resultant resource conditions for visitor use and experience would change by comparing existing conditions to the parameters proposed in the alternative. The analysis also utilizes the results of the *Noise Technical Analysis* (Appendix F) to identify potential impacts to visitor use and experience from the alternatives, including interpretive programs. As described in the *Noise Technical Analysis* (Appendix F), the time above 52 dBA metric represents the level at which one may reasonably expect interference with Park interpretive programs. The locations of Park interpretive programs and the corresponding time above 52 dBA are noted in order to identify impacts to interpretive programs that could occur. The analysis also considers the different noise sensitivities of the different types of Park visitor and visitor experiences (e.g., backcountry vs. front country), and how each of the alternatives could affect visitor use at those sites. For areas of the Park where visitors would have an expectation to hear natural sounds, the analysis includes a reference to the results of the time audible, natural ambient metric. In addition to considering noise effects on the Park visitor experience, the analysis considers how visual effects could influence visitor use and experience (see method description for visual effects below). The relative effects to Park visitors are also qualitatively compared across all alternatives.

The impact analysis for other recreational opportunities applies to persons recreating outside the Park but within the ATMP planning area through the experience of air tours. Although they are not considered Park visitors, commercial air tours offer a recreational experience for those who wish to view the Park from a different vantage point. Impacts to the availability of this experience within the ATMP planning area are considered by qualitatively analyzing how the opportunity to see the Park from an air tour within the ATMP planning area would change as a result of each alternative by comparing existing conditions to the parameters proposed under each alternative. This analysis primarily considers how routes and the number of tours authorized by each alternative could affect the availability of this experience within the ATMP planning area for air tour clients.

#### 4.7. Environmental Justice and Socioeconomics

The study area for the environmental justice (EJ) analysis includes the county or counties that are within or partially within the Park and ½-mile of its boundary. As stated in the 1050.1F Desk Reference, the combination of all study areas for the other relevant impact categories represents the potential impact area for EJ, because EJ impacts may be realized in conjunction with impacts to any other impact category. Refer to each environmental impact category's respective section in the draft EA for a description of the study area limits. The analysis incorporates data presented at the county level and from U.S. Census block groups that are within and adjacent to the ATMP planning area.

U.S. Census data is used to identify the percentage of the populations within the counties that are low-income (as identified by poverty status) and minority pursuant to U.S. Department of Transportation

(DOT) Order 5610.2(a), otherwise known as “EJ populations.” For the purposes of this EJ analysis, FAA uses the minority and low-income definitions provided in DOT Order 5610.2a. The average of the county income and minority population percentages is compared to block group level data on income and race and ethnicity within the study area to determine if the population is an EJ community of concern. A minority census block group considered as an EJ community is a census block group with a minority population percentage greater than the average minority population percentage of the study area. Any census block group with a minority population greater than the average of the study area is designated as a census block group of EJ concern. A low-income population census block group considered as an EJ community is a census block group with a greater percentage of low-income population than the average percentage of low-income population in the study area. Each census block group with a low-income population greater than the study area average is designated a census block group of EJ concern. State and local data has also been evaluated to confirm accuracy of findings.

The EJ analysis considers the ATMP operating parameters (i.e., locations of the commercial air tour routes, altitudes, and frequencies) under each alternative as well as the results of the analyses for Noise and Noise-Compatible Land Use, Air Quality, and Visual Effects, as well as the corresponding environmental effects of each alternative. The analysis identifies if each alternative would cause disproportionately high and adverse effects on low-income or minority populations within the study area. The definitions for disproportionately high and adverse effects provided in DOT Order 5610.2(a) is used to conduct the analysis. The significance of the impacts to EJ populations is determined by identifying the context, intensity, and relation the impact has to other environmental impact categories. Specifically, for each environmental impact category, the analysis identifies if an EJ population would sustain more of an impact than any other population segment. In doing so, the impacts to environmental impact categories are considered, as well as if the impacts would affect the EJ population in a way that the agencies determine is unique or significant to that population.

The socioeconomic analysis considers the effects the alternatives may have on local business activity. This could include businesses within the ATMP planning area that could be affected by noise or other effects of the ATMP and will also evaluate effects of the alternatives on the commercial air tour industry and related businesses. Specifically, the draft EA analyzes how commercial air tour operators may support economic development by generating income for other ancillary tourism industry businesses. The draft EA describes how the number of flights authorized by each alternative compares to the current level of air tours reported by each operator. The analysis notes that the competitive bidding process may redistribute the number of flights and income between individual operators in the future.

Given the nature of the alternatives, the agencies do not anticipate impacts to the housing, race, age, or population conditions of the ATMP planning area; therefore, effects to these socioeconomic characteristics within the ATMP planning area have not been analyzed.

As they occur, the draft EA will document efforts that the agencies performed to incorporate EJ principles throughout the ATMP development process, including opportunities for engagement with EJ populations throughout the ATMP planning area.

#### 4.8. Visual Effects

In accordance with FAA’s 1050.1F Desk Reference, visual effects deal broadly with the extent to which the alternatives would either: 1) produce light emissions that create annoyance or interfere with



activities; or 2) contrast with, or detract from, the visual resources and/or visual character of the existing environment. As air tours occur during daylight, the draft EA focuses on visual effects on visual resources and character and not light emissions. Visual effects on resources discussed in other sections of the draft EA are discussed in those sections and a cross-reference to the Visual Effects section is provided.

Visual resources may include structures or objects that identify landscape features that are visually important or have unique characteristics. In addition, visual resources can include the cohesive collection of various individual visual resources that can be viewed at once or in concert from the area surrounding the site of the alternatives. Visual character refers to the overall visual makeup of the existing environment where the alternatives are located.

The study area for visual effects includes the Park and ½ mile buffer up to 5,000 ft. AGL, which corresponds with the ATMP planning area. The study area for visual effects also includes areas within the cultural resources APE that are outside the ATMP planning area. The impact analysis focuses on analyzing effects to Park viewsheds and notable visual resources, as identified in the Affected Environment, which notes any aesthetic value and unique aspects within the Park. The analysis analyzes how the ATMP operating parameters (e.g., number of tours, location of the routes, altitudes, hovering/loitering, and other ATMP elements that could affect Park viewsheds) for each alternative and the resultant Park viewshed resource conditions would change by comparing existing conditions to the parameters proposed in the alternative. The relative effects to Park viewsheds are also compared across all alternatives. Impacts to visual resources and visual character relate to a decrease in the aesthetic quality of the Park resulting from air tours. According to FAA's 1050.1F Desk Reference, significance of impacts is determined based on the degree the action would have to affect the visual character of the area, taking into consideration the importance, uniqueness, and aesthetic value; the degree to which the action contrasts with the visual resources or character; and the degree to which views are obstructed.

#### 4.9. Department of Transportation Act Section 4(f) Resources

Section 4(f) is applicable to historic sites and publicly owned parks, recreation areas, and wildlife and waterfowl refuges of national, state, or local significance that may be impacted by transportation programs or projects carried out by DOT and its operating administrations, including the FAA. The study area for considering Section 4(f) resources in the EA is inclusive of the APE used for compliance with Section 106 of the NHPA.

Historic properties are identified as part of the Section 106 consultation process (see section above: Cultural Resources). Parks, recreational areas, and wildlife and waterfowl refuges are identified using public datasets from federal, state, and local sources. The study area for Section 4(f) analysis is the same as the APE identified as part of Section 106. Each resource that intersects the study area is included in the Section 4(f) analysis. A list of these properties as well as a short description, the approximate size, and Official(s) with Jurisdiction has been compiled, and the properties were mapped.

As land acquisition, construction, or other ground disturbance activities would not occur under the ATMP, the alternatives would not have the potential to cause a permanent use of a Section 4(f) resource. Therefore, analysis of potential impacts to Section 4(f) resources is limited to identifying impacts that could result in a constructive use. Evaluating potential impacts to Section 4(f) resources

focuses on changes in aircraft noise exposure and visual effects resulting from implementing the alternative. A constructive use of a Section 4(f) resource would occur if there was a substantial impairment of the resource to the degree that the activities, features, or attributes of the site that contribute to its significance or enjoyment are substantially diminished. This could occur as a result of both visual and noise impacts. The FAA has evaluated the Section 4(f) resources for potential noise (including vibration) and visual impacts for all alternatives to determine if there will be substantial impairment to Section 4(f) resources that would result in a constructive use.

The methodology for the noise impacts analysis will reflect that described for the Noise and Noise-Compatible Land Use environmental impact category (see above). The methodology for the visual impacts analysis reflects that described under the Visual Effects environmental impact category (see above). As noted, both resource analyses describe the effects of the alternative itself as well as the relative change from the environmental baseline.

Noise impacts on Section 4(f) resources are analyzed using location point data provided in the *Noise Technical Analysis* (Appendix F). Location points are used to model noise across multiple metrics (e.g., 12-hour equivalent sound level, time above 52 dBA) at specific points of interest in the study area, including forests, geological features, and historic sites, and often correspond to Section 4(f) resources. For Section 4(f) resources without corresponding location point data, noise impacts are assessed using the closest location point(s). The range of time (in minutes) above 52 dBA is reported for each Section 4(f) resource.

## **APPENDIX F**

### Noise Technical Analysis

# Noise Technical Analysis: Mount Rushmore National Memorial

**January 2023**

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# 1. Introduction

The purpose of this report is to present the noise results used in the alternatives impact analysis discussed in the Mount Rushmore National Memorial (Park) Air Tour Management Plan (ATMP) Environmental Assessment (EA) and to document the inputs and assumptions used in the computer modeling of air tour aircraft activity. This information will provide the reader with the technical basis used to assess potential impacts to the following environmental impact categories – Noise and Noise-Compatible Land Use; Biological Resources; Department of Transportation Act Section 4(f) Resources; Cultural Resources; Environmental Justice and Socioeconomics; Visitor Use and Experience; and Wilderness.

Humans perceive sound as an auditory sensation created by pressure variations that move through a medium such as water or air. Sound is measured in terms of amplitude and frequency. Amplitude, which refers to the sound pressure level or intensity, is the relative strength of sound waves which humans perceive as loudness or volume and is measured in decibels (dB). Decibels work on a logarithmic scale, such that an increase of 10 dB causes a doubling of perceived loudness and represents a ten-fold increase in sound level. Thus 20 dB would be perceived as twice as loud as 10 dB, 30 dB would be perceived as 4 times louder than 10 dB, 40 dB would be perceived as 8 times louder than 10 dB, etc. (see Table 1).

**Table 1. Subjective Effect of Change in Sound Level**

Change in Sound Level	Perceived Change to Human Ear
± 1 dB	Not Perceptible
± 3 dB	Threshold of Perception
± 5 dB	Obvious Change
± 10 dB	Twice / Half as Loud
± 20 dB	Fourfold or ¼ as Loud

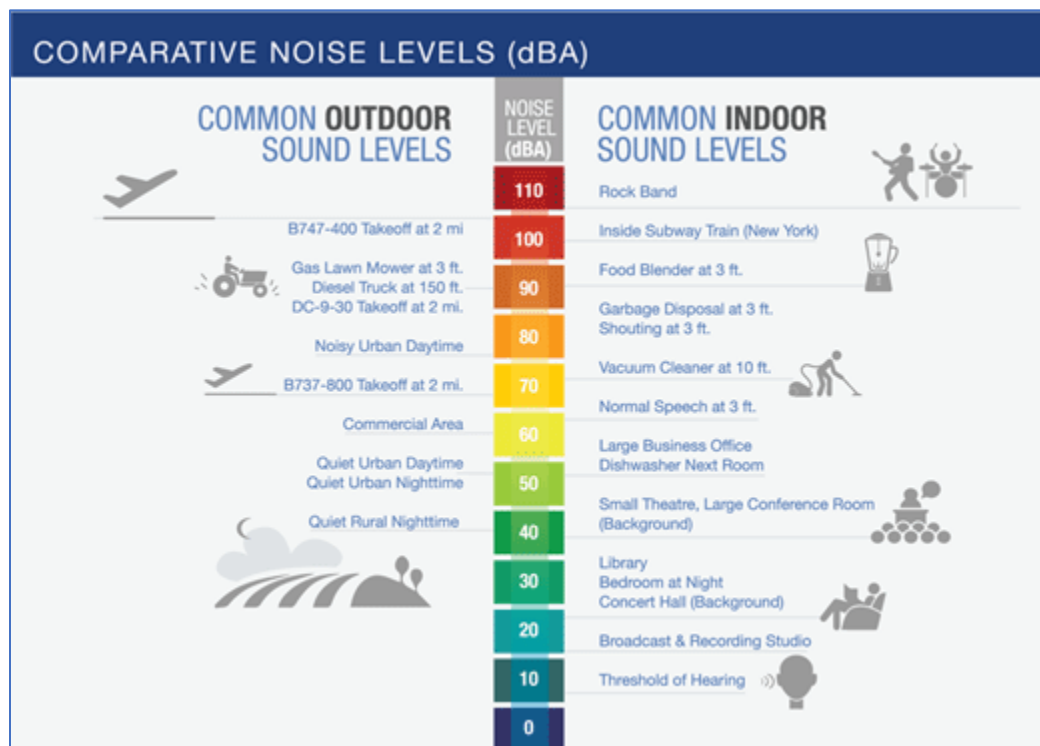
The A-weighted decibel scale (dBA) is commonly used to describe sound levels because it reflects the frequency range to which the human ear is most sensitive.<sup>1</sup> The dBA scale from zero to 110 covers most of the range of everyday sounds, as shown in Figure 1. Note that sound levels in protected natural

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<sup>1</sup> dBA (A-weighted decibels): Sound is measured on a logarithmic scale relative to the reference sound pressure for atmospheric sources, 20 µPa. Sound levels are reported in units of decibels (dB) (ANSI S1.1-1994, American National Standard Acoustical Terminology). A-weighting is applied to sound levels to account for the sensitivity of the human ear (ANSI S1.42-2001, Design Response of Weighting Networks for Acoustical Measurements). To approximate human hearing sensitivity, A-weighting discounts sounds below 1 kHz and above 6 kHz.



areas, such as the Park, are often lower than those of the ‘common’ outdoor areas shown, in the range of 20-40 dBA.



**Figure 1. Comparative Sound Levels<sup>2</sup>**

Section 2 discusses the noise metrics. Section 3 discusses the affected environment and ambient soundscape. Section 4 discusses the noise model method and inputs while Section 5 discusses outputs. Sections 6 and 7 provide detailed noise results for each Alternative. Section 8 discusses indirect effects.

## 2. Modeled Noise Metrics

There are numerous ways to measure the potential impacts of noise from commercial air tours on the acoustic environment of a park, including intensity, duration, and spatial footprint of the noise. The affected environment and impact analysis disclose noise metrics consistent with both Federal Aviation Administration (FAA) and National Park Service (NPS) noise guidance. The FAA noise evaluation is based on guidance under FAA Order 1050.1F and uses the yearly Day Night Average Sound Level (DNL) metric; the cumulative noise energy exposure from aircraft over 24 hours. The NPS considers various different metrics to analyze impacts to park resources and values from noise, including equivalent sound level, time audible (the amount of time you can hear air tour aircraft noise), the amount of time that the noise from a commercial air tour operation would be above specific sound levels that relate to functional

<sup>2</sup> Source: [https://www.faa.gov/regulations\\_policies/policy\\_guidance/noise/basics/](https://www.faa.gov/regulations_policies/policy_guidance/noise/basics/)

effects of noise and park management objectives (e.g., 35 and 52 decibels), and maximum sound level. These metrics are discussed further in Table 2.

**Table 2. Primary Metrics Used for the Noise Analysis**

Metric	Relevance and Citation
Equivalent sound level, $L_{Aeq, 12\text{ hr}}$	The logarithmic average of commercial air tour sound levels, in dBA, over a 12-hour day. The selected 12-hour period is selected to represent typical daytime commercial air tour operating hours.
Day-night average sound level, $L_{dn}$ (or DNL)	<p>The logarithmic average of sound levels, in dBA, over a 24-hour day, DNL takes into account the increased sensitivity to noise at night by including a 10 dB penalty between 10 PM and 7 AM local time.</p> <p>Note: Both <math>L_{Aeq, 12\text{ hr}}</math> and DNL characterize:</p> <ul style="list-style-type: none"> <li>Increases in both the loudness and duration of noise events</li> <li>The number of noise events during specific time period (12-hours for <math>L_{Aeq, 12\text{ hr}}</math> and 24-hours for DNL)</li> </ul> <p>If there are no nighttime events, then <math>L_{Aeq, 12\text{ hr}}</math> is arithmetically three dBA higher than DNL.</p> <p>The FAA's (2015, Exhibit 4-1) indicators of significant impacts are for an action that would increase noise by DNL 1.5 dB or more for a noise sensitive area that is exposed to noise at or above the DNL 65 dB noise exposure level, or that will be exposed at or above the DNL 65 dB level due to a DNL 1.5 dB or greater increase, when compared to the no action alternative for the same timeframe.</p>
Time Audible Natural Ambient	<p>The total time (in minutes) that aircraft noise levels are audible to an attentive listener with normal hearing under natural ambient conditions.</p> <p>The median natural ambient is the sound level exceeded 50 percent of the time (<math>L_{50}</math>), determined from the natural sound conditions found in a study area, including all sounds of nature (i.e., wind, streams, wildlife, etc.), and excluding all human and mechanical sounds. Time audible does not indicate how loud the event is, only if it might be heard.</p>
Time Above 35 dBA	<p>The amount of time (in minutes) that aircraft sound levels are above a given threshold (i.e., 35 dBA).</p> <p>In quiet settings, outdoor sound levels exceeding 35 dBA degrade experience in outdoor performance venues (American National Standards Institute (ANSI), 2007). This level is also shown to cause blood pressure increases in sleeping humans (Haralabidis et al., 2008); as well as exceeding recommended maximum background noise level inside classrooms (ANSI S12.60/Part 1-2010).</p>

Metric	Relevance and Citation
Time Above 52 dBA	<p>The amount of time (in minutes) that aircraft sound levels are above a given threshold (i.e., 52 dBA).</p> <p>This metric represents the level at which one may reasonably expect interference with park interpretive programs. At this background sound level (52 dBA), normal voice communication at five meters (two people five meters apart), or a raised voice to an audience at ten meters would result in 95% sentence intelligibility (United States Environmental Protection Agency, Office of Noise Abatement and Control, 1974).</p>
Maximum sound level, $L_{max}$	<p>The loudest sound level, in dBA, generated by the loudest event; it is event-based and is independent of the number of operations. <math>L_{max}</math> does not provide any context of number of events, duration, or timing of exposure.</p>

### 3. Affected Environment

NPS defines acoustic resources as physical sound sources, including both natural sounds (wind, water, wildlife, vegetation) and cultural and historic sounds (battle reenactments, tribal ceremonies, quiet reverence). The acoustic environment is the combination of all the acoustic resources within a given area. This includes natural sounds and cultural sounds, as well as non-natural human-caused sounds. Soundscape can be defined as the human perception of those physical sound resources.

Natural sounds are also part of the biological or other physical resource components of the Park. Examples include:

- Sounds produced by birds, chipmunks, frogs, mountain lions, mountain goats, and bighorn sheep to define territories or aid in attracting mates
- Sounds produced by bats to locate prey or navigate
- Sounds received by mice or deer to detect and avoid predators or other danger
- Sounds produced by physical processes, such as wind in the trees, claps of thunder, or falling water

One of the natural resources of the Park is the natural soundscape, also referred to as the natural ambient or “natural quiet.” The natural ambient includes all of the naturally occurring sounds of the Park, as well as the quiet associated with certain environments, still nights, and certain seasons. An important part of the mission of the NPS is to preserve or restore the natural soundscapes associated with units of the national park system (NPS Management Policies, 4.9 Soundscape Management).

The term existing ambient refers to the sound level of all sounds in a given area, and includes all natural sounds as well as all mechanical, electrical, and other human-caused sounds. Human-generated noise

sources may include wheeled vehicles on roads, such as passenger vehicles, tour buses, and cyclists, and aircraft overflights consisting of high-altitude commercial jet aircraft, occasional NPS flights for research or other Park purposes, commercial air tour operations, and private general aviation aircraft. On the ground, human-generated noise within the Park is typically concentrated in travel corridors and areas of high visitor use.

To characterize the natural and existing ambient at the Park, detailed sound level measurements were conducted at two locations in 2003, resulting in the identification of two acoustic zones representing regions with similar acoustic conditions (Table 3) (Lee et al., 2016). These acoustic sampling locations were chosen to be representative of the natural ecological zones or broad ecosystems of the Park and ATMP planning area, but were not intended to directly measure the amount of air tour noise. Median daytime natural ambient sound levels ( $L_{50}$ ) were 34 dBA in both zones; median daytime existing ambient sound levels were 40 dBA in the historic zone to 48 dBA in the development zone where visitors are more prevalent. The median or  $L_{50}$  sound level (in decibels) is the sound level exceeded 50 percent of the day. Additional acoustic monitoring was conducted by NPS for the Park in 2007 and 2012 (Lynch, 2012). The 2007 study was intended to record current conditions at a backcountry location in the Park. The natural ambient sound level at this location was approximately 22 dBA. The purpose of the 2012 study was to characterize existing sound levels during a time of unusually high Park visitation.

**Table 3. Acoustic Conditions**

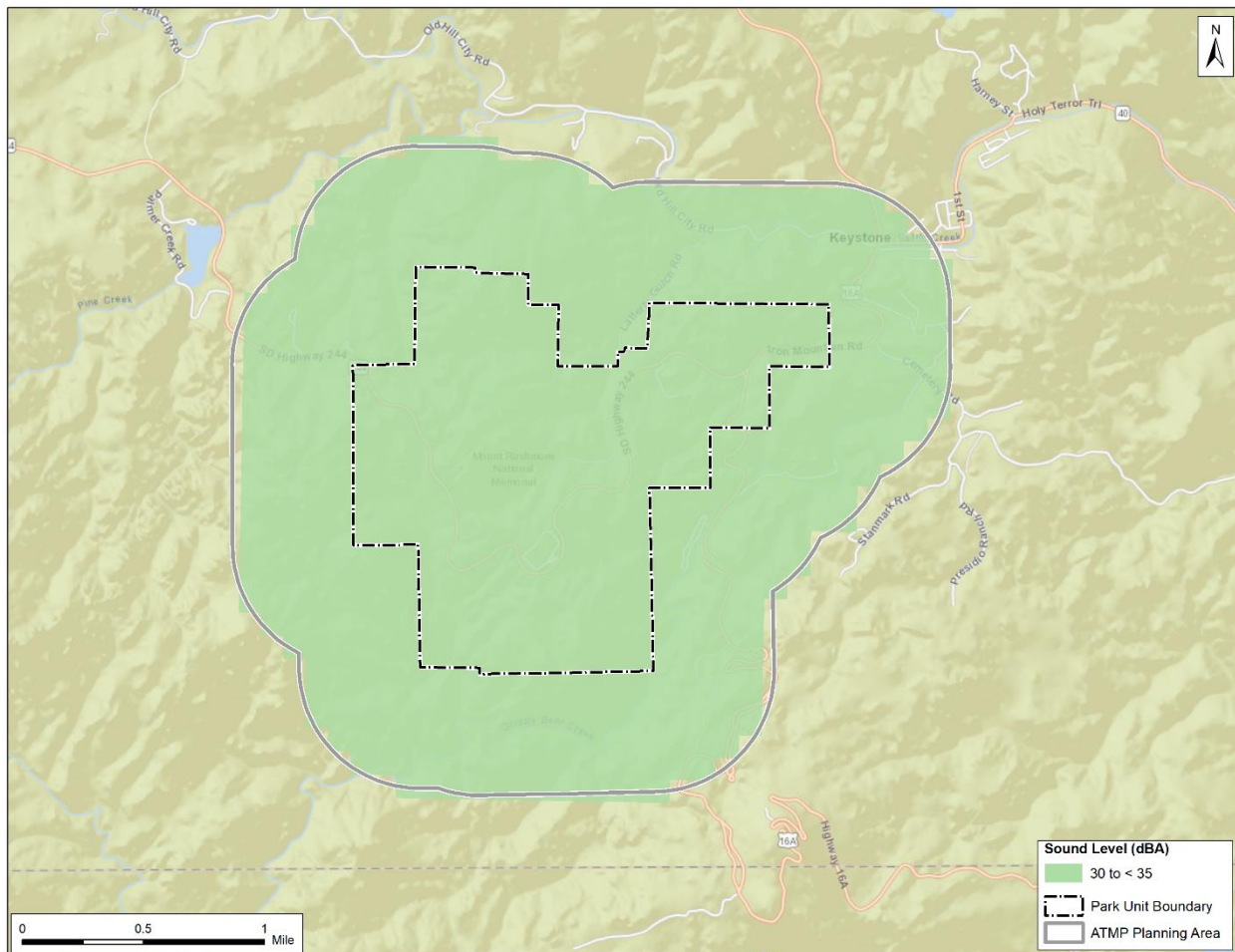
<b>Acoustic Sampling Area</b>	<b>Daytime Natural Ambient, <math>L_{50}</math> (dBA)</b>	<b>Daytime Existing Ambient, <math>L_{50}</math> (dBA)</b>	<b>Description</b>
Zone 1 (Development Zone, Grand View Terrace)	34	48	Natural sounds in this zone include wind through the low brush and goats. Human sounds include aircraft, vehicles, amphitheater announcements, and visitors.
Zone 2 (Historic Zone, Presidential Trail)	34	40	Natural sounds in this zone include wind through the low brush and birds. Human sounds include aircraft, vehicles, amphitheater announcements, and visitors.

#### **Ambient Map Data**

From the detailed data collected in 2003, an ambient “map” of the natural soundscape<sup>3</sup> of the ATMP planning area was developed to be used in computer modeling (Figure 2). Lee et al. (2016) provides further technical detail on the acoustical monitoring and development of the ambient map.

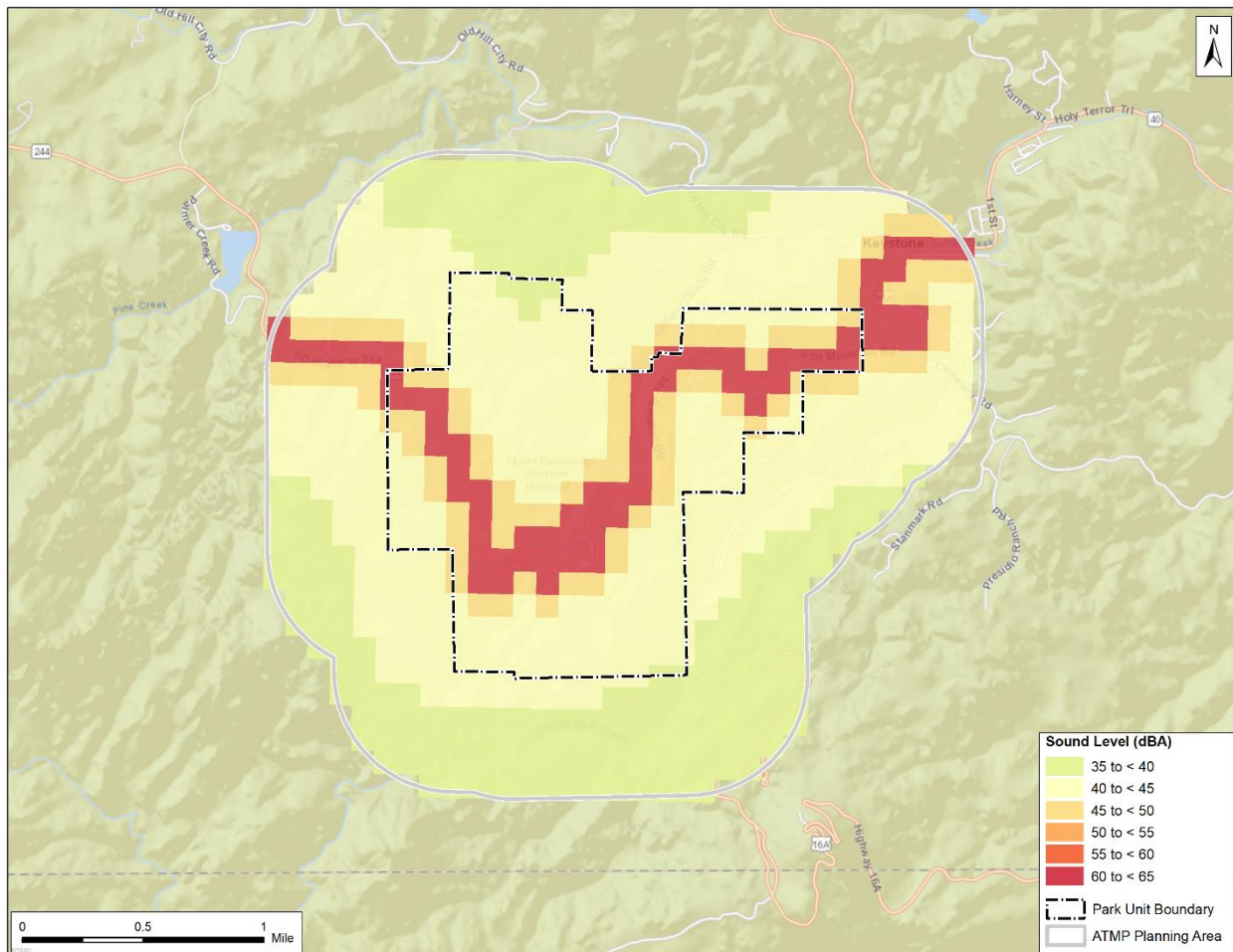
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<sup>3</sup> Natural Ambient/Soundscape ( $L_{50}$ ): The sound level exceeded 50 percent of the time determined from the natural sound conditions found in a study area, including all sounds of nature (i.e., wind, streams, wildlife, etc.), and excluding all human and mechanical sounds. All ambient data were based on a 12-hour time period, i.e., 7 AM to 7 PM, which are the typical operating hours for air tours.



**Figure 2. Ambient map – Natural Ambient L<sub>50</sub>**

The contribution of aircraft noise during the sound level measurements provides a snapshot in time and is not necessarily a representative characterization of the existing ambient under current conditions (as described in the No Action Alternative and in Section 4 below). The existing ambient under current conditions was determined by adding the noise exposure due to existing air tours (Figure 7), modeled using the FAA Aviation Environmental Design Tool (AEDT), Version 3e (see Section 4), to the Existing Ambient without Air Tours shown in Figure 3. The Existing Ambient without Air Tours is defined as the composite, all-inclusive sound associated with a given environment, excluding the sound source of interest, in this case, commercial air tour aircraft. It does include all other human-caused sound sources that were audible at the measurement site; visitors, vehicles, amphitheater announcements, commercial jets, and general aviation aircraft. The result of this process is the Cumulative Existing Ambient (Figure 4).



**Figure 3. Ambient map – Existing Ambient without Air Tours  $L_{50}$** <sup>4</sup>

<sup>4</sup> Because it is not feasible to carry out field data collection efforts in all areas of a park, the effect of localized sound sources, such as from roadways, were modeled using the Federal Highway Administration's Traffic Noise Model®. Details of modeled roadway sound sources can be found in Lee et al. (2016).



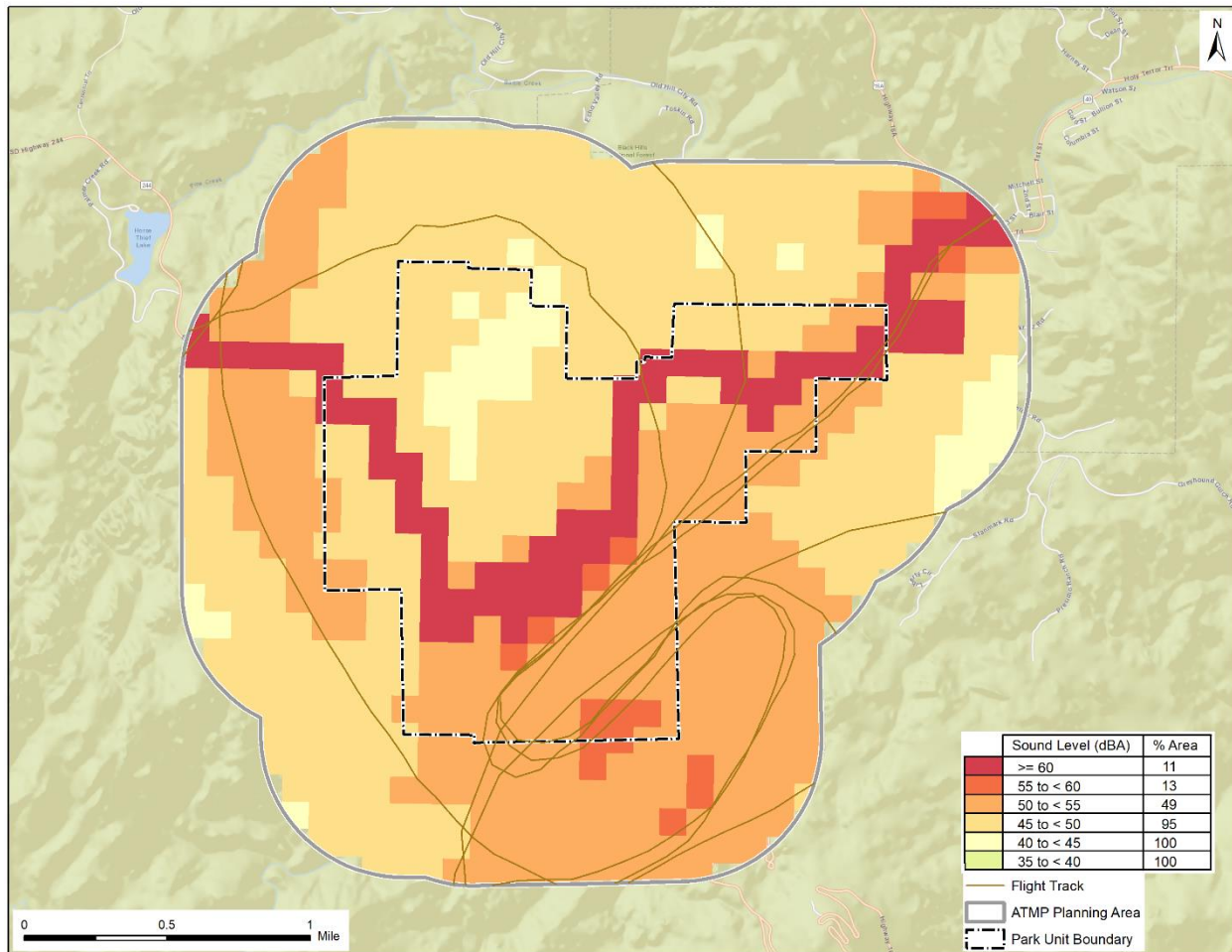


Figure 4. Cumulative Existing Ambient for Existing Conditions

## 4. Noise Model Method

The FAA's AEDT, Version 3e (Lee et al., 2022) is the FAA-approved computer program for modeling noise under Appendix A of FAA's Part 150 Airport Noise Compatibility Planning (14 Code of Federal Regulations (CFR) sec. A150.103(a)). Requirements for aircraft noise modeling are defined in FAA Order 1050.1F, Environmental Impacts: Policies and Procedures, and in Federal Aviation Regulations 14 CFR Part 150, Airport Noise Compatibility Planning.

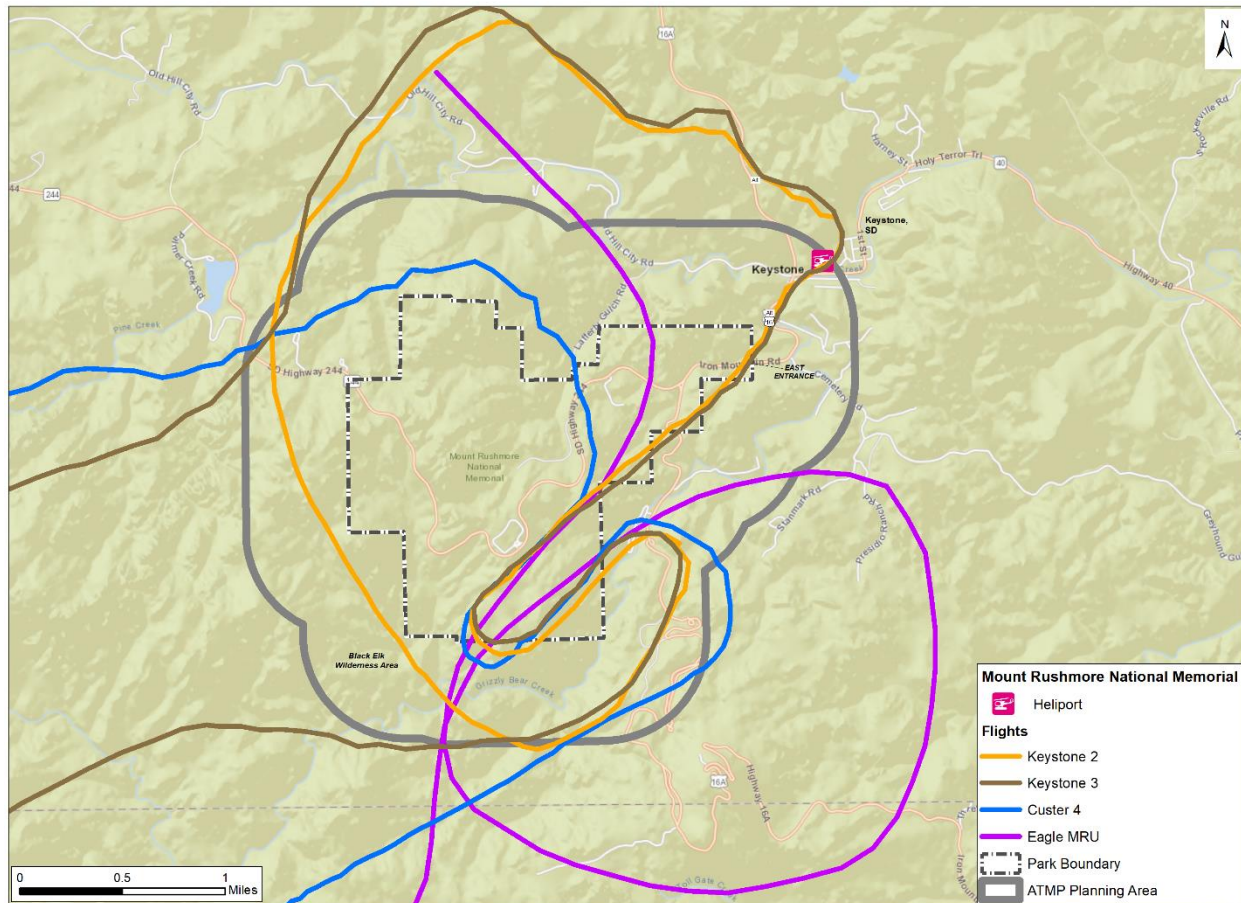
The noise model requires detailed information regarding the aircraft source, operational, and flight route information (obtained from the air tour operators), as well as other information<sup>5</sup> to compute

<sup>5</sup> The noise model accounts for a number of effects over the propagation path between the aircraft source and receptor. Attenuation due to line-of-sight blockage from terrain features is computed utilizing terrain data obtained from the U.S. Geological Survey along with algorithms documented in Society of Automotive Engineers (SAE) Aerospace Information Report 6501. Atmospheric absorption is based on the 2012-2021 average temperature of 76 degrees Fahrenheit and 71% relative humidity and computed according to SAE-ARP-5534.

various noise metrics that can be used to assess the potential impacts of noise from commercial air tours on the acoustic environment of a park.

### Aircraft Data

The tour aircraft types identified for modeling are the Robinson R-44 and Cessna 206 aircraft. The flight routes used for modeling the alternatives are shown in Figure 5.



**Figure 5. Air Tour Routes Modeled**

A unique noise modeling profile was developed for each modeled aircraft and route combination based on typical aircraft climb rates, descent rates, power settings and speeds during the different phases of flight (cruise, climb, and descent).

The analysis for the No Action Alternative is based on a peak month, average day<sup>6</sup> (PMAD) of commercial air tour activity. For the three-year average of commercial air tour activity from 2017-2019,

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<sup>6</sup> As required by FAA policy, the FAA typically represents yearly conditions as the Average Annual Day (AAD). However, it was determined that a PMAD representation of the operations would more adequately allow for



the PMAD was identified in terms of number of operations, and then further assessed for the type of aircraft and route flown to ensure it is a reasonable representation of the commercial air tour activity over the park. For the ATMP planning area, the PMAD was identified as summarized in Table 4. Altitudes were modeled based on information provided by the operators.

The analyses for Alternatives 3 and 4 are based on the number of aircraft operations for each aircraft and route combination identified and are summarized in Table 4.

**Table 4. Aircraft, Routes, and Number of Operations Modeled**

Route	Aircraft	No Action Alternative (2017-2019 PMAD)	Alternative 3	Alternative 4
<b>Keystone 2</b>	Robinson R-44	18	12	4
<b>Keystone 3</b>	Robinson R-44	12	8	2
<b>Custer 4</b>	Robinson R-44	7	4	1
<b>Eagle MRU</b>	Cessna 206	1	1	1
	<b>Total</b>	38	25	8

## 5. Model Output

Two types of analyses were performed using FAA's AEDT, Version 3e: 1) contour analysis and 2) representative location point analysis. A noise contour presents a graphical illustration or "footprint" of the area potentially affected by the noise. Location point results present the metric results at specific points of interest. The NPS provided a list of 27 location points, geographically located across the ATMP planning area, where noise levels were to be evaluated. In addition, noise levels were evaluated at 11 historic property locations (points 28-38) both within and outside<sup>7</sup> the ATMP planning area. These locations are listed in Table 5 and shown geographically in Figure 6.

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disclosure of any potential impacts. PMAD has therefore been used as a conservative representation of assessment of AAD conditions.

<sup>7</sup> The routes, altitudes and numbers of air tours outside the ATMP planning area are unknown. This is because directly outside of the ATMP planning area is outside the scope of this ATMP, and operators fly under Visual Flight Rules (VFR) in uncontrolled airspace. For the purposes of disclosing the potential effects on locations outside the ATMP planning area, routes within the Park were extrapolated based on available information. Additionally, ambient data are not available outside the ATMP planning area and thus time audible results were not computed.

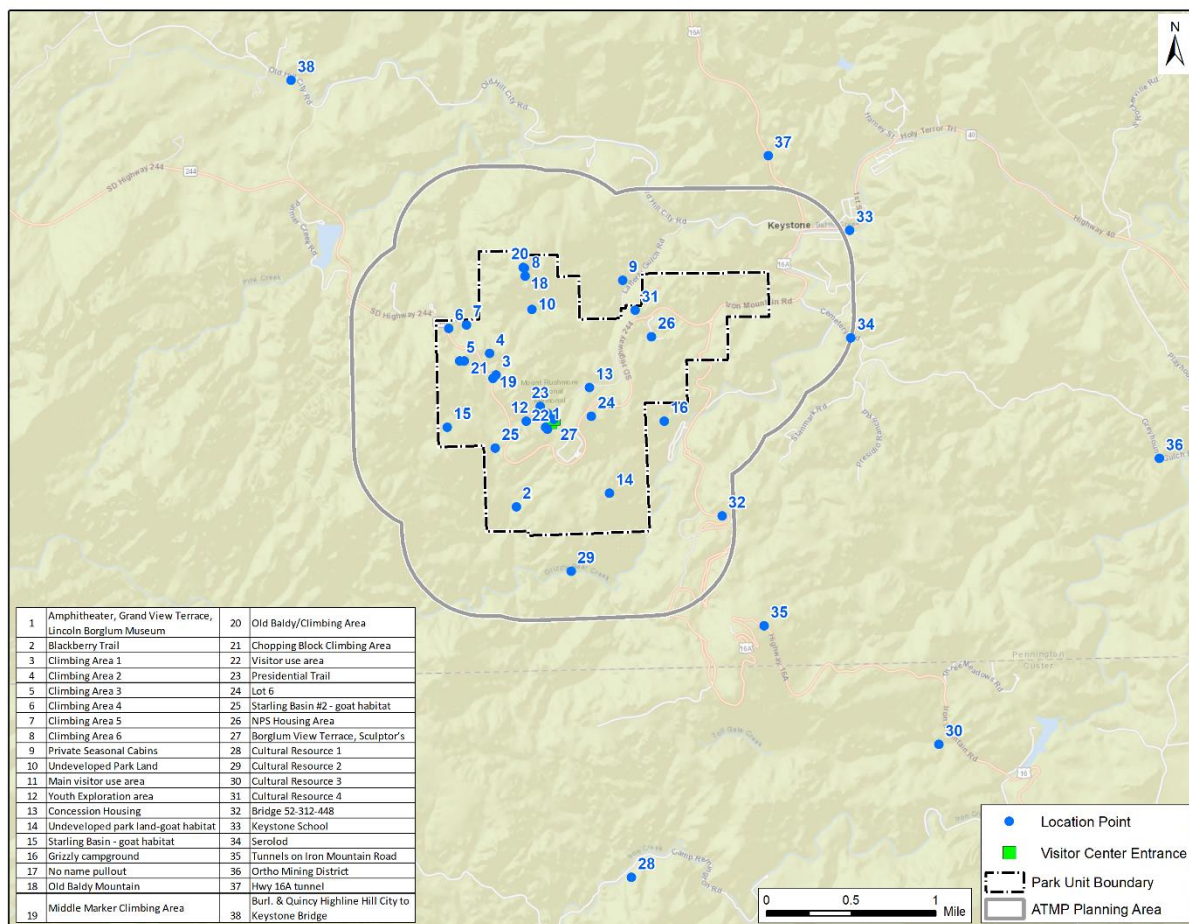


Figure 6. Location Points Modeled

**Table 5. Location Points Modeled for Mount Rushmore National Memorial**

Location	Longitude (decimal degrees)	Latitude (decimal degrees)	Natural Ambient L <sub>50</sub> (dBA)
1. Amphitheater, Grand View Terrace, Lincoln Borglum Museum	43.877	-103.456	30-35
2. Blackberry Trail	43.870	-103.460	30-35
3. Climbing Area 1	43.882	-103.462	30-35
4. Climbing Area 2	43.884	-103.463	30-35
5. Climbing Area 3	43.883	-103.466	30-35
6. Climbing Area 4	43.886	-103.467	30-35
7. Climbing Area 5	43.886	-103.465	30-35
8. Climbing Area 6	43.890	-103.458	30-35
9. Private Seasonal Cabins	43.890	-103.447	30-35
10. Undeveloped Park land	43.887	-103.458	30-35
11. Main visitor use area	43.878	-103.456	30-35
12. Youth Exploration area	43.878	-103.458	30-35
13. Concession Housing	43.880	-103.451	30-35
14. Undeveloped Park land-goat habitat	43.871	-103.449	30-35
15. Starling Basin - goat habitat	43.877	-103.468	30-35
16. Grizzly Campground	43.877	-103.442	30-35
17. No name pullout	43.879	-103.448	30-35
18. Old Baldy Mountain	43.891	-103.458	30-35
19. Middle Marker Climbing Area	43.881	-103.462	30-35
20. Old Baldy/Climbing Area	43.891	-103.458	30-35
21. Chopping Block Climbing Area	43.883	-103.466	30-35
22. Visitor use area	43.877	-103.456	30-35
23. Presidential Trail	43.879	-103.457	30-35
24. Lot 6	43.878	-103.451	30-35
25. Starling Basin #2 - goat habitat	43.875	-103.462	30-35
26. NPS Housing Area	43.885	-103.443	30-35
27. Borglum View Terrace, Sculptor's Studio	43.878	-103.455	30-35
28. Cultural Resource 1*	43.839	-103.447	N/A
29. Cultural Resource 2	43.865	-103.453	30-35
30. Cultural Resource 3*	43.849	-103.410	N/A
31. Cultural Resource 4	43.887	-103.445	30-35
32. Bridge 52-312-448	43.869	-103.435	30-35
33. Keystone School*	43.893	-103.420	N/A
34. Serolod	43.884	-103.420	30-35
35. Tunnels on Iron Mountain Road*	43.860	-103.431	N/A
36. Ortho Mining District*	43.873	-103.384	N/A
37. Highway 16A Tunnel*	43.901	-103.429	N/A
38. Burlington & Quincy Highline Hill City to Keystone Bridge*	43.907	-103.486	N/A

\*Location points outside the ATMP planning area.

## 6. Noise Model Results / Environmental Consequences

This section provides figures and tables showing the detailed noise results, organized by alternative. Presented first are the noise contour result maps for three metrics: 12-hour equivalent sound level (Figure 7, Figure 10, and Figure 13), time audible natural ambient (Figure 8, Figure 11, and Figure 14) and time above 35 dBA (Figure 9, Figure 12, and Figure 15), followed by tabular results (Table 6, Table 7, and Table 8) for the location points for each of the five acoustic metrics modeled. The noise contour map legends include the percentage of the total ATMP planning area covered by each contour level.

### Alternative 1 (No Action Alternative)

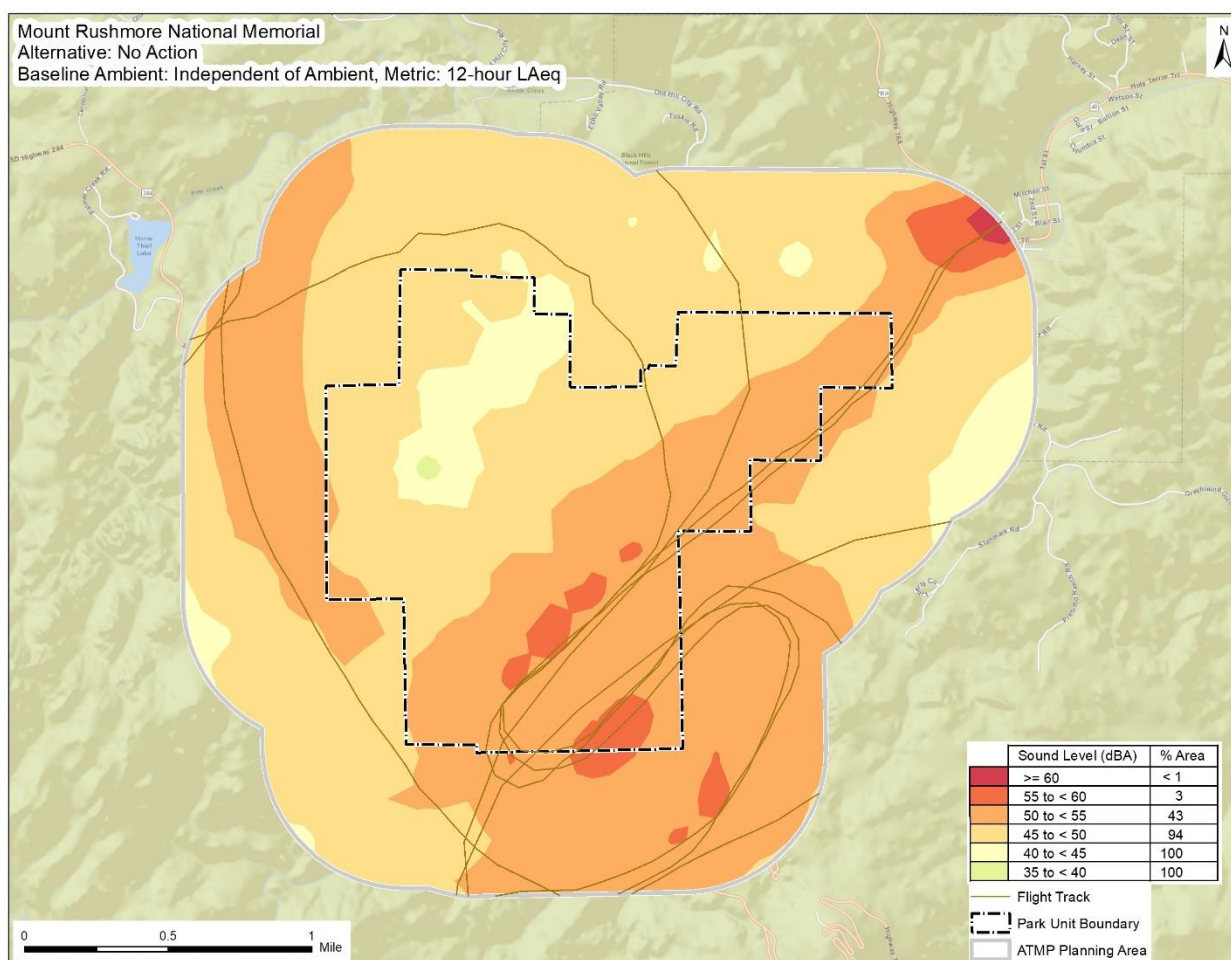


Figure 7. 12-hour Equivalent Sound Level ( $L_{Aeq,12h}$ ) Map for the No Action Alternative

As there are no nighttime events, DNL would be 3 dB less than the 12-hour equivalent sound level.

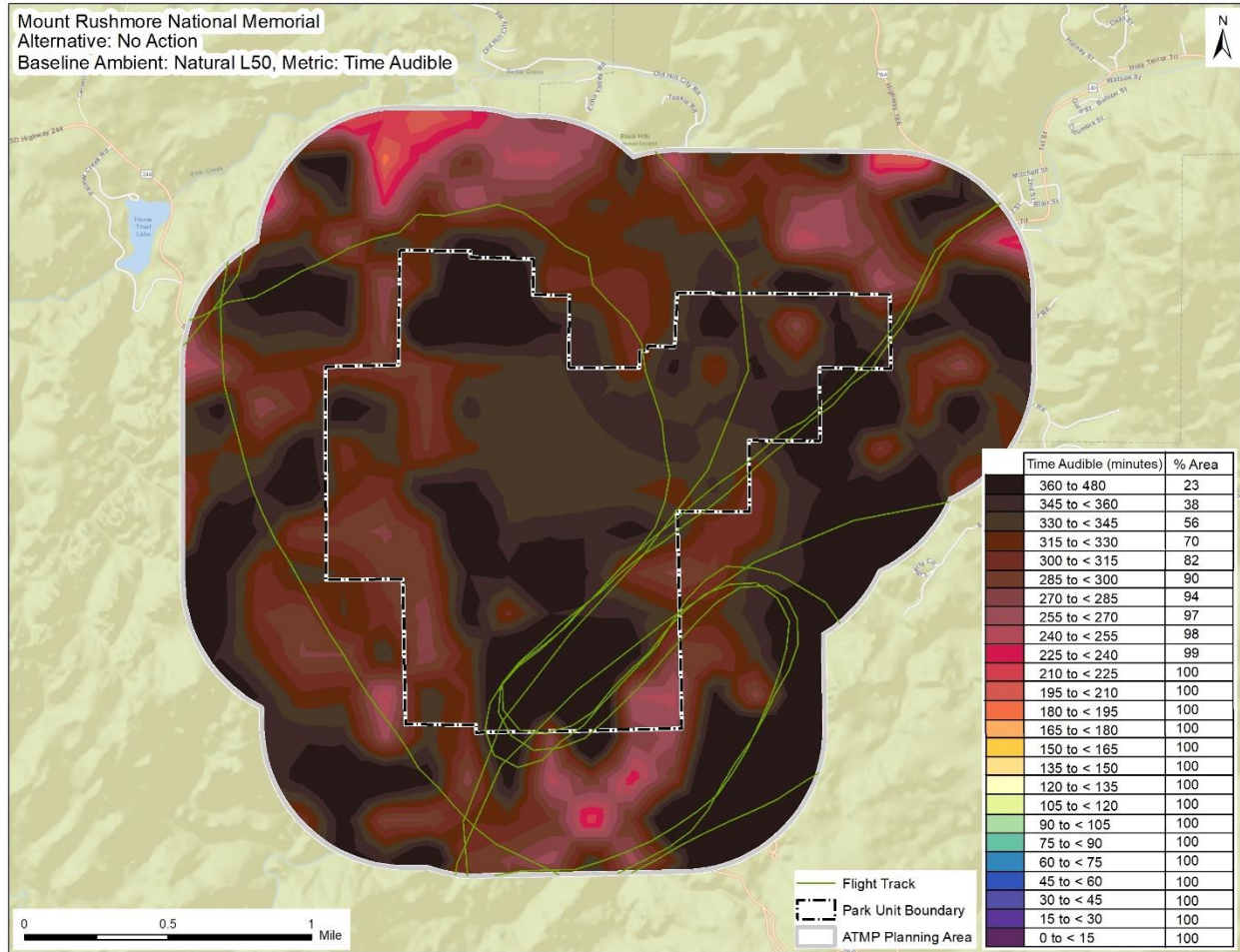


Figure 8. Time Audible (for Natural Ambient) Map for the No Action Alternative



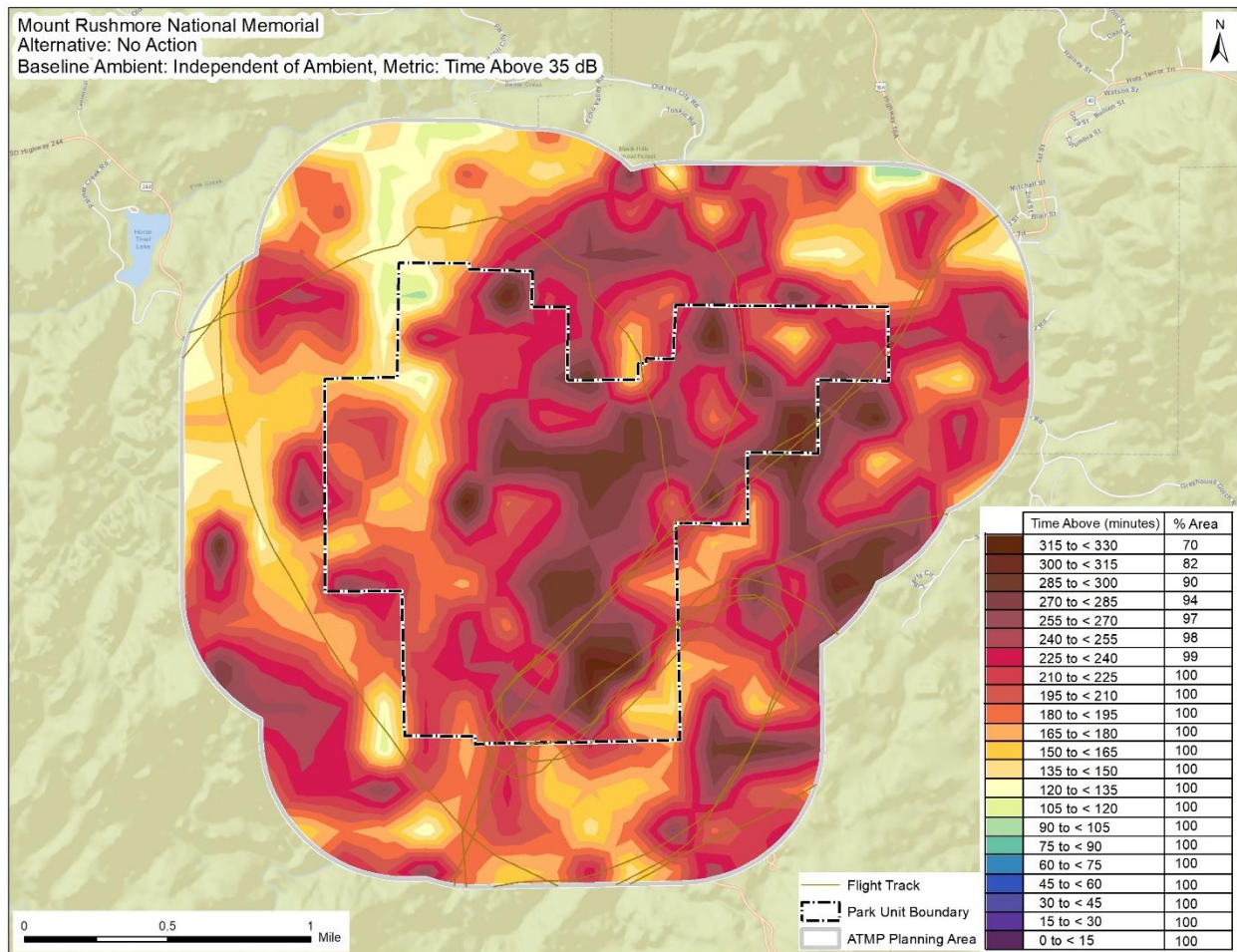


Figure 9. Time Above 35 dBA Map for the No Action Alternative

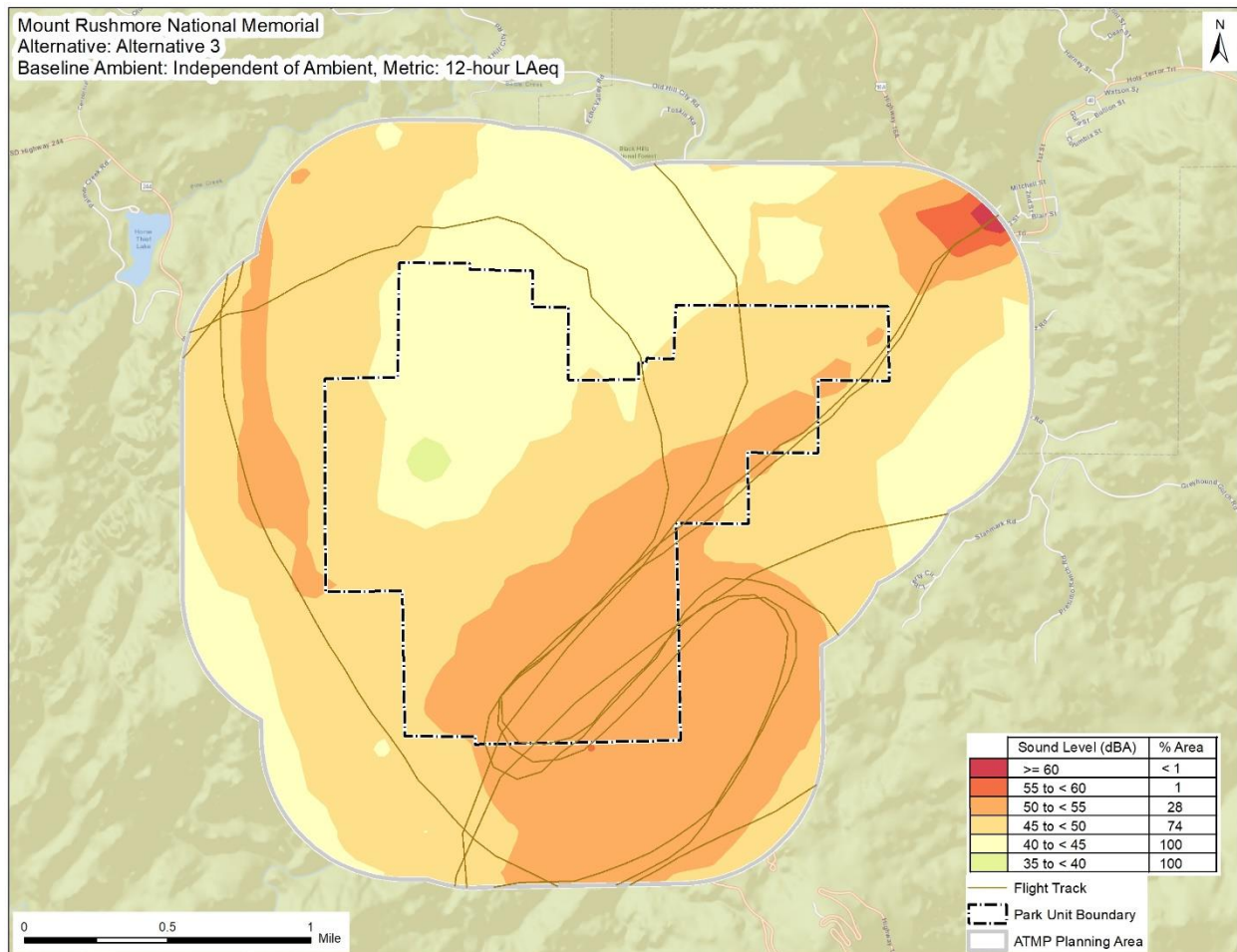
**Table 6. Location Point Results - No Action Alternative**

Location	12-Hour Equivalent Sound Level (dBA)*	Time Audible for Natural Ambient (minutes)	Time Above 35 dBA (minutes)	Time Above 52 dBA (minutes)	Maximum Sound Level (dBA)
1. Amphitheater, Grand View Terrace, Lincoln Borglum Museum	50.5	363.4	242.7	49.4	69.0
2. Blackberry Trail	52.9	323.2	235.4	66.9	73.3
3. Climbing Area 1	39.6	301.4	80.8	5.8	62.6
4. Climbing Area 2	44.6	308.5	122.5	27.6	62.5
5. Climbing Area 3	44.8	313.6	200.7	30.9	62.2
6. Climbing Area 4	47.9	324.3	165.3	43.3	65.7
7. Climbing Area 5	46.7	307.3	162.1	42.7	63.6
8. Climbing Area 6	44.9	439.8	241.4	36.7	62.1
9. Private Seasonal Cabins	45.8	313.8	221.3	35.9	62.9
10. Undeveloped Park land	44.3	332.9	194.9	34.6	59.7
11. Main visitor use area	50.3	335.2	233.0	67.4	67.8
12. Youth Exploration area	49.3	375.7	208.5	64.0	66.5
13. Concession Housing	51.3	343.2	290.8	74.8	69.2
14. Undeveloped Park land-goat habitat	53.9	341.7	200.5	104.9	71.3
15. Starling Basin - goat habitat	50.0	331.9	191.5	35.0	71.7
16. Grizzly Campground	52.2	351.5	261.1	96.2	67.8
17. No name pullout	54.2	384.2	319.0	90.8	73.7
18. Old Baldy Mountain	44.3	317.9	267.0	27.5	63.5
19. Middle Marker Climbing Area	44.7	334.8	126.0	21.2	63.0
20. Old Baldy/Climbing Area	47.2	431.1	313.8	58.4	63.9
21. Chopping Block Climbing Area	45.3	329.8	165.3	23.1	64.4
22. Visitor use area	51.6	366.6	281.2	75.3	69.7
23. Presidential Trail	49.6	344.6	204.3	71.7	66.4
24. Lot 6	54.2	400.5	333.2	101.1	73.4
25. Starling Basin #2 - goat habitat	48.7	286.2	188.1	46.5	66.3
26. NPS Housing Area	50.5	341.5	282.0	62.8	68.5
27. Borglum View Terrace, Sculptor's Studio	50.5	370.7	270.0	53.1	68.8
28. Cultural Resource 1**	34.9	N/A	119.9	0.7	59.0
29. Cultural Resource 2	51.2	200.1	123.4	48.8	72.1
30. Cultural Resource 3**	29.0	N/A	20.1	0.4	60.2
31. Cultural Resource 4	46.3	365.5	286.9	35.7	64.2
32. Bridge 52-312-448	52.1	357.5	246.9	74.4	69.7
33. Keystone School**	52.3	N/A	152.1	53.9	77.0
34. Serolod	40.9	293.4	121.6	12.7	61.4
35. Tunnels on Iron Mountain Road**	40.7	N/A	122.1	9.2	60.3
36. Ortho Mining District**	23.9	N/A	4.5	0.0	51.5
37. Highway 16A tunnel **	50.0	N/A	96.9	44.4	71.3
38. Burlington & Quincy Highline Hill City to Keystone Bridge**	36.8	N/A	97.9	1.6	52.7

\* As there are no nighttime events, DNL would be 3 dB less than the 12-hour equivalent sound level.

\*\*Refer to footnote 8 regarding modeling limitations for location points outside the ATMP planning area.

### Alternative 3



**Figure 10. 12-hour Equivalent Sound Level ( $L_{Aeq,12h}$ ) Map for Alternative 3**

As there are no nighttime events, then DNL would be 3 dB less than the 12-hour equivalent sound level.



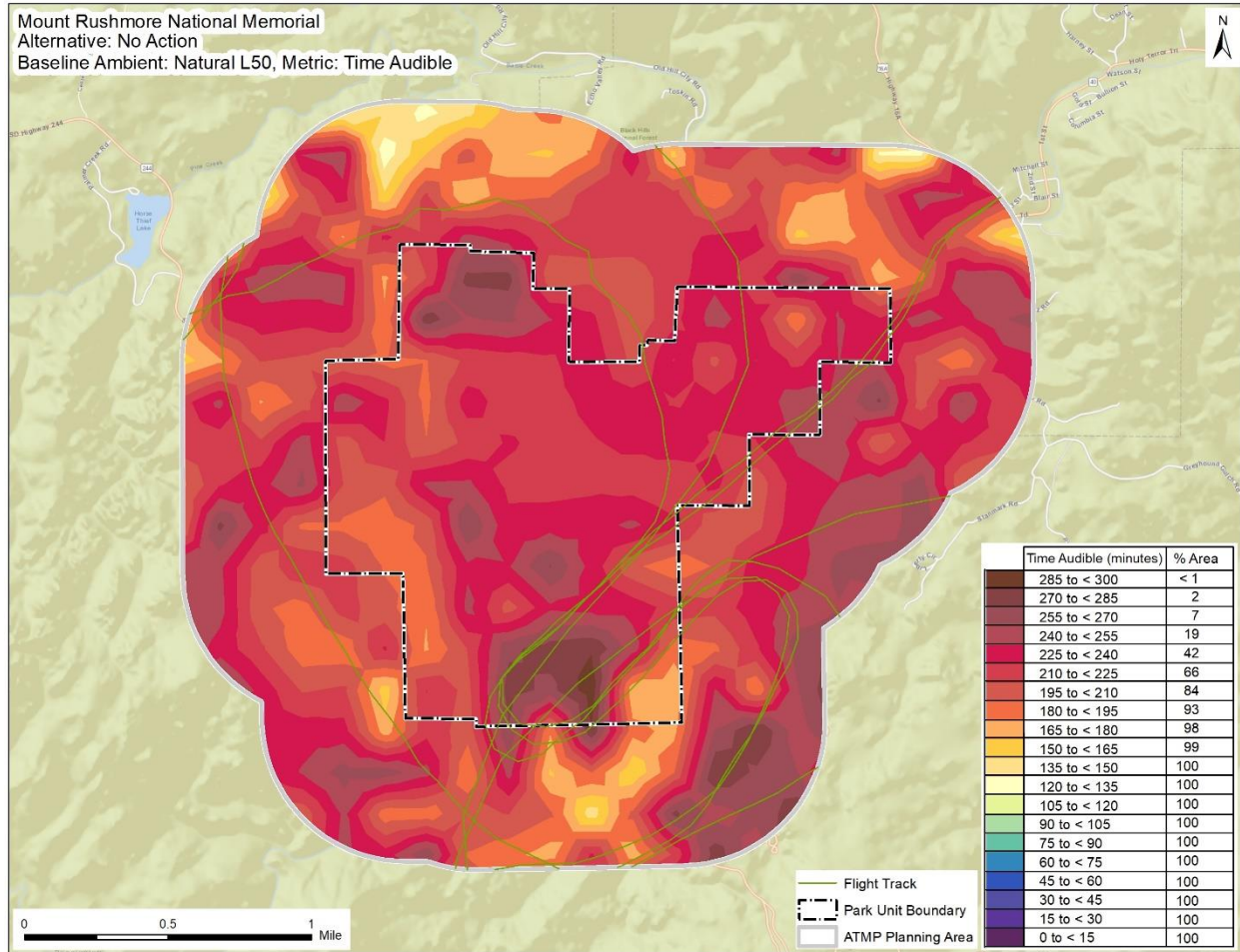


Figure 11. Time Audible (for Natural Ambient) Map for Alternative 3

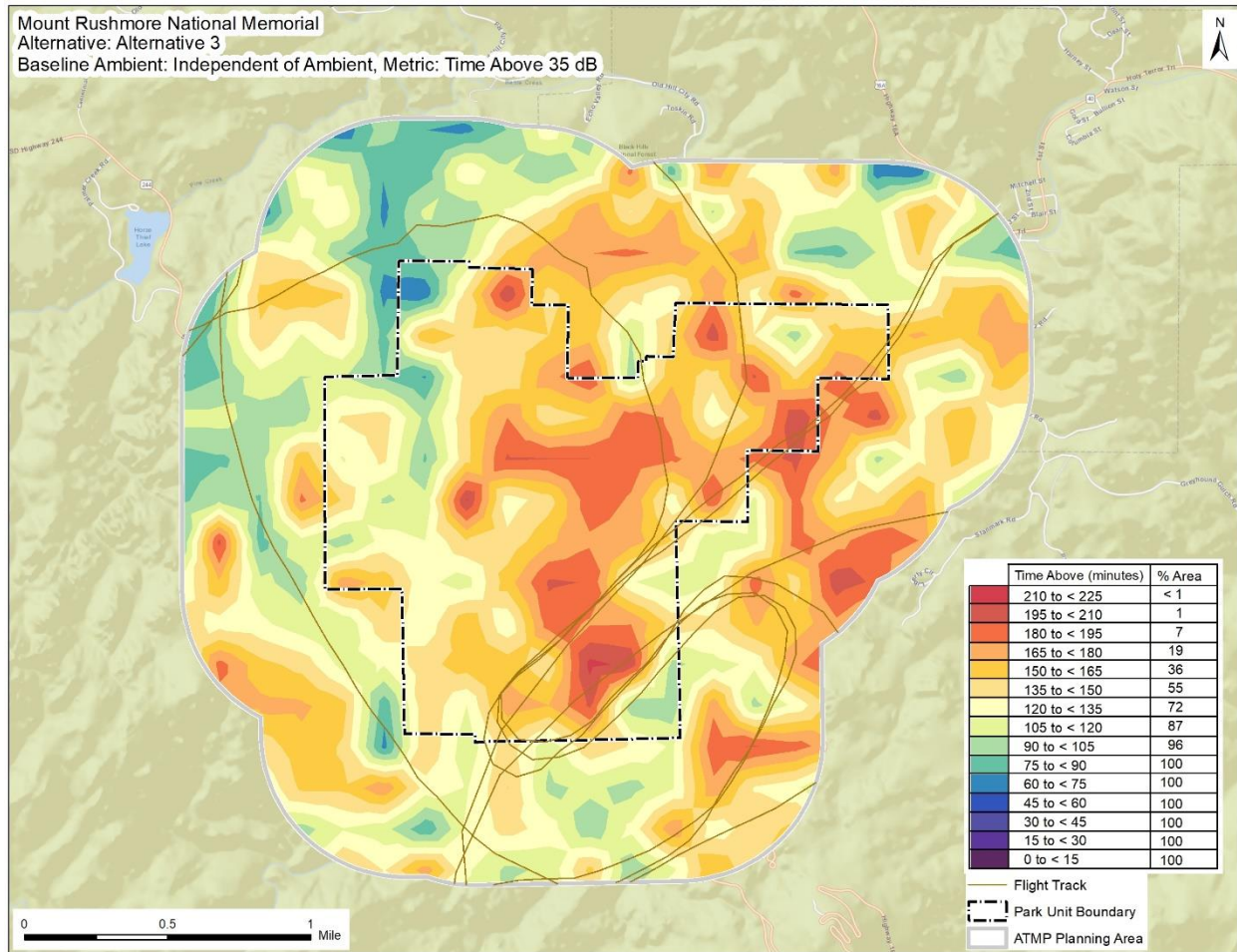


Figure 12. Time Above 35 dBA Map for Alternative 3

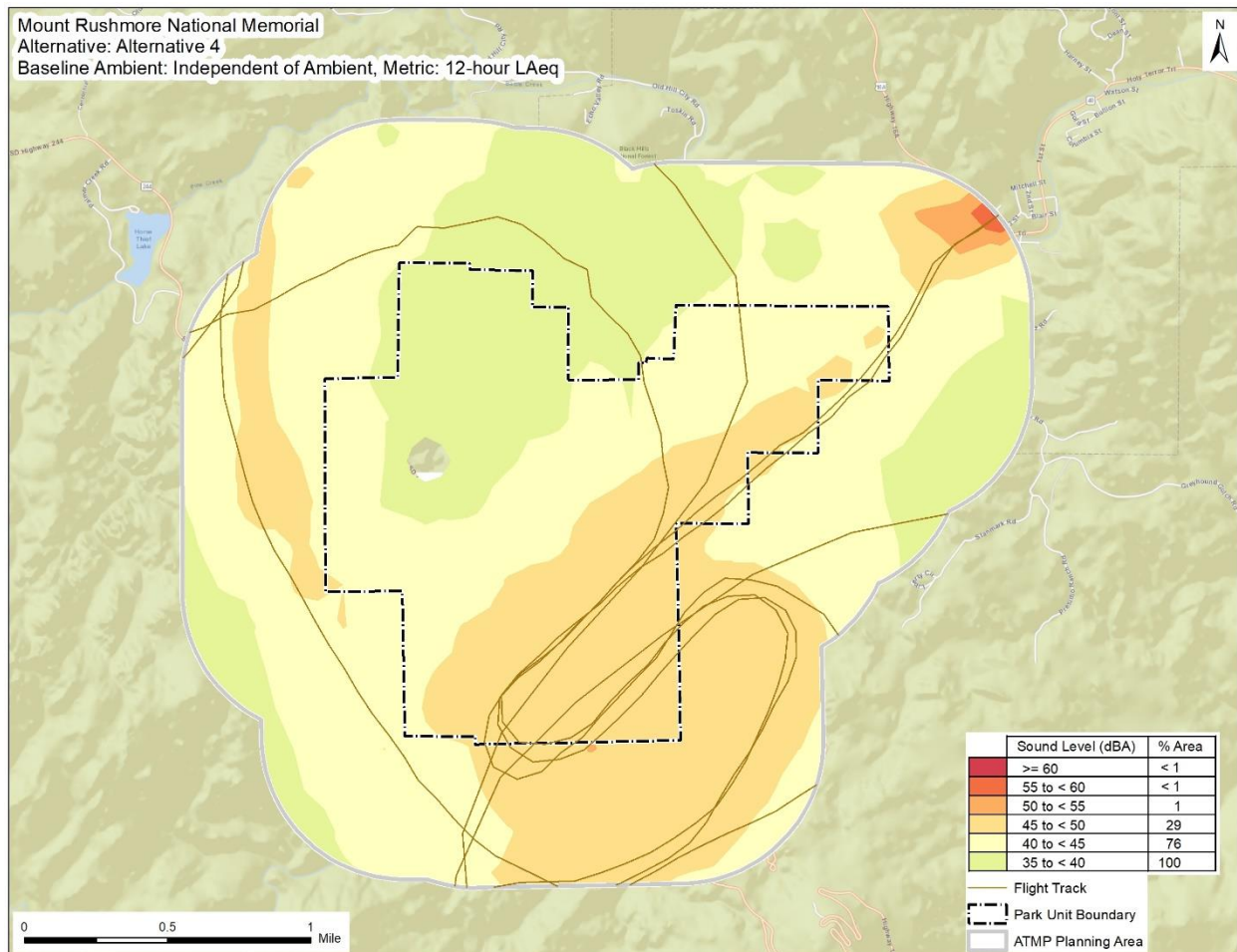
**Table 7. Location Point Results for Alternative 3**

Location	12-Hour Equivalent Sound Level (dBA)*	Time Audible for Natural Ambient (minutes)	Time Above 35 dBA (minutes)	Time Above 52 dBA (minutes)	Maximum Sound Level (dBA)
1. Amphitheater, Grand View Terrace, Lincoln Borglum Museum	48.6	239.1	158.7	32.1	69.0
2. Blackberry Trail	51.0	211.5	152.7	43.8	73.3
3. Climbing Area 1	37.8	197.2	52.7	3.9	62.6
4. Climbing Area 2	42.8	202.4	79.8	18.0	62.5
5. Climbing Area 3	43.0	206.3	131.4	20.1	62.2
6. Climbing Area 4	46.1	213.6	107.8	28.2	65.7
7. Climbing Area 5	44.9	202.1	105.9	27.8	63.6
8. Climbing Area 6	43.0	288.8	157.8	23.7	62.1
9. Private Seasonal Cabins	44.0	207.4	145.5	23.5	62.9
10. Undeveloped Park land	42.4	219.2	127.1	22.3	59.7
11. Main visitor use area	48.5	221.2	153.1	44.0	67.8
12. Youth Exploration area	47.5	247.6	136.8	41.8	66.5
13. Concession Housing	49.4	226.6	191.5	48.7	69.2
14. Undeveloped Park land-goat habitat	52.0	225.4	131.7	68.1	71.3
15. Starling Basin - goat habitat	48.2	218.5	125.7	23.1	71.7
16. Grizzly Campground	50.4	231.9	172.0	62.7	67.8
17. No name pullout	52.4	253.1	210.0	59.1	73.7
18. Old Baldy Mountain	42.4	209.8	175.9	17.8	63.5
19. Middle Marker Climbing Area	42.9	219.4	81.9	14.0	63.0
20. Old Baldy/Climbing Area	45.3	283.3	206.2	38.1	63.9
21. Chopping Block Climbing Area	43.5	216.2	107.4	15.2	64.4
22. Visitor use area	49.7	241.0	184.3	49.1	69.7
23. Presidential Trail	47.7	227.1	134.2	46.7	66.4
24. Lot 6	52.3	263.6	219.2	65.8	73.4
25. Starling Basin #2 - goat habitat	46.8	187.4	122.1	30.5	66.3
26. NPS Housing Area	48.7	225.1	185.5	41.0	68.5
27. Borglum View Terrace, Sculptor's Studio	48.6	244.8	177.7	34.6	68.8
28. Cultural Resource 1**	33.3	N/A	77.9	0.7	59.0
29. Cultural Resource 2	49.3	132.4	81.1	32.0	72.1
30. Cultural Resource 3**	28.2	N/A	13.5	0.4	60.2
31. Cultural Resource 4	44.5	240.5	188.0	23.1	64.2
32. Bridge 52-312-448	50.1	235.4	162.2	48.5	69.7
33. Keystone School**	50.5	N/A	100.4	36.1	77.0
34. Serolod	39.2	193.3	80.6	8.6	61.4
35. Tunnels on Iron Mountain Road**	38.8	N/A	80.6	5.9	60.3
36. Ortho Mining District**	22.7	N/A	3.3	0.0	51.5
37. Highway 16A tunnel **	48.3	N/A	64.7	29.6	71.3
38. Burlington & Quincy Highline Hill City to Keystone Bridge**	35.0	N/A	64.1	1.1	52.7

\* As there are no nighttime events, DNL would be 3 dB less than the 12-hour equivalent sound level.

\*\*Refer to footnote 8 regarding modeling limitations for location points outside the ATMP planning area.

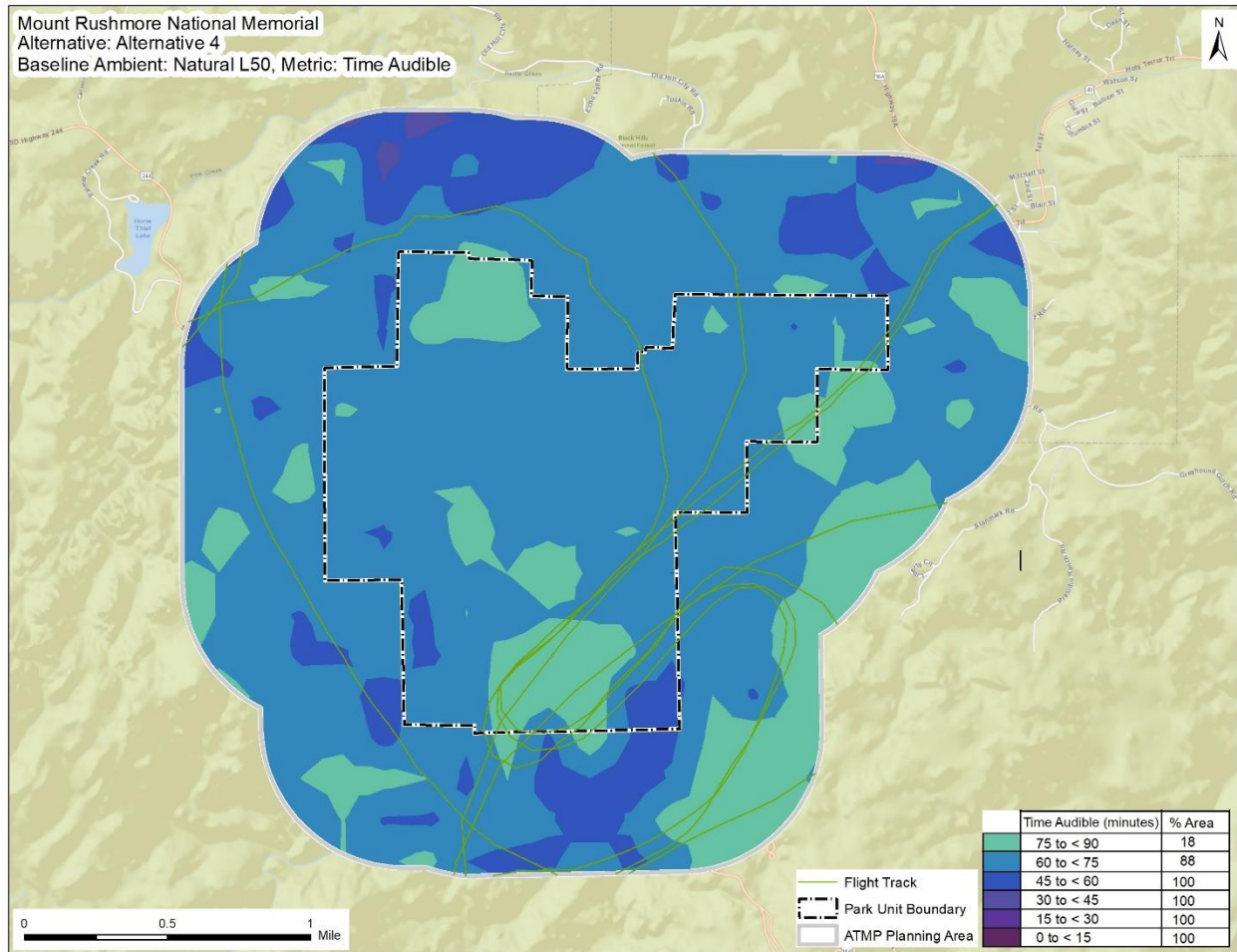
## Alternative 4



**Figure 13. 12-hour Equivalent Sound Level ( $L_{Aeq,12h}$ ) Map for Alternative 4**

As there are no nighttime events, then DNL would be 3 dB less than the 12-hour equivalent sound level. If air tours are restricted to operating between 9 AM and 5 PM (i.e., 8 hours), then the 8-hour equivalent sound level would be 1.8 dBA greater than the 12-hour equivalent sound level.





**Figure 14. Time Audible (for Natural Ambient) Map for Alternative 4**

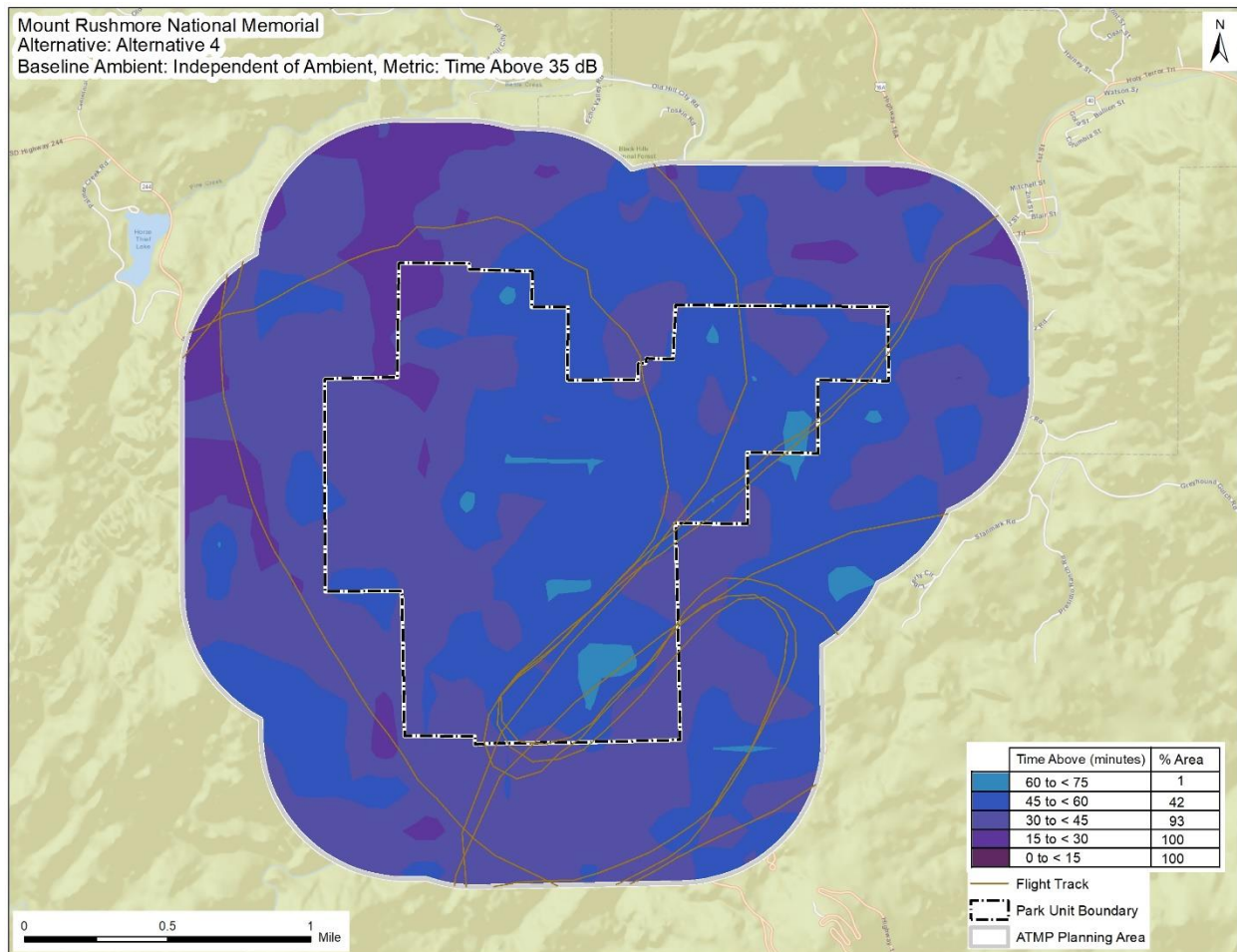


Figure 15. Time Above 35 dBA Map for Alternative 4

**Table 8. Location Point Results for Alternative 4**

Location	12-Hour Equivalent Sound Level (dBA)*	Time Audible for Natural Ambient (minutes)	Time Above 35 dBA (minutes)	Time Above 52 dBA (minutes)	Maximum Sound Level (dBA)
1. Amphitheater, Grand View Terrace, Lincoln Borglum Museum	43.7	74.2	49.5	10.3	69.0
2. Blackberry Trail	46.2	65.9	45.9	14.0	73.3
3. Climbing Area 1	32.9	63.0	16.6	1.3	62.6
4. Climbing Area 2	37.8	63.2	23.9	5.7	62.5
5. Climbing Area 3	38.1	65.1	41.5	6.6	62.2
6. Climbing Area 4	41.1	67.3	34.0	8.6	65.7
7. Climbing Area 5	40.0	63.7	33.5	8.9	63.6
8. Climbing Area 6	38.0	87.8	49.0	7.7	62.1
9. Private Seasonal Cabins	39.4	66.0	45.2	8.1	62.9
10. Undeveloped Park land	37.5	68.3	39.4	7.6	59.7
11. Main visitor use area	43.6	69.8	48.2	14.0	67.8
12. Youth Exploration area	42.6	76.6	42.8	13.5	66.5
13. Concession Housing	44.5	71.3	59.5	15.3	69.2
14. Undeveloped Park land-goat habitat	47.0	70.8	42.1	21.1	71.3
15. Starling Basin - goat habitat	43.4	68.3	39.8	7.9	71.7
16. Grizzly Campground	45.4	72.6	54.4	19.5	67.8
17. No name pullout	47.5	78.5	65.1	18.4	73.7
18. Old Baldy Mountain	37.6	66.6	55.2	6.3	63.5
19. Middle Marker Climbing Area	38.0	68.5	24.4	4.5	63.0
20. Old Baldy/Climbing Area	40.3	86.8	63.7	12.6	63.9
21. Chopping Block Climbing Area	38.6	68.2	33.9	5.1	64.4
22. Visitor use area	44.8	74.8	57.1	15.5	69.7
23. Presidential Trail	42.8	72.0	42.6	15.0	66.4
24. Lot 6	47.4	81.3	67.4	20.6	73.4
25. Starling Basin #2 - goat habitat	42.0	59.6	37.2	10.2	66.3
26. NPS Housing Area	43.9	70.3	57.7	13.0	68.5
27. Borglum View Terrace, Sculptor's Studio	43.7	75.7	55.2	11.1	68.8
28. Cultural Resource 1**	29.9	N/A	25.1	0.7	59.0
29. Cultural Resource 2	44.6	43.7	25.7	10.3	72.1
30. Cultural Resource 3**	26.9	N/A	6.2	0.4	60.2
31. Cultural Resource 4	39.8	74.8	57.6	7.8	64.2
32. Bridge 52-312-448	45.1	73.0	51.4	15.7	69.7
33. Keystone School**	45.3	N/A	31.2	11.3	77.0
34. Serolod	34.7	61.9	25.6	3.0	61.4
35. Tunnels on Iron Mountain Road**	34.5	N/A	27.0	2.3	60.3
36. Ortho Mining District**	20.8	N/A	2.0	0.0	51.5
37. Highway 16A tunnel **	43.2	N/A	20.7	9.1	71.3
38. Burlington & Quincy Highline Hill City to Keystone Bridge**	29.9	N/A	19.6	0.4	52.7

\* As there are no nighttime events, DNL would be 3 dB less than the 12-hour equivalent sound level. If air tours are restricted to operating between 9 AM and 5 PM (i.e., 8 hours), then the 8-hour equivalent sound level would be 1.8 dBA greater than the 12-hour equivalent sound level.

\*\*Refer to footnote 8 regarding modeling limitations for location points outside the ATMP planning area.

## 7. Comparison of Alternatives by Metric

This section provides tables showing the detailed noise results, organized by metric for each of the five acoustic metrics modeled. These tables allow for comparison across the alternatives. As the alternatives consider only a change in number of operations, the differences between alternatives are consistent across the ATMP planning area. High-level observations of the differences between alternatives by metric include:

- 12-hour Equivalent Sound Level (Table 9 and Table 12): Compared to existing conditions, the average sound levels under Alternatives 3 and 4 would be lower.
  - Compared to existing conditions, Alternative 3 would represent a 34% reduction in number of modeled daily operations, equivalent to a decrease of approximately 2 dBA ( $L_{Aeq,12h}$ ). Alternative 4 would represent a 79% reduction in number of modeled daily operations, equivalent to a decrease of approximately 7 dBA ( $L_{Aeq,12h}$ ). As there are no nighttime events, then DNL would be 3 dB less than the 12-hour equivalent sound level.
  - With the exception of a small area (less than 1% of the ATMP planning area) within the immediate vicinity of the heliport, Alternative 3 would eliminate areas with 12-hour average noise levels over 55 dBA, and Alternative 4 would eliminate areas with 12-hour average noise levels over 50 dBA.
- Time Audible Natural Ambient (Table 10 and Table 13): Compared to existing conditions, the time audible natural ambient under Alternatives 3 and 4 would be less.
  - Compared to existing conditions, under Alternative 3 the time audible number of minutes would be potentially 34% less, equivalent to 100-120 minutes at most locations. Under Alternative 4 the time audible number of minutes would be potentially 79% less, equivalent to 160-350 minutes at most locations.
- Time Above 35 (Table 11 and Table 14): Compared to existing conditions, the time above 35 dBA under Alternatives 3 and 4 would be less.
  - The time above 35 dBA under Alternative 3 would range from 28 (point 3) to 114 minutes less (point 24).
  - Under Alternative 4 the time above 35 dBA would range from 64 to 266 minutes less at these same locations.
- Time Above 52 (Table 15): Compared to existing conditions, the time above 52 dBA under Alternatives 3 and 4 would be less.
  - The time above 52 dBA under Alternative 3 would range from 2 (point 3) to 37 minutes less (point 14).
  - Under Alternative 4, the time above 52 dBA would range from 5 to 84 minutes less at these same locations.
- Maximum Sound Level (Table 16): Since this metric represents the loudest sound level, in dBA, generated by the loudest event and is independent of the number of operations, there would be no change in the maximum sound levels between alternatives.



**Table 9. Comparison of Contour Results for 12-hour Equivalent Sound Level**

12-hour Equivalent Sound Level Contour Results		% Area for No Action	% Area for Alternative 3	% Area for Alternative 4
>=60		<1	<1	<1
55 to <60		3	1	<1
50 to < 55		43	28	1
45 to < 50		94	74	29
40 to < 45		100	100	76
35 to < 40		100	100	100

**Table 10. Comparison of Contour Results for Time Audible for Natural Ambient**

Time Audible for Natural Ambient Contour Results		% Area for No Action	% Area for Alternative 3	% Area for Alternative 4
360 to < 480		23	0	0
345 to < 360		38	0	0
330 to < 345		56	0	0
315 to < 330		70	0	0
300 to < 315		82	0	0
285 to < 300		90	<1	0
270 to < 285		94	2	0
255 to < 270		97	7	0
240 to < 255		98	19	0
225 to <240		99	42	0
210 to < 225		100	66	0
195 to < 210		100	84	0
180 to < 195		100	93	0
165 to < 180		100	98	0
150 to < 165		100	100	0
135 to < 150		100	100	0
120 to < 135		100	100	0
105 to < 120		100	100	0
90 to < 105		100	100	0
75 to < 90		100	100	18
60 to < 75		100	100	88
45 to < 60		100	100	100
30 to < 45		100	100	100
15 to < 30		100	100	100
0 to < 15		100	100	100

**Table 11. Comparison of Contour Results for Time Above 35 dBA**

Time Above 35 dBA Contour Results	% Area for No Action	% Area for Alternative 3	% Area for Alternative 4
315 to < 330	70	0	0
300 to < 315	82	0	0
285 to < 300	90	0	0
270 to < 285	94	0	0
255 to < 270	97	0	0
240 to < 255	98	0	0
225 to < 240	99	0	0
210 to < 225	100	<1	0
195 to < 210	100	1	0
180 to < 195	100	7	0
165 to < 180	100	19	0
150 to < 165	100	36	0
135 to < 150	100	55	0
120 to < 135	100	72	0
105 to < 120	100	87	0
90 to < 105	100	96	0
75 to < 90	100	100	0
60 to < 75	100	100	1
45 to < 60	100	100	42
30 to < 45	100	100	93
15 to < 30	100	100	100
0 to < 15	100	100	100

**Table 12. Comparison of Location Point Results for 12-hour Equivalent Sound Level**

Location	No Action	Alternative 3	Alternative 4
1. Amphitheater, Grand View Terrace, Lincoln Borglum Museum	50.5	48.6	43.7
2. Blackberry Trail	52.9	51.0	46.2
3. Climbing Area 1	39.6	37.8	32.9
4. Climbing Area 2	44.6	42.8	37.8
5. Climbing Area 3	44.8	43.0	38.1
6. Climbing Area 4	47.9	46.1	41.1
7. Climbing Area 5	46.7	44.9	40.0
8. Climbing Area 6	44.9	43.0	38.0
9. Private Seasonal Cabins	45.8	44.0	39.4
10. Undeveloped Park land	44.3	42.4	37.5
11. Main visitor use area	50.3	48.5	43.6
12. Youth Exploration area	49.3	47.5	42.6
13. Concession Housing	51.3	49.4	44.5
14. Undeveloped Park land-goat habitat	53.9	52.0	47.0
15. Starling Basin - goat habitat	50.0	48.2	43.4
16. Grizzly Campground	52.2	50.4	45.4
17. No name pullout	54.2	52.4	47.5
18. Old Baldy Mountain	44.3	42.4	37.6
19. Middle Marker Climbing Area	44.7	42.9	38.0
20. Old Baldy/Climbing Area	47.2	45.3	40.3
21. Chopping Block Climbing Area	45.3	43.5	38.6
22. Visitor use area	51.6	49.7	44.8
23. Presidential Trail	49.6	47.7	42.8
24. Lot 6	54.2	52.3	47.4
25. Starling Basin #2 - goat habitat	48.7	46.8	42.0
26. NPS Housing Area	50.5	48.7	43.9
27. Borglum View Terrace, Sculptor's Studio	50.5	48.6	43.7
28. Cultural Resource 1**	34.9	33.3	29.9
29. Cultural Resource 2	51.2	49.3	44.6
30. Cultural Resource 3**	29.0	28.2	26.9
31. Cultural Resource 4	46.3	44.5	39.8
32. Bridge 52-312-448	52.1	50.1	45.1
33. Keystone School**	52.3	50.5	45.3
34. Serolod	40.9	39.2	34.7
35. Tunnels on Iron Mountain Road**	40.7	38.8	34.5
36. Ortho Mining District**	23.9	22.7	20.8
37. Highway 16A tunnel **	50.0	48.3	43.2
38. Burlington & Quincy Highline Hill City to Keystone Bridge**	36.8	35.0	29.9

\*\*Refer to footnote 8 regarding modeling limitations for location points outside the ATMP planning area.

**Table 13. Comparison of Location Point Results for Time Audible for Natural Ambient**

Location	No Action	Alternative 3	Alternative 4
1. Amphitheater, Grand View Terrace, Lincoln Borglum Museum	363.4	239.1	74.2
2. Blackberry Trail	323.2	211.5	65.9
3. Climbing Area 1	301.4	197.2	63.0
4. Climbing Area 2	308.5	202.4	63.2
5. Climbing Area 3	313.6	206.3	65.1
6. Climbing Area 4	324.3	213.6	67.3
7. Climbing Area 5	307.3	202.1	63.7
8. Climbing Area 6	439.8	288.8	87.8
9. Private Seasonal Cabins	313.8	207.4	66.0
10. Undeveloped Park land	332.9	219.2	68.3
11. Main visitor use area	335.2	221.2	69.8
12. Youth Exploration area	375.7	247.6	76.6
13. Concession Housing	343.2	226.6	71.3
14. Undeveloped Park land-goat habitat	341.7	225.4	70.8
15. Starling Basin - goat habitat	331.9	218.5	68.3
16. Grizzly Campground	351.5	231.9	72.6
17. No name pullout	384.2	253.1	78.5
18. Old Baldy Mountain	317.9	209.8	66.6
19. Middle Marker Climbing Area	334.8	219.4	68.5
20. Old Baldy/Climbing Area	431.1	283.3	86.8
21. Chopping Block Climbing Area	329.8	216.2	68.2
22. Visitor use area	366.6	241.0	74.8
23. Presidential Trail	344.6	227.1	72.0
24. Lot 6	400.5	263.6	81.3
25. Starling Basin #2 - goat habitat	286.2	187.4	59.6
26. NPS Housing Area	341.5	225.1	70.3
27. Borglum View Terrace, Sculptor's Studio	370.7	244.8	75.7
28. Cultural Resource 1**	N/A	N/A	N/A
29. Cultural Resource 2	200.1	132.4	43.7
30. Cultural Resource 3**	N/A	N/A	N/A
31. Cultural Resource 4	365.5	240.5	74.8
32. Bridge 52-312-448	357.5	235.4	73.0
33. Keystone School**	N/A	N/A	N/A
34. Serolod	293.4	193.3	61.9
35. Tunnels on Iron Mountain Road**	N/A	N/A	N/A
36. Ortho Mining District**	N/A	N/A	N/A
37. Highway 16A tunnel **	N/A	N/A	N/A
38. Burlington & Quincy Highline Hill City to Keystone Bridge**	N/A	N/A	N/A

\*\*Refer to footnote 8 regarding modeling limitations for location points outside the ATMP planning area.

**Table 14. Comparison of Location Point Results for Time Above 35 dBA**

Location	No Action	Alternative 3	Alternative 4
1. Amphitheater, Grand View Terrace, Lincoln Borglum Museum	242.7	158.7	49.5
2. Blackberry Trail	235.4	152.7	45.9
3. Climbing Area 1	80.8	52.7	16.6
4. Climbing Area 2	122.5	79.8	23.9
5. Climbing Area 3	200.7	131.4	41.5
6. Climbing Area 4	165.3	107.8	34.0
7. Climbing Area 5	162.1	105.9	33.5
8. Climbing Area 6	241.4	157.8	49.0
9. Private Seasonal Cabins	221.3	145.5	45.2
10. Undeveloped Park land	194.9	127.1	39.4
11. Main visitor use area	233.0	153.1	48.2
12. Youth Exploration area	208.5	136.8	42.8
13. Concession Housing	290.8	191.5	59.5
14. Undeveloped Park land-goat habitat	200.5	131.7	42.1
15. Starling Basin - goat habitat	191.5	125.7	39.8
16. Grizzly Campground	261.1	172.0	54.4
17. No name pullout	319.0	210.0	65.1
18. Old Baldy Mountain	267.0	175.9	55.2
19. Middle Marker Climbing Area	126.0	81.9	24.4
20. Old Baldy/Climbing Area	313.8	206.2	63.7
21. Chopping Block Climbing Area	165.3	107.4	33.9
22. Visitor use area	281.2	184.3	57.1
23. Presidential Trail	204.3	134.2	42.6
24. Lot 6	333.2	219.2	67.4
25. Starling Basin #2 - goat habitat	188.1	122.1	37.2
26. NPS Housing Area	282.0	185.5	57.7
27. Borglum View Terrace, Sculptor's Studio	270.0	177.7	55.2
28. Cultural Resource 1**	119.9	77.9	25.1
29. Cultural Resource 2	123.4	81.1	25.7
30. Cultural Resource 3**	20.1	13.5	6.2
31. Cultural Resource 4	286.9	188.0	57.6
32. Bridge 52-312-448	246.9	162.2	51.4
33. Keystone School**	152.1	100.4	31.2
34. Serolod	121.6	80.6	25.6
35. Tunnels on Iron Mountain Road**	122.1	80.6	27.0
36. Ortho Mining District**	4.5	3.3	2.0
37. Highway 16A tunnel **	96.9	64.7	20.7
38. Burlington & Quincy Highline Hill City to Keystone Bridge**	97.9	64.1	19.6

\*\*Refer to footnote 8 regarding modeling limitations for location points outside the ATMP planning area.

**Table 15. Comparison of Location Point Results for Time Above 52 dBA**

Location	No Action	Alternative 3	Alternative 4
1. Amphitheater, Grand View Terrace, Lincoln Borglum Museum	49.4	32.1	10.3
2. Blackberry Trail	66.9	43.8	14.0
3. Climbing Area 1	5.8	3.9	1.3
4. Climbing Area 2	27.6	18.0	5.7
5. Climbing Area 3	30.9	20.1	6.6
6. Climbing Area 4	43.3	28.2	8.6
7. Climbing Area 5	42.7	27.8	8.9
8. Climbing Area 6	36.7	23.7	7.7
9. Private Seasonal Cabins	35.9	23.5	8.1
10. Undeveloped Park land	34.6	22.3	7.6
11. Main visitor use area	67.4	44.0	14.0
12. Youth Exploration area	64.0	41.8	13.5
13. Concession Housing	74.8	48.7	15.3
14. Undeveloped Park land-goat habitat	104.9	68.1	21.1
15. Starling Basin - goat habitat	35.0	23.1	7.9
16. Grizzly Campground	96.2	62.7	19.5
17. No name pullout	90.8	59.1	18.4
18. Old Baldy Mountain	27.5	17.8	6.3
19. Middle Marker Climbing Area	21.2	14.0	4.5
20. Old Baldy/Climbing Area	58.4	38.1	12.6
21. Chopping Block Climbing Area	23.1	15.2	5.1
22. Visitor use area	75.3	49.1	15.5
23. Presidential Trail	71.7	46.7	15.0
24. Lot 6	101.1	65.8	20.6
25. Starling Basin #2 - goat habitat	46.5	30.5	10.2
26. NPS Housing Area	62.8	41.0	13.0
27. Borglum View Terrace, Sculptor's Studio	53.1	34.6	11.1
28. Cultural Resource 1**	0.7	0.7	0.7
29. Cultural Resource 2	48.8	32.0	10.3
30. Cultural Resource 3**	0.4	0.4	0.4
31. Cultural Resource 4	35.7	23.1	7.8
32. Bridge 52-312-448	74.4	48.5	15.7
33. Keystone School**	53.9	36.1	11.3
34. Serolod	12.7	8.6	3.0
35. Tunnels on Iron Mountain Road**	9.2	5.9	2.3
36. Ortho Mining District**	0.0	0.0	0.0
37. Highway 16A tunnel **	44.4	29.6	9.1
38. Burlington & Quincy Highline Hill City to Keystone Bridge**	1.6	1.1	0.4

\*\*Refer to footnote 8 regarding modeling limitations for location points outside the ATMP planning area.

**Table 16. Comparison of Location Point Results for Maximum Sound Level**

Location	No Action	Alternative 3	Alternative 4
1. Amphitheater, Grand View Terrace, Lincoln Borglum Museum	69.0	69.0	69.0
2. Blackberry Trail	73.3	73.3	73.3
3. Climbing Area 1	62.6	62.6	62.6
4. Climbing Area 2	62.5	62.5	62.5
5. Climbing Area 3	62.2	62.2	62.2
6. Climbing Area 4	65.7	65.7	65.7
7. Climbing Area 5	63.6	63.6	63.6
8. Climbing Area 6	62.1	62.1	62.1
9. Private Seasonal Cabins	62.9	62.9	62.9
10. Undeveloped Park land	59.7	59.7	59.7
11. Main visitor use area	67.8	67.8	67.8
12. Youth Exploration area	66.5	66.5	66.5
13. Concession Housing	69.2	69.2	69.2
14. Undeveloped Park land-goat habitat	71.3	71.3	71.3
15. Starling Basin - goat habitat	71.7	71.7	71.7
16. Grizzly Campground	67.8	67.8	67.8
17. No name pullout	73.7	73.7	73.7
18. Old Baldy Mountain	63.5	63.5	63.5
19. Middle Marker Climbing Area	63.0	63.0	63.0
20. Old Baldy/Climbing Area	63.9	63.9	63.9
21. Chopping Block Climbing Area	64.4	64.4	64.4
22. Visitor use area	69.7	69.7	69.7
23. Presidential Trail	66.4	66.4	66.4
24. Lot 6	73.4	73.4	73.4
25. Starling Basin #2 - goat habitat	66.3	66.3	66.3
26. NPS Housing Area	68.5	68.5	68.5
27. Borglum View Terrace, Sculptor's Studio	68.8	68.8	68.8
28. Cultural Resource 1**	59.0	59.0	59.0
29. Cultural Resource 2	72.1	72.1	72.1
30. Cultural Resource 3**	60.2	60.2	60.2
31. Cultural Resource 4	64.2	64.2	64.2
32. Bridge 52-312-448	69.7	69.7	69.7
33. Keystone School**	77.0	77.0	77.0
34. Serolod	61.4	61.4	61.4
35. Tunnels on Iron Mountain Road**	60.3	60.3	60.3
36. Ortho Mining District**	51.5	51.5	51.5
37. Highway 16A tunnel **	71.3	71.3	71.3
38. Burlington & Quincy Highline Hill City to Keystone Bridge**	52.7	52.7	52.7

\*\*Refer to footnote 8 regarding modeling limitations for location points outside the ATMP planning area.

## **8. Indirect Effects of Potential Displacement of Air Tours Outside of the ATMP Planning Area**

For alternatives that limit the number of flights per year to a level below existing conditions (3,914 flights per year), it is reasonably foreseeable that air tour operators could seek to make up lost revenue in other ways. One of the ways that operators could potentially generate revenue is by offering air tours outside of the ATMP planning area, as these would not be regulated by the ATMP. An unknown number of air tours may continue to fly more than ½-mile outside of the Park's boundary, or over the ATMP planning area at or above 5,000 feet (ft.) above ground level (AGL). This type of shift in air tour activity is referred to as "air tour displacement". This could result in impacts to resources to the extent that they are present near the locations where displaced air tours would occur.

### **Indirect Effects to ATMP Planning Area**

Displaced air tours, if any, above the ATMP planning area (at or above 5,000 ft. AGL) could result in noise within the ATMP planning area. Compared to current conditions, the noise would be spread over a larger geospatial area and would be audible for a longer period, but at lower intensity. Thus, some locations within the ATMP planning area may experience less intense noise but for a longer period when compared to current conditions. Additionally, other locations within the ATMP planning area not currently experiencing air tour noise may experience some noise under these alternatives when compared to current conditions. In both cases the intensity of noise would likely be low given the aircraft altitude; any noise that might result could also be more easily masked by opportunistic sounds such as wind and various anthropogenic noise sources. In summary, while the area of noise could be greater under these alternatives, the intensity of noise, especially when compared to current conditions at locations near or directly below existing air tour routes, would be less.

Air tours could also fly just outside of the ATMP planning area. Noise from air tours in this case would still likely reach the Park, however, the noise would be less intense.

### **Indirect Effects Outside the ATMP Planning Area**

Displaced air tours have the potential to affect noise-sensitive locations outside the ATMP planning area. However, it is unlikely that displaced air tours would generate noise at or above DNL 65 dB. To illustrate this, a conservative, screening-level noise analysis was conducted. The analysis considers the air tour aircraft types currently operating at the Park, and assesses the activity threshold that would generate a noise at or above DNL 65 dB. For the purposes of this illustration only, the analysis assumes a hypothetical, worst-case scenario where all operations occur at a low altitude (500 ft. AGL for helicopters and 1,000 ft. AGL for fixed-wing aircraft) on a common route outside the ATMP planning area. The noise analysis considers aircraft activity in two ways:

- For the aircraft type with the loudest noise level, what is the daily activity level that would generate a noise level at or above DNL 65 dB?
- For the aircraft types and fleet mix distribution within the 2017-2019 PMAD, what is the daily activity level that would generate a noise level at or above DNL 65 dB?



### *Analysis for Aircraft with Loudest Noise Level*

The aircraft with the loudest noise level<sup>8</sup> currently operating at the Park is the Robinson R-44. For overflight operations at 500 ft. AGL, the number of operations over a 12-hour period to exceed DNL 65 dB is 1,086 (see Table 17). Other aircraft operating at the Park are the Cessna 206. The number of daily operations to exceed a DNL 65 dB level for this aircraft is 1,306.

**Table 17. Overflight Sound Exposure Levels and Number of Daily Flights of Each Aircraft Type that Would Generate a Cumulative Noise Exposure Level at or Above DNL 65 dB**

Aircraft	Altitude, AGL (ft.)	Overflight Sound Exposure Level (dB)	# Daily Flights for DNL to Exceed 65 dB
Robinson R-44	500	84.0	1,086
Cessna 206	1,000	83.2	1,306

### *Analysis for the Aircraft Types and Fleet Mix Distribution within the 2017-2019 Reporting Data*

This analysis compares the number of PMAD and peak day operations, since they could occur outside the ATMP planning area as a result of Alternatives 2, 3 and 4, to the number of daily flights it would take to exceed DNL 65 dB. Based on the fleet mix assessed for the PMAD, it would take at least 1,093 daily operations at low altitude to exceed a DNL 65 dB level (see Table 18). This activity level represents an increase in daily operations of 1,055 compared to the current PMAD (38 operations). This indicates that it would be highly unlikely that air tours that are displaced to outside the ATMP planning area under these alternatives would generate noise at or above DNL 65 dB.

**Table 18. Number of Daily Flights of Each Aircraft Type that Would Generate a Cumulative Noise Exposure Level at or Above DNL 65 dB for the Aircraft Types and Fleet Mix Distribution within the 2017-2019 PMAD**

Aircraft	Altitude, AGL (ft)	Overflight Sound Exposure Level (dB)	# Daily Flights in 2017-2019 PMAD	2017-2019 PMAD Fleet Distribution %	# daily Flights for DNL to Exceed 65 dB
Robinson R-44	500	84.0	37	97.4%	1,064
Cessna 206	1,000	83.2	1	2.6%	29
Total			18	100%	1,093

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<sup>8</sup> The determination of loudest is based on the aircraft with the highest overflight sound exposure level within the noise-power-distance data that form the basis of FAA's AEDT. Sound exposure level describes the cumulative noise exposure from a single overflight. It is represented by the total A-weighted sound energy during the overflight, normalized to a 1-second interval.

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## **APPENDIX G**

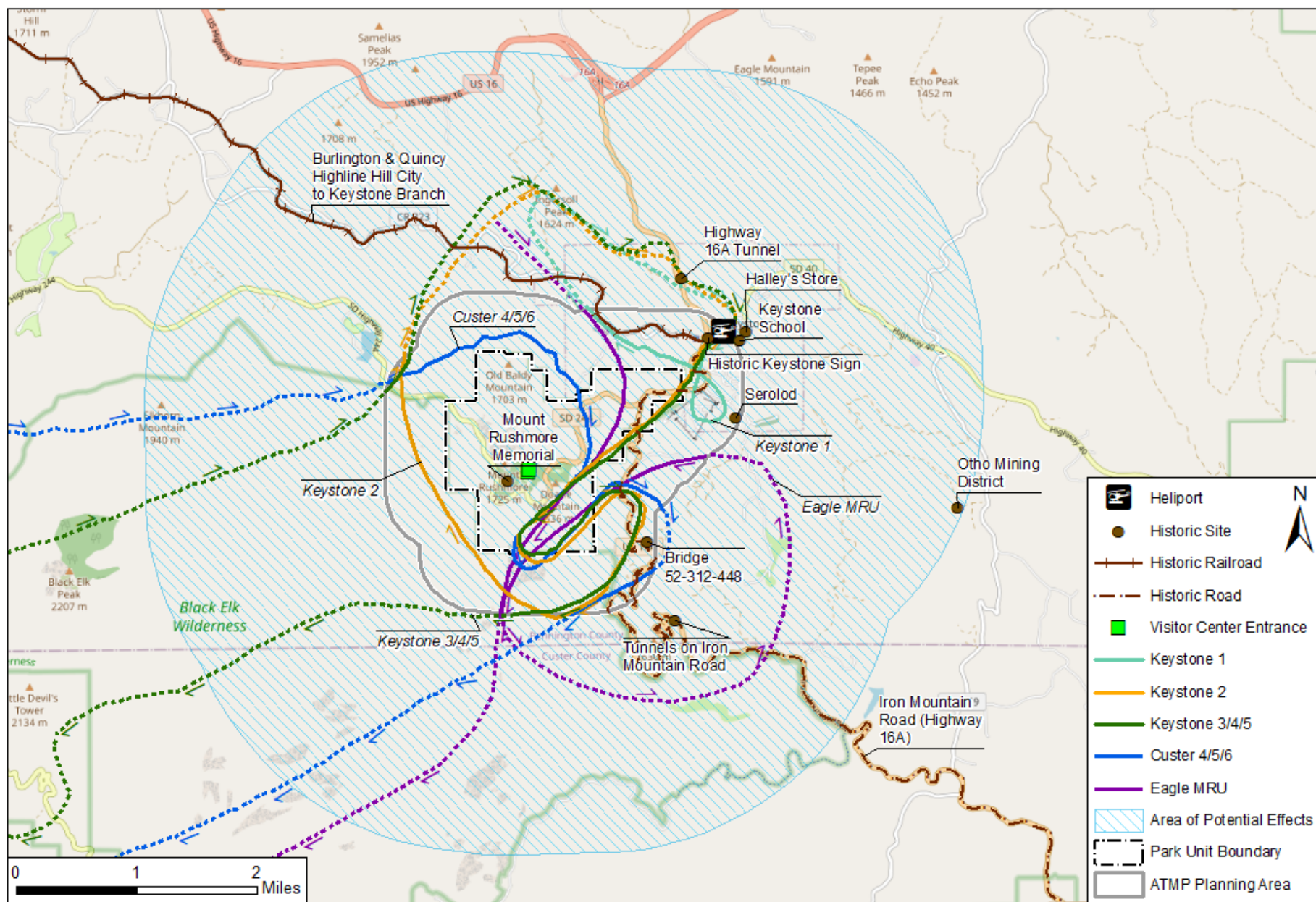
### **Cultural Resources Consultation and Summary**

## **Appendix G: Cultural Resources Consultation and Summary**

*Historic Property List*

*Section 106 Consultation Correspondence*

## Area of Potential Effects with Historic Properties for ATMP at Mount Rushmore National Memorial



### List of Historic Properties in the APE and Description of Historic Characteristics

Property Name	Property Type	Eligibility Status	Location	Significant Characteristics
Black Hills	TCP	Recommended Eligible/undetermined <sup>1</sup>	Black Hills	The Black Hills, including Badlands National Park and Mount Rushmore National Memorial, are part of a continuous landscape that is sacred, which includes plants, animals, the sky, and other natural resources. The landscape is considered a TCP by many tribes.
Mount Rushmore Developed Area	Structures	Listed	Within the Park	See Mount Rushmore Memorial.
Mount Rushmore Memorial	Site	Listed	Within the Park	Mount Rushmore National Memorial, established October 1, 1925, is near the center summit of the Black Hills in SW South Dakota. The sculpture, known as the Shrine of Democracy, is carved into the SW face of Mount Rushmore, a solid granite ridge in the Harney Range. Areas of significance include: 1) illustration of an important theme in our nation's history; 2) association with the lives of four presidents represented; 3) represents the work of a master and possesses artistic value. It is also significant as an example of American cultural values. The presidents typify the ideals, attitudes, values, dreams, and spirit of Americans.
Burlington & Quincy Highline Hill City to Keystone Br.	District	Eligible	Sections are within the Park	The property is significant as a reflection of the growth and operational pattern of the Burlington and Quincy railroad. This spur line demonstrates how the railroad served and influenced the towns of Hill City and Keystone. The Burlington and Quincy High Line Hill City to Keystone Branch is also significant as an excellent example of early railway design, engineering, and architecture.
Bridge 52-312-448	Structure	Eligible	Outside the Park	Bridge integrity has been diminished slightly with removal of one wingwall. The structure also has some condition

<sup>1</sup> For the purposes of Section 106, the FAA is treating identified but unevaluated properties as eligible for the National Register of Historic Places.

Property Name	Property Type	Eligibility Status	Location	Significant Characteristics
				problems. Nevertheless, it has been selected as a National Register-eligible representation of the steel stringer bridge type, in large part because of its position on a pigtail section of U.S. Highway 16A.
Hwy 16A tunnel	Structure	Eligible	Outside the Park	See Iron Mountain Road (Highway 16A).
Iron Mountain Road (Highway 16A)	Structure	Eligible	Sections are within the Park	After receiving presidential support for the Mount Rushmore monument in 1929, Peter Norbeck turned his attention to the construction of a scenic road between the Game Lodge and Mount Rushmore. Iron Mountain Road was completed in 1932. The two-lane section between Mount Rushmore and Custer State Park becomes divided into two single lanes twice to minimize the cutting of rock, preserving the forest and mountain scenery. He designed the road over a picturesque route so that the presidential figures could be seen from several different aspects.
Tunnels on Iron Mountain Road	Structure	Eligible	Outside the Park	See Iron Mountain Road (Highway 16A).
Serolod	Structure	Eligible	Outside the Park	An example of single-family resort architecture in South Dakota. The house was constructed by local craftsmen, who also worked on several fine resort buildings in the area. Devastated by a flood in the early 1970's, the community of Keystone has few remaining early houses, and this structure is the best example of post-World War I architecture. The log construction technique employs stripped, unhewn logs joined with a saddle notch. Referred to as a Lincoln Log building, ends of the logs are sawn, the tapering crowns extend beyond the corner, a low-pitched roof extends beyond the wall in a wide eave both as an arts and crafts/Prairie School/Western Stick style feature and to protect the crown ends.
Keystone School	Structure	Eligible	Outside the Park	Significant in the areas of education and architecture. An example of a frame rural school at the turn of the century. .

Property Name	Property Type	Eligibility Status	Location	Significant Characteristics
				The school, which dominates the town from its hillside position, is unusually large for schools of its day.
Halley's Store	Structure	Eligible	Outside the Park	The buildings are significant in the areas of commerce and vernacular architecture, the Keystone Trading Company Store is indirectly significant to industry as well. As a well-preserved example of a gable-end, one-story country store, the building was one of the two general merchandising stores serving the town. In addition, the store served as the company store for the mining operations.
Historic Keystone Sign	Object	Eligible	Outside the Park	The Historic Keystone sign likely built c.1968 is eligible for listing in the National Register for its significance within the history of tourism development. The sign was a local effort for roadside wayfinding and economic promotion, demonstrating the trends of postwar tourist development in Black Hills towns, also indicated, and spurred, by the Mission 66 improvements to Mount Rushmore National Memorial and the 1967-1968 construction of the Keystone Wye bridge. The stone veneer and unpainted vertical wood boards used in the design of the sign also demonstrate period trends in tourist construction in the Black Hills to use natural materials of the region.
39CU3069*	Site – Rock Shelter	Eligible	Outside the Park	Historic artifacts related to Native American protestors who occupied the site during two brief periods in 1970 and 1971. This archaeological site may be considered TCP by some because of its association with the events related to Native American occupation of Mount Rushmore Memorial.
39PN3239*	Site	Eligible	Outside the Park	Rock Shelter
39CU3873*	Site	Eligible	Outside the Park	Mine



Property Name	Property Type	Eligibility Status	Location	Significant Characteristics
Scott Family Summer Cabin (also known as Lafferty Gulch Summer Home)*	Structure	Eligible	Outside the Park	The Scott Family Summer Cabin is eligible for the National Register for its association with Depression-era recreation in the Black Hills, as well as the Federal Government's policy of encouraging private recreational developments on public lands from the mid-1930s to the early 1940s.
Otho Mining District	District	Eligible	Outside the Park	The Otho Mining District was a small rural mining community. It is eligible for the National Register because it represents a period of time when mining in the Black Hills was drawing people into the area from all over the United States. It was the mining of various rich mineral deposits in the area including gold, silver, tin, feldspar and beryl that attracted both national and international speculators to invest millions of dollars into the economy of the Keystone area communities including Otho. Until 1882, the United States imported all the tin we used. Some of the mines in the Keystone area, including Otho, produced tin; reducing the Nation's dependence on imports. Otho's open and undeveloped space offers an unspoiled glimpse at how and where the prospectors tested an area for minerals and how the later full scale mining developed. The landscape that surrounds it is pocked with prospectors test holes, cuts and trenches, mine tunnels and shafts, and milling foundations. This area provides a rare opportunity to see how these features tie together to generate a cohesive picture of turn of the century mining practices.

\*Location is restricted and therefore cannot be shown on the APE map



**United States Department of the Interior**  
**NATIONAL PARK SERVICE**  
Natural Resource Stewardship & Science  
Natural Sounds and Night Skies Division



U.S. Department  
of Transportation  
**Federal Aviation  
Administration**

**United States Department of Transportation**  
**FEDERAL AVIATION ADMINISTRATION**  
Office of Policy, International Affairs & Environment  
Office of Environment and Energy

## **NATIONAL PARKS AIR TOUR MANAGEMENT PROGRAM**

April 12, 2021

Re: Initiation of consultation under Section 106 of the National Historic Preservation Act for the development of Air Tour Management Plans for Badlands National Park and Mount Rushmore National Memorial

Ted Spencer  
State Historic Preservation Officer  
Cultural Heritage Center  
900 Governors Drive  
Pierre, SD 57501

Dear Mr. Spencer:

The Federal Aviation Administration (FAA) and the National Park Service (NPS) (collectively, the agencies) are developing Air Tour Management Plans (ATMPs) for 23 parks including Badlands National Park and Mount Rushmore National Memorial. ATMPs apply to commercial air tours flown at or below 5,000 feet above ground level in and within ½ mile of a park boundary. The agencies have determined that development of an ATMP qualifies as an “undertaking” subject to Section 106 of the National Historic Preservation Act (NHPA). The purpose of this letter is to initiate Section 106 consultation with your office in accordance with 36 CFR 800.3(c), and solicit any initial comments you may have about the proposed undertaking.

In response to a May 1, 2020 court order, the agencies are working to complete all of the ATMPs by August 31, 2022.<sup>1</sup> The ATMPs are being developed in accordance with the National Parks Air Tour Management Act (NPATMA). NPATMA directs the agencies to either enter into voluntary agreements with air tour operators or establish ATMPs for national parks and adjacent tribal lands where commercial air tour operations are conducted or proposed, subject to certain exceptions not relevant here.

The FAA is acting as the lead federal agency overseeing compliance with Section 106 of the NHPA for this undertaking. The FAA will be coordinating its review under Section 106 with its compliance with the National Environmental Policy Act (NEPA). Each ATMP will be unique and therefore, each ATMP will be

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<sup>1</sup> For more information about the court order and proposed plan, see:  
[https://www.faa.gov/about/office\\_org/headquarters\\_offices/arc/programs/air\\_tour\\_management\\_plan/](https://www.faa.gov/about/office_org/headquarters_offices/arc/programs/air_tour_management_plan/)

assessed individually under Section 106 and NEPA. We look forward to meaningful consultation on the air tours and their overall effect on historic properties.

There will be no ground disturbance, construction or demolition associated with this undertaking. Air tours have been operating in Badlands National Park and Mount Rushmore National Memorial for over 20 years. Since 2005, these air tours have been conducted pursuant to interim operating authorizations (IOAs) as provided in NPATMA. The agencies are creating ATMPs to replace IOAs and, to the extent possible, will limit the number of annual air tour operations to the average flown between 2017 and 2019. At this time we anticipate little or no increase in air tour operations

In accordance with 36 CFR 800.3 and NPATMA, the agencies have identified and initiated consultation with federally recognized tribes whose lands will be overflown or who have an interest or ancestral connections to one or more of the parks (See Attachment A). We would welcome your assistance in identifying additional consulting parties along with meaningful ways to engage the public. Information regarding ATMPs is available through a dedicated web site located at:

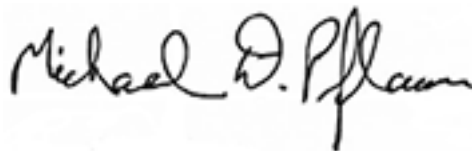
[https://www.faa.gov/about/office\\_org/headquarters\\_offices/arc/programs/air\\_tour\\_management\\_plan/](https://www.faa.gov/about/office_org/headquarters_offices/arc/programs/air_tour_management_plan/). During the next phase of consultation, we will seek your input regarding the Area of Potential Effect and the identification of historic properties.

We will follow up with you in the next month. Should you wish to receive additional information regarding this undertaking, please contact Cathy Nadals at [ATMPTeams@dot.gov](mailto:ATMPTeams@dot.gov) or (202) 267-0746.

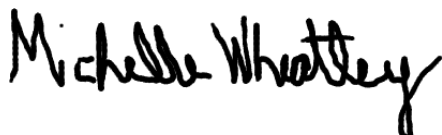
Sincerely,



Rebecca MacPherson  
Regional Administrator  
Great Lakes Region  
Federal Aviation Administration



Michael Pflaum  
Superintendent  
Badlands National Park  
National Park Service



Michelle Wheatley  
Superintendent  
Mount Rushmore National Memorial  
National Park Service

Attachment A: List of Tribes

**ATTACHMENT A**  
**TRIBAL CONSULTATION LIST**

<b>Tribe</b>
Apache Tribe of Oklahoma
Assiniboine and Sioux Tribes of the Fort Peck Indian Reservation
Cheyenne and Arapaho Tribes of Oklahoma
Cheyenne River Sioux Tribe (of the Cheyenne River Reservation, South Dakota)
Crow Creek Sioux Tribe (of the Crow Creek Reservation, South Dakota)
Crow Tribe of Montana
Eastern Shoshone Tribe of the Wind River Reservation, Wyoming
Flandreau Santee Sioux Tribe of South Dakota
Fort Belknap Indian Community of the Fort Belknap Reservation
Kiowa Indian Tribe of Oklahoma
Lower Brule Sioux Tribe of the Lower Brule Reservation
Northern Arapaho Tribe of the Wind River Reservation, WY
Northern Cheyenne Tribe of the Northern Cheyenne Indian Reservation
Oglala Lakota Nation
Omaha Tribe of Nebraska
Ponca Tribe of Nebraska
Rosebud Sioux Tribe of the Rosebud Indian Reservation
Santee Sioux Nation, Nebraska
Sisseton-Wahpeton Oyate of the Lake Traverse Reservation
Spirit Lake Tribe
Standing Rock Sioux Tribe of North & South Dakota
Three Affiliated Tribes of the Berthold Reservation, North Dakota (Mandan, Hidatsa and Arikara Nation)
Turtle Mountain Band of Chippewa Indians of North Dakota
Upper Sioux Community, Minnesota
Winnebago Tribe of Nebraska
Yankton Sioux Tribe of South Dakota



U.S. Department  
of Transportation  
**Federal Aviation  
Administration**

**United States Department of Transportation**  
**FEDERAL AVIATION ADMINISTRATION**  
Office of Policy, International Affairs & Environment  
Office of Environment and Energy

## **NATIONAL PARKS AIR TOUR MANAGEMENT PROGRAM**

October 28, 2022

Re: Continuing Consultation under Section 106 of the National Historic Preservation Act for the development of an Air Tour Management Plan for Mount Rushmore National Memorial

Ted Spencer  
State Historic Preservation Officer  
Cultural Heritage Center  
900 Governors Drive  
Pierre, SD 57501

Dear Mr. Spencer:

The Federal Aviation Administration (FAA), in coordination with the National Park Service (NPS), seeks to continue consultation with your office under Section 106 of the National Historic Preservation Act (NHPA) for the development of an Air Tour Management Plan (ATMP) for Mount Rushmore National Memorial (Mount Rushmore or Park). The FAA initiated consultation with your office by letter dated April 12, 2021.

This letter presents a description of the alternatives being considered for the ATMP. The ATMP will become the proposed undertaking in accordance with 36 CFR 800.3(a) and 800.16(y). This letter will also describe the proposed Area of Potential Effects (APE) pursuant to 36 CFR 800.4(a)(1). The FAA has completed its initial historic property identification effort within the proposed APE in accordance with 36 CFR 800.4. The FAA specifically requests your comments on our proposed APE and initial historic property identification efforts.

### **Description of the Undertaking**

Consistent with the National Parks Air Tour Management Act of 2000 (Act), the proposed ATMP would regulate commercial air tours over the Park or within a half-mile outside the boundary of the Park. Further background information regarding the history of commercial air tours over the Park, the authority under which they are currently conducted, and the area to be regulated under the ATMP is available in the September 2022 Scoping Newsletter, prepared by the FAA and the NPS (together, the agencies), that was previously provided to your office and is available at the following link:

<https://parkplanning.nps.gov/document.cfm?parkID=152&projectID=97377&documentID=123303>

The agencies have documented the existing conditions for commercial air tour operations over the Park. Two commercial air tour operators currently conduct tours over the Park: Dakota Rotors LCC (Dakota Rotors) and Eagle Aviation, Inc. (Eagle Aviation). There is a third operator, Black Hills Helicopters and Charters, that also conducts air tours over the Black Hills region. This operator is not currently authorized to conduct air tours over the Park or outside the Park but within ½ mile of its boundary, but does circle just outside of the Park (approximately ½ mile to 1 mile). The number of air tours conducted by this operator are unknown, as there are no reporting requirements for air tour activity more than ½ mile outside the Park's boundary.

The agencies consider the existing operations for commercial air tours to be an average of 2017-2019 annual air tours flown, which is 3,914 air tours. A three-year annual average is used because it reflects the most accurate and reliable air tour conditions, and accounts for variations across multiple years. Under existing conditions, commercial air tours over the Park are conducted using both fixed wing aircraft: CE-172-N and CE-206-U206F, and helicopters: BHT-206-B, BHT-47-47, BHT-47-G3B1, R-44- II, and R-66-66. The average number of air tours conducted on an annual basis from 2017-2019 for Dakota Rotors is 3,905 air tours and 9 for Eagle Aviation. The helicopter operator (Dakota Rotors) accounts for the vast majority of the tours. The fixed-wing operator (Eagle Aviation) flew 19 tours in 2017, 6 in 2018, and 2 in 2019. Reported minimum altitudes range from 900 ft. AGL to 1,400 ft. AGL<sup>1</sup>, depending on operator.

Air tours are offered on five different routes, though under current conditions the operators are not required to fly on any particular route and could change their routes without notice to the agencies. Air tours that fly over the Park to view the sculpture generally keep a minimum standoff distance of approximately 2,600 feet (ft.) from the sculpture and approximately 1,500 ft. from the amphitheater for viewing the sculpture, though there is currently no requirement for them to do so. Existing routes are depicted in **Attachment A**. Air tours are offered seasonally, primarily occurring May through October and typically peaking in July. Monthly reported data does reveal a trend of the concentration of flights in the summer months.

The proposed ATMP would authorize or prohibit commercial air tour operations over the Park in accordance with the conditions included in the selected alternative. The FAA and the NPS are working to select a preferred alternative for the ATMP, which will be the proposed undertaking. The current draft alternatives are shown in the table below and a summary of the elements in each alternative being considered can be found in **Attachment B**.

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<sup>1</sup> Altitude expressed in units above ground level is a measurement of the distance between the ground surface and the aircraft, whereas altitude expressed in median sea level (MSL) refers to the altitude of aircraft above sea level, regardless of the terrain below it. Aircraft flying at a constant MSL altitude would simultaneously fly at varying AGL altitudes, and vice versa, assuming uneven terrain is present below the aircraft.

### Potential Undertakings

Alternative 2- No Air Tours in the Planning Area <sup>2</sup>
Alternative 3 – Daily Cap of 25 Air Tours During the Operating Season with Additional Modifications
Alternative 4 – Daily Cap of 13 Air Tours During the Operating Season with Additional Modifications

The agencies have decided to comply with the Act by developing an ATMP for the Park. Alternative 2 would prohibit any commercial air tours from operating within the ATMP planning area. The other two alternatives being considered for selection for the Park ATMP (Alternatives 3 and 4) are detailed with specificity in **Attachment B** and generally incorporate some or all of the following:

- Annual and daily number of flights.
- Air tours would be conducted along designated routes.
- Aircraft types used for commercial air tours would be designated and any new or replacement aircraft could not exceed the noise level produced by the aircraft being replaced.
- Minimum Altitudes: The range of altitudes examined in the alternatives will be from 900 ft. AGL to 1,400 ft. AGL.
- Time of day restrictions and seasonal restrictions.
- Incentives for quiet technology aircraft.
- A process for the NPS to establish temporary no-fly periods that apply to air tours for special events or planned Park management. Events could include tribal ceremonies or rituals as determined by affected tribes.
- Operators would submit semi-annual reports to the FAA and the NPS regarding the number of commercial air tours conducted by the operator over the Park.
- Operators would be encouraged to take one training course per year conducted by NPS staff that will include the terms and conditions of the ATMP as well as Park, tribal, and historical resource information for operators to use to enhance interpretive narratives for air tour clients and increase understanding of parks by air tour clients.
- At the request of either of the agencies, the Park staff, or the local FAA Flight Standards District Office (FSDO), all operators would meet once per year to discuss the implementation of the ATMP. This proposed annual meeting could be conducted in conjunction with the required annual training.

### **Proposed Area of Potential Effects**

The APE as defined at 36 CFR 800.16(d) is the geographic area or areas within which the undertaking may directly or indirectly cause alterations in the character or use of any historic properties, if any such properties exist. The proposed FAA and NPS approval of the ATMP does not require land acquisition,

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<sup>2</sup> Under the Act and its implementing regulations, an ATMP regulates commercial air tours over a national park or outside the park but within 1/2 mile of its boundary during which the aircraft flies below 5,000 ft. AGL. This is referred to as the ATMP planning area.

construction, or ground disturbance, and the FAA anticipates no physical effects to historic properties. The FAA is therefore focusing its assessment on the potential introduction of visual or audible elements that could diminish the integrity of any identified significant historic properties.<sup>3</sup>

In establishing the proposed APE, the FAA sought to include areas where any historic property present could be affected by noise from or sight of commercial air tours that may take place under the selectable draft alternatives, including those over the Park or those that are reasonably foreseeable to take place adjacent to the ATMP area. The FAA will consider the number and altitude of commercial air tours over historic properties in these areas to further assess the potential for visual effects and any incremental change in noise levels that may result in alteration of the characteristics of historic properties qualifying them for the National Register of Historic Places (National Register).

The FAA proposes an APE comprising the Park plus 2 ½ miles outside the boundary of the Park, as depicted in **Attachment A** below. The APE may be refined depending on the preferred alternative.

### **Preliminary Historic Property Identification**

The FAA, in cooperation with NPS, has undertaken preliminary efforts to identify historic properties within the APE. In so doing, the FAA has taken into consideration the views of consulting parties, past planning, research and studies, the magnitude and nature of the undertaking, the degree of Federal involvement, the nature and extent of potential effects on historic properties and the likely nature of historic properties within the APE in accordance with 36 CFR 800.4(b)(1). As such, the historic property identification effort has focused on properties for which setting and feeling are characteristics contributing to the property's National Register eligibility. The FAA is also considering whether air tours could affect the use of traditional cultural properties (TCPs) associated with cultural practices, customs or beliefs that continue to be held or practiced today.

The agencies have invited 26 tribes to participate in the consultation process for Badlands National Park, Mount Rushmore, or both parks. The agencies recognize that these tribes have a long-standing and deeply rooted association with the landscape that encompasses these National Park System lands, which include numerous sites of religious and cultural significance. The agencies have held various meetings to begin discussing ATMP planning, the range of alternatives, and Section 106 consultation. Tribal meetings were held on March 30, 2021, July 23, 2021, September 9, 2021, October 19, 2021, January 28, 2022 and May 12, 2022 for both Badlands National Park and Mount Rushmore. At these meetings, the FAA heard from the Fort Peck Assiniboiné and Sioux Tribes, Santee Sioux Nation, Upper Sioux Community, Rosebud Sioux Tribe, Cheyenne River Sioux Tribe, and others that the Black Hills, including Mount Rushmore, are part of a continuous landscape that is sacred. The landscape is considered a TCP by many tribes.

The FAA, with assistance from NPS Park staff, the NPS Midwest Archeological Center, the US Forest Service Black Hills National Forest, the South Dakota State Historic Preservation Office's CR GRID database, and the South Dakota Archaeological Research Center, has identified 16 historic properties within the APE for which feeling and setting are characteristics that make the properties eligible for listing on the National Register. Historic properties with unrestricted locations are shown in the

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<sup>3</sup> The term historic property is defined in 54 U.S.C. 300308 and 36 CFR 800.16(l)(1).



proposed APE map provided in **Attachment A**. All historic properties mentioned above are listed in **Attachment C**.

### **Preliminary Effects Assessment**

The FAA anticipates the proposed undertaking would have no physical effects to historic properties. However, the FAA recognizes that for certain types of historic properties, including those where the property's setting contributes to its historic significance or where the introduction of visual, atmospheric, or audible elements could diminish the integrity of a property's significant historic features, air tour operations could result in non-physical effects. The FAA seeks the expertise of consulting parties to identify properties that could be thus impacted.

### **Review Request**

The FAA requests that you provide any comments you may have regarding the proposed APE and initial identification of historic properties. In particular, we would appreciate your views regarding the characteristics of historic properties, and any information you might have that would help us to identify additional properties for which setting or feeling is a significant characteristic. Should you wish to receive additional information regarding this undertaking, please contact Judith Walker at 202-267-4185 or [Judith.Walker@faa.gov](mailto:Judith.Walker@faa.gov) and copy the ATMP team at [ATMPTeam@dot.gov](mailto:ATMPTeam@dot.gov).

Sincerely,

A handwritten signature in black ink, appearing to read 'Judith Walker', with a long horizontal flourish extending to the right.

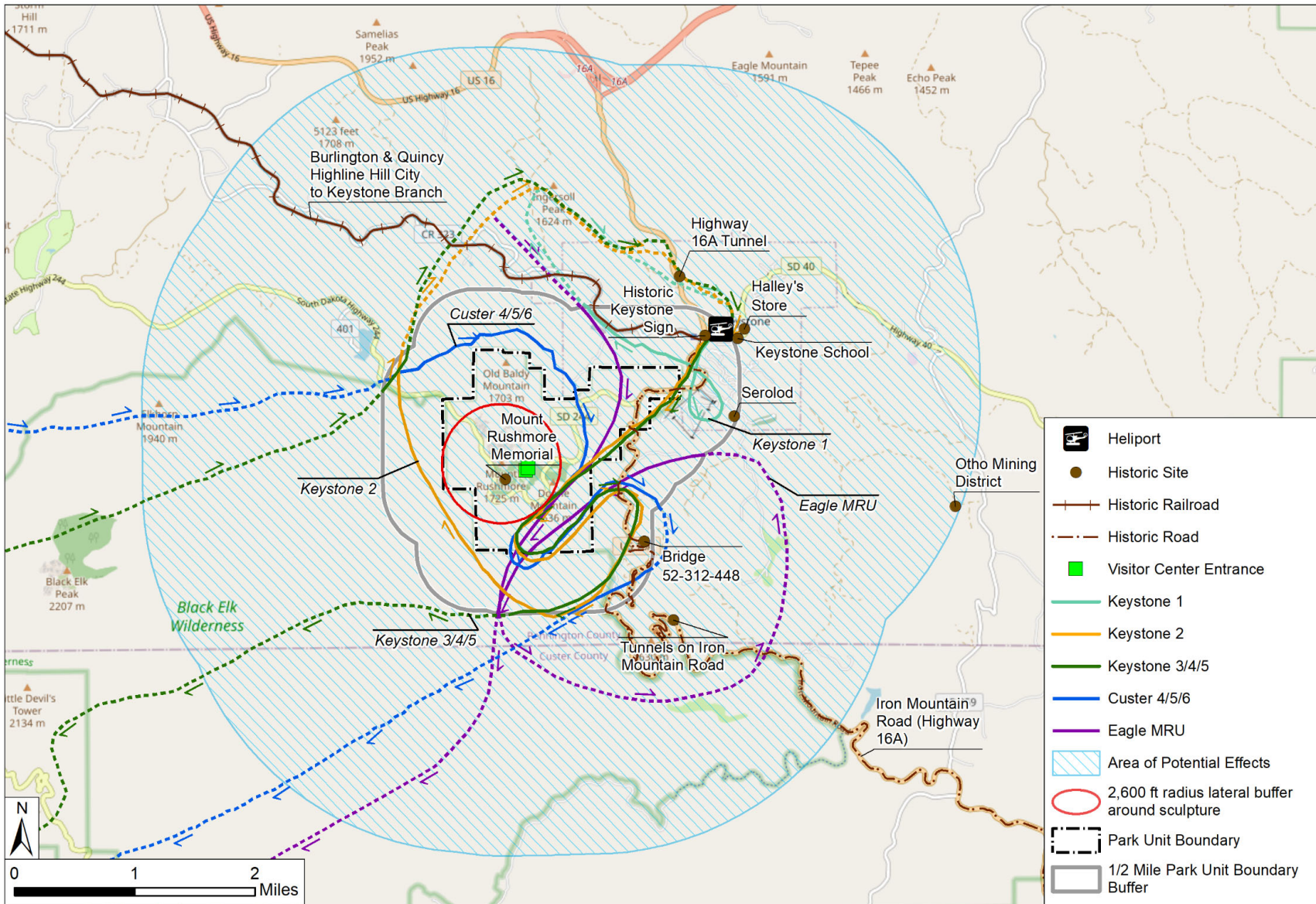
Judith Walker  
Federal Preservation Officer  
Senior Environmental Policy Analyst  
Environmental Policy Division (AEE-400)  
Federal Aviation Administration

### **Attachments**

- A. APE Map Including Existing Commercial Air Tour Routes
- B. Summary of Alternative Elements
- C. List of Historic Properties in the APE and Description of Historic Characteristics

**ATTACHMENT A**  
**AREA OF POTENTIAL EFFECTS MAP**  
**INCLUDING EXISTING**  
**COMMERCIAL AIR TOUR ROUTES**

## Area of Potential Effects with Historic Properties for ATMP at Mount Rushmore National Memorial



## ATTACHMENT B

### SUMMARY OF ALTERNATIVE ELEMENTS

	<b>Action Alternative 2 (No Air Tours in the Planning Area<sup>4</sup>)</b>	<b>Alternative 3 (Daily Cap of 25 Air Tours During the Operating Season with Additional Modifications)</b>	<b>Alternative 4 (Daily Cap of 13 Air Tours During the Operating Season with Additional Modifications)</b>
<b>General Description and Objectives</b>	Prohibits air tours within the ATMP planning area to maximize Park resource protection. Air tours could still continue to fly outside the ATMP planning area (i.e., above 5,000 feet AGL or more than ½-mile outside of the Park's boundary).	Provides five flight paths within the ATMP planning area and a daily cap of 25 tours per day.	Provides five flight paths within the ATMP planning area and a daily cap of 13 tours per day.
<b>Annual/Daily Number of Flights</b>	None in ATMP planning area.	3,657 flights per year, may not exceed 25 flights per day.	1,833 flights per year, may not exceed 13 flights per day.
<b>Routes</b>	None in ATMP planning area.	Five different routes with varying distances and altitudes for each operator	Five different routes with varying distances and altitudes for each operator
<b>Minimum Altitudes</b>	Flights over the Park that are above 5,000 feet AGL could occur as they are outside the ATMP planning area. Flights more than ½-mile outside the Park boundary are similarly outside the ATMP planning area.	Minimum 6,000 ft. MSL (900 ft. AGL) – 6,500 ft. MSL (1,400 ft. AGL)	Minimum 6,000 ft. MSL (900 ft. AGL) – 6,500 ft. MSL (1,400 ft. AGL)
<b>Time of Day</b>	N/A	One hour after sunrise to one hour before sunset for non-QT flights.	One hour after sunrise to one hour before sunset for non-QT flights.
<b>Day of Week</b>	N/A	No restrictions.	No restrictions.

<sup>4</sup> Under the Act and its implementing regulations, an ATMP regulates commercial air tours over a national park or outside the park but within 1/2 mile of its boundary during which the aircraft flies below 5,000 ft. AGL. This is referred to as the ATMP planning area.

	<b>Action Alternative 2 (No Air Tours in the Planning Area<sup>5</sup>)</b>	<b>Alternative 3 (Daily Cap of 25 Air Tours During the Operating Season with Additional Modifications)</b>	<b>Alternative 4 (Daily Cap of 13 Air Tours During the Operating Season with Additional Modifications)</b>
<b>Seasonal</b>	N/A	Tours may occur May 1 through September 30, for 152 days total.	Tours may occur May 1 through September 30, for 152 days total.
<b>Quiet Technology (QT) Incentives</b>	N/A	QT flights may fly from sunrise to sunset.	QT flights may fly from sunrise to sunset.
<b>Annual Meeting, Operator Training and Education</b>	N/A	Mandatory if requested and/or made available by the FAA or the NPS.	Mandatory if requested and/or made available by the FAA or the NPS.
<b>Restrictions for Particular Events</b>	N/A	NPS can establish temporary no-fly periods and must provide one month notice to operators of the no-fly periods. Plus, 5 days of no air tours for the tribes to select.	NPS can establish temporary no-fly periods and must provide one month notice to operators of the no-fly periods. Plus, 5 days of no air tours for the tribes to select.
<b>Adaptive Management</b>	N/A	To be considered/analyzed.	To be considered/analyzed.
<b>Initial Allocation, Aircraft Type, Competitive Bidding, and New Entrants</b>	N/A	Dakota Rotors: 3,648 flights annually and 24 flights daily; BHT-206-B, BHT-47-47, BHT-47-G3B1, R-44-II, R-66-66 Eagle Aviation: nine flights annually and one flight daily; Cessna 172, Cessna 206  Then it would move to competitive bidding.	Dakota Rotors: 1,824 flights annually and 12 flights daily; BHT-206-B, BHT-47-47, BHT-47-G3B1, R-44-II, R-66-66 Eagle Aviation: nine flights annually and one flight daily; Cessna 172, Cessna 206  Then it would move to competitive bidding.
<b>Monitoring and Enforcement</b>	Monitoring would occur to ensure operators are complying with the terms and conditions of the ATMP.	Semi-annual reporting and use of flight tracking technology required to ensure operators are complying with the terms and conditions of the ATMP.	Semi-annual reporting and use of flight tracking technology required to ensure operators are complying with the terms and conditions of the ATMP.

<sup>5</sup> Under the Act and its implementing regulations, an ATMP regulates commercial air tours over a national park or outside the park but within 1/2 mile of its boundary during which the aircraft flies below 5,000 ft. AGL. This is referred to as the ATMP planning area.

<b>Interim operating authority<sup>6</sup></b>	Goes away and operations must be consistent with the ATMP.	Goes away and operations must be consistent with the ATMP.	Goes away and operations must be consistent with the ATMP.
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<sup>6</sup> See p. 6 of the September 2022 newsletter for a description of interim operating authority.

**ATTACHMENT C**  
**LIST OF HISTORIC PROPERTIES IN THE APE AND DESCRIPTION OF HISTORIC CHARACTERISTICS**

Property Name	Property Type	Eligibility Status	Location	Significant Characteristics
Mount Rushmore Developed Area	Structures	Listed	Within the Park	See Mount Rushmore Memorial.
Mount Rushmore Memorial	Site	Listed	Within the Park	Mount Rushmore National Memorial, established October 1, 1925, is near the center summit of the Black Hills in SW South Dakota. The sculpture, known as the Shrine of Democracy, is carved into the SW face of Mount Rushmore, a solid granite ridge in the Harney Range. Areas of significance include: 1) illustration of an important theme in our nation's history; 2) association with the lives of four presidents represented; 3) represents the work of a master and possesses artistic value. It is also significant as an example of American cultural values. The presidents typify the ideals, attitudes, values, dreams, and spirit of Americans.
Burlington & Quincy Highline Hill City to Keystone Br.	District	Eligible	Sections are within the Park	The property is eligible under Criterion A as a reflection of the growth and operational pattern of the Burlington and Quincy railroad. This spur line demonstrates how the railroad served and influenced the towns of Hill City and Keystone. The Burlington and Quincy High Line Hill City to Keystone Branch is also eligible under Criterion C as an excellent example of early railway design, engineering, and architecture.
Bridge 52-312-448	Bridge	Eligible	Outside the Park	Bridge integrity has been diminished slightly with removal of one wingwall. The structure also has some condition problems. Nevertheless, it has been selected as a National Register-eligible representation of the steel stringer bridge type, in large part because of its position on a pigtail section of U.S. Highway 16A.
Hwy 16A tunnel	Structure	Eligible	Outside the Park	See Iron Mountain Road (Highway 16A).
Iron Mountain Road (Highway 16A)	Linear Property	Eligible	Sections are within the Park	Iron Mountain Road was completed in 1932. The two-lane section between Mt. Rushmore and Custer State Park becomes divided into two single lanes twice to minimize the cutting of rock, preserving the forest and mountain scenery. The road is over a picturesque route so that the presidential figures could be seen from several different aspects. After receiving presidential support for the Mt.

Property Name	Property Type	Eligibility Status	Location	Significant Characteristics
				Rushmore memorial in 1929, Peter Norbeck turned his attention to the construction of a scenic road between the Game Lodge and Mt. Rushmore. He designed the road over a picturesque route so that the presidential figures could be seen from several different aspects.
Tunnels on Iron Mountain Road	Structure	Eligible	Outside the Park	See Iron Mountain Road (Highway 16A).
Serolod	Structure	Eligible	Outside the Park	An example of single-family resort architecture in South Dakota. This structure is an example of post-World War I architecture. The log construction technique employs stripped, unhewn logs joined with a saddle notch. referred to as Lincoln Log building, ends of the logs are sawn, the tapering crowns extend beyond the corner, low pitched roof extends beyond the wall in a wide eave both as an arts and crafts/Prairie School/Western Stick style feature and to protect the crown ends.
Keystone School	Structure	Eligible	Outside the Park	Significant in the areas of education and architecture. An example of a frame rural school at the turn of the century.
Halley's Store	Structure	Eligible	Outside the Park	The buildings are significant in the areas of commerce and vernacular architecture, the Keystone Trading Company Store is indirectly significant to industry as well.
Historic Keystone Sign	Object	Eligible	Outside the Park	The Historic Keystone sign likely built c.1968 is eligible for listing in the National Register for its significance within the history of tourism development. The sign was a local effort for roadside wayfinding and economic promotion, demonstrating the trends of postwar tourist development in Black Hills towns, also indicated, and spurred, by the Mission 66 improvements to Mount Rushmore National Memorial and the 1967-1968 construction of the Keystone Wye bridge. The stone veneer and unpainted vertical wood boards used in the design of the sign also demonstrate period trends in tourist construction in the Black Hills to use natural materials of the region.
39CU3069*	Site – Rock Shelter	Eligible	Outside the Park	Historic artifacts related to Native American protestors who occupied the site during two brief periods in 1970 and 1971. Eligible under Criteria D but may be considered TCP by some.
39PN3239*	Site	Eligible	Outside the Park	Rock Shelter



Property Name	Property Type	Eligibility Status	Location	Significant Characteristics
39CU3873*	Site	Eligible	Outside the Park	Mine
Scott Family Summer Cabin (also known as Lafferty Gulch Summer Home)*	Structure	Eligible	Outside the Park	The Scott Family Summer Cabin is eligible for the National Register under Criterion A for its association with Depression-era recreation in the Black Hills, as well as the Federal Government's policy of encouraging private recreational developments on public lands from the mid-1930s to the early 1940s.
Otho Mining District	District	Eligible	Outside the Park	The Otho Property is eligible for the National Register under Criterion A, because the Otho House represents a period of time when mining in the Black Hills was drawing people into the area from all over the United States. It was the mining of various rich mineral deposits in the area including gold, silver, tin, feldspar and beryl that attracted both national and international speculators to invest millions of dollars into the economy of the Keystone area communities including Otho. Until 1882, the United States imported all the tin we used. Some of the mines in the Keystone area, including Otho, produced tin; reducing the Nation's dependence on imports.

\*Location is restricted and therefore cannot be shown on the APE map.



United States Department of Transportation  
**FEDERAL AVIATION ADMINISTRATION**  
Office of Policy, International Affairs & Environment  
Office of Environment and Energy

## **NATIONAL PARKS AIR TOUR MANAGEMENT PROGRAM**

March 14, 2023

Re: Continuing Consultation and Finding of No Adverse Effect under Section 106 of the National Historic Preservation Act for the development of an Air Tour Management Plan for Mount Rushmore National Memorial

Ted Spencer  
State Historic Preservation Officer  
Cultural Heritage Center  
900 Governors Drive  
Pierre, SD 57501

Dear Ted Spencer:

### **Introduction**

The Federal Aviation Administration (FAA), in coordination with the National Park Service (NPS) (together, the agencies), seeks to continue consultation with your office under Section 106 of the National Historic Preservation Act (NHPA) for the development of an Air Tour Management Plan (ATMP) for Mount Rushmore National Memorial (the Park). At this time, the FAA requests your concurrence with its proposed finding that the undertaking would have no adverse effect on historic properties, in accordance with 36 CFR 800.5(c). On this date, we are also notifying all consulting parties of this proposed finding and providing the documentation below for their review.

In accordance with the requirements of 36 CFR 800.11(e), this letter provides: a description of the undertaking - no air tours in the planning area (the preferred alternative under the National Environmental Policy Act (NEPA)); the Area of Potential Effects (APE); a description of steps taken to identify historic properties; a description of affected historic properties in the APE and the characteristics that qualify them for listing in the National Register of Historic Places (National Register); and an explanation of why the criteria of adverse effect do not apply to this undertaking. This letter also describes the Section 106 consultation process and public involvement for this undertaking.

The FAA initiated Section 106 consultation with your office by letter dated April 12, 2021. In a follow-up letter dated October 28, 2022, we described the proposed undertaking in more detail, including the range of alternatives under consideration, proposed a preliminary APE, and provided our initial list of historic properties identified within the APE. Similar letters were sent to all consulting parties listed in **Attachment A**.

The agencies have held six tribal consultation meetings under Section 106 to discuss the ATMP planning process, the range of alternatives, and Section 106 consultation. During these tribal consultation meetings, several tribal representatives stated that the entire Black Hills region, including the Black Hills and Badlands, is sacred land that many tribes view as a single landscape and Traditional Cultural Property (TCP).<sup>1</sup> Section 106 consultation with tribes is further described below.

Public involvement for this undertaking was integrated with the NEPA process. The agencies published an ATMP Public Scoping Potential Alternatives Newsletter on September 6, 2022. The Public Scoping comment period spanned from September 6, 2022, through October 6, 2022. The agencies received 263 comments, of which five were about potential adverse effects on cultural resources and five were about tribal concerns. One commenter requested that the agencies consider the effects of noise on cultural and historic resources during the preparation of the environmental assessment for the plan. A commenter also stated that the natural setting of the Park represents a place of great spiritual and cultural significance to the Native American Tribes who have connections to the land. Some commenters supported Alternative 2 - no air tours in the planning area, because it provides the greatest protection of the Park's cultural resources, and it is most consistent with some of the Park's most important management objectives including preservation of traditional and cultural resources.

During the Public Scoping comment period, a commenter also stated that the land is sacred to the Oglala Sioux and other indigenous persons, and that helicopter tours are disrespectful to the indigenous persons and sacred lands. The commenter suggested that eliminating helicopters would partially acknowledge that the land is sacred by reducing the noise pollution.

### **Description of the Undertaking**

Consistent with the National Park Air Tours Management Act (NPATMA), the proposed ATMP would regulate commercial air tours within the ATMP planning area. Further background information regarding the history of commercial air tours over the Park, the authority under which they are currently conducted, and the area to be regulated under the ATMP is available in the September 2022 Scoping Newsletter, prepared by the agencies, that was previously provided to your office and is available at the following link:

<https://parkplanning.nps.gov/document.cfm?parkID=152&projectID=97377&documentID=123303>

The undertaking for purposes of Section 106 is implementing an ATMP that applies to all commercial air tours over the Park and within ½ mile outside the Park's boundary. A commercial air tour subject to the ATMP is any flight conducted for compensation or hire in a powered aircraft where a purpose of the flight is sightseeing over the Park, or within ½ mile of its boundary, during which the aircraft flies:

- (1) Below 5,000 feet above ground level (except solely for the purposes of takeoff or landing, or necessary for safe operation of an aircraft as determined under the rules and regulations of the FAA requiring the pilot-in-command to take action to ensure the safe operation of the aircraft); or
- (2) Less than one mile laterally from any geographic feature within the Park (unless more than ½ mile outside the Park boundary).

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<sup>1</sup> For the purposes of Section 106, the FAA is treating identified but unevaluated properties as eligible for listing in the National Register.

The area regulated by the ATMP is referred to as the ATMP planning area. Overflights that do not meet the definition of a commercial air tour above are not subject to NPATMA and are thus outside the scope of the ATMP.

The agencies have documented the existing conditions for commercial air tour operations over the Park. Two commercial air tour operators currently conduct tours over the Park: Eagle Aviation, Inc. (Eagle Aviation) and Dakota Rotors LCC (Rushmore Helicopters, Inc. and Black Hills Aerial Adventures, Inc.). The agencies consider the existing operations for commercial air tours to be an average of 2017-2019 annual air tours flown, which is 3,914 air tours. A three-year average is used because it reflects the most accurate and reliable air tour conditions, and accounts for variations across multiple years. Under existing conditions, commercial air tours over the Park are conducted using both fixed wing aircraft: CE-172-N and CE-206-U206F, and helicopters: BHT-206B, BHT-47-G3B1, R-44-II, R-66- 66. The helicopter operator accounts for the vast majority of the tours. The fixed-wing operator flew 19 tours in 2017, six tours in 2018, and two tours in 2019. Air tours that fly over the park to view the sculpture keep a minimum standoff distance of approximately 2,600 ft. from the sculpture and approximately 1,500 ft. from the amphitheater for viewing the sculpture. Reported minimum altitudes range from 6,000 ft. mean sea level (MSL) (900 ft. AGL) to 6,500 ft. MSL, depending on operator.<sup>2</sup>

Dakota Rotors flies three routes that originate from a privately owned and operated helipad on the boundary of the ATMP planning area near Keystone, SD, and a fourth route that originates near Custer, SD. All four routes meet approximately 2,600 ft. to the southeast of the sculpture for a direct view, then begin a tight S-turn before exiting the ATMP planning area. Eagle Aviation flies one route from north to south, across the eastern side of the Park. This fixed-wing route, similarly, flies at approximately 2,600 ft. to the southeast of the sculpture for a direct view but flies 500 ft. higher than the helicopters. Rather than an S-turn, the fixed-wing aircraft performs a large loop, exiting the ATMP planning area, re-entering the ATMP planning area, and then exiting again. Under existing conditions, the operators are not required to use these routes and could change the routes without notice to the agencies. Existing routes are depicted in **Attachment B**. The commercial air tours are offered seasonally, occurring May through September, and typically peak in July.

The proposed undertaking, which was referred to in prior consultation and the September 2022 Scoping Newsletter as Alternative 2 – No Air Tours in the Planning Area, would prohibit commercial air tour operations within the ATMP planning area. A summary of the undertaking elements is shown in the table below:

**SUMMARY OF ATMP ELEMENTS**

<b>General Description and Objectives</b>	Prohibits air tours within the ATMP planning area to maximize achievement of Park management objectives. Air tours could continue to fly outside the ATMP planning area (i.e., at or above 5,000 feet AGL or more than ½-mile outside of the Park’s boundary).
<b>Annual/Daily Number of Flights</b>	None in ATMP planning area.

<sup>2</sup> Altitude expressed in units above ground level (AGL) is a measurement of the distance between the ground surface and the aircraft, whereas altitude expressed in median sea level (MSL) refers to the altitude of aircraft above sea level, regardless of the terrain below it. Aircraft flying at a constant MSL altitude would simultaneously fly at varying AGL altitudes, and vice versa, assuming uneven terrain is present below the aircraft.

<b>Routes</b>	None in ATMP planning area.
<b>Minimum Altitudes</b>	Flights over the Park at or above 5,000 feet AGL could occur as they are outside the ATMP planning area. Flights more than ½-mile outside the Park boundary could similarly still occur as they are also outside the ATMP planning area.
<b>Time of Day</b>	N/A
<b>Day of Week</b>	N/A
<b>Seasonal</b>	N/A
<b>Quiet Technology (QT) Incentives</b>	N/A
<b>Annual Meeting, Operator Training and Education</b>	N/A
<b>Restrictions for Particular Events</b>	N/A
<b>Adaptive Management</b>	N/A
<b>Initial Allocation, Aircraft Type, Competitive Bidding, and New Entrants</b>	N/A
<b>Monitoring and Enforcement</b>	Monitoring would occur to ensure operators are complying with the terms and conditions of the ATMP.
<b>Interim Operating Authority<sup>3</sup></b>	Goes away and operations must be consistent with the ATMP.

### **Area of Potential Effects (APE)**

The APE for the undertaking was proposed in the Section 106 consultation letter dated October 28, 2022, sent to all consulting parties. In a letter dated November 30, 2022, your office informed the FAA that you had no concerns with the proposed APE. At the conclusion of the 30-day comment period the agencies received no additional comments regarding the APE. The APE has therefore not changed. The undertaking does not require land acquisition, construction, or ground disturbance. In establishing the APE, the FAA sought to include areas where any historic property present could be affected by noise from or sight of commercial air tours that may take place under any of the selectable draft alternatives, including those over the Park or those that are reasonably foreseeable to take place adjacent to the ATMP planning area. The FAA considered the number and altitude of commercial air tours over historic properties in these areas to further assess the potential for visual effects and any incremental change in, or elimination of, noise levels that may result in alteration of the characteristics of historic properties qualifying them for listing in the National Register.

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<sup>3</sup> See p. 6 of the September 2022 newsletter for a description of interim operating authority.

The APE was delineated based on the undertaking's potential effects in consultation with the SHPO and in consideration of input by consulting parties. The APE for this undertaking comprises the Park plus 2.5 miles outside the boundary of the Park, as depicted in **Attachment B** below.

### **Summary of Section 106 Consultation with Tribes**

On April 15, 2021, the agencies invited 26 federally recognized tribes to participate in the consultation process for either Badlands National Park, Mount Rushmore National Memorial, or both Parks. The agencies recognize that these tribes have a long-standing and deeply rooted association with the landscape that includes these National Park lands, which have numerous sites of religious and cultural significance. Tribal consultation meetings were held on March 30, 2021, June 14, 2021, October 19, 2021, January 28, 2022, May 12, 2022, and November 17, 2022, regarding the ATMP for Mount Rushmore National Memorial. Meeting attendees for some or all of these meetings included representatives from Assiniboine and Sioux Tribes of Fort Peck, Cheyenne River Sioux Tribe, Flandreau Santee Sioux Tribe, Fort Belknap Indian Community, Northern Arapaho Tribe, Northern Cheyenne Tribe, Oglala Lakota Nation, Omaha Tribe of Nebraska, Rosebud Sioux Tribe, Santee Sioux Nation, Sisseton-Wahpeton Oyate of the Lake Traverse Reservation, Spirit Lake Tribe, Standing Rock Sioux Tribe, Three Affiliated Tribes, Upper Sioux Community and Winnebago Tribe of Nebraska.

The April 15, 2021, invitation letter included a request for the tribes' expertise in identifying historic properties, including TCPs that may be located within the APE. The list of tribes is included in the list of consulting parties enclosed as **Attachment A**. On October 28, 2021, the FAA sent a Section 106 consultation letter to all consulting parties describing the proposed undertaking, including a description of the alternatives being considered for the ATMP, proposed an APE, and provided the results of a preliminary identification of historic properties.

During tribal consultation meetings the agencies heard from the participating tribes that they support no air tours in the planning area. The Rosebud Sioux Tribe expressed that the sound from commercial air tours would have an effect on animals; the wind of helicopter blades would alter the seed distribution of the plant relatives; and that commercial air tours in general affect soundscapes when the Rosebud Sioux Tribe conducts ceremonies, and they should be able to conduct traditional practices without that kind of disruption.

The agencies also heard from several tribes that the Black Hills, including Badlands National Park and Mount Rushmore National Memorial, are part of a continuous landscape that is sacred. The landscape is considered a TCP by many tribes, which includes natural resources that are also considered to be cultural resources by the tribes. The tribes emphasized that plants, animals, the sky, and other natural resources are contributing features to cultural resources within the area and throughout the Black Hills which includes Badlands National Park and Mount Rushmore National Memorial.

During a tribal consultation meeting that occurred before the agencies defined the APE, the Cheyenne River Sioux Tribe also discussed how this project could have the potential to contribute to preservation as a whole by considering an expanded buffer zone around the Parks' boundaries. The Cheyenne River Sioux Tribe noted that they would like the agencies to expand the buffer zone beyond the ATMP planning area, otherwise that they were interested in no air tours in the planning area. The Cheyenne River Sioux Tribe also expressed concerns about land, air, and water protection for all life forms. A tribal representative expressed concerns because the Park is within lands that involve the Cheyenne River Sioux Tribe's creation stories.

## Identification of Historic Properties

In accordance with 36 CFR 800.4, the FAA has made a reasonable and good faith effort to identify historic properties within the APE. As the undertaking would not result in physical effects, the identification effort focused on identifying properties where setting and feeling are characteristics contributing to a property's National Register eligibility, as they are the type of historic properties most sensitive to the effects of aircraft overflights. These may include isolated properties where a cultural landscape is part of the property's significance, rural historic districts, and outdoor spaces designed for meditation or contemplation. The FAA is specifically considering whether air tours could affect the use of TCPs associated with cultural practices, customs or beliefs that continue to be held or practiced today. In so doing, the FAA has taken into consideration the views of consulting parties, past planning, research and studies, the magnitude and nature of the undertaking, the degree of Federal involvement, the nature and extent of potential effects on historic properties, and the likely nature of historic properties within the APE in accordance with 36 CFR 800.4(b)(1).

The initial identification of historic properties relied upon data submitted by the NPS regarding known historic properties in the Park and data received by or retrieved from the NPS Midwest Archeological Center, the Black Hills National Forest (U.S. Forest Service), the South Dakota State Historic Preservation Office's Cultural Resource Geographic Research Information Display (CR GRID) database, and the South Dakota Archaeological Research Center. Section 106 consultation efforts to identify historic properties within the APE also involved outreach to affiliated tribes, the South Dakota State Historic Preservation Office, operators, and other consulting parties including local governments. Public comments submitted as part of the Public Scoping process also informed identification efforts.

A preliminary list of historic properties was provided to all consulting parties for their review and comment in a letter dated October 28, 2022. The agencies received no written comments about the preliminary list of historic properties or identifying additional historic properties within the APE.

As discussed above, a number of tribal consultation meetings were held regarding the ATMPs for both Badlands National Park and Mount Rushmore National Memorial in which the agencies heard from the Fort Peck Assiniboiné and Sioux Tribes, Upper Sioux Community, Santee Sioux Nation, Rosebud Sioux Tribe, Cheyenne River Sioux Tribe, and others that the Black Hills, including Badlands National Park and Mount Rushmore National Memorial, are part of a continuous landscape that is sacred and considered a TCP by many tribes.

The efforts described resulted in the identification of 17 historic properties within the APE for which feeling and setting are characteristics that make the properties eligible for listing on the National Register, which are listed in **Attachment C**. Those historic properties identified with available non-restricted location data are shown in the APE map provided in **Attachment B**. Approximately 120 additional below-ground archaeological sites were identified within the APE; however, these below-ground archaeological resources are not further described in this letter because feeling and setting are not characteristics that make these properties eligible for listing on the National Register and there is no potential for the undertaking to affect these resources.

## Assessment of Effects

The undertaking could have an effect on a historic property if it alters the characteristics that qualify the property for eligibility for listing or inclusion in the National Register. The characteristics of the historic properties within the APE that qualify them for inclusion in the National Register are described in

**Attachment C.** Effects are considered adverse if they diminish the integrity of a property's elements that contribute to its significance. The undertaking does not include land acquisition, construction, or ground disturbance and will not result in physical effects to historic properties. The FAA, in coordination with the NPS, focused the assessment of effects on the potential for adverse effects from the introduction of audible or visual elements that could diminish the integrity of the property's significant historic features.

As the undertaking would remove flights from the ATMP planning area and potentially displace some of those flights to outside of the ATMP planning area, it is reasonably foreseeable that current air tour operators would increase flights in areas not regulated by the ATMP, referred to as "air tour displacement." Because the undertaking would eliminate air tours within the ATMP planning area, the agencies also considered the potential for indirect impacts to cultural resources within the APE that could occur from air tours displaced outside the ATMP planning area as a result of the undertaking. Based on current air tour activity, the number of flights displaced outside the ATMP planning area could be similar to the number of flights currently operating within the ATMP planning area. The preciseness of routes and altitudes for tours flown on alternative routes are generally subject to Visual Flight Rules (VFR), which is based on the principle of "see and avoid," and therefore may vary.

It is difficult to predict with specificity if, where, and to what extent any displaced air tours would result in impacts in different and/or new areas because of the undertaking. Due to the undertaking, it is reasonably foreseeable that operators would continue to fly over points of interest outside of the ATMP planning area elsewhere in the region, such as Crazy Horse Memorial, Iron Mountain Road, Horsethief Lake, Black Elk Peak, and Sylvan Lake, or would conduct tours just outside of the perimeter of the ATMP planning area since the sculpture would still be visible from this area. Therefore, the undertaking may result in some indirect impacts to cultural resources within the APE that could occur from the noise and visual effects associated with these displaced flights.

### **Assessment of Noise Effects**

To assess the potential for the introduction of audible elements, including changes in the character of aircraft noise, the agencies considered whether there would be a change in the annual number, daily frequency, routes, or altitudes of commercial air tours, as well as the type of aircraft used to conduct those tours. The level of commercial air tour activity under the ATMP is expected to improve the protection of cultural resources within the ATMP planning area.

The ATMP prohibits commercial air tours within the ATMP planning area; therefore, overall noise impacts within the ATMP planning area that are associated with commercial air tours are expected to be reduced in both character and decibel level. The elimination of air tours within the ATMP planning area will reduce maximum noise levels at sites directly below commercial air tour routes under existing conditions. Historic properties that would experience a reduction in noise effects include portions of the Black Hills TCP, Mount Rushmore Developed Area, Mount Rushmore National Memorial, and portions of Highway 16A (Iron Mountain Road) – properties for which setting and feeling are significant characteristics that make them eligible for listing in the National Register.

For purposes of assessing noise impacts from commercial air tours on the acoustic environment of the Parks under NEPA, the FAA noise evaluation is based on Yearly<sup>4</sup> Day Night Average Sound Level ( $L_{dn}$  or DNL); the cumulative noise energy exposure from aircraft over 24 hours. The DNL analysis indicates that

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<sup>4</sup> Yearly conditions are represented as the Average Annual Day (AAD)



the undertaking would not result in any noise impacts that would be “significant” or “reportable” under the FAA’s policy for NEPA.<sup>5</sup>

As part of the ATMP noise analysis, the NPS provided supplemental metrics to further assess the impact of commercial air tours in quiet settings: time above 35 dBA and time above 52 dBA. These metrics account for the amount of time in minutes that aircraft sound levels are above a given threshold (i.e., 35 dBA and 52 dBA). In quiet settings, outdoor sound levels exceeding 35 dB degrade experience in outdoor performance venues (American National Standards Institute (ANSI), 2007). Interference with Park interpretive programs would reasonably occur at 52 dBA. **Attachment D** provides further information about the supplemental noise metrics and presents the results of modeling.

**Attachment D** presents noise contours (i.e. graphical illustration depicting noise exposure) for existing conditions and the representative location point analysis. Under existing conditions, noise related to commercial air tours is modeled to be greater than 35 dBA for approximately 330 minutes (5.5 hours) a day within the ATMP planning area. Historic properties that will experience the elimination of noise related to commercial air tours within the ATMP planning area are listed above. Under existing conditions, historic properties outside the ATMP planning area for which setting and feeling are significant characteristics that make them eligible for listing in the National Register are currently experiencing noise related to commercial air tours modeled to be greater than 35 dBA for approximately 152 minutes (2.5 hours) a day. For example, the Keystone School is currently experiencing sound above 35 dBA for approximately 152 minutes, the Tunnels on Iron Mountain Road are in areas where the sound is above 35 dBA for up to 122 minutes, and the Hwy 16A tunnel is in an area where the sound is above 35 dBA for up to 97 minutes on days when commercial air tours would occur. Because noise is modeled using conservative assumptions (see **Attachment D**) and implementing the ATMP would eliminate flights and routes within the ATMP planning area, noise impacts are expected to be reduced within the ATMP planning area, and therefore would not diminish the integrity of any historic property’s significant historic features.

Displaced air tours, if any, above the ATMP planning area (at or above 5,000 ft. AGL) would result in noise within the ATMP planning area. Compared to current conditions, the noise would be spread over a larger geographical area and would be audible for a longer period, but at lower intensity. Additionally, other locations within the APE not currently experiencing air tour noise may experience some noise when compared to current conditions. However, in both cases, the intensity of noise within the APE would likely be low given the aircraft altitude of 5,000 ft. AGL or higher. Any noise that might result could also be more easily masked by opportunistic sounds such as wind and various anthropogenic noise sources. Flights close to the sculpture and around the Black Hills above 5,000 ft. AGL are unlikely due to the elevation and safety requirements for unpressurized aircraft.

Locations outside the ATMP planning area but within the APE not currently experiencing noise due to air tours within the ATMP planning area may experience noise from displaced air tours. For example, portions of Highway 16A that are outside the ATMP planning area but within the APE may experience an increase in noise from displaced air tours. However, any noise that might result could also be easily

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<sup>5</sup> Under FAA policy, an increase in the Day-Night Average Sound Level (DNL) of 1.5 dBA or more for a noise sensitive area that is exposed to noise at or above the DNL 65 dBA noise exposure level, or that will be exposed at or above the DNL 65 dBA level due to a DNL 1.5 dBA or greater increase, is significant. FAA Order 1050.1F, *Environmental Impacts: Policies and Procedures*, Exhibit 4-1. Noise increases are “reportable” if the DNL increases by 5 dB or more within areas exposed to DNL 45-60 dB, or by 3 dB or more within areas exposed to DNL 60-65 dB. FAA Order 1050.1F, Appendix B, section B-1.4.

masked by various existing anthropogenic noise sources, especially coming from vehicles using the highway or aircraft using the nearby helipad. Cultural resources such as Halley's Store, the Ortho Mining District, the Historic Keystone Sign, and the Burlington & Quincy Highline Hill City to Keystone Br. would not be adversely affected by noise coming from displaced air tours because quiet or natural settings are not significant characteristics that make them eligible for listing in the National Register.

The undertaking could result in some indirect noise and visual effects to cultural resources within the APE for flights along the perimeter but outside the ATMP planning area. For flights above 5,000 ft. AGL, the increase in altitude would likely decrease impacts on ground level resources as compared to existing conditions. Numbers of flights displaced above or along the perimeter of the ATMP planning area due to the ATMP restrictions are expected to be similar to or less than the existing number of flights that currently fly within the ATMP planning area and therefore may result in an increase of flights outside the ATMP planning area. However, this is not anticipated to result in adverse effects to historic properties as those that may have an increase in noise are already experiencing noise coming from vehicles using the highway or aircraft using the nearby helipad or quiet or natural settings are not significant characteristics that make them eligible for listing in the National Register.

### **Assessment of Visual Effects**

Recognizing that some types of historic properties may be affected by visual effects of commercial air tours, the agencies considered the potential for the introduction of visual elements that could alter the characteristics of a historic property that qualify it for inclusion in the National Register. Aircraft are transitory elements in a scene and visual impacts tend to be relatively short. The elimination of flights within the ATMP planning area make it unlikely a historic property within the ATMP planning area would experience a visual effect from the undertaking. The agencies also considered the experience of tribal members who may be conducting ceremonies or practices that could involve looking toward the sky. The elimination of air tour aircraft overhead represents an improvement over existing conditions.

The ATMP prohibits commercial air tours within the ATMP planning area and would not introduce visual elements that would alter the characteristics of any historic property that qualifies it for inclusion in the National Register. Visual effects to historic properties within the ATMP planning area are expected to decrease compared to impacts currently occurring because no flights are authorized in the ATMP planning area and any visual impacts would be further removed from the properties to areas outside the ATMP planning area. Sites that would experience a reduction in visual effects include portions of the Black Hills TCP, Mount Rushmore Developed Area, Mount Rushmore Memorial, and portions of Highway 16A (Iron Mountain Road) – properties for which setting and feeling are significant characteristics that make them eligible for the National Register.

Displaced air tours, if any, above the ATMP planning area (at or above 5,000 ft. AGL) would not result in an increase of visual effects as compared to current conditions as air tour flights currently occur in these areas at lower altitudes. However, other locations within the APE not currently seeing air tours within the ATMP planning area may experience some visual effects of commercial air tours when compared to current conditions due to displaced air tours. However, the effects of these displaced air tours would likely be minimal given the aircraft altitude.

Locations outside the ATMP planning area but within the APE not currently experiencing visual effects due to air tours within the ATMP planning area may experience an increase in visual elements from displaced air tours along the perimeter of the ATMP planning area when compared to current

conditions. For example, portions of Highway 16A that are outside the ATMP planning area, but within the APE may experience an increase in visual elements from displaced air tours. However, as noted above, aircraft are transitory elements in a scene and visual impacts tend to be relatively short. Cultural resources, such as Halley's Store, the Ortho Mining District, the Historic Keystone Sign, and the Burlington & Quincy Highline Hill City to Keystone Br., would not be adversely affected by visual elements coming from displaced air tours because setting and feeling are not significant characteristics that make them eligible for listing in the National Register.

The undertaking could result in some indirect visual effects to cultural resources within the APE for flights just outside of the ATMP planning area. Numbers of flights displaced above or along the perimeter of the ATMP planning area due to the ATMP restrictions are expected to be similar to or less than the existing number of air tour flights within the ATMP planning area and therefore may result in an increase of flights outside the ATMP planning area. However, this is not anticipated to result in adverse effects to historic properties as those that may have an increase in visual effects are already experiencing visual effects from aircraft using the nearby helipad or setting and feeling are not significant characteristics that make them eligible for listing in the National Register.

#### **Finding of No Adverse Effect Criteria**

To support a Finding of No Adverse Effect, an undertaking must not meet any of the criteria set forth in the Advisory Council on Historic Preservation's Section 106 regulations at 36 CFR 800.5(a). This section demonstrates the undertaking does not meet those criteria. The undertaking would not have any physical impact on any property. The undertaking would not result in any alteration or physical modifications to historic properties. The undertaking would not remove any property from its location. The undertaking would not change the character of any property's use or any physical features in any historic property's setting. As discussed above, the undertaking would not introduce any auditory or visual elements that would diminish the integrity of the significant historical features of any historic properties in the APE. The undertaking would not cause any property to be neglected, sold, or transferred.

#### **Proposed Finding and Request for Review and Concurrence**

FAA and NPS approval of the undertaking would not alter the characteristics of any historic properties located within the APE as there would be a reduction in audible or visual effects from existing conditions. Based on the above analysis, the FAA proposes a finding of no adverse effect on historic properties. We request that you review the information and respond whether you concur with the proposed finding within 30 days of receiving this letter.

Should you have any questions regarding any of the above, please contact Judith Walker at 202-267-4185 or [Judith.Walker@faa.gov](mailto:Judith.Walker@faa.gov) and copy the ATMP team at [ATMPTeam@dot.gov](mailto:ATMPTeam@dot.gov).

Sincerely,

A handwritten signature in black ink, appearing to read 'Judith Walker', with a stylized flourish extending to the right.

Judith Walker  
Federal Preservation Officer  
Senior Environmental Policy Analyst  
Environmental Policy Division (AEE-400)  
Federal Aviation Administration

#### Attachments

- A. List of Consulting Parties
- B. APE Map including existing Commercial Air Tour Routes
- C. List of Historic Properties in the APE and Description of Historic Characteristics
- D. Summary of Noise Technical Analysis from NEPA Review

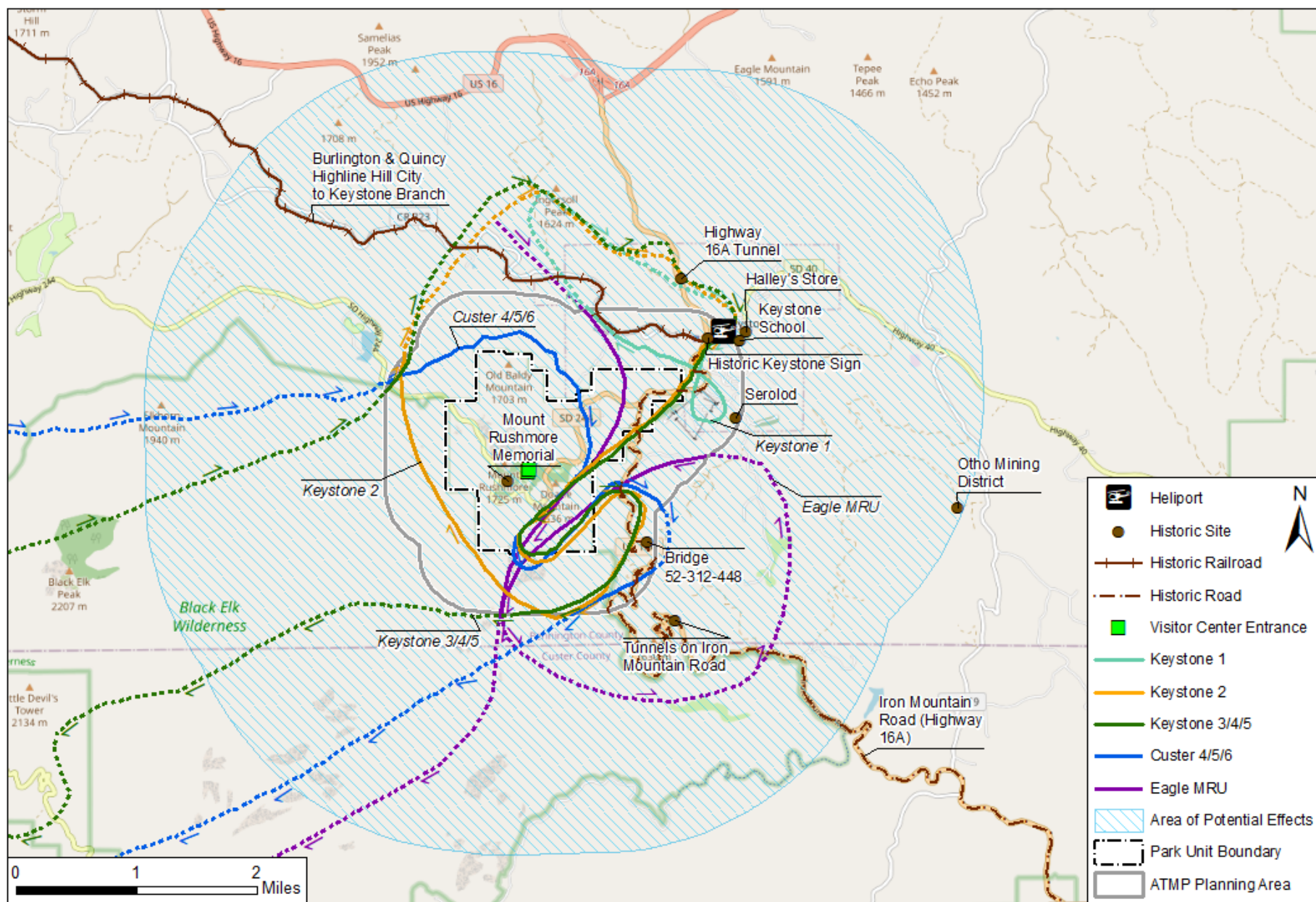
**ATTACHMENT A**  
**List of Consulting Parties**

Apache Tribe of Oklahoma
Assiniboine and Sioux Tribes of Fort Peck
Dakota Rotors LLC (Black Hills Aerial Adventures, Inc. & Rushmore Helicopters, Inc.)
Cheyenne and Arapaho Tribes of Oklahoma
Cheyenne River Sioux Tribe
Crow Creek Sioux Tribe (of the Crow Creek Reservation, South Dakota)
Crow Tribe of Montana
Dakota Rotors LLC (Rushmore Helicopters, Inc.)
Eagle Aviation, Inc.
Eastern Shoshone Tribe of the Wind River Reservation, Wyoming
Flandreau Santee Sioux Tribe of South Dakota
Fort Belknap Indian Community of the Fort Belknap Reservation
Kiowa Indian Tribe of Oklahoma
Lower Brule Sioux Tribe of the Lower Brule Reservation
National Trust for Historic Preservation
Northern Arapaho Tribe of the Wind River Reservation, WY
Northern Cheyenne Tribe of the Northern Cheyenne Indian Reservation
Oglala Lakota Nation
Omaha Tribe of Nebraska
Pennington County
Ponca Tribe of Nebraska
Rosebud Sioux Tribe of the Rosebud Indian Reservation
Santee Sioux Nation, Nebraska
Sisseton-Wahpeton Oyate of the Lake Traverse Reservation
Spirit Lake Tribe
Standing Rock Sioux Tribe of North & South Dakota
Three Affiliated Tribes of the Berthold Reservation, North Dakota (Mandan, Hidatsa and Arikara Nation)
Town of Keystone, SD
Turtle Mountain Band of Chippewa Indians of North Dakota
Upper Sioux Community, Minnesota
U.S. Forest Service Black Hills National Forest
Winnebago Tribe of Nebraska
Yankton Sioux Tribe of South Dakota

**ATTACHMENT B**

**Area of Potential Effects Map  
Including  
Existing Commercial Air Tour Routes**

## Area of Potential Effects with Historic Properties for ATMP at Mount Rushmore National Memorial



## ATTACHMENT C

### List of Historic Properties in the APE and Description of Historic Characteristics

Property Name	Property Type	Eligibility Status	Location	Significant Characteristics
Black Hills	TCP	Recommended Eligible/undetermined <sup>6</sup>	Black Hills	The Black Hills, including Badlands National Park and Mount Rushmore National Memorial, are part of a continuous landscape that is sacred, which includes plants, animals, the sky, and other natural resources. The landscape is considered a TCP by many tribes.
Mount Rushmore Developed Area	Structures	Listed	Within the Park	See Mount Rushmore Memorial.
Mount Rushmore Memorial	Site	Listed	Within the Park	Mount Rushmore National Memorial, established October 1, 1925, is near the center summit of the Black Hills in SW South Dakota. The sculpture, known as the Shrine of Democracy, is carved into the SW face of Mount Rushmore, a solid granite ridge in the Harney Range. Areas of significance include: 1) illustration of an important theme in our nation's history; 2) association with the lives of four presidents represented; 3) represents the work of a master and possesses artistic value. It is also significant as an example of American cultural values. The presidents typify the ideals, attitudes, values, dreams, and spirit of Americans.
Burlington & Quincy Highline Hill City to Keystone Br.	District	Eligible	Sections are within the Park	The property is significant as a reflection of the growth and operational pattern of the Burlington and Quincy railroad. This spur line demonstrates how the railroad served and influenced the towns of Hill City and Keystone. The Burlington and Quincy High Line Hill City to Keystone Branch is also significant as an excellent example of early railway design, engineering, and architecture.

<sup>6</sup> For the purposes of Section 106, the FAA is treating identified but unevaluated properties as eligible for the National Register of Historic Places.



Property Name	Property Type	Eligibility Status	Location	Significant Characteristics
Bridge 52-312-448	Structure	Eligible	Outside the Park	Bridge integrity has been diminished slightly with removal of one wingwall. The structure also has some condition problems. Nevertheless, it has been selected as a National Register-eligible representation of the steel stringer bridge type, in large part because of its position on a pigtail section of U.S. Highway 16A.
Hwy 16A tunnel	Structure	Eligible	Outside the Park	See Iron Mountain Road (Highway 16A).
Iron Mountain Road (Highway 16A)	Structure	Eligible	Sections are within the Park	After receiving presidential support for the Mount Rushmore monument in 1929, Peter Norbeck turned his attention to the construction of a scenic road between the Game Lodge and Mount Rushmore. Iron Mountain Road was completed in 1932. The two-lane section between Mount Rushmore and Custer State Park becomes divided into two single lanes twice to minimize the cutting of rock, preserving the forest and mountain scenery. He designed the road over a picturesque route so that the presidential figures could be seen from several different aspects.
Tunnels on Iron Mountain Road	Structure	Eligible	Outside the Park	See Iron Mountain Road (Highway 16A).
Serolod	Structure	Eligible	Outside the Park	An example of single-family resort architecture in South Dakota. The house was constructed by local craftsmen, who also worked on several fine resort buildings in the area. Devastated by a flood in the early 1970's, the community of Keystone has few remaining early houses, and this structure is the best example of post-World War I architecture. The log construction technique employs stripped, unhewn logs joined with a saddle notch. Referred to as a Lincoln Log building, ends of the logs are sawn, the tapering crowns extend beyond the corner, a low-pitched roof extends beyond the wall in a wide eave both as an arts and crafts/Prairie School/Western Stick style feature and to protect the crown ends.

Property Name	Property Type	Eligibility Status	Location	Significant Characteristics
Keystone School	Structure	Eligible	Outside the Park	Significant in the areas of education and architecture. An example of a frame rural school at the turn of the century. . The school, which dominates the town from its hillside position, is unusually large for schools of its day.
Halley's Store	Structure	Eligible	Outside the Park	The buildings are significant in the areas of commerce and vernacular architecture, the Keystone Trading Company Store is indirectly significant to industry as well. As a well-preserved example of a gable-end, one-story country store, the building was one of the two general merchandising stores serving the town. In addition, the store served as the company store for the mining operations.
Historic Keystone Sign	Object	Eligible	Outside the Park	The Historic Keystone sign likely built c.1968 is eligible for listing in the National Register for its significance within the history of tourism development. The sign was a local effort for roadside wayfinding and economic promotion, demonstrating the trends of postwar tourist development in Black Hills towns, also indicated, and spurred, by the Mission 66 improvements to Mount Rushmore National Memorial and the 1967-1968 construction of the Keystone Wye bridge. The stone veneer and unpainted vertical wood boards used in the design of the sign also demonstrate period trends in tourist construction in the Black Hills to use natural materials of the region.
39CU3069*	Site – Rock Shelter	Eligible	Outside the Park	Historic artifacts related to Native American protestors who occupied the site during two brief periods in 1970 and 1971. This archaeological site may be considered TCP by some because of its association with the events related to Native American occupation of Mount Rushmore Memorial.
39PN3239*	Site	Eligible	Outside the Park	Rock Shelter
39CU3873*	Site	Eligible	Outside the Park	Mine

Property Name	Property Type	Eligibility Status	Location	Significant Characteristics
Scott Family Summer Cabin (also known as Lafferty Gulch Summer Home)*	Structure	Eligible	Outside the Park	The Scott Family Summer Cabin is eligible for the National Register for its association with Depression-era recreation in the Black Hills, as well as the Federal Government's policy of encouraging private recreational developments on public lands from the mid-1930s to the early 1940s.
Otho Mining District	District	Eligible	Outside the Park	The Otho Mining District was a small rural mining community. It is eligible for the National Register because it represents a period of time when mining in the Black Hills was drawing people into the area from all over the United States. It was the mining of various rich mineral deposits in the area including gold, silver, tin, feldspar and beryl that attracted both national and international speculators to invest millions of dollars into the economy of the Keystone area communities including Otho. Until 1882, the United States imported all the tin we used. Some of the mines in the Keystone area, including Otho, produced tin; reducing the Nation's dependence on imports. Otho's open and undeveloped space offers an unspoiled glimpse at how and where the prospectors tested an area for minerals and how the later full scale mining developed. The landscape that surrounds it is pocked with prospectors test holes, cuts and trenches, mine tunnels and shafts, and milling foundations. This area provides a rare opportunity to see how these features tie together to generate a cohesive picture of turn of the century mining practices.

\*Location is restricted and therefore cannot be shown on the APE map.

## ATTACHMENT D

### Summary of Noise Technical Analysis from NEPA Review

There are numerous ways to measure the potential impacts from commercial air tours on the acoustic environment of a park, including intensity, duration, and spatial footprint of the noise. The metrics and acoustical terminology used for the ATMPs are shown in the table below.

Metric	Relevance and citation
Equivalent sound level, $L_{Aeq, 12\text{ hr}}$	The logarithmic average of commercial air tour sound levels, in dBA, over a 12-hour day. The selected 12-hour period is selected to represent typical daytime commercial air tour operating hours.
Day-night average sound level, $L_{dn}$ (or DNL)	<p>The logarithmic average of sound levels, in dBA, over a 24-hour day, DNL takes into account the increased sensitivity to noise at night by including a 10 dB penalty between 10 PM and 7 AM local time.</p> <p>Note: Both <math>L_{Aeq, 12\text{hr}}</math> and DNL characterize:</p> <ul style="list-style-type: none"> <li>Increases in both the loudness and duration of noise events</li> <li>The number of noise events during specific time period (12 hours for <math>L_{Aeq, 12\text{hr}}</math> and 24-hours for DNL)</li> </ul> <p>If there are no nighttime events, then <math>L_{Aeq, 12\text{hr}}</math> is arithmetically three dBA higher than DNL.</p> <p>The FAA's (2015, Exhibit 4-1) indicators of significant impacts are for an action that would increase noise by DNL 1.5 dB or more for a noise sensitive area that is exposed to noise at or above the DNL 65 dB noise exposure level, or that will be exposed at or above the DNL 65 dB level due to a DNL 1.5 dB or greater increase, when compared to the no action alternative for the same timeframe.</p>
Time Above 35 dBA <sup>7</sup>	<p>The amount of time (in minutes) that aircraft sound levels are above a given threshold (i.e., 35 dBA)</p> <p>In quiet settings, outdoor sound levels exceeding 35 dB degrade experience in outdoor performance venues (American National Standards Institute (ANSI), 2007). This level is also shown to cause blood pressure increases in sleeping humans (Haralabidis et al., 2008); as well as exceeding recommended maximum background noise level inside classrooms (ANSI S12.60/Part 1-2010).</p>

<sup>7</sup> dBA (A-weighted decibels): Sound is measured on a logarithmic scale relative to the reference sound pressure for atmospheric sources, 20  $\mu\text{Pa}$ . Sound levels are reported in units of decibels (dB) (ANSI S1.1-1994, American National Standard Acoustical Terminology). A-weighting is applied to sound levels to account for the sensitivity of the human ear (ANSI S1.42-2001, Design Response of Weighting Networks for Acoustical Measurements). To approximate human hearing sensitivity, A-weighting discounts sounds below 1 kHz and above 6 kHz.

<b>Metric</b>	<b>Relevance and citation</b>
Time Above 52 dBA	<p>The amount of time (in minutes) that aircraft sound levels are above a given threshold (i.e., 52 dBA)</p> <p>This metric represents the level at which one may reasonably expect interference with park interpretive programs. At this background sound level (52 dB), normal voice communication at five meters (two people five meters apart), or a raised voice to an audience at ten meters would result in 95% sentence intelligibility (United States Environmental Protection Agency, Office of Noise Abatement and Control, 1974).</p>

#### **Aircraft, Routes and Number of Operations Modeled**

<b>Route</b>	<b>Aircraft</b>	<b>Existing Conditions</b>
<b>Keystone 2</b>	Robinson R-44	18
<b>Keystone 3</b>	Robinson R-44	12
<b>Custer 4</b>	Robinson R-44	7
<b>Eagle MRU</b>	Cessna 206	1
	<b>Total</b>	38

Two types of analyses were performed using FAA’s AEDT, Version 3e: 1) contour analysis and 2) representative location point analysis. A noise contour presents a graphical illustration or “footprint” of the area potentially affected by the noise. Location point results present the metric results at specific points of interest. The NPS provided a list of 27 location points, geographically located across the planning area, where noise levels were to be evaluated. In addition, noise levels were evaluated at 11 historic property locations (points 28-38) both within and outside<sup>8</sup> the ATMP planning area. These locations are geographically shown in Figure 1 and listed in Figure 2.

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<sup>8</sup> The routes, altitudes and numbers of air tours outside the ATMP boundary are unknown. This is because directly outside of the ATMP boundary is uncontrolled airspace outside the scope of this ATMP, and operators fly under Visual Flight Rules (VFR) in uncontrolled airspace. For the purposes of disclosing the potential effects on locations outside the ATMP boundary, routes outside the park were extrapolated based on available information. Additionally, ambient data are not available outside the ATMP planning area and thus time audible results were not computed.

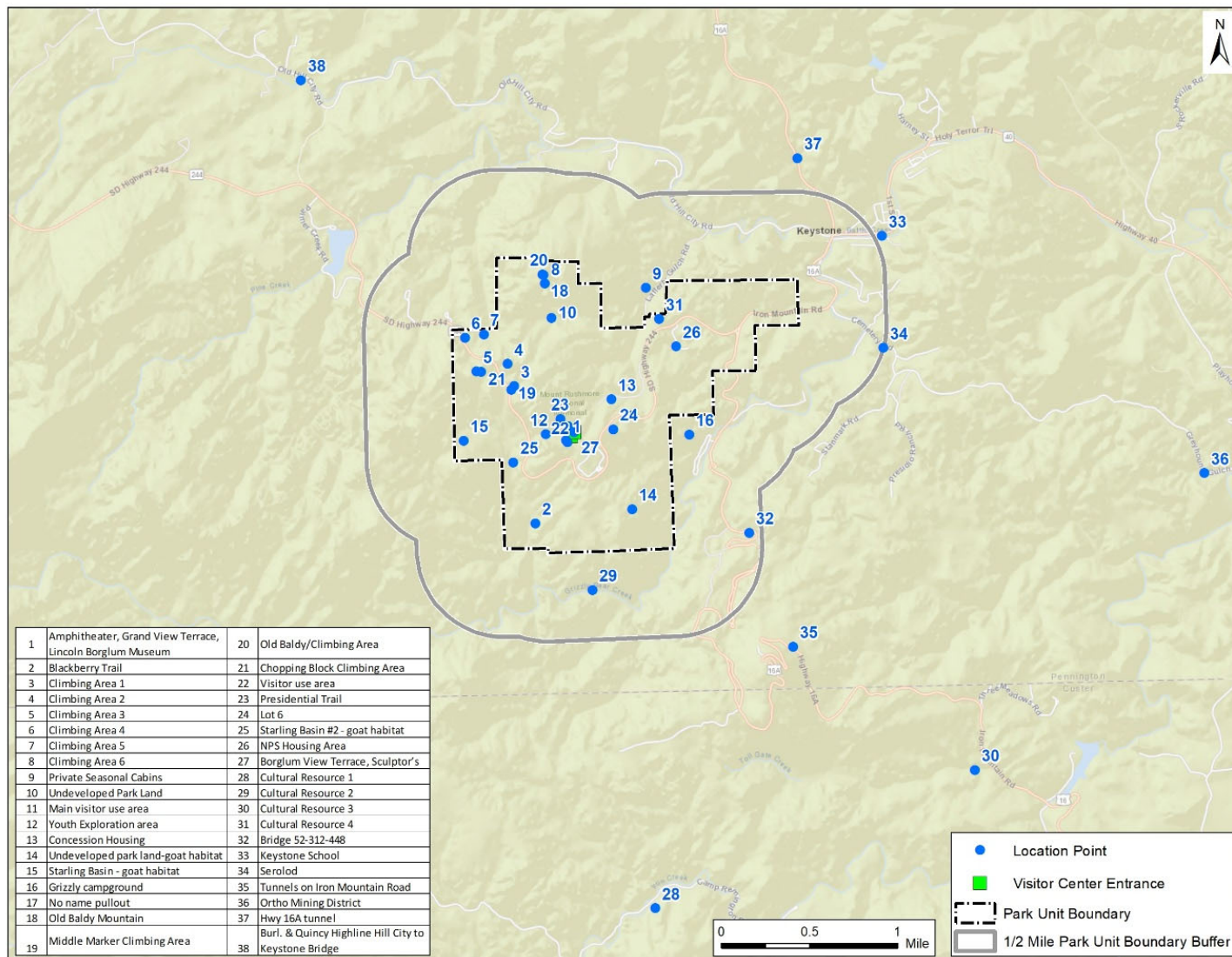


Figure 1. Location Points Modeled

**Figure 2. Location point results – Existing Conditions**

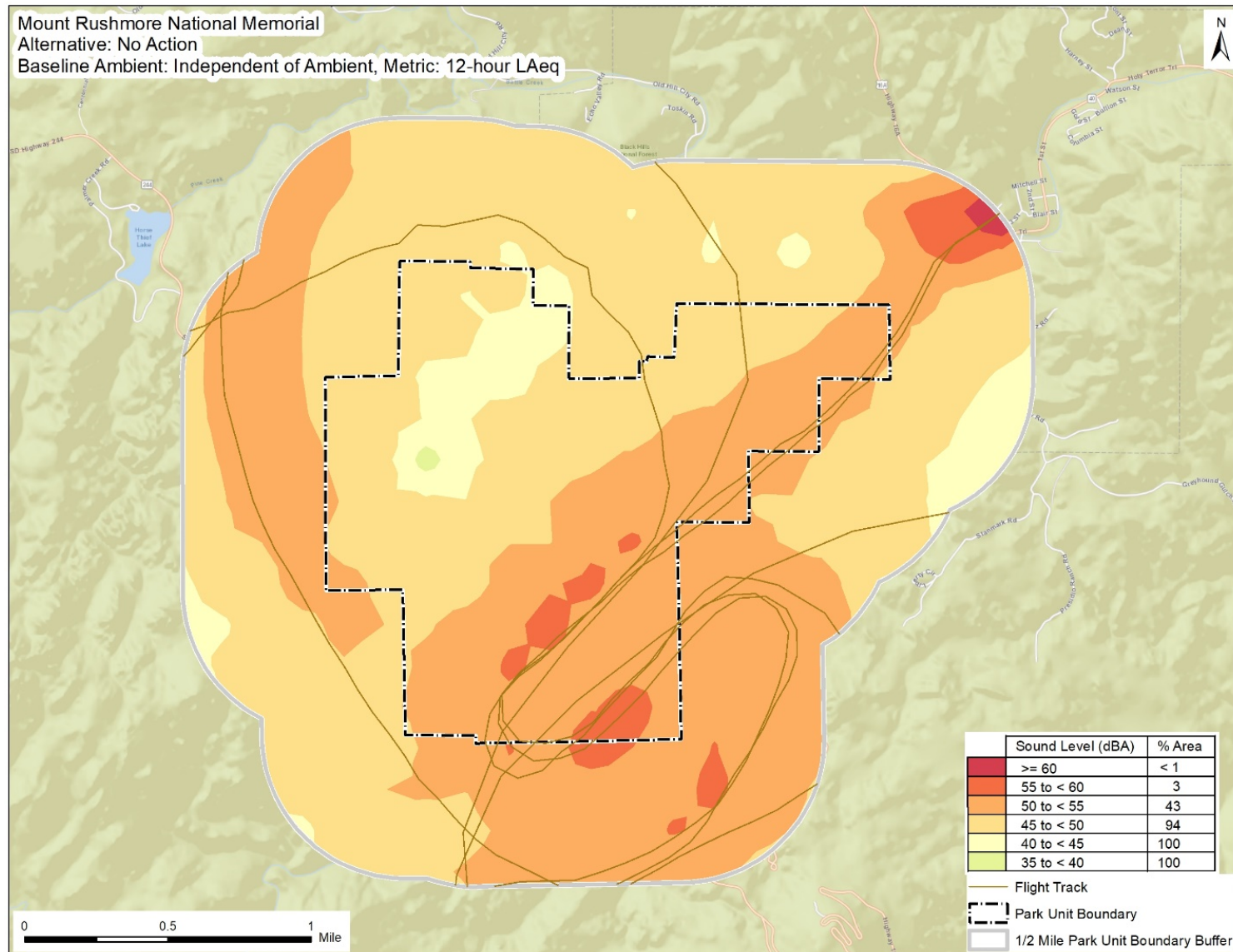
Location	12 Hour Equivalent Sound Level (dBA)*	Time Above 35 dBA (minutes)	Time Above 52 dBA (minutes)
1. Amphitheater, Grand View Terrace, Lincoln Borglum Museum	50.5	242.7	49.4
2. Blackberry Trail	52.9	235.4	66.9
3. Climbing Area 1	39.6	80.8	5.8
4. Climbing Area 2	44.6	122.5	27.6
5. Climbing Area 3	44.8	200.7	30.9
6. Climbing Area 4	47.9	165.3	43.3
7. Climbing Area 5	46.7	162.1	42.7
8. Climbing Area 6	44.9	241.4	36.7
9. Private Seasonal Cabins	45.8	221.3	35.9
10. Undeveloped lark land	44.3	194.9	34.6
11. Main visitor use area	50.3	233.0	67.4
12. Youth Exploration area	49.3	208.5	64.0
13. Concession Housing	51.3	290.8	74.8
14. Undeveloped park land-goat habitat	53.9	200.5	104.9
15. Starling Basin - goat habitat	50.0	191.5	35.0
16. Grizzly campground	52.2	261.1	96.2
17. No name pullout	54.2	319.0	90.8
18. Old Baldy Mountain	44.3	267.0	27.5
19. Middle Marker Climbing Area	44.7	126.0	21.2
20. Old Baldy/Climbing Area	47.2	313.8	58.4
21. Chopping Block Climbing Area	45.3	165.3	23.1
22. Visitor use area	51.6	281.2	75.3
23. Presidential Trail	49.6	204.3	71.7
24. Lot 6	54.2	333.2	101.1
25. Starling Basin #2 - goat habitat	48.7	188.1	46.5
26. NPS Housing Area	50.5	282.0	62.8
27. Borglum View Terrace, Sculptor's Studio	50.5	270.0	53.1
28. Cultural Resource 1**	34.9	119.9	0.7

Location	12 Hour Equivalent Sound Level (dBA)*	Time Above 35 dBA (minutes)	Time Above 52 dBA (minutes)
29. Cultural Resource 2	51.2	123.4	48.8
30. Cultural Resource 3**	29.0	20.1	0.4
31. Cultural Resource 4	46.3	286.9	35.7
32. Bridge 52-312-448	52.1	246.9	74.4
33. Keystone School**	52.3	152.1	53.9
34. Serolod	40.9	121.6	12.7
35. Tunnels on Iron Mountain Road**	40.7	122.1	9.2
36. Ortho Mining District**	23.9	4.5	0.0
37. Hwy 16A tunnel **	50.0	96.9	44.4
38. Burl. & Quincy Highline Hill City to Keystone Bridge**	36.8	97.9	1.6

\* As there are no nighttime events, DNL would be 3 dB less than the 12-hour equivalent sound level.

\*\*Refer to footnote 8 regarding modeling limitations for location points outside the ATMP planning area





**Figure 3. 12-hour equivalent sound level ( $L_{Aeq,12h}$ ) map for existing conditions**  
As there are no nighttime events, DNL will be 3 dB less than the 12-hour equivalent sound level.

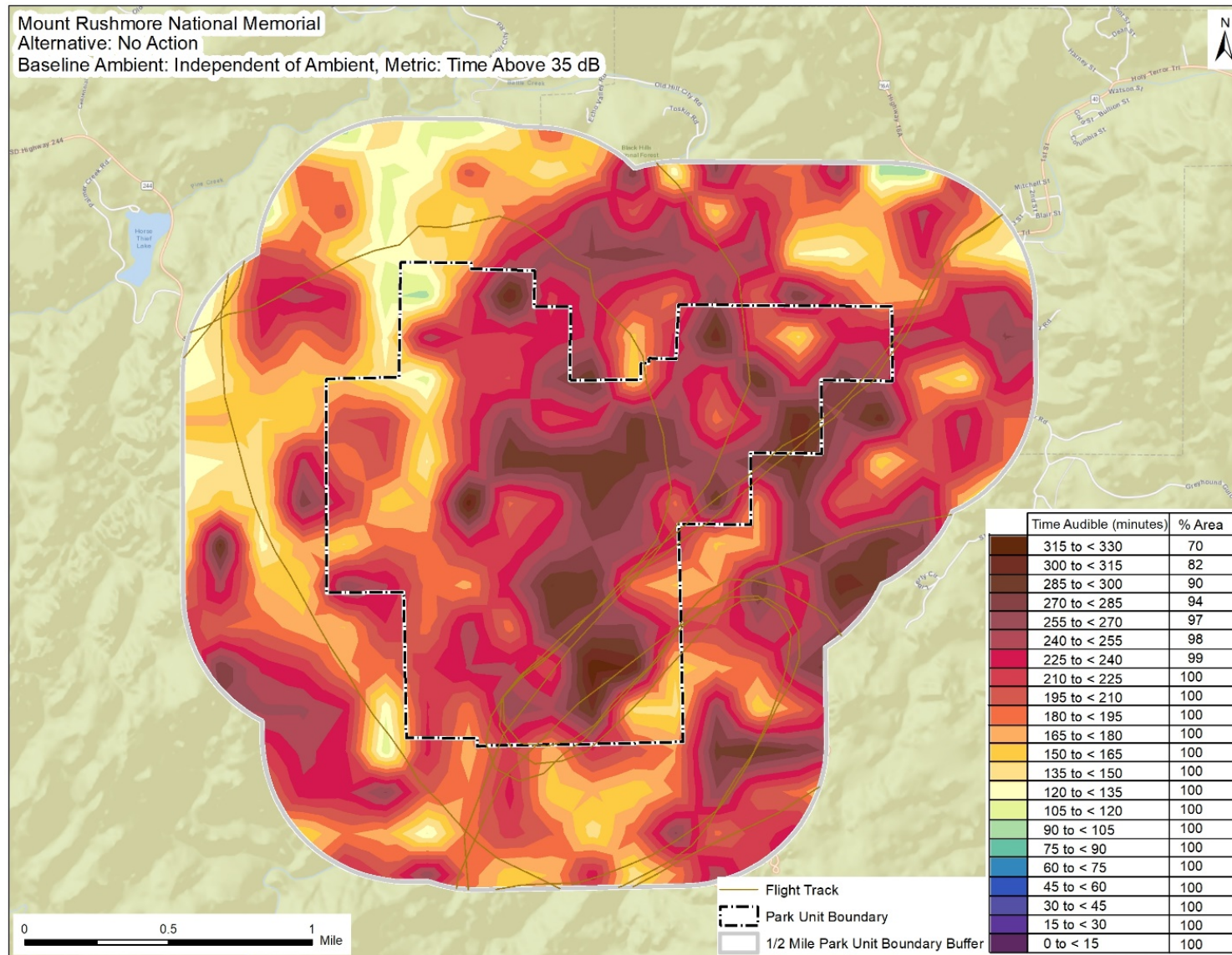


Figure 4. Time Above 35 dBA map for existing conditions

# **APPENDIX H**

## **Section 7 Consultation**



United States Department of the Interior  
**NATIONAL PARK SERVICE**  
Natural Resource Stewardship & Science  
Natural Sounds and Night Skies Division



U.S. Department  
of Transportation  
**Federal Aviation  
Administration**

United States Department of Transportation  
**FEDERAL AVIATION ADMINISTRATION**  
Office of Policy, International Affairs & Environment  
Office of Environment and Energy

## **NATIONAL PARKS AIR TOUR MANAGEMENT PROGRAM**

April 23, 2023

### **Re: Section 7 Endangered Species Act No Effect Determination for Mount Rushmore National Memorial Air Tour Management Plan**

The Federal Aviation Administration (FAA), in cooperation with the National Park Service (NPS) (collectively, the agencies), is developing an Air Tour Management Plan (ATMP) for Mount Rushmore National Memorial (the Park). The agencies are preparing documentation for the ATMP in accordance with the National Parks Air Tour Management Act of 2000 (NPATMA) and other applicable laws. This memorandum documents the agencies' *No Effect* determination associated with the proposed action for the purpose of compliance with Section 7 of the Endangered Species Act (ESA). In addition, this memorandum documents the analysis for birds protected under the Migratory Bird Treaty Act (MBTA).

### **Action Area**

The action area is the area that includes all direct and indirect effects within the ATMP planning area, which includes the Park and the area within a ½-mile outside the Park's boundary depicted in Figure 1. A commercial air tour subject to the ATMP is any flight, conducted for compensation or hire in a powered aircraft where a purpose of the flight is sightseeing over the Park, during which the aircraft flies:

- (1) Below 5,000 feet (ft.) above ground level (except solely for the purposes of takeoff or landing, or necessary for safe operation of an aircraft as determined under the rules and regulations of the FAA requiring the pilot-in-command to take action to ensure the safe operation of the aircraft); or
- (2) Less than one mile laterally from any geographic feature within the Park (unless more than ½-mile outside the Park boundary).

As air tours outside of the action area are outside the jurisdiction of the ATMP and not subject to NPATMA, there would be no limitations on the annual number of air tours that could occur, and no designated routes could be set outside of the action area.



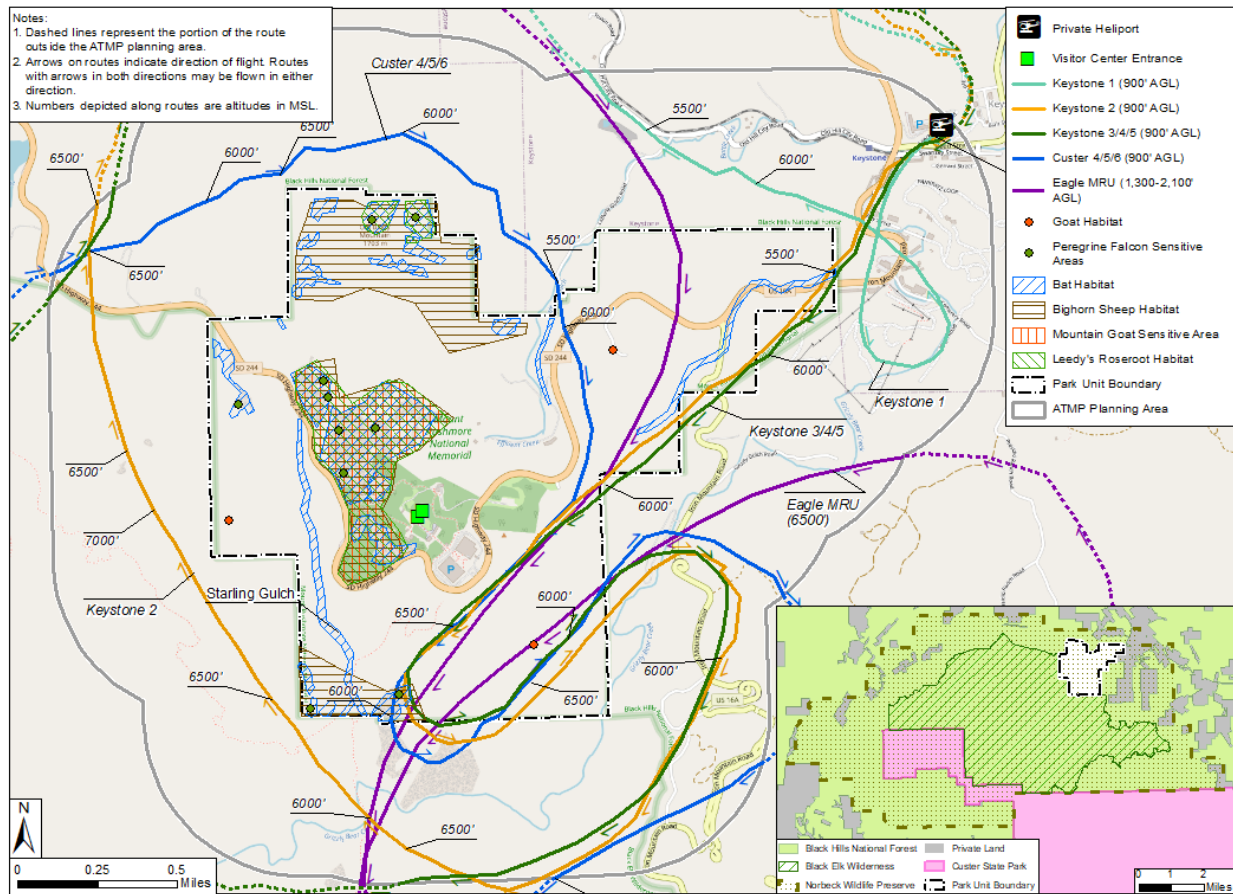


Figure 1. Species Habitat and Commercial Air Tour Routes Under Existing Conditions at Mount Rushmore National Memorial

### Description of the Proposed Action

The proposed action is implementation of an ATMP for the Park which establishes conditions for the management of commercial air tour operations. The ATMP will remain in effect until amended, at which time the agencies would reinstate consultation pursuant to 50 CFR 402.16. The relevant operating parameters of the draft ATMP are discussed in detail below.

The proposed action prohibits commercial air tours within the action area (i.e., below 5,000 ft. AGL over the Park and outside the Park within ½-mile of its boundary). Except when necessary for takeoff or landing from the privately owned heliport on the boundary of the action area, in an emergency or to avoid unsafe conditions, or unless otherwise authorized for a specified purpose, commercial air tour operators would not be allowed to enter the action area.

Air tours could be conducted only outside the action area. Air tours outside of the action area are not subject to NPATMA and are therefore not regulated under the draft ATMP. An unknown number of air tours may continue to fly more than ½-mile outside of the Park's boundary or over the action area at or above 5,000 ft. AGL. There would be no limitations on the number of such air tours that could occur.

Aircraft monitoring and enforcement would occur under the proposed action to ensure that commercial air tour operators are complying with the terms and conditions of the ATMP by not conducting tours under 5,000 ft. AGL over the action area. The NPS and the FAA would both be responsible for the monitoring and oversight of ATMP implementation.

### Listed Species Evaluated for Effects

The U.S. Fish and Wildlife Service's (USFWS) Information for Planning and Consultation (IPaC) tool and the NPS species list were used to assess the potential for any federally listed species or designated critical habitat that may occur within the action area. Based on this review, the agencies identified the following species and/or critical habitat that may occur within the action area (see Table 1).

The agencies analyzed potential impacts to all federally listed species with suitable habitat within the action area with a focus on several federally listed species, some of which are noise sensitive species that occur within the action area (see Table 1).

Because the proposed action would prohibit commercial air tours within the action area, it is reasonably foreseeable that current air tour operators could offer air tours outside of the action area, as the areas beyond the action area would not be regulated by the draft ATMP. This type of shift in air tour activity is referred to as "air tour displacement," and could consist of air tour operators shifting routes or altitudes to just outside the action area, some of which could result in impacts to wildlife to the extent that they are present near the locations where the displaced air tours would occur. It is difficult to predict with specificity if, where, and to what extent any air tours would be displaced to areas outside the action area, including at altitudes at or above 5,000 ft. AGL. However, air tours outside of the action area are outside the jurisdiction of the ATMP and not subject to NPATMA.

Table 1. Listed Species Potentially Occurring in the Action Area with No Effect Determination

<b>Mammals Scientific Name</b>	<b>Mammals Common Name</b>	<b>Mammals Status (Federal)</b>	<b>Mammals Critical Habitat (Y/N)</b>	<b>Mammals Occurrence in the Park</b>
<i>Myotis septentrionalis</i>	Northern Long-eared Bat	Endangered	N	Present
<i>Perimyotis subflavus</i>	Tricolored Bat	Proposed – Endangered	N	Present
<b>Birds Scientific Name</b>	<b>Birds Common Name</b>	<b>Birds Status (Federal)</b>	<b>Birds Critical Habitat (Y/N)</b>	<b>Birds Occurrence in the Park</b>
<i>Calidris canutus rufa</i>	Red Knot	Threatened	N	Not Present
<b>Insects Scientific Name</b>	<b>Insects Common Name</b>	<b>Insects Status (Federal)</b>	<b>Insects Critical Habitat (Y/N)</b>	<b>Insects Occurrence in the Park</b>
<i>Danaus plexippus</i>	Monarch	Candidate	N	Unknown

Table 1 includes the Section 7 determination for each species listed under the ESA. The proposed action does not involve ground disturbance or other activities with the potential to modify aquatic or terrestrial habitat. Therefore, the agencies determined the proposed action will have *No Effect* on mammals, birds, and insects.

### **Northern Long-eared Bat**

The northern long-eared bat (*Myotis septentrionalis*) is listed as endangered<sup>1</sup> under the ESA (87 FR 73488) and is one of several bat species documented within the Park. Northern long-eared bats are nocturnal and emerge at dusk to forage for insects in the understories of trees. Northern long-eared bats hibernate in caves in the winter months. Delayed fertilization occurs in spring, and the breeding season occurs from later summer to fall. They spend the remainder of the year in forested habitat.

NPS conducted bat monitoring at the Park from mid-October to February of 2021-2022 in order to track winter bat activity and identify areas of importance to wintering bats. Survey methods included mist-netting, emergence counts, radio telemetry, and acoustic monitoring; the area of greatest winter bat activity occurs in the western region of the Park, at a clearing between two tall granite cliffs by Highway 244 near pine snags (Maddox, 2022).

The most significant threat to this species is white nose syndrome, followed by collisions with wind turbines, climate change, and habitat loss. White nose syndrome disrupts hibernation and has caused populations of northern long-eared bats to decline 97-100% across 79% of their range, while mortality from wind turbines poses a risk to northern long-eared bats across almost half of their range (USFWS, 2022a).

Stressors to this species, compounded with their low reproduction rate of one pup per year, are expected to cause a 95% decline of northern long-eared bat abundance throughout their range by 2030. As such, the USFWS uplisted this species from threatened to endangered in 2023. Although there have been no detections of white nose syndrome at the Park, the disease has been detected in bats at nearby Wind Cave National Park and Jewel Cave National Monument.

### Effect Determination

Anthropogenic noise has been found to reduce foraging success of bats (Siemers and Schaub, 2011; Luo et al., 2015). When exposed to played-back traffic and gas compressor station noise at 58-76 dBA and low-level amplified noise at 35 dBA, pallid bats (*Antrozous pallidus*) experienced increases in the amount of time it took to locate prey-generated sounds (Bunkley and Barber, 2015). The greater mouse-eared bat (*Myotis myotis*) showed decreased foraging efficiency when exposed to broadband computer-generated noise at a sound pressure level of 80 dB (which corresponds to sounds occurring 10 – 15 meters (33 - 49 ft.) away); bats will avoid foraging areas with these conditions in favor of quieter foraging areas (Schaub et al., 2008). Northern long-eared bats have been documented utilizing artificial bat houses near airports for roosting (Whitacker et al., 2004), while other endangered bats such as the Indiana bat (*Myotis sodalis*) focused foraging activity near forested areas in response to increases in developed land around airports (Divoll and O’Keefe, 2018).

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<sup>1</sup> The effective date of a final rule amending 50 CFR Part 17 to reclassify the northern long-eared bat as endangered was delayed until March 31, 2023.

Under the proposed action, commercial air tours would not be conducted within the action area, which would eliminate this source of noise from the action area. Therefore, there would be a direct beneficial effect on the northern long-eared bat in the Park since the intensity and presence of noise from commercial air tours would be less than under existing conditions. The agencies believe that the proposed action is sufficiently protective of this species and therefore have determined that the proposed action would have **No Effect** on the northern long-eared bat.

### Tricolored Bat

The tricolored bat is an insectivore that is distinguished by its tricolored fur that appears darker at the base and top of its body and lighter in the middle. The tricolored bat is one of several bat species that were recently detected at the Park and is proposed to be listed as endangered under the ESA (87 FR 56381). They are nocturnal mammals that forage at treetop level or over waterways and forest edges at dusk with slow, erratic flight patterns. Similar to other bat species, the tricolored bat winters in caves or mines and roosts in forested habitats during other parts of the year. Tricolored bats mate during the fall and winter seasons, hibernate throughout the winter, and migrate to their summer habitat where females form maternity colonies to birth their young (USFWS, 2022b). Once juveniles can fly, the bats disperse and return to their winter habitats to swarm, mate, and hibernate. Tricolored bats demonstrate site fidelity to their winter and summer roost habitats (USFWS, 2022b).

Threats to tricolored bats include white nose syndrome, collisions with wind turbines, habitat loss and disturbance, and climate change. Colonies of tricolored bats are vulnerable to extirpations from white noise syndrome and other stressors due to their low reproduction rate of two pups per year and high philopatry (tendency to return to or remain near a particular site or area). White nose syndrome is the most prominent threat to this species, and it is estimated that abundance of tricolored bats will decrease by 81% across their range over the next ten years (USFWS, 2022b). Low abundances also increase the loss of genetic diversity which will further lessen the ability of the tricolored bat to adapt to changes in their environment.

NPS conducted bat monitoring at the Park from mid-October to February in order to track winter bat activity and identify areas of importance to wintering bats. Survey methods included most-netting, emergence counts, radio telemetry, and acoustic monitoring. Tricolored bats were not detected during winter bat monitoring, but the area of greatest winter bat activity occurs in the western region of the Park, at a clearing between two tall granite cliffs by Highway 244 near pine snags (Maddox, 2022).

### Effect Determination

As discussed above, anthropogenic noise can impact foraging success and patterns of bats (Siemers and Schaub, 2011; Luo et al., 2015), while other species of bats have been documented roosting and foraging near airports (Whitaker et al., 2004; Divoll and O'Keefe, 2018). However, under the proposed action, commercial air tours would not be conducted within the action area which would eliminate this source of noise from the action area. Therefore, there would be a direct beneficial effect on the tricolored bat since the intensity and presence of noise from commercial air tours would be less than existing conditions. The agencies believe that the proposed action is sufficiently protective of the species and therefore have determined that the proposed action would have **No Effect** on the tricolored bat.



## Red Knot

The red knot (*Calidris canutus rufa*) is listed as threatened under the ESA and is a robin-like shorebird in the sandpiper family. They fly thousands of miles to and from the Arctic tundra where they nest in large flocks. As such, stopover sites such as South Dakota, where red knots occupy inland saline lakes and freshwater marshes, are vital for successful migratory patterns. Red knots migrate at dawn and dusk. Females lay eggs from June to July and depart the northern breeding grounds around mid-July shortly after chicks hatch, where adults and juveniles migrate separately to southern wintering habitats.

Their diet consists of invertebrates, marine worms, and crustaceans, in addition to horseshoe crab eggs along the eastern seaboard of the U.S. that support 50-80% of migrating red knots every year (USFWS, 2022c). Overharvesting of horseshoe crabs limited the food supply for migrating red knots, causing their survival rates to decrease and populations to decline from 67,546 individuals in 1985 to 14,800 individuals in 2008 (Niles et al., 2009). Restrictions on horseshoe crab harvests have not resulted in recovered or increasing population sizes for horseshoe crabs and subsequently red knots, so both of these species continue to decline in number (Niles et al., 2009). Additional threats to red knots include sea level rise and coastal development that jeopardize coastal stopover habitat where red knots forage and rest during migration.

### Effect Determination

In a study considering the noise sensitivity of this species, areas with more aircraft noise had lower abundances of red knots compared to areas with fewer overflights, and restlessness among birds who resided in these noisier areas was greater on days that had a greater number of aircraft overflights (Koolhaas, 1993).

The red knot has not been documented in the Park, and no suitable habitat for the species occurs within the Park. Under the proposed action, commercial air tours would not be conducted within the action area, which would eliminate this source of noise from the action area. Therefore, since the species is not present or likely to become present, and commercial air tours would not occur within the action area, the agencies have determined that the proposed action would have **No Effect** on the red knot.

## Monarch

The monarch butterfly (*Danaus plexippus*) is known for its orange, black, and white wings that serve as a warning of its toxicity to predators. Monarchs feed on nectar and are important pollinators. Populations of monarch within North America are divided into east and west populations based on their proximity to the Rocky Mountains; monarch butterflies in South Dakota are part of the eastern population. Monarchs breed year-round and lay their eggs on milkweed plants, where adult butterflies emerge after eight to 19 days (USFWS, 2020). Three to five generations are produced each breeding season, and the lifespan of monarch butterflies ranges from several weeks to nine months.

This population of North American monarchs have unique features that differentiate them from other populations. Notably, they migrate long distances every fall and travel south to central Mexico. Overwintering adults enter reproductive diapause (suspended reproduction) and are also equipped with directional flight orientation to the south, which allow the eastern population of monarchs to be

adapted for their long migratory patterns. The phenotypes of eastern monarchs differ from other populations as well; eastern monarchs have larger bodies, elongated wings, are redder in color, and have lower rates of parasitic infection (USFWS, 2020).

Butterfly distribution within the action area depends on the presence of host plants. Monarch abundances have been declining across North America, and the primary threats to the abundance and health of these populations are habitat degradation, use of herbicides and insecticides, urban development, and climate change. The eastern population of monarchs in North America have experienced lower abundances and declining population rates over the past several years (USFWS, 2020). This species is a candidate for listing under the ESA, but is precluded from listing by higher priority actions of USFWS (85 FR 81813).

#### Effect Determination

In consideration of the noise sensitivity of this species, monarch butterfly larvae exposed to short-term traffic noise showed increased heart rates, while larvae exposed to 7 to 12 days of continuous traffic noise showed no increased heart rates, suggesting that larvae could become desensitized or habituated to chronic exposure to anthropogenic noise (Davis et al., 2018).

Although the monarch has not been documented in the Park, the Park falls within its known range. It is possible that the species occurs but has not yet been identified in the Park. Under the proposed action, commercial air tours would not be conducted within the action area, which would eliminate this source of noise from the action area. The agencies believe that the proposed action is sufficiently protective of this species. Therefore, the agencies have determined that the proposed action would have **No Effect** on the monarch butterfly.

#### **Summary of Determinations for ESA-Listed Species**

A *No Effect* determination under the ESA means that there would be no consequences to listed species or critical habitat that are caused by the proposed action, including the consequences of other connected activities that are caused by the proposed action. A consequence is caused by the proposed action if it would not occur but for the proposed action and it is reasonably certain to occur. Effects of the action may occur later in time and may include consequences occurring outside the immediate area involved in the action.

As discussed, the proposed action prohibits air tours within the action area, which provides the greatest protection to listed species. Therefore, the ATMP results in no meaningful, measurable, or noticeable impacts on the species listed in Table 1. In accordance with Section 7 of the ESA, the agencies have determined that the proposed project would have **No Effect** on northern long-eared bat (*Myotis septentrionalis*), tricolored bat (*Perimyotis subflavus*), red knot (*Calidris canutus rufa*), and monarch butterfly (*Danaus plexippus*).

## Species Protected Under the MBTA

The agencies also analyzed potential impacts to non-ESA listed species that are protected under the MBTA, including bald eagles (*Haliaeetus leucocephalus*) and peregrine falcons (*Falco peregrinus*) (see Table 2).

Because the proposed action would prohibit commercial air tours within the action area, it is reasonably foreseeable that current air tour operators could offer air tours outside of the action area, as the areas beyond the action area would not be regulated by the draft ATMP. It is difficult to predict with specificity if, where, and to what extent any air tours would be displaced to areas outside the action area, including at altitudes at or above 5,000 ft. AGL. However, air tours outside of the action area are outside the jurisdiction of the ATMP and not subject to NPATMA.

Based on the analysis below, there would be no impacts from the proposed action on species protected under the MBTA.

*Table 2. Species Protected Under the Migratory Bird Treaty Act Potentially Occurring in the Action Area*

Scientific Name	Common Name	Occurrence in the Park
<i>Falco peregrinus</i>	Peregrine Falcon	Present
<i>Haliaeetus leucocephalus</i>	Bald Eagle	Present

### Peregrine Falcon

The peregrine falcon is a carnivorous bird of with a diet that consists primarily of other birds and is augmented by rare intakes of small mammals, reptiles, or insects. This species nests along remote cliffs and ledges, where their nests, called scrapes, are just small depressions in gravel. Nesting occurs in the spring and their clutch size is two to three eggs.

Pollutants such as dichloro-diphenyl-trichloroethane (DDT) caused egg-shell thinning, resulting in the listing of this species as endangered under the ESA in 1973 (NPS, 2021). Limiting the use of DDT allowed populations to recover, and this species was delisted in 1999, where their populations have since slowly increased and are now considered to be stable. Despite population recovery, the peregrine falcon is still listed as threatened at the state level in South Dakota (South Dakota Department of Game, Fish, and Parks, 2022). Threats to peregrine falcons include poisoning from DDT-based pesticides and illegal shooting.

This species is an uncommon migrant of South Dakota but has been observed in the Black Hills during the summer season. Surveys in 2017 documented two peregrine falcon nest locations in the northern and central Black Hills (South Dakota Department of Game, Fish, and Parks 2022). In 2020, the NPS observed a pair of nesting peregrines in the park (though the four chicks did not survive), and in 2022, a pair was observed flying over the sculpture. Peregrine falcons have also been observed in portions of the action area outside the Park, but no nests have been documented in these locations.

When peregrine falcons were exposed to helicopters and fixed-wing aircraft overflights from 1,000 meters (3,281 ft.) or less, or at slant distances of 550 meters (1,804 ft.), 2-3% of individuals had in-flight responses; when active nests were approached at the same slant distances, peregrine falcons have been observed attacking these aircraft (Nordmeyer, 1999). Studies suggest that although peregrine falcons have shown reactions to aircraft, they display stronger reactions and are therefore more sensitive to disturbance from humans, other animals, and boats than they are to overflights from helicopters or fixed-wing aircraft (Nordmeyer, 1999; Roby et al., 2002; Palmer et al., 2003). Studies recommend a standoff distance of 2,640 ft. between from active nest for human activities (Richardson and Miller, 1997; Colorado Division of Wildlife, 2020). Under the proposed action, no impacts to peregrine falcons would occur.

### Bald Eagle

Bald eagles are birds of prey with large wingspans. They are considered carnivores, with a diet that consists primarily of rodents. Bald eagles inhabit seacoasts, forest valleys, mountain regions, lakes, and rivers, and are occasionally present within the Park and greater action area. Bald eagles mate for life and aggressively defend nests during the breeding season. Nests are typically constructed in trees near water sources or along cliffs. The clutch size is one to three eggs, and adults will use the same nests each year. Chicks hatch and fledge throughout the spring.

In 2007, the USFWS estimated there were 9,789 breeding pairs across the southern U.S., which led to the delisting of the bald eagle from the ESA in those regions and later removed from the federal list of endangered species. The population size of this species has increased since 2007, and continues to increase, as bald eagles are provided protection under both the MBTA and the Bald and Golden Eagle Protection Act.

In 2007, the USFWS prepared National Bald Eagle Management Guidelines. These guidelines provide landowners, land managers, and others who share public and private lands with bald eagles with procedures for when and under what circumstances the Bald and Golden Eagle Protection Act applies to project activities. Additionally, the guidelines include standoff distances of 1,000 ft. for aircraft at nests during the breeding season, foraging areas, and communal roost sites. In 2016, USFWS released the Final Programmatic Environmental Impact Statement for the Eagle Rule Revision, which analyzed the effects of revised incidental take permit regulations. In 2022, the USFWS published a proposed rule and draft EA proposing additional changes to the eagle incidental take permitting program. Threats to bald eagles include habitat loss from development in coastal areas, pesticide poisoning, and illegal shooting.

Noise from air tours may impact wildlife in a number of ways: altered vocal behavior, breeding relocation, changes in vigilance and foraging behavior, and impacts on individual fitness and the structure of ecological communities (Shannon et al., 2015, Kunc and Schmidt, 2019). Under the proposed action, commercial air tours will not be conducted in the action area and therefore are not expected to impact bald eagles or inhibit foraging, feeding, breeding, or nesting.

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## United States Department of the Interior

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In Reply Refer To:

April 17, 2023

Project Code: 2023-0069720

Project Name: Mount Rushmore National Memorial - Air Tour Management Plan

Subject: List of threatened and endangered species that may occur in your proposed project location or may be affected by your proposed project

To Whom It May Concern:

The enclosed species list identifies threatened, endangered, proposed and candidate species, as well as proposed and final designated critical habitat, that may occur within the boundary of your proposed project and/or may be affected by your proposed project. The species list fulfills the requirements of the U.S. Fish and Wildlife Service (Service) under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 *et seq.*).

New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list. Please feel free to contact us if you need more current information or assistance regarding the potential impacts to federally proposed, listed, and candidate species and federally designated and proposed critical habitat. Please note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the Act, the accuracy of this species list should be verified after 90 days. This verification can be completed formally or informally as desired. The Service recommends that verification be completed by visiting the ECOS-IPaC website at regular intervals during project planning and implementation for updates to species lists and information. An updated list may be requested through the ECOS-IPaC system by completing the same process used to receive the enclosed list.

The purpose of the Act is to provide a means whereby threatened and endangered species and the ecosystems upon which they depend may be conserved. Under sections 7(a)(1) and 7(a)(2) of the Act and its implementing regulations (50 CFR 402 *et seq.*), Federal agencies are required to utilize their authorities to carry out programs for the conservation of threatened and endangered species and to determine whether projects may affect threatened and endangered species and/or designated critical habitat.

A Biological Assessment is required for construction projects (or other undertakings having similar physical impacts) that are major Federal actions significantly affecting the quality of the human environment as defined in the National Environmental Policy Act (42 U.S.C. 4332(2)(c)). For projects other than major construction activities, the Service suggests that a biological

evaluation similar to a Biological Assessment be prepared to determine whether the project may affect listed or proposed species and/or designated or proposed critical habitat. Recommended contents of a Biological Assessment are described at 50 CFR 402.12.

If a Federal agency determines, based on the Biological Assessment or biological evaluation, that listed species and/or designated critical habitat may be affected by the proposed project, the agency is required to consult with the Service pursuant to 50 CFR 402. In addition, the Service recommends that candidate species, proposed species and proposed critical habitat be addressed within the consultation. More information on the regulations and procedures for section 7 consultation, including the role of permit or license applicants, can be found in the "Endangered Species Consultation Handbook" at:

<https://www.fws.gov/media/endangered-species-consultation-handbook>

**Migratory Birds:** In addition to responsibilities to protect threatened and endangered species under the Endangered Species Act (ESA), there are additional responsibilities under the Migratory Bird Treaty Act (MBTA) and the Bald and Golden Eagle Protection Act (BGEPA) to protect native birds from project-related impacts. Any activity, intentional or unintentional, resulting in take of migratory birds, including eagles, is prohibited unless otherwise permitted by the U.S. Fish and Wildlife Service (50 C.F.R. Sec. 10.12 and 16 U.S.C. Sec. 668(a)). For more information regarding these Acts see <https://www.fws.gov/law/bald-and-golden-eagle-protection-act>, <https://www.fws.gov/media/endangered-species-act-1>, and/or <https://www.fws.gov/law/migratory-bird-treaty-act-1918>.

The MBTA has no provision for allowing take of migratory birds that may be unintentionally killed or injured by otherwise lawful activities. It is the responsibility of the project proponent to comply with these Acts by identifying potential impacts to migratory birds and eagles within applicable NEPA documents (when there is a federal nexus) or a Bird/Eagle Conservation Plan (when there is no federal nexus). Proponents should implement conservation measures to avoid or minimize the production of project-related stressors or minimize the exposure of birds and their resources to the project-related stressors. For more information on avian stressors and recommended conservation measures see <https://www.fws.gov/birds/bird-enthusiasts/threats-to-birds.php>.

In addition to MBTA and BGEPA, Executive Order 13186: *Responsibilities of Federal Agencies to Protect Migratory Birds*, obligates all Federal agencies that engage in or authorize activities that might affect migratory birds, to minimize those effects and encourage conservation measures that will improve bird populations. Executive Order 13186 provides for the protection of both migratory birds and migratory bird habitat. For information regarding the implementation of Executive Order 13186, please visit <https://www.fws.gov/law/migratory-birds>

Please be aware that bald and golden eagles are protected under the Migratory Bird Treaty Act (16 U.S.C. §§ 703-712, as amended), as well as the Bald and Golden Eagle Protection Act (16 U.S.C. 668 et seq.). Projects affecting these species may benefit from the development of an Eagle Conservation Plan (ECP), see guidance at this website (<https://www.fws.gov/node/266177>). An ECP can assist developers in achieving compliance with regulatory requirements, help avoid "take" of eagles at project sites, and provide biological support for eagle permit applications. Additionally, we recommend wind energy

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developments adhere to our Land-based Wind Energy Guidelines for minimizing impacts to migratory birds and bats.

We have recently updated our guidelines for minimizing impacts to migratory birds at projects that have communication towers (including meteorological, cellular, digital television, radio, and emergency broadcast towers). These guidelines can be found at:

<https://www.fws.gov/story/incidental-take-beneficial-practices-communication-towers>  
<http://www.towerkill.com>

According to National Wetlands Inventory maps, (available online at <https://www.fws.gov/library/collections/national-wetland-inventory>) wetlands exist adjacent to the proposed construction corridor. If a project may impact wetlands or other important fish and wildlife habitats, the U.S. Fish and Wildlife Service (Service), in accordance with the National Environmental Policy Act of 1969 (42 U.S.C. 4321-4347) and other environmental laws and rules, recommends complete avoidance of these areas, if possible. If this is not possible, attempts should be made to minimize adverse impacts. Finally if adverse impacts are unavoidable, measures should be undertaken to replace the impacted areas. Alternatives should be examined and the least damaging practical alternative selected. If wetland impacts are unavoidable, a mitigation plan addressing the number and types of wetland acres to be impacted, and the methods of replacement should be prepared and submitted to the resource agencies for review.

Please check with your local wetland management district to determine whether Service interest lands exist at the proposed project site, the exact locations of these properties, and any additional restrictions that may apply regarding these sites. The Offices are listed below. If you are not sure which office to contact, we can help you make that decision.

U.S. Fish and Wildlife Service, Huron Wetland Management District, Federal Building, Room 309, 200 4th Street SW, Huron, SD 57350; telephone (605) 352-5894. Counties in the Huron WMD: Beadle, Buffalo, Hand, Hughes, Hyde, Jerauld, Sanborn, Sully.

U.S. Fish and Wildlife Service, Lake Andes Wetland Management District, P O Box 18, Pickstown, South Dakota, 57367; telephone (605) 487-7603. Counties in the Lake Andes WMD: Aurora, Brule, Charles Mix, Davison, Douglas.

U.S. Fish and Wildlife Service, Madison Wetland Management District, P.O. Box 48, Madison, South Dakota, 57042, telephone (605) 256-2974. Counties in the Madison WMD: Bon Homme, Brookings, Clay, Deuel, Hamlin, Hanson, Hutchinson, Kingsbury, Lake, Lincoln, McCook, Miner, Minnehaha, Moody, Turner, Union, Yankton.

U.S. Fish and Wildlife Service, Sand Lake Wetland Management District, 39650 Sand Lake Drive, Columbia, South Dakota, 57433; telephone (605) 885-6320. Counties in the Sand Lake WMD: Brown, Campbell, Edmunds, Faulk, McPherson, Potter, Spink, Walworth.

U.S. Fish and Wildlife Service, Waubay Wetland Management District, 44401 134A Street, Waubay, South Dakota, 57273; telephone (605) 947-4521. Counties in the Waubay WMD: Clark, Codington, Day,

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Grant, Marshall, Roberts.

You are welcome to visit our website (<https://www.fws.gov/office/southdakota-ecological-services>) or to contact our office/staff at the address or phone number above for more information.

We appreciate your concern for threatened and endangered species. The Service encourages Federal agencies to include conservation of threatened and endangered species into their project planning to further the purposes of the Act. Please include the Consultation Code in the header of this letter with any request for consultation or correspondence about your project that you submit to our office.

Attachment(s):

- Official Species List
  - USFWS National Wildlife Refuges and Fish Hatcheries
  - Migratory Birds
  - Wetlands
-

## OFFICIAL SPECIES LIST

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

**South Dakota Ecological Services Field Office**

420 South Garfield Avenue, Suite 400

Pierre, SD 57501-5408

(605) 224-8693

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## PROJECT SUMMARY

Project Code: 2023-0069720

Project Name: Mount Rushmore National Memorial - Air Tour Management Plan

Project Type: Recreation Operations

Project Description: The Federal Aviation Administration (FAA) and the National Park Service (NPS) are working together to develop an air tour management plan (ATMP) pursuant to the National Parks Air Tour Management Act of 2000. The National Parks Air Tour Management Act applies to all commercial air tour operations over a unit of the National Park System and requires the FAA, in cooperation with the NPS, to develop an ATMP or Voluntary Agreement for parks and tribal lands where operators have applied to conduct commercial air tours.

Project Location:

The approximate location of the project can be viewed in Google Maps: <https://www.google.com/maps/@43.8800545,-103.45161762327722,14z>



Counties: Pennington County, South Dakota

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## ENDANGERED SPECIES ACT SPECIES

There is a total of 4 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries<sup>1</sup>, as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

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1. [NOAA Fisheries](#), also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

## MAMMALS

NAME	STATUS
Northern Long-eared Bat <i>Myotis septentrionalis</i> No critical habitat has been designated for this species. Species profile: <a href="https://ecos.fws.gov/ecp/species/9045">https://ecos.fws.gov/ecp/species/9045</a>	Endangered
Tricolored Bat <i>Perimyotis subflavus</i> No critical habitat has been designated for this species. Species profile: <a href="https://ecos.fws.gov/ecp/species/10515">https://ecos.fws.gov/ecp/species/10515</a>	Proposed Endangered

## BIRDS

NAME	STATUS
Red Knot <i>Calidris canutus rufa</i> There is <b>proposed</b> critical habitat for this species. Species profile: <a href="https://ecos.fws.gov/ecp/species/1864">https://ecos.fws.gov/ecp/species/1864</a>	Threatened

## INSECTS

NAME	STATUS
Monarch Butterfly <i>Danaus plexippus</i> No critical habitat has been designated for this species. Species profile: <a href="https://ecos.fws.gov/ecp/species/9743">https://ecos.fws.gov/ecp/species/9743</a>	Candidate

## CRITICAL HABITATS

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.

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## **USFWS NATIONAL WILDLIFE REFUGE LANDS AND FISH HATCHERIES**

Any activity proposed on lands managed by the [National Wildlife Refuge](#) system must undergo a 'Compatibility Determination' conducted by the Refuge. Please contact the individual Refuges to discuss any questions or concerns.

THERE ARE NO REFUGE LANDS OR FISH HATCHERIES WITHIN YOUR PROJECT AREA.

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# MIGRATORY BIRDS

Certain birds are protected under the Migratory Bird Treaty Act<sup>1</sup> and the Bald and Golden Eagle Protection Act<sup>2</sup>.

Any person or organization who plans or conducts activities that may result in impacts to migratory birds, eagles, and their habitats should follow appropriate regulations and consider implementing appropriate conservation measures, as described [below](#).

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1. The [Migratory Birds Treaty Act](#) of 1918.
  2. The [Bald and Golden Eagle Protection Act](#) of 1940.
  3. 50 C.F.R. Sec. 10.12 and 16 U.S.C. Sec. 668(a)

**The birds listed below are birds of particular concern either because they occur on the [USFWS Birds of Conservation Concern \(BCC\)](#) list or warrant special attention in your project location.** To learn more about the levels of concern for birds on your list and how this list is generated, see the FAQ [below](#). This is not a list of every bird you may find in this location, nor a guarantee that every bird on this list will be found in your project area. To see exact locations of where birders and the general public have sighted birds in and around your project area, visit the [E-bird data mapping tool](#) (Tip: enter your location, desired date range and a species on your list). For projects that occur off the Atlantic Coast, additional maps and models detailing the relative occurrence and abundance of bird species on your list are available. Links to additional information about Atlantic Coast birds, and other important information about your migratory bird list, including how to properly interpret and use your migratory bird report, can be found [below](#).

For guidance on when to schedule activities or implement avoidance and minimization measures to reduce impacts to migratory birds on your list, click on the PROBABILITY OF PRESENCE SUMMARY at the top of your list to see when these birds are most likely to be present and breeding in your project area.

NAME	BREEDING SEASON
Bald Eagle <i>Haliaeetus leucocephalus</i> This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities.	Breeds Dec 1 to Aug 31
Bobolink <i>Dolichonyx oryzivorus</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds May 20 to Jul 31
California Gull <i>Larus californicus</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds Mar 1 to Jul 31

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NAME	BREEDING SEASON
<b>Franklin's Gull <i>Leucophaeus pipixcan</i></b> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds May 1 to Jul 31
<b>Lesser Yellowlegs <i>Tringa flavipes</i></b> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. <a href="https://ecos.fws.gov/ecp/species/9679">https://ecos.fws.gov/ecp/species/9679</a>	Breeds elsewhere
<b>Lewis's Woodpecker <i>Melanerpes lewis</i></b> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. <a href="https://ecos.fws.gov/ecp/species/9408">https://ecos.fws.gov/ecp/species/9408</a>	Breeds Apr 20 to Sep 30
<b>Long-eared Owl <i>asio otus</i></b> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. <a href="https://ecos.fws.gov/ecp/species/3631">https://ecos.fws.gov/ecp/species/3631</a>	Breeds Mar 1 to Jul 15
<b>Prairie Falcon <i>Falco mexicanus</i></b> This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA <a href="https://ecos.fws.gov/ecp/species/4736">https://ecos.fws.gov/ecp/species/4736</a>	Breeds Mar 1 to Jul 31
<b>Red-headed Woodpecker <i>Melanerpes erythrocephalus</i></b> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds May 10 to Sep 10
<b>Western Grebe <i>aechmophorus occidentalis</i></b> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. <a href="https://ecos.fws.gov/ecp/species/6743">https://ecos.fws.gov/ecp/species/6743</a>	Breeds Jun 1 to Aug 31
<b>Willet <i>Tringa semipalmata</i></b> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds Apr 20 to Aug 5

## PROBABILITY OF PRESENCE SUMMARY

The graphs below provide our best understanding of when birds of concern are most likely to be present in your project area. This information can be used to tailor and schedule your project activities to avoid or minimize impacts to birds. Please make sure you read and understand the FAQ "Proper Interpretation and Use of Your Migratory Bird Report" before using or attempting to interpret this report.

### Probability of Presence (■)

Each green bar represents the bird's relative probability of presence in the 10km grid cell(s) your project overlaps during a particular week of the year. (A year is represented as 12 4-week months.) A taller bar indicates a higher probability of species presence. The survey effort (see

below) can be used to establish a level of confidence in the presence score. One can have higher confidence in the presence score if the corresponding survey effort is also high.

How is the probability of presence score calculated? The calculation is done in three steps:

1. The probability of presence for each week is calculated as the number of survey events in the week where the species was detected divided by the total number of survey events for that week. For example, if in week 12 there were 20 survey events and the Spotted Towhee was found in 5 of them, the probability of presence of the Spotted Towhee in week 12 is 0.25.
2. To properly present the pattern of presence across the year, the relative probability of presence is calculated. This is the probability of presence divided by the maximum probability of presence across all weeks. For example, imagine the probability of presence in week 20 for the Spotted Towhee is 0.05, and that the probability of presence at week 12 (0.25) is the maximum of any week of the year. The relative probability of presence on week 12 is  $0.25/0.25 = 1$ ; at week 20 it is  $0.05/0.25 = 0.2$ .
3. The relative probability of presence calculated in the previous step undergoes a statistical conversion so that all possible values fall between 0 and 10, inclusive. This is the probability of presence score.

### Breeding Season (■)

Yellow bars denote a very liberal estimate of the time-frame inside which the bird breeds across its entire range. If there are no yellow bars shown for a bird, it does not breed in your project area.

### Survey Effort (I)

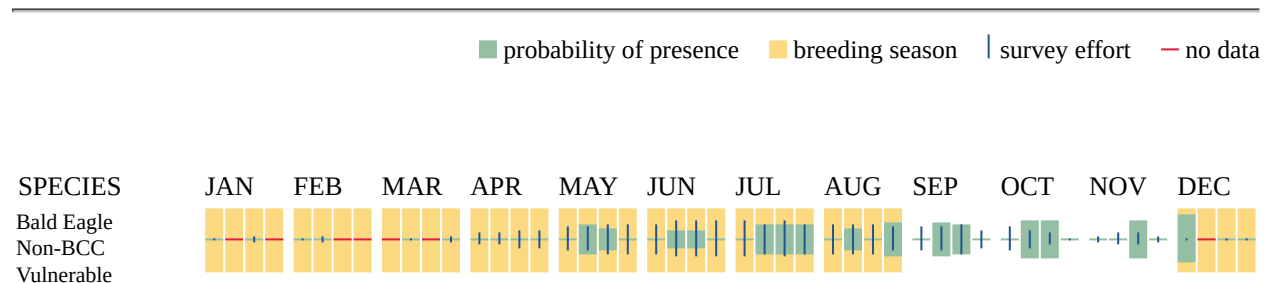
Vertical black lines superimposed on probability of presence bars indicate the number of surveys performed for that species in the 10km grid cell(s) your project area overlaps. The number of surveys is expressed as a range, for example, 33 to 64 surveys.

**No Data (—)**

A week is marked as having no data if there were no survey events for that week.

## Survey Timeframe

Surveys from only the last 10 years are used in order to ensure delivery of currently relevant information. The exception to this is areas off the Atlantic coast, where bird returns are based on all years of available data, since data in these areas is currently much more sparse.





Additional information can be found using the following links:

- Birds of Conservation Concern <https://www.fws.gov/program/migratory-birds/species>
- Measures for avoiding and minimizing impacts to birds <https://www.fws.gov/library/collections/avoiding-and-minimizing-incidental-take-migratory-birds>
- Nationwide conservation measures for birds <https://www.fws.gov/sites/default/files/documents/nationwide-standard-conservation-measures.pdf>

## MIGRATORY BIRDS FAQ

**Tell me more about conservation measures I can implement to avoid or minimize impacts to migratory birds.**

[Nationwide Conservation Measures](#) describes measures that can help avoid and minimize impacts to all birds at any location year round. Implementation of these measures is particularly important when birds are most likely to occur in the project area. When birds may be breeding in the area, identifying the locations of any active nests and avoiding their destruction is a very

helpful impact minimization measure. To see when birds are most likely to occur and be breeding in your project area, view the Probability of Presence Summary. [Additional measures](#) or [permits](#) may be advisable depending on the type of activity you are conducting and the type of infrastructure or bird species present on your project site.

**What does IPaC use to generate the list of migratory birds that potentially occur in my specified location?**

The Migratory Bird Resource List is comprised of USFWS [Birds of Conservation Concern \(BCC\)](#) and other species that may warrant special attention in your project location.

The migratory bird list generated for your project is derived from data provided by the [Avian Knowledge Network \(AKN\)](#). The AKN data is based on a growing collection of [survey, banding, and citizen science datasets](#) and is queried and filtered to return a list of those birds reported as occurring in the 10km grid cell(s) which your project intersects, and that have been identified as warranting special attention because they are a BCC species in that area, an eagle ([Eagle Act](#) requirements may apply), or a species that has a particular vulnerability to offshore activities or development.

Again, the Migratory Bird Resource list includes only a subset of birds that may occur in your project area. It is not representative of all birds that may occur in your project area. To get a list of all birds potentially present in your project area, please visit the [Rapid Avian Information Locator \(RAIL\) Tool](#).

**What does IPaC use to generate the probability of presence graphs for the migratory birds potentially occurring in my specified location?**

The probability of presence graphs associated with your migratory bird list are based on data provided by the [Avian Knowledge Network \(AKN\)](#). This data is derived from a growing collection of [survey, banding, and citizen science datasets](#).

Probability of presence data is continuously being updated as new and better information becomes available. To learn more about how the probability of presence graphs are produced and how to interpret them, go the Probability of Presence Summary and then click on the "Tell me about these graphs" link.

**How do I know if a bird is breeding, wintering or migrating in my area?**

To see what part of a particular bird's range your project area falls within (i.e. breeding, wintering, migrating or year-round), you may query your location using the [RAIL Tool](#) and look at the range maps provided for birds in your area at the bottom of the profiles provided for each bird in your results. If a bird on your migratory bird species list has a breeding season associated with it, if that bird does occur in your project area, there may be nests present at some point within the timeframe specified. If "Breeds elsewhere" is indicated, then the bird likely does not breed in your project area.

**What are the levels of concern for migratory birds?**

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Migratory birds delivered through IPaC fall into the following distinct categories of concern:

1. "BCC Rangewide" birds are [Birds of Conservation Concern](#) (BCC) that are of concern throughout their range anywhere within the USA (including Hawaii, the Pacific Islands, Puerto Rico, and the Virgin Islands);
2. "BCC - BCR" birds are BCCs that are of concern only in particular Bird Conservation Regions (BCRs) in the continental USA; and
3. "Non-BCC - Vulnerable" birds are not BCC species in your project area, but appear on your list either because of the [Eagle Act](#) requirements (for eagles) or (for non-eagles) potential susceptibilities in offshore areas from certain types of development or activities (e.g. offshore energy development or longline fishing).

Although it is important to try to avoid and minimize impacts to all birds, efforts should be made, in particular, to avoid and minimize impacts to the birds on this list, especially eagles and BCC species of rangewide concern. For more information on conservation measures you can implement to help avoid and minimize migratory bird impacts and requirements for eagles, please see the FAQs for these topics.

### **Details about birds that are potentially affected by offshore projects**

For additional details about the relative occurrence and abundance of both individual bird species and groups of bird species within your project area off the Atlantic Coast, please visit the [Northeast Ocean Data Portal](#). The Portal also offers data and information about other taxa besides birds that may be helpful to you in your project review. Alternately, you may download the bird model results files underlying the portal maps through the [NOAA NCCOS Integrative Statistical Modeling and Predictive Mapping of Marine Bird Distributions and Abundance on the Atlantic Outer Continental Shelf](#) project webpage.

Bird tracking data can also provide additional details about occurrence and habitat use throughout the year, including migration. Models relying on survey data may not include this information. For additional information on marine bird tracking data, see the [Diving Bird Study](#) and the [nanotag studies](#) or contact [Caleb Spiegel](#) or [Pam Loring](#).

### **What if I have eagles on my list?**

If your project has the potential to disturb or kill eagles, you may need to [obtain a permit](#) to avoid violating the Eagle Act should such impacts occur.

### **Proper Interpretation and Use of Your Migratory Bird Report**

The migratory bird list generated is not a list of all birds in your project area, only a subset of birds of priority concern. To learn more about how your list is generated, and see options for identifying what other birds may be in your project area, please see the FAQ "What does IPaC use to generate the migratory birds potentially occurring in my specified location". Please be aware this report provides the "probability of presence" of birds within the 10 km grid cell(s) that overlap your project; not your exact project footprint. On the graphs provided, please also look carefully at the survey effort (indicated by the black vertical bar) and for the existence of the "no data" indicator (a red horizontal bar). A high survey effort is the key component. If the survey effort is high, then the probability of presence score can be viewed as more dependable. In contrast, a low survey effort bar or no data bar means a lack of data and, therefore, a lack of

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certainty about presence of the species. This list is not perfect; it is simply a starting point for identifying what birds of concern have the potential to be in your project area, when they might be there, and if they might be breeding (which means nests might be present). The list helps you know what to look for to confirm presence, and helps guide you in knowing when to implement conservation measures to avoid or minimize potential impacts from your project activities, should presence be confirmed. To learn more about conservation measures, visit the FAQ "Tell me about conservation measures I can implement to avoid or minimize impacts to migratory birds" at the bottom of your migratory bird trust resources page.

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# WETLANDS

Impacts to [NWI wetlands](#) and other aquatic habitats may be subject to regulation under Section 404 of the Clean Water Act, or other State/Federal statutes.

For more information please contact the Regulatory Program of the local [U.S. Army Corps of Engineers District](#).

Please note that the NWI data being shown may be out of date. We are currently working to update our NWI data set. We recommend you verify these results with a site visit to determine the actual extent of wetlands on site.

## FRESHWATER EMERGENT WETLAND

- [PEM1C](#)
- [PEM1Cb](#)

## RIVERINE

- [R4SBC](#)
- [R3UBF](#)

## FRESHWATER POND

- [PABGb](#)
-

**IPAC USER CONTACT INFORMATION**

Agency: Department of Transportation  
Name: Briana Litchholt  
Address: 55 Broadway  
City: Cambridge  
State: MA  
Zip: 02142  
Email: brilitchholt@gmail.com  
Phone: 8579983936

**LEAD AGENCY CONTACT INFORMATION**

Lead Agency: Federal Aviation Administration  
Name: Shawna Barry  
Email: shawna.m.barry@faa.gov  
Phone: 2022671844

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# **APPENDIX I**

## **Section 4(f) Analysis**

# Section 4(f) Analysis

## Section 4(f) Parks and Recreational Areas

Table 1 lists the Section 4(f) parks, recreational areas, and wildlife and waterfowl refuges identified in the Section 4(f) study area. All data sources were accessed the week of December 12, 2022.

*Table 1. Section 4(f) parks, recreational resources, and wildlife/waterfowl refuges in the study area.*

Property Name	Official(s) with Jurisdiction	Property Type	Description	Approximate Size (acres)
Mount Rushmore National Memorial	National Park Service	National Memorial	National memorial carved into Mount Rushmore in the Black Hills, depicting four United States Presidents.	1,278 acres
Black Hills National Forest	U.S. Forest Service	National Forest	Established in 1897, the Forest contains the highest mountain in South Dakota, Black Elk Peak, and encompasses Mount Rushmore National Memorial and Jewel Cave National Monument.	1.07 million acres (18,500 acres in Section 4(f) study area)
Norbeck Wildlife Preserve National Game Refuge	U.S. Forest Service	National Game Refuge	The Refuge is located within the Black Hills, protecting game animals, birds, and breeding habitat.	46,100 acres (15,700 acres in Section 4(f) study area)

## Noise Effects Analysis on Section 4(f) Resources

Noise modeling for the Park included two types of analyses: contour analysis and representative location point analysis. A noise contour presents a graphical illustration or “footprint” of the area potentially affected by the noise. Contours were developed for the following metrics: 12-hour equivalent sound level, time audible for natural ambient, and time above 35 decibels, A-weighted (dBA). Location point results present the metric results at specific points of interest. The National Park Service (NPS) provided a list of 38 location points, geographically located across the entire Park, where noise levels were to be evaluated. Location point analysis was conducted for the same set of metrics, as well as time above 52 dBA and the maximum sound level. Refer to Appendix F, *Noise Technical Analysis*.

To assess time above 52 dBA at Section 4(f) resources under Alternatives 3 and 4, location points within 1.5 miles of each Section 4(f) resource were identified. These location points are listed in Table 3 for each Section 4(f) resource and the corresponding time above 52 dBA. The time above 52 dBA at each location point and the range of time above 52 dBA at Section 4(f) resources based on nearby location points were then calculated and reported as high and low values. This range is reported in Table 2 for each Section 4(f) property. See Figure 1 for a map of location points and Section 4(f) resources at the Park.

## Section 4(f) Study Area with Properties for ATMP at Mount Rushmore National Memorial

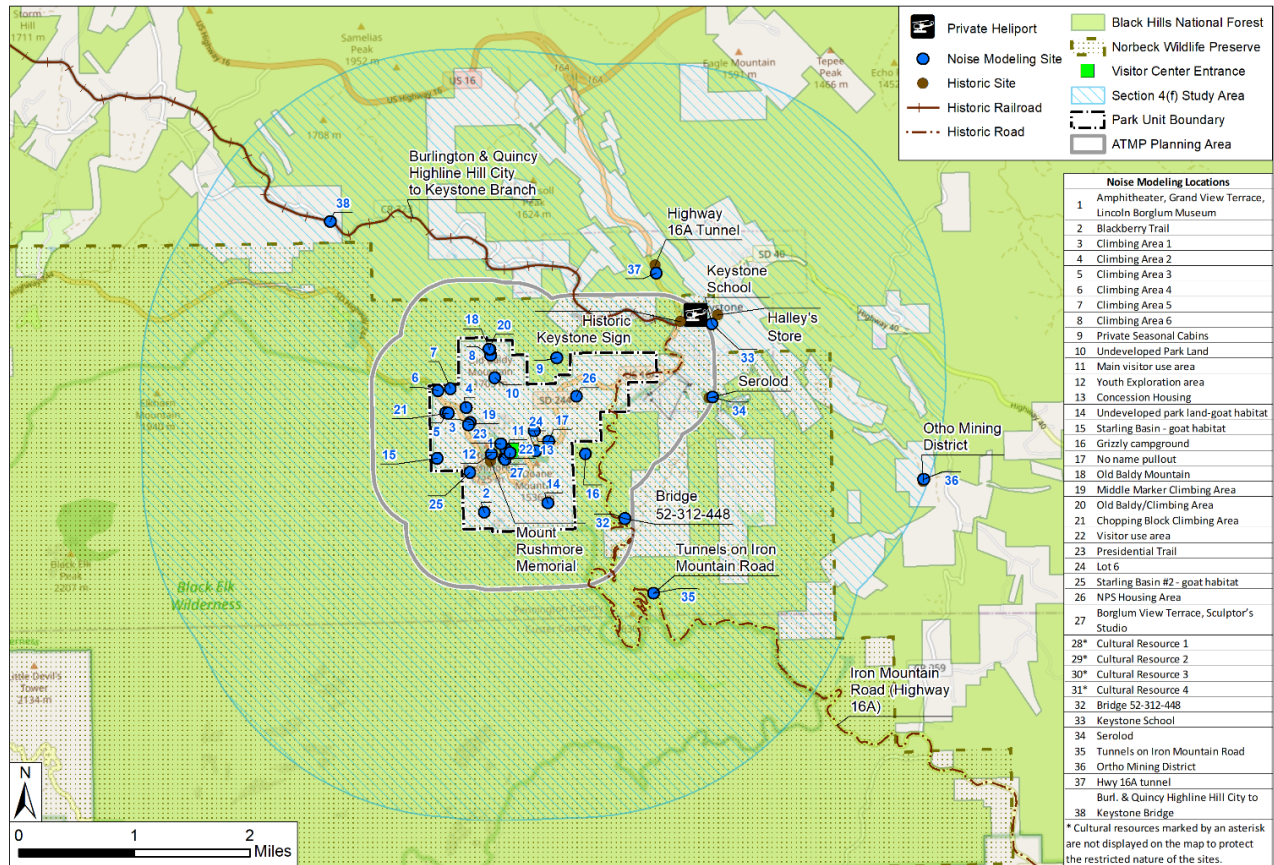


Figure 1. Section 4(f) resources and location points in the Section 4(f) study area.

Table 2 shows the low and high modelled time above 52 dBA values under Alternative 3 and Alternative 4 at each Section 4(f) resource. Table 3 shows the distance between each Section 4(f) resource and nearby location point and the time above 52 dBA at the corresponding location point. A distance of 0.00 miles indicates that the location point falls within the Section 4(f) property. The longest time above 52 dBA in the Section 4(f) study area on days when air tours occur is 68.1 minutes under Alternative 3 and 21.1 minutes under Alternative 4.

Table 2. Low and high modelled values for time above 52 dBA under the preferred alternative for Section 4(f) resources.

Section 4(f) Resource	Time Above 52 dBA – Low (Minutes) Under Alternative 3	Time Above 52 dBA – High (Minutes) Under Alternative 3	Time Above 52 dBA – Low (Minutes) Under Alternative 4	Time Above 52 dBA – High (Minutes) Under Alternative 4
Black Hills National Forest	0	68.1	0	21.1
Bridge 52-312-448	5.9	68.1	2.3	21.1
Burlington & Quincy Highline	1.1	65.8	0.4	20.6

<b>Section 4(f) Resource</b>	<b>Time Above 52 dBA – Low (Minutes) Under Alternative 3</b>	<b>Time Above 52 dBA – High (Minutes) Under Alternative 3</b>	<b>Time Above 52 dBA – Low (Minutes) Under Alternative 4</b>	<b>Time Above 52 dBA – High (Minutes) Under Alternative 4</b>
Hill City to Keystone Branch				
Halley's Store	8.6	41	3	13
Highway 16A Tunnel	8.6	41	3	13
Historic Keystone Sign	8.6	62.7	3	19.5
Iron Mountain Road (Highway 16A)	0.4	68.1	0.4	21.1
Keystone School	8.6	41	3	13
Mount Rushmore National Memorial	3.9	68.1	1.3	21.1
Norbeck Wildlife Preserve National Game Refuge	0	68.1	0	21.1
Otho Mining District	0	0	0	0
Serolod	8.6	62.7	3	19.5
Tunnels on Iron Mountain Road	0.4	68.1	0.4	21.1

Table 3. Section 4(f) resources and corresponding location point data for air tours under the preferred alternative.

<b>Section 4(f) Resource</b>	<b>Location Point ID</b>	<b>Location Point Name</b>	<b>Distance to Location Point (Miles)</b>	<b>Time Above 52 dBA Under Alternative 3 (Minutes)</b>	<b>Time Above 52 dBA Under Alternative 4 (Minutes)</b>
Black Hills National Forest	1	1. Amphitheater, Grand View Terrace, Lincoln Borglum Museum	0.39	32.1	10.3
Black Hills National Forest	2	2. Blackberry Trail	0.14	43.8	14
Black Hills National Forest	3	3. Climbing Area 1	0.33	3.9	1.3
Black Hills National Forest	4	4. Climbing Area 2	0.21	18	5.7
Black Hills National Forest	5	5. Climbing Area 3	0.12	20.1	6.6
Black Hills National Forest	6	6. Climbing Area 4	0.05	28.2	8.6
Black Hills National Forest	7	7. Climbing Area 5	0.03	27.8	8.9
Black Hills National Forest	8	8. Climbing Area 6	0.11	23.7	7.7
Black Hills National Forest	9	9. Private Seasonal Cabins	0.0	23.5	8.1
Black Hills National Forest	10	10. Undeveloped Park Land	0.25	22.3	7.6
Black Hills National Forest	11	11. Main Visitor Use Area	0.43	44	14
Black Hills National Forest	12	12. Youth Exploration Area	0.3	41.8	13.5
Black Hills National Forest	13	13. Concession Housing	0.35	48.7	15.3
Black Hills National Forest	14	14. Undeveloped Park Land-goat Habitat	0.23	68.1	21.1
Black Hills National Forest	15	15. Starling Basin - Goat Habitat	0.04	23.1	7.9
Black Hills National Forest	16	16. Grizzly Campground	0.0	62.7	19.5
Black Hills National Forest	17	17. No name pullout	0.21	59.1	18.4
Black Hills National Forest	18	18. Old Baldy Mountain	0.06	17.8	6.3

<b>Section 4(f) Resource</b>	<b>Location Point ID</b>	<b>Location Point Name</b>	<b>Distance to Location Point (Miles)</b>	<b>Time Above 52 dBA Under Alternative 3 (Minutes)</b>	<b>Time Above 52 dBA Under Alternative 4 (Minutes)</b>
Black Hills National Forest	19	19. Middle Marker Climbing Area	0.31	14	4.5
Black Hills National Forest	20	20. Old Baldy/Climbing Area	0.06	38.1	12.6
Black Hills National Forest	21	21. Chopping Block Climbing Area	0.15	15.2	5.1
Black Hills National Forest	22	22. Visitor Use Area	0.4	49.1	15.5
Black Hills National Forest	23	23. Presidential Trail	0.41	46.7	15
Black Hills National Forest	24	24. Lot 6	0.33	65.8	20.6
Black Hills National Forest	25	25. Starling Basin #2 - Goat Habitat	0.07	30.5	10.2
Black Hills National Forest	26	26. NPS Housing Area	0.17	41	13
Black Hills National Forest	27	27. Borglum View Terrace, Sculptor's Studio	0.45	34.6	11.1
Black Hills National Forest	28	28. Cultural Resource 1**	<1.5 mi	0.7	0.7
Black Hills National Forest	29	29. Cultural Resource 2	<1.5 mi	32	10.3
Black Hills National Forest	30	30. Cultural Resource 3**	<1.5 mi	0.4	0.4
Black Hills National Forest	31	31. Cultural Resource 4	<1.5 mi	23.1	7.8
Black Hills National Forest	32	32. Bridge 52-312-448	0.0	48.5	15.7
Black Hills National Forest	33	33. Keystone School**	0.23	36.1	11.3
Black Hills National Forest	34	34. Serolod	0.0	8.6	3
Black Hills National Forest	35	35. Tunnels on Iron Mountain Road**	0.0	5.9	2.3
Black Hills National Forest	36	36. Ortho Mining District**	0.11	0	0
Black Hills National Forest	37	37. Highway 16A Tunnel**	0.0	29.6	9.1
Black Hills National Forest	38	38. Burlington & Quincy Highline Hill	0.1	1.1	0.4

<b>Section 4(f) Resource</b>	<b>Location Point ID</b>	<b>Location Point Name</b>	<b>Distance to Location Point (Miles)</b>	<b>Time Above 52 dBA Under Alternative 3 (Minutes)</b>	<b>Time Above 52 dBA Under Alternative 4 (Minutes)</b>
		City to Keystone Bridge**			
Bridge 52-312-448	1	1. Amphitheater, Grand View Terrace, Lincoln Borglum Museum	1.17	32.1	10.3
Bridge 52-312-448	2	2. Blackberry Trail	1.22	43.8	14
Bridge 52-312-448	11	11. Main Visitor Use Area	1.19	44	14
Bridge 52-312-448	12	12. Youth Exploration Area	1.28	41.8	13.5
Bridge 52-312-448	13	13. Concession Housing	1.09	48.7	15.3
Bridge 52-312-448	14	14. Undeveloped Park Land-goat Habitat	0.68	68.1	21.1
Bridge 52-312-448	16	16. Grizzly Campground	0.65	62.7	19.5
Bridge 52-312-448	17	17. No name pullout	0.94	59.1	18.4
Bridge 52-312-448	22	22. Visitor Use Area	1.15	49.1	15.5
Bridge 52-312-448	23	23. Presidential Trail	1.25	46.7	15
Bridge 52-312-448	24	24. Lot 6	0.97	65.8	20.6
Bridge 52-312-448	25	25. Starling Basin #2 - Goat Habitat	1.4	30.5	10.2
Bridge 52-312-448	26	26. NPS Housing Area	1.14	41	13
Bridge 52-312-448	27	27. Borglum View Terrace, Sculptor's Studio	1.15	34.6	11.1
Bridge 52-312-448	29	29. Cultural Resource 2	<1.5 mi	32	10.3
Bridge 52-312-448	31	31. Cultural Resource 4	<1.5 mi	23.1	7.8
Bridge 52-312-448	32	32. Bridge 52-312-448	0.0	48.5	15.7
Bridge 52-312-448	34	34. Serolod	1.3	8.6	3
Bridge 52-312-448	35	35. Tunnels on Iron Mountain Road**	0.69	5.9	2.3
Burlington & Quincy Highline Hill City to Keystone Branch	1	1. Amphitheater, Grand View Terrace, Lincoln Borglum Museum	1.45	32.1	10.3

<b>Section 4(f) Resource</b>	<b>Location Point ID</b>	<b>Location Point Name</b>	<b>Distance to Location Point (Miles)</b>	<b>Time Above 52 dBA Under Alternative 3 (Minutes)</b>	<b>Time Above 52 dBA Under Alternative 4 (Minutes)</b>
Burlington & Quincy Highline Hill City to Keystone Branch	3	3. Climbing Area 1	1.34	3.9	1.3
Burlington & Quincy Highline Hill City to Keystone Branch	4	4. Climbing Area 2	1.23	18	5.7
Burlington & Quincy Highline Hill City to Keystone Branch	5	5. Climbing Area 3	1.31	20.1	6.6
Burlington & Quincy Highline Hill City to Keystone Branch	6	6. Climbing Area 4	1.15	28.2	8.6
Burlington & Quincy Highline Hill City to Keystone Branch	7	7. Climbing Area 5	1.1	27.8	8.9
Burlington & Quincy Highline Hill City to Keystone Branch	8	8. Climbing Area 6	0.74	23.7	7.7
Burlington & Quincy Highline Hill City to Keystone Branch	9	9. Private Seasonal Cabins	0.48	23.5	8.1
Burlington & Quincy Highline Hill City to Keystone Branch	10	10. Undeveloped Park Land	0.94	22.3	7.6
Burlington & Quincy Highline Hill City to Keystone Branch	11	11. Main Visitor Use Area	1.37	44	14
Burlington & Quincy Highline Hill City to Keystone Branch	12	12. Youth Exploration Area	1.48	41.8	13.5
Burlington & Quincy Highline	13	13. Concession Housing	1.12	48.7	15.3



<b>Section 4(f) Resource</b>	<b>Location Point ID</b>	<b>Location Point Name</b>	<b>Distance to Location Point (Miles)</b>	<b>Time Above 52 dBA Under Alternative 3 (Minutes)</b>	<b>Time Above 52 dBA Under Alternative 4 (Minutes)</b>
Hill City to Keystone Branch					
Burlington & Quincy Highline Hill City to Keystone Branch	16	16. Grizzly Campground	1.18	62.7	19.5
Burlington & Quincy Highline Hill City to Keystone Branch	17	17. No name pullout	1.15	59.1	18.4
Burlington & Quincy Highline Hill City to Keystone Branch	18	18. Old Baldy Mountain	0.7	17.8	6.3
Burlington & Quincy Highline Hill City to Keystone Branch	19	19. Middle Marker Climbing Area	1.37	14	4.5
Burlington & Quincy Highline Hill City to Keystone Branch	20	20. Old Baldy/Climbing Area	0.69	38.1	12.6
Burlington & Quincy Highline Hill City to Keystone Branch	21	21. Chopping Block Climbing Area	1.3	15.2	5.1
Burlington & Quincy Highline Hill City to Keystone Branch	22	22. Visitor Use Area	1.45	49.1	15.5
Burlington & Quincy Highline Hill City to Keystone Branch	23	23. Presidential Trail	1.36	46.7	15
Burlington & Quincy Highline Hill City to Keystone Branch	24	24. Lot 6	1.26	65.8	20.6
Burlington & Quincy Highline Hill City to Keystone Branch	26	26. NPS Housing Area	0.7	41	13

<b>Section 4(f) Resource</b>	<b>Location Point ID</b>	<b>Location Point Name</b>	<b>Distance to Location Point (Miles)</b>	<b>Time Above 52 dBA Under Alternative 3 (Minutes)</b>	<b>Time Above 52 dBA Under Alternative 4 (Minutes)</b>
Burlington & Quincy Highline Hill City to Keystone Branch	27	27. Borglum View Terrace, Sculptor's Studio	1.38	34.6	11.1
Burlington & Quincy Highline Hill City to Keystone Branch	31	31. Cultural Resource 4	<1.5 mi	23.1	7.8
Burlington & Quincy Highline Hill City to Keystone Branch	33	33. Keystone School**	0.3	36.1	11.3
Burlington & Quincy Highline Hill City to Keystone Branch	34	34. Serolod	0.69	8.6	3
Burlington & Quincy Highline Hill City to Keystone Branch	37	37. Highway 16A Tunnel **	0.39	29.6	9.1
Burlington & Quincy Highline Hill City to Keystone Branch	38	38. Burlington & Quincy Highline Hill City to Keystone Bridge**	0.0	1.1	0.4
Halley's Store	9	9. Private Seasonal Cabins	1.44	23.5	8.1
Halley's Store	26	26. NPS Housing Area	1.41	41	13
Halley's Store	31	31. Cultural Resource 4	<1.5 mi	23.1	7.8
Halley's Store	33	33. Keystone School**	0.09	36.1	11.3
Halley's Store	34	34. Serolod	0.71	8.6	3
Halley's Store	37	37. Highway 16A Tunnel**	0.65	29.6	9.1
Highway 16A Tunnel	9	9. Private Seasonal Cabins	1.17	23.5	8.1
Highway 16A Tunnel	26	26. NPS Housing Area	1.32	41	13
Highway 16A Tunnel	31	31. Cultural Resource 4	<1.5 mi	23.1	7.8
Highway 16A Tunnel	33	33. Keystone School**	0.71	36.1	11.3

<b>Section 4(f) Resource</b>	<b>Location Point ID</b>	<b>Location Point Name</b>	<b>Distance to Location Point (Miles)</b>	<b>Time Above 52 dBA Under Alternative 3 (Minutes)</b>	<b>Time Above 52 dBA Under Alternative 4 (Minutes)</b>
Highway 16A Tunnel	34	34. Serolod	1.25	8.6	3
Highway 16A Tunnel	37	37. Highway 16A Tunnel**	0.07	29.6	9.1
Historic Keystone Sign	9	9. Private Seasonal Cabins	1.12	23.5	8.1
Historic Keystone Sign	16	16. Grizzly Campground	1.41	62.7	19.5
Historic Keystone Sign	26	26. NPS Housing Area	1.11	41	13
Historic Keystone Sign	31	31. Cultural Resource 4	<1.5 mi	23.1	7.8
Historic Keystone Sign	33	33. Keystone School**	0.27	36.1	11.3
Historic Keystone Sign	34	34. Serolod	0.71	8.6	3
Historic Keystone Sign	37	37. Highway 16A Tunnel **	0.47	29.6	9.1
Iron Mountain Road (Highway 16A)	1	1. Amphitheater, Grand View Terrace, Lincoln Borglum Museum	0.82	32.1	10.3
Iron Mountain Road (Highway 16A)	2	2. Blackberry Trail	1.04	43.8	14
Iron Mountain Road (Highway 16A)	3	3. Climbing Area 1	1.18	3.9	1.3
Iron Mountain Road (Highway 16A)	4	4. Climbing Area 2	1.23	18	5.7
Iron Mountain Road (Highway 16A)	5	5. Climbing Area 3	1.4	20.1	6.6
Iron Mountain Road (Highway 16A)	6	6. Climbing Area 4	1.49	28.2	8.6
Iron Mountain Road (Highway 16A)	7	7. Climbing Area 5	1.39	27.8	8.9

<b>Section 4(f) Resource</b>	<b>Location Point ID</b>	<b>Location Point Name</b>	<b>Distance to Location Point (Miles)</b>	<b>Time Above 52 dBA Under Alternative 3 (Minutes)</b>	<b>Time Above 52 dBA Under Alternative 4 (Minutes)</b>
Iron Mountain Road (Highway 16A)	8	8. Climbing Area 6	1.11	23.7	7.7
Iron Mountain Road (Highway 16A)	9	9. Private Seasonal Cabins	0.56	23.5	8.1
Iron Mountain Road (Highway 16A)	10	10. Undeveloped Park Land	1.02	22.3	7.6
Iron Mountain Road (Highway 16A)	11	11. Main Visitor Use Area	0.82	44	14
Iron Mountain Road (Highway 16A)	12	12. Youth Exploration Area	0.94	41.8	13.5
Iron Mountain Road (Highway 16A)	13	13. Concession Housing	0.63	48.7	15.3
Iron Mountain Road (Highway 16A)	14	14. Undeveloped Park Land-goat Habitat	0.5	68.1	21.1
Iron Mountain Road (Highway 16A)	15	15. Starling Basin - Goat Habitat	1.4	23.1	7.9
Iron Mountain Road (Highway 16A)	16	16. Grizzly Campground	0.15	62.7	19.5
Iron Mountain Road (Highway 16A)	17	17. No name pullout	0.48	59.1	18.4
Iron Mountain Road (Highway 16A)	18	18. Old Baldy Mountain	1.13	17.8	6.3
Iron Mountain Road (Highway 16A)	19	19. Middle Marker Climbing Area	1.19	14	4.5
Iron Mountain Road (Highway 16A)	20	20. Old Baldy/Climbing Area	1.14	38.1	12.6
Iron Mountain Road (Highway 16A)	21	21. Chopping Block Climbing Area	1.38	15.2	5.1

<b>Section 4(f) Resource</b>	<b>Location Point ID</b>	<b>Location Point Name</b>	<b>Distance to Location Point (Miles)</b>	<b>Time Above 52 dBA Under Alternative 3 (Minutes)</b>	<b>Time Above 52 dBA Under Alternative 4 (Minutes)</b>
Iron Mountain Road (Highway 16A)	22	22. Visitor Use Area	0.81	49.1	15.5
Iron Mountain Road (Highway 16A)	23	23. Presidential Trail	0.87	46.7	15
Iron Mountain Road (Highway 16A)	24	24. Lot 6	0.57	65.8	20.6
Iron Mountain Road (Highway 16A)	25	25. Starling Basin #2 - Goat Habitat	1.12	30.5	10.2
Iron Mountain Road (Highway 16A)	26	26. NPS Housing Area	0.3	41	13
Iron Mountain Road (Highway 16A)	27	27. Borglum View Terrace, Sculptor's Studio	0.78	34.6	11.1
Iron Mountain Road (Highway 16A)	28	28. Cultural Resource 1**	<1.5 mi	0.7	0.7
Iron Mountain Road (Highway 16A)	29	29. Cultural Resource 2	<1.5 mi	32	10.3
Iron Mountain Road (Highway 16A)	30	30. Cultural Resource 3**	<1.5 mi	0.4	0.4
Iron Mountain Road (Highway 16A)	31	31. Cultural Resource 4	<1.5 mi	23.1	7.8
Iron Mountain Road (Highway 16A)	32	32. Bridge 52-312-448	0.0	48.5	15.7
Iron Mountain Road (Highway 16A)	33	33. Keystone School**	0.37	36.1	11.3
Iron Mountain Road (Highway 16A)	34	34. Serolod	0.39	8.6	3
Iron Mountain Road (Highway 16A)	35	35. Tunnels on Iron Mountain Road**	0.01	5.9	2.3

<b>Section 4(f) Resource</b>	<b>Location Point ID</b>	<b>Location Point Name</b>	<b>Distance to Location Point (Miles)</b>	<b>Time Above 52 dBA Under Alternative 3 (Minutes)</b>	<b>Time Above 52 dBA Under Alternative 4 (Minutes)</b>
Iron Mountain Road (Highway 16A)	37	37. Highway 16A Tunnel**	0.58	29.6	9.1
Keystone School	9	9. Private Seasonal Cabins	1.37	23.5	8.1
Keystone School	26	26. NPS Housing Area	1.33	41	13
Keystone School	31	31. Cultural Resource 4	<1.5 mi	23.1	7.8
Keystone School	33	33. Keystone School**	0.0	36.1	11.3
Keystone School	34	34. Serolod	0.64	8.6	3
Keystone School	37	37. Highway 16A Tunnel**	0.65	29.6	9.1
Mount Rushmore National Memorial	1	1. Amphitheater, Grand View Terrace, Lincoln Borglum Museum	0.12	32.1	10.3
Mount Rushmore National Memorial	2	2. Blackberry Trail	0.45	43.8	14
Mount Rushmore National Memorial	3	3. Climbing Area 1	0.38	3.9	1.3
Mount Rushmore National Memorial	4	4. Climbing Area 2	0.51	18	5.7
Mount Rushmore National Memorial	5	5. Climbing Area 3	0.57	20.1	6.6
Mount Rushmore National Memorial	6	6. Climbing Area 4	0.76	28.2	8.6
Mount Rushmore National Memorial	7	7. Climbing Area 5	0.72	27.8	8.9
Mount Rushmore National Memorial	8	8. Climbing Area 6	0.92	23.7	7.7
Mount Rushmore National Memorial	9	9. Private Seasonal Cabins	1.06	23.5	8.1

<b>Section 4(f) Resource</b>	<b>Location Point ID</b>	<b>Location Point Name</b>	<b>Distance to Location Point (Miles)</b>	<b>Time Above 52 dBA Under Alternative 3 (Minutes)</b>	<b>Time Above 52 dBA Under Alternative 4 (Minutes)</b>
Mount Rushmore National Memorial	10	10. Undeveloped Park Land	0.72	22.3	7.6
Mount Rushmore National Memorial	11	11. Main Visitor Use Area	0.17	44	14
Mount Rushmore National Memorial	12	12. Youth Exploration Area	0.06	41.8	13.5
Mount Rushmore National Memorial	13	13. Concession Housing	0.46	48.7	15.3
Mount Rushmore National Memorial	14	14. Undeveloped Park Land-goat Habitat	0.62	68.1	21.1
Mount Rushmore National Memorial	15	15. Starling Basin - Goat Habitat	0.46	23.1	7.9
Mount Rushmore National Memorial	16	16. Grizzly Campground	0.82	62.7	19.5
Mount Rushmore National Memorial	17	17. No name pullout	0.53	59.1	18.4
Mount Rushmore National Memorial	18	18. Old Baldy Mountain	0.97	17.8	6.3
Mount Rushmore National Memorial	19	19. Middle Marker Climbing Area	0.37	14	4.5
Mount Rushmore National Memorial	20	20. Old Baldy/Climbing Area	0.97	38.1	12.6
Mount Rushmore National Memorial	21	21. Chopping Block Climbing Area	0.55	15.2	5.1
Mount Rushmore National Memorial	22	22. Visitor Use Area	0.13	49.1	15.5
Mount Rushmore National Memorial	23	23. Presidential Trail	0.17	46.7	15

<b>Section 4(f) Resource</b>	<b>Location Point ID</b>	<b>Location Point Name</b>	<b>Distance to Location Point (Miles)</b>	<b>Time Above 52 dBA Under Alternative 3 (Minutes)</b>	<b>Time Above 52 dBA Under Alternative 4 (Minutes)</b>
Mount Rushmore National Memorial	24	24. Lot 6	0.4	65.8	20.6
Mount Rushmore National Memorial	25	25. Starling Basin #2 - Goat Habitat	0.2	30.5	10.2
Mount Rushmore National Memorial	26	26. NPS Housing Area	0.93	41	13
Mount Rushmore National Memorial	27	27. Borglum View Terrace, Sculptor's Studio	0.18	34.6	11.1
Mount Rushmore National Memorial	29	29. Cultural Resource 2	<1.5 mi	32	10.3
Mount Rushmore National Memorial	31	31. Cultural Resource 4	<1.5 mi	23.1	7.8
Mount Rushmore National Memorial	32	32. Bridge 52-312-448	1.26	48.5	15.7
Norbeck Wildlife Preserve National Game Refuge	1	1. Amphitheater, Grand View Terrace, Lincoln Borglum Museum	0.0	32.1	10.3
Norbeck Wildlife Preserve National Game Refuge	2	2. Blackberry Trail	0.0	43.8	14
Norbeck Wildlife Preserve National Game Refuge	3	3. Climbing Area 1	0.0	3.9	1.3
Norbeck Wildlife Preserve National Game Refuge	4	4. Climbing Area 2	0.0	18	5.7
Norbeck Wildlife Preserve National Game Refuge	5	5. Climbing Area 3	0.0	20.1	6.6
Norbeck Wildlife Preserve National Game Refuge	6	6. Climbing Area 4	0.0	28.2	8.6



<b>Section 4(f) Resource</b>	<b>Location Point ID</b>	<b>Location Point Name</b>	<b>Distance to Location Point (Miles)</b>	<b>Time Above 52 dBA Under Alternative 3 (Minutes)</b>	<b>Time Above 52 dBA Under Alternative 4 (Minutes)</b>
Norbeck Wildlife Preserve National Game Refuge	7	7. Climbing Area 5	0.0	27.8	8.9
Norbeck Wildlife Preserve National Game Refuge	8	8. Climbing Area 6	0.0	23.7	7.7
Norbeck Wildlife Preserve National Game Refuge	9	9. Private Seasonal Cabins	0.0	23.5	8.1
Norbeck Wildlife Preserve National Game Refuge	10	10. Undeveloped Park Land	0.0	22.3	7.6
Norbeck Wildlife Preserve National Game Refuge	11	11. Main Visitor Use Area	0.0	44	14
Norbeck Wildlife Preserve National Game Refuge	12	12. Youth Exploration Area	0.0	41.8	13.5
Norbeck Wildlife Preserve National Game Refuge	13	13. Concession Housing	0.0	48.7	15.3
Norbeck Wildlife Preserve National Game Refuge	14	14. Undeveloped Park Land-goat Habitat	0.0	68.1	21.1
Norbeck Wildlife Preserve National Game Refuge	15	15. Starling Basin - Goat Habitat	0.0	23.1	7.9
Norbeck Wildlife Preserve National Game Refuge	16	16. Grizzly Campground	0.0	62.7	19.5
Norbeck Wildlife Preserve National Game Refuge	17	17. No name pullout	0.0	59.1	18.4
Norbeck Wildlife Preserve National Game Refuge	18	18. Old Baldy Mountain	0.0	17.8	6.3
Norbeck Wildlife Preserve National Game Refuge	19	19. Middle Marker Climbing Area	0.0	14	4.5
Norbeck Wildlife Preserve National Game Refuge	20	20. Old Baldy/Climbing Area	0.0	38.1	12.6

<b>Section 4(f) Resource</b>	<b>Location Point ID</b>	<b>Location Point Name</b>	<b>Distance to Location Point (Miles)</b>	<b>Time Above 52 dBA Under Alternative 3 (Minutes)</b>	<b>Time Above 52 dBA Under Alternative 4 (Minutes)</b>
Norbeck Wildlife Preserve National Game Refuge	21	21. Chopping Block Climbing Area	0.0	15.2	5.1
Norbeck Wildlife Preserve National Game Refuge	22	22. Visitor Use Area	0.0	49.1	15.5
Norbeck Wildlife Preserve National Game Refuge	23	23. Presidential Trail	0.0	46.7	15
Norbeck Wildlife Preserve National Game Refuge	24	24. Lot 6	0.0	65.8	20.6
Norbeck Wildlife Preserve National Game Refuge	25	25. Starling Basin #2 - Goat Habitat	0.0	30.5	10.2
Norbeck Wildlife Preserve National Game Refuge	26	26. NPS Housing Area	0.0	41	13
Norbeck Wildlife Preserve National Game Refuge	27	27. Borglum View Terrace, Sculptor's Studio	0.0	34.6	11.1
Norbeck Wildlife Preserve National Game Refuge	28	28. Cultural Resource 1**	<1.5 mi	0.7	0.7
Norbeck Wildlife Preserve National Game Refuge	29	29. Cultural Resource 2	<1.5 mi	32	10.3
Norbeck Wildlife Preserve National Game Refuge	30	30. Cultural Resource 3**	<1.5 mi	0.4	0.4
Norbeck Wildlife Preserve National Game Refuge	31	31. Cultural Resource 4	<1.5 mi	23.1	7.8
Norbeck Wildlife Preserve National Game Refuge	32	32. Bridge 52-312-448	0.0	48.5	15.7
Norbeck Wildlife Preserve National Game Refuge	33	33. Keystone School**	0.0	36.1	11.3
Norbeck Wildlife Preserve National Game Refuge	34	34. Serolod	0.0	8.6	3

<b>Section 4(f) Resource</b>	<b>Location Point ID</b>	<b>Location Point Name</b>	<b>Distance to Location Point (Miles)</b>	<b>Time Above 52 dBA Under Alternative 3 (Minutes)</b>	<b>Time Above 52 dBA Under Alternative 4 (Minutes)</b>
Norbeck Wildlife Preserve National Game Refuge	35	35. Tunnels on Iron Mountain Road**	0.0	5.9	2.3
Norbeck Wildlife Preserve National Game Refuge	36	36. Ortho Mining District**	0.79	0	0
Norbeck Wildlife Preserve National Game Refuge	37	37. Highway 16A Tunnel**	0.2	29.6	9.1
Norbeck Wildlife Preserve National Game Refuge	38	38. Burlington & Quincy Highline Hill City to Keystone Bridge**	0.18	1.1	0.4
Otho Mining District	36	36. Ortho Mining District**	0.02	0	0
Serolod	9	9. Private Seasonal Cabins	1.37	23.5	8.1
Serolod	16	16. Grizzly Campground	1.18	62.7	19.5
Serolod	17	17. No name pullout	1.44	59.1	18.4
Serolod	26	26. NPS Housing Area	1.15	41	13
Serolod	31	31. Cultural Resource 4	<1.5 mi	23.1	7.8
Serolod	32	32. Bridge 52-312-448	1.28	48.5	15.7
Serolod	33	33. Keystone School**	0.64	36.1	11.3
Serolod	34	34. Serolod	0.03	8.6	3
Serolod	37	37. Highway 16A Tunnel**	1.18	29.6	9.1
Tunnels on Iron Mountain Road	14	14. Undeveloped Park Land-goat Habitat	1.2	68.1	21.1
Tunnels on Iron Mountain Road	16	16. Grizzly Campground	1.34	62.7	19.5
Tunnels on Iron Mountain Road	29	29. Cultural Resource 2	<1.5 mi	32	10.3
Tunnels on Iron Mountain Road	30	30. Cultural Resource 3**	<1.5 mi	0.4	0.4
Tunnels on Iron Mountain Road	32	32. Bridge 52-312-448	0.69	48.5	15.7

\*\* Location points are outside of the air tour management plan (ATMP) planning area.

*Table 4. Distribution to Officials with Jurisdiction for Section 4(f) resources.*

<b>Entity Name</b>	<b>Address</b>
National Park Service	13000 Highway 233 Building 31 Suite 1 Keystone, SD 57751
U.S. Forest Service	1019 N. 5th Street Custer, SD 57730

## **APPENDIX J**

### **Public Scoping Newsletter and Comment Summary Report**



# Public Scoping Comment Report

## Mount Rushmore National Memorial Air Tour Management Plan

December 2022



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## APPENDIX A

A	Scoping Newsletter
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## INTRODUCTION AND BACKGROUND

The National Park Service (NPS) and Federal Aviation Administration (FAA) are preparing an Air Tour Management Plan (ATMP), which would regulate commercial air tours conducted over Mount Rushmore National Memorial (memorial) pursuant to the National Parks Air Tour Management Act of 2000. The act requires that the Federal Aviation Administration, in cooperation with the National Park Service (collectively, the agencies), establish an ATMP or voluntary agreement for each national park system unit for which one or more applications to conduct commercial air tours has been submitted, unless that unit is exempt from this requirement because 50 or fewer commercial air tour operations are conducted over the memorial on an annual basis, 49 *United States Code* (USC) § 40128(a)(5). The objective of the ATMP development process is to develop acceptable and effective measures to mitigate or prevent the significant adverse impacts, if any, of commercial air tours on natural and cultural resources, wilderness character, visitor experience, and tribal lands.

An environmental assessment (EA) is being completed in compliance with the National Environmental Policy Act (NEPA) to analyze a range of alternatives and evaluate potential issues and impacts. This plan will also be conducted in accordance with section 106 of the National Historic Preservation Act (NHPA) and other applicable laws, regulations, and policies. This report summarizes comments, feedback, and input received from the public during scoping for this ATMP environmental assessment.

Scoping was conducted by an interdisciplinary team of NPS and FAA planners, scientists, cultural resource specialists, and managers. Scoping is a process that federal agencies pursue in the early stages of preparing environmental analyses and is intended to encourage public participation and solicit public input on the scope and significance of a proposed action (see the *Code of Federal Regulations* [CFR], Title 40, Part 1501.7). Comments received during scoping help the agencies identify issues and concerns and allows the agencies to refine or dismiss alternatives and potentially consider new alternatives. Public input received during scoping is also used to inform the environmental analysis in the environmental assessment.

The agencies notified the public of the scoping period through a news release, notices on the memorial's website and social media, and e-mails. Comments were accepted from September 6 through October 6, 2022. The agencies posted a newsletter describing the potential alternatives to the NPS Planning, Environment, and Public Comment (PEPC) website at the start of the scoping period and attached the newsletter to the notification e-mails. The newsletter on potential alternatives provided a project introduction, the purpose and need for the project, resources for consideration in the environmental assessment, elements common to all the alternatives, and an overview of four potential alternatives, including routes, altitudes, time-of-day restrictions, restrictions for particular events, maximum numbers of flights, or other provisions. The potential draft alternatives also include a justification for the provisions and conditions designed to protect park resources and visitor experience.

## METHODS

Comment analysis is a process used to compile and combine similar public comments into a format to be used by decision makers and the planning team. Comment analysis assists the team in organizing, clarifying, and addressing technical information pursuant to NEPA regulations. It also aids in identifying the alternatives, topics, and issues to be evaluated and considered throughout the planning process.

The comment analysis process includes five steps:

1. Develop a coding structure.
2. Use a comment database for comment management.
3. Read and code public comments.
4. Interpret and analyze the comments to identify issues and themes.
5. Prepare a comment summary.

The agencies developed a coding structure to organize comments into logical groups by topics and issues. The coding structure was derived from an analysis of the range of topics discussed during internal agency scoping, past planning documents, and the comments themselves.

The agencies used the NPS PEPC database to manage the comments. The database stores the full text of all correspondence, facilitates coding of comments by topic and issue, and includes several other tools and report functions.

A **correspondence** is the entire document received from a commenter. It can be in the form of a letter, e-mail, fax, written comment form, note card, open house transcript, or petition. Correspondences were entered directly into PEPC by the commenter. A **comment** is a portion of the text within a correspondence that addresses a single subject. It could include information such as an expression of support or opposition to the use of a potential management tool, additional data regarding an existing condition, or an opinion debating the adequacy of the analysis.

The agencies read all correspondences and assigned a code to all substantive comments within the correspondence. **Substantive comments** are comments that do one or more of the following:

- Question, with reasonable basis, the accuracy of information in the environmental assessment.
- Question, with reasonable basis, the adequacy of environmental analysis.
- Present reasonable alternatives other than those presented in the environmental assessment.
- Cause changes or revisions in the proposal.

In other words, they raise, debate, or question a point of fact or policy. Comments in favor of or against the proposed action or alternatives, or comments that only agree or disagree with NPS policy, are not considered substantive.

The agencies wrote one or more **concern statements** (written summaries) for each code that summarized the comments received and included representative quotes directly from the comments.

Although the analysis process attempts to capture the full range of public concerns, this content analysis report should be used with caution. Comments from people who chose to respond do not necessarily represent the sentiments of the entire public. Furthermore, this was not a vote counting process, and the emphasis was on the content of the comment rather than the number of times a comment was received. This report is intended to be a summary of the comments received rather than a statistical analysis.

## COMMENT SUMMARY

The agencies received 263 correspondences, of which 3 were duplicates and 108 were form letters. The agencies coded 311 comments by topic. Some comments received more than one code. Table 1 lists the number and proportion of comments by topic. Comments on routes and altitudes (153) were the most common comment topics, followed by annual number of air tours (130), process comments (other) (114). Impact topics most frequently commented on include equity (120), other (116), socioeconomics (115), and soundscapes (72).

**Table 1. Number of Comments by Topic**

Topic	Number of Comments	Percentage of Comments
<b>Impacts</b>		
Adverse Impacts: Soundscapes	72	23.2%
Adverse Impacts: Visitor Use and Experience	51	16.4%
Adverse Impacts: Socioeconomics	115	37.0%
Adverse Impacts: Wildlife / Biological	17	5.5%
Adverse Impacts: Wilderness Character	13	4.2%
Adverse Impacts: Cultural Resources	5	1.6%
Adverse Impacts: Visual	3	1.0%
Adverse Impacts: Equity	120	38.6%
Adverse Impacts: Climate Change / Greenhouse Gases / Air Quality	2	0.6%
Tribal Concerns	5	1.6%
Adverse Impacts: Other	116	37.3%
<b>Alternatives</b>		
Alternatives: Oppose Alternative 1 – No Action	1	0.3%
Alternatives: Support Alternative 1 – No Action	4	1.3%
Alternatives: Oppose Alternative 2 – No Air Tours in Planning Area	5	1.6%
Alternatives: Support Alternative 2 – No Air Tours in Planning Area	2	0.6%
Alternatives: Oppose Alternative 3 – Mitigation Measures	0	0.0%
Alternatives: Support Alternative 3 – Mitigation Measures	1	0.3%
Alternatives: Oppose Alternative 4 – Reduction of Air Tours In Planning Area	0	0.0%
Alternatives: Support Alternative 4 – Reduction of Air Tours In Planning Area	8	2.6%
<b>ATMP Elements</b>		
ATMP Elements: Aircraft Type	52	16.7%
ATMP Elements: Annual Number of Air Tours	130	41.8%
ATMP Elements: Day / Time	8	2.6%
ATMP Elements: Other	3	1.0%
ATMP Elements: Routes and Altitudes	153	49.2%
<b>Process</b>		
Process Comments: Alternatives Considered	7	2.3%
Process Comments: Other	114	36.7%
Process Comments: Impact Analysis	0	0.0%

<b>Topic</b>	<b>Number of Comments</b>	<b>Percentage of Comments</b>
Process Comments: NEPA	2	0.6%
<b>Miscellaneous</b>		
Benefits of Air Tours	6	1.9%
Wrong Park: Substantive Comment	0	0%
Duplicate Correspondence	3	1.0%
<b>Non-Substantive</b>		
Non-Substantive Comment: Oppose Air Tours Continuing	10	3.2%
Non-Substantive Comment: Oppose Air Tours Introduction	0	0.0%
Non-Substantive Comment: Other	24	32.2%

## **CONCERN STATEMENTS**

Concern statements, summarizing comments received by topic, are presented below.

### **IMPACTS**

#### **Adverse Impacts: Soundscapes**

- Commenters suggest that air tours have adverse impacts on the soundscape of the memorial because they are loud, distracting, prevent conversation, startling, scary, affect wildlife, are unnatural, and interfere with the visitor experience.
- Commenters suggest that air tours, which operate several hundred feet in the air, are quieter than motorcycles, which are common in the park.

#### **Adverse Impacts: Visitor Use and Experience / Recreation**

- Commenters suggest that this environmental assessment should be focused on evaluating potential impacts of commercial air tours on natural and cultural resources and visitor experience consistent with the NPS conservation mandate. Chapter 1 of the environmental assessment should include a section summarizing applicable laws, including the Organic Act.
- Commenters suggest that the number of visitors potentially impacted by air tours should also be considered in the environmental assessment. Commenters urge the National Park Service to make it a high priority to protect the monument from visual intrusions and noise impacts. The plan should include measures to minimize visibility and noise in viewing areas.
- Commenters suggest that air tours can be dangerous where verbal communication is necessary for rock climbing and where they can spook horses on trails.
- Commenters suggest that air tours have adverse impacts on visitor use and experience in the planning area because they are disturbing, distracting, and detract from the natural setting and peace and quiet. Air tours can interfere with park interpretive programs and interrupt weddings.

#### **Adverse Impacts: Socioeconomics**

- Commenters noted that air tours provide an economic benefit to the surrounding communities, and eliminating or reducing air tours would have adverse socioeconomic impacts from loss of business and corresponding jobs, which would harm the local and state economies. Aerial tourism provides significant workforce development opportunities that support other jobs including firefighting and emergency medical services. Eliminating local pilot jobs could exacerbate current pilot shortages and have impacts beyond the memorial.

#### **Adverse Impacts: Wildlife / Biological / Endangered Species Impacts**

- Commenters provided information on helicopter impacts on mountain goats, which are present in the memorial.

- The South Dakota Mountain Goat Management Plan, 2018–2027 highlights the increasing demand for use of public lands for recreational activities while also highlighting the sensitivity of these animals to human disturbances.
- The Black Hills has limited escape terrain and it is critical that those areas remain secure from human disturbance as to not increase the probability of predation risk.
- A study conducted in 1995 found helicopter flights caused the disintegration of social groups and the distance between mountain goat groups and the helicopter was the most important factor affecting their behavior. Studies concluded that mountain goats had a very high probability of being moderately and strongly disturbed when approached within 547 yards (500 meters) of a helicopter.
- Mountain goats give birth from mid-May to early June. It is very important that these core areas are protected during this vulnerable time; therefore, commenters suggest adjusting the current proposed seasonal restrictions of alternatives 3 and 4 to include the mountain goat parturition window (May 15–June 15) and not allow flights to occur.
- Commenters support the idea of seasonal restrictions as identified in alternatives 3 and 4. However, commenters request additional restrictions in the form of “quiet” days or additional tour hour limitations for aircraft without quiet technology to minimize impacts on mountain goats.
- Commenters note that air tour routes in the memorial include flying over a granite rock outcrop that mountain goats are known to occupy.
- Commenters ask the National Park Service to actively consider several sources of information, most of which includes effects on wildlife, during the preparation of the environmental assessment. Commenters provided links to the sources.
- Commenters support alternative 2 because it provides the greatest protection of the memorial’s natural resources, including threatened and endangered species and other wildlife sensitive to noise.
- Commenters suggest that air tours have adverse impacts on wildlife, including altering behavior. Commenters suggest that air tours have resulted in fewer big game animals near the memorial.
- Commenters suggest that the environmental assessment must contain a thorough analysis of air tours’ noise effects on sensitive wildlife.

### **Adverse Impacts: Wilderness Character Impacts**

- Commenters suggest that air tours have adverse impacts on wilderness character in the Black Elk Wilderness, including wildlife, mountain goats, natural sounds, solitude, and cultural connections.

### **Adverse Impacts: Cultural Resource Impacts**

- Commenters request that the National Park Service consider *Effects of Noise on Cultural-Historic Resources* during the preparation of the environmental assessment.



- Commenters suggest that the natural setting of the memorial represents a place of great spiritual and cultural significance to the American Indian tribes who have connections to the land.
- Commenters support alternative 2 – no air tours in the planning area, because it provides the greatest protection of the park’s cultural resources, and it is most consistent with some of the memorial’s most important management objectives including preservation of traditional and cultural resources.

### **Adverse Impacts: Visual Impacts**

- Commenters noted that the visitor experience at the memorial is closely associated with the natural setting of the sculpture. As a result, the National Park Service should make it a high priority to protect the natural setting at established viewing areas from visual and noise intrusions caused by low-flying air tour aircraft.
- Commenters find air tours to be visually distracting and suggest that the National Park Service should make it a high priority to protect the visitor experience from visual intrusions caused by air tours flying above or near the established viewing areas. Protective measures should include constraints that eliminate visible overflights that could be easily seen by visitors from the viewing areas.

### **Adverse Impacts: Equity**

- Commenters note that helicopters provide access to view the memorial to visitors who are not physically able to walk to viewing locations. Prohibiting or decreasing air tours would prevent access for these visitors.

### **Adverse Impacts: Climate Change / Greenhouse Gases / Air Quality**

- Commenters suggest that the environmental assessment should contain a thorough analysis of air tours’ greenhouse gas emissions and climate impacts on park resources.

### **Adverse Impacts: Other**

- Commenters note that currently there are no restrictions or mitigation efforts for other vehicles operating inside the boundaries of the memorial. Commenters cite that during the summer months, heavy motorcycle traffic at the memorial produces more impact than air tours, which was documented in a study completed by the Town of Keystone.
- Commenters suggest that there is risk of an inflight collision due to operators not using automatic dependent surveillance–broadcast, which is a surveillance technology that broadcasts aircraft position.
- Commenters suggest that proposed elements in the ATMP, including routes, numbers of flights, and other restrictions, would result in an increase in safety risks due to air tours operating in a smaller area.
- Commenter suggests that aerial tourism reduces impacts to parks, recreation areas, and memorials by offering an alternative method of visitation. Commenter suggests that air tours

impact the memorial less than other means and leave no trace, while reducing congestion and demands on memorial infrastructure.

## **Tribal Concerns**

- Commenters suggested that the land is sacred to the Oglala Sioux and other indigenous persons, and that helicopter tours are disrespectful to the indigenous persons and sacred lands. Commenters suggested that eliminating helicopters would partially acknowledge that the land is sacred by reducing the noise pollution. Concessions must be made to respect the ceremonies of indigenous persons in the area. Restrictions should be enacted on specific days to avoid interference.

## **ALTERNATIVES**

### **Alternatives: Support Alternative 1 – No Action**

- Commenters offered support for alternative 1 – no action for the following reasons:
  - Air tours create less noise than motorcycles and trucks.
  - Air tours further the mission of the National Park Service to teach about the monument.
  - Air tours allow a greater viewing experience for a large variety of people including those who are elderly or have a disability.
  - Air tours benefit the economy of the area.
  - The Interim Operating Authority (IOA) could be modified.

### **Alternatives: Oppose Alternative 1 – No Action**

No comments.

### **Alternatives: Support Alternative 2 – No Air Tours in Planning Area**

- Commenters offer support for alternative 2 – no air tours in the planning area for the following reasons:
  - Alternative 2 provides the greatest protection for the memorial's natural and cultural resources.
  - Alternative 2 is the most consistent with the memorial's management objectives.
  - Alternative 2 best preserves wilderness character.
  - Alternative 2 would end helicopter noise.
  - Air tours benefit few people at the expense of many people.
  - No air tours would benefit the most visitors.

- Air tours provide limited benefit to gateway communities.

### **Alternatives: Oppose Alternative 2 – No Air Tours in Planning Area**

- Commenters oppose alternative 2 – no air tours in planning area for the following reasons:
  - Alternative 2 is overly restrictive.
  - Alternative 2 would push the same number of flights further out from the sculpture.
  - Alternative 2 would have adverse socioeconomic impacts on surrounding communities.

### **Alternatives: Support Alternative 3 – Mitigation Measures**

- Commenters offer support for alternative 3 – mitigation measures but suggest two proposed revisions: (1) Establish an annual schedule to reduce conflicts and allow air tour operators to plan; and (2) Give the operators an annual quota without a daily quota.
- Alternatives 3 and 4 do not include an operational flight window for the Keystone heliport. This subjects every takeoff and landing to a non-compliance issue.

### **Alternatives: Oppose Alternative 3 – Mitigation Measures**

No comments.

### **Alternatives: Support Alternative 4 – Reduction of Air Tours in Planning Area**

- Commenters offer support for alternative 4 – reduction of air tours in planning area for the following reasons:
  - The best way to reduce cumulative air tour impacts is to reduce the total number of flights allowed.
  - Reducing air traffic would improve visitor experience.
  - Alternative 4 would reduce impacts on wilderness character and equestrian safety.
- Some commenters mention that they prefer alternative 2 – no air tours, but identify alternative 4 as their second choice. Commenters also note concern that alternatives 3 and 4 are too similar.

### **Alternatives: Oppose Alternative 4 – Reduction of Air Tours in Planning Area**

No comments.

## **AIR TOUR MANAGEMENT PLAN ELEMENTS**

### **Air Tour Management Plan Elements: Annual Number of Air Tours**

- Commenters support the reduced number of annual air tours in alternative 3 because the most effective way to reduce cumulative air tour impacts is to reduce the total number of flights allowed.
- Commenters are concerned that alternative 4 is essentially the same as alternative 3, except for the reduction in flights. Commenters recommend that the National Park Service consider different levels of intensity among alternatives, allowing for a more meaningful analysis.
- Commenters suggest that the number of flights proposed do not account for market fluctuations. Commenters suggest that the National Park Service should attempt to account for this dynamic.

### **Air Tour Management Plan Elements: Routes and Altitudes**

- Commenters suggest that there are too many flights over specific locations including campgrounds and the Black Elk Wilderness.
- Commenters propose that air tour routes be located farther from the sculpture to reduce noise for climbers and hikers. Suggestions include  $\frac{3}{4}$  of a mile and 3,900 feet. Commenters also suggest that the hard surface of the sculpture may reflect sound. Commenters request that the National Park Service explain the rationale for the 2,600-foot setback.
- Commenters suggest that the 900-foot minimum above ground level (AGL) in the plan is insufficient, arbitrary, causes adverse impacts, and is dangerous. Commenters suggest alternate minimums for the plan including 984 feet, 3,000 feet, 6,000 feet, and 2,000 feet (specifically over wilderness).

### **Air Tour Management Plan Elements: Aircraft Type**

- Commenters suggest that helicopters are perceived as louder and more annoying than airplanes at the same altitude and provide links to sources of information.
- Commenters note that incentives in alternatives 3 and 4 are insufficient for operators to embrace quiet aviation technology. The increased number of flights that operators would be allowed to fly would not compensate for aircraft that cost millions of dollars. Commenters suggest that the environmental assessment should include an economic analysis of the incentives.
- Quiet technology that alternatives 3 and 4 should embrace include NOTAR (no tail rotor) helicopters, electrically powered aviation, and other modifications.

### **Air Tour Management Plan Elements: Day/Time**

- Commenters support a cap of 13 air tours per day in alternative 4 because they believe the most direct and effective way to reduce cumulative air tour impacts is to reduce the total number of flights allowed.
- Commenters suggest that alternative 4 is too similar to alternative 3 with only the number of flights allowed differing.
- Commenters made suggestions for limitations related to day or time in the ATMP. These included allowing fewer flights during peak hours of the day on week days, limiting air tours

to one per hour, and restricting air tours to fly only from three hours after sunrise until three hours before sunset.

- Commenters suggest that alternatives 3 and 4, which would allow air tours to fly from one hour after sunrise until one hour before sunset for non-quiet technology flights; and from sunrise to sunset for quiet technology flights, would make it difficult for visitors to experience the sculpture when air tours are not occurring. Commenters believe that visitors should have a reasonable opportunity to see the sculpture without hearing air tours for at least a few hours every day.
- Commenters suggest that the number of flights allowed and implementation noise reduction measures are the most important considerations for the ATMP. Commenters suggest that the current daily air tours cap is having adverse impacts, and a 50% reduction is still a large number of air tours. Commenter notes that no air tours would be most desirable but not realistic.

### **Air Tour Management Plan Elements: Other**

- Commenters suggested that the phrasing, “mandatory if requested and/or made available by the NPS” is unclear. Commenters recommend that the National Park Service require and provide annual air tour operator and pilot training.
- Commenters suggest that the National Park Service take market fluctuations into account in the proposed restrictions in the ATMP.

## **PROCESS**

### **Process Comments: Alternatives Considered**

- Commenters suggest that the no-action alternative would be better framed as the existing number of flights rather than the maximum theoretical number allowed under IOAs.
- Commenters propose that additional alternatives be considered for the ATMP, which address frequency of flights, routes, and altitude. Commenters suggest inclusion of alternatives that address the impact helicopters have on the resident mountain goat population and specify a minimum altitude of 984 feet.
- Commenters suggest that the alternatives presented in the newsletter are largely boilerplate and were designed to pre-shape public comment by offering alternatives with no justification or data as required by the National Parks Air Tour Management Act of 2000 (NPATMA). Commenters suggest the process was designed to produce an NPS desired outcome rather than one designed for aviation safety, public interest, and economics.
- Commenters suggest that the differentiation between alternatives 3 and 4 is not as great as it could/should be to provide a meaningful comparison of attributes and impacts.
- Commenters suggest that the National Park Service considered but dismissed several alternatives prematurely and inappropriately prior to analyzing impacts in the environmental assessment.
- Commenter notes that the scoping document states that the National Park Service has determined that the current level of air tours cannot be mitigated to avoid or prevent

unacceptable impacts, and thus, no alternatives featuring current levels can meet the purpose and need for the plan. Commenter questions how this was determined prior to analyzing impacts in the environmental assessment. Commenter suggests that this was a premature determination.

### **Process Comments: Other**

- Commenters suggest that the agencies need to consider input from stakeholders, operators, and the National Parks Overflight Advisory Group (NPOAG), and they feel that NPOAG has not been appropriately involved in previous planning.
- Commenters are concerned that the ATMP may be amended at any time upon notification of either agency to the other, which creates uncertainty about the longevity of the ATMP. Commenters suggest that this features would allow for political and industry pressure and to expand the numbers of flights allowed or to weaken measures intended to minimize the adverse impacts of air tour noise.

### **Process Comments: National Environmental Policy Act**

- Commenters suggest that the environmental assessment should identify the preferred alternative and environmentally preferable alternative because it would add much needed transparency to the planning process.
- Commenters claim that the National Park Service completed other ATMPs without NEPA compliance and public review and questions why this occurred.
- Commenters suggest that the agency should identify the preparers in the environmental assessment to clarify roles of the agencies.

## **MISCELLANEOUS**

### **Benefits of Air Tours**

- Commenters suggest the benefits of air tours include:
  - Economic benefits to local communities (see socioeconomics);
  - Access to view the memorial for visitors who are not physically able to walk due to health issues, disabilities, or age;
  - Lack of impacts on the ground; and
  - Once-in-a-lifetime-opportunity type of visitor experience.

### **Wrong Park: Substantive Comment**

No comments.

## **NON-SUBSTANTIVE**

### **Non-Substantive Comment: Oppose Air Tours Continuing**

- Commenters offered a variety of non-substantive comments opposing air tours continuing. These included many statements in opposition without reasons or suggestions. Some statements included where the commenter lives or their occupation or interests.

### **Non-Substantive Comment: Oppose Air Tours Introduction**

No comments.

### **Wrong Park: Non-Substantive Comment**

No comments.

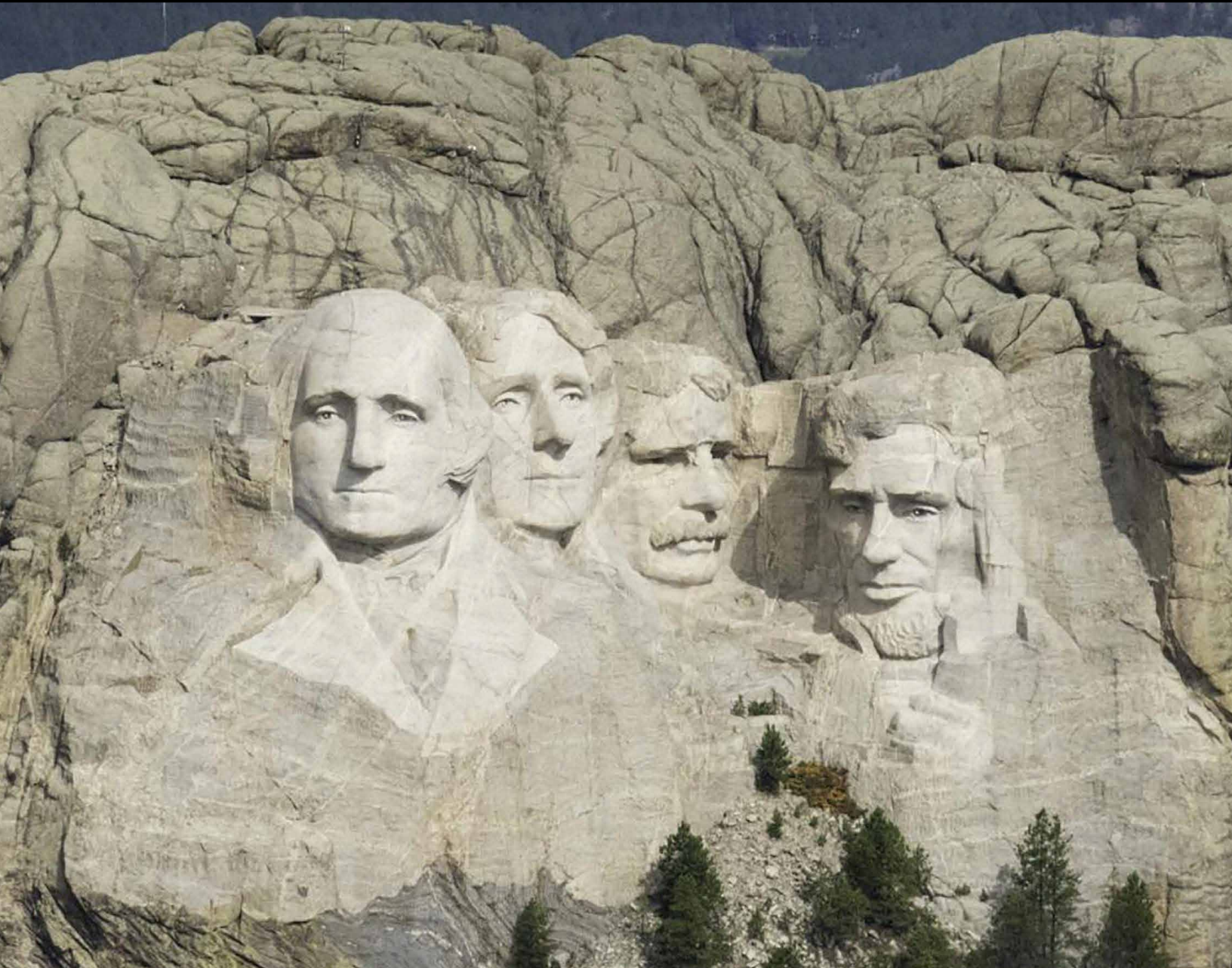
### **Non-Substantive Comment: Other**

- Commenters supplied a variety of thoughts on the role of government, the experience of viewing the monument, and conservation of resources. Commenters also noted observations on topics outside the scope of the plan including contracting, land administered by other agencies, livestock, ATVs, and terrorism.

**APPENDIX A**  
**Scoping Newsletter**







# Mount Rushmore National Memorial

**September 2022**  
**Newsletter**

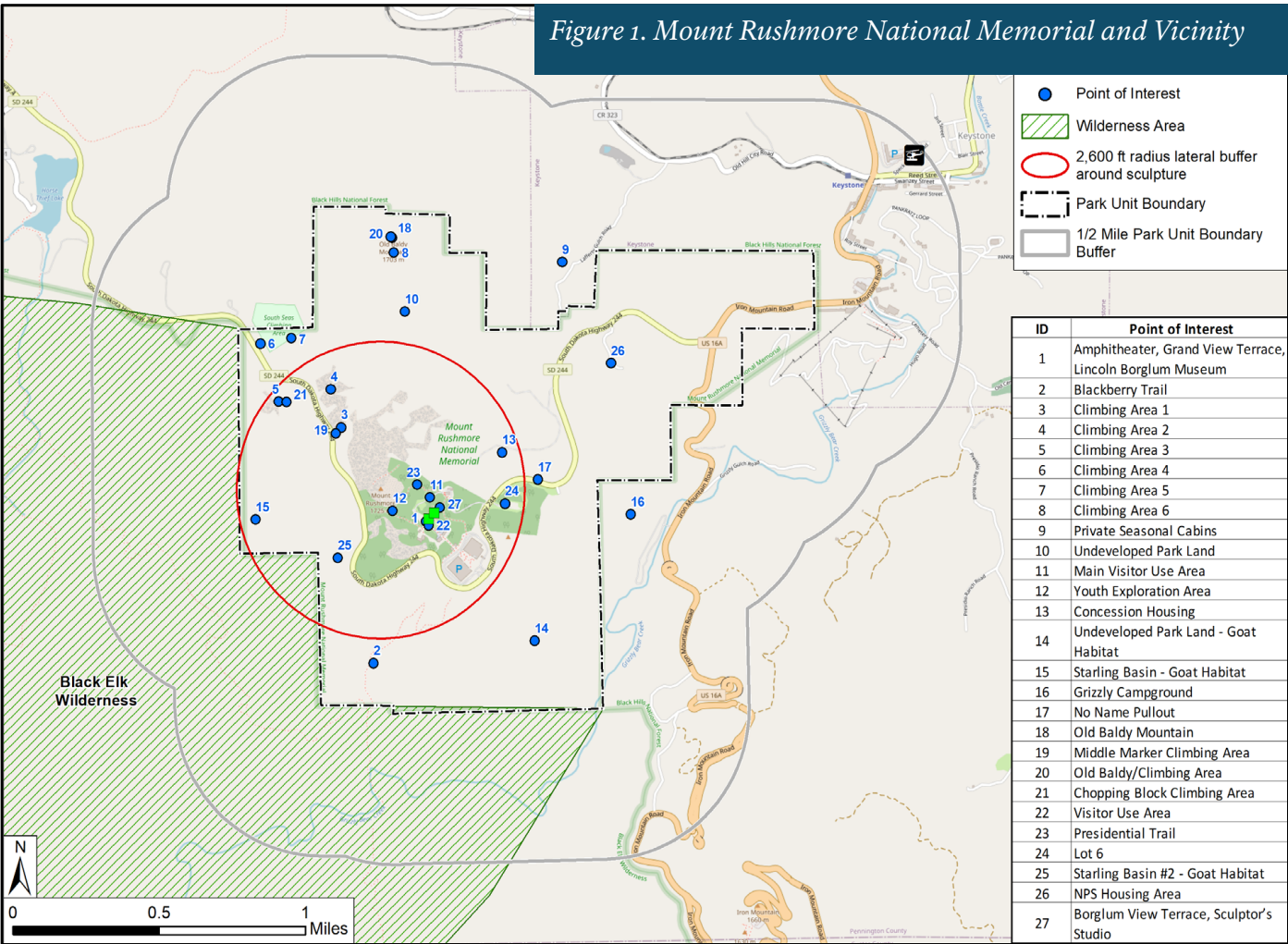
**Air Tour Management Plan**  
Potential Alternatives for Public Comment

The Federal Aviation Administration (FAA) and the National Park Service (NPS) are working together to present potential alternatives for an air tour management plan for Mount Rushmore National Memorial (Park). Public and stakeholder feedback during this phase is critical. This document will explain:

- Commercial air tour operations
- Requirements for a plan for the Park
- Potential alternatives being considered for the plan
- How the public and stakeholders can provide feedback

## Mount Rushmore National Memorial

The 1,278-acre Mount Rushmore National Memorial is located in the central Black Hills in southwestern South Dakota (see Figure 1). Most of the landscape is composed of massive granite outcrops intermingled with ponderosa pine forest. Mount Rushmore is seen as an icon of the United States of America and a special place for many people and cultures. Most people visit the Park to see the carved mountain sculpture of four U.S. presidents. The Black Hills are also an important historical, spiritual, and cultural site to many tribal





nations. The Park provides a setting where visitors can learn about history and culture and explore the natural setting.

## Project Introduction

This document presents potential alternatives for the Mount Rushmore National Memorial Air Tour Management Plan (ATMP) Environmental Assessment (EA) for public and stakeholder input. As applied to the Park, the term commercial air tour operation is defined as any flight conducted for compensation or hire in a powered aircraft, where a purpose of the flight is sightseeing over the Park or outside the Park but within 1/2 mile of its boundary, during which the aircraft flies below 5,000 feet (ft.) above ground level (AGL). Altitude expressed in mean sea level (MSL) refers to the altitude of an aircraft above sea level, regardless of the terrain below it, whereas altitude expressed in AGL is a measurement of the distance between the ground surface and the aircraft.

Air tours have been occurring over the Park since before the year 2000.

The National Parks Air Tour Management Act (the Act) of 2000 requires the FAA, in cooperation with the NPS, to develop an ATMP or voluntary agreement for parks where operators have applied to conduct commercial air tours.

The objective of the ATMP, under the Act, is to develop acceptable and effective measures to mitigate or prevent the significant adverse impacts of commercial air tour operations on the natural and cultural resources, tribal sacred sites and ceremonial areas, wilderness character, and visitor experience.

As part of the public scoping process pursuant to the National Environmental Policy Act (NEPA),

the FAA and the NPS invite public input on potential alternatives. Public and stakeholder input will be used to further refine or dismiss alternatives and potentially to consider new alternatives. Public input will also be used to inform the environmental analysis. Alternatives that are carried forward and analyzed in the EA are expected to be available for public review and comment early next year.

## Purpose and Need for the Project

Under NEPA, alternatives must meet the Purpose (i.e., objective) and Need for the project.

### Purpose

To comply with the *National Parks Air Tour Management Act of 2000 (the Act)* and other applicable laws, consistent with the *Plan and Schedule for Completion of Air Tour Management Plans at Twenty-Three Parks* approved by the U.S. Court of Appeals for the District of Columbia Circuit on November 20, 2020, in Case No. 19-1044, *In Re Public Employees for Environmental Responsibility and Hawai'i Coalition Malama Pono*.

### Need

The Act requires an ATMP or voluntary agreement for the Park. Air tours have the potential to impact natural and cultural resources, wilderness character, and visitor experience. The Act requires that the FAA and the NPS develop acceptable and effective measures to mitigate or prevent significant adverse impacts, if any, of commercial air tour operations on natural and cultural resources, wilderness character, visitor experience, and tribal lands. Cultural and ethnographic resources

that may be protected under an ATMP include traditional cultural properties, tribal sacred sites and ceremonial areas. In order to address impacts from commercial air tours the agencies have decided to prepare an ATMP for the Park.

## Resources for Consideration in the EA

The agencies propose to analyze the potential impacts of each alternative on the following resources:

- Air quality
- Biological resources
- Climate (climate change and greenhouse gas emissions)
- Cultural resources (historic buildings, historic districts, archeological resources)
- Ethnographic resources (sacred sites, traditional cultural properties, cultural landscape, traditional uses)
- Department of Transportation Act, Section 4(f) properties
- Noise and compatible land use (acoustic environment and Park soundscape)
- Visitor experience
- Socioeconomics, Children's Environmental Health and Safety Risk, and Environmental Justice
- Visual effects (visual resources and visual character)
- Wilderness



*A Resident of Mount Rushmore National Memorial*

## Elements Common to All Alternatives for the Mount Rushmore National Memorial ATMP

All alternatives being considered for selection for the Mount Rushmore National Memorial ATMP will incorporate the following:

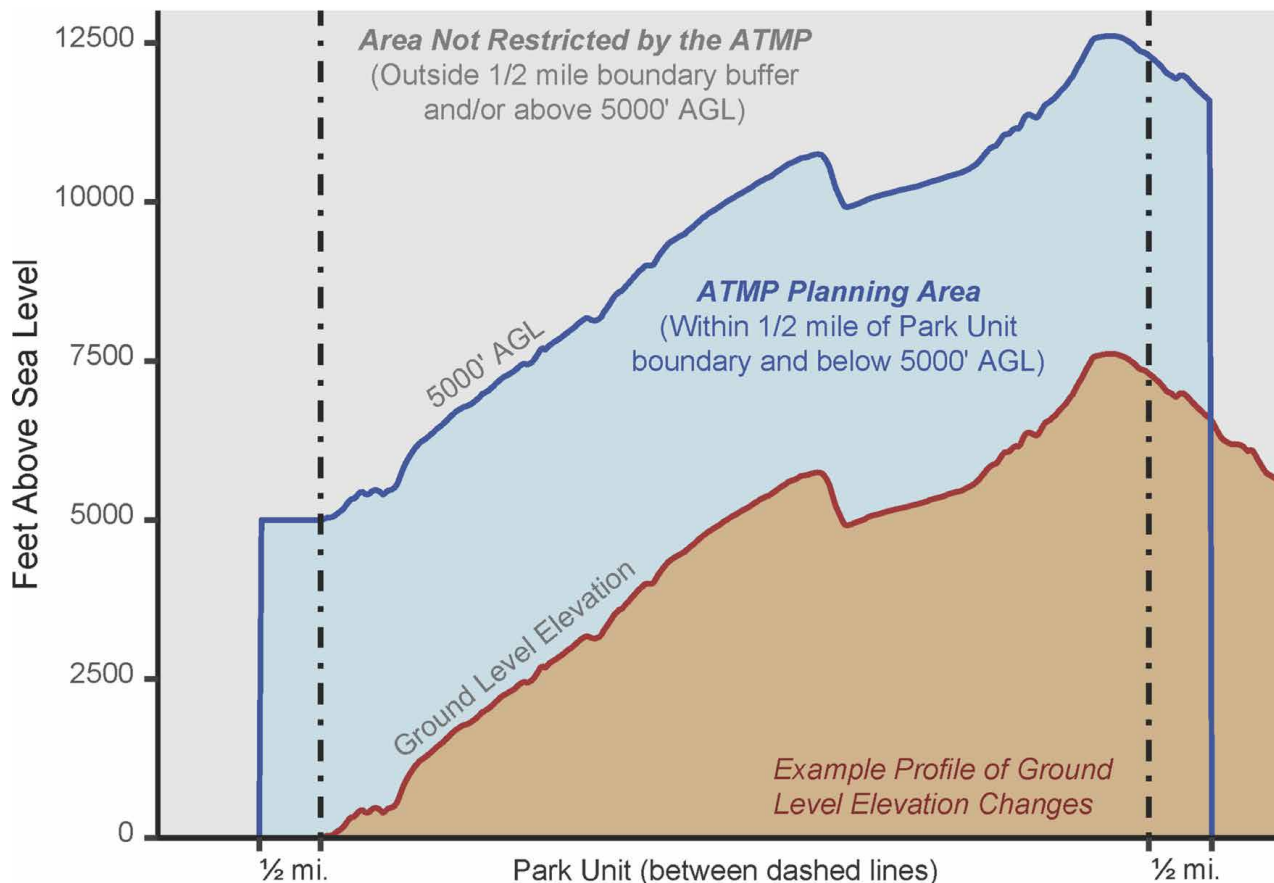
### ATMP Planning Area

Under the Act and its implementing regulations, an ATMP regulates commercial air tours over a national park or outside that park but within 1/2 mile of its boundary during which the aircraft flies below 5,000 ft. AGL. This is referred to as the ATMP planning area.



Air tours outside of the ATMP planning area are not subject to the Act and are therefore not regulated under the ATMP. Thus, there would be no limitations on the annual number of air tours or routes that could occur outside the ATMP planning area under any alternative. Refer to the figure below for a geographic depiction of the ATMP planning area. In addition, although they may occur within the ATMP planning area, general aviation flights, overflights by commercial airlines, and military flights would not be regulated by the ATMP because they are not commercial air tours subject to regulation under the Act.

Geographic Areas Covered by the ATMP



## Interim Operating Authority

Commercial air tours over the Park are currently conducted under interim operating authority (IOA) that the Act required the FAA to grant air tour operators. Interim operating authority does not provide any operating parameters (routes, altitudes, etc.) for commercial air tours other than an annual limit. Under the Act, IOA for a park terminates after an ATMP is established for that park.



Flight routes within the ATMP planning area are represented by a line. The flight lines will be used for noise modeling purposes in the impact analysis.

## FAA Airspace Authority

The FAA has authority for all airspace matters, including any enforcement actions for violations under the ATMP, which the agency would process in accordance with existing FAA procedures and regulations.



## Monitoring and Enforcement

All air tour operators are required to report the number of commercial air tour operations they have conducted within the ATMP planning area to the FAA and the NPS.



The operators must provide the date and time each tour occurred, the make/model of aircraft used, and the route on which the tour was conducted.

## Minimum Altitudes

The range of altitudes examined in the alternatives will be from 900 ft. AGL for helicopters to 1,400 ft. AGL for fixed-wing aircraft.



## Flight Routes

The maps included in the potential alternatives show flight routes where air tours could occur within the ATMP planning area.



## Fee Collection

The NPS is authorized by the Omnibus Budget Reconciliation Act of 1993 (54 U.S.C. § 100904) to collect commercial tour use fees for all aircraft conducting tours in the airspace over certain parks. The Park does not currently collect fees from air tour operators and does not propose to begin fee collection from air tour operators at this time.



## Potential Alternatives

The agencies have considered a range of reasonable alternatives that are technically and economically feasible, meet the purpose and need for the project, and the goals of the agencies. The alternatives are discussed in detail below and summarized in Table 6.

## Alternatives Considered and Dismissed

The agencies considered but dismissed alternatives that would allow air tour operations at or above existing numbers.



Existing air tour reporting figures are displayed in Table 1 below. These alternatives were dismissed from further consideration because the NPS determined they would result in unacceptable impacts to the Park's natural and cultural resources, and visitor enjoyment under the NPS 2006 Management Policies 1.4.7.1, and do not meet the purpose and need for the plan.

The Park's purpose is "to commemorate the founding, expansion, preservation, and unification of the United States by preserving, protecting, and interpreting the mountain sculpture in its historic, cultural and natural setting while providing for the education, enjoyment, and inspiration of the public" (see Foundation Document). The NPS determined that the noise from the current level of air tours is inconsistent with the Park's purpose and values. Frequent and loud noise interruptions from air tours impact sacred sites and ceremonial uses associated with Tribal Nations, impact public enjoyment and interpretive programming, and degrade the Park's cultural and natural setting.

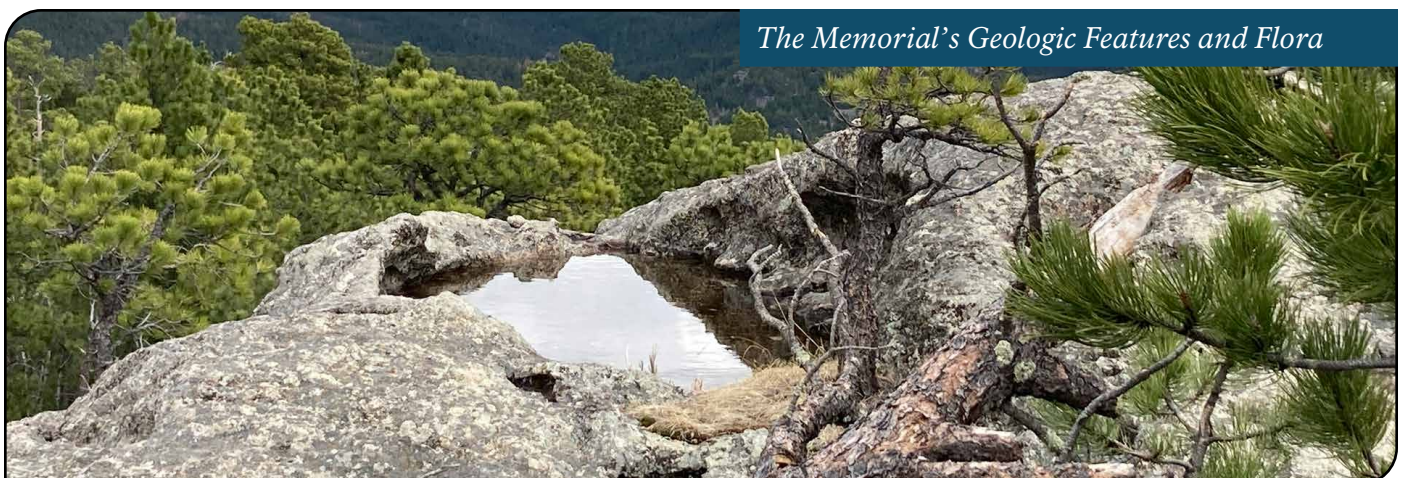
The NPS is required to avoid impacts to sacred sites to the extent possible (NPS 2006 Management Policies 5.3.5.3.2). Tribes and individual tribal members have consistently

noted that persistent air tours over the Park unreasonably interfere with their connections to the sacred landscape of the Black Hills.

Existing air tour operations also repeatedly interrupt and unreasonably interfere with interpretive programs and visitor activities at many sites, including the Park amphitheater, Presidential Trail, Youth Exploration Area, and Mount Baldy.

The current level of air tours diminishes visitor opportunities to learn about and be inspired by the Park's resources and values, and unreasonably interferes with the atmosphere of peace and tranquility in the Park as well as natural soundscapes in adjacent wilderness managed by the Black Hills National Forest.

Therefore, authorizing commercial air tours at or above the existing level of operations would not meet the objective of an ATMP under the Act. The NPS has determined that the current level of air tours cannot be mitigated to avoid or prevent unacceptable impacts and therefore any alternative that would maintain the current number of air tours over the Park does not meet the purpose and need for the plan. For all of these reasons, the agencies have considered but dismissed alternatives that would continue air tours at or above existing levels.



*The Memorial's Geologic Features and Flora*



## Alternative 1 — No Action/No ATMP

### Objective

A no action alternative is required by the Council on Environmental Quality and NEPA regulations.

The no action alternative provides a basis for comparison but is not a selectable alternative because it does not meet the purpose and need for the ATMP and is not in compliance with the Act. The agencies have decided to comply with the Act by developing an ATMP for the Park.

### Description

The no action alternative is what happens if the agencies do not adopt an ATMP. The no action alternative would allow a continuation of air tours under IOA without implementation of an ATMP or voluntary agreement. Air tour numbers from 2017 to 2019 are listed on the following page.

Under the no action alternative operators could fly up to their IOA, 5,608 air tours per year. IOA includes only an annual cap on the number of commercial air tours that may be conducted by an operator but does not represent the actual number of air tours conducted and does not designate the route(s), time-of-day, altitude(s), or other conditions for such tours.

### Number of Flights Each Year

Alternative 1 represents a continuation of air tours that are currently flown and allowed under existing law, including each company's IOA as granted by the FAA (70 Fed. Reg. 36,456 (June 23, 2005)) and applicable regulations that govern aviation safety (14 CFR Part 136).

Two commercial air tour operators currently hold IOA to fly up to a combined total of 5,608 annual commercial air tours over the Park and within ½ mile of the Park (see Table 1).

Since reporting began in 2013, the total number of commercial air tours reported over the Park each year has ranged from 3,648 (reported in 2014) to 4,363 (reported in 2015). The operators may not exceed their respective IOA limitation in any given year. Under the no action alternative, air tours numbers would be expected to vary from year to year, likely consistent with reported numbers over the past three to five years.

The average annual number of commercial air tours conducted over the Park from 2017-2019 for all operators is 3,914. These years were selected because they reflected relatively current air tour conditions, represented reliable operator reporting of air tours, accounted for variations across multiple years, and excluded 2020 which was atypical due to the COVID-19 pandemic. The agencies also decided against using 2021 data due to continued abnormalities associated with the COVID-19 pandemic and the unavailability of reporting data for 2021 during most of the planning effort.

Alternative 1 — No Action/No ATMP

Routes and Altitudes

There are no designated flight routes or no-fly zones under the no action alternative. The map below (Figure 2) depicts general route information provided by current commercial air tour operators, but operators could change routes without notice. Actual commercial air tour operations are dispersed around the generalized routes provided by operators depicted on the map. Reported minimum altitudes range from 6,000 ft. mean sea level (MSL) (900 ft. AGL) to 6,500 ft. MSL, depending on operator.

Operators, Aircraft Types, Interim Operating Authority

The two commercial operators that hold IOA for the Park reported flying commercial air tours over the Park between 2013 and 2019. Dakota Rotors LLC (Black Hills Aerial Adventures, Inc.,

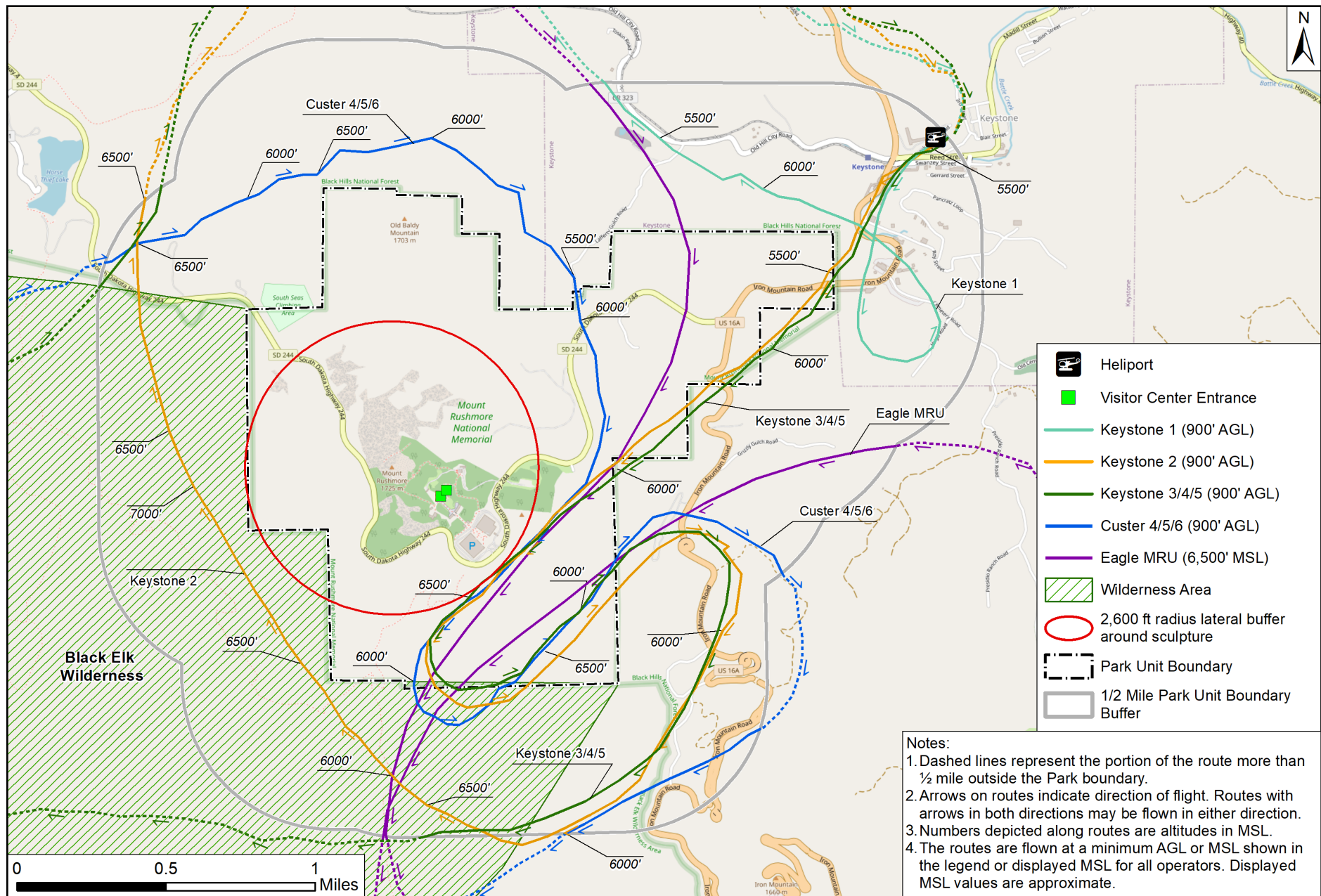
and Rushmore Helicopters) flies helicopters, and Eagle Aviation, Inc. flies fixed-wing aircraft. Dakota Rotors flies four routes that originate from two helipads outside the northeast corner of the Park and near Custer, SD. All four routes condense approximately 2,600 ft. to the southeast of the sculpture for a direct view, then begin a tight S-turn before exiting the planning area.

Eagle Aviation flies one route from north to south, across the eastern side of the Park. This fixed-wing route, similarly, flies at approximately 2,600 ft. to the southeast of the sculpture for a direct view, but flies 500 ft. higher than the helicopters. Rather than an S-turn, the fixed-wing aircraft performs a large loop, exiting the planning area, re-entering the planning area, and then exiting again. Table 1 below summarizes each operator’s aircraft type, IOA for the Park, and average number of reported air tours over the Park from 2017-2019:

Table 1. Existing air tour operators and reported air tours.

Operator	Aircraft Type	2017 Reported Tours	2018 Reported Tours	2019 Reported Tours	3-year Reported Average No. of Air Tours (2017-2019)	Interim Operating Authority (IOA)
Dakota Rotors LLC (Black Hills Aerial Adventures, Inc., and Rushmore Helicopters)	BHT-206B, BHT-47-G3B1, R-44-II, R-66- 66 (helicopters)	3,730	3,782	4,202	3,905	5,563
Eagle Aviation, Inc.	Cessna 172, Cessna 206 (fixed-wing)	19	6	2	9	45
		3,749	3,788	4,204	3,914	5,608

Figure 2. Alternative 1 — No Action/No ATMP



## Alternative 2 — No Air Tours in the Planning Area

### Objective

Alternative 2 — No Air Tours in the Planning Area would provide the greatest protection of the Park's natural and cultural resources and visitor experience management objectives.

The Park holds and protects numerous resources and values including: sites of spiritual and cultural significance to numerous Tribal Nations and their traditional cultural practices; the sculpture as a physical and cultural resource; threatened and endangered species and other wildlife sensitive to noise; visitor opportunities for enjoyment and solitude; ground-based visitor experiences; scenic qualities, and natural sounds.

This alternative supports the following Park management objectives:

- The Park's acoustic environment supports an outstanding visitor experience and opportunities to hear and enjoy natural sounds.
- Park staff are able to conduct, and visitors are able to experience, interpretive programming with minimal interference due to noise.
- Natural sounds are protected to conserve healthy and robust wildlife populations; biological and ecological processes prevail.
- Traditional and cultural resources are preserved to facilitate ongoing connection with and use of these resources by associated Tribal Nations and traditionally associated communities.

The ATMP also seeks to:

- Ensure the acoustic resources of the Black Elk Wilderness Area inside the planning area are maintained to preserve wilderness character: opportunities for solitude or primitive and unconfined recreation, including remoteness from sights and sounds; untrammelled or wildness; naturalness; undeveloped; and other features or values.

### Description

Alternative 2 would prohibit air tours within the ATMP planning area, except for the purpose of takeoff and landing at helipads located outside the Park but within ½-mile of the boundary. The Park itself would be designated as an area to remain free of commercial air tours under 5,000 ft. AGL. Air tours outside of the ATMP planning area (i.e., above 5,000 ft. AGL or more than ½-mile outside the Park boundary) are not subject to the Act and are therefore not regulated under the ATMP. Thus, there would be no limitations on the number of air tours that could occur outside the ATMP planning area.

### Routes and Altitudes

The figure for this alternative (Figure 3) depicts a prohibition on all air tours within the ATMP planning area. Air tours could be conducted only outside the ATMP planning area. The routes and altitudes of those air tours would not be set by the ATMP. The actual flight path of air tours



## Alternative 2 — No Air Tours in the Planning Area

outside the ATMP planning area would vary due to operator preference and weather conditions at the time of the air tour. Based on current air tour activity, numbers of flights outside the planning area would be expected to be similar to existing conditions. This alternative could result in some current air tour operators shifting routes to other areas outside the Park that may also be significant to the Tribes or other stakeholders.<sup>1</sup>

### Amendment

The ATMP may be amended at any time if the NPS, by notification to the FAA, determines that the ATMP is not adequately protecting Park resources and/or visitor enjoyment; or if the FAA, by notification to the NPS, determines that the ATMP is adversely affecting aviation safety and/or the national aviation system; or, if the agencies determine that appropriate changes to the ATMP are necessary to address new information or changed circumstances.

<sup>1</sup> During consultation, a number of Tribes stated that they consider the Badlands and Black Hills a traditional cultural landscape; a large scale area containing many linked features that have religious and cultural significance.

## Monitoring and Enforcement

Aircraft monitoring and enforcement would occur to ensure that commercial air tour operators are complying with the terms and conditions of the ATMP. The NPS and the FAA are both responsible for the monitoring and oversight of the ATMP. If the NPS identifies instances of non-compliance, the NPS will report such findings to the FAA's local FSDO. The FSDO will investigate all substantiated reports of noncompliance. The public may also report allegations of non-compliance with the ATMP to the FSDO, which may result in an FAA investigation.

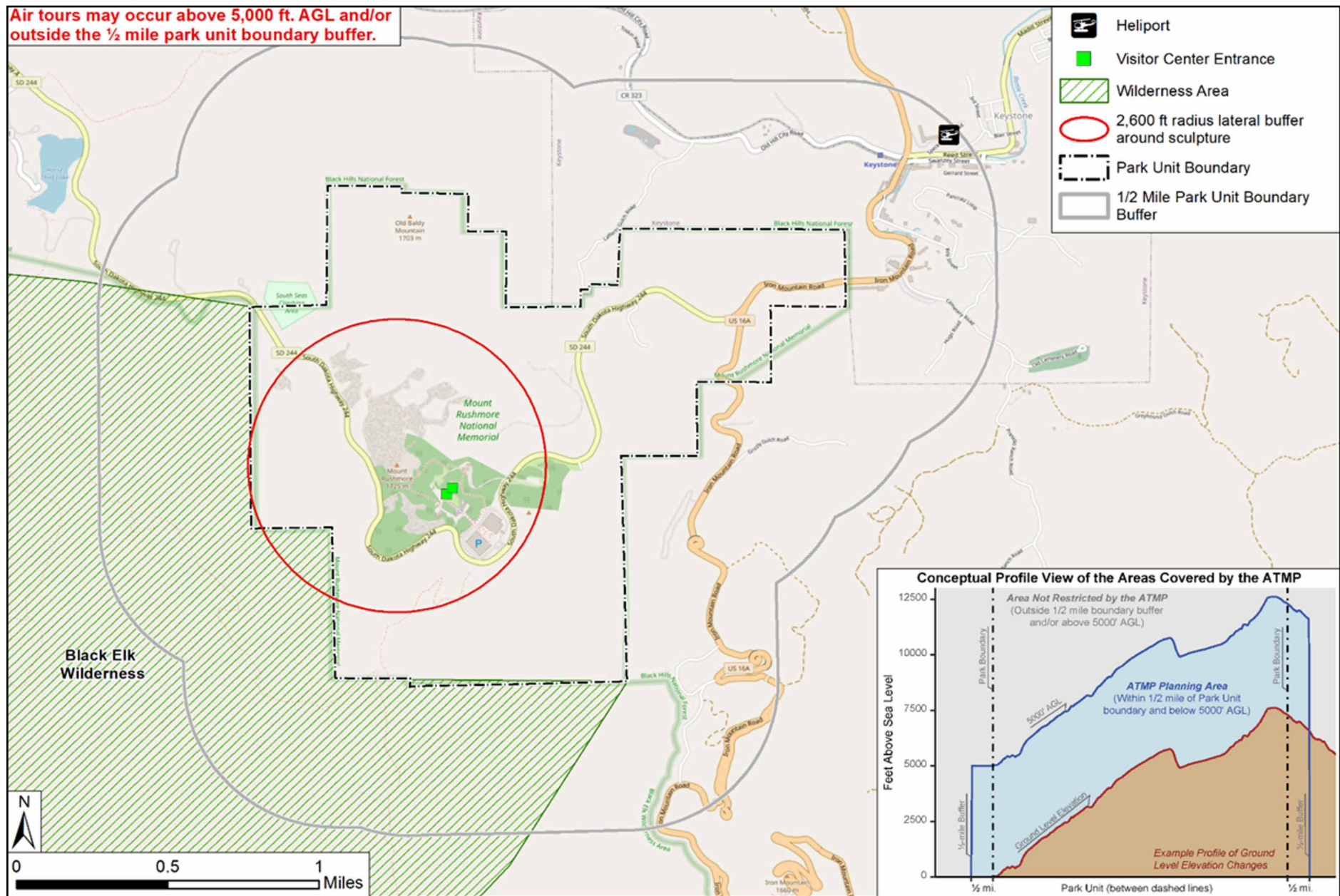
### IOA

The establishment of the ATMP will result in the termination of all IOA for the Park. Air tour operators' operation specifications (OpSpecs) will be updated accordingly. OpSpecs are a set of rules that an operator must follow.



*An Air Tour by Helicopter*

Figure 3. Alternative 2 — No Air Tours in the Planning Area





## Alternative 3 — Daily Cap of 25 Air Tours with Additional Modifications

### Objective

The NPS developed Alternative 3 to provide opportunities for air tours to occur over the Park, with mitigations to avoid or minimize impacts to natural and cultural resources and visitor experience.

Similar to Alternative 2 – No Air Tours in the Planning Area, the Park’s management objectives would also apply. The FAA reviewed the alternative to ensure it would not adversely affect aviation safety.

### Description

Commercial air tour operations within the ATMP planning area would be subject to a daily cap of 25 flights per day and annual cap of 3,657 flights per year. Five routes would be included in this alternative, with minimum altitudes ranging from 6,000 ft. MSL (900 ft. AGL) to 6,500 ft. MSL (1,400 ft. AGL), depending on the selected route (see Figure 4).

### Caps on Numbers of Flights Allowed Annually and Daily

The total number of air tours would be limited to 3,657 flights annually. The daily number of air tours would be limited to 25 flights per day. Each operator would be subject to annual and daily flight limits (see Table 2).

### Routes and Altitudes

Alternative 3 includes four routes for the helicopter operator and one route for the fixed-wing operator, all with varying altitudes and flight patterns across the ATMP planning area (see Table 3). No air tours could occur below 5,000 ft. AGL within the ATMP planning area except those conducted on the authorized routes.

### Time of Day, Day of Week, and Seasonal Restrictions

Commercial air tours would be permitted to operate one hour after sunrise until one hour before sunset, as defined by the National Oceanic and Atmospheric Administration (NOAA), except for the quiet technology incentive below. Sunrise and sunset data are available from the NOAA Solar Calculator. Air tours would be permitted to occur between May 1 through September 30, for 152 total days each year. Air tours could occur any day of the week.

Additionally, to reduce the potential for disruptions to tribal ceremonies there would be designated days when no air tours would be permitted within the ATMP planning area. These days would be selected collaboratively through consultation with associated Tribal Nations. Advance notice from tribes would be required and a limit would be established for the number of days per year tribes could request.

## Restrictions for Particular Events

In addition to the seasonal restrictions and no air tour days described above, the NPS can establish temporary no-fly periods in one-hour increments that apply to air tours for special events or planned Park management. Absent exigent circumstances or emergency operations, the NPS will provide a minimum of 30 days notice to the operators in writing in advance of the no-fly period. Events may include naturalization ceremonies, wildlife surveys, tribal ceremonies, or other similar events.

## Monitoring and Enforcement

All air tour operators are required to report to the FAA and the NPS, on a semi-annual basis, the number of commercial air tour operations they have conducted within the ATMP planning area. In addition to these reports, operators will also include flight monitoring data and such other information as the FAA and the NPS may request.

Aircraft monitoring and enforcement would occur to ensure that commercial air tour operators are complying with the terms and conditions of the ATMP. The NPS and the FAA are both responsible for the monitoring and oversight of the ATMP. If the NPS identifies instances of non-compliance, the NPS will report such findings to the FAA's local FSDO. The FSDO will investigate all substantiated reports of noncompliance. The public may also report allegations of non-compliance with the ATMP to the FSDO, which may result in an FAA investigation.

## Quiet Technology Incentives

The Act requires that the ATMP include incentives for the adoption of quiet technology by commercial air tour operators. The ATMP for this alternative would incentivize the use of quiet technology aircraft by commercial air tour operators. Operators that have converted to quiet technology aircraft, may request to be allowed to conduct air tours beginning at sunrise or ending at sunset on all days that flights are authorized.

Because aviation technology continues to evolve and advance and FAA updates its noise certification standards periodically, the aircraft eligible for this incentive will be analyzed on a case-by-case basis at the time of the operator's request to be considered for this incentive. The NPS will periodically monitor Park conditions and coordinate with FAA to assess the effectiveness of this incentive. If implementation of this incentive results in unanticipated effects on Park resources or visitor experience, further agency action may be required to ensure the protection of Park resources and visitor experience.

## Operator Training and Education

When made available by Park staff, operators/pilots would be required to take at least one training course per year conducted by NPS staff. The training would include Park information that operators can use to further their own understanding of Park priorities and management objectives as well as enhance the interpretive narrative and increase understanding of the Park by air tour clients.



## **Adaptive Management**

Adaptive management allows for minor modifications to the ATMP without a formal ATMP amendment if the impacts of such changes are within the impacts already analyzed by the agencies under the National Environmental Policy Act, the National Historic Preservation Act, and the Endangered Species Act. Adjustments to the number of commercial air tours allocated to individual operators as a result of the competitive bidding process and minor changes to routes, altitudes, or other operating parameters are examples of adaptive management measures that may not require a formal ATMP Amendment. Such modifications may be made if: 1) the NPS determines that they are necessary to avoid adverse impacts to Park resources, values, or visitor experiences; 2) the FAA determines the need for such changes due to safety concerns; or 3) the agencies determine that appropriate, minor changes to this ATMP are necessary to address new information or changed circumstances.

## **Annual Meeting**

At the request of either of the agencies, the Park staff, the local FAA FSDO, and all operators would be required to meet once per year to discuss the implementation of the ATMP and any amendments or other changes to the ATMP. This annual meeting could be conducted in conjunction with any required annual training.

The annual meeting will facilitate effective implementation of the ATMP because it would be used to review and discuss implementation of the ATMP between Park staff, local FAA FSDO, and all operators. It will thus serve to ensure that air tour operators remain informed regarding the terms and conditions of the ATMP, including any adaptive management measures or amendments, and are made aware of new or reoccurring concerns regarding Park resources.

## **Competitive Bidding**

The Act states whenever an ATMP limits the number of commercial air tour operations during a specified time frame, a competitive bidding process must occur pursuant to the criteria set forth in 49 U.S.C. § 40128(a)(2)(B) and other criteria developed by the agencies. Since the number of flights would be limited for this alternatives, competitive bidding would be conducted, if appropriate.

In the time period between the finalization of an ATMP and the completion of a competitive bidding process, commercial air tour operators would be allocated a certain number of commercial air tours over the Park, referred to as the initial allocation.

Competitive bidding may also be appropriate to address: a new entrant application; a request by an existing operator for additional operating authority; consideration by the agencies of Park-specific resources, impacts, or safety concerns; or for other reasons. The Act directs the agencies to consider various factors during the competitive bidding process including known resource issues, reporting, and compliance concerns.

## **Operators, Initial Allocation of Air Tours, Aircraft Types, and Interim Operating Authority**

Upon finalization of the ATMP, the number of flights authorized to occur each year would be proportionally allocated to each of the two operators that have reported operations over the Park in the period from 2017-2019 (Table 2). Each operator's aircraft types would reflect those reported in the period from 2017-2019. The initial allocation would be used until a competitive bidding process could occur, if necessary. The establishment of the ATMP will result in the termination of all IOA for the Park.

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## Alternative 3 — Daily Cap of 25 Air Tours with Additional Modifications

### New Entrant

For the purposes of the ATMP, a “new entrant” is a commercial air tour operator that has not been granted any operations under the ATMP or that no longer holds operations under the ATMP at the time of the application. New entrants must apply for and be granted operating authority before conducting commercial air tours over the lands and waters covered by the ATMP.

The FAA and the NPS will publish additional information for interested parties about the form and required content of a new entrant application. The FAA and the NPS will jointly consider new entrant applications and determine whether to approve such applications. Review of applications submitted prior to the effective date of the ATMP will commence within six months of the effective date. Applications submitted after that time will be considered no less frequently than every three years from the effective date of the ATMP.

If any new entrant is granted operating authority under the ATMP, the FAA will issue OpSpecs (and, if necessary, will revise OpSpecs of operators whose allocation of operating authority changes due to accommodation of a new entrant) within 90 days of the publication of an amended ATMP or of the effective date of ATMP changes implemented through the adaptive management process.

### Amendment

The ATMP may be amended at any time: if the NPS, by notification to the FAA and the operator(s), determines that the ATMP is not adequately protecting Park resources and/or visitor enjoyment; if the FAA, by notification to the NPS and the operator(s), determines that the ATMP is adversely affecting aviation safety and/or the national aviation system; or, if the agencies determine that appropriate changes to the ATMP are necessary to address new information or changed circumstances that cannot be addressed through adaptive management.

The FAA and the NPS will jointly consider requests to amend the ATMP from interested parties. Requests must be made in writing and submitted to both the FAA and the NPS. Requests must also include justification that includes information regarding how the requested amendment: is consistent with the objectives of the ATMP with respect to protecting Park resources, tribal lands, or visitor use and enjoyment; and would not adversely affect aviation safety or the national aviation system. The FAA and the NPS will publish additional information for interested parties about the form and manner for submitting a request.

Increases to the total number of air tours authorized per year under the ATMP resulting from accommodation of a new entrant application or a request by an existing operator will require an amendment to this ATMP and additional environmental review.

Notice of all amendments to the ATMP will be published in the Federal Register for notice and comment.

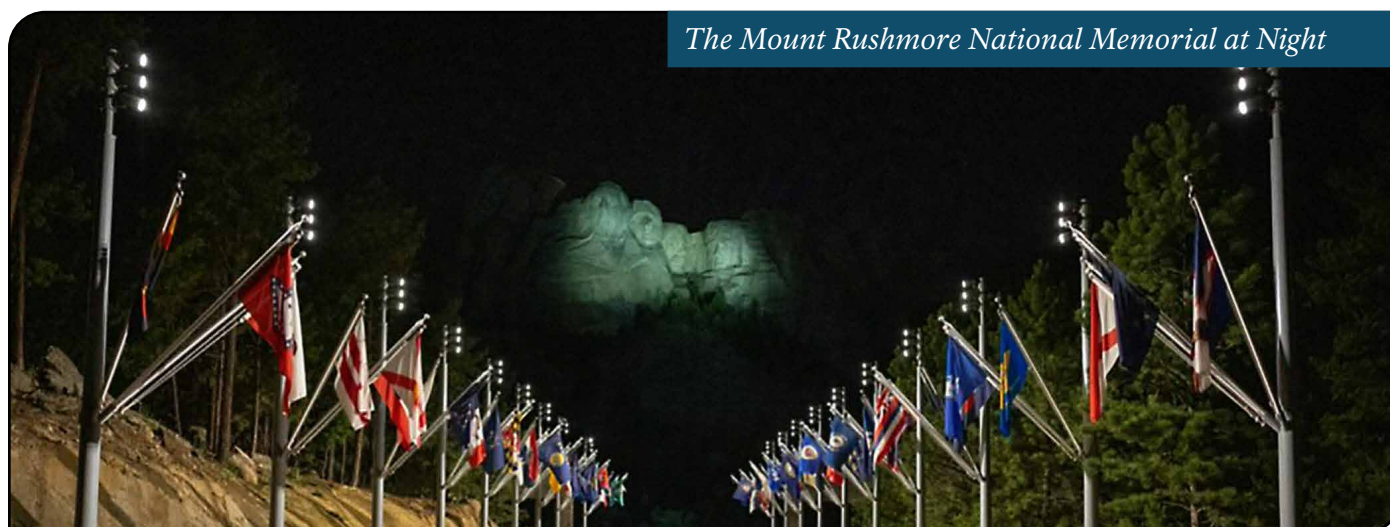
## Alternative 3 — Daily Cap of 25 Air Tours with Additional Modifications

**Table 2. Alternative 3 operators and annual cap, daily cap, and number of routes**

Operator	Aircraft Type	3-year Reported Average No. of Air Tours (2017-2019)	Alternative 3 Annual Allocations	Daily Cap	Number of Routes
<b>Dakota Rotors LLC (Black Hills Aerial Adventures, Inc., and Rushmore Helicopters)</b>	BHT-206B, BHT-47-G3B1, R-44-II, R-66- 66 (helicopter)	3,905	3,648	24	4
<b>Eagle Aviation, Inc.</b>	Cessna 172, Cessna 206 (fixed-wing)	9	9	1	1
		<b>3,914</b>	<b>3,657</b>	<b>25</b>	<b>5</b>

**Table 3. Alternative 3 operator routes, altitude, and aircraft type conditions**

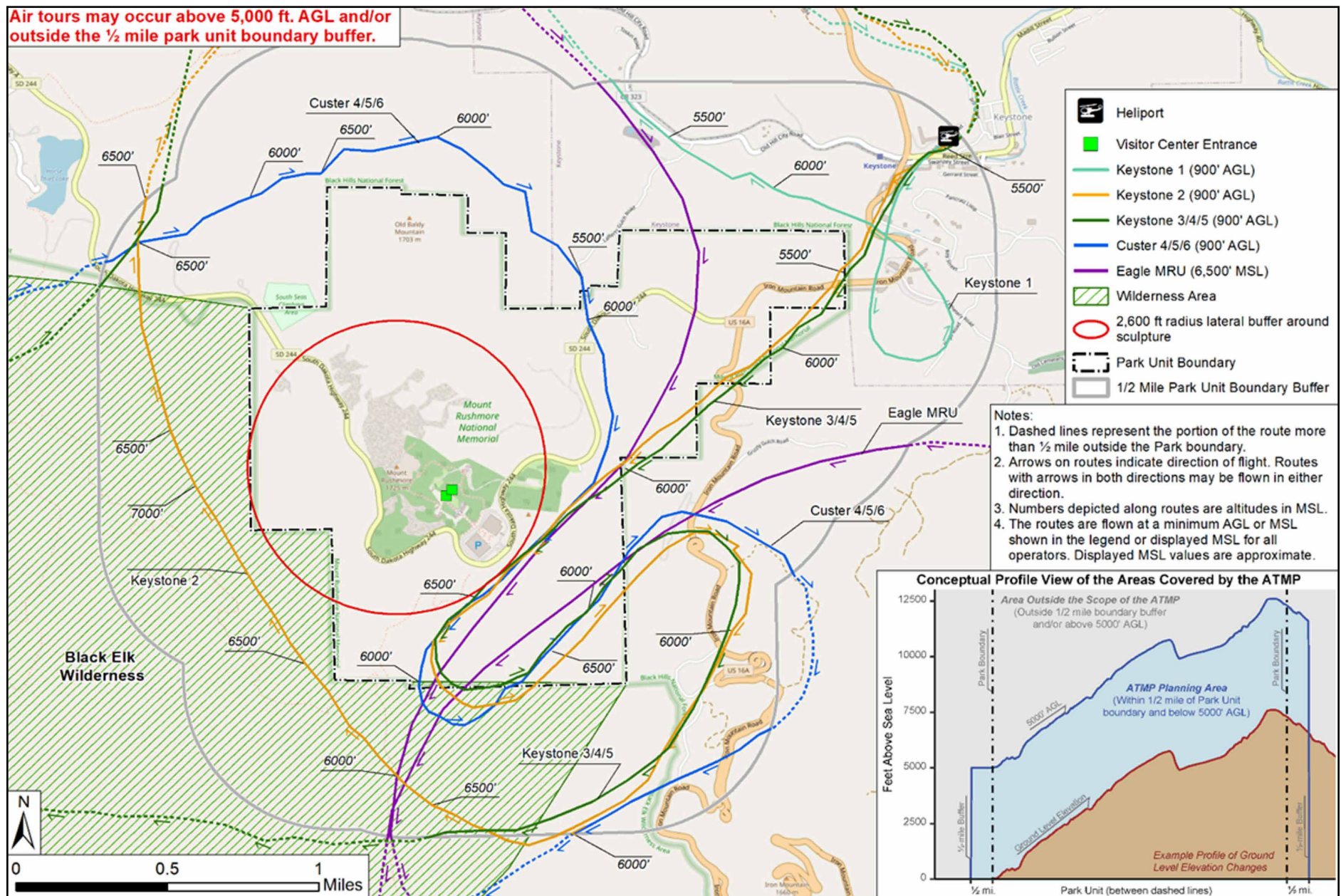
Route Name	Altitude	Aircraft Type	Operator
<b>Dakota Rotors - Keystone 1</b>	N/A	Helicopter	Dakota Rotors
<b>Dakota Rotors - Keystone 2</b>	900 ft. AGL (6,000 ft. MSL)	Helicopter	Dakota Rotors
<b>Dakota Rotors - Keystone 3/4/5</b>	900 ft. AGL (6,000 ft. MSL)	Helicopter	Dakota Rotors
<b>Dakota Rotors - Custer 4/5/6</b>	900 ft. AGL (6,000 ft. MSL)	Helicopter	Dakota Rotors
<b>Eagle Aviation Route</b>	1,400 ft. AGL (6,500 ft. MSL)	Fixed-wing	Eagle Aviation



*The Mount Rushmore National Memorial at Night*



Figure 4. Alternative 3 — Daily Cap of 25 Air Tours with Additional Modifications



## Alternative 4 - Daily Cap of 13 Air Tours with Additional Modifications

### Objective

The NPS developed Alternative 4 to provide opportunities for air tours to occur over the Park, with mitigations to avoid or minimize impacts to natural and cultural resources and visitor experience (see Figure 5).

Similar to Alternative 3 – Daily Cap of 25 Air Tours with Additional Modifications, the Park’s management objectives would also apply. The FAA reviewed the alternative to ensure it does not adversely affect aviation safety.

### Description

Commercial air tour operations within the ATMP planning area would be subject to a daily cap of 13 air tours per day and an annual cap of 1,833 flights per year across all operators. Five routes would be included in this alternative, with minimum altitudes ranging from 900 ft. AGL (6,000 ft. MSL) to 1,400 AGL (6,500 MSL), depending on the selected route.

### Caps on Numbers of Flights Allowed Annually and Daily

The total number of air tours would be limited to 1,833 flights annually. The daily number of air tours would be limited to 13 tours per day. Each operator would be subject to annual and daily flight limits (see Table 4).

### Conditions that are the Same as Alternative 3:

- Routes and Altitudes (see Table 5)
- Time of Day, Day of Week, and Seasonal Restrictions
- Quiet Technology (QT) Incentives
- Restrictions for Particular Events
- Adaptive Management
- Operator Training and Education
- Annual Meeting
- Competitive Bidding
- Operators, Initial Allocation of Air Tours, Aircraft Types, and Interim Operating Authority
- New Entrant
- Monitoring and Enforcement
- Amendment

## Alternative 4 — Daily Cap of 13 Air Tours with Additional Modifications

**Table 4. Alternative 4 operators and annual cap, daily cap, and number of routes**

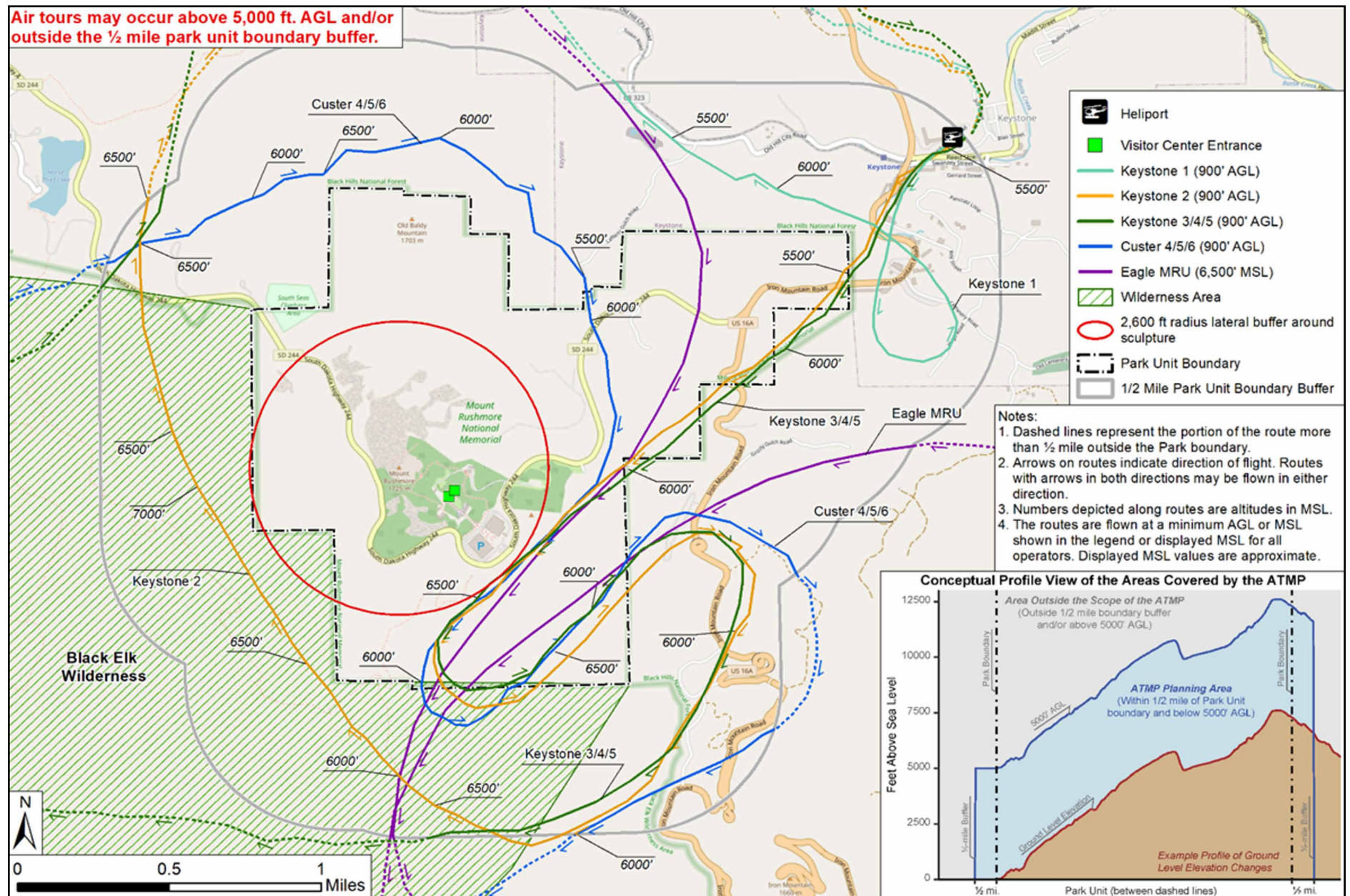
Operator	Aircraft Type	3-year Reported Average No. of Air Tours (2017-2019)	Alternative 4 Annual Allocations	Daily Cap	Number of Routes
<b>Dakota Rotors LLC (Black Hills Aerial Adventures, Inc., and Rushmore Helicopters)</b>	BHT-206B, BHT-47-G3B1, R-44-II, R-66-66 (helicopter)	3,905	1,824	12	4
<b>Eagle Aviation, Inc.</b>	Cessna 172, Cessna 206 (fixed-wing)	9	9	1	1
		<b>4,914</b>	<b>1,833</b>	<b>13</b>	<b>5</b>

**Table 5. Alternative 4 operator routes, altitude, and aircraft type conditions**

Route Name	Altitude	Aircraft Type	Operator
Dakota Rotors - Keystone 1	N/A	Helicopter	Dakota Rotors
Dakota Rotors - Keystone 2	900 ft. AGL (6,000 ft. MSL)	Helicopter	Dakota Rotors
Dakota Rotors - Keystone 3/4/5	900 ft. AGL (6,000 ft. MSL)	Helicopter	Dakota Rotors
Dakota Rotors - Custer 4/5/6	900 ft. AGL (6,000 ft. MSL)	Helicopter	Dakota Rotors
Eagle Aviation Route	1,400 ft. AGL (6,500 ft. MSL)	Fixed-wing	Eagle Aviation



Figure 5. Alternative 4 - Daily Cap of 13 Air Tours with Additional Modifications



**Table 6. Summary of Alternative Elements**

<b>Alternative Attributes</b>	<b>Alternative 1 — No Action/ No ATMP</b>	<b>Alternative 2— No Air Tours in the Planning Area</b>	<b>Alternative 3 — Daily Cap of 25 Air Tours with Additional Modifications</b>	<b>Alternative 4 — Daily Cap of 13 Air Tours with Additional Modifications</b>
<b>General Description and Objectives</b>	Allows a continuation of air tours under IOA without implementation of an ATMP or voluntary agreement. Does not comply with the Act.	Prohibits air tours within the ATMP planning area to maximize resource protection and visitor experience. Air tours could still continue to fly outside the ATMP planning area (i.e., above 5,000 ft. AGL or more than ½-mile outside of the Park's boundary).	Restricts air tour operations within the ATMP planning area. Primarily, the conditions in this alternative include annual and daily caps, designated routes, required minimal altitudes, and no-fly periods for tribal ceremonies or special events.	Restricts and reduces air tour operations within the ATMP planning area. Primarily, the conditions in this alternative include annual and daily caps, designated routes, required minimal altitudes, and no-fly periods for tribal ceremonies or special events.
<b>Annual/Daily Number of Flights</b>	Leaves IOA in place, allowing the potential for up to 5,608 commercial air tours each year. Actual number of tours has historically ranged from 3,648 to 4,363 flights per year, or an average of 3,914 flights (based on 2017-2019 reporting).	None in ATMP planning area.	The annual number of flights would be limited to 3,657 total flights per year across both operators. The daily number of flights may not exceed 25 tours per day across all operators. There would be annual and daily limitations for each operator.	The annual number of flights would be limited to 1,833 total flights per year across both operators. The daily number of flights may not exceed 13 tours per day across all operators. There would be annual and daily limitations for each operator.
<b>Routes</b>	No mandatory routes or no-fly zones. See map for depiction of reported routes and actual operations, though operators may change routes or altitude without notice.	None in ATMP planning area.	Four routes for the helicopter operator and one route for the fixed-wing operator all with varying distances and altitudes.	Same as Alternative 3.
<b>Minimum Altitudes</b>	No mandatory minimum altitudes. See map for depiction of reported operations, though operators may change altitude without notice.	No minimum altitude would be set. However, flights over the Park that are above 5,000 ft. AGL could occur as they are outside the ATMP planning area. Flights more than ½-mile outside the Park boundary are similarly outside the ATMP planning area and could occur.	Minimum altitudes ranging from 900 ft. AGL to 1,400 ft. AGL, depending on the selected route.	Same as Alternative 3.



Continuation of Table 6. Summary of Alternative Elements

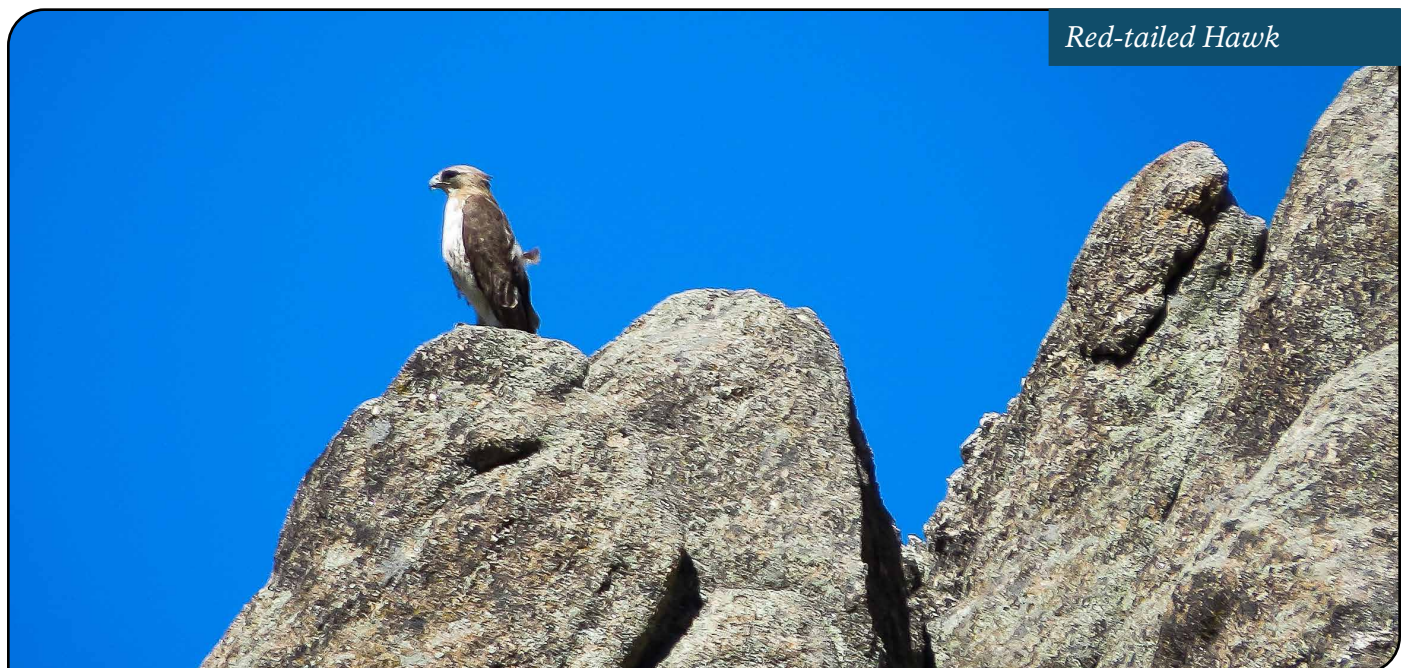
<b>Alternative Attributes</b>	<b>Alternative 1 — No Action</b>	<b>Alternative 2— No Air Tours in the Planning Area</b>	<b>Alternative 3 — Daily Cap of 25 Air Tours with Additional Modifications</b>	<b>Alternative 4 — Daily Cap of 13 Air Tours with Additional Modifications</b>
<b>Time of Day</b>	No Restrictions.	N/A	One hour after sunrise until one hour before sunset for non-QT flights. Sunrise to sunset for QT flights.	Same as Alternative 3.
<b>Seasonal Restrictions</b>	No Restrictions.	N/A	Air tours would be permitted to occur from May 1 through September 30, for 152 total days each year.	Same as Alternative 3.
<b>Day of Week</b>	No Restrictions.	N/A	Air tours may fly any day of the week from May 1 to September 30.	Same as Alternative 3.
<b>Quiet Technology (QT) Incentives</b>	None.	N/A	Air tours operators are incentivized to adopt QT by being extended the opportunity to fly sunrise through sunset for QT flights.	Same as Alternative 3.
<b>Operator Training and Education</b>	None.	N/A	Mandatory if requested and/ or made available by the NPS.	Same as Alternative 3.
<b>Annual Meeting</b>	None.	N/A	Mandatory if requested and/ or made available by the FAA or the NPS.	Same as Alternative 3.
<b>Restrictions for Particular Events</b>	None.	N/A	In addition to seasonal restrictions, the NPS can establish temporary no-fly periods and must provide 30 days notice to operators of the no-fly periods. Events may include tribal ceremonies or other similar events.	Same as Alternative 3.

Continuation of Table 6. Summary of Alternative Elements

Alternative Attributes	Alternative 1 — No Action	Alternative 2— No Air Tours in the Planning Area	Alternative 3 — Daily Cap of 25 Air Tours with Additional Modifications	Alternative 4 — Daily Cap of 13 Air Tours with Additional Modifications
<b>Adaptive Management</b>	None.	N/A	Adaptive management actions may be taken as long as their impacts are within the impacts already analyzed by the agencies.	Same as Alternative 3.
<b>Operators, Initial Allocation of Air Tours, Aircraft Types, and Interim Operating Authority</b>	Two operators hold for IOA of 4,117 air tours each year.	The establishment of the ATMP will result in the termination of all IOA for the Park.	Dakota Rotors: 3,648 flights annually; BHT-206B, BHT-47-G3B1, R-44-II, R-66- 66  Eagle Aviation: nine flights annually; Cessna 172, Cessna 206  Competitive bidding could occur and change air tour allocations.  The establishment of the ATMP will result in the termination of all IOA for the Park.	Dakota Rotors: 1,824 flights annually; BHT-206B, BHT-47-G3B1, R-44-II, R-66- 66  Eagle Aviation: nine flights annually; Cessna 172, Cessna 206  Competitive bidding could occur and change air tour allocations.  The establishment of the ATMP will result in the termination of all IOA for the Park.
<b>Amendments</b>	None.	The ATMP may be amended at any time if the NPS, by notification to the FAA, determines that the ATMP is not adequately protecting Park resources and/or visitor enjoyment; or if the FAA, by notification to the NPS, determines that the ATMP is adversely affecting aviation safety and/or the national aviation system; or, if the agencies determine that appropriate changes to the ATMP are necessary to address new information or changed circumstances.	The ATMP may be amended at any time: if the NPS, by notification to the FAA and the operator(s), determines that the ATMP is not adequately protecting Park resources and/or visitor enjoyment; if the FAA, by notification to the NPS and the operator(s), determines that the ATMP is adversely affecting aviation safety and/or the national aviation system; or, if the agencies determine that appropriate changes to the ATMP are necessary to address new information or changed circumstances that cannot be addressed through adaptive management.	Same as Alternative 3.

## Glossary

The Act	National Parks Air Tour Management Act of 2000
AGL	Above Ground Level
ATMP	Air Tour Management Plan
EA	Environmental Assessment
FAA	Federal Aviation Administration
FSDO	Flight Standards District Office
IOA	Interim Operating Authority
MSL	Mean Sea Level
NEPA	National Environmental Policy Act
NPS	National Park Service
OpSpecs	Operational Specifications
Park	Mount Rushmore National Memorial
PEPC	Planning, Environment & Public Comment System
QT	Quiet Technology



*Red-tailed Hawk*

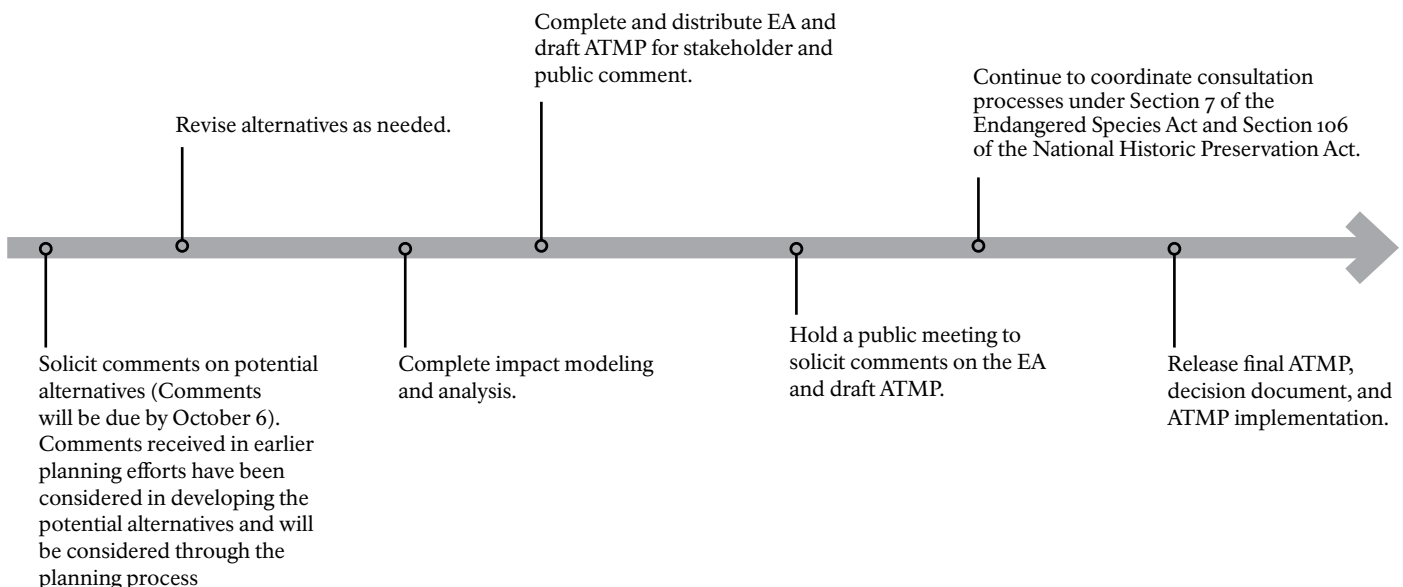
## Next Steps

This public scoping period represents the first opportunity to be involved in the current planning process. During this scoping period, the project planning team would like to receive comments on the potential alternatives. After this public scoping process has concluded, the agencies will prepare an EA to comply with NEPA and a draft ATMP. Important steps in the planning process are in the graphic below.

The FAA and the NPS are also identifying resources that are listed in or eligible for listing in the National Register of Historic Places that could be affected by air tours operating under the proposed ATMP. This includes any historic districts, sites, buildings, structures, objects or landscapes, including traditional cultural properties. If members of the public have any information on historic properties that they believe would be helpful in this effort, including properties outside of the Park, we welcome that assistance.

The FAA and the NPS are also seeking to identify additional individuals or organizations that may be interested in participating in Section 106 of the National Historic Preservation Act consultations for the ATMP as consulting parties.

Should you have information you wish to provide regarding historic properties or are interested in participating in the Section 106 review process as a consulting party, please contact Sheri G. Lares at 701.323.7388 or [sheri.lares@faa.gov](mailto:sheri.lares@faa.gov) and copy the ATMP Team at [ATMPTeam@dot.gov](mailto:ATMPTeam@dot.gov). Please note that this contact information is only for correspondence related to the Section 106 process and comments not related to the Section 106 process will not be accepted or relayed via email. Instructions for general public comment on the potential alternatives described in this newsletter are provided below.



## Instructions for Public Comment

Please comment on any alternative and/or alternative element described above. The agencies are seeking substantive comments that describe why something will or will not work, provide new ideas or factual information to correct or adjust assumptions made, or present reasonable alternatives other than those described. Comments that merely support or oppose the proposals are not considered substantive. Commenters may wish to consider the following questions:

- What elements of the alternatives do you think are most important? Why?
- What other information should the planning team consider when analyzing the alternatives?
- Are there other elements or ideas that should be considered and analyzed that are not already presented? What is missing, and why should it be considered?
- Are there other resources or impact topics that should be considered in the analysis?
- What other comments and suggestions do you have?

Comment submission using the Planning, Environment & Public Comment (PEPC) system is preferred, although written comments sent via postal mail will also be accepted. If you do not have access to a computer, use the attached comment form, following directions on the form. Comments will not be accepted via email.

Comments may be submitted using the PEPC system (<https://parkplanning.nps.gov/MountRushmoreATMP>) by October 6, 2022 at 11:59 PM MT.

Written comments may be sent via postal mail to the following address:

Volpe National Transportation Systems Center  
Kaitlyn Rimol, V-326  
Attn: Mount Rushmore National Memorial ATMP  
55 Broadway  
Cambridge, MA 02142

# Send Us Your Comments!

**PLEASE SUBMIT YOUR COMMENTS BY OCTOBER 6, 2022 AT 11:59 PM MT.**

Please submit comments electronically by visiting: <https://parkplanning.nps.gov/MountRushmoreATMP>  
Once on the website, select “Open for Comment” to provide your thoughts on these preliminary alternatives. If you do not have access to a computer, you can send us your comments on this comment form.

Do you wish to remain on the mailing list for the Air Tour Management Plan ?      ☐ YES      ☐ NO

Please print your name and address in the space provided. If the mailing label we used is incorrect, please indicate any corrections in the space below. To keep our mailing list accurate, please check the boxes below that apply.

- ☐ Change my address.
- ☐ Add my name to the mailing list.
- ☐ Remove my name from the mailing list.
- ☐ Send me information by e-mail.

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Organization, if any: \_\_\_\_\_

Mailing Address: \_\_\_\_\_

City/State/Zip: \_\_\_\_\_

Email: \_\_\_\_\_

Below, please write any comments or feedback related to information provided in this newsletter. Please include additional sheets of paper as necessary. When complete, please fold this form in half, showing the preprinted address on the outside, tape it closed (no staples please), add postage, and drop in the mail.

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Address: \_\_\_\_\_

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**ADD  
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