

**ALASKA DEPARTMENT OF
ENVIRONMENTAL CONSERVATION**



Amendments to:

State Air Quality Control Plan

Volume III: Appendix III.K.13

2021 Alaska Regional Haze State Implementation Plan

Appendix to Section III.K.13.K

Public Notice Draft

March 30, 2022

Mike J. Dunleavy, Governor

Jason W. Brune, Commissioner

(This page serves as a placeholder for two-sided-copying)

Appendix III.K.13.K Consultation

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ALASKA DEPARTMENT OF ENVIRONMENTAL CONSERVATION



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Response to Federal Land Managers' Comments on Regional Haze Proposed
Regulations

March 30, 2022

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Regional Haze - Federal Land Manager RTC

Introduction

This document provides the Alaska Department of Environmental Conservation's (DEC) response to the Federal Land Managers' review draft comments received regarding the 2021 draft 2nd Implementation Period Alaska Regional Haze State Implementation Plan (SIP).

Under 40 C.F.R. 51.308 and 42 U.S.C. § 7491(d), DEC is required consult with Federal Land Managers (FLMs) prior to public notice of the proposed SIP on regional haze. In this document, DEC responds to comments received from the FLMs at the U.S. Fish & Wildlife Service (FWS) and the National Park Service (NPS) under the consultation process.

This document responds to individual comments from the FLMs. For each section of the SIP, the document provides the comments received and provides DEC's response.

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Federal Land Managers Comment Responses

National Park Service (NPS):

Comments:

Our review of the draft SIP finds that Alaska incorrectly identifies the Trapper Creek IMPROVE monitor (TRCR1) as the official IMPROVE monitor for Denali NP&P. The Denali Headquarters IMPROVE site (DENA1) is recognized by the NPS, EPA, WRAP TSS, and IMPROVE steering committee as the official monitor for this Class I area. The DENA1 monitor has been in continuous operation 13 years longer than Trapper Creek and better represents the 2/3 of the park acreage located on the north side of the Alaska Range. We acknowledge a long-standing disagreement with the state of Alaska on this point and reiterate our request that Alaska correct this error in the draft SIP. We also value the monitoring data and historic record of air quality provided by the TRCR1 monitor and recommend that Alaska continue the precedent of tracking reasonable progress for both TRCR1 and DENA1 in this and future planning periods.

Response: DEC concurs that the Denali IMPROVE data should be included in the State Implementation Plan (SIP) in addition to the Trapper Creek IMPROVE data. The monitoring data and historic trends for that site have been added to the relevant sections of the plan consistent with prior plans. DEC and the NPS do disagree about which IMPROVE site, Trapper Creek or Denali, is the primary IMPROVE site for regional haze purposes, but this disagreement does not prevent the state from displaying all the relevant data for the Class I area in the SIP, DEC has always identified in the Regional Haze SIP that the IMPROVE site purposefully installed at Trapper Creek to monitor for regional haze is the primary monitor for purposes of the state's SIP planning and regional haze monitoring network as described in Section K.13.C (Monitoring Strategy). In response to the ongoing disagreement related to which site is the primary IMPROVE site for the Denali Class I area for purposes of regional haze planning, DEC is conducting further analysis and assessment of the two monitoring locations, TRCR1 and DENA1, to further document this issue and the State's position. DEC plans to share that analysis with the Federal Land Managers and EPA upon its completion.

Comments:

With respect to the four-factor analysis and limited reviews conducted for three power plants affecting Denali NP&P we appreciated the discussion during our consultation call and the supplementary information provided. We now have the following feedback:

- North Pole Power Plant
 - We agree with the outcome of the four-factor analysis for this facility.
 - We also have questions regarding Unit 6. Based on Table III.K.13.F-6 of the SIP, it appears that Unit 6 is permitted but not installed. The estimated installation date for

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- unit 6 is 2024. When was Unit 6 permitted? Was it permitted in 2005 along with Unit 5? If so, will a BACT re-evaluation be required when the unit is installed in 2024?
- Chena Power Plant
 - We requested additional information during our consultation call on July 19th, 2021.
 - Alaska staff directed us to the particulate matter serious nonattainment SIP documents posted online. We appreciate this information and recommend that all relevant materials should be included in the regional haze SIP. Our team needs additional time to evaluate the technical feasibility and cost-effectiveness documentation for the Chena Power Plant from the nonattainment SIP and will provide feedback by August 13th, 2021.
 - Healy Power Plant
 - Because Healy Unit 2 is effectively controlled for SO₂, we agree with the limited review for this emission unit.
 - However, we disagree with Alaska's limited review of SO₂ control opportunities for Healy Unit 1.
 - This unit is not effectively controlled for SO₂, the primary haze-causing pollutant for nearby Denali NP&P.
 - The consent decree does not address additional SO₂ emission reductions if the facility continues operating after 2024.
 - Alaska should require a full four-factor analysis of SO₂ control opportunities for Healy Unit 1 and require implementation of reasonable controls in this planning period.

Response:

North Pole Power Plant

Emissions Unit (EU) 6 was permitted along with EU 5 on May 22, 2003, with the issuance of Construction Permit AQ0110CP01. These EUs were incorporated into Operating Permit AQ00110TVP01 Rev. 1 on July 28, 2003. ADEC notes that EUs 5 and 6 are identical EUs which are both already required to fire Naphtha/LSR with a sulfur content of no greater than 50 ppmw under Condition 5.1 of Minor Permit AQ0110MSS01. ADEC does not intend to perform an additional re-evaluation of EU 6 if it is installed prior to the next planning period as the four-factor analysis already performed for EU 5 would be identical for EU 6 and that analysis showed that switching to ULSD would cost more than one million dollars per ton of SO₂ removed, which is not cost effective.

Chena Power Plant

To facilitate the FLM review, DEC provided to the NPS an internet link to all relevant materials on the Chena Power Plant from the existing Serious PM_{2.5} Nonattainment SIP. NPS has not provided additional comments on the Chena Power Plant for consideration but may choose to comment further during the public comment period. Rather than duplicating these materials in the overall Alaska SIP, DEC intends to provide, in the Regional Haze SIP section, references and a link to the website: <http://dec.alaska.gov/air/anpms/communities/fbks-pm2-5-serious-sip/> to ensure those relevant materials already included in other sections of Alaska's SIP are available and accessible to readers/reviewers of the Regional Haze SIP.

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Healy Power Plant

DEC has modified the Healy Power Plant section of the SIP. The 2010 Regional Haze BART determination for Healy EU 1 found that the incremental cost effectiveness for the addition of a spray dry absorber system was \$29,813 per ton of SO₂ removed and for a wet scrubber system was \$12,033 per ton of SO₂ removed. In line with the Guidance Document, DEC believes that there have been no significant cost reductions in the previous decade that would warrant re-evaluating the addition of these two types of controls for EU 1 as they would still be considered cost ineffective. However, the previous BART determination found that optimizing the already installed DSI system on EU 1 would cost \$4,218 per ton of SO₂ removed. It is possible that a re-evaluation of DSI optimization for EU 1 could result in a cost effectiveness finding by DEC. Therefore, in the event that GVEA chooses not to retire EU 1, DEC will require GVEA to complete a full four-factor analysis for DSI optimization by July 1, 2023. Alternatively, GVEA may establish an enforceable emission limit for SO₂ of 0.20 lb/MMBtu by submitting an application for a permit amendment by January 1, 2024, with DEC issuing the permit no later than January 1, 2025, which would result in EU 1 being considered an effectively controlled EU per the Guidance Document.

Fish and Wildlife Service (FWS):

Comments:

On pages 11, 75, and 213, language suggests that Alaska limited their approach and/or conditionally considered controls based on the current placement on Class I area glidepaths. The preamble of the RH rule discusses the Uniform Rate of Progress (URP) as not a “safe harbor” and should not be used as a factor to evaluate reasonable progress. Please consider whether sources offer reasonable control opportunity without consideration of the current placement on the glidepath.

Response:

Section III.K.13.F describes the methodology for selecting sources using the AOI and WEP analysis and followed by the Q/d values. This method and selection of sources does not include screening sources with relation to the glidepaths. The goal was to identify the sources that would most likely improve visibility should additional controls be used. The State understands there is no “safe harbor” and that continual progress towards the goals of 2064 is required.

Comments:

On page 22, the Trapper Creek IMPROVE monitor is identified as the “official” site for Denali National Park. Later, page 240, a reasonable progress goal (RPG) is projected for Trapper Creek (not DENA1). Though we acknowledge the value of the Trapper Creek site, the IMPROVE network identifies the DENA1 as an “IMPROVE” site and TRCR1 as a “protocol” site. There is no objection if the State wants to include and project progress for the Trapper

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Creek site; however, we do think that proper recognition and RPG projection at the DENA1 site is required.

Response: DEC concurs that the Denali IMPROVE data should be included in the State Implementation Plan (SIP) in addition to the Trapper Creek IMPROVE data. The monitoring data and historic trends for that site have been added to the relevant sections of the plan consistent with prior plans. DEC disagrees with the FWS about which IMPROVE site, Trapper Creek or Denali, is the primary IMPROVE site for regional haze purposes, but this disagreement does not prevent the state from displaying all the relevant data for the Class I area in the SIP, DEC has always identified in the Regional Haze SIP that the IMPROVE site purposefully installed at Trapper Creek to monitor for regional haze is the primary monitor for purposes of the state's SIP planning and regional haze monitoring network as described in Section K.13.C (Monitoring Strategy). In response to the ongoing disagreement related to which site is the primary IMPROVE site for the Denali Class I area for purposes of regional haze planning, DEC is conducting further analysis and assessment of the two monitoring locations, TRCR1 and DENA1, to further document this issue and the State's position. DEC plans to share that analysis with the Federal Land Managers and EPA upon its completion.

Comments:

On page 55, bar charts are presented to enhance description of 2016 vs. 2028 emission levels. The charts on the right side of the page are not presented with the same x-axis scale which may mislead the reader. A quick view may appear to show equal or reduced emission totals when in fact they increase. Please use the same x-axis scale.

Response:

DEC has updated the horizontal axes in both the 2016 and 2028 anthropogenic source emission level charts (located on the right side/panel of the page) to match one another to avoid confusion regarding the emissions increases during this period (Figures III.K.3.E-2 and III.K.3.E-3).

Comments:

In general, the state utilizes tools (page 79, SO_x WEP of >5% or more) to identify individual sources for 4-factor review. The Long Term Strategy section continues discussion under this constraint and concludes that no individual control is identified. The State should consider the benefits from evaluating and potentially applying controls on a group of similar sources (source category).

Response:

DEC modified its methodology based on comments received during the federal agency pre-

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review of the draft SIP to identify individual sources for 4-factor review. In the public notice draft, DEC has also included its proposed regulations that expand the reporting and tracking of permitted facilities located within the Regional Haze Visibility Protection Zone. Furthermore, DEC has developed a tool to screen proposed permit amendments and new applications to ensure that modifications do not adversely impact the reasonable further progress goals. This proposed approach should assist the state in identifying any need for additional mitigation needs in the permit or permit application process. The new proposed regulations also begin to allow DEC to track maintenance schedules on equipment that could potentially assist, in the future, possible control options. While the comments encourage the state to consider looking for additional benefits for evaluating and applying controls, currently DEC lacks the tools and information for this effort. The proposed regulations and approach should provide more information that will be reported within the next 5-year progress report to better understand and address this issue.

Comments:

On page 107, there is a potential typo, *“At this time, the USAF is still planning to move forward with the boiler replacement project before the end of the 2064 Regional Haze planning period, which will significantly reduce SO₂ emissions for the stationary source.”* Do you mean that to say 2028? The discussion surrounding the facility modification indicates *“In the years to come, as the older boilers are replaced, there will be a substantial decline in emissions from the stationary source which will result in a positive impact on visibility.”* Later, it states that *“ADEC will continue to monitor the status of the boiler replacement project at Eielson AFB to ensure reasonable progress is made.”*? If the source is already indicating that it will control within the planning period, please discuss why the State is monitoring this source instead of scheduling the reduction under the authority of the rule? Does the State have discretion to schedule controls on other facilities earmarked for monitoring?

Response:

DEC did not originally intend to say 2028 instead of 2064. Currently the USAF has not indicated whether they intend to replace the existing coal-fired boilers within this planning period. DEC does not have discretion to schedule controls on other facilities earmarked for monitoring because we cannot prescribe the control and/or schedule for implementing such control, without incorporating the analysis into the SIP. Therefore, DEC has modified the Eielson AFB section of the SIP to require the USAF to either establish an enforceable retirement date for the remaining coal-fired boilers EUs 1 through 4 or complete a full four-factor analysis for add on SO₂ pollution control technologies to include wet scrubbers, DSI, and SDA by July 1, 2023.

Comments:

On page 231, the statement is made *“Without monitoring data, ADEC and EPA cannot directly measure local pollution increases from utilization of these shipping routes”*. The potential increase is along the Northwest Passage near the Bering Sea Class I area. With monitoring unavailable, the State should consider basic modeling analysis to estimate pollution increases.

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Response:

DEC appreciates FWS's desire for additional efforts to analyze potential increases in shipping at this very remote Class I area. However, given that these offshore marine shipping emissions are outside state control, this would likely be more appropriately addressed by federal agencies that have both the resources and expertise to potentially do this type of modeling for an extremely remote area as well as the ability to influence international control programs.

Marine traffic increases near the Bering Sea Wilderness Area (BSWA) are largely predicated on trans-Arctic shipping routes becoming increasingly utilized over the 21st Century due to ice sheet thinning. This increase in shipping is predicted based on expectations for continued climate change-driven thawing and ongoing environmental changes in the Arctic Circle. Modeling both climate change as well as potential shipping responses to this is exceedingly difficult given the number of modeling inputs that need to be taken into consideration (IPCC climate models, economic growth scenarios, etc.) that would impact these long-term models.

The IPCC models involved with these modeling inputs include several climate predictions out to 2060 which include low, mid, and high-emissions/business-as-usual scenarios which differ greatly in the interconnected climate heating outcomes (1.5, 4.5 and 7 degrees Celsius) based on the atmospheric greenhouse gas concentrations. These concentration figures and the related ice thinning are major inputs for trans-Arctic shipping route utilization and potential traffic increases which would produce visibility-impairing pollution.

Conducting state modeling for these potential outcomes would require assistance from several agencies, including the U.S. Coast Guard and shipping companies which would utilize routes. At present, this is beyond the resource capabilities of the state. EPA has a significant resource in its NEI marine emissions and traffic modeling, which includes satellite GPS and transponder locations to assist with total vessel traffic estimations. Using such resources, EPA is in a better position than DEC to conduct potential marine traffic estimations for trans-Arctic shipping routes using both the IPCC GHG atmospheric concentrations models, as well as building the tertiary datasets needed to provide additional inputs needed for traffic modeling.

A secondary consideration that must be considered is the growth of shoreside support facilities which would facilitate increased ship traffic. This growth would facilitate trans-Polar shipping and allow for more vessels to use the trading lanes, further accelerating the growth in the use of these routes. Modeling these inputs accurately is difficult with current state resources and is dependent on both market and environmental conditions for traffic increase modeling.

DEC will send recommendations to EPA to consider these concerns and support for such modeling for use in the next round of Regional Haze planning. Based on current warming trends, it is unlikely that this will be a significant concern for local air quality and visibility planning until the Third Planning Period. DEC also recommends that the FWS consult with EPA on opportunities to better analyze impacts at the Bering Sea Class I area given the inability to locally monitor air quality and visibility impacts in such a remote location.

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Comments:

Section 3, Measures to Mitigate Impacts from Construction Activities. Please consider including discussion of how the State will mitigate impacts from future construction from the previously described oil/gas development off Tuxedni National Wildlife Refuge. Construction activities of offshore oil/gas platforms can have significant impacts to Class I areas.

Response:

DEC is proposing new regulations to establish a Regional Haze Visibility Protection Area to ensure that an application for a construction permit, new permit, permit renewal, or permit modification specifically addresses information related to possible impacts on the reasonable further progress goals for Class I areas, as identified in the State Air Quality Control Plan. This Visibility Protection Area would apply to new facilities within the parameters of Figure III.K.13 H-1 and would include applications for construction of new facilities or modifications to existing facilities.

Comments:

On page 240, there is a troubling statement “*At Simeonof, reducing local emissions may not benefit visibility improvement as indicated by the 2028 projected MID being higher when all U.S. anthropogenic emissions are eliminated (13.5 dv versus 12.6 dv).*” Please discuss in more detail this modeled behavior. Does this result indicate a problem with the modeling system?

Response:

The statement is not about the modeling system, but it is due to the fact that when you take away all local Alaska emissions in the model run there is no change in visibility. The “zero out” run removes all local Alaska emissions. In Simeonof there is no impact because there are only very small emission sources that do not contribute significantly to Regional Haze, and the majority of the emissions seen are impacts from anthropogenic and natural sources that are not local emissions (for example: international shipping and long range transport pollution or natural emissions from volcanos, DMS (di-methyl sulfide and sea salt).

Comments:

On page 244, we encourage the State to work with EPA, and other governmental entities, in pursuit of solutions to reduce impacts at Simeonof through international treaty.

Response:

Regional Haze - Federal Land Manager RTC

The federal government and the Department of State (DOS) have primacy in all international diplomatic relations, and the State can only work with its federal partners to communicate its concerns regarding IMO fuel regulations. The EPA serves as DEC's point of contact during DOS-led diplomatic negotiations regarding the IMO and other international environmental organizations. At present, the IMO low-sulfur marine diesel regulations have been in place since January 1, 2020, roughly 21 months as of September 2021. The international agreement was binding on all IMO signatory states for the sale of, and regulatory enforcement towards, low-sulfur marine diesel to commercial vessels.

The Russian Federation has requested a four-year phased implementation period for vessels operating within its waters and inland waterways which would place the endpoint in 2024. The Russian Federation operates a large fleet of ice-classed civilian and military vessels, including cargo and ice breakers, along its extensive Arctic coastline. These vessels also operate on the Russian side of the maritime boundary in the Bering Sea, meaning that there is a potential for Russian-generated SO₂ and PM to be transported into Alaska airsheds and potentially impact visibility at nearby coastal Class I areas.

In the development of the Second Planning Period Progress Report, at least three years of data on the SIME1 monitor will be available for review to assess potential changes resulting from the IMO low-sulfur diesel rule and to examine whether it has reduced visibility impacts.

DEC will communicate any issues or concerns during analysis review to EPA. If emissions increases occur, or visibility declines, at coastal Class I areas are found to be associated with international marine diesel consumption, DEC will raise this issue to EPA to address through international channels and the DOS.

Attachments

Regional Haze - Federal Land Manager RTC

Attachment A.1
National Park Service Comments

Regional Haze - Federal Land Manager RTC

From: [Peters, Melanie](#)
To: [Birnbaum, Molly \(DEC\)](#); [Edwards, Alice L S \(DEC\)](#); [Goodfellow, Paul J \(DEC\)](#); [Heil, Cynthia L \(DEC\)](#); [Huff, Deanna M \(DEC\)](#); [Jones, Dave F \(DEC\)](#); [Renovatio, James J \(DEC\)](#); [Trost, Barbara E \(DEC\)](#); [Simpson, Aaron J \(DEC\)](#)
Cc: [Paul Burger](#); [Blakesley, Andrea J](#); [King, Kirsten L](#); [Vimont, John](#); [Shepherd, Don](#); [Stacy, Andrea](#); [Miller, Debra C](#); [Allen, Tim](#); [Ming, Jaron E](#); karen.dillman@usda.gov; [Anderson, Bret A -FS](#); [Clark, Adam](#); [Kotchenruther, Robert](#)
Subject: NPS Alaska Regional Haze Consultation Documentation
Date: Monday, July 26, 2021 4:03:36 PM
Attachments: [NPS-AK_RH_ConsultationDocumentation_07.2021.pdf](#)

Hello Molly,

The National Park Service (NPS) appreciates the opportunity to review the May 2021 Federal Land Manager (FLM) review draft of the Alaska Regional Haze State Implementation Plan (SIP). On July 19, 2021, NPS Air Resources Division (ARD), NPS Interior Region 11, and Denali National Park & Preserve staff hosted a regional haze SIP review consultation meeting with Alaska Department of Environmental Conservation staff. Representatives from the U.S. Fish and Wildlife Service, U.S. Forest Service, and Environmental Protection Agency Region 10 also attended. An annotated set of slides shared during this meeting are attached. This email and attachment serve as documentation of NPS conclusions and recommendations resulting from formal regional haze consultation as required by 42 U.S.C. §7491(d).

As you know, Alaska is home to four Class I areas: Bearing Sea, Simeonof, and Tuxedni National Wildlife Refuge/National Wilderness Areas; and Denali National Park & Preserve (NP&P). Of these, only Denali NP&P is managed by the NPS and is the focus of our review.

We commend Alaska for putting together a well laid out and detailed SIP, and for engaging with NPS in the SIP development process. We are satisfied that the weighted emission potential and area of influence analysis undertaken by Alaska identified a reasonable set of sources in the state for potential four-factor analysis. In future planning periods we ask that the state evaluate the contribution of ammonium nitrate to haze and consider including NO_x sources if appropriate.

Our review of the draft SIP finds that Alaska incorrectly identifies the Trapper Creek IMPROVE monitor (TRCR1) as the official IMPROVE monitor for Denali NP&P. The Denali Headquarters IMPROVE site (DENA1) is recognized by the NPS, EPA, WRAP TSS, and IMPROVE steering committee as the official monitor for this Class I area. The DENA1 monitor has been in continuous operation 13 years longer than Trapper Creek and better represents the 2/3 of the park acreage located on the north side of the Alaska Range. We acknowledge a long-standing disagreement with the state of Alaska on this point and reiterate our request that Alaska correct this error in the draft SIP. We also value the monitoring data and historic record of air quality provided by the TRCR1 monitor and recommend that Alaska continue the precedent of tracking reasonable progress for both TRCR1 and DENA1 in this and future planning periods.

With respect to the four-factor analysis and limited reviews conducted for three power plants

Regional Haze - Federal Land Manager RTC

affecting Denali NP&P we appreciated the discussion during our consultation call and the supplementary information provided. We now have the following feedback:

- North Pole Power Plant
 - We agree with the outcome of the four-factor analysis for this facility.
 - We also have questions regarding Unit 6. Based on Table III.K.13.F-6 of the SIP, it appears that Unit 6 is permitted but not installed. The estimated installation date for unit 6 is 2024. When was Unit 6 permitted? Was it permitted in 2005 along with Unit 5? If so, will a BACT re-evaluation be required when the unit is installed in 2024?
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 - We requested additional information during our consultation call on July 19th, 2021.
 - Alaska staff directed us to the particulate matter serious nonattainment SIP documents posted online. We appreciate this information and recommend that all relevant materials should be included in the regional haze SIP. Our team needs additional time to evaluate the technical feasibility and cost-effectiveness documentation for the Chena Power Plant from the nonattainment SIP and will provide feedback by August 13th, 2021.
- Healy Power Plant
 - Because Healy Unit 2 is effectively controlled for SO₂, we agree with the limited review for this emission unit.
 - However, we disagree with Alaska's limited review of SO₂ control opportunities for Healy Unit 1.
 - This unit is not effectively controlled for SO₂, the primary haze-causing pollutant for nearby Denali NP&P.
 - The consent decree does not address additional SO₂ emission reductions if the facility continues operating after 2024.
 - Alaska should require a full four-factor analysis of SO₂ control opportunities for Healy Unit 1 and require implementation of reasonable controls in this planning period.

Additional progress will be needed to reach the ultimate regional haze goal of no human-caused visibility impairment at the park. To that end, we look forward to continuing our work with Alaska for clean air and clear views into the future. If you have any questions, do not hesitate to reach out to us.

Best,
Melanie

Regional Haze - Federal Land Manager RTC

--

Melanie V. Peters
NPS, Air Resources Division

Office: 303-969-2315
Cell: 720-644-7632



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Attachment A.2
National Park Service Consultation Documentation

Regional Haze - Federal Land Manager RTC



7/19/2021. NPS Formal Consultation Call with Alaska Department of Environmental Conservation for Regional Haze SIP Development. Attendees:

- National Park Service
 - Paul Burger, Interior Region 11 – Alaska
 - Andrea Blakesley, Denali NP&P - Alaska
 - Kirsten King, Air Resources Division (ARD) – Denver, CO
 - Melanie Peters, ARD – Denver, CO
 - Don Shepherd, ARD – Denver, CO
 - Andrea Stacy, ARD – Denver, CO
- Alaska Department of Environmental Conservation
 - Molly Birnbaum
 - Alice Edwards
 - Paul Goodfellow
 - Cindy Heil
 - Deanna Huff
 - Dave Jones
 - James Renovatio
 - Barbara Trost
 - Aaron Simpson
- Fish & Wildlife Service
 - Tim Allen
 - Jaron Ming
- U. S. Forest Service
 - Karen Dillman
- Environmental Protection Agency (EPA) Region 10
 - Adam Clark
 - Bob Kotchenruther

NPS photos from left to right: Acadia NP, Denali NP&P, Yellowstone NP, Grand Canyon NP

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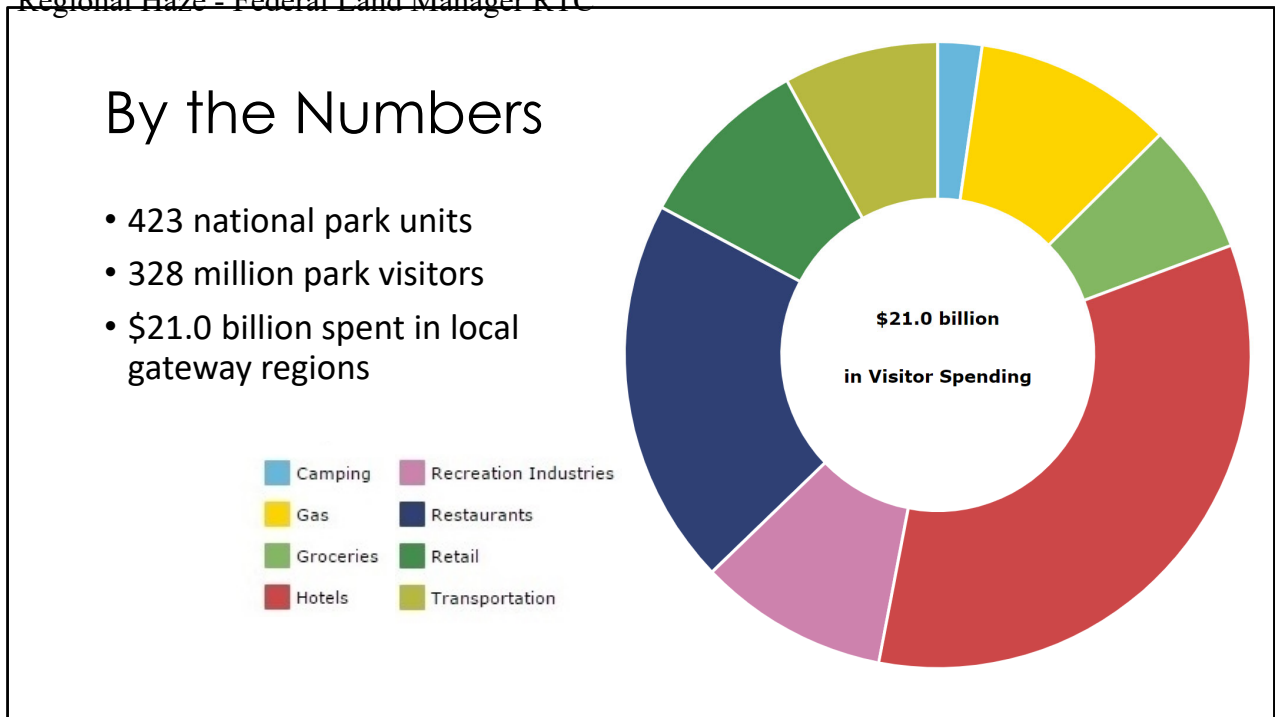
Agenda

- Welcome & Introductions
- NPS Regional Haze Background
- NPS Class I Area in Alaska
 - Denali National Park
- NPS SIP Feedback for Alaska
 - Engagement
 - Source Selection
 - IMPROVE Monitor Use
 - MID/Glidepath Adjustments
 - EGU Review
- Next-Steps



We welcome discussion at any time during this presentation. Please feel free to ask questions or add information along the way.

NPS Photo of Denali NP&P by Jacob W Frank



Nationally in **2019** (a 2020 report was not completed due to the pandemic)

328 million park visitors spent an estimated \$21 billion in local gateway regions while visiting National Park Service lands across the country.

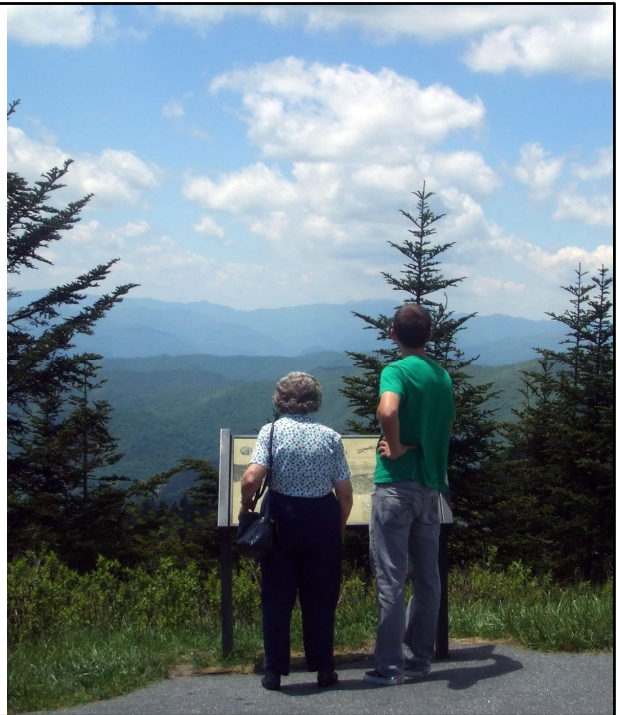
These expenditures supported a total of

- 341 thousand jobs,
- \$14.1 billion in labor income,
- \$24.3 billion in value added, and
- \$41.7 billion in economic output in the national economy.

<https://www.nps.gov/subjects/socialscience/vse.htm>

By the Numbers

- **48** Class I areas
- In **24** states
- **90%** of visitors surveyed say that scenic views are **extremely** to **very** important
- **100%** of visitors surveyed rate clean air in the **top 5** attributes to protect in national parks



List of Class I areas: <https://www.nps.gov/subjects/air/npsclass1.htm>

States with at least one Class I area:

AK, AZ, CA, CO, FL, HI, ID, KY, ME, MI, MN, MT, NC, ND, NM, OR, SD, TN, TX, UT, VA, VI, WA, WY

Statistics citation:

Kulesza C and Others. 2013. National Park Service visitor values & perceptions of clean air, scenic views, & dark night skies; 1988–2011. Natural Resource Report. NPS/NRSS/ARD/NRR—2013/622. National Park Service. Fort Collins, Colorado

NPS photo of Great Smoky Mountains NP, NC & TN

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The NPS has an affirmative legal responsibility to protect clean air in national parks.

- **1916 NPS Organic Act:** created the agency with the mandate to conserve the scenery, natural and cultural resources, and other values of parks in a way that will leave them unimpaired for the enjoyment of future generations. This statutory responsibility to leave National Park Service units “unimpaired” requires us to protect all National Park Service units from the harmful effects of air pollution.
- **1970 Clean Air Act:** authorized the development of comprehensive federal and state regulations to limit emissions from both stationary (industrial) sources and mobile sources. The Act also requires the Environmental Protection Agency to set air quality standards.
- **1977 Clean Air Act Amendments:** these amendments to the Clean Air Act provide a framework for federal land managers such as the National Park Service to have a special role in decisions related to new sources of air pollution, and other pollution control programs to protect visibility, or how well you can see distant views. The Act established a national goal to prevent future and remedy existing visibility impairment in national parks larger than 6,000 acres and national wilderness areas larger than 5,000 acres that were in existence when the amendments were enacted (Class I areas).
- **1990 Clean Air Act Amendments:** created regulatory programs to address acid rain and expanded the visibility protection and toxic air pollution programs. The acid rain regulations began a series of regional emissions reductions from electric generating facilities and industrial sources that have substantially reduced air pollutant emissions.

NPS photo of Washington DC: <https://npgallery.nps.gov/AirWebCams/wash>

Visibility goal:
Restore natural conditions by 2064



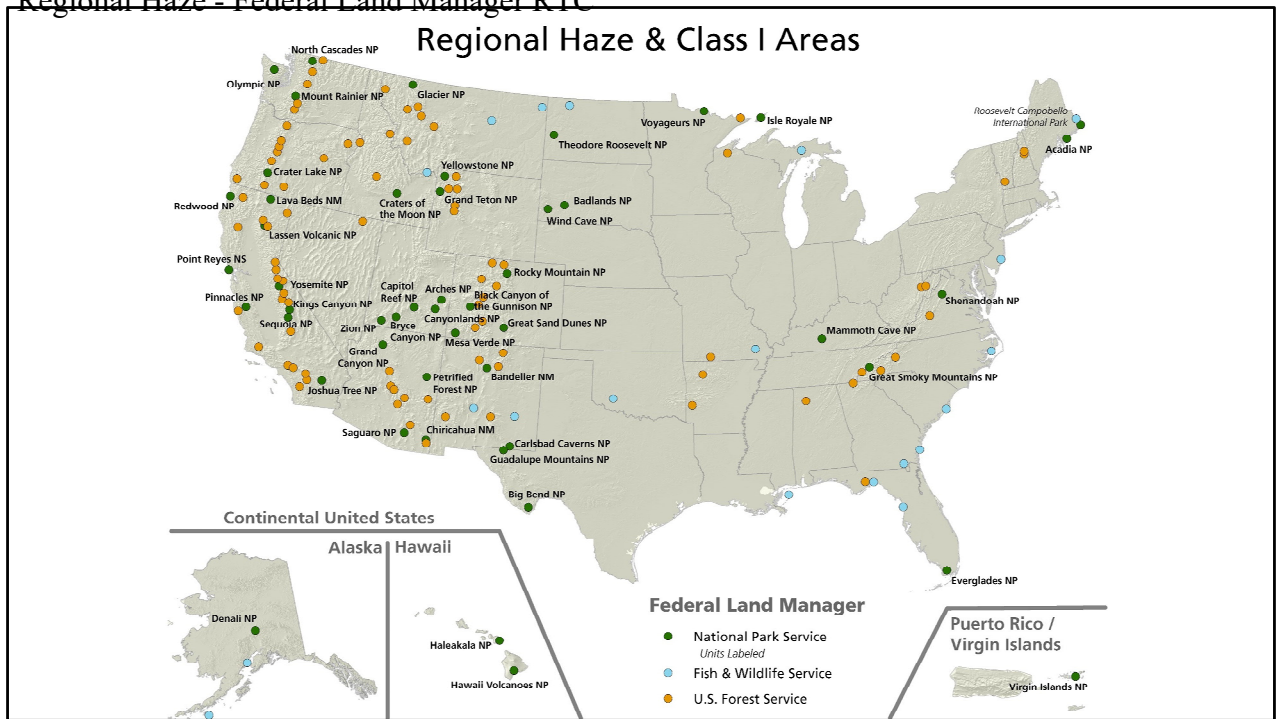
Denali National Park, Alaska

Left to right images illustrate hazy to clear conditions.

Haze obscures the color and detail in distant features.

NPS photos

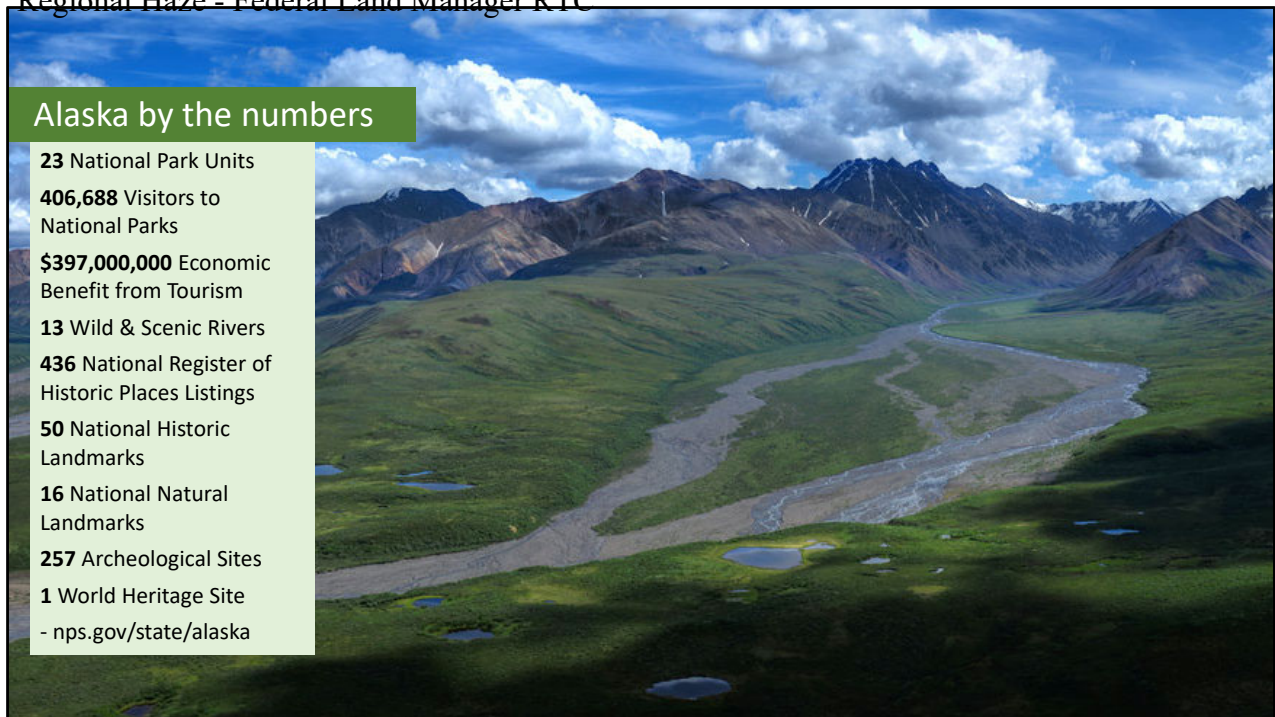
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As you know, the NPS is one of three Federal Land Managers (FLMs) with responsibility for the 156 Class I areas nationwide. The NPS manages 48 Class I areas.

NPS map of Class I areas, 2020

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Parks managed by the National Park Service in Alaska:

1. [Alagnak](#) Wild River; King Salmon, AK
2. [Aleutian Islands World War II](#) National Historic Area; Unalaska/Dutch Harbor, AK
3. [Aniakchak](#) National Monument & Preserve; King Salmon, AK
4. [Bering Land Bridge](#) National Preserve; Nome, AK
5. [Cape Krusenstern](#) National Monument, Kotzebue, AK
6. [Denali](#) National Park & Preserve, Denali Park, AK
7. [Gates Of The Arctic](#) National Park & Preserve, Bettles, AK
8. [Glacier Bay](#) National Park & Preserve; Gustavus, AK
9. [Katmai](#) National Park & Preserve; King Salmon, AK
10. [Kenai Fjords](#) National Park; Seward, AK
11. [Klondike Gold Rush](#) National Historical Park; Skagway, AK
12. [Kobuk Valley](#) National Park; Kotzebue, AK
13. [Lake Clark](#) National Park & Preserve; Port Alsworth, AK
14. [Noatak](#) National Preserve; Kotzebue, AK
15. [Sitka](#) National Historical Park; Sitka, AK
16. [Wrangell - St Elias](#) National Park & Preserve; Copper Center, AK
17. [Yukon - Charley Rivers](#) National Preserve; Eagle, AK

*Note “& Preserve” units each count as 2 in the tally for 23 total official units...

NPS photo of Polychrome Pass, Denali NP&P by Jacob W Frank.

Denali National Park & Preserve

1986 Denali NP&P General Management Plan summarized in the 2014 Denali NP&P Foundation Statement



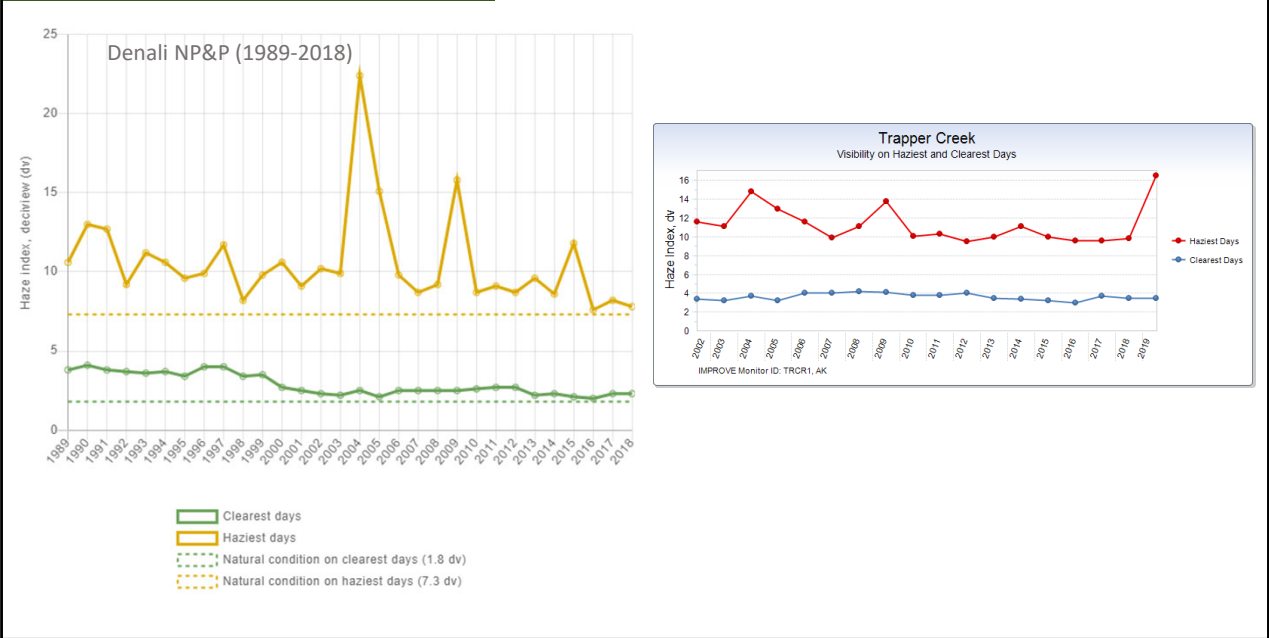
Park Purpose	Significance Statements
<p>Why did Congress and the president establish the park as a unit of the national park system? <i>(as paraphrased and condensed from multiple pieces of legislation)</i></p> <p>Denali National Park and Preserve was established as a park...</p> <ul style="list-style-type: none"> • for people's enjoyment and benefit • to preserve wildlife • to preserve scenic beauty • to preserve extensive, unaltered natural ecosystems • to protect historic and archeological sites • to preserve wilderness resource values and related recreational opportunities 	<p>What is most important about the park's natural and cultural resources and values? <i>(consistent with language in the park's Consolidated General Management Plan (1986), as amended in 1997 and 2006)</i></p> <ol style="list-style-type: none"> 1. Large Protected Area 2. Mountains and Glaciers 3. Wildlife and Habitat 4. Scenic Resources and Air Quality 5. Cultural Resources 6. Mountaineering 7. Wilderness Recreation 8. Paleontological Resources

Denali National Park & Preserve is Alaska's only NPS Class I area.

One of the purposes of establishing Mount McKinley National Park in 1917 was for the preservation of natural curiosities and their scenic beauty. Mount McKinley NP was expanded and renamed Denali National Park & Preserve in 1980. Air Quality and Scenic Resources are among the park's most important resources and values, as identified in the 1986 General Management Plan.

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Long-term Visibility Trends



There is a long history of IMPROVE visibility monitoring at Denali NP&P (32+ years).

The regional haze metric is now based on most-impaired days rather than haziest. Still, it is interesting to see the range of visibility conditions experienced by park visitors and monitored in the park. It is also interesting to note the dramatic influence of fire on the haziest days in 2004, 2009, and 2015.

Long term visibility trend graphs from:

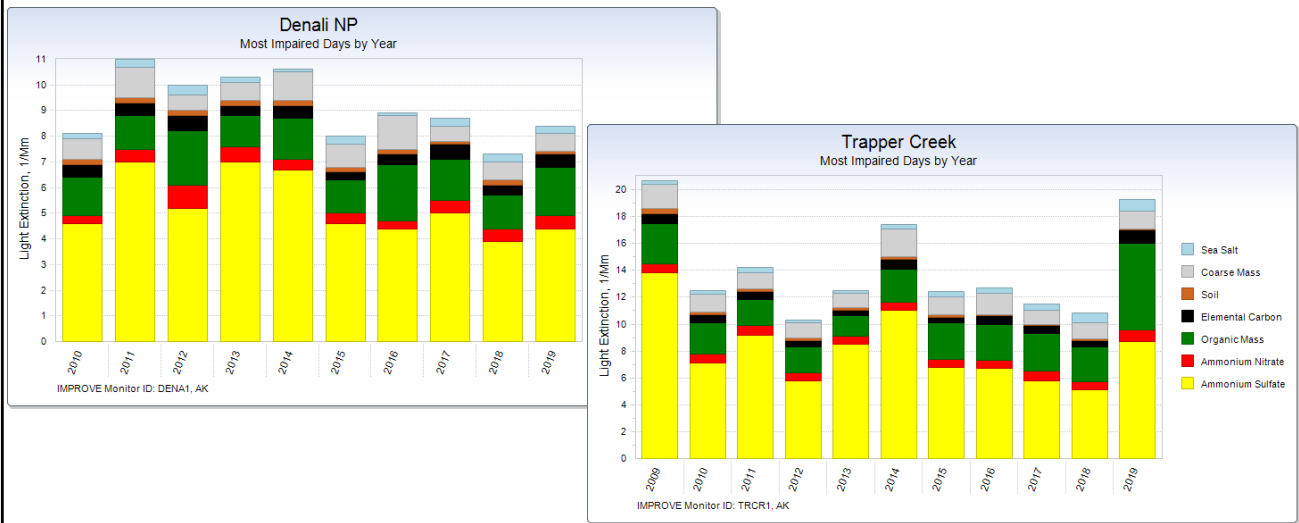
DENA1

[https://www.nps.gov/subjects/air/park-conditions-trends.htm?tabName=trends&parkCode=DENA¶mCode=Visibility&startYr=1989&endYr=2018&monitoringSite=DENA1%20\(IMPROVE\)&timePeriod=Long-term](https://www.nps.gov/subjects/air/park-conditions-trends.htm?tabName=trends&parkCode=DENA¶mCode=Visibility&startYr=1989&endYr=2018&monitoringSite=DENA1%20(IMPROVE)&timePeriod=Long-term)

TRCR1

<http://vista.cira.colostate.edu/Improve/aqrv-summaries/>

Regional Haze - Federal Land Manager RTC Haze Composition on Most Impaired Days



These annual extinction bar graphs show that over the past 10 years, light extinction appears relatively steady on most impaired days. Ammonium sulfate historically dominated impairment and is still the main contributor to anthropogenic haze at Denali NP&P.

Because these graphs are focused on the most impaired set of days, they are not dominated by organic carbon as the haziest days (from the previous slide) are. This illustrates an appropriate focus on anthropogenic pollutants.

Most-impaired days annual light extinction composition stacked bar graph from: <http://vista.cira.colostate.edu/Improve/aqrv-summaries/>

Alaska Draft SIP Feedback

Engagement

- We commend Alaska for early engagement with NPS during the SIP development process.
- We first met with the state in November of 2019 to discuss source selection and have been pleased with the level of continuing discussion and involvement.



NPS photo of a sharp shinned hawk, Denali NP&P by Tim Rains



Alaska Draft SIP Feedback

Source Selection

- Alaska used a weighted emission potential (WEP) area of influence (AOI) analysis to identify anthropogenic SO₂ sources for consideration.
- This methodology identified 26 sources including 3 of the sources initially recommended by the NPS.
- We are satisfied with sources identified by Alaska in this round and ask that the state evaluate the influence of NO_x and consider including NO_x sources in the next planning period if appropriate.

Note, our initial recommendation of 15 sources was based on Q/d and only pertained to Denali NP&P. We did not analyze and do not represent the other FLMs. Also, our initial recommendation included NO_x sources and excluded airports, ports, and railroads.

NPS photo of sled dogs pulling a sled, Denali NP&P by Jacob W Frank

Alaska Draft SIP Feedback

IMPROVE Monitor Use

Alaska incorrectly identifies the Trapper Creek IMPROVE monitor (TRCR1) as the official IMPROVE monitor for Denali NP&P.

- The Denali Headquarters IMPROVE site (DENA1) is recognized by the NPS, EPA, WRAP TSS, and IMPROVE steering committee as the official monitor for this Class I area.
- The monitor has been in continuous operation 13 years longer than Trapper Creek and better represents the 2/3 of the park acreage located on the north side of the Alaska Range.
- Alaska should update the draft SIP to correct this error.

Alaska Draft SIP Feedback

Reasonable Progress Goals

- The Denali NP&P Glidepath and Reasonable Progress Goals should include the official IMPROVE monitor for the park, DENA1.
- We recognize that:
 - The TRCR1 monitor better represents the portion of the park on the south side of the Alaska range, and
 - Alaska referenced both DENA1 and TRCR1 in the state's 2011 Regional Haze SIP.
- We recommend that Alaska continue the precedent of referring to both monitors when evaluating progress in this and future planning periods.

The Denali NP&P Glidepath and Reasonable Progress Goals should include the official IMPROVE monitor for the park, DENA1. From the 2003 Tracking Progress Guidance: "For mandatory Federal Class I areas with multiple representative monitors, separate visibility values and progress goals should be established for each site representing the area."

Regional emissions affecting visibility and air quality on both sides of the Alaska Range are likely to change as we progress toward the 2064 goal of natural conditions. Therefore, it is important to continue tracking reasonable progress goals on both sides of the Alaska Range.

We recommend that Alaska continue to reference both the DENA1 site and the TRCR1 site as representative of Denali.

Alaska Draft SIP Feedback

MID and Glidepath Adjustments

- Volcanic SO₂
 - Alaska's approach to SO₄ screening is based on the assumption that all episodic SO₄ events are due to volcanic eruptions.
 - This SO₄ screening approach may not be appropriate for adjusting MIDs at Denali without modeling volcanic eruptions/degassing and transport. Anthropogenic SO₂ sources may be a relatively larger contribution to the Interior Class I Area than to coastal Class I Areas.

- International
 - Please note that international adjustments to the 2064 endpoint are likely to change in the future and should not be viewed as static, or one-time adjustments.

Alaska Draft SIP Feedback

EGU Review

- Alaska conducted a four-factor review for the North Pole Power Plant and a limited review for the Chena and Healy power plants.
- Please walk us through the state's findings and control determinations for these facilities.
- We will share initial comments/questions next.

Alaska Draft SIP Feedback

North Pole Comments

- How were fuel switching costs calculated?
- Please provide your analysis.

Chena Comments

- Please provide the recent analysis of emission control options and cost calculations.

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Alaska Draft SIP Feedback

Healy Comments

- Because Healy Unit 2 is effectively controlled for SO₂ the limited review for this emission unit makes sense.
- However, we disagree with Alaska's limited review of SO₂ control opportunities for Healy Unit 1.
 - This unit is not effectively controlled for SO₂, the primary haze-causing pollutant for nearby Denali NP&P.
 - Unless an enforceable shut down date is included in the SIP, Alaska should require a full four-factor analysis of SO₂ control opportunities for Healy Unit 1 and require implementation of reasonable controls.
 - Such action would responsibly address haze-causing SO₂ emissions from Healy Unit 1 in this planning period.

Additional Feedback on Unit 1:

As acknowledged in the SIP, the consent decree does not require SO₂ emission reductions for Unit 1. Therefore, the consent decree does not address our regional haze concerns for this facility. Based on the EPA RH guidance, Unit 1 would not be considered "effectively controlled" for SO₂ in this round of RH planning. Furthermore, Alaska determined that the current limit (0.30 lb/MMBtu) was BART in the first round (partly based on a short equipment lifetime & assumed shutdown date). We disagreed with this BART determination in 2010, noting that optimization of the existing DSI system was very cost effective and that their analysis of a new lime-spray dryer and wet limestone FGD system over-estimated the costs and underestimated the benefits of these retrofits. We also noted that the assumed 8-year equipment life should be federally enforceable if relied on to determine that controls are not cost-effective. We also commented on Unit 1 SO₂ in our 2012 letter to EPA regarding the Alaska RH SIP: "For SO₂, we recommend that EPA require GVEA to evaluate addition of a spray dryer with plume reheat and to test whether the efficiency of the existing dry sorbent injection system can be increased to improve SO₂ controls."

A review of the 2020 CAMD database reveals that there are hundreds of coal-fired units with significantly higher SO₂ control efficiencies than Healy Unit 1. There are 14 facilities in CAMD with DSI control systems—seven of these facilities report much lower SO₂ emission rates on a lb/MMBtu basis than Healy Unit 1 is achieving in practice (0.26 lb/MMBtu). Therefore, it is difficult to construe this unit as "effectively controlled."

Because GVEA has not yet committed to a 2024 shutdown date (per the allowable timeframes in the CD), we recommend that an SO₂ four-factor analysis is necessary for Healy Unit 1. These cost analyses should include optimizing the existing DSI system as well as retrofits with new FGD systems (as was done for BART). **This is very important given the proximity of the Healy facility to Denali NP&P.** If GVEA declines the shutdown option, Unit 1, which is poorly-controlled for SO₂, will continue to operate well beyond the next planning period.

This recommendation is consistent with the recent EPA RH clarification memo, which states: "Therefore, on-the-way measures, including anticipated shutdowns that are relied on to forgo a four-factor analysis or to shorten the remaining useful life of a source, are necessary to make reasonable progress and must be included in a SIP."

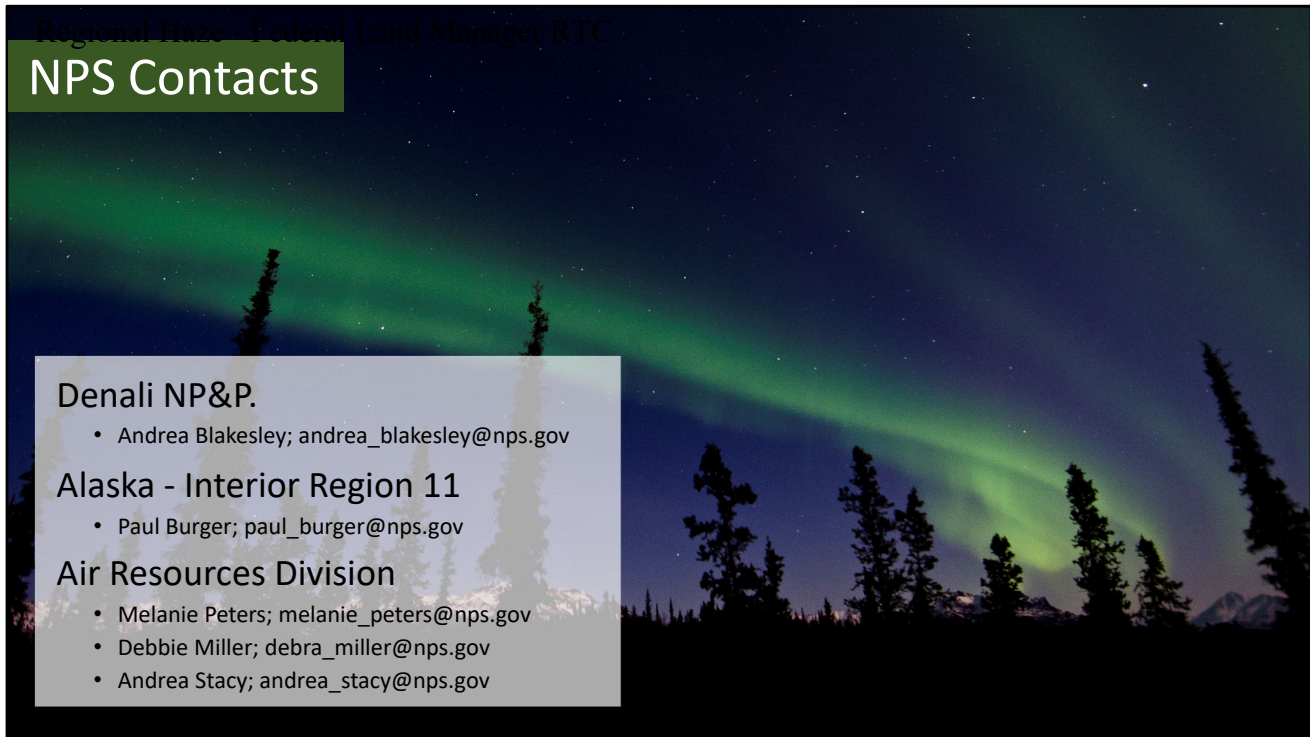
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Next Steps

- Thank you for meeting with us!
- Please share:
 - Anticipated SIP schedule
 - How you will respond to NPS comments
- Please let us know:
 - When the public comment period opens
 - If/when a public hearing will be held
- The NPS will:
 - Email call summary & additional comments
 - By **July 26, 2021**
 - Share our comments with EPA Region 10

The NPS will submit an email summary of our July 19, 2021 consultation call along with final review comments by July 26, 2021.

We ask that the state notify us when the draft SIP will be open for public review and comment, and alert us to any public hearing dates.



Please reach out to us with any questions.

For any formal notifications of public documents, please include the above list of NPS staff.

The NPS values clean air and clear views and recognizes these as essential to our visitor experience and the very purpose of our Class I areas. We recognize opportunities for progress to be made in this planning period as we strive toward the goal of unimpaired visibility. We welcome future opportunities to engage with the Alaska Department of Environmental Conservation and work together on efforts to reduce haze-causing pollution and address regional haze in our national parks.

NPS photo of Aurora Borealis, Denali NP&P by Katie Thoresen

Regional Haze - Federal Land Manager RTC

Attachment B
U.S. Fish & Wildlife Service Comments

Regional Haze - Federal Land Manager RTC

From: [Birnbaum, Molly \(DEC\)](#)
To: [Heil, Cynthia L \(DEC\)](#); [Edwards, Alice L S \(DEC\)](#)
Cc: [Goodfellow, Paul J \(DEC\)](#); [Huff, Deanna M \(DEC\)](#); [Simpson, Aaron J \(DEC\)](#)
Subject: FW: Alaska Draft Regional Haze SIP, Second Round
Date: Friday, August 6, 2021 1:36:05 PM

fyi

From: Allen, Tim <tim_allen@fws.gov>
Sent: Friday, August 6, 2021 1:27 PM
To: Birnbaum, Molly (DEC) <molly.birnbaum@alaska.gov>
Cc: Ming, Jaron E <jaron_ming@fws.gov>
Subject: Alaska Draft Regional Haze SIP, Second Round

Molly,

Thank you for the opportunity to review the Alaska Department of Conservation's draft State Air Quality Control Plan (May 2021), second-round amendments for Regional Haze (RH). The State's draft addresses national visibility program progress at Bearing Sea, Simeonof, and Tuxedni Class I areas, managed under the public's trust, by the U.S. Fish & Wildlife Service (FWS). This email serves as documentation of FWS review and fulfills the State's requirements under the 40 CFR 51.308 for consultation prior to public hearing.

Please consider the following comments:

On pages 11, 75, and 213, language suggests that Alaska limited their approach and/or conditionally considered controls based on the current placement on Class I area glidepaths. The preamble of the RH rule discusses the Uniform Rate of Progress (URP) as not a "safe-harbor" and should not be used as a factor to evaluate reasonable progress. Please consider whether sources offer reasonable control opportunity without consideration of the current placement on the glidepath.

On page 22, the Trapper Creek IMPROVE monitor is identified as the "official" site for Denali National Park. Later, page 240, a reasonable progress goal (RPG) is projected for Trapper Creek (not DENA1). Though we acknowledge the value of the Trapper Creek site, the IMPROVE network identifies the DENA1 as an "IMPROVE" site and TRCR1 as a "protocol" site. There is no objection if the State wants to include and project progress for the Trapper Creek site; however, we do think that proper recognition and RPG projection at the DENA1 site is required.

On page 55, bar charts are presented to enhance description of 2016 vs. 2028 emission levels. The charts on the right side of the page are not presented with the same x-axis scale which may mislead the reader. A quick view may appear to show equal or reduced emission

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totals when in fact they increase. Please use the same x-axis scale.

In general, the state utilizes tools (page 79, SOx WEP of >5% or more) to identify individual sources for 4-factor review. The Long Term Strategy section continues discussion under this constraint and concludes that no individual control is identified. The State should consider the benefits from evaluating and potentially applying controls on a group of similar sources (source category).

On page 107, there is a potential typo, *“At this time, the USAF is still planning to move forward with the boiler replacement project before the end of the 2064 Regional Haze planning period, which will significantly reduce SO2 emissions for the stationary source.”* Do you mean that to say 2028? The discussion surrounding the facility modification indicates *“In the years to come, as the older boilers are replaced, there will be a substantial decline in emissions from the stationary source which will result in a positive impact on visibility.”* Later, it states that *“ADEC will continue to monitor the status of the boiler replacement project at Eielson AFB to ensure reasonable progress is made.”*? If the source is already indicating that it will control within the planning period, please discuss why the State is monitoring this source instead of scheduling the reduction under the authority of the rule? Does the State have discretion to schedule controls on other facilities earmarked for monitoring?

On page 231, the statement is made *“Without monitoring data, ADEC and EPA cannot directly measure local pollution increases from utilization of these shipping routes”*. The potential increase is along the Northwest Passage near the Bering Sea Class I area. With monitoring unavailable, the State should consider basic modeling analysis to estimate pollution increases.

Section 3, Measures to Mitigate Impacts from Construction Activities. Please consider including discussion of how the State will mitigate impacts from future construction from the previously described oil/gas development off Tuxedni National Wildlife Refuge. Construction activities of offshore oil/gas platforms can have significant impacts to Class I areas.

On page 240, there is a troubling statement *“At Simeonof, reducing local emissions may not benefit visibility improvement as indicated by the 2028 projected MID being higher when all U.S. anthropogenic emissions are eliminated (13.5 dv versus 12.6 dv).”* Please discuss in more detail this modeled behavior. Does this result indicate a problem with the modeling system?

On page 244, we encourage the State to work with EPA, and other governmental entities, in pursuit of solutions to reduce impacts at Simeonof through international treaty.

Thank you for all the hard work. The amount of effort shows and is greatly appreciated.

Regional Haze - Federal Land Manager RTC

Tim Allen

U.S. Fish & Wildlife Service

Appendix III.K.13.K Consultation

Contents

Stakeholder Log

FLM Meeting Log

Stakeholder Log

DATE	STAKEHOLDER	NAME	Comm Format	SUMMARY
7/8/2020	NPCA	Jim Adams, Ulla Reeves, Daniel Orozco	Online meeting	NPCA presented on 4F Analysis based on their Q/d perspective. ADEC responded by informing them of state process which is outlined in the EPA guidance and that we were following and using the WESTAR/Ramboll Q/d parameters. DEC told them the WEP and AOI will be posted on the WRAP TSS website. DEC also shared that our largest source of emissions is international (we focused on marine shipping). Alaska issues are not the same as the lower 48 and our strategy was to look at approaches which are reflective of local conditions.
12/16/2020	ANTHC		Web Presentation	Paul Goodfellow presented in the ATCEM Forum an introduction to regional haze. The majority of attendees were native stakeholders.

Federal Land Manager Meeting Log

DATE	Attendees	SUMMARY
Dec 2019	All FLM	Kick off meeting with FLMs: Review of basics of RH planning.
June 2020	All FLM	Second FLM Briefing: Overview of 4-factor analysis progress, RH writing status update
Aug. 2020	USFS/FWS	Meeting with USFS and FWS on Marine Emissions and non-Class I Area visibility impacts
July 2020	NPS	Meeting with NPS on Healy Power Plant Status in Regional Haze Planning
July 2020	All FLM	Follow-up FLM Briefing on Weighted Emissions Potential (WEP) results
Sept. 14, 2020	All FLM	AK permits and your RH planning process! I am following up regarding our discussion on FLM/NPS notification procedures for PSD permits in Alaska. NPS understands ADEC has incorporated 40 CFR 52.21 (p) into 18 AAC 50.306 – Sources impacting Federal Class I areas.
January 19, 2021	All FLM	General overview meeting with all FLMs: Update on TSS data sources; review of sulfate potential source contributions (Ramboll); 4-Factor Methodology Update; Outreach Efforts; SIP Schedule. Verbal agreement with FLMs to conduct a 60-day review of the draft RH Plan once it is completed.
July 19, 2021	NPS/FWS	NPS and FWS meeting and discussion of the agency (NPS) response to AK Draft RH Plan and proposed regulations. ADEC attended and provided input and responses to questions.