United States Department of the Interior
NATIONAL PARK SERVICE
Air Resources Division
P.O. Box 25287
Denver, Colorado 80225

IN REPLY REFER TO:

N3615 (2350)

July 2, 2012

Gregory Nudd
U. S. EPA, Region 9
Air Planning Office, Air Division
75 Hawthorne Street
San Francisco, California 94105

EPA Docket ID: EPA-R09-OAR-2012-0345

Dear Greg:

The National Park Service (NPS) has reviewed the Environmental Protection Agency (EPA)'s proposed "Approval and Promulgation of Implementation Plans; State of Hawaii; Regional Haze State Implementation Plan" published in the Federal Register on May 29, 2012. We generally agree with EPA's assessment of contributions to visibility impairment. To demonstrate reasonable progress to improve visibility at Haleakala and Hawaii Volcanoes National Parks (NPs), we strongly recommend that EPA establish SO_2 emissions limits for electric utilities on Maui as well as on the Island of Hawaii. Our comments are summarized below.

Contribution Assessment:
On the 20% worst visibility days at both Haleakala and Hawaii Volcanoes NPs, sulfate is the primary pollutant contributing to visibility impairment. Sulfate concentrations on the 20% worst visibility days in both parks are primarily due to sulfur dioxide (SO_2) emissions from the Kilauea Volcano in Hawaii Volcanoes NP, a natural and uncontrollable source of visibility impairment. The predominant trade winds are from the northeast to east. Much less frequently, primarily in the winter months, winds from the south or west may transport volcanic emisisons to the IMPROVE monitors in both parks. Emissions from the Kilauea Volcano began in 1983 and vary year to year, making it difficult to project future emissions levels or the specific contribution of the volcanic emissions to visibility impairment at Haleakala and Hawaii Volcano NPs in 2018 or 2064. For example, sulfate levels on the 20% worst days are higher in the 2005-2009 period than in the baseline 2001-2004 period at both Hawaii Volcanoes and Haleakala

NP, reflecting the increased contribution from volcanic emissions in 2008 and 2009. For clarity, we recommend that in Section III. 1. Estimating Natural Visiblity Conditions[1], EPA change the conclusion ". . . in estimating natural conditions for purposes of this first planning period, we have assumed there will be no visbility impact from the volcano" to ". . . in estimating natural conditions for purposes of this first planning period, we have not tried to forecast the future contribution of the volcano to natural background visibility."

On the 20% worst visibility days in the 2000-2004 baseline period, sulfate due to volcanic emissions accounted for roughly 90% of the impairment at Hawaii Volcanoes NP and 60% at Haleakala NP. A fraction of the sulfate at each park is attributable to fossil fuel combustion, but detailed analyses of wind direction and chemical tracers are necessary to differeniate sulfate due to volcanic or manmade emissions. At Hawaii Volcanoes NP, all other pollutants together contribute roughly 10% of the impairment. At Haleakala NP, organic carbon, coarse mass, and nitrate each contribute 9-10% of the impairment on the 20% worst visibility days. On many days during the year volcanic contributions are lower and anthropogenic sources have more significant contributions to visibility. Nitrate indicates fossil fuel combustion; elevated organic carbon and elemental carbon indicate biomass burning, mobile sources, and/or vegetative emissions; and fine soil and course mass indicate local or transported dust. The State of Hawaii Department of Health (DOH)[2, 3]and the Desert Research Institute[4] used chemical tracers as indicators of potential source contributions to visibility impairment at the IMPROVE monitors.

Emissions Controls:
Section 169A of the 1977 Amendments to the Clean Air Act sets a national goal to prevent any future and remedy any existing manmade visibility impairment in mandatory Class I Federal areas. States, or in the case of this Federal Implementation Plan, EPA, must demonstrate reasonable progress in reducing emissions from anthropogenic sources. The Hawaii DOH emissions inventories for 2005 and 2018 indicate that emissions of SO_2, nitrogen oxides (NO_x), and particulate matter (PM) from mobile sources (on-road, non-road, and marine) will decrease by 2018, primarily due to federal rules. However, emissions of SO_2, NO_x, and PM from point sources are projected to increase over the

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[1] 77 FR 31699

[2]Haleakala National Park Visibility Assessment, Regional Haze Program Visibility Assessment. 2012. State of Hawai`i, Department of Health, Clean Air Branch. EPA Docket ID EPA-R09-OAR-2012-0345.

[2] Hawai`i Volcanoes National Park Visibility Assessment, Regional Haze Program Visibility Assessment. 2012. State of Hawai`i, Department of Health, Clean Air Branch. EPA Docket ID EPA-R09-OAR-2012-0345.

[4] Causes of Haze for Hawai`i's Two Class I Areas. 2005. Marc Pitchford, NOAA. EPA Docket ID EPA-R09-OAR-2012-0345.

same time period, and for SO_2 and PM these increases will be greater than the decreases from mobile sources[5].

Visibility modeling conducted for Hawaii DOH demonstrated that several point sources impact visibility at Haleakala and Hawaii Volcanoes NPs[6]. The modeling was conducted both for units that were considered for Best Available Retrofit Technology (BART) and for units that were considered for the reasonable progress demonstration. Whether under the requirements of BART or reasonable progress, EPA needs to evaluate the feasibility of emissions controls for the point sources on both the islands of Maui and Hawaii.

Electricity generation is Hawaii's largest anthropogenic source category for SO_2 emissions. In 2009, the Hawaii State Legislature passed the Clean Energy Omnibus Bill (HB 1464) that calls for a 30% reduction in the state's energy use via efficiency and increases the state's renewable portfolio standard to 40% by 2030. Because the timing of implementation is uncertain, Hawaii DOH's 2018 emisisons inventory does not reflect potential emissions reductions under this Bill. EPA estimates that by 2018 compliance with this rule would lead to the closure of the Kahului Power Plant on Maui and the Shipman Power Plant on Hawaii and significant reductions in utilization (or burning biofuels) for the Maalaea Generating Station on Maui and the Kanoelehua Hill Generating Station and Puna Power Plant on Hawaii. Because the Clean Energy Bill is not federally enforceable, however, these projected emissions reductions cannot be relied on to demonstrate BART or reasonable progress for regional haze.

EPA is proposing to establish a federally enforceable cap on SO_2 emissions on the Island of Hawaii. This cap is based on switching to lower sulfur residual fuel (from the current 1.57 % sulfur to 1.0% sulfur) at three electric generating facilities (Kanoelehua Hill, Puna, and Shipman) on the Island of Hawaii. EPA's proposed SO_2 emissions cap (3,550 tons SO_2 per year) allows higher emissions than are estimated to be remaining by 2018 (1130 tons[7]) under the Clean Energy Bill. EPA used the current costs for 0.5% sulfur fuel oil on Oahu to estimate the costs of 1.0% sulfur fuel oil for utilities on Hawaii and Maui, and therefore likely overestimated the costs of switching to 1.0% sulfur fuel. We believe that EPA's proposed cap is the minimum acceptable action to demonstrate reasonable progress for Hawaii Volcanoes NP. Given the reductions projected under the Clean Energy Bill, we believe a lower SO_2 emissions cap is feasible and justified.

We strongly recommend that EPA also establish a federally enforceable SO_2 emissions cap for the Kahului Power Plant and the Maalaea Generating Station on Maui. This limit could be met by lower sulfur fuel, reduced utilization, or increased biofuels. Under the Clean Energy Bill, SO_2 emissions from these two facilities are projected to be reduced by 83% by 2018[8]. A federally enforceable SO_2 emissions cap for the Kahului and Maalaea

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[5] Tables 8-10, 77 FR 31701
[6] Hawaii BART/RP Supplemental Modeling Results, Docket, EPA-R09-OAR-2012-0345
[7] Table 24, 77 FR 31712
[8] Table 20, 77 FR 31710

facilities is justified for reasonable progress and would provide incentive for early implementation of the Clean Energy Bill objectives. The visibility modeling demonstrated that the Kahului Power Plant contributes to visibility impairment at Haleakala NP. EPA determined that costs for 1% sulfur fuel would be lower for Kahului Power Plant ($4,200 per ton) than for the electric generating facilities on Hawaii ($5,587 per ton) that are required to meet a SO_2 emissions limit. Additionally, we disagree with EPA's reliance on the projected reductions in SO_2 emissions from marine shipping under the North American Emissions Control Area (that requires lower sulfur fuels for marine shipping within 200 nautical miles of the U.S. coastline beginning in August 2012) to offset emissions from the electric generating facilites on Maui. There is considerable uncertainty in the levels of baseline and future marine traffic and the extent that these emisisons should be included in the island inventory. EPA should implement a SO_2 emissions cap for the two largest sources on Maui.

Monitoring Strategy:
We agree with EPA's proposal to use the IMPROVE monitor at the Haleakala Crater for future regional haze planning efforts. An IMPROVE monitor (HALE1) was operated from 2000 through May 2012 at 1153 meters at a location northeast and outside of the Haleakala park boundary. The HALE1 monitor was used for 2001-2004 baseline visibility for Haelakala NP. A second IMPROVE monitor (HACR1) was installed in 2007 near the park's visitor center at 2158 meters. We believe the HACR1 monitor is more representative of the park's air quality and visibility than the HALE1 monitor that is located at much lower elevation than much of the park area. We have evaluated the IMPROVE data for both monitors for the period 2007 through 2010. Sulfate concentrations are elevated on the same days at the two monitors, indicating that volcanic emissions from the Kilauea Volcano are impacting both monitors concurrently, although the concentrations are lower at the higher elevation (HACR1) site. In general, concentrations of nitrate, organic carbon, elemental carbon, and seasalt are lower at the higher elevation site. Concentrations of soil and coarse matter at times are higher at the higher elevation site, suggesting possible international transport.

At the Maui public hearing on May 31, 2012 there was considerable public comment on the impact of cane burning on public health on Maui and visibility at Haleakala National Park. While there are days in the IMPROVE record at HALE1 with elevated organic and elemental carbon suggestive of biomass burning, the monitor location is not well suited for evaluating smoke impacts from cane burning. We recommend that if EPA's objective is to characterize smoke incidence and potential health impacts from smoke, then a PM monitor sited closer to populated areas would be more useful than the HALE1 monitor.

As of June 2012, the HALE1 monitor is no longer operating and we are recommending that the monitor be decommissioned and that the HACR1 monitor become the official record representing Haleakala National Park. We are consulting with the IMPROVE network to assure a representative data record for the regional haze process.

We appreciate the opportunity to work closely with EPA Region 9 and Hawaii to improve visibility in our Class I areas. For further information regarding our comments, please contact Pat Brewer at (303) 969-2153.

Sincerely,

Susan Johnson
Chief, Policy, Planning and Permit Review Branch

cc: Priscilla Ligh
Clean Air Branch
Hawaii Department of Health
1250 Punchbowl Street
Honolulu, Hawaii 96813