UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
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OFFICE OF THE
REGIONAL ADMINISTRATOR

April 10, 2001

Donna Hepp
White Mountain National Forest
WMNF Supervisor's Office
719 Main Street
Laconia, NH 03246

RE: Draft Environmental Impact Statement Loon Mountain Ski Resort Development and Expansion Project White Mountain National Forest, New Hampshire (EPA ERP No. AFS-B65009-NH)

Dear Ms. Hepp:

In accordance with our responsibilities under the National Environmental Policy Act (NEPA) and Section 309 of the Clean Air Act, we have reviewed the Forest Service's (FS) Draft Environmental Impact Statement (DEIS) for the proposed development and expansion of the Loon Mountain Ski Resort on the White Mountain National Forest (WMNF) near the towns of Lincoln and Woodstock, New Hampshire.

The DEIS explains that the Loon Mountain Recreation Corporation (LMRC) applied in 1998 to the FS for a Special Use Permit (SUP) for a proposed action that includes "the addition of new and more diverse ski terrain; the installation of upgraded and high speed chair lifts; adequate water sources, pumps, pipelines, and water storage facilities for increased snowmaking capacity; the addition of new and/or expanded lodge and parking facilities, and an expanded SUP area." The proposed actions are intended to allow LMRC to position itself to capture its share of potential future growth in the regional skier market through modifications "necessary for an enjoyable skiing experience." LMRC's proposal is intended to provide a more balanced ski area design to meet current and anticipated skier expectations. The proposal focuses on increasing the comfortable carrying capacity (CCC), expanding/diversifying ski terrain available, and increasing snowmaking capabilities as the primary means for LMRC to remain competitive within the New England regional skiing market. The proposal would expand the ski area from 266 skiable acres to 382 and would expand the SUP area from 785 acres by 581 acres onto South Mountain for a total of 1,366 acres. The proposal includes the expansion of two existing up-mountain lodges within the existing SUP area, as well as two lodges at the base on privately owned land just outside of the SUP area and the construction of an additional day lodge on privately owned land to serve the South Mountain expansion. A new parking lot with 840 spaces would also be provided for the South Mountain expansion area.

Background

The first comment we must make is to acknowledge the work of the FS and LMRC to prepare the current EIS. In many ways the current analysis provides a much better foundation for future FS decision-making than previous efforts. In addition, the FS staff deserves recognition for their work to seek out, consider, and incorporate public and agency comments during the process to develop the current EIS. As you know EPA raised a number of significant concerns about the project and the EIS analysis when the original EIS was filed for a larger version of this current proposal in 1989. These issues included: the potential for significant impacts associated with snowmaking water withdrawals; deficiencies in the alternatives analysis; incomplete and superficial treatment of secondary and cumulative impacts; local infrastructure deficiencies, traffic concerns and insufficient mitigation measures. In large measure, the current EIS analysis is more comprehensive and describes a less damaging project than its predecessor. Most notably, the EIS now explores a reasonable range of alternatives to the proposed action and new snowmaking water supply measures are incorporated that reduce the potential for significant impacts. While we are pleased with these changes, we remain concerned about the project and believe additional information is warranted prior to the conclusion of the NEPA process. Our concerns are discussed more fully below and in the attachment to this letter.

FS Responsibility/Purpose and Need

As you know, the Council on Environmental Quality's Regulations implementing NEPA require that EIS's specify the underlying purpose and need to which the FS is responding in proposing alternatives, including the proposed action (40 CFR 1502.13). The DEIS explains that two elements, namely a general FS purpose and need as established by FS policy and direction, and LMRC's purpose and need, combine to establish the purpose and need for the project. A mutually beneficial relationship is described wherein the separate purpose and needs are "connected through a committed long-term partnership to provide quality recreation opportunities on NFS lands."

It is this very relationship that makes the decision about how much expansion to allow within the WMNF exceedingly difficult. The LMRC interest is to develop a ski area that meets current and future skiers needs and also returns a profit. In a similar vein, the FS wants LMRC to operate a viable facility on federal land capable of providing a quality winter recreation experience to each visitor (skier). It is clear from the analysis that the FS purpose and need may be met by a range of alternatives that meet a majority, but not all, of the LMRC's objectives. For example, one LMRC objective is to be a destination resort that can satisfy skiers for 3 days instead of a day skiing resort that offer only 1.5 days of skiing terrain. Because several of the actions considered in the EIS appear to be able to meet the FS purpose and need, it is critical that the FS determine and document in the EIS the types and level of winter recreation services they must accommodate in order to fulfill their mission. Because it is hard to imagine a skier who would respond to a survey with a preference for increasingly crowded slopes, longer bathroom lines,

and no place to sit, the burden on the FS increases. Consequently, the FS must independently determine the level of services/satisfaction acceptable to visitors, and how important that criterion is among all the others used to determine whether the Service is meeting its obligations while also balancing social and environmental issues.

Clearly, the infrastructure investment by LMRC since the 1960's has created a successful ski area that provides a range of winter recreation opportunities on FS lands. This success has increased pressure on LMRC to remain competitive by providing a quality up to date (including new interests such as snowboarding) skiing experience and meeting industry established goals. The extent to which the FS believes that LMRC should meet "ski industry goals" is all important as it informs answers to questions of how diverse the terrain should be, how many restaurant seats should be provided, how much space in the lodge each visitor to this part of the WMNF should be afforded, among others. Not only is this question relevant now, it becomes even more critical in the future should an additional South Mountain proposal be advanced. Unfortunately, other than references to the Forest Plan Revision and LMRC's own plans for a substantial phase II proposal on South Mountain, the EIS is silent on this difficult issue. The need to correct this deficiency in the FEIS appears obvious and all the more justified given that the Loon Mountain Ski Resort is operating on a 30 year term SUP due to expire in less than five years (2006).

In view of the environmental impacts on public resources caused by the ski resort industry, the FEIS should articulate how the FS will ultimately determine that expansion and development within existing/expanded SUP areas has reached an end point, or what that end point will be. We also recommend that the discussion includes an explanation of the steps involved in the process to extend or reissue a 30 year-term SUP since that process is directly relevant to the subject of this EIS. Delaying this discussion or reserving it for evaluation as part of the Forest Plan Revision process is inappropriate unless the decisions made on this project are contingent on the results of those processes which will follow at a later date. Ideally, the discussion will address how the limits of the SUP expansion area will be defined, and other important issues such as limitations of water withdrawals that may need to be established to protect environmental quality.

Loon Pond/Snowmaking Water Supply Strategy

Conservation Flows

As you know, two major concerns to EPA in the original EIS process were the impacts of snowmaking water withdrawals on Loon Pond and the East Branch of the Pemigewasset River. EPA is pleased to see that Loon Pond, a water body that provides 28% of Lincoln's water supply, would be eliminated as a snowmaking water supply source under all but the No Action alternative, and that water withdrawals from the East Branch of the Pemigewasset River for snowmaking will not occur when the streamflow is equal to or less than the February Median Flow (FMF) value. EPA appreciates the commitment of all parties to utilize the FMF value and we support the FMF as the conservation flow for any water withdrawals to protect aquatic habitat in the East Branch of the Pemigewasset River (87.8 cfs), the Main Stem of the Pemigewasset

River (140 cfs), and Boyle Brook (1.17cfs).

Under the proposed plan, water tapped from these water supply sources would be pumped to storage ponds, the number and size of which depends upon the snowmaking performance target ultimately selected, that will help to reduce the potential for effects, aquatic and otherwise, from snowmaking efforts. While we support the establishment of the conservation flows set at the FMF as one mechanism to prevent aquatic effects, we believe it will be important for the water sources to be objectively monitored and surveyed to confirm that the FMF level adequately protects the resources present. The EIS should describe how this can happen and who would be responsible for this monitoring. As part of these efforts, the FMF levels must be subject to periodic adjustment as specific flow data is collected.

Protection of Use

Even if the FMF is implemented it is not clear that "[u]nder each alternative, conservation flows ...would provide full protection to other existing or potential water uses, including wastewater assimilation, drinking water supply, aquatic habitat protection, and water quality maintenance." Several years ago, a NPDES permit was reissued to the Town of Lincoln that contains numeric effluent limitations for copper, ammonia, and chlorine. The limits for these three parameters are a function of the 7Q10 low flow value in the East Branch Pemigewasset River and the treatment plant's design flow. The EIS should include an analysis of the reduced flow regime in the East Branch caused by snowmaking withdrawals and likely impact on the discharge of these three pollutants and the potential for D.O. violations. The discharge of copper is of particular concern because the water quality monitoring data provided on pages 3-41 and 3-42 indicate exceedances of instream water quality criteria specified in New Hampshire water quality standards. Additional information to document how each of these uses would be protected, for example, a specific discussion about wastewater assimilation now and in the future under projected growth scenarios, is necessary to support these claims and fully disclose the potential for impacts from the withdrawals.

Water Demand

In addition to the discussion of FMF issues, the EIS provides a good description of the many issues and points of controversy that helped to shape the current action, including a discussion of previous snowmaking proposals. What it lacks is an explanation why under the proposed action the water demand target increases approximately threefold, to 448 Mgal a year when estimates of the snowmaking needs for the original, and larger, project ten years ago described a estimated water demand of 134 million gallons on an annual basis. This change in the water demand figure is an issue we requested be clearly explained in this EIS in meetings over the past few years. Although part of this change is likely due to changes in the terrain mix proposed it is unclear if the rest can easily be attributed to changes in the snowmaking strategy or how the information is presented. This deficiency should be resolved in the FEIS.

Snowmaking Targets

The snowmaking strategy for the Loon ski area depends on the ability to pump, store and deliver water to the ski terrain. The EIS describes a series of system performance targets expressed in terms of seasonal water demand target volume in a certain percentage of years the resort is in operation. The LMRC performance target for their system is 100%/85%, reflecting their desire to have 100% of their water demand target available in 85% of the years the ski area operates. The FEIS explains that the 80%/80% threshold is likely to be the break point below which the LMRC would not be able to provide the "product the skiing public expects" and subsequently, we assume, meet the FS objectives for this SUP area. The 80%/80% rule, as it is commonly referred to in Vermont, has been successfully applied to other ski areas on National Forest System lands. Both of these factors lead us to believe that an 80%/80% threshold can be applied to this project in a manner that meets the purpose and need.

Snowmaking

Ponds

The snowmaking strategy relies on the use of water storage ponds to provide the appropriate level of instantaneous pumping capacity for snowmakiing when conditions are appropriate. The EIS describes four storage locations of which two sites (Connector Pond and Conn Pit) already contain water in depressions left following former use as gravel pits. Because several of the ponds are located within the 100 year flood plain of the East Branch and Main Stem of the Pemigewasset, the EIS should be enhanced to describe the potential impact on the downstream areas should the ponds fail during the 100 year and a lesser flood (25 or 50 year) event. Moreover, the FS and LMRC should commit to annual inspections of the storage ponds to identify and correct potential structural problems that could lead to pond failure.

During the development of the EIS, EPA coordinated with FS personnel to help study the relationship between Connector Pond and the Main Stem. Based on that coordination, we concur that the maximum induced recharge from the river to Connector Pond should not exceed 218 gpm at any time. This "not to exceed" amount represents 5% of the projected 7Q10 flow of the Main Stem adjacent to this site. A 500 foot long sheet-piling retention wall between the river and pond is proposed to accomplish this objective. However, the DEIS does not contain any description of the methods, data sources, and modeling assumptions, etc. that must be used post-construction during snow-making seasons to ensure that this recharge rate is not exceeded. Important questions remain unanswered. Who will collect the water-level data from the river, wells and pond? At what frequency? And from what locations? What level of precision will be acceptable? This information should be provided in the FEIS. It may make sense for the FS to convene an advisory group of experts (with federal/state agency participation or oversight) to design such a measurement system.

Finally, we believe a management plan for the snowmaking ponds during the non-snowmaking months should be considered to help protect water quality. These ponds have the potential to impact the surrounding environment especially the adjacent rivers. For example, storage ponds

along the East Branch of the Pemigewasset River can intercept the ground water that recharges the River in the summer. Consequently, the streamflows may be diminished during the summer low flow periods at a time when streamflows are at their lowest levels. These lower streamflows could impact the capacity of the East Branch of the Pemigewasset River to assimilate the effluent from the Lincoln wastewater treatment facility during the critical period in the summer when flows are low and water temperatures high. This combination can cause instream dissolved oxygen exceedances below the treatment facility. The FEIS should discuss this issue and commit to a management plan that will protect water quality.

Snowfall Estimates

We question the use of precipitation records for Benton, NH to estimate precipitation in Lincoln, NH. The EIS states that the data at Lincoln "suggest slightly higher precipitation amounts at Lincoln as compared to the Benton data." Actually, the average precipitation data at Lincoln, NH for November through February in Table 3.2 appear to differ greatly (0.9 to 1.6 inches) from the monthly values for Benton, NH shown in figure 3.3. If this is the case and the Benton data continue to be used to determine snowmaking needs, projected water storage needs will be overestimated. Additional information should be provided to explain why a more complete data set (for the Benton area) makes it representative of climatic conditions in Lincoln. Part of the response should address whether or not the precipitation data from Lincoln for the period of record (1948-1965) show that it is statistically similar to the Benton data for the same period of record.

Land Use

The EIS explains that there is likely to be minimal population growth in the study area as a result of the Proposed Action because the ski area will hire few additional employees, and job opportunities will be at the low end of the wage scale. Very little attention is given, however, to the potential for greatly accelerated growth in vacation and second homes; the DEIS states that "growth in vacation and second homes, particularly in the Lincoln-Woodstock subarea, would slightly increase under the Proposed Action..." We can find no good rationale for making that statement; indeed, there is high demand in the area for year-round and seasonal accommodations, as described in part in Section 4.9.1.4.5 (Real Estate) and elsewhere, and the vacation and second-home market is booming in resort areas around the county. The report also explains that the design flow for Lincoln's wastewater treatment facility was reduced from 1.52 to 1.3 Mgd in recent years due to reductions in infiltration in the sewer system. Therefore, there is less additional capacity at this plant to accommodate future growth in the area. This limitation is important when one reads in the EIS and Loon's August 2000 Revised Master Development Plan (RMDP) that LMRC could build approximately 1000 units on its developable land. This kind of growth, and the demands it could create, is not captured in the population estimates, yet the impacts on land use are just as significant regardless of whether the occupants are permanent residents or visitors. We believe the USFS should analyze the potential for vacation or second home development in greater detail in the Final EIS and whether the infrastructure (e.g. water, sewer, transportation) and environment of the region can accommodate this kind of growth. If

local data are lacking, one approach that should be considered is to examine patterns of growth that occurred elsewhere in the country following a similar expansion.

Although the world of local land use decision-making the EIS describes is the ideal–one in which local ordinances match the master plan and all development is directed towards suitable areas and away from sensitive resources--we do not know of a single community in New England in which the "ideal" is fully achieved. Indeed, we receive numerous phone calls from communities across New England that describe many of the same dilemmas no matter what size or degree of growth pressure they encounter: ordinances are out of date or don't match the goals of the master plan; no master plan, or no up-to-date master plan exists to direct decision making and zoning; zoning that directs all industrial development to wetlands, aquifer recharge areas, or other sensitive resources; local planning boards with high turnover and few resources; and countless other difficulties.

While it is easy to simply state that local land use development activities would be consistent with town master plans, and that "[e]ffective planning and timely implementation of mitigation measures by the communities may be necessary to avoid this negative impact," we believe the FS and LMRC must do more. A good first step would be for both to take concrete steps to help these communities cope with increased growth pressures many of the alternatives could cause. While local land use decision-making must remain vested in the local level, implementation of the proposed action, and the possibility of a Phase II proposal on South Mountain–one that could add 206 acres of ski terrain; increase the comfortable carrying capacity by 6500 skiers; add parking and lodge facilities; and demand 238 million gallons of water a year for snowmaking--will impose new burdens and challenges on these local decision-makers. Woodstock, for example, does not have a planner, an up-to-date plan, zoning regulations, or site plan review, which will pose more of a problem as the pace of growth accelerates. Lincoln, however, does have a planner and zoning ordinances, but they might benefit, for example, from funding for planning services that would help them translate their soon-to-be-released Village Center Plan into ordinances, or help them review complex development proposals. In both instances, funding from the FS and the LMRC could help these communities to pay for staff and planning services to help them fill these gaps and fully understand and prepare for the changes the expansion proposal(s) are likely to catalyze.

These types of assistance will become increasingly important should LMRC ever advance the Phase II proposal described in their August 2000 Revised Master Development Plan (RMDP). At that time it will be important for the communities to be able to independently analyze whether they want to accommodate an expanded ski area and the snowmaking and infrastructure demands it would bring, along with up to 1000 new housing units. We were pleased to see that the DEIS clearly states that any approval of Phase II development plans on South Mountain would be subject to further NEPA analysis if and when they are advanced. At that time it will be critical for the analysis to detail the secondary impacts of growth in the appropriate area that will accompany the expansion. That information will help local communities and the FS to understand how each course of action would be likely to affect land use and infrastructure

demands adjacent to the Forest. For now, the preliminary level of information about Phase II plans provided in the DEIS and the RMDP is an important piece of information the local communities can use as they plan for their future. In any event, the specter of a Phase II proposal raises real questions the FS will need to answer about how much the FS must accommodate on National Forest lands in order to meet its mission.

Forest Plan Revision

The DEIS correctly recognizes that any number of ongoing analyses (the Roadless Area Conservation, Canada Lynx Conservation Strategy, and Indiana Bat Biological Opinion) may lead to amendments to the existing Forest Plan before the revision process is complete. Further, it notes that Forest Plan Standards and Guidelines, and Management Area designations/management directions, could also change in response to these documents in a way that would make it necessary to modify the Loon Mountain Ski Resort Development and Expansion EIS and/or Record of Decision. We agree with both of these observations.

Conclusion/Rating

The FS should be commended for the extensive public outreach and interagency coordination surrounding the preparation of the DEIS. EPA looks forward to continuing involvement in review of the project prior to the completion of the NEPA process. Based on our review of the DEIS, it appears that the FS may be able to meet its core mission objectives for winter recreation on White Mountain National Forest lands through a number of the proposed alternatives that appear to meet the purpose and need, including LMRC's proposed action. The decision is likely to be a difficult one as it requires the FS to examine how "successful" they believe the LMRC must be in order to provide a product that meets the FS goals for a SUP, or, put another way, the FEIS must clearly articulate how the alternatives were distinguished for decision-making purposes. The analysis shows that application of the 80%/80% standard to snowmaking should allow LMRC to provide adequate snow coverage for an enjoyable skiing experience at Loon with reduced infrastructure (snowmaking pond) demands. This target level has also been successfully applied on FS lands in Vermont.

For the reasons discussed above, EPA has rated this EIS "EC-2 Environmental Concerns, Insufficient Information" in accordance with EPA's national rating system, a description of which is attached to this letter. We look forward to continuing to work with you towards the

completion of the environmental review of this project. Please feel free to contact me or Timothy Timmermann of EPA's Office of Environmental Review at 617/918-1025 if you wish to discuss these comments further.

Sincerely,

Elizabeth A. Higgins
Senior Policy Advisor
Director, Office of Environmental Review

attachments
cc:

Marty Abair, U.S. Army Corps of Engineers
William Neidermyer, United States Fish and Wildlife Service

Please note, signatures have been removed from this document.

SUMMARY OF RATING DEFINITIONS AND FOLLOW-UP ACTION

Environmental Impact of the Action

LO--Lack of Objections
The EPA review has not identified any potential impacts requiring substantive changes to the proposal. The review may have disclosed opportunities for application of mitigation measures that could be accomplished with no more than minor changes to the proposal.

EC--Environmental Concerns
The EPA review has identified environmental impacts that should be avoided in order to fully protect the environment. Corrective measures may require changes to the preferred alternative or application of mitigation measures that can reduce the environmental impact. EPA would like to work with the lead agency to reduce these impacts.

EO--Environmental Objections
The EPA review has identified significant environmental impacts that must be avoided in order to provide adequate protection for the environment. Corrective measures may require substantial changes to the preferred alternative or consideration of some other project alternative (including the no action alternative or a new alternative). EPA intends to work with the lead agency to reduce these impacts.

EU--Environmentally Unsatisfactory
The EPA review has identified adverse environmental impacts that are of sufficient magnitude that they are unsatisfactory from the standpoint of public health or welfare or environmental quality. EPA intends to work with the lead agency to reduce these impacts. If the potential unsatisfactory impacts are not corrected at the final EIS stage, this proposal will be recommended for referral to the CEQ.

Adequacy of the Impact Statement

Category 1--Adequate
EPA believes that draft EIS adequately sets forth the environmental impact(s) of the preferred alternative and those of the alternatives reasonably available to the project or action. No further analysis or data collection is necessary, but the reviewer may suggest the addition of clarifying language or information.

Category 2--Insufficient Information
The draft EIS does not contain sufficient information for EPA to fully assess environmental impacts that should be avoided in order to fully protect the environment, or the EPA reviewer has identified new reasonably available alternatives that are within the spectrum of alternatives analyzed in the draft EIS, which could reduce the environmental impacts of the action. The identified additional information, data, analyses, or discussion should be included in the final EIS.

Category 3--Inadequate
EPA does not believe that the draft EIS adequately assesses potentially significant environmental impacts of the action, or the EPA reviewer has identified new, reasonably available alternatives that are outside of the spectrum of alternatives analysed in the draft EIS, which should be analyzed in order to reduce the potentially significant environmental impacts. EPA believes that the identified additional information, data, analyses, or discussions are of such a magnitude that they should have full public review at a draft stage. EPA does not believe that the draft EIS is adequate for the purposes of the NEPA and/or Section 309 review, and thus should be formally revised and made available for public comment in a supplemental or revised draft EIS. On the basis of the potential significant impacts involved, this proposal could be a candidate for referral to the CEQ.

Attachment to EPA's Comment Letter on Loon Mountain Ski Resort Development and Expansion Project

Infrastructure

We believe the EIS should be expanded to include an analysis of demands on infrastructure not just from the Proposed Action and the expected growth in permanent population, but also from other induced growth such as vacation and second homes and commercial development. Vacation or second homes may pose less of a burden on some kinds of infrastructure, but since the number of these buildings appears to be underestimated, it is likely that the demand on infrastructure also is underestimated. Not all of these buildings will be built in areas with water or sewer infrastructure, so the analysis should estimate where this development is most likely to occur, and determine whether the natural resources can support this growth. Finally, many resort areas around the country are finding that what started as second homes are turning into permanent residences, with the attendant increased demands on infrastructure. Consequently, it would be prudent for the analysis to cover a range of assumptions about whether the occupants will be temporary or permanent residents.

Transportation Issues

The DEIS indicates that peak hour traffic volumes will be 6 to 22 percent greater than those under the No Action Alternative by 2010. Most intersections would exceed their design capacities and levels of service would deteriorate. In response the EIS lists some potential mitigation measures such as establishing a remote parking facility close to the I-93 interchange with a shuttle system, expanding the existing shuttle bus system, and offering activities that could shift the peak departure times when the greatest congestion occurs. These actions are worthy, but limited in their outlook, and may not sufficiently reduce Vehicle Miles Traveled (VMT). The FEIS should provide more detail about solutions successfully being used at other ski resorts in Maine and Vermont, such as train service from population centers such as Concord or Boston. It should also present the respective costs of the mitigation measures and describe who would be responsible for funding the proposed improvements.

We also believe that the USFS should do more to mitigate potential increases in VMTs from employees. The DEIS acknowledges that it will be difficult for employees to afford home ownership in the immediate area and most would be forced to rent or commute to outlying areas. The proposed mitigation (a housing or transportation subsidy to employees with long commutes) would certainly help those employees, but may do nothing to reduce VMTs and the demand on the road network. In addition to shuttles for skiers, the EIS explore whether shuttles or other solutions would help to reduce employee VMTs.

Air Quality

The Loon Mountain Project Area is located within Grafton County, New Hampshire. This area is currently classified as attainment for the one-hour ozone national ambient air quality standard, and also attainment for the carbon monoxide national ambient air quality standards. General conformity and transportation conformity are not applicable to the Loon Mountain Ski Resort Development and Expansion Project as conformity provisions apply to classified nonattainment or maintenance areas.

Mobile source emission factors (VOC, CO and NOx) were generated for the EIS using MOBILE5b with input data provided by the New Hampshire Department of Environmental Services. While the input files were not provided, the output files for the MOBILE5b emission factor model were provided in Appendix E to the final air quality technical report. The MOBILE5b outputs reflect the use of reformulated gasoline in an area of the State of New Hampshire that does not require reformulated gasoline. Some motorists traveling to Loon Mountain Resort may have filled their fuel tanks in areas of Southern New England or Southern New Hampshire where reformulated gasoline is required; however, it is not safe to assume that everyone is coming from these areas. Since reformulated gasoline results in less volatile organic compounds (VOC), nitrogen oxides (NOx) and carbon monoxide (CO) from motor vehicles, assuming its use will result in a lower emissions estimate than is realistic. The magnitude or difference between the alternative scenarios would remain somewhat constant, however, as eliminating the reformulated gasoline benefit would affect the alternatives similarly. Unless other reasons dictate recalculation of the mesoscale air quality analysis, we do not recommend redoing the air quality analysis for the single purpose of reflecting the use of non reformulated gasoline. However, we do suggest that new motor vehicle emission factors be calculated for use in any future intersection carbon monoxide analysis modeling conducted.

In addition to new parking facilities for increased visitors (up to 1,429 new spaces), the proposed alternatives could affect traffic volume and flow as they include: (1) the possible upgrade of Woods Road; (2) changing Loon Brook Road so it is no longer a through road, and rerouting traffic; and (3) rerouting traffic between South Mountain parking lot and existing special use permit (SUP) base area facilities. Several roadway areas were identified within the DEIS as currently having traffic flow problems which include: (a) the intersection of NH-112 / Millfront Marketplace and School driveway; (b) the intersection of NH-112 / Lincoln Square and Cooper Memorial Drive - Northbound: (c) the intersection of NH-112 / Loon Mountain Road, and (d) roadway area of NH-112. Without roadway and intersection air quality modeling, EPA can not independently conclude that the proposed development and expansion project will or will not result in adverse air quality impacts or exceedances of the national ambient air quality standards.

The EIS does not include any hot-spot carbon monoxide analysis, citing that traffic normally flows freely and this pattern is expected to continue with the action alternatives. According to the transportation consultant, congestion only occurs in the afternoon for about one hour on peak days only. However, given that the afternoon congestion is typically occurring during cold

weather with many vehicles in the cold-start mode, we believe it would be worthwhile to see some of the congested roadways and intersection modeled using EPA's Roadway Intersection Model CAL3QHC Version2. We recommend that major intersections in the project area (especially those intersections exhibiting congested conditions) be evaluated in a microscale carbon monoxide air quality analysis which reflects winter roadway conditions and winter emission factors. Highway links and intersections can be screened following guidance in "EPA's Guideline For Modeling Carbon Monoxide From Roadway Intersections" (EPA document EPA-454/R-92-005 dated November 1992). This screening approach would look at the worst level-of service intersections and the highest traffic volume intersections for one-hour and eight-hour carbon monoxide impact on local receptors. If a CO concentration value within ten percent of the National Ambient Air Quality Standards is modeled at a given location, the project sponsors should commit to reasonable feasible mitigation for that location.

The LMRC shuttle system is one example of both a long-and-short term air quality mitigation measure that helps to reduce motor vehicle emissions in the project area. EPA supports LMRC's efforts to provide transportation shuttle service to their visitors. As a further mitigation measure, we recommend that LMRC install retrofit pollution control equipment such as particulate filters, also known as particulate traps, on the exhaust system of their diesel shuttle buses. The particulate filter is effective at reducing particulate matter emissions, as well as reducing hydrocarbon and carbon monoxide emissions. Retrofits have been successfully applied to many diesel engines across the country including construction equipment used on the Central Artery/Third Harbor Tunnel project in Boston, transit buses in New York City, and will soon be installed on older MBTA buses in Boston.

Finally, we recommend that a table showing the one and eight hour CO values for the highest receptor at major intersections be included in the FEIS. Furthermore, all technical support documentation for the intersection carbon monoxide analyses must be made available including the MOBILE emission factors input files, the CAL3QHC Version2.0 input and example output files, and technical assumptions and parameters. This information should be submitted to EPA and the State air agency with the project air quality analyses prior to the release of the FEIS. The technical support document must also be made available for public review.

General Corrections

- The list of Agency permitting responsibilities in Table 1.6 (page 1-35) indicates that the NHDES is the NPDES permitting authority in New Hampshire under the Clean Water Act. This statement needs to be corrected because the EPA administers the NPDES permit program in this state. Thus, the NHDES role in the Clean Water Act Section 401 Certification for these permits should be added to this table.

- The paragraph discussing Low Flows on page 3-19 includes an explanation of the basis for the 7Q10 streamflow statistic which is misleading and it should be revised as follows: This streamflow statistic is used as the basis for regulatory determination by the EPA and

the NHDES of the allowable concentration of specific chemicals in the wastewater discharges to surface waters.