May 20, 2022

Steve Brown, Ranger
Stevensville Ranger Station
Bitterroot National Forest
88 Main Street
Stevensville, MT 59840

Re: Bitterroot Front Project – Scoping

Thank you for providing this opportunity to comment regarding the Scoping document relating to the Bitterroot Front Project. These comments are submitted on behalf of Gail H. Goheen and Stephen S. Goheen. We are initially very concerned about the impact of this huge Project for so many different reasons, some of which we have summarized below. At this stage, it would be fair to say that many more questions need to be answered and much more information needs to be provided by the Forest Service before we are able to fully comment on this Project. At any rate, please note our following initial concerns and questions, set out below.

ROAD ISSUES:

A.) Roads within the Project area:

The "transportation system" encompassed within the proposed Project is VERY extensive, and according the Scoping Document (p. 11, dealing with "Existing Transportation System"), 424.6 miles of mapped road prisms were evaluated within the Project area. Many of these roads (p. 12) are by your own reports, not presently in good condition, and to meet the alleged goals will require much expense (e.g, for resurfacing, reconditioning, drainage crossings and other treatments) The "Existing Transportation System" analysis does not appear to include other "temporary" or "new roads" to meet project objectives (p. 11). The

Project (p. 1) includes an area of almost 144,000 acres, and elevation ranges from 3,400 to over 9,100 feet. Obviously, most if not all of this road system, is dirt or gravel, and the danger of runoff and sedimentation is considerable (even with improvements), especially since steep inclines may often be involved. Even more important, is the considerable damage that will be continually done to the road system during the life of the Project through the incredible traffic that will be involved in the Project, clearly over many years. Ongoing damage from loaded logging trucks will be especially problematic [*see* our further discussion on this point below, in the discussion of the impacted county roads].

Since SO many miles of road are likely to be involved in heavy usage, it will become especially important to budget adequate funds and resources to properly maintain these roads. The discussion in the existing "Scoping document" doesn't specifically identify the forest service roads that will be impacted by the project, so it is impossible for the public to reasonably assess exactly what roads will be affected. Likewise, no economic analysis of the project has been provided to date, and one is certainly needed. Such analysis should include a detailed assessment of the anticipated expenses regarding each road system impacted—not only to originally bring the roads up to a good condition, but the cost of continuing adequate maintenance throughout the life of the Project.

In addition to the logging, burning, etc. plans for the Project, there will clearly be many scars left from improved, expanded, new, or "temporary" roads, affecting the entire character of the Bitterroot Front.

Questions:

1.) Please provide the detailed analysis of the existing 424.6 miles of road "prisims" analyzed.

2.) Please provide a detailed summary of the "temporary" or "new" roads that may be utilized for this project (spelling out the location and distance of each).

3.) Please set forth a detailed economic analysis of the costs to improve and maintain the roads, culverts, protection against sedimentation, etc. for this Project, and the anticipated timing regarding the improvements as well as the likely ongoing maintenance required during the Project's life.

4.) Please explain in detail, all efforts and expenses which will be undertaken to protect the public against dust emanating from the road system used within this Project, and set forth all air monitoring devices which are intended to be used to ensure that the public is protected from dangerous particulates femitted.

5.) Has there been any analysis of how improved, expanded, new, or temporary roads within this Project, will affect the character of this scenic valley? If so, please provide the same, and if not completed yet, please make this information available to the public. These should be shown on maps (including topographical maps and thematic maps that show trees and other significant vegetation and geological features).

B.) <u>County roads impacted:</u>

In the "Scoping document" provided (at p.7), there is the following statement":

> …Management of county roads and deeded/permitted private roads is outside the scope of this project, thus these roads were excluded from evaluation.

The county roads are analyzed to be 6.3 miles (and the private roads, 12.8 miles) at p. 8. It is not clear that the Forest Service has obtained easements or what other rights they are anticipating to utilize relating to the "private roads" (and that information should be documented to ensure the legality of the planned road system—please provide the same).

An even more important consideration is the ongoing expense for maintenance of county roads within the Project <u>and</u> for county roads lying

outside of the Project, but which will need to be utilized to allow Project traffic (including—but not limited to—loaded logging trucks) access to state/federal highways. It does not appear that the Forest Service intends to be financially responsible for such road usage, even though the law seems to require exactly that. Evidence of this is based on the exclusion by the Forest Service in the "Scoping document" of county and private road analysis. Even better evidence is the position that the Forest Service has taken recently in another Project (Gold Butterfly, which is of record at the Forest Service website), where it has essentially said that the maintenance of a the major haul road (Willow Creek Road) outside of forest boundaries, is the sole financial responsibility of the Ravalli County—despite the County's assertion that it simply can't afford to do the necessary maintenance.[1]

How much of an expense for the County taxpayers is the maintenance of County Roads relating to this Bitterroot Front Project likely to be? Based on the information which has yet to be provided by the Forest Service, that is difficult to predict. The "Scoping document" (p. 10), shows about 20 "Opportunity Areas" relating to the Project, extending from the Lolo-Carlton area in the North, down south through the valley to the "Trapper Bunkhouse." The affected area is huge and obviously there will be VERY many county roads utilized to handle the logging trucks going in and out, as well as road maintenance equipment, other equipment involved with the project, administrative traffic, etc., etc.

To date, there does not appear to be any projections provided for the number of logging trucks involved, so analyzing the effect of the Project on road wear and related maintenance is somewhat difficult to predict. But, in the Gold Butterfly Project (information available on the Forest Service website), the total acreage within the Project area was approximately 55,000 acres, of which a little over 5,000 acres was to be commercially harvested--and there was anticipated to be 6,000 to 7,000 truck loads of logs hauled out. The current plans for the Bitterroot Front Project, references 144,000 acres within the Project area, and of this, the total projected treatment "opportunity areas" (timber harvest potential) is quantified at 54,883 acres (p. 10 of "Scoping document"). That is

[1] The only exception by the Forest Service relating to the County Road in the Gold Butterfly was a short distance of the gravel portion of the road that it has indicated it will do limited dust control maintenance on.

approximately ten times the amount of commercial logging acreage than what the Gold Butterfly project was. Since there has not yet been provided a current estimate of the timber to be cut on the Bitterroot Front Project (or the number of logging trucks that would be used to haul out those logs), if there was 10 times the amount of timber commercially harvested (as compared to the Gold Butterfly Project), there may be approximately 70,000 truckloads hauling commercial loans (7000 x 10 based on comparable commercial logging acreage).

Using this estimate, what would the impact of just the loaded logging trucks hauling logs out (based on weight) be? The formula used by the government to do these calculations utilizes weight of the loaded truck and number of axels, when comparing weight and axels for average cars. The impact when employing these comparable factors is exponential. For example, if we were to assume each truck weighed 80,000 pounds (the load limit on Interstate highways), when comparing the loaded logging trucks to average cars, under the formula the calculation would be determined as follows:

Assuming logging trucks are loaded to weigh approximately 80,000 pounds[2] and have 5 axles, cars weigh approximately 4,000 pounds and have 2 axles, and using the GAO's "fourth power" calculations[3]

Logging Truck – 16,000 lbs./axle ÷ Car – 2,000 lbs./axle = 8 times more weight per axle 8 x 8 x 8 x 8 = 4,096 times more road damage from a loaded logging truck than an average car.

Assuming logging trucks are loaded to weigh approximately 92,000 pounds (based on a MSU study for weight)[4] and have 5 axles:

Logging Truck – 18,400 lbs./axle ÷ Car – 2,000 lbs./axle = 9.2 times more weight/axle9.2 x 9. x 9.2 x 9.2 = 7,164 times more road damage from a loaded logging truck than an average car.

[2] Federal Interstate Load Limit – see https://oversize.io/regulations/dot-truck-weight-limits .
[3] https://www.denenapoints.com/relationship-vehicle-weight-road-damage/ quoting the applicable formula from the federal General Accounting Office (https://www.gao.gov/assets/130/127292.pdf) - see Document 2 attached.
[4] http://forestry.msuextension.org/forestproducts/timber_haulers.html - MSU Forestry Extension findings of typical log truck weights - see Document 3 attached.

So the bottom line of the application of this formula (depending on whether one is using the load limit on Interstate highways or the weight based on the MSU study for the actual average weight of loaded logging trucks in Montana), would be that each loaded logging truck is the equivalent of between about 4,000 to 7,000 average cars. That is translates into a HUGE impact for the likely many impacted Ravalli County roads, and one that will result in considerable cost for proper road maintenance. Such road maintenance would be needed over the life of the Project for the numerous roads affected, and (for the reasons mentioned below), would undoubtedly need to include dust control maintenance to ensure that Clean Air Act (and DEQ) standards are met. That translates into much more in taxes (probably millions of dollars over the life of the Project) for Ravalli County citizens. Alternatively roads would be in terrible shape and county citizens on a large portion of the west side of the valley, would have to endure this (including inconvenience, safety hazards, and health hazards)—for years. They will undoubtedly be clamoring to both County and the Forest Service for relief. The Forest Service needs to bear its share of the resulting expenses, as it is something that Ravalli County can't afford (based on their filings in the Gold Butterfly case), and it is a requirement that the Forest Service's own regulations, handbook, etc. requires, due to the fact that it is their Project that is creating the added burdens.

Some of the authority reflecting that the Forest Service should be financially responsible for ensuring that County roads are properly maintained relating to the planned logging, etc. operations, are:

- The existing agreement from 1965 between the County and the Forest Service and "Schedule A" Amendments to the same, refer to use of the Forest Service for "administrative access." Chapter 60 (provision 60.5 of the Forest Service Handbook (FSH 5409.17) indicates that "Administrative Traffic" does not include "commercial traffic associated with logging such as log trucks, fallers, machine operators or other commercial activities such as mineral developments and special uses."

- The 1965 Agreement referenced in the above paragraph also requires project agreements to reconstruct, improve and maintain road projects if

the work is outside the scope of ordinary maintenance. No plans for the same are apparent in the "Scoping document" relating to this Project.

- FSM 7703.4 deals with Common Transportation Interests between the Forest Service and Local Public Road Authority and Other Landowners, and states in part: "Encourage local public road authorities to bear a proportionate share of reconstruction and maintenance cost of transportation facilities over which the Forest Service does not exercise jurisdiction when the local public road authorities are unable or lack authority to accept full responsibility. Use forest road agreements (FSH 1409.11, sec 31.2) to implement these cost sharing arrangements. Forest road agreements do not change jurisdiction over a forest transportation facility."

- FSH 31.21 states in part that the Chief may require "the user or users of a road, including purchasers of Government timber and other products to maintain the roads in a satisfactory condition commensurate with the particular use requirements…" If the Forest service were to chose this method for maintenance of county roads, however, we would maintain that it should be specifically added into any contract. Ultimately, however, that responsibility for enforcement—including financial responsibility for any shortfalls—should fall upon the Forest Service for any shortfalls.

- Any bridges on County roads that are impacted by the Project also need to be inventoried and be subject to engineering studies to ensure they are adequate to meet Project needs (including logging truck operations), as the County commissioners have the right and responsibility to ensure safe passage pursuant to Section 7-14-2201 MCA. Concerns for Project activities could result in the repercussions referenced immediately below.

- The County has the ultimate authority over its road and has the ability to stop road usage if the Forest Service (or those operating under contract with the Forest Service) fail to meet their responsibilities, including the

use of Section 7-14-2127 (1) MCA, which allows the County at its discretion to limit or forbid certain classes of traffic on county roads.

Questions:

1.) What is the anticipated time span for fully implementing this Project, including the detailed timespans for each of the "Opportunity Areas" referenced on p. 10 of the Scoping document.

2.) What are the projected number of log truck loads to be harvested from each of the "Opportunity Areas" referenced in the Scoping document.

3.) Is the Forest Service planning on paying a proportionate share of the County road impact resulting from this Project (including, but not limited to, that based on loaded logging trucks being the equivalent of 4,000 to 7,000 average cars)? If that is so:

a. what is the Forest Service's plans for use of county roads (naming or otherwise identifying the same) to allow logging trucks from the project to haul logs to state or federal highways?

b. What are the Forest Service's projections of total dollar impact expenses to do that work per each county road affected?

c. What is the anticipated share (based both on percentage of use and total expense) to be paid by the Forest Service (or those contracting to work on the Project), for each of the roads impacted?

d. If not based on a proportionate use estimate for the impact of the Project on Ravalli County roads, is the Forest Service willing to pay any amount for county road use, and if so, what amount, and on what rationale.

4.) If the Forest Service is taking the position that Ravalli County should be fully responsible for the expenses resulting to county roads from this project, and if so, please set forth all reasons, including legal authority, for this position (citing to appropriate statutes, regulations, etc.)

PARTICULATE EMISSIONS:

When the Gold Butterfly Project was announced by local publications, it was noted as largest forest service project in the Ravalli County in decades. The Bitterroot Front Project is almost three times that size, and the particulates which will emanate from this Project activity are likely to be very considerable and a potential health hazard to local residents—especially those from road dust and from controlled burning.

We wish to point out that when it comes to environmental issues involving forest service projects, Federal and State requirements affecting "people" (not just animals and vegetation, etc.) are relevant considerations. The National Environmental Policy Act (NEPA; 42 USC, Section 4321 *et seq.*) requires federal agencies to complete detailed analyses of proposed actions that may significantly affect the quality of the human environment." The severity of the impact should, amongst other factors, include: "the degree to which the proposed action affect public health or safety"; the "degree to which the effects on the quality of the human environment are likely to be highly controversial"; the degree to which the effects on the human environment are highly uncertain or involve unique or unknown risks"' and whether "the action threatens a violation of Federal, State, or local law or requirements imposed for the protection of the environment" (items 2,4,5, and 10 of 40 CFR 1508.27). Surely these factors are met here in regards to particulate emissions resulting from the Bitterroot Front Project. As to state and local law, Montana's Department of Environmental Quality requires air quality consistent with the Clean Air Act, and Montana's Constitution even

entitles its citizens to “a clean and healthful environment” (Article IX, Section 1). Montana’s regulations [ARM 17.8.308 (2)] states: “No person may cause or authorize the use of any street, road, or parking lot without taking reasonable precautions to control emissions of airborne particulate matter.” We respectfully request that the Bitterroot National Forest Service honor and protect these rights and the well-being of all the people living in this County (as well as the environment and wildlife) which may otherwise be negatively impacted by the proposed Bitterroot Front Project.

Dust is likely to be produced from timber harvest and related activities, including (but not limited to) yarding, log hauling, and road maintenance. Further aggravating the dangers of dust concentrations would by concentrations accumulating through the canyon like spines emerging from the mountains where the activities will be concentrated. Road dust generated by the Bitterroot Front Project may present a real threat to the health of those people who live near the gravel portion of the roads impacted. Even county roads that have been chip sealed are susceptible to turning into dust if they become crushed by too much heavy road traffic. Remember from the discussion above, that each loaded logging truck due to its weight is calculated to have an impact equivalent to 4,000 to 7,000 average cars.

How much dust may we expect on the roads affected by the Project? An attached document a Ravalli County 2004 Gravel Roads Management publication indicates that a single vehicle travelling an unpaved road once per day for one year will produce on ton of dust per mile, “which equates to losing 100 tons of fine particles per year for each mile of road with an average of 100 vehicles per day.” No doubt the log truck traffic (given the added weight, friction, road surface, etc.) has the potential to pulverize any local gravel or eventually any chip seal road. Surely such dust particles need to be monitored, and the road surface needs to be appropriately treated as part of the impact resulting from the Bitterroot Front Project. That needs to be done, certainly for public health. It also needs to be done for public safety in travelling the roads (as dust may preclude vision for those traveling or entering the affected roads).

The Clean Air Act (as well as Montana's Department of Environmental Quality) has endeavored to quantify a safe level for small particulates in the air. The current standard for small particulate of 2.5 microns in size or less would require the threshold that should not be exceeded, is 35 micrograms per cubic meter over a 24 hour period (https://www.epa.gov/criteria-air-pollutants/naaqs-table). The PM 2.5 and smaller particles are referenced because they have been determined to be so dangerous.

A literature review[5] by researchers from West Virginia University and North Dakota State University showed that, "Road dust was found to have harmful effects of the human body, especially the respiratory system." This review found 17 different studies reporting that exposure to road dust had adverse health effects on the respiratory system, including asthma and mesothelioma. It also found 7 articles reporting that road dust exposure adversely affected the cardiovascular system, and one study that linked low birth weights to exposure of the mother to road dust during pregnancy. This extensive research showing a broad spectrum of negative health effects from road dust, indicates that thorough care should be taken to minimize the amount of road dust generated by the Bitterroot Front Project.

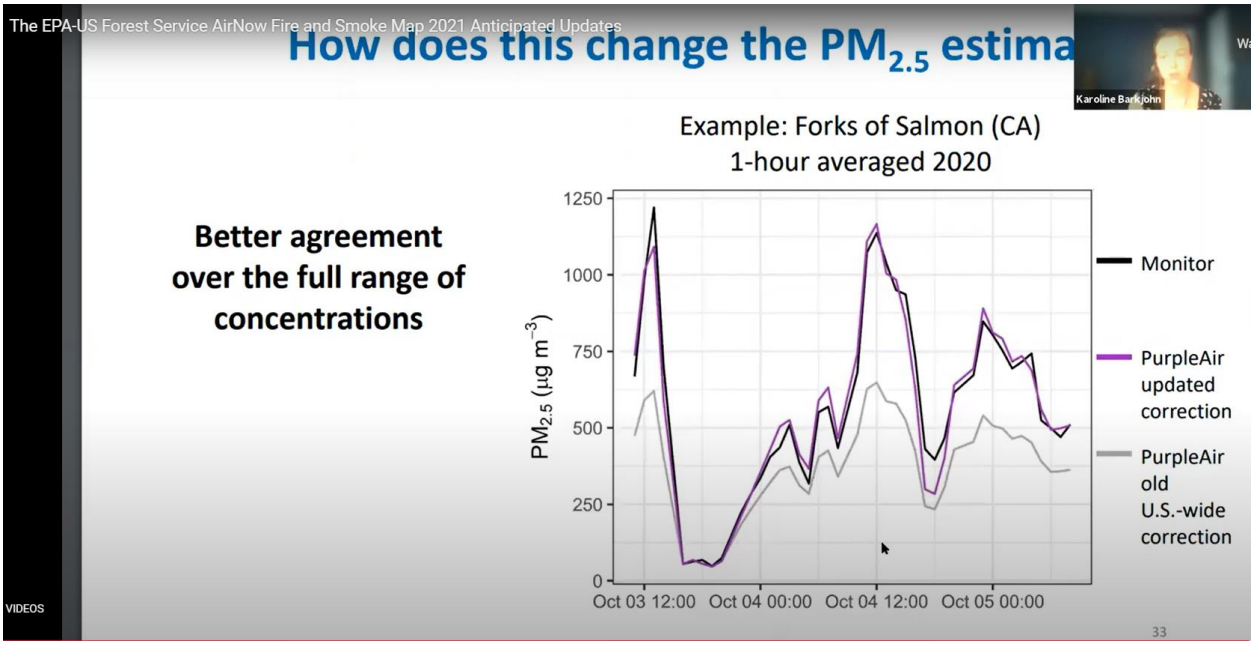
For a summary of the systemic effects of breathing fine particles suspended in air, *see also: https://hms.harvard.edu/magazine/racism-medicine/particulates-matter.* That article points out how such particles (PM 2.5) can cause a host of health conditions including not only cardiovascular or respiratory vulnerabilities, but as many as 12 additional diseases, including kidney failure, urinary tract and blood infections, and fluid and electrolyte disorders. This was based on a study of 95 million Medicare hospitalization claims from 2000 to 2012. "The research demonstrates that even small, short -term increases in exposure can be harmful to health, and quantifies the economic impact of the resulting hospitalizations and lives lost" (p.1). The article went on to point out that while older people may be more vulnerable than younger people with healthy immune systems, everyone is affected.

[5] "Road dust and its effect on human health: a literature review," Khan, R & Strand, M. *Epidemiol Health, v. 40.* April 10, 2018. See attached Document.

The Forest Service should be aware of the ability to monitor with reasonably reliable low cost equipment, in part due to comments/objects filed relating to the Gold Butterfly Project. The technology for the use of low-cost and reliable products to monitor air quality is an obvious and reasonably simple solution. As part of the attachments , we are providing the Forest Service with a copy of an article from the "PurpleAir" website, which shows products (including for outdoor monitoring) for less than $300. In addition, we have provided a copy of another document attesting to the reliability of these sensors from credible sources. A copy of an EPA referenced study from 2020 is also provided with this Objection, which references and evaluates the "popular low-cost PM2.5 sensor" from PurpleAir." In that article, EPA indicates that these sensors are increasingly being used across the country, and goes on to explain these sensors when collocated (so they can be compared to AQI measurements) are of "near-regulatory grade quality." More specifically, the EPA found "results for PurpleAir sensors when corrected, accurately report NowCast AQI catetories 90% of the time."

The PurpleAir online map shows recent and current data from the network of PurpleAir monitors. This map's data now defaults to being presented as the correlated EPA AQI Index number and category. The conversion formulas which turn the base data into this AQI index number have been shown to give results which are extremely consistent with actual EPA monitors over the full range of PM2.5 concentrations (see EPA example in image[6] below).

[6] https://www.youtube.com/embed/G7CNziDkUok?&start=1641



The PurpleAir online map accessible to a user, can show the recently collected data as either a graph of real-time data, or as a graph showing the average of data collected over a period of time from 10 minutes to 24 hours. As the NAAQS standards relate to the 24-hour average, this means that it would be extremely easy for a Forest Service employee to determine with strong confidence whether the NAAQS standards were being met in the areas covered by PurpleAir sensors.

Another factor that will affect the air quality relating to the Bitterroot Front Project is smoke from slash burning. Given the immense size of this Project, the slash burning is likely to be considerable and continue over a period of years. The Forest Service needs to consider the impact of smoke particulate when combined with road dust and the need to restrict log hauling activity when conditions warrant (including when smoke may come from a wildfire). Such combination of factors needs to be addressed and enforced in plans for logging operations when dangerous levels of particulates are reached. Along these lines, it should be noted that evidence shows that prescribed fires in and of themselves can be especially dangerous to human health. In that regard we first point to a technical paper examining the nature of prescribed burns and their production of such

particles, written by Haikerwal, *et. al.*[7] That article warned of special potential concerns regarding prescribed fires:

> Unlike wildfires that are of high intensity, prescribed fires are cool low-intensity burns and produce relatively short plumes…While low-intensity prescribed burns (low heat, light emissions) cause minimal risk to life and property, they can however emit large amounts of smoke particulates… . Furthermore, prescribed burns are conducted on a regular basis (annually) and impact communities each year. Wildfires, on the other hand, are unpredictable episodic events. There may also be differences in the pattern of smoke exposure (such as duration and frequency) from prescribed fires compared to wildfires. Exposures to smoke plumes from prescribed fires are generally shorter in duration but occur more frequently than wildfire events, although studies are required to quantify the impacts from this. Prescribed burns are conducted under favorable meteorological conditions, for example, light winds and wind gusts, low temperature, and moderate humidity. These conditions limit the ventilation rate and smoke dispersion and thus promote the buildup of air pollution. As a result, smoke from prescribed burning can have a substantial impact on rural/regional areas, along with potential to impact airsheds due to long-range transport of smoke particles.
>
> One of the important pollutants present in high concentrations in smoke from prescribed burns and wildfires is fine particulate matter (PM 2.5 with aerodynamic diameter <2.5µm), and research studies have shown that PM 2.5 concentrations consistently exceed the air quality guidelines… Smaller particles are of greater public health concern than larger size fractions for two reasons: First they remain in the atmosphere for longer periods of time and second, they can penetrate further in the respiratory system where they promote local and systemic inflammation. …

Another study from the Medical Journal of Australia has been reviewed in various articles, as noted in https://www.scimex.org/newsfeed/health-impacts-of-prescribed-burns-significant and https://medicalxpress.com/news/2020-04-

[7] Haikerwal, Reisen, Sim, Abramson, Meyer, Johnston and Dennekamp, *Impact of smoke from prescribed burning: Is it a public health concern,* Journal of the Air & Waste Management Association, 65 (5):592-598, 2015.

negative-health-impacts-significant.html. Those articles reiterate that a significant number of premature deaths, and hospitalizations (and related costs) attributable to elevated PM 2.5 concentration. "The study found that, although the impacts of smoke from individual prescribed fires was much lower than that of severe bushfires, their cumulative impacts were similar because of much greater frequency of prescribed burns" [quotation from Schmex].

The message in all of this information is that the Forest Service needs to protect the health of the public relating to particulates potentially emitted as a result of this Project. As part of this they need to ensure that they are fully monitoring the particulates emitted relating to this Project and ensure that Clean Air (and DEQ) standards are met. This will involve the need to adequately monitor particulates by keeping track of 2.5 particles throughout the project area, including by using numerous reliable monitors (such as those available through PurpleAir). If the readings exceed those exceeding federal and state levels (as set forth above), then the Forest Service needs to shut down Project activities until safe levels can again be established.

Questions:

1.) What analyses (if any) has the Forest Service undertaken, to ensure that clean air standards (especially involving particulates—especially arising from road project activities, including road usage and road dust, as well as prescribed burning?) In answering this question, please provide the details of the analysis referenced.

2.) What plans (if any) does the Forest Service have as to halting Project activities, in the event clean air particulate standards are not being met? (Please set forth all planned procedures to avoid violating any state or legal requirements—including those outlined in this section—regarding meeting particulate limits.) Please set forth in detail all such plans, including the halting of controlled burning activities; stopping logging operations; halting log hauling activities; etc.

3.) Please describe in detail all plans the Forest Service has to monitor particulates arising from this Project, including the use of any air quality monitors and the anticipated expense for the same throughout the life of the Project.

4.) If the Forest Service has not developed plans to meet air quality federal or state requirements, please set forth in detail, all legal justifications for such a position that the Forest Service intends to rely upon.

THE SCOPING DOCUMENT ATTEMPTS TO SIDESTEP NECESSARY PROCESSES FOR UPDATING THE BITTERROOT NATIONAL FOREST PLAN AND THE UTILIZATION OF "AMENDMENTS" TO LIMIT LEGALLY REQURED PUBLIC INVOLVEMENT.

The Bitterroot National Forest Plan was developed in 1987 under the 1982 Planning Rule passed by Congress. This Planning Rule has been replaced by new Planning Rules, including most recently in 2012. In 2016, the Forest Service made administrative changes to the Bitterroot National Forest Plan to comply with this latest Planning Rule. The 1987 Forest Plan, however, remains in effect despite these administrative changes.

The National Forest Management Act (NMFA) anticipates forest plans to be updated every 15 years. This practice has been ignored, apparently for budgetary reasons. The Forest Service stated in its 2016 letter announcing the administrative changes mentioned above that, "The Lolo and Bitterroot National Forests are proposing to revise their forest plans simultaneously, given that the two forests share a common boundary and can use a joint team of specialists to complete both plans at the same time. Revision is expected to begin in the near future, depending on the availability of funding." Based on discussions with a Forest Service official it is our understanding that the Bitterroot Forest Plan is one of the oldest forest plans in the region. Six years have passed since the 2016 letter referencing intended Plan changes were announced. Priority in budget concerns should not be an excuse for failing to amend the Plan (and involving the public in

doing so), or in ignoring requirements in enforcing the Plan "as is," or illegally attempting through "amendments" to move forward with Projects.

The violations referenced are best reflected in the Scoping document for the Bitterroot Front Project which (on p. 16) makes it clear that the Forest Service is intending to ignore Forest Plan requirements in implementing this Project. The Scoping document has the audacity to declare that "this amendment applies to this project only and does not change the plans for other projects." Yet the planned amendments in reality are representative of a blanket revision of standards in the Bitterroot Forest Plan. This is reflected on p. 18 of the DSEIS relating to the Gold Butterfly Project which confesses the Bitterroot Forest's gameplan to consistently apply the old growth "project-specific amendments to the other major projects currently underway in the Bitterroot—i.e., the Mud Creek and Bitterroot Front projects, stating:

> Other projects including Mud Creek and the Bitterroot Front will also be incorporating a project-specific amendment to the Forest Plan for old growth. These site-specific amendments improve the method for measuring the amount of old growth in project areas and evaluating project effects. Modifying the current criteria used to identify old growth is based on better scientific information than was used in 1987 when the Bitterroot Plan was developed. Therefore there would be no adverse effects expected to old growth when considering this project project-specific amendment in concert with the reasonably foreseeable old growth project-specific amendments for Mud Creek and Bitterroot Front projects.

It is very apparent that the Bitterroot Forest administration is effectively undertaking Plan amendments and simply, through a "sleight of hand," hiding that fact by calling them "project-specific" amendments.[8]

[8] The magnitude of the supposed project-specific amendments is amplified by the size of the projects referenced. The Gold Butterfly project, as previously indicated, encompasses over 55,000 acres on the east side of the Bitterroot Valley. The Mud Creek project involves approximately 48,000 acres and the Bitterroot Front project about 144,000 acres, both on the west side of the Bitterroot and together encompassing almost the entire length of the Bitterroots in Ravalli County. [The utilization of site-exception amendments have also recently been applied not only to the Gold Butterfly Project, but also in another project concerning road density in elk habitat (namely the Darby Lumber Lands project), changing the road system across more than 27,000 acres, with logging on about 1300 of those acres on the southeast side of the Bitterroot valley. The Scoping document presented for the

By taking the course of action it has over such a wide expanse of the Bitterroot Forest, the Forest Service is violating CFR § 219.13(b)(3), which states, "…Except for an amendment that applies only to one project or activity, a proposed amendment that may create a significant environmental effect and thus requires preparation of an environmental impact statement is considered a significant change in the plan for purposes of the NFMA and therefore requires a 90-day comment period for the proposed plan and draft environmental impact statement (§ 219.16(a)(2)), in addition to meeting the requirements of this section."

It appears that the Forest Service is illegally attempting to use project-specific amendments to bypass the need for more comprehensive public input which would naturally be part of the development of a new Forest Plan. We are deeply disappointed by the Forest Service's attempt to do an "end-run" around the public on this issue.

Questions:

1.) Please set forth in detail all legal authority and all factual data upon which the Forest Service intends to rely to support their decision to utilize "Project-Specific" Forest Service Plan Amendments in undertaking the Bitterroot Front Project.

2.) Please set forth in detail the status of all plans and actions the Forest Service has undertaken to amend the Forest Service Plan currently in effect, and detail any proposed changes to the Plan.

THE FAILURE TO ADEQUATELY DEAL WITH ADEQUATE "OLD-GROWTH" REQUIREMENTS IN THE SCOPING DOCUMENT PLANS AND THE

Bitterroot Front Project also reflects plans to remove Plan components for elk habitat effectiveness, thermal cover and hiding cover, under the guise of a "project-specific" amendment rationale.]

JUSTIFICATIONS FOR THE SAME, NOT ONLY AFFECT SPECIES SURVIVAL, BUT ARE CONTRARY TO CLIMATE CHANGE CONCERNS, AS WELL AS ENHANCING DANGERS FROM LARGE FIRES.

The Scoping document (and the video the Forest Service has provided to the public) for the Bitterroot Front Project commits to reducing fuels, ostensibly by removing ladder fuels. But, that is inconsistent with the massive commercial logging which is anticipated in the Project, which will undoubtedly involve considerable stands of old-growth stands, as reflected on p. 10 of the documents (54,883 acres being described as "Opportunity Areas" for commercial logging). The references cited by the Forest Service in the "Scoping document" include several citations to Green et. al which has been previously utilized by the Forest Service to allow for significantly more removal of old growth trees (e.g, in the Gold Butterfly Project). The less restrictive nature of the definition of "old-growth" presented by Green et. al., would allow for significantly more removal of large, old trees from old-growth stands without having to classify the result as "losing old-growth stands." In contrast with the Plan for the Bitterroot Forest, this would almost certainly lead to more commercial logging of old-growth stands, threatening important wildlife habitat and forest resilience. The cited authority by the Forest Service is almost entirely based on authority which is certainly quite dated and certainly not the most current science—especially in light of the crescendoing climate crisis imperiling humanity, wildlife, and the entire world environment. Suffice it to say that the undersigned strongly object to the cutting of any old growth stands (or those that function as such), especially given the effects of climate change on preserving moisture in the forest, including in the form of snowmelt; the likelihood that historical forest regeneration is unlikely to occur given increasing temperatures and drought; the likely impact of extreme wind occurrence when fires occur; and, of course the damage done to habitat for endangered species.

Significant studies currently suggest that forest treatments which attempt to use fuel reduction to mitigate forest fires can actually have the opposite effect.

One such study[9] analyzed 1,500 forest fires affecting over 23 million acres of pine and mixed-conifer forests in the West from 1984 to 2014. The study covered 11 western states and considered 45 different variables, including climate ecoregion and topography. It found that the more actively managed areas with more logging suffered higher burn density as noted below:

> We found no evidence to support the prevailing forest/fire management view that higher levels of forest protection [like parks and wilderness] are associated with more severe fires when fires eventually occur. On the contrary, using over three decades of fire severity data and a broad analysis are, we found support for the opposite – burn severity tended to be higher in pine and mixed-conifer forests with lower levels of protection – more intense management – after accounting for topographic and climatic conditions.
>
> …While we did not test for the specific mechanism responsible for our findings, we suspect based on published literature… that logged areas tended to burn more severely than protected areas due to logging slash and homogenization of dense vegetation found in most forest plantations. Also in forests with higher canopy cover, which are frequently found in protected areas, woody material on the forest floor can stay moister later into the fire season, due to the cooling shade of the forest canopy.

The findings referenced above are strongly buttressed by *Atchley et al*,[10] which indicates that the type of openings which currently seem likely under the Bitterroot Front Project are likely to result in "turbulent wind conditions" resulting in "faster fire spread."

[9] Dominick DellaSalla, Ph.D., Geos Institute, Chad Hanson, Ph. D., John Muir Project, Earth Island Institute; and Curtis Bradley, Center for Biological Diversity, *Logged Forests Across the West Burn at Higher Severities Compared to Protected Forests (Summary)*

[10] Atchley, et al 2021, "Effects of fuel spatial distribution on wildland fire behaviour." International Journal of Wildland Fire, https://doi.org/10.1071/WF20096.

Because of the lack of detail in the Scoping document regarding the Bitterroot Front Project, it is difficult to fully assess what is actually being planned regarding "old growth" forests, or even what "old growth" forests means in the context of this Project. Recently (in April of 2022), President Biden issued an executive order[11] which in part mandates that within one year, the Forest Service (as part of the Department of Agriculture): "define, identify, and complete, an inventory of old-growth and mature forests on Federal lands, accounting for regional and ecological variations, as appropriate, and make such inventory publicly available." In short, the Bitterroot Forest Service now has the cart before the horse where acting relating to "old growth" forest issues when it comes to the Bitterroot Front Project. The Bitterroot Forest Service should first comply with the requirements of the executive order above referenced in completing an inventory of "old-growth and mature" forests within its jurisdiction, and provide that information to the public—before proceeding with the Bitterroot Front Project.

Questions:

1.) Please cite all authority relied on by you which contradict the conclusions of *DellaSalla et al* and of *Atchley et al* in the above references.

2.) Please indicate whether or not you agree that climate change will impact forest regeneration potential, and if so, how that has been considered in the recommendations utilized in the DSEIS.

3.) Please explain how and to what extent "old growth" harvesting plans intended in the Bitterroot Front Project have evaluated and adapted to climate change concerns, including the those relating to fire severity (such as enhancement of turbulent winds) based on the studies referenced above by *Atchley et al* and *DellaSalla et al.*

4.) Please set forth an alternative to avoid the openings referenced in *Atchley et al.*

[11] *See* https://www.whitehouse.gov/briefing-room/presidential-actions/2022/04/22/executive-order-on-strengthening-the-nations-forests-communities-and-local-economies/.

5.) Identify and detail all plans the Bitterroot Forest Service has to comply with the "executive order" signed in April of 2022 (referenced above), including plans to make such information available to the public. As time goes on, please update this information until such analysis is completed.

NEED FOR ANALYSIS OF ADDITIONAL STUDIES (AND PROVIDING THE SAME TO THE PUBLIC) BEFORE PROCEDING WITH BITTERROOT FRONT PROJECT PLANS

The "Scoping document" for the Bitterroot Front Project is woefully inadequate in providing appropriate information to properly evaluate the plusses and minuses of the Project, and hence for us (and the public generally) to knowledgeably comment. In addition to the requests previously made in these comments, some of the additional analysis need includes the following.

A.) Economic Analysis:

An inherent part of any Project should include an economic analysis…a determination of the costs of the project and a detailed summary of how those expenses will actually be met. In the Gold Butterfly Project, the Forest Service endeavored to equate economic benefits generated to employees and mills outside of the county with the approximate $1.65 million shortfall. Obviously, such economic "benefits" would not pay for that shortfall, leaving serius concerns that proper roadwork, restoration, and many of the other planned activities enumerated in that project would not actually be accomplished. For the Bitterroot Front Project, with regard to all activities planned as part of the Project please be specific as to how said expenses will actually be paid, and from what resources, detailing actual funding available to accomplish the same. As part of this analysis, please include any anticipated costs for maintenance of county roads (both in and outside the project, to the extent such roads will be utilized to transport all involved vehicles to and from state and federal highways to/from project activities).

B.) Air Quality:

Please provide a detailed analysis of all air quality issues raised in these comments as expressed above.

C.) Scenery:

Please prepare an analysis of how the Bitterroot Front Project will impact the scenery, not only in the affected area, but also the viewshed from the remainder of the area impacting (including the valley floor and eastside of the valley), showing where and how the views will change from the trees and vegetation which are planned to be removed, and where the intended roads relating to the Project (existing, new, and "temporary") will be located.

D.) Climate Change and Carbon; water impacts:

Please set forth in detail all carbon emission or related carbon impacts that are anticipated relating to the Project. This should include not only impacts from the removal of vegetation (including—but not limited to--all old-growth trees, as well as debris removal and resulting soil impacts), effects of all controlled burns, and emissions from all vehicles likely to be included in the project (including logging trucks incoming and going likely mills, and other equipment operations), etc.

Explain the Forest Service's analysis of the impact of climate change on likely Project activities and plans, including restoration activities and success of the same; estimation of how drought is likely to affect regeneration; or any other aspect of the Project. Also explain the Forest Service's analysis on how the Project will impact available water resources for the valley, including impacts of overstory reduction; forest floor debris removal (currently retaining moisture to the forest floor); controlled burn activities; snow cover; etc.

E.) Wildlife and Fisheries:

Please provide a detailed analysis of how the planned Bitterroot Front Project will impact fisheries and wildlife, including all endangered or threatened species.

F.) Roadless and Wilderness Areas:

Detail all impacts to any roadless areas or wilderness areas resulting from the planned Project (including direct and indirect impacts.

CONCLUSIONS:

To date the Forest Service has provided very inadequate information by which the public is able to evaluate the actual plans regarding the Bitterroot Front Project and its impact for the health of the forest, affected wildlife, and the citizens of this community. Rather than just distracting the public with hysteria of threatened fires (and not even providing current more complete scientific information about comparing the history of fire mitigation in treated versus untreated areas), the Forest Service needs to provide the public with what the total impact of the intended Project may mean, and offer a range of alternatives for consideration. Based on the plans to date, the undersigned fear that the Bitterroot Front will be left with relatively bare hillsides, that continue to dry out, with greater fire and other risks to any remaining trees and other vegetation, as well as the wildlife dependent on the forest. Given the reality of global warming, the risk of forest regeneration failure is a likely result, unless careful attention is paid to Project plans. That would leave this community also with serious scenic deficits—essentially bare hillsides, criss-crossed with an unsightly myriad of logging roads. The Forest Service also needs to fully set forth an economic analysis of the Project and plans to cover its complete costs (including those related to county roads). The forest service also needs to make complete and adequate plans to protect the public against dangerous particulate emissions resulting from any Project plans.

Thank you for this opportunity to comment.

Sincerely,

Gail H. Goheen and Stephen S. Goheen