September 13, 2023

Bitterroot National Forest
Matt Anderson, Forest Supervisor, Bitterroot National Forest
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Filed electronically at: https://cara.ecosystem-management.org/Public/CommentInput?Project=57341

Please acknowledge receipt.

Re: Bitterroot Front Project - Comments regarding draft Environmental Assessment (EA)

Dear Supervisor Matt Anderson and Ranger Steve Brown,

Thank you for providing this opportunity to comment regarding the draft Environmental Assessment relating to the Bitterroot Front Project. These comments are submitted on behalf of Gail H. Goheen and Stephen S. Goheen; Alliance for the Wild Rockies [Mike Garrity, Director]; and Friends of the Bitterroot [Jim Miller, President]. We are very concerned about the negative impact of this huge Project for so many different reasons, several of which are summarized below.

1.) Introduction.

The scope of the planned Bitterroot Front Project outlined in the draft Environmental Assessment (EA) is nothing short of shocking, given its massive size and potential impact, including for the health, safety, and well-being of the people living in the Bitterroot. The announced total project spans 57 miles along the length of the Bitterroot mountains from McClain Creek, near Lolo on the North to Trapper Creek southwest of Darby, encompassing 143,340 acres [Ravalli

Republic, Aug 26, 2023, pp. 1-2]. Pages 8-12 (and Table 2) of the EA summarizes (in part) the Forest Service (FS) plans through this project to oversee/conduct:

- commercial logging (and prescribed burning) on 27,477 acres;
- noncommercial stand improvement (and prescribed burning) on 3,163 acres;
- noncommercial whitebark pine restoration (and prescribed burning) on 35,575 acres;
- prescribed burning only on 54,046 acres; and
- slashing and prescribed burning on 18,019 acres.

Thus, adding the acres mentioned above, the total land subject to prescribed burning could be as much as 138,280 acres. (The acreage amount is somewhat in question because according to the EA citation referenced above, treatment areas may overlap…although determining the extent of that is more than difficult to discern because the project is essentially "conditions based" and largely left to "plan as you go" determinations.) The "prescribed fire only" treatment would also include wilderness areas (p. 11, draft EA). The project is expected to take about 4 years to complete (2024-2027).

These comments will certainly not attempt to address all of the effects of the project on vegetation, wildlife, soils, etc., but will primarily focus on public health and safety issues that will likely ensue from the Project and affect the human environment.

2.) Is an Environmental Assessment An Appropriate Means for Analysis and Public Input, or should an "Environmental Impact Statement" Analysis and Process be Required.

The FS in this instance has chosen to utilize an Environmental Analysis (EA) process for undertaking the Bitterroot Front Project. To do so, the FS thus far, has essentially determined that there will be no significant impact to the environment. (40 CFR 1501.5 and 1501.6). The National Environmental Policy Act (NEPA), however as noted below, absolutely requires agencies to prepare an Environmental Impact Statement (EIS) process if a proposed major federal action

will significantly affect the quality of the human environment. The regulatory requirements for an EIS are more detailed and rigorous than the requirements for an EA. Even the process referenced in the draft EA (at p. 7) recognizes the importance of whether the quality of the human environment will be affected by the subject project, because in that event there is an acknowledgment that an EIS should be required to go forward.

NEPA regulations (many of which were revised in May of 2022), require federal agencies—including the US Forest Service—to comply with requirements protecting the human environment relating to any actions they undertake (including, but not limited to, those involving actions requiring an environmental impact statement under Sections 40 CFR 1502.3 and 40 CFR 1502.4). Section 40 CFR 1508.1 includes a number of definitions federal agencies are to utilize in undertaking their responsibilities. Under it, "Human environment means comprehensively the natural and physical environment" both for "present and future generations of Americans with that environment." "Effects or impacts" (which are implicit in any EIS) are now defined by the same cited regulation (subsection g) to mean "changes to the human environment from the proposed action or alternative that are reasonably foreseeable and include:

> (1) Direct effects, which are caused by the action and occur at the same time and place.
>
> (2) Indirect effects, which are caused by the action and are later in time or farther removed in distance, but are still reasonably foreseeable. Indirect effects may include…effects on air and water and other natural systems, including ecosystems.
>
> (3) Cumulative effects, which are effects on the environment that result from incremental effects of the action when added to the effects of other past, present, and reasonably foreseeable actions. …Cumulative effects can result from individually minor but collectively significant actions taking place over a period of time.

> (4) Effects include ecological (such as the effects on natural resources and on the components, structures, and functioning of affected ecosystems)…economic, social, or health, whether direct, indirect, or cumulative. Effects may also include those resulting from actions which may have both beneficial and detrimental effects, even if on balance the agency believes that the effects will be beneficial."

In subsequent sections of these Comments, many significant issues affecting the human environment (given the above definitions) are raised, including:

- Effects of smoke from prescribed fires that will impact the human environment (especially in the Bitterroot Valley);
- Effects of road construction and project activities that will compound air quality problems, especially in the more localized regions where logging and other heavy equipment may clog the air with dust particulates;
- Financial (economic effects as referenced above) on Ravalli County roads resulting from road usage between the Forest Service controlled property and Highway 93; and
- Financial (economic effects a referenced above) from the impact of the Project on tourism, community commercial activities, and property values.
- Arguments for the Project based on "theories" from the FS which are contradicted by actual "evidence," relating to the planned forest "treatments," posing an additional potential risk to the human environment, including through wildfires and climate change consequences.

Other environmental issues will also be at least briefly addressed below, or encompassed in Comments made by others which the undersigned have joined in.

3.) <u>Small Particulates Relating to the Project Pose a Serious Health Danger.</u>

Before addressing the effect of particulates from prescribed fire smoke and other particulates related to the Project (such as dust from use of roads and other

Project activities), it is important to appreciate the health damage emanating from these particles. The Federal Clean Air Act (through EPA's National Ambient Air Quality Standards—NAAQS) includes requirements for airborne particulate concentrations, which currently for PM 2.5 particles (very small particles which are particularly dangerous to health) are not allowed to exceed 35 micrograms/cubic meter over a 24 hour period (40 CFR 50.13). This maximum level is significantly reduced from the 1997 standard where the standard was 65 micrograms/cubic meter, reflecting a trend by specialists in recognizing the danger of these particles.

The EPA now lists a myriad of serious health conditions for people resulting from small particulate exposure (*see* attachment Item 2). There the EPA emphasizes that small particulates can affect both your heart and lungs, causing a variety of problems such as:

- premature death in people with heart or lung disease;
- nonfatal heart attacks;
- irregular heartbeats;
- aggravated asthma;
- decreased lung function; and
- increased respiratory symptoms, such as irritation of the airways, coughing, or difficulty breathing.

The EPA indicates that older adults and children are most impacted by these particulates.

The issue is so concerning, that once again the EPA is considering lowering the standards for PM 2.5 particles (*see* attached Item 3). For additional documentation referencing the health dangers from particle pollution, see a posting at the American Lung Association (attached Item 4), where cancer was also mentioned as a heightened risk and which cited other studies showing that even short term exposure could affect life expectancy. Another article provided, entitled: "How Pollution Affects Brain Health" indicates that air pollution is involved in neurologic disorders, including stroke, dementia, and possibly Parkinson's disease (Item 5 attached). For a summary of the systemic effects of breathing fine particles suspended in air, *see also an* article from Harvard magazine (Item 6 attached) which 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." 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. Even increased higher coronavirus death rates have been linked to fine-particle particulates (*see* appended Item 7).

With the evidence that small 2.5 PM particulates have serious human health negative consequences, the likely creation of such particles resulting from this Project should require further study, including through an Environmental Impact Statement analysis process.

4.) Air Quality Issues Relating to Project Prescribed Fires.

As previously indicated, the Federal Clean Air Act (through EPA's National Ambient Air Quality Standards—NAAQS) includes requirements for airborne particulate concentrations, which currently for PM 2.5 particles (very small particles which are particularly dangerous to health) are not allowed to exceed 35 micrograms/cubic meter over a 24 hour period (40 CFR 50.13).

Particulates can be created by dust resulting from project related road traffic and other project activities, but that problem will be addressed in another section of these Comments. However, it should be remembered that the source of particulates can certainly arise from fire activity as well. While smoke from wildfires can be harmful to health, so can smoke from prescribed burns. That is especially true here, where prescribed fires are unlikely to occur in conditions when there is not snow on the ground (in the Spring through Fall). During that time, the air flow is primarily from the West (as noted in the attached Item 8), which anyone who resides in the Bitterroot is familiar with. The inhabited area of the Bitterroot Valley lies not far from the project area in the relatively narrow valley and hillsides that extend east along most of the length Front Project--in

other words in the direct path of what is likely to be the prevailing airflow. Smoke from the prescribed burning will undoubtedly be frequently captured within this space, as winds are usually not strong during the spring through fall (as referenced in the appended Item 8). Even if there are overlapping treatment areas in the Project, as noted in the "Introduction" section above, the controlled burns are likely to be conducted in over 100,000 acres—a very large area, and over a major portion of a four year period. The human environment in the Bitterroot Valley will certainly be significantly affected by the Project activities, and the health of the people residing there will undoubtedly be impacted. This is supported by studies involving prescribed fires, as hereafter noted.

One of the technical papers warning about the dangers of prescribed burns and their production of dangerous particulates was written by Haikerwal (appended Item 9). 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 the attached Items 10 and 11. Those articles reiterate that a significant number of premature deaths, and hospitalizations (and related costs) are 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, Item 10]. This was analogous to the conclusion in a recent article out of California where 26% of the participants experienced impact from prescribed fire smoke. [*See* Item 12 attached.]

Similar concerns are expressed in the attached Item 13, an article describing a study of the effects of prescribed fire smoke on public health populations in Georgia, where the authors concluded:

> …The health burden of smoke from prescribed buns in the state is comparable to that estimated for other major emission sectors such as vehicles and industrial combustion. …These findings call for greater attention to the <u>air quality impacts</u> of prescribed burning in the Southeastern <u>U.S.</u> and the communities most exposed to fire related smoke.

See also Item 14 appended, for similar conclusions in "The Influence of Prescribed Fire on Fine Particulate Matter Pollution in the Southeastern United States" where the author echoed similar complaints in studies from Florida and Georgia.

5.) Road and Other Project Activities Effect on Particulates Relating to Health.

Some of the problems relating to this Project due to its impact on the human environment through generation of air particulates have been totally skirted by the FS in its draft EA. This is especially true regarding particulates created through road usage. The section of the draft EA dealing with transportation says primary access for the Bitterroot Front Project "is via U.S. Highway 93 and a network of NFSRs" (which are defined in the "Acronyms/Abbrevations" section at the beginning of the draft EA to be "National Forest System roads"). BUT, THERE IS NOT ONE REFERENCE FOR ROAD IMPACT ON THE COUNTY ROADS THAT CONNECT U.S. HIGHWAY 93 TO THE NSFR's in the draft EA or the Appendices that follow. The Chart on p. 75 references 478 miles of NSFRs in the project area. Reaching all of these roads will require access to Ravalli County roads; while the Forest Service has not quantified those, given the scope of the Project activities, that will probably amount to hundreds of miles of roads as well. Most of the length of those roads are dirt/gravel, with some chip seal which are not of highway paving quality. The weight of the of the trucks based on Federal Interstate Load Limits is probably at least 80,000 pounds Aside from the financial burden those loads will create for the County and County taxpayers due to road damage, as explained in the next section of these Comments, the Project will create very considerable particulates affecting air quality as well—especially for those who live nearby.

As mentioned in the "Introduction" to these Comments, commercial logging is planned for 27,477 acres. Nowhere in the Project documents is there any mention of the number of logging truck load that will generate, but some comparisons may be useful in that regard. It is important to realize that a loaded logging truck will impact road **much** more heavily than regular automobile, based on weight comparisons, axels, speed, etc. There are established formulas to determine car vehicle equivalencies and they are based on exponential factors that can be calculated.

One comparison which may be applicable relating to projecting loaded logging trucks involves the Gold Butterfly Project (which the Bitterroot Forest has indicated it will be undertaking across the Valley to the East). In the Gold Butterfly

Project, there are 6000-7000 logging truck loads of commercial harvest projected to be taken over a total period of 8 years. The Gold Butterfly Project involves a commercial timber harvest of around 5,281 acres. The projected road damage from logging trucks vs. historic traffic was calculated by us in response to that project, and estimated to be about 22 to 39 times the historic road usage. That amounted to loaded logging trucks for the Project being equivalent to 28,000,000 to 49,000,000 car trips. [The pages providing more detail and authority for these calculations from the undersigned's January 18, 2022 Objections, are attached hereto (as Item 15) and can be found in the FS files for the Gold Butterfly Project.] Obviously, these numbers are impressive, and they did not even include the effects of unloaded logging trucks going to the project or other project activities traffic.

So, what sort of such numbers might be projected from the Bitterroot Front Project in comparison? This is a somewhat challenging consideration, especially given the rather disconcerting numbers presented by the FS. As indicated above, the FS was projecting commercial logging on 27,477 acres. That is an amount which is **over 5 times the size** of commercial logging on the Gold Butterfly Project. [Even that is contradicted by the draft EA at p. 60, where 32,150 acres of timber harvest is projected.] YET, although the Gold Butterfly Project was estimated to result in at least 25 million board feet in 3 harvests of lumber (based on a 2020 Ravalli Republic article, attached as Item 16, and the timber harvest hasn't changed much since then). By comparison, although the estimated commercial timber harvest acreage for the Bitterroot Front Project is over 5 times the acreage of that for the Gold Butterfly, the board feet of lumber that was projected from the BR Front Project was a <u>maximum</u> of 33.4 million board feet (based on the numbers contained on p. 6 of Appendix F from said Project), which seems comparatively questionable. However, even just assuming logging trucks for the Front Project did not exceed those in the Gold Butterfly Project, there would still be an estimated 6,000-7,000 loaded logging trucks utilizing Ravalli County roads, AND that would take place in about half the time projected for the Gold Butterfly. (The Bitterroot Front Project is anticipated to occur over about 4 years from 2024-2027, and the Gold Butterfly Project was projected to take 8 years to complete.) Thus, the particulate emanating from the Front Project will be more immediately impactful.

How much particulate is likely to be generated by 6,000 to 7,000 loaded logging trucks? A Ravalli County 2004 Gravel Roads Management publication (Item 17 attached) indicates that a single vehicle travelling an unpaved road once per day for one year, will produce one ton of dust per mile. Now consider multiplying the number of historic car trips per day on a road by the type of multiples referenced in the examples of numbers utilized in the Gold Butterfly Project. (In that example utilizing a number of 28 million to 49 million equivalent car trips for the loaded logging trucks one way would be very dramatic in terms of the likely dust produced. Admittedly these loaded logging trucks in the Front Project would be traveling over more County roads than in the Gold Butterfly. But still, dust particulate would be created, perhaps less intensely, but certainly over many more miles of roads, and people living near those roads would be impacted. And, there would be added dust particulates from activities related to the logging operations, including yarding, road maintenance, etc. Add to this the impact of logging trucks traveling to the commercial logging sites; vehicle travel involved in thinning operations and in prescribed burning activities, and administrative travel, etc., and it is evident that dust particulates could create serious consequences for the health of residents along the roadways. This is not going to be monitored by regular Airshed or DEQ monitors stationed in the cities of western Montana. More localized monitoring should be required to measure road impacts, which taken together with prescribed burning and other activities affecting the airshed is important in protecting the human environment for those most immediately impacted by all of this activity, to ensure that Clean Air Act requirements (PM 2.5 particles levels) are being met for them.

6.) Proper, yet Inexpensive Air Monitoring Equipment Should be Utilized; That Has not Been Addressed in the Draft EA, and Should be Analyzed Through an EIS Process.

As mentioned above in section 2 of these Comments, an EIS process is reasonably required where there are possible effects or impacts on the human environment. Relating to definitions of "effects" or "impacts" applicable to mandates to analyze how they relate to the human environment, 40 CFR 1508.1 definitions, regarding cumulative effects need to be considered. That would

include those "that result from incremental effects of the action when added to the effects of other past, present, and reasonably foreseeable actions." In this instance that should include not only the particulates created as a result of the Bitterrroot Front Project, but also particulates that are foreseeable from prescribed burning and other activities relating to other planned Projects which the Bitterroot National Forest plans to conduct, including: the Gold Butterfly Project; the Mud Creek Project; the Eastside Project; zRye Creek Fuel Break; Sleeping Child Fuel Break; Sula District Fuel Break; Soda Baker Wildfire Risk Reduction and Forest Restoration Project Fuel Break; and Thunder Mountain project. These will add thousands and thousands of more acres which will contribute to fine particulates through prescribed fires and other treatments.

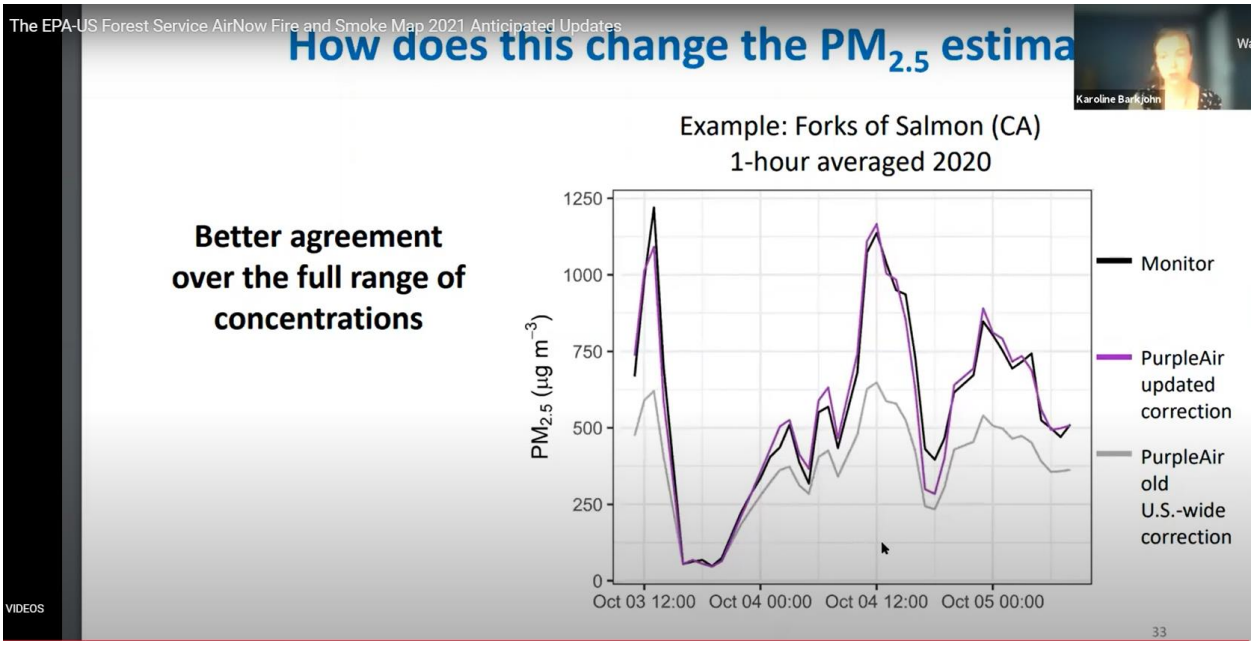
The FS indicates it will be able to manage smoke concerns with the Montana Department of Environmental Quality program through coordination with the Montana/IDAHO Airshed Group (p. 69 of Appendix A in the Project documents). Despite attempts, controlling smoke to keep it within the mandated for PM 2.5 particles which are not allowed to exceed 35 micrograms/cubic meter over a 24 hour period (40 CFR 50.13) that is highly unlikely for a number of reasons. Smoke cannot be automatically stopped like a light switch. It may linger for quite awhile. Smoke intensity may vary through the Valley and monitoring facilities referenced by the FS, may not be able to easily detect those differences. Smoke from outside the Project areas (or even the Bitterroot National Forest) is likely to compound the complexities of monitoring. Monitors across the valley adequate to measure particulates at a closer range (for those whose health is impacted there by smoke, dust, etc.) are currently not adequately in use. If the smoke levels at locations other than those normally utilized by the FS are beyond what is required for PM 2.5 particles (even if for comparatively short periods of time or with relative frequency), given the authority previously cited, they are likely to cause serious health problems (and even possibly death) for a number of people who reside in the Bitterroot Valley.

Furthermore, for the reasons explained above relating to road dust particulates engendered by the Project, more localized monitoring is reasonably required to protect the health in the human environment, especially along the roads that are more heavily utilized in the Project. In that regard, there are methods of monitoring that are reasonably needed.

The technology for the use of low-cost and reliable products to monitor air quality is an obvious and reasonably simple solution relating to meeting monitoring needs for the Bitterroot Front Project. As part of the attachments to these comments, we are providing the Forest Service with a copy of an article from the "PurpleAir" website [Item 18 attached], which shows products (including for outdoor monitoring) costing less than $300. In addition, we have provided a copy of another document attesting to the reliability of these sensors from credible sources [attached Item 19]. A copy of an EPA referenced study from 2020 is also provided with this Objection [Item 20 attached] 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." (A more detailed "PurpleAir PM 2.5 performance study from December of 2019 is also attached to these Objections as Item 21.)

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[1] below).

[1] 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.

Based on the above information, it should be reasonably feasible and relatively inexpensive (especially given the countervailing public risks) for the Forest Service to monitor the dust from the Bitterroot Front along the affected roads, and apply the measurements from the same to come up with reliable data for both monitoring and enforcing the Clean Air Act standards for PM 2.5 particles. Strategically placed monitors could also be put at many locations across the length of the Front Project to also monitor air quality affected by controlled burns. But monitoring also brings the duty of enforcing violations. Given the fact that the Forest Service is charged with the responsibility of complying with Clean Air Act requirements on this Project, it also need to be prepared to at least temporarily shut down hauling and as well as prescribed burning when a violation of the safe standard for PM 2.5 particulate measurements are being exceeded. Because these issues involve effects and impacts on the human environment, the

law requires analysis through an EIS process, and not the EA process utilized by the Forest Service to date.

7.) Financial (Economic) Impacts of the Project in Covering County Road Costs Has Not Been Addressed in the draft EA, and an EIS Process Should be utilized for that Purpose.

Not one word has been mentioned in the draft EA analysis documents about the impact of air particulate on the Ravalli County Roads that will be affected by the Project. Yet, undoubtedly significant maintenance will be required to handle all effects of the Project activities traffic for the dust and related damage which will result (especially from the heavy loaded logging trucks). Under the NEPA requirements (40 CFR 1508.1) mentioned near the beginning of these comments, effects requiring an EIS process analysis include ecological (such as the effects on natural resources and on the components, structures, and functioning of affected ecosystems)… economic, social, or health, whether direct, indirect, or cumulative.

In this instance, it is clear that the travel on Ravalli County roads to get to and from Project activities (especially those relating to log hauling) will indeed impact the roads, because there is no way to get to and from the Project areas (from U.S. 93) other than by crossing County roads. Ravalli County is very limited in its money to handle road expenses, as was evident from the input it gave to the Gold Butterfly Project (where it said it simply couldn't pay for the expenses on the county road impacted—Willow Creek Road). That means difficult and dangerous situations for those expecting to use the impacted roads, whether it includes those utilizing the roads for Project purposes or simply for recreation or a means to get to or from their residences. These impacts again clearly affect the human environment and call for an EIS process review.

8.) Economic Effects Stemming from the Project on Property Values, Recreational Activities, and Commerce in General Require an EIS Review Process.

As indicated in the prior section, EIS review (as opposed to EA) processes are mandated when the human environment will have effects from a FS activity.

More particularly the definitions included relating to such "effects" in part include the following un 40 CFR 1508.1:

> Effects include ecological (such as the effects on natural resources and on the components, structures, and functioning of affected ecosystems)… economic, social, or health, whether direct, indirect, or cumulative. Effects may also include those resulting from actions which may have both beneficial and detrimental effects, even if on balance the agency believes that the effects will be beneficial."

The economic and social effects of this project (in addition to the health effects as recited herein) should be considered.

Given the multitude of activities on the Project including (but not limited to) commercial logging, non-commercial thinning, slash and burning activities, and all of the prescribed burning which is planned (on this Project as well as others likely to contemporaneously occur), the impact on the nearby residents and communities will be very significant. While recreational activities are apparently not to be restricted by the FS relating to the Project, the reality is that most people who might normally visit the Bitterroot Front and related wilderness areas for a quiet and peaceful encounter with nature, will avoid doing so where any activities are being conducted. The likely encounters with ongoing smoke will make that even more true—not only for potential tourists and visitors (who undoubtedly will choose not to visit because of the Project), but also for residents. No doubt some of those who normally reside here, will also need to leave for health reasons (should they be able to financially or otherwise). In a nutshell, this Valley will become an unattractive and very challenging place to live—or—even go outdoors in much of the year, especially due to air particulate issues. Those largely (or even partially) engaged in commercial activities related to tourism (such as restaurants, hotels, main street shops, and the like) will undoubtedly be impacted, as well as the community that is indirectly supported by them. While business is likely to pick up for doctors and hospitals, that will hardly make up for the likely local commercial decline that will likely be the fallout.

The Project assessment (at least to some degree) even recognizes that there will be changes in the scenery resulting from the Project (*see e.g.,* pp 57-62

of the draft EA). But in general, that acknowledgment extends for 2 to 5 years (although on p. 58, it cites "temporal bounds" as 20 years). Black and gray forest areas from various view-points are also admitted. At one point (on p. 60), it is noted that 32,150 acres would be affected by commercial timber harvest "which would cause a direct effect on scenery from viewer access points." [Interesting number of acres cited for commercial timber harvest, in light of the references on p. 10 of the draft EA, showing that commercial timber harvest on the proposed Project will be 27,477 acres.] The bottom line is that there undoubtedly will be scenery impact from the Project which will influence the tourist and recreational commercial/economic nature of the Bitterroot Valley—whether that ends up being 2-5 years or 20 years. It surely will affect business and property values during at least during those times. And a likely sea of haze or smoke (most probably during normal tourist seasons) will also have a serious effect on commercial and residential activities and assets, for at least most of the 4 years while the projected time of the Project occurs.

But, the promises from the FS are that someday, the Project will all be for the good, and is justified because it will create a healthy forest ecosystem and lower the risk of wildfire (as well as improving vegetation, watershed, wildlife and fish habitat, in addition to transportation resources). The wildfire issue is of course the most promoted benefit, as fear always works the best to garner political and public support. The problem, however, is that there is significant actual evidence contrary to this benefit conclusion (which will be further discussed in the next section of these Comments). Regardless, it should be noted that even if all the benefits were justified, that does not take away from the fact that analysis of this proposed Project should be required to proceed through an EIS status, as opposed to an EA process. As noted above regarding 40 CFR 1508.1 and the discussion of "effects," changes to the human environment mandate an EIS process, even if there are offsetting benefits. The regulation in part, specifically indicates that changes to the human environment include : "those resulting from actions which may have both beneficial and detrimental effects, even if on balance the agency believes that the effects will be beneficial."

9.) <u>Justifications for the Project not only affect the likely demise of Old Growth trees, but are contrary to Climate Change concerns, as well as enhancing the dangers from large Fires.</u>

The draft EA 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 as cited above, which will undoubtedly involve considerable old-growth stands. The references cited by the Forest Service in the draft EA 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 considerably 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 historic 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 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[2] 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

[2] 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.* [See summary article at Item 23 attached.]

western states and considered 45 different variables, including climate eco-region 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*, [attached Item 24] which indicates that the type of openings which currently seem probable under the Bitterroot Front Project are likely to result in "turbulent wind conditions" resulting in "faster fire spread."

Other studies have also in fact shown, that contrary to the Forest Service's espoused motivations for the Project, forest "treatments" have actually made forests <u>more</u> vulnerable to wildfires rather than protected them. For example, the "John Muir Project," where recent high intensity fires occurred, produced more results contradicting the rationale for this Project. The results of study summarized were:

- Dense forests do not burn more intensely;

- Dense forests are not more susceptible to tree mortality from native beetles or drought;
- Logging does not curb wildfires—it does the opposite; and
- Protecting forests, and allowing them to increase their biomass and carbon is essential to change mitigation..

A copy of this article is submitted (Item 25 attached) as evidence contradicting the assumptions and rationalizations for the Forest Service's efforts to continue with the Gold Butterfly Project.

Similar conclusions have been expressed by George Wurerthner an ecologist who has written numerous books relating to the Forest Service and its failed policies regarding forest fire policies. (*See* attached article marked Item 26, entitled "Good Fire/Bad Fire, a False Paradigm").

Finally, attention is drawn to an article appended hereto as Item 27 (written by an experienced forest scientist) which discusses the failure of thinning projects in relationship to wildfire mitigation (either for home or fires), and his suggestions instead for fire mitigation in areas surrounding homes. He also emphasizes the effects of climate change regarding these issues.

Of course, there is also the risk of prescribe fires (especially on such a wide swath as that involved in this Project, may themselves set off the wildfires they are supposedly going to prevent, as was the case with the New Mexico fires in 2022.

Indeed, climate change is important and seems to have been largely ignored by the Forest Service relating to this project. We are concerned about the extreme shortsighted effects of this problem. With a drier, hotter evolving climate, the nature of projects like the Bitterrroot Front Project, cannot rely on regrowth and regeneration based on historical studies. Instead, the Forest Service should try to protect the forests—especially the Old Growth that we have--not only to preserve the vegetation there, but to protect the wildlife that depend on it, as well as to preserve the benefits that they bring to the human environment.

The storage of carbon in this present climate crisis is especially important, as noted by the U. S. District Court, Missoula Division (Judge Molloy) in a case

decided in August of 2023, *Center for Biological Diversity, et al vs. U.S. Forest Service et al.* (provided herewith as Item 28). In that decision, the Court rejected the Forest Service's use of an Environmental Analysis approach in a project involving large logging plans in the Kootenai known as the "Black Ram" project as being inadequate in evaluating the significant environmental impact affected. That project would have allowed nearly 4,000 acres of the forest to be commercially logged, including clearcutting in excess of 1700 acres and logging hundreds of acres of very old trees. [Obviously, the Bitterroot Front Project envisions far more commercially logged trees, and also uses the EA process.] In addition to making findings relating to grizzlies and other matters, Judge Molloy found that the Forest Service failed to consider the climate harms of the planned logging activities, noting (at pp 31-32):

> Ultimately, "[greenhouse gas] reduction must happen quickly" and removing carbon from forests in the form of logging, even if the trees are going to grow back, will take decades to centuries to re-sequester. FS-038329. Put more simply, logging causes immediate carbon losses, while re-sequestration happens slowly over time, time that the planet does not have. FS-020739 ("[I]t is recognized that global research indicates the world's climate is warming and that most of the observed 20th century increase in global average temperatures is very likely to increased human-caused greenhouse gas emissions.")

The Court went on to indicate that while the USFS addressed climate change in the EA, it pointed out that merely discussing carbon impacts and concluding that they will be minor does not equate to a "hard look" as required by NEPA.

Clearly the FS in the EA relating to the Bitterroot Front Project has failed to do the type of "hard look" analysis called for in the Black Ram decision. As Judge Molly indicated (at p. 34): "An EIS is required when an EA raises substantial questions that an agency action will have a significant environmental effect." Given the comparatively huge scope of logging and other environmental impacts involved in the Bitterroot Front Project, an EIS process should be mandated here—not only for the reasons relating to the issues considered by Judge Molloy in his ruling, but also due to the affects on the human environment which have been outlined in these Comments.

CONCLUSIONS:

To date the Forest Service has provided a very inadequate analysis of the proposed Bitterroot Front Project in its draft EA. A full EIS analysis process should be required to determine the effects of Project on the air particulates relating to the human environment—from the resulting smoke, as well as road and other activities, and the options for properly monitoring (and enforcing) compliance with the Clean Air Act. Such an EIS process is also necessary to determine the Project impact for the health of the forest, the effects on climate change relating to the project, affected wildlife, and the citizens of this community (including but not limited to the financial and social impacts resulting from deterioration of scenery, road costs, etc.). 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 through an EIS analysis process. Based on the plans to date, the undersigned fear that the Bitterroot Front will be left with land that will continue to dry out, with greater fire and other risks to any remaining trees and other vegetation, as well as devastation for 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 gray and black 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), as well as considering the economic losses to the community which is so dependent on the beauty of the surrounding forests and hillsides. The forest service also needs to make complete and adequate plans to protect the public against dangerous particulate emissions stemming from any Project plans, including those that result from prescribed burns, as well as road and other Project activities. Such an analysis should also consider the cumulative impact of a myriad of other FS projects currently under consideration.

Thank you for this opportunity to comment.

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