To: United States Forest Service, US Department of Agriculture

From: Michael Schenk

re: Mountain Valley Pipeline and Equitrans Expansion Project Supplemental EIS #50036

I write to comment on the Mountain Valley Pipeline's (MVP) Draft Supplemental Environmental Impact Statement (DSEIS) as a concerned citizen with professional experience in stream water quality, as a West Virginia landowner and registered ginseng grower, and as an Appalachian Trail backpacker. The USFS should choose Alternative #1: No Action, and restore the MVP Right Of Way (ROW).

**Damage to Jefferson National Forest and environs**

The DSEIS has not provided assessment reports, monitoring reports, and other documents that support the conclusions in the DSEIS; therefore, the public cannot review the methodology to determine if DSEIS has any justification to support its conclusions.

The analysis of the effectiveness of erosion control devices is severely flawed. The DSEIS claims that the MVP's erosion controls are effective at controlling erosion, runoff, and sedimentation under normal conditions when properly installed and maintained. However, the MVP has a proven record of improperly installing and not maintaining erosion controls. West Virginia Department of Environmental Protection has cited MVP with over 250 instances where the MVP failed to comply with the requirements of their stormwater construction permit resulting in over 50 violations of water quality standards. Sedimentation events from the MVP will continue.

Sedimentation events are not transient. The North Fork of the Roanoke River experienced long-term sedimentation following MVP construction. Sediment release into streams has been thoroughly documented during construction of the MVP. It is likely the MVP will release sediment again in the future. Construction of the MVP through Jefferson National Forest (JNF) will have long-term impacts on both local and distal stream ecosystems: riparian areas; populations of aquatic fauna such as fish, mussels, and benthic macroinvertebrates; and sources of potable water for human consumption. Sediment smothers fish eggs (e.g., brook trout) and bottom-dwelling fauna, and fills the cavity habitats in stream bottoms. The organic matter in sediment will contribute to nutrient pollution. The mineral components of sediment become semi-permanent components of the disturbed watersheds and will be flushed downstream over a long period of years by storm flows and other disturbances of stream beds. Clay particles adsorb pollutants and provide substrate for pathogens. These mineral components will affect biota and potable water treatment systems until they eventually deposit in riparian zones, the Gulf of Mexico, or Albemarle Sound. Ecosystems and human water usage are both impacted by these sediment particles. Water treatment plants will need to use additional quantities of flocculant chemicals to control the resultant turbidity, and the chances of particle-borne pathogens entering drinking water will increase. Studies have shown the extensive and long-term impact of sediment releases into streams and rivers.

Wood, P. J., & Armitage, P. D. (1997). Biological effects of fine sediment in the lotic environment. Environmental management, 21(2), 203-217.

Sara Rathburn, Ellen Wohl (2003) Predicting fine sediment dynamics along a pool-riffle mountain channel, Geomorphology, Volume 55, Issues 1–4, Pages 111-124,

"...persistent deposition of fine sediment within eddies distal from the sediment source may result from

sediment releases."
David G Argent, Patricia A Flebbe (1999) Fine sediment effects on brook trout eggs in laboratory streams, Fisheries Research, Volume 39, Issue 3, Pages 253-262,
"Our results indicate that increased levels of fine sediment may reduce survival of brook trout through early development."

The DSEIS is premature in stating that the MVP would have No Impact on Threatened, Endangered, and Sensitive species. It states that future "formal" consultations with the Forest Service would determine mitigation measures. This implies that such mitigation measures are not yet determined or planned. The DSEIS does not specify who would participate in these consultations, or the nature and form of them. The DSEIS does not make provision for public participation in these consultations.

The DSEIS is also premature in that it was filed before a current Biological Opinion from US Fish and Wildlife Service has been filed and published. The previous Biological Opinion was vacated by the court. This limits the ability of the public to comment in regards to Threatened, Endangered and Sensitive (TES) species.

I question the rationale that the DSEIS uses to conclude that TES species Effects Determinations are judged to be minor. Using American Ginseng (*Panax quinquefolius*) as an example, an Effects Determination of "May Impact Individuals – Is Not Likely to Cause a Trend Toward Federal Listing or Loss of Viability" is assigned to ginseng. The rationale provided is that the habitat for this plant on the ROW is already damaged, so it doesn't matter. This ignores factors such as the likely presence of propagules in the ROW soil. Ginseng seeds persist through winter stratification seasons and may germinate at a later date; this likely happened in West Virginia after 19th century clear-cutting. The DSEIS notes that ginseng individuals were observed in alternative ROW paths, but there is no indication that there was a prior survey for ginseng in the current ROW. Ginseng was thus likely present in the ROW. This is a valuable commercial species (the 2015 ginseng harvest in Virginia was valued at $2.15 million) which is regulated at the State, Federal, and international levels (CITES agreement, Schedule II), and is well-studied due its commercial value. Wild ginseng represents long-term financial security for rural families. The US population of ginseng is under high stress from habitat destruction and illegal harvesting. I have been present at Federal meetings with ginseng harvesters on the topic of reducing the harvest by increasing the harvestable age, as evidence of Federal interest in protecting this species while collaborating with the traditional harvest. Substantial jail sentences have been assessed on individuals who poached ginseng from JNF. What is the difference between poor locals who get jail time and large corporations who suffer no consequence? Corporations buy mitigation credits, but generic mitigation banks can't replace wild ginseng populations, which are genetically distinct and locally adapted. The populations are not interchangeable and bankable. This is likely true for other native plants which may be in the MVP ROW, such as trillium and lady's slipper orchid. The Forest Service must not dismiss the damage to ginseng and other such TES species that the MVP is causing. This species requires careful management, not careless destruction. The USFS must select Alternative #1 and return the ROW to prior condition in order to protect locally-adapted populations of TES species.
"Anyone caught removing ginseng from federal lands may face a fine of up to $5,000, six months in jail or both. Violation of Virginia’s wild ginseng harvest regulations is punishable by imprisonment for up to 12 months, up to a $2,500 fine, or both." (https://www.vdacs.virginia.gov/press-releases-220831-ginseng.shtml)
Schlag, E.M., McIntosh, M.S. RAPD-based assessment of genetic relationships among and within

American ginseng (*Panax quinquefolius* L.) populations and their implications for a future conservation strategy. Genet Resour Crop Evol 59, 1553–1568 (2012). https://doi.org/10.1007/s10722-011-9784-4

The MVP uses mitigation credits to offset some of the damage it causes. There is no equivalent generic mitigation bank to replace the rich Appalachian Cove ecosystems which MVP is damaging. Mitigation banks do not have old growth Appalachian Coves in their accounts.

The USFS states that "The Revision will emphasize restoration of damaged ecosystems, natural disturbance regimes, old growth areas, watersheds, and air quality. " How can the MVP, with a restoration and monitoring time scale of three years, restore old growth forest areas, which exist on a time scale of entire human lifetimes? Several acres of old growth are scheduled for removal. That old growth will not be restored in this century. Distant old-growth mitigation banks will not replace the intact ecosystem function of acres of old-growth forest in the JNF.

The DSEIS should require that funding for the planned restoration and monitoring work be secured in escrow, performance bond, or similar financial instrument. No provision is made to ensure that the funding for restoration and monitoring work is secure. Planned work will not be performed without a budget to pay for that work. The MVP envisions three years of professional monitoring of the ROW. This is expensive work requiring a high degree of skill. I have spent hundreds of hours working to control exotic and invasive plants on my West Virginia property, but I still could not identify on sight most of the four pages of exotic and invasive species listed in Appendix B of the restoration plan. This restoration and monitoring work will require a trained botanist (as well as experts in geomorphology and native fauna), as an example of the complexity and scope of the monitoring and restoration work. This work will be expensive if properly performed. The DSEIS should require that restoration and monitoring funding be secured now. Experiences with fracked gas pipelines in Pennsylvania show that careless practices can result in gross destruction including ecosystem damage and a burned home. Budget cuts can scuttle high-quality monitoring work: if the funding succumbs to market issues, how will the work be performed? The DSEIS is incomplete in not requiring pre-funding of restoration monitoring, with quality control and professional skill standards specified.
"Natural gas investigations in PA lead to record fine, closed pipelines", https://www.bayjournal.com/news/pollution/natural-gas-investigations-in-pa-lead-to-record-fine-closed-pipelines/article_551ef3fa-ac68-11eb-acd6-2b035028a604.html accessed February 20, 2023

The DSEIS is incomplete as regards detecting methane leaks from the pipeline. Surveys with instruments such as explosimeters able to detect methane leaks will be needed, since the MVP will not add odorants to the odorless methane carried by the pipeline. Instrument calibration, operator certification, and field procedures for methane detection need to be specified in the DSEIS.

The MVP will tunnel through Peters Mountain under the Appalachian Trail (AT). This will create novel paths for groundwater in the mountain; blasting could amplify the effect of faults and create stress cracks, and the tunnel itself could serve as a water path. Even if the tunnel is successfully sealed, groundwater could follow the exterior of the tunnel to the exits, and find new paths through widened faults and cracks. Existing water resources at a higher elevation than the bore could drain through the area of the construction bore even after it is backfilled. Soils near the Appalachian Trail could slowly dry, on a timescale beyond the MVP's three years of monitoring, and completely change the AT's vegetation community. This will create opportunities for invasive species to colonize the area of the

AT. Trees would be stressed for water and vulnerable to disease and parasites. Water resources of the Scenic Trail would be permanently changed. The DSEIS does not consider the long-term hydrologic effects of tunneling through the mountain. This should be addressed in the DSEIS.

The USFS should not provide concurrence to the Bureau of Land Management (BLM) to accommodate the MVP with a right of way and temporary use permit to cross the Appalachian National Scenic Trail. This will degrade the scenic nature of the trail. I have backpacked portions of the Appalachian Trail in five States, especially Virginia. I deeply appreciate the quietude of the Trail and the views from the AT. The construction noise and disturbance will impact miles of the AT, and the viewshed will be destroyed for the long term, with some portions of the MVP visible up to 15 miles from the AT. The USFS's own Revised Land And Resource Management Plan states that the JNF should "...provide for the conservation and enjoyment of the nationally significant scenic, historic, natural and cultural qualities of the land through which the Appalachian Trail passes." This can not be accomplished by running a major pipeline through the AT, with attendant clearcutting, excavation, welding, and blasting. The public will benefit from an undisturbed AT, not a damaged Trail and environs. "Visibility Study on the Appalachian Trail for the MVP", graphic, A Modern Day Threat to the AT: The Proposed Mountain Valley Pipeline, https://thetrek.co/appalachian-trail/a-modern-day-threat-to-the-at-the-proposed-mountain-valley-pipeline/ , accessed February 17, 2023

Construction of the MVP has already heavily impacted recreational, land and water resources, which is inconsistent with the Forest Plan; therefore, I urge USFS to refrain from making the 11 amendments to the Jefferson National Forest Plan in order to justify the harm done by the MVP. Many of the justifications for these amendments boil down to "it's a done deal, so keep going", i.e., heavy damage to the Forest has already happened, so further damage doesn't matter. The public will not benefit if the Forest Service makes these 11 exceptions to the Forest Plan.

**External costs of the MVP are against the public benefit**

The US EPA Region 3, in a comment dated February 15, 2023, acknowledges climate impacts from the MVP. The EPA. however, limits its comment only to the loss of ecosystem services and carbon capture of 22 acres of forest which the MVP will permanently convert to grass/shrub and industrial use. It is gratifying to see official acknowledgement of climate impacts from the MVP. The full impacts go far beyond local loss of ecosystem services, though.

The MVP damages the public's recreation, soil, and water. The MVP will also add roughly 72 million metric tons per year of greenhouse gas (GHG) to the atmosphere, making it a major contributor to US GHG emissions. The DSEIS should also analyze the MVP’s environmental and economic impacts on the rate of climate change, with its attendant catastrophes. The methane transported by the MVP is itself a potent greenhouse gas, as well as the carbon dioxide emissions from its combustion. Leaks of methane from the pipeline will be difficult to detect, trace, and repair because the MVP will not add odor to the gas, which also makes the pipeline an explosion and fire hazard. The DSEIS fails to consider the externalized costs to the public and distributed damage to the environment caused by the transportation, subsequent leaks, and emissions of these greenhouse gases. It also does not consider the loss of ecosystem services from burned, droughted or flooded ecosystems suffering climate impacts. These externalized costs take the forms of increased extreme natural disasters such as wildfires, floods, storms, and droughts. The DSEIS assertion that there are only beneficial effects from MVP is false. Science supports the fact that catastrophic climate impacts (on the order of billions of dollars and

thousands of lives lost) increase in both severity and frequency due to the use and release of greenhouse gases. This science and an analysis of the cost against the public benefit should be a part of the DSEIS. The public will not benefit from the MVP; it will, however, pay the externalized costs in the form of public funds for disaster relief, large engineering projects like seawalls, and relocating flood-prone populations. The public will also bear the increased cost of private insurance. Poor and marginalized communities are hardest hit by climate catastrophes, like the Ninth Ward in New Orleans during the unprecedented 2005 hurricane season. The climate impacts exacerbated by the MVP will damage the poorest members of the public with the fewest resources the hardest: a severe harm to the public benefit, and a cost to the taxpaying public.
"...the total lifecycle emissions from MVP would be 72.35 million metric tons CO2-equivalent annually.", Response to Mountain Valley Pipeline on Greenhouse Gas Emissions Analysis Filed in FERC Docket, https://priceofoil.org/2021/12/08/mvp/, accessed February 20, 2023
"The 2005 Atlantic hurricane season was the most active Atlantic hurricane season in history, until the record was broken 15 years later in 2020.",
https://en.wikipedia.org/wiki/2005_Atlantic_hurricane_season, accessed February 20, 2023

The international security consequences of the release of GHG due to the MVP and their impact on the environment must also be considered. Undeveloped and developing countries are becoming impatient with the disproportionate release of GHG by the developed world, and are beginning to demand compensation for climate disasters (a further potential burden on the US taxpaying public). Pakistan is an example. The unprecedented monsoon of 2022 flooded one-third of the country. From the Associated Press link below: "Pakistan, which contributed only 0.8% to the world's emissions, now faces damages estimated at more than $30 billion". The public tax burden of compensations to poor countries afflicted by GHG emissions is not in the public benefit. It will be difficult to quantify and associate this diffuse effect with the product supplied by the MVP, but the DSEIS must consider this real-world environmental impact to the detriment of the public benefit.
"Drive for climate compensation grows after Pakistan's floods", Associated Press,
https://apnews.com/article/floods-pakistan-united-nations-monsoons-climate-and-environment-403ba462fe9e808714e2fa849386d29d , accessed February 18, 2023.

Most inputs to the local economy from the MVP will be very temporary, with only 54 permanent jobs in two States. The public will pay the external costs and will not benefit.

**Conclusion**

For these reasons, I request that the United States Forest Service choose Alternative #1: No Action.