

APRIL 10, 2015

Via Electronic Mail: comments-southern-georgewashington-jefferson@fs.fed.us

Re: Mountain Valley Pipeline Special-Use Permit Comments

USDA Forest Service
George Washington and Jefferson National Forest
ATTN: Mountain Valley Pipeline Survey Comments
5162 Valleypointe Parkway
Roanoke, VA 24019

Dear H. Thomas Speaks, Jr.:

As the Science and Technical Committee of Preserve Craig, Inc. we urge the US Forest Service (USFS) to **deny the application by MVP for a Special-Use Permit to conduct surveys on Jefferson National Forest Lands in Craig County, Virginia**, pursuant to Alternative Routes 110, 110J and 110R for the Mountain Valley Pipeline (MVP) Project. The USFS has already judiciously denied such permission for a portion of Alternate 110 as incompatible with present land designation (i.e. Wilderness Area). We contend that the proposals of Alternative Routes 110J, 110R and the remaining parts of 110 show a similar lack of professional diligence on the part of MVP, as detailed in the attached assessment.

We understand the USFS typically allows surveys even when the proposal is highly questionable. In this case, however, **established facts about Alternates 110, 110J, and 110R clearly demonstrate that the route is so egregious and environmentally disastrous** that the USFS should reject the Special Use Permit application on the grounds of known environmental concerns. Specifically, current facts demonstrate that these alternatives 1) threaten the security of domestic water supplies, 2) violate longstanding management practices and policies, 3) violate multiple water quality BMPs, 4) threaten federally listed species, 5) damage viewsheds, and 6) negatively impact longstanding relations between the USFS and the citizens of Craig County.

At the same time, the exceptionally poor survey design will provide no useful information to support sound decision-making: the proposed surveys will be extensive rather than intensive (i.e. cover a wide area in a cursory way), and will be extremely limited spatially (300-ft survey corridor) and temporally (4-5 months for 300+ miles). While MVP will attempt to make definitive statements from such insubstantial data, the limited nature of their findings cannot address concerns for rare taxa, water quality, and other issues noted in our assessment.

If, the USFS does allow the surveys, we strongly suggest that 1) **the survey design be peer-reviewed by experts** to provide the best possible information, and 2) the survey work specifically **address the issues raised in the attached document.**

We appreciate the chance to submit comments and offer our services as the USFS considers this important decision. For more information, contact Larry Willis (ldwillis1028@gmail.com).

Sincerely,

The Scientific and Technical Committee of Preserve Craig, Inc., on behalf of the community

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State Senator Steve Newman
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ASSESSMENT OF THE IMPACT OF THE MOUNTAIN VALLEY PIPELINE

Prepared by the Scientific and Technical Committee of Preserve Craig, Inc.

Our assessment of the Mountain Valley Pipeline survey request addresses 6 critical areas:

1. Security of Domestic Water Supplies
2. Long Standing Land Management Strategies, Agreements, and Decisions
3. Water Quality, Landscape Considerations, and Best Management Practices (BMPs)
4. Rare, Threatened, Endangered, and Invasive Species
- 5 Viewsheds
6. Cultural Issues

Based on serious, well-documented, easily predicted violations of both policy and law across these six categories, we find MVP's request for a Special Use Permit to survey Jefferson National Forest Lands in Craig County unsupportable and recommend immediate rejection.

1. Security of Domestic Water Supplies

Virtually every Craig County resident (more than 5000 people) gets their domestic household water supply from water sources that originate in the Jefferson National Forest, and any large-scale disturbance of forested JNF lands will potentially interrupt or degrade these supplies. All households in Craig County draw their domestic water supplies from springs and wells within the county. This includes more than 500 households and businesses and more than 1200 people serviced by the Craig-New Castle Public Service Authority, which relies on local wells. Additionally, every Craig County agricultural operation relies on either groundwater or surface water that originates at least in part from the JNF. Therefore, the entire water supply for Craig County depends on the JNF for spring flow, stream flow, and groundwater flow to wells through easily disturbed karst geology. This highly sensitive karst geology means that fractures, cracks, channels, and sinkholes readily form throughout the region's limestone base, creating a deeply interconnected and fragile water supply. Excavation and blasting for pipeline construction thus has the potential to severely impact many miles and acres of NF and neighboring lands. One need only look at two case studies in this area to understand how sensitive karst-geology water supplies can be damaged 1) wells were disturbed by construction along the I-81 corridor and 2) drilling an exploratory gas well near Paint Bank contaminated the spring feeding the Paint Bank Fish Hatchery.

Moreover, allowing the passage of the pipeline through JNF lands would mean that the proposed pipeline would also pass through approximately 150 private-land parcels in Craig County that would be directly affected by the major forest-clearing, excavating, blasting, and related ground-disturbing activities required to build the MVP pipeline, creating additional risks for residents throughout the county, regardless of whether their land lies along the pipeline route..

The Forest Plan for the JNF (USFS 2004) extensively discusses the need to protect watersheds in the JNF that are relied upon for domestic water supplies. That discussion focuses on domestic water-supply impoundments for urban communities, but ignores the fact that protection of water supplies is equally, if not more, critical for rural communities where no alternative water sources exist. The JNF composes more than 50% of the land in Craig County. Thousands of Craig county residents rely on spring water and well water that depends at least in part, and in many cases substantially or entirely, on hydrology from the JNF. These water sources deserve and need protection just as much as domestic water-supply reservoirs. This issue is an oversight in

the present Forest Plan that certainly needs to be addressed in the next planning phase, but that must also be taken into account immediately as the USFS considers MVP's request.

A survey of surface features will do little more than identify a few existing sinkholes and will provide no information to assess the risks associated with future construction. At the same time, known, planned activities associated with the pipeline construction itself threaten the County's water supply:

- The survey corridor will be stripped of forest cover, removing an important water-filtering component of the forest floor that is particularly critical in karst regions, where channels and sinkholes can take surface water directly into the aquifer.
- A 10-foot-deep trench will be excavated through the rock and soil, and such activity itself has a history of altering groundwater flows.
- A 42-inch metal pipe will be placed in the ground and water breaks will be installed which will unavoidably alter near-surface water movement.
- The survey corridor will be compacted, creating a more-impervious surface.

The Weeks Act charged the Forest Service with restoring and protecting forests, watersheds, and water supplies (Williams 2003, Weeks Act of March 1, 1911; 36 Stat. 961). The domestic water supplies for hundreds of people could be negatively impacted by construction of the MVP pipeline through the JNF in Craig County, and such construction should not even be considered in such a hydrologically sensitive and critical area. *The residents of Craig County call on the Forest Service to help protect and secure their water supplies by denying the proposed actions of a private company that threaten the water security of many county residents.*

2. Long Standing Land Management Strategies, Agreements, and Decisions

The Mountain Valley Pipeline Alternate Routes 110, 110J, and 110R contradict and outright violate previous USFS studies and decisions, the USFS Land and Resource Management Plan, and private citizens' conservation efforts with other state and federal agencies.

First, in the 1990s a power line was proposed to cross Craig County and the Jefferson National Forest (JNF) in the same general area as the current proposed pipeline routes. **After extensive studies of thirteen proposed routes, the USFS effectively denied a request for a power line to cross the region (USFS 1996a, USFS 2002).** In that decision, the Forest Service considered economic, environmental, technical and other factors to not approve any of the routes in order to best fulfill their statutory missions and responsibilities.

The reasons for that decision are more important today than they were 20 years ago. The proposed route for the MVP most closely resembles routes assessed in 1996 that were among the worst for crossing steep slopes with high erosion potentials. Because a pipeline requires ditch excavation, it is a much more intense disturbance to the land and cultural assets than a power line, and is an equally intense disturbance to recreation and viewsheds (see Section 4). As a result, the proposed MVP routes 110, 110J and 110R would have an even bigger effect on the landscape than a power line. The power line routes through Craig County were also considered *"...the most severe impacts to wildlife habitat and remote recreation experience"* (USFS 1996b). Allowing a pipeline through this area now would contradict the decision made in 1996.

Second, the USFS has adopted a management plan for the Jefferson National Forest (USFS 2004) in which they made the decision that utility rights of way are **not appropriate in some of the areas proposed for the current pipeline**. The development of that plan took many years to complete and relied on extensive public comment. The plan was a well-deliberated compromise of multiple uses that included management prescriptions 6C-Old Growth with Disturbance areas and 8C- Black Bear Habitat.

The management prescriptions for 6C-Old Growth with Disturbance in the Forest Plan (USFS 2004) provide a number of clear, specific reasons for disallowing new pipeline construction and related infrastructure (e.g., roads and staging areas); 6C-026C specifically prohibits new utility right-of-way construction:

“These areas are unsuitable for designation of new utility corridors, utility rights-of-way, or communication sites. Existing uses are allowed to continue.” (Page 3-84)

The 8C-Black Bear Management prescriptions are founded on the idea that disturbances such as road construction and use should be kept to a minimum to provide seclusion. Clearly, the activities surrounding the design, construction, and maintenance of the pipeline and resulting corridor will violate this directive. In fact, 8C-028 specifically prohibits new right-of-way construction:

“These areas are unsuitable for designation of new utility corridors, utility rights-of-way, or communication sites.” (p. 3-124)

As we have stated, the current Forest Plan, including these prescriptions, resulted from an arduous process involving multiple, diverse stakeholder interests. While it is possible to amend the plan to accommodate the pipeline request, it is not possible to change the reasons these areas were designated as they were. The uses were assigned as the agreed-upon best use of the land, and the limitations were stated for sound scientific, ecological, and social reasons based on input from numerous experts as well as citizen stakeholders. Changing the plan will undoubtedly require a reinvestment of time and energy from stakeholder groups to address the resulting changes and their impacts on management across the JNF. **The proposed survey will not be sufficient to provide the data needed for a major change in USFS Policy.**

Third, although the USFS has stated that it will only be considering Forest Service owned lands in this deliberation, there is undoubtedly a strong connection between private and public lands, and what happens on one strongly affects the other. The proposed routes will degrade private conservation easements, private wildlife habitat restoration projects, and other longstanding, private conservation efforts created by concerned citizens in collaboration with state and federal agencies, land conservancies, and other dedicated conservation entities. These conservation efforts and public participation are important to USFS goals and affect USFS land management activities. Allowing MVP to proceed with its survey on Forest Service land will have ripple effects among hundreds of private land owners who to date have served with the USFS as citizen-stewards of our region’s forests.

Together, these violations of current USFS and JNF policies and practices clearly warrant a refusal of MVP’s request for a survey.

3. Water Quality, Landscape Considerations, and BMPs

The MVP would clearly negatively impact water quality and landscape, and violate related BMPs. The importance of watershed protection is clear throughout the current Forest Plan, and effectively summarized in the following excerpts:

- a. *“Maintenance and restoration of healthy, diverse, and resilient watersheds, which include not only the water, but also the soil and air, will be given the highest priority in all of our management activities.”* (Page 2-2, paragraph 2, line 2)
- b. *“Water quality remains within a range that ensures survival, growth, reproduction, and migration of aquatic and riparian wildlife species; and contributes to the biological, physical, and chemical integrity of aquatic ecosystems. Water quality meets or exceeds State and Federal standards.”* (p. 3-180)
- c. *“The biological integrity of aquatic communities is maintained, restored, or enhanced. Aquatic species distributions are maintained or are expanded into previously occupied habitat. The amount, distribution, and characteristics of aquatic habitats for all life stages are present to maintain populations of indigenous and desired nonnative species. Habitat conditions contribute to the recovery of species under the Endangered Species Act.”* (p. 3-180)
- d. *“Any human caused disturbances or modifications that may concentrate runoff, erode the soil, or transport sediment to the channel or water body are rehabilitated or mitigated to reduce or eliminate impacts. Channel stability of streams is protected during management activities.”* (p. 3-181)
- e. *“On all soils dedicated to growing vegetation, the organic layers, topsoil and root mat will be left in place over at least 85% of the activity area.”* (p. 2-7)
- f. *“No herbicide is aerially applied within 200 horizontal feet, nor ground-applied within 30 horizontal feet, of lakes, wetlands, perennial or intermittent springs and streams.”* (p. 2-28)
- g. *“Use advanced harvesting methods on sustained slopes 45 percent or greater to avoid adverse impacts to the soil and water resources. Use advanced harvest systems on sustained slopes over 20 percent when soils have a high erosion hazard or are failure-prone.”* (p. 2-33)
- h. *“This Forest Plan meets or exceeds State Best Management Practices. Current State BMP handbooks or manuals are incorporated as direction in the Forest Plan and are implemented for those resource management activities that are covered by the handbooks/manuals. Standards for activities not included in BMP handbooks/manuals are included in Chapters 2 and 3 of this Forest Plan.”* (p. A-3)

If any of the proposed routes through Craig County (110, 110J, 110R) were approved, **EVERY** goal and strategy listed above would be violated during both construction and operations, and some of the most important stream habitats within the National Forest boundaries would be adversely affected.

While the subject of route feasibility is one of the goals of a survey, the extensive information already available clearly and directly indicates Alternates 110, 110J and 110R are inappropriate under any circumstances.

Two landscape features stand out as particularly obvious problems with regard to water quality along the proposed routes: **steep slopes and extremely sensitive aquatic habitats.**

First, with respect to the slopes, one key reason MVP proposed alternate routes at all was the presence of steep slopes along their original route. These proposed alternates do nothing to address that concern. Alternative Route 110 and all related routes (110J, 110R) traverse extreme slopes in the JNF in Craig County, including:

- the southeast face of Potts Mountain: up to 42% slope
- the northwest face of Sevenmile Mountain: up to 63% slope
- the northwest face of Johns Creek Mountain: up to 63% slope
- the southeast face of Johns Creek Mountain: up to 85% slope
- the northwest face of Sinking Creek Mountain: up to 63% slope
- the northwest face of Cove Mountain: up to 63% slope

As clearly stated in USFS policy, “*Current Forest Service policy directs compliance with required CWA permits and State regulation and requires the use of BMPs to control nonpoint source pollution to meet applicable water quality standards and other CWA requirements*” (USFS 2012; p. v), which clearly includes adherence to BMPs with respect to slope runoff.

Pipeline construction activity on these steep slopes will inevitably violate BMPs and create problems with slope failure, erosion, sedimentation and ground water and surface water quality.

These problems are not merely *potential* effects – they are certainties, even with all state-of-the-art mitigation practices observed. BMPs are implemented to minimize negative effects; they are never assumed to eliminate effects. Moreover, the effectiveness of BMPs is dependent on many factors, including the steepness of the landscape. The slopes involved in Alternate Routes 110, 110J, and 110R are clearly outside the design limits and are unacceptable under BMPs. In addition, BMPs for road building promulgated by the Virginia Department of Forestry dictate that “*roads should follow contour as much as possible, with grades between two percent and 10 percent*” (VDOF 2011; p. 18). The “Gold Book” (USDI and USDA 2007) that governs oil and gas exploration on federal lands stipulates that

“*[road] gradient should fit as closely as possible to the natural terrain . . . The gradient should not exceed 8 percent . . . in order to minimize environmental effects. In mountainous or dissected terrain, grades greater than 8 percent and up to 16% may be permissible with prior approval of the surface management agency.*” (USDI and USDA 2007; p. 25).

Pipelines are a much more intense disturbance than road building because of the consistent depth of excavation and because they are oriented perpendicular to the slope. The steep slopes encountered along the proposed routes in Craig County will cause erosion, increased runoff and sedimentation problems in the watersheds. **No mitigation procedures are capable of**

eliminating these inevitable problems on the slopes. These problems *will* occur, thereby affecting water quality and the sensitive aquatic habitat in surface streams along the route.

Moreover, given the steepness of the slopes, the 300-ft survey corridor, 125- ft construction corridor and the ultimate 75-ft maintenance corridor described in the MVP application are **misleading to the USFS and the public**, as the ultimate corridor would necessarily be significantly wider than stated to accommodate access roads, further increasing runoff, erosion, and sedimentation. In their detailed route analysis of the initial Proposed Route and Alternative Route 1 (MVP 2014; filed 1 December 2014), **MVP rejected using some existing transmission line rights-of-way along Route Alternative 1 due to steep side slopes** that would have to be traversed by the pipeline. MVP further stated that if such slopes were indeed to be traversed, then the impact corridor for pipeline construction will necessarily be much wider than the 125-ft corridor initially described:

“Initial flight reconnaissance and ground check revealed that much of the route that followed existing overhead electric transmission line rights-of-way was along severe side slopes. While the overhead transmission lines span significant areas of slide slope, these areas would be required to be crossed directly by the pipeline. As a result of this next phase of route analysis, MVP determined that Route Alternative 1 represented insurmountable construction challenges, as well as a high risk of slope failure and pipeline slips, once the pipeline was to be in operation.” (MVP 2014: p. 1-4) . . . However, in areas where Route Alternative 1 is alongside slopes, the construction right-of-way would need to be significantly wider than 125 feet to accommodate significant cut-and-fill that would be required for construction, which would result in an even greater area of construction impact.” (MVP 2014: p. 1-5)

In other words, MVP’s own extensive route analyses (MVP 2014) ruled out Route Alternative 1 as presenting “*insurmountable construction challenges*” because of steep slopes. Yet in MVP’s filing Summary of Alternative February 2015 (MVP 2015a), the company proposed new Route Alternatives 110/110J/110R through Craig County that cross extreme slopes that reach and even exceed 80%. The exact same construction challenges MVP identified on Route Alternative 1 are present on the severe side slopes along Route Alternatives 110, 110J, and 110R, and would also require a construction corridor significantly wider than 125 feet. This point is never revealed in either MVP’s 18 February 2015 filing to FERC that first describes these Route Alternatives (MVP 2015a), nor is it ever mentioned in MVP’s application to USFS for the permit to survey in the JNF (MVP 2015b). **Thus the survey-permit application to USFS contains incomplete and/or misleading information.**

On the steep slopes crossed by Route Alternatives 110, 110J, and 110R, it will be impossible to engineer either construction-access roads or maintenance-access roads that meet required USFS BMPs (USFS 2012), even by utilizing the entire proposed 125-ft temporary construction corridor for switchbacks. Properly built roads that represent responsible land stewardship and meet BMP guidelines would necessarily have multiple switchbacks and a properly designed drainage network, which would be impossible to construct even within the larger 125-ft construction corridor, much less the 75-ft permanent easement corridor described by MVP.

Therefore, if the pipeline were ever allowed to be constructed through the JNF in Craig County, either the corridor through the National Forest would be much wider than suggested, or MVP would have to violate accepted BMPs **and USFS would have to contradict its own policies to allow such egregious violations.**

The second key landscape feature concerns the sensitive aquatic habitats along the Alternatives 110, 110J, and 110R. **These routes will negatively affect known sensitive aquatic habitats.** While we defer discussion of the sensitivity of specific habitats and species to Section 4 (Rare, Endangered and Invasive Species), we note here that **several of the streams to be crossed have exceptional water quality that supports species that are especially sensitive to sedimentation.**

With respect to water quality, the proposed routes will remove forest cover that protects critical water resources on both public and private lands and destroy streamside buffers. Construction will compact the soil in the construction corridor, thereby causing increased runoff to nearby stream channels outside the corridor that will result in channel erosion and sediment problems downstream. These are **known, predictable outcomes.** Additionally, construction could potentially destroy ground water connections and clog underground drainage networks. Nearly the entire length of the proposed Alternatives 110, 110J, and 110R intersect karst geology that provides the supply and protection of clean water for wildlife (as well as for residential and agricultural use, as noted in Section 1).

The proposed routes will run along and across innumerable small un-named headwater streams that are essential for aquatic habitat, as well as the more-well-known named streams (Dicks Creek Johns Creek, Sinking Creek, and Craig Creek). Construction of buried pipeline stream crossings is known to cause negative impacts to stream ecosystems (Levesque and Dube 2007). In particular, construction of these crossings will directly impact stream beds and banks, increase suspended sediment and deposition and, thereby, impact fish and macroinvertebrate habitats (Tsui and McCart 1981, Reid et al. 2002). While little research exists concerning the long-term impacts of pipeline crossings, there will certainly be impacts on the local riparian forests and the many recently implemented CRP and CREP conservation efforts in the area.

A survey will do little to improve our already extensive understanding of these water quality issues. We already know where the important resources are and why they are important. We know the proposed route is inappropriately steep. The USFS was formed in large part to protect watersheds, and its formation led to the restoration of millions of acres of denuded, eroded land and the protection of related water resources (Williams, 2003). It would be incongruous to allow that same land to be newly denuded and eroded for a purpose that is clearly unsuitable for the land.

4. Rare, Threatened, Endangered and Invasive Species

The proposed Alternate Route 110 and all related options will negatively impact multiple rare, threatened, and endangered species. The Forest Service Plan makes clear, unambiguous declarations about the USFS goals for protecting important species that inhabit the corridor for MVP Alternative Routes 110J and 110R (USFS 2004):

- a. *“Sensitive aquatic species is a concern throughout this watershed. The James spiny mussel is found in all the 6th level watersheds except Upper Barbours Creek. In addition, the orangefin madtom is present in Upper Craig Creek, Johns Creek and Lower Craig Creek. The Atlantic pigtoe, a state-listed threatened mussel and the roughhead shiner a state species of special concern are also found in the Upper James River watershed.”*
- b. *“Clean water and gravels will be provided in streams inhabited by and upstream of the James spiny mussel, Atlantic pigtoe and their host fish, as well as the roughhead shiner*

and orangefin madtom so that populations can be maintained, protected and restored.” (p. 4-10)

- c. *“Priority Watersheds which Possess Outstanding Aquatic Biodiversity (Potts Creek, Johns Creek, Upper Craig Creek, Lower Craig Creek): Within these watersheds, we will seek opportunities for dialog with adjacent private landowners and work collaboratively with local governments and other Federal government agencies to restore water quality or maintain and restore aquatic habitat. In addition to identification of these priority watersheds, the Forest (Service) has developed a Federally Listed Fish and Mussel Conservation Plan in collaboration with the U.S. Fish and Wildlife Service, and continues to work with the Virginia Department of Game and Inland Fisheries to protect and recover federally listed and sensitive aquatic species.”* (p. 2-4)
- d. *“Aquatic Habitat Areas: Forest management activities within these areas are designed to protect habitat for threatened, endangered, and sensitive fish and mussels in streams adjacent to or immediately downstream from, National Forest System lands. These lands and their associated streams reflect the physical, chemical, and biological structure that sustains exceptional aquatic diversity.”* (p. 3-163);
- e. *“Timber harvest is not allowed unless associated with reasonable access to valid existing rights or salvage of hazard trees for public safety and/or aesthetics.”* (p. 3-165)

The various alternative routes cross all five known locations for the endangered James spinymussel (*Pleurobema collina*) in the Upper James River watershed including: South Fork of Potts Creek , Little Oregon Creek, Dicks Creek, Johns Creek, and Craig Creek.

All of the known populations of James Spiny mussel in the Upper James River basin are directly downhill from National Forest lands and within what are commonly referred to as the boundaries of the National Forest. **This federally protected endangered species would be negatively impacted by any activities in the National Forest that might increase erosion and resultant sedimentation into the headwater streams.** As fully demonstrated in Section 3, there is no doubt that a pipeline on the severe slopes of the proposed routes will cause erosion. There are no BMPs that can possibly eliminate, or even hope to reasonably control, erosion caused by the proposed project. Our assertions of the ineffectiveness of BMPs for pipelines on steep slopes and the problems this can cause with endangered mussels is documented by an important case study of the East Tennessee Gas Pipeline in Tazewell and Smyth Counties, Virginia. In 2006, during construction of a 20-inch gas pipeline, extreme care was taken by FERC, USFWS, the Virginia Department of Conservation and Recreation, and the company to ensure that state-of-the-art erosion control measures were in place (TRC et al. 2009). In addition, hourly turbidity monitoring was conducted by the USGS during construction to provide nearly real-time feedback on construction activities (USGS 2009). In spite of this extreme attention to detail, slopes failed in two independent events resulting in a kill of several hundreds of individuals and multiple species of endangered mussels in Indian Creek and N. F. Holston River (Dinkins 2011). The worst sediment problems originated high in the watershed where small streams transported sediment to the larger streams (USGS 2009, TRC et al. 2009).

Dr. Richard Neves, internationally recognized authority on endangered mollusks, points out the importance of the James spinymussel populations in the upper James basin and specifically relates how projects like the MVP and Alternative Routes 110, 110J and 110R can have catastrophic failures like the incident at Indian Creek. Dr. Neves writes (emphasis added):

*Let me answer your 2 questions about the 1) significance of the meta-population of the endangered James spiny mussel in upper John's Creek, Dicks Creek, and Little Oregon Creek, and 2) potential effects of a pipeline crossing of those streams. By way of background, **I co-conducted the initial status survey of this species (Clarke and Neves 1984), assisted Andy Moser, FWS, with preparation of its federal Recovery Plan in 1990, and have supervised graduate students who worked on its life history and habitat requirements (Hove 1989, Hove and Neves 1989, Hove and Neves 1994), and status of various populations (Ensign and Neves 1995, 2000; Petty and Neves 2002, 2006; Johnson, Petty and Neves 2005) throughout the James and Dan river systems, but particularly in the Craig Creek drainage. I have also conducted many mussel surveys for VDOT in Craig and John's creeks for bridge replacement and ford crossing projects over the last 30 years (e.g., Gatenby and Neves 1994), and discovered the Dicks Creek and Little Oregon Creek populations of the James spiny mussel during one of those surveys (Gatenby and Neves 1994). Thus I am very familiar with the species and its habitat requirements.***

The meta-population of James spiny mussel in John's, Dicks, and Little Oregon creeks is the largest and most reproductively viable population known, throughout the species' range. Detailed monitoring studies by state malacologist Brian Watson over the last 4 years have confirmed this. My sampling of other populations in various streams throughout its range over the last 30 years, to include Craig Creek, has indicated a gradual decline of those populations, with limited recruitment likely due to poor reproductive success. Conversely, John's Creek has maintained its healthy population because of excellent water quality and minimal impacts to physical habitat in the stream(s). For the last 7 years (e.g., Dan and Neves 2014), we have been using gravid females from John's Creek to augment natural reproduction in Craig Creek, as a component of a Biological Opinion issued by FWS to VDOT in 2007. John's Creek drainage is the only creek system throughout the species' range where we can readily collect reproductively mature females for this project.

*With respect to the potential effects of a pipeline crossing of any of these streams, I can say that **any negative impact to water quality or physical habitat, such as erosion or sediment (Henley et al. 2000), could jeopardize the resident population, particularly the more isolated populations in Dicks and Little Oregon creeks. This species does best in high-quality headwater streams, witnessed by its present range in small streams with good water quality, stable substrates, and healthy populations of resident host fishes. Relocation is not an acceptable option for this species, as the resident population(s) in the upper John's Creek drainage occupy what has been empirically determined by them to be most suitable for their survival, growth, and reproduction. I conducted many mussel surveys for stream crossings of the Jewell Ridge Lateral Gas Pipeline project by Spectra Energy in southwest Virginia (Ostby and Neves 2005), and was called by FWS to assess two known sediment spills in 2006 from this project; one in Indian Creek, Tazewell County, and the other in upper North Fork Holston River (NFHR), Smyth County. The sediment plume in Indian Creek degraded the habitat of 2 federally endangered species (Ostby and Neves 2006), and the washout of the crossing site on NFHR caused the death of some mussels, particularly in the area of the coffer dam (Ostby and Neves 2006a). Evidence of the sediment was detected as far as 2 km downstream (Ostby and Neves 2006b). Thus in spite of a contractor's best efforts and implementation of Best Management Plans, accidents and unexpected events do happen, with potentially serious***

consequences to mussels.” [Richard Neves, USGS and Virginia Tech, retired; e-mail communication; March 21, 2015]

The proposed Alternate Routes 110, 110J and 110R pass through and would disrupt the most important streams *on earth* for the Federally Endangered James spiny mussel, and **because the effect is predictable it violates the Federal Clean Water Act Mandated Best Management Practices**, which state:

“Discharges must not take, jeopardize, adversely modify or destroy the critical habitat of threatened or endangered species as defined under the Endangered Species Act.

In the Recovery Plan the USFWS charges the USFS with giving this area special protection with this statement:

“Wherever possible, the Forest Service should acquire those habitat areas and watersheds, with priority placed on the Craig/Johns Creek watershed” (USFWS 1990).

Recently, the USFWS wrote a letter (dated April 3, 2015) to an agent for MVP recommending alternative routes be developed that avoid the Johns Creek and Craig Creek watersheds because of the importance of the watersheds to the conservation and recovery of the spiny mussel. The letter went on to say that presence/absence surveys are not necessary for Craig, Johns, Little Oregon and Dicks Creeks.

In addition to the **likely violations of federal law and stated policies** raised above, Alternatives 110, 110R, and 110J also impact multiple other rare, endangered, threatened, and protected species:

- The Johns Creek Watershed has been proposed as Critical Habitat for the James spiny mussel (Hartl 2015)
- Johns Creek and Craig Creek are known habitat for the Federally Endangered Orange Finned Madtom.
- Craig Creek is habitat for the Atlantic pigtoe, which is proposed for Federal Listing as Endangered.
- North Fork of the Roanoke River is documented to contain the Federally Endangered Roanoke Log Perch in the vicinity of Route 110 crossings.
- The proposed routes will pass near known nesting sites for bald eagles.
- All of the proposed routes cross caves that have been historically used by endangered species of bats.
- The proposed routes pass through wetlands that support diverse amphibian assemblages and karst areas that support numerous rare cave organisms.
- Many of the streams that are endangered-species waters are also of concern as known habitat for native brook trout. In addition, Alternate 110J runs alongside Trout Creek for several miles and crosses Pickles Branch, which are both native brook trout streams.

- Sinking Creek riparian wetlands, in the area crossed by the alternative routes are habitat for an endemic, undescribed species of crayfish that will likely receive Federal Protection. Details regarding this species in the Sinking Creek watershed, and other endangered crayfishes that are threatened by the MVP pipeline, can be found on the FERC Docket for the proposed MVP project (http://elibrary.ferc.gov/idmws/file_list.asp?accession_num=20150401-5067).

At the same time that the MVP directly threatens multiple rare, threatened, and endangered species, anthropogenic corridors like pipelines are known to **spread invasive species and diseases**. Perhaps the best evidence is a drive down any interstate highway in Virginia. Road rights-of-way are choked with autumn olive, tree of heaven, fescue and multiflora roses, among other state-listed invasive plants (the full number of potential invasive species is too long to list here). Furthermore, the standard mitigation approach to replanting vegetation along the pipeline is to broadcast fast-growing, typically non-native plants, which consistently results in an injection of highly invasive, non-native species into sensitive management areas of the forest - a result that is clearly incompatible with existing management directives. Management of the right of way by the spraying of herbicides or mowing further exacerbates the problem for invasive grasses like fescue. Even if the right of way is seeded with native plants, without active management invasive plants spread on their own in such disturbed areas.

Given the known likely direct threats to federally listed species and potential associated violations of federal law, **the USFS should reconsider its decision to seek a categorical exclusion for the environmental analysis for the permit**. There are potential environmental effects to endangered species that must be examined, and details of those examinations must be addressed. For example, how will the mussel surveys be conducted? Will they be performed in conjunction with long-term studies the USFWS and VDGIF are conducting? Could the mussel surveys interrupt these long-term studies? How will the bat mist-net surveys insure that diseases like white-nose syndrome will not be spread? Will the bat studies identify bat roost trees? Will the bat studies follow the USFWS Indiana bat survey guidelines? MVP has described the surveys as being conducted on foot through the USFS lands, but already low-level aerial (helicopter) surveys are being conducted that are affecting private livestock. Will that be allowed during the surveys and what would be the effect in the 110R corridor between the Brush Mountain Wilderness areas? The USFS should consider doing an environmental analysis on the effect of the surveys before even considering approval of such surveys.

5. Viewsheds

The proposed route will damage viewsheds in ways that violate both the spirit and the letter of the current Forest Plan with respect to visual impact. The Jefferson National Forest Plan (USFS 2004) includes numerous statements about how activities on the Forest Service lands should minimize the effect to viewsheds:

- “Utility corridors and communication sites on National Forest System lands minimize negative environmental, social, or visual impacts; minimize acres of land affected; are designed using good engineering and technological practices; and clearly benefit society.” (p. 2-59)
- “Linear Rights-of-Way and Communication Sites: Develop and use existing corridors and sites to their greatest potential in order to reduce the need for additional commitment of lands for these uses.” (p. 2-60)

- c. “When feasible, expansion of existing corridors and sites is preferable to designating new sites.” (p. 2-60)
- d. “Design new corridors and sites to meet a scenic integrity objective as high as practicable. (p. 2-61)
- e. Locate new public utilities and rights-of-way in areas of this management prescription area where major impacts already exist. Limit linear utilities and rights-of-way to a single crossing of the prescription area, per project. “(p. 2-63)
- f. “Require mitigation measures including screening, feathering, and other visual management techniques to mitigate visual and other impacts of new or upgraded utility rights-of-way.” (p. 2-63)
- g. “Designated Utility Corridors: Where possible, existing corridors are expanded as needed rather than creating additional areas. Compatible multiple uses are encouraged, including co-location of communication uses on existing electric transmission towers.” (p. 3-71)

In direct violation of these policies, the proposed routes will create a new 75-125 ft-wide corridor through the National Forest that will affect views throughout the county as well as from the Dragons Tooth overlook and from multiple vantage points along the Appalachian Trail (AT). The Forest Service has a long-term connection with outdoor recreation, and especially the Appalachian Trail, as demonstrated by the purchase of property in Millers Cove specifically to protect the AT corridor (USFS 1997). A major reason listed for not approving the power line in 1996 was to protect viewsheds (USFS 1996b). The proposed routes cross and will be visible from the Appalachian Trail and Dragons Tooth, and thus negatively impact this long-standing partnership.

From a viewshed perspective one of the most disturbing aspects of the pipeline is the corridor that runs alongside Trout Creek and next to the Millers Cove property that the USFS bought. It appears virtually impossible to responsibly construct the pipeline as mapped in the extremely steep and narrow Trout Creek gorge without major alterations to the stream, road, and houses. Moreover, the Trout Creek gorge is directly across the valley from Dragons Tooth, which is one of the most iconic day hikes in the region and on the entire AT system. The hike culminates in dramatic views from the Dragons Tooth rock formation that look directly across the valley at Millers Cove and the Trout Creek gorge. The thought of scarring these views is incomprehensible and in direct contradiction to the policies of the current Forest Plan. Moreover, as noted in Section 3 of this analysis, the corridors would likely need to be even wider than the proposed 75-125 feet, exacerbating the damage to these viewsheds.

6. Cultural Issues

Finally, the proposed Alternate 110, 110J, and 110R routes pose a significant cultural risk to the local community. **The citizens of Craig County have a unique connection to the National Forest System, and carving a (minimum) 125-foot-wide corridor through the heart of the National Forest will inevitably have a negative effect on the community and users of the forest.**

Because 54% of Craig County is U.S. National Forest and these federal lands essentially surround all private land holdings, it is impossible to separate what happens on private and federal lands. We all affect each other. Moreover, the citizens of Craig County have a unique

connection to the National Forest and the land, as documented by the cultural attachment study the USFS commissioned in 1995 (James Kent Associates 1996) and these cultural issues were listed as one reason for not approving the power line (USFS 1996b) . Long-term residents have traditional and longstanding cultural attachments to using federal lands, and many new arrivals have moved here because they want to be a part of that culture. The residents of Craig County feel like they live *in* the National Forest, in part because many do technically live within its boundaries.

Given our deep connection to the land, a scar across our Forest would affect us all. It would lessen our sense of living in a unique place, characterized by clean, abundant water in wild streams that support diverse biological communities with minimal impact from development and industrialization. Craig County communities are naturally shaped by the landscape. John's Creek, Sinking Creek and Craig Creeks are not just streams; they are both biological and social communities shaped by the landscape. They are also communities that have historically opposed power lines and now a pipeline. In the 1990s, 80% of the households in the county united to oppose the power line. We are experiencing a similar response to the proposed MVP.

The 1996 Cultural Attachment Study (James Kent Associates 1996) defines an intrusion as “an outside force brought into an area, which will create a significant long-term change in the relationship between people and land which cannot be absorbed into existing culture, thereby changing that culture.” The proposed MVP represents just such an intrusion. Our cultural attachment and sense of place cannot be mitigated, and a survey of a proposed route will likely tell you little about the long-term negative effect on our communities. In fact, the proposal of a pipeline and the possibility that the USFS might even consider a pipeline by allowing a survey has been a threat to our communities that we are having trouble absorbing. It is beyond our understanding that a major environmental stressor could be allowed to weave between protected wilderness areas, through our streams and water supplies, through our forest and our homes.

As urbanization of other parts of the country intensifies, natural landscapes like those found in Craig County are increasingly rare and valuable. Craig County is the center of a hotspot of biotic diversity. This wild and rural character may be the county's single greatest asset for attracting and holding land-conscious residents and those seeking to recreate within such landscapes. The degradation of these landscapes through ill-conceived projects like the Mountain Valley Pipeline will only increase opportunities for additional projects (either within the same right of way, or through others) until the cumulative impact degrades the landscape as a whole. The character of the county would then be so deeply changed as to no longer embody the qualities and values that the county and its residents have so carefully stewarded.

SUMMARY

Given the known negative impacts resulting from both the survey and Alternative Routes 110, 110J, and 110R documented in this assessment, the Scientific and Technical Committee of Preserve Craig, Inc. urges the USFS **deny the application by MVP for a Special-Use Permit to conduct surveys on Jefferson National Forest Lands in Craig County, Virginia.** As professionals with extensive expertise in forest management, wildlife management, fish biology, water quality, stream ecology, law, and engineering, we developed our assessment of the proposed project based on our deep familiarity with both the scientific and cultural issues at stake for Craig County. As researchers and environmental professionals, our knowledge combines technical expertise with direct, on-the-ground knowledge of the slopes, habitats,

species, water systems, and ecologies we describe. This assessment reflects over 200 years of combined experience in areas directly related to the issues at hand.

As a result, we respectfully ask the USFS to consider the information documented above, consider the known risks involved for this project (from the survey stage through construction and operation), consider whether a cursory survey such as that proposed will really provide any meaningful or useful new information, and move now to reject the request to survey on the basis that the proposed alternate routes through Craig County are detrimental to water supplies, long-standing Forest Service goals, water quality, endangered species management, viewsheds, and cultural resources. **Moreover, allowing the proposed route creates a preferred pathway for future utilities to collocate, and the potential effects could widen in the future.** The long-term cumulative impacts of such possibilities represent unsustainable, unsupportable damage. The USFS must act now to fulfill its mission and protect JNF resources in Craig County.

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