[EXECUTIVE SUMMARY]

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Report to:
Protect Our Water, Heritage, Rights (The POWHR Coalition)
powhr.org

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The Mountain Valley Pipeline (MVP) is proposed to carry natural gas from the Marcellus and Utica Shale approximately 300 miles through 11 West Virginia and 6 Virginia counties before terminating at the existing Transcontinental pipeline compressor station in Pittsylvania County, Virginia. Mountain Valley Pipeline, LLC, which would construct and operate the pipeline as a joint venture of EQT Corporation and NextEra Energy, Inc., and some public officials have promoted the MVP as both environmentally safe and economically beneficial, providing economic opportunity for local communities along the proposed route.

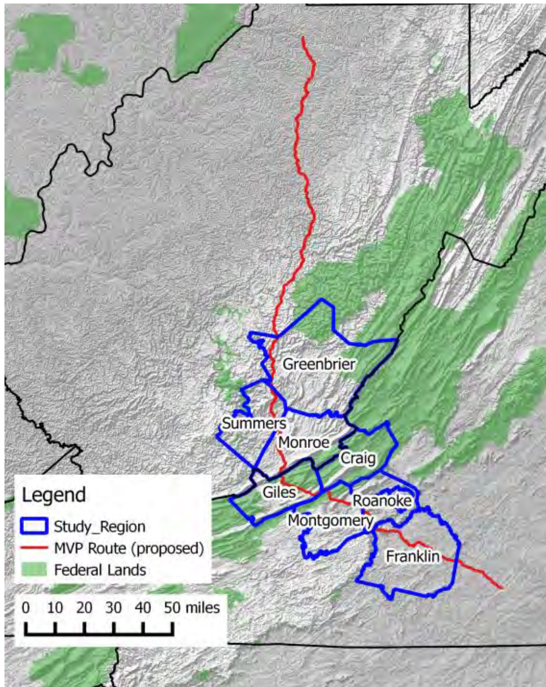

FIGURE 1: Eight-County Study Region

Note: Roanoke County includes the independent cities of Salem and Roanoke

Sources: MVP route digitized from online maps and MVP LLC filings (http://mountainvalleypipeline.info/maps/); Study Region (counties), federal lands, and hill shade from USGS and http://nationalmap.gov/small_scale/

Promised economic benefits, however, are only part of the impact the Federal Energy Regulatory Commission (FERC) must review before deciding whether to approve the construction and operation of the pipeline. Under its own policy and the more comprehensive requirements of the National Environmental Policy Act, FERC's review must consider the full range of environmental effects of the proposed pipeline. These include the various ways in which environmental effects would result in changes in human well-being—including economic benefits and costs. While estimates of the positive economic effects, including construction jobs and local tax payments, have been developed and promoted as reasons to move forward with the pipeline, no systematic consideration of the potential negative economic effects—economic costs—of the MVP has been completed.

To help fill the gap in current information, the POWHR (Protect Our Water, Heritage, Rights) coalition of community groups from an eight-county region in West Virginia and Virginia commissioned this independent research into key economic costs of the MVP. This region comprises Greenbrier, Monroe, and Summers Counties in West Virginia and Craig, Franklin, Giles, Montgomery, and Roanoke Counties in Virginia (Figure 1). The MVP's construction, operation, and presence would impose three types of costs on this region. First, the pipeline would impact property values along the approximately 143 miles of pipeline proposed for the study region. Affected properties are those touched by the 50-foot-wide right-of-way, within the 1.4-mile-wide evacuation zone, and throughout the viewshed of the proposed pipeline. Second, construction and the ongoing operation of the pipeline would alter land use/land cover in ways that diminish the value of ecosystem services, such as aesthetics, water supply, and timber and food production. Third, and in part due to a loss of scenic and quality-of-life amenities, there would be decreases in visitation, in-migration, tourism, small business development, plus a loss of jobs and personal income those activities would otherwise support.

Considering this eight-county region alone, estimated one-time costs range from $65.1 to $135.5 million. These one-time costs comprise lost property value and the value of ecosystem services lost during construction. Annual costs following the construction period include lower ecosystem service productivity in the MVP's right-of-way, lower property tax revenue due to the initial losses in property value, and dampened economic development. These total between $119.1 and $130.8 million per year and would persist for as long as the MVP right-of-way exists—that is, in perpetuity. (See "At a Glance," page iii for details.) Putting the stream of costs

into present value terms[1] and adding the one-time costs, the total estimated cost of the MVP in the eight counties is between $8.0 and $8.9 billion.

The costs represented by the estimates presented here are what economists call "externalities," or "external costs," because they would be imposed on parties other than (external to) the company proposing to build the pipeline. Unlike the private (or internal) costs of the pipeline, external costs borne by the public do not affect the company's bottom-line. From an economic perspective, the presence of externalities is what demands public involvement in decisions about the MVP. Without consideration of all of the costs of the project, too much pipeline (which may mean any pipeline at all) is the inevitable result. FERC must consider the true bottom line and ensure that the full costs of the pipeline, especially those external costs imposed on the public, are rigorously examined and brought to bear on its decision about whether or not to permit the MVP project to proceed.

For reasons explained in the body of this report, estimates of external costs developed as part of this study and reported here are conservative. One reason is simply that there are categories of impacts that are beyond the scope of the study. These impacts include changes to sites or landscapes that have historical or cultural significance. Like lost aesthetic quality or a decrease in the capacity of the landscape to retain soil, filter water, or sequester carbon, historical and cultural impacts matter to humans and, therefore, can be expressed as monetary value. We have also not included the cost to communities of increased emergency response planning and capacity necessary during the operation of the proposed pipeline or of increased law enforcement, road maintenance and repair, or other costs that would accompany its construction.[2]

Another important category of cost not counted here is "passive use value." Passive use value includes the value to people of simply knowing an unspoiled natural area exists and the value of keeping such places unspoiled for the sake of some future direct or active use. In light of this, it is important to consider the estimates of economic costs provided here as a fraction of the total economic value put at risk by the proposed Mountain Valley Pipeline.

Finally, while this report covers many of the costs that *will* happen if the MVP is constructed and operated, it does not include an assessment of natural resource damage and other effects that *might* happen during construction and operation. For example, there is some probability that erosion of steep slopes and resulting sedimentation of streams and rivers will occur during construction. Similarly, there is some probability that there will be a leak and explosion somewhere along the length of the MVP during its lifetime. If, when, and where such events occur with the MVP, there will be clean-up and remediation costs, costs of fighting fires and reconstructing homes, businesses, and infrastructure, the cost of lost timber, wildlife habitat, and other ecosystem services, and most tragically, the cost of lost human life and health.[3] The magnitude of these damages, multiplied by the probability that they will occur, yields additional "expected costs," which would then be added to the more certain costs estimated in this study. The same is true of the costs that could accrue after the MVP is no longer used and maintained.

To be clear, the costs estimated here—the effect on ecosystem services from clearing land for the pipeline corridor, the impact on land values resulting from buyers' concerns about pipeline safety, and reductions in economic vitality stemming from changes in the landscape—will occur with or without any discreet or extreme events like landslides or explosions ever happening. These impacts and their monetary equivalents are simply part of what will happen in West Virginia and Virginia if the MVP is approved, built, and operated.

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[1] The present value of a perpetual stream cost is the one-year cost divided by the 1.5% real discount rate recommended by the Office of Management and Budget for cost-benefit and cost-effectiveness analysis of public projects and decisions (Office of Management and Budget, 2015).

[2] As of this writing, a pilot study of these cost for one Virginia county in our study region is underway, with results expected in the coming weeks.

[3] While no one was killed in the incident, one need look no further than the recent explosion of Spectra Energy's Texas Eastern gas transmission line in Pennsylvania to see such impacts. See, for example, https://stateimpact.npr.org/pennsylvania/2016/05/04/pa-pipeline-explosion-evidence-of-corrosion-found/

At a Glance:

The Mountain Valley Pipeline in Virginia and West Virginia

Craig, Franklin, Giles, Montgomery, and Roanoke Counties in Virginia and Greenbrier, Monroe, and Summers Counties in West Virginia

- Miles of pipeline: 143
- Acres
  - In the construction corridor and temporary roads and workspaces: 2449
  - In the permanent right-of-way (ROW): 861
  - In permanent access roads and other facilities: 76
- Most impacted land cover types (ROW only): forest (664 acres) and pasture (142 acres)
- Parcels touched by ROW: 716
- Parcels in the 1.4-mile-wide evacuation zone: 8,221
- Residents and housing units in the evacuation zone: 20,389 people and 9,700 homes
- Parcels from which the pipeline would be visible: 78,553 or 31% of all parcels in the six counties for which detailed parcel data are available
- Baseline (no pipeline) property value at risk (and expected one-time cost due to the MVP):
  - In the ROW: $125.9 million ($5.3 to $16.4 million)
  - In the evacuation zone: $972.6 million ($37.0 million)
  - In the viewshed: $16.8 billion (to avoid double counting with lost aesthetic value under ecosystem services, this impact is not separately estimated)
- Total property value lost (a one-time cost): $42.2 to $53.3 million
- Resulting loss in property tax revenue (annual): $243,500 to $308,400
- Lost ecosystem service value, such as for water and air purification, recreational benefits, and others:
  - Over the two-year construction period (a one-time cost): between $22.9 and $82.2 million
  - Resulting loss in property tax revenue (annual): between $4.1 and $14.8 million
- Lost economic development opportunities due to the erosion of these counties' comparative advantages as attractive places to visit, reside, and do business. Under the scenarios described below, these could include:
  - Annual loss of recreation tourism expenditures of $96.8 million that supports 1,073 jobs and $24.3 million in payroll and generates $4.8 million in state and $2.6 million in local taxes
  - Annual loss of personal income of $15.6 million due to slower growth in the number of retirees
  - Annual loss of personal income of $2.1 million due to slower growth in sole proprietorships
- Total of estimated costs:
  - One-time costs (lost property value and lost ecosystem service value during construction) would total between $65.1 to $135.5 million
  - Annual costs (costs that recur year after year) would range from $119.1 to $130.8 million
    - Present discounted value of all future annual costs (discounted at 1.5%): $7.9 to $8.7 billion
  - One-time costs plus the discounted value of all future annual costs: $8.0 to $8.9 billion