

Mountain Valley Pipeline, LLC
Mountain Valley Pipeline Project
Docket No. CP16-10-000
Supplemental Materials Submitted June 24, 2016

ATTACHMENT C

In May of 2016, Key-Log Economics (“Key-Log”) published a main technical report and eight county-specific reports on behalf of the Protect Our Water, Heritage, Rights (“POWHR”) coalition that claimed that the Mountain Valley Pipeline (“MVP”) project would create \$8.0–8.9 billion of economic costs in present value terms.¹

MVP conducted a critical review of the Key-Log reports and finds that Key-Log has made a number of arbitrary, unfounded, and speculative assumptions throughout its analysis in order to establish and then inflate alleged economic costs of the MVP project. MVP also finds that the methodologies employed for valuing certain alleged costs are contentious due to their subjectivity. MVP therefore considers the Key-Log analysis to have no basis and to be completely unreliable.

MVP also finds that Key-Log’s analysis was highly biased as it failed to present the value of the MVP project’s economic and environmental benefits. MVP estimates that the MVP project will deliver to West Virginia and Virginia \$1.3 billion in economic benefits in present value terms. This estimate does not include the larger U.S. economic benefit of the project from spending on goods and services outside the two states, which could be multiple times higher.

MVP details the many issues with Key-Log’s assumptions and methodologies below. MVP also computes the present value of the economic benefits of the MVP project.

Issues with Key-Log’s Assumptions and Methodologies

The table below summarizes the economic cost estimate in the Key-Log main technical report.

Table 1: Key-Log’s Claimed Economic Costs of the MVP Project in the Eight POWHR Counties²
(millions of \$’s in present value)

Item No.	Claim	Min	Max
1	Annual Tourism Expenditure Loss	\$6,453.3	\$6,453.3
2	Annual Retiree Spending Loss	1,040.0	1,040.0
3	Annual State and Local Property Tax Revenue Loss – Ecosystem Service Value	273.3	986.7
4	Annual Sole Proprietorship Income Loss	140.0	140.0
5	One-Time Property Value Loss	42.3	53.4
6	One-Time Ecosystem Service Value Loss	22.9	82.2
7	Annual State and Local Property Tax Revenue Loss – Individual	16.2	20.63
8	Total	\$7,988.0	\$8,776.2

Note: Key-Log showed a range of \$8.0 –8.9 billion in negative impacts; while coming very close, MVP was unable to replicate this range exactly.

¹ Phillips et al., *Economic Costs of the Mountain Valley Pipeline: Effects on Property Value, Ecosystem Services, and Economic Development in Virginia and West Virginia*, May 2016, pg. iii.

² For Item Numbers 1–4 and 7, MVP assumed that Phillips et al. divided the annual costs by its assumed discount rate of 1.5% to bring them into present value terms.

MVP details below the many issues with the Key-Log assumptions and methodologies used to compute these alleged economic costs:

1. Key-Log assumes an arbitrary 10% decline in perpetuity in the growth in 1.) recreation and tourism spending, 2.) retiree spending, and 3.) business proprietor's income due to MVP.
 - The value of 10% is not supported with facts based on any studies; instead, the value is based on what Key-Log considers to be "reasonable scenarios."³
 - Key-Log ignores the fact that the permanent rights-of-way, roads, and other facilities would represent 0.04% of the 2.5 million combined acres in the counties.⁴ Key-Log does not attempt to bridge the gap between 0.04% of affected land area with the 10% value it assumes.
 - Adding tourism spending and retiree and proprietor income together to conduct a valuation shows an egregious misunderstanding of economic concepts.
 - Spending is revenue or output while income is a component of GDP.
 - To be consistent, Key-Log should have conducted its valuation on a consistent basis, either completely on output or completely on GDP. MVP's approach below is completely on a GDP basis.
 - Even Key-Log admits the speculative nature of its assumptions and analysis by stating:
 - "It is difficult to predict exactly how large an effect the MVP would have on decisions about visiting, locating to, or staying in the study region."⁵
 - "It is difficult to precisely quantify the effect of the MVP on retirement income."⁶
 - These combined, unsupported costs shown as Item Numbers 1, 2, and 4 in Table 1 represent 87-96% of the total alleged costs (Item Number 8 of Table 1) of the MVP project.
2. Key-Log wrongly claims that property value and thus property tax revenue (Item Number 5 and 7, respectively) would be lost indefinitely as a result of the MVP project. A large body of evidence as cited by Key-Log shows that natural gas pipelines do not diminish property values. A recent study conducted on behalf of the Interstate Natural Gas Association of America and cited by Key-Log found the following:⁷
 - *There is no measurable impact on the sales price of properties located along or in proximity to a natural gas pipeline versus properties which are not located along or in proximity to the same pipeline.*
 - *Neither the size nor the age of a natural gas pipeline affects a property's sale price.*
 - *There is no impact on demand for properties located along natural gas pipeline easements nor is development in areas with natural gas pipelines hindered.*
 - *Natural gas pipelines do not affect the property value of any particular type of residence any more or less than another type of residence.*
 - *The sales frequency of homes "on" a pipeline is consistent with those "off" a pipeline indicating that the presence of a pipeline does not inhibit sales.*

³ Phillips et al., pg. 36.

⁴ The eight counties contain 2.5 million combined acres according to the U.S. Census data accessed at <https://www.census.gov/support/USACdataDownloads.html#LND>. On page iii, Phillips et al. state that there would be 937 (861 + 76) acres of permanent, impacted land once construction is complete.

⁵ Phillips et al., pg. 36.

⁶ Phillips et al., pg. 37.

⁷ *Pipeline Impact to Property Value and Property Insurability*, Integra Realty Resources, February 2016, pg. iv.

3. Key-Log's Ecosystem Service Value (ESV) methodological approach and analysis as well as its valuation of ESV (shown in Item Numbers 3 and 6 in Table 1) have a number of concerns:

- The methodology is considered to be “contentious” as it is “subjective and variable over time, space and issue” according to a UK Parliament PostNote.⁸
- The UK Parliament PostNote later states “the subjective and ephemeral nature of ecosystem service values held by different groups could also potentially conflict with the society-wide aggregation and ‘impartial nature’ of economic analysis and governance structures acting in the national interest. Use of economic valuations could reinforce the dominance of a small number of ecosystem services over the rest.”⁹ In the case of MVP, Key-Log is attempting to use ESV to supplant the national interest of the MVP project.
- Furthermore, a report by The Economics of Ecosystems and Biodiversity (TEEB) and relied upon by Key-Log noted that “valuation studies often assume that respondents know their preferences with certainty, i.e. they are aware of how much they would be willing to pay for such ecosystem service provision. Empirical evidence in the stated preference literature suggests, however, that respondents are uncertain about their responses.”¹⁰ In other words, the data that one uses to build an economic valuation may not be reflective of the true economic value as the individuals that make up that data may have uncertainty in their willingness to pay for such ecosystem services.
- Additionally, one researcher at the National Center for Environmental Economics under the United States Environmental Protection Agency notes that “robust estimation of ecosystem services whether it is for payments for ecosystem services or for national level green accounting are scarce and inadequate.”¹¹ He goes on to state that “The values of ecosystem services have not yet been estimated with any generality or precision. While several celebrated studies have addressed valuation, most are problematic. Moreover, there are a number of reasons for which valuing ecosystem services remains a daunting exercise.”
- When discussing some of the pitfalls associated with the ESV framework, another researcher states that “much of the ES literature tacitly or explicitly accepts an economic valuation framework for assessing human well-being. This raises two kinds of concerns. First, possibly because the ES literature has been driven by conservation biologists more than economists, there have been some glaring mis-applications of conventional (neoclassical) economic methods. Second, all the limitations of the neoclassical idea of economic valuation have been carried over uncritically into this literature.”¹²
- Lastly, three citations that Key-Log relies upon for its Ecosystem Service Value use the hedonic pricing method. This method is considered to be completely subjective according to the European Parliament.¹³

⁸ *Ecosystem Service Valuation*, PostNote Number 378, Houses of Parliament, Parliamentary Office of Science & Technology, May 2011, pg. 3. Accessed at: <http://www.parliament.uk/briefing-papers/POST-PN-378.pdf>

⁹ *Ibid.*

¹⁰ *The Economics of Ecosystems and Biodiversity: The Ecological and Economic Foundations, Chapter 5: The Economics of Valuing Ecosystem Services and Biodiversity*, Unai Pascual, et al., March 2010. Available at: <http://www.teebweb.org/wp-content/uploads/2013/04/DO-Chapter-5-The-economics-of-valuing-ecosystem-services-and-biodiversity.pdf>

¹¹ *The “Ecosystem Service Framework”: A Critical Assessment*, R. David Simpson, National Center for Environmental Economics, January 2011. Available at: http://www.bioecon-network.org/pages/UNEP_publications/05%20Ecosystem%20Service%20Framework.pdf

¹² *Ecosystem Services: Origins, Contributions, Pitfalls, and Alternatives*, Sharachandra Lele, et al., Conservation and Society, 2013. Available at: <http://www.conservationandsociety.org/article.asp?issn=0972-4923;year=2013;volume=11;issue=4;spage=343;epage=358;aulast=Lele>

¹³ *Ecosystem services: Valuing our natural capital*, European Parliament Briefing, March 2015, pg. 5. Accessed at: [http://www.europarl.europa.eu/RegData/etudes/BRIE/2015/551321/EPRS_BRI\(2015\)551321_EN.pdf](http://www.europarl.europa.eu/RegData/etudes/BRIE/2015/551321/EPRS_BRI(2015)551321_EN.pdf)

MVP Economic Benefits

From an economics standpoint, the MVP project brings a number benefits to Virginia, West Virginia, and several surrounding states. These benefits come in the form of construction spending benefits (i.e., expenditures on goods and services within the state), operational benefits (i.e., skilled workforce for pipeline operations along with incremental tax revenues), and direct-use benefits (i.e., allow for potential commercial and manufacturing expansion opportunities).

To give perspective on the economic benefits of the MVP project, MVP calculated the net present value (NPV) of the gross regional product and ad valorem tax revenue benefits. This methodology mirrors that of Key-Log's. The calculation included the following data and assumptions:

1. Gross regional product benefits by year from 2015-2018, as shown in Figure 6 and Figure 7 of FTI Consulting Inc.'s ("FTI") October 2015 economic benefit reports for Virginia and West Virginia, respectively.
2. Annual ad valorem tax revenues from Table 3 and Table 2 of FTI's October 2015 economic benefit reports for Virginia and West Virginia, respectively. MVP assumed that these annual tax benefits will not start to accrue until the project is online in 2019.¹⁴ MVP also assumed that the tax revenue benefits stop after 20 years. This assumption is conservative due to the fact that the revenues would continue for as long as the pipeline is in service (most likely between 20 and 50 years).
3. MVP used the 1.5% discount rate that was put forth in the Key-Log report.

The results of this analysis show that the economic benefits on an NPV basis amount to more than \$1.3 billion.¹⁵ This value is conservative for two reasons. First, it excludes other GDP benefits during operation such as increased labor income. Second, this value is representative only of Virginia and West Virginia. As noted in FTI's October 2015 economic benefit reports for Virginia and West Virginia, of the \$3.5 billion that the MVP project owners plan to spend, \$1.2 billion (or approximately 35%) will be spent directly in these two states. The additional project expenditures that will take place outside of these two states would push the overall project benefits even higher.

Ultimately, the MVP will bring economic prosperity to Virginia, West Virginia, and other states. These benefits need to be carefully considered when also discussing any economic costs the project might bring.

¹⁴ See, <https://www.mountainvalleypipeline.info/project-schedule>. The targeted in-service date for the MVP project is 4th Quarter 2018. To be conservative, MVP assumed the benefits start in 2019.

¹⁵ This figure includes \$914 million of GRP benefits and \$394 million of ad valorem tax benefits.