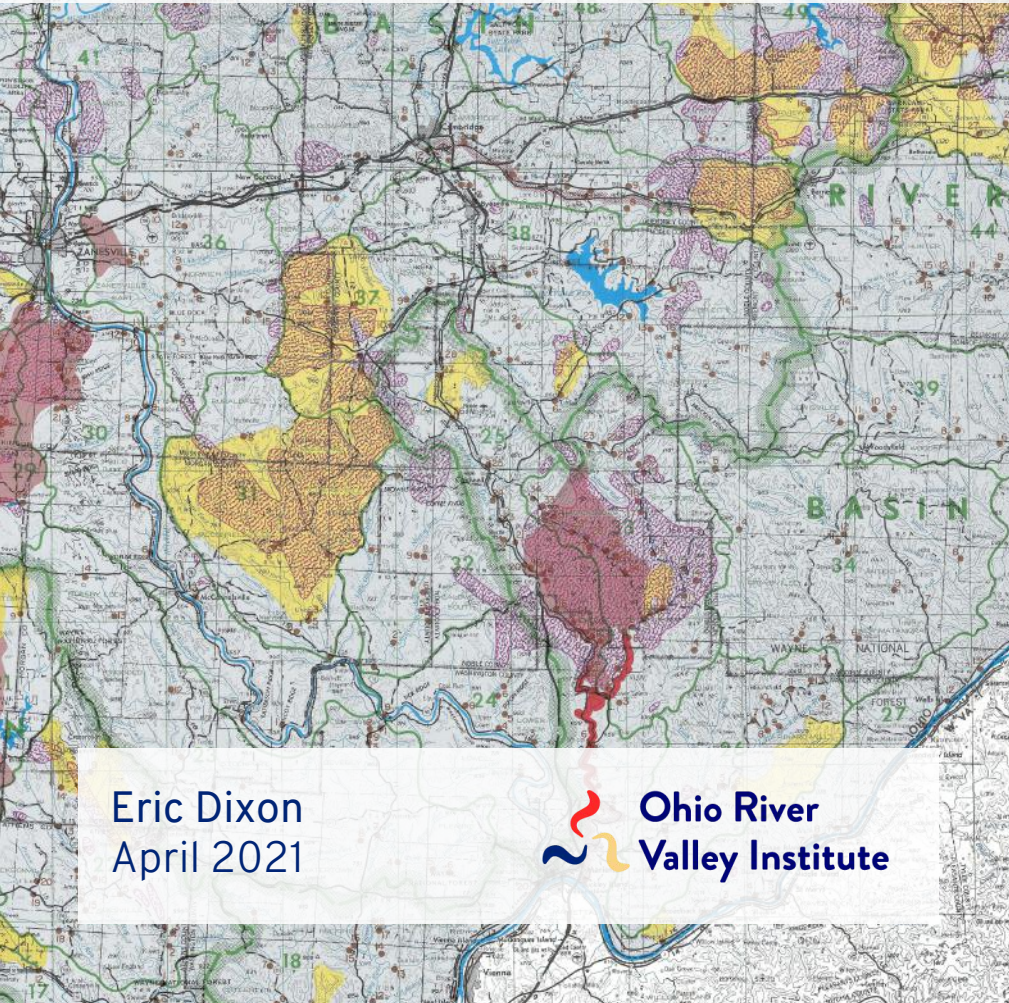


# Repairing the Damage

Cleaning up the land, air, and water damaged by the coal industry before 1977



## Summary:

For more than 200 years, the coal industry extracted billions of tons of coal, damaging thousands of acres and leaving much of it unreclaimed. Congress created the Abandoned Mine Land (AML) program in 1977 to repair the damage of the coal industry up to that point. A majority of damage from AMLs remain unreclaimed, yet the coal industry is rapidly declining and with it the ability to finance the AML program through fees on coal production. Thousands of unreclaimed AML sites threaten the injury and death of residents, deter development, harm local ecosystems, and contribute to global warming by emitting greenhouse gases. Policymakers should consider the program as part of a massive national economic mobilization to address climate change and inequality.

## Key Findings:

- Only 27% of total AML damage has been repaired (by 2020 cost), and more than 850,000 standardized acres of damage remain.
- The estimated cost to reclaim all unrepaired AMLs is \$18.3 to \$24.4 billion as of 2020 (low and high scenarios)—significantly higher than the \$11.0 billion in unreclaimed construction costs in the federal AML inventory. Unreclaimed costs will likely grow to \$21.0 to \$33.6 billion by 2050.
- If we clean up half of remaining AML damage in 10 years (\$1.3 billion per year), it would support 6,909 direct jobs for 2021-30: 3,178 construction jobs with \$30 assumed hourly gross pay, 3,317 design jobs with state/tribal agencies, and 484 federal administration jobs (medium scenario). An estimated 10,384 induced and indirect jobs—or, 17,293 total jobs—would be supported. Cleaning up all AMLs (\$26.3 billion) would support an estimated 138,024 direct job-years and 344,403 total job-years.

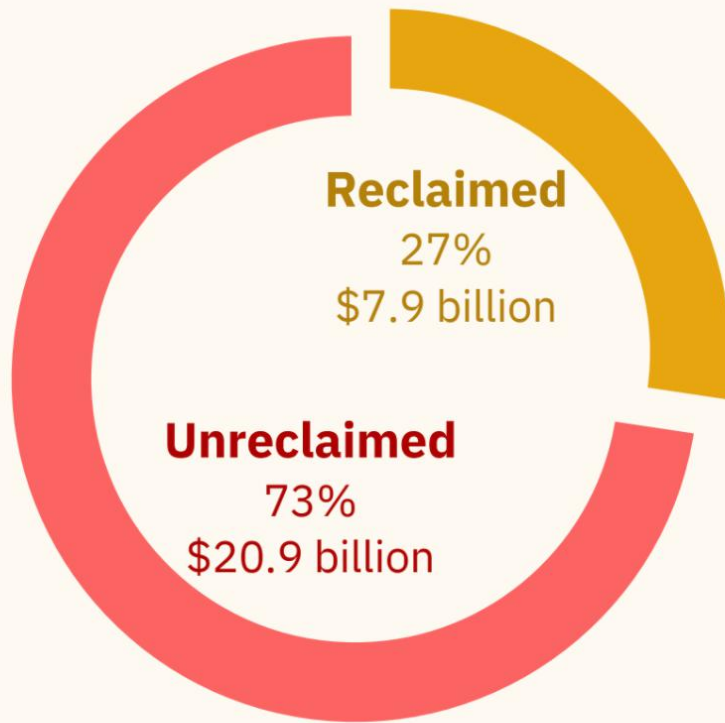
View and download the full report at [www.ohiorivervalleyinstitute.org](http://www.ohiorivervalleyinstitute.org).

## About the Ohio River Valley Institute:

The Ohio River Valley Institute is an independent, nonprofit research and communications center founded in 2020. We equip the region's residents and decision-makers with the policy research and practical tools they need to advance long-term solutions to Appalachia's most significant challenges.



Figure 1. Cost to address damage from AMLs, 2020



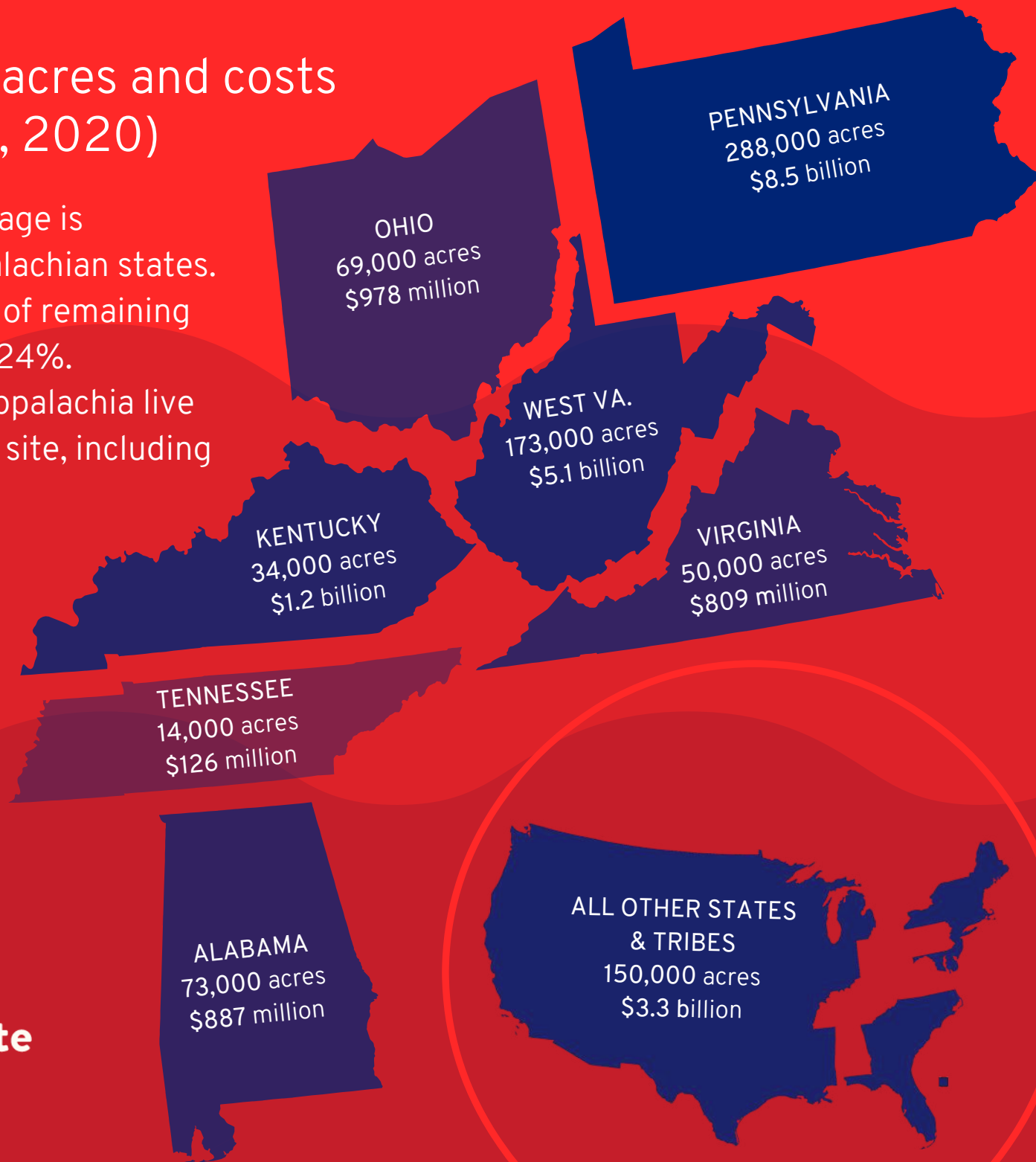
Remaining AML damage includes flooding from clogged streams, water pollution, mine fires, landslides, deforested land, and greenhouse gas emissions.

Abandoned coal mines are the 11th largest source of CH<sub>4</sub> emissions in the US, and there remain at least 7,000 acres of AML mine fires, which often emit CO<sub>2</sub>.

Surface-mined AMLs can produce greater runoff and carry sediment that clogs waterways, increasing flooding. AMLs continue to clog 5,500 miles of streams—enough to stretch across the continental US. Flooding will likely exacerbate as peak rainfall increases in some areas, including Appalachia, with climate change.

# Unreclaimed AML acres and costs (medium estimate, 2020)

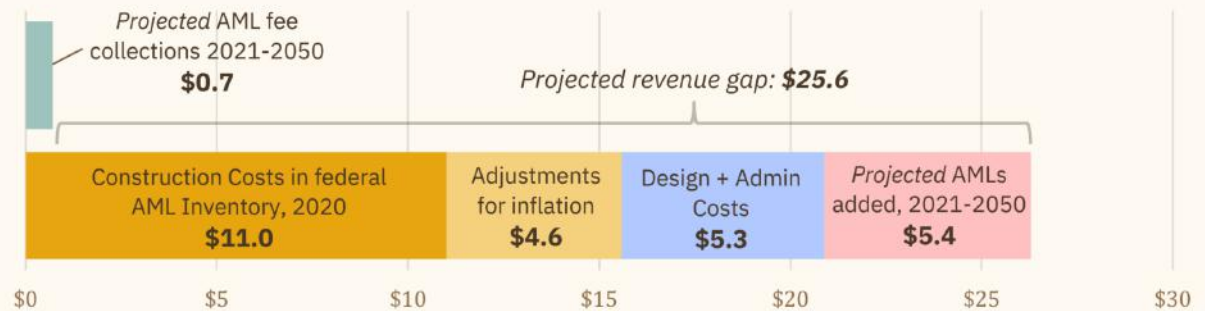
- 84% of remaining damage is concentrated in 7 Appalachian states.
- PA alone contains 41% of remaining damage and WV holds 24%.
- 5.5 million people in Appalachia live within 1 mile of an AML site, including 1 in 3 West Virginians.



# Unreclaimed damage is at least twice as large as official estimates

Updating AML cost estimates for inflation and adding design and administration costs suggest unreclaimed AML costs are double the official estimate as of 2020. Projections of future AML discovery suggest the problem will likely be even larger by 2050. As the coal industry declines, even if current AML fees are assessed on coal production through 2050, the program faces a large revenue shortfall.

Figure 2. Unreclaimed AML costs and projected AML fee collections, billions (medium scenario)

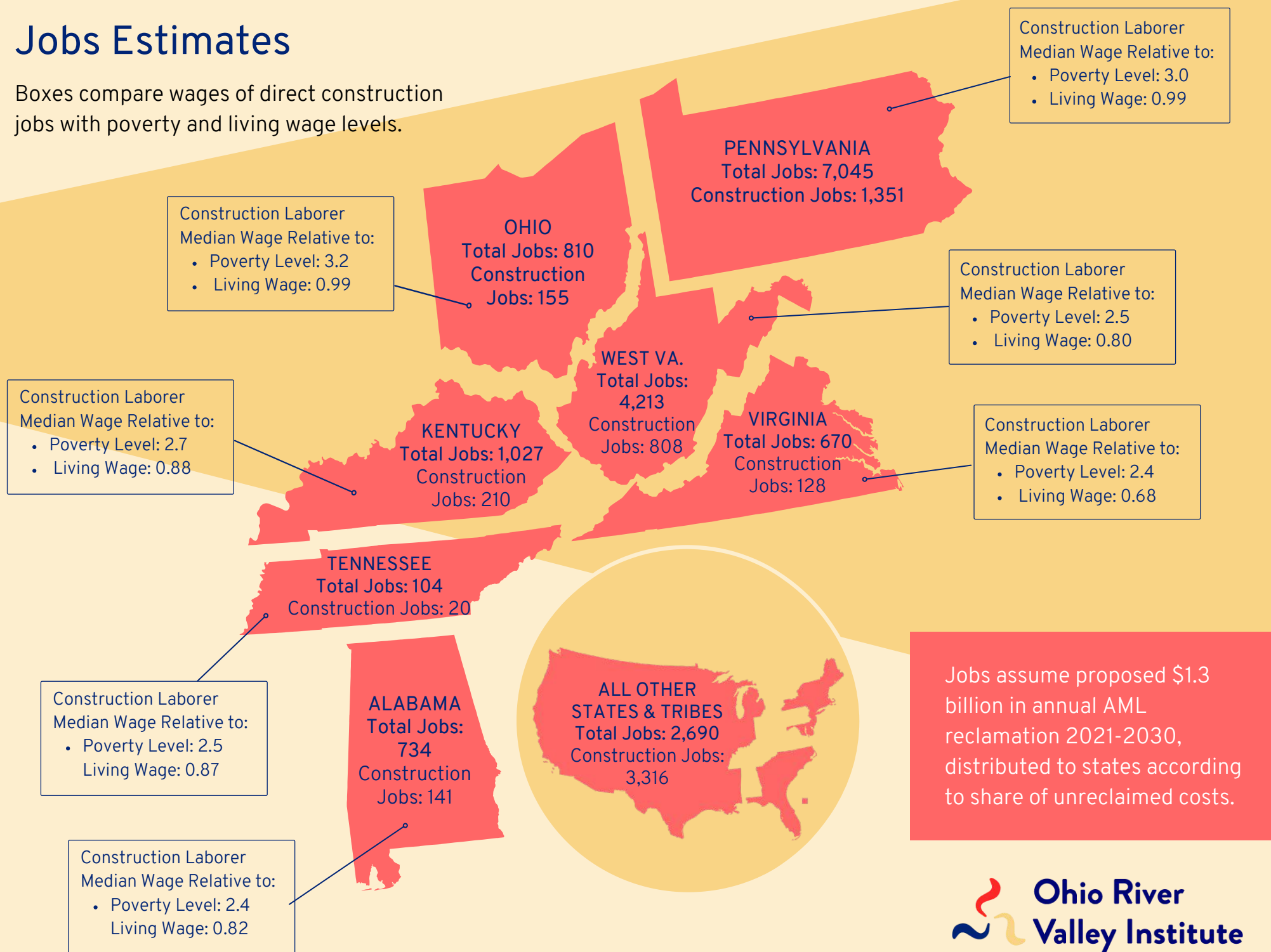


## Policy recommendations:

1. Ensure reclamation workers are paid a living wage, build power among workers, and prioritize firms owned broadly and/or by historically disadvantaged groups
2. Create a public reclamation jobs program under a Civilian Climate Corps (CCC) to ensure jobs are accessible among those most in need and in rural coal communities.
3. Strengthen mine reclamation to incorporate ecological health, prioritize reforestation and abating GHG emissions, and bring more land into public and local stewardship.
4. Support mine reclamation training and research program(s).
5. Update the federal AML inventory and strengthen data collection and reporting.
6. Double AML fee levels and extend collections through 2050.
7. Appropriate \$13 billion for AML cleanup over the next 10 years. Once the inventory is updated & more precise remaining AML costs are available, appropriate more funding to complete (nearly) all remaining AML cleanup by 2050.

# Jobs Estimates

Boxes compare wages of direct construction jobs with poverty and living wage levels.

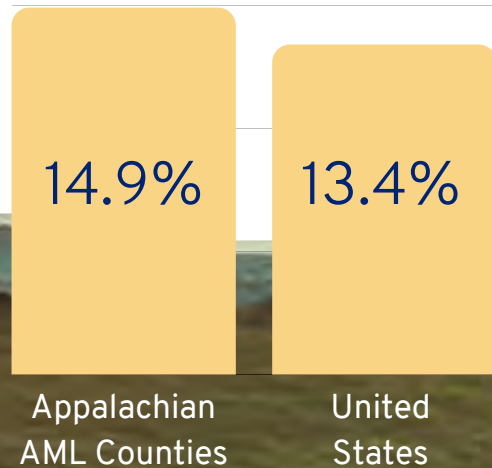




# Public reclamation jobs program could ensure jobs are accessible

A public reclamation jobs program within the Civilian Climate Corps (CCC) could fundamentally change the impact of the AML program, ensuring jobs are accessible and raising the bar for wages and benefits, safety, and reclamation techniques in rural construction markets. Poverty is higher in AML counties than the nation on average, and within AML counties poverty is higher among people of color, women, young people, and those with less formal schooling. A public jobs program can ensure reclamation jobs are accessible not only to the many former coal workers looking for work, but also to others in AML counties experiencing poverty and who may lack prior construction experience.

## Poverty Rate (2019)



Public jobs programs in coal mine reclamation are not without precedent. In the 1980s and 1990s, the Ohio Division of Civilian Conservation—a workforce training program that provided temporary jobs for young adults—had crews that completed dozens of mine reclamation contracts annually for the Ohio AML agency. The Pennsylvania AML agency currently employs 2 crews of 12 full-time permanent staff each that complete more than a hundred small reclamation projects annually.