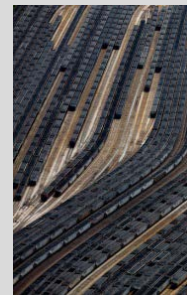


# *Access vs. Isolation*

## Preserving Appalachia's Rail Connectivity in the 21<sup>st</sup> Century: Part One

Prepared for the Appalachian Regional Commission January 2016



# Access vs. Isolation: Preserving Appalachia's Railway Connectivity in the 21<sup>st</sup> Century: Part One

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Over the past decade, increased natural gas production, heightened air quality considerations, and global market conditions have combined to reduce the demand for Appalachian coal and create serious challenges for coal-dependent railroads in the eastern United States. Reduced coal traffic is leading to railroad operating and service cuts, and facility closures. Even the most sanguine must admit that continued affordable freight access throughout the Appalachian Region is threatened. Moreover, unlike past cyclical disruptions in the demand for coal, the current trend appears to confirm a lasting structural shift with broad economic implications rather than a transient cyclical downturn.

Within this context, a volunteer working group of academics, economic development professionals, and state transportation officials has taken up the question of how to best encourage continued rail transportation access in an Appalachia where the movement of coal is no longer a regional freight anchor. Authored by our working group, this document aims to inform policy-makers and other concerned stakeholders of our initial findings as we begin to seriously explore public-sector actions that can help form a cohesive regional policy response.

## The Diminished Role of Coal and Reduced Coal Transportation

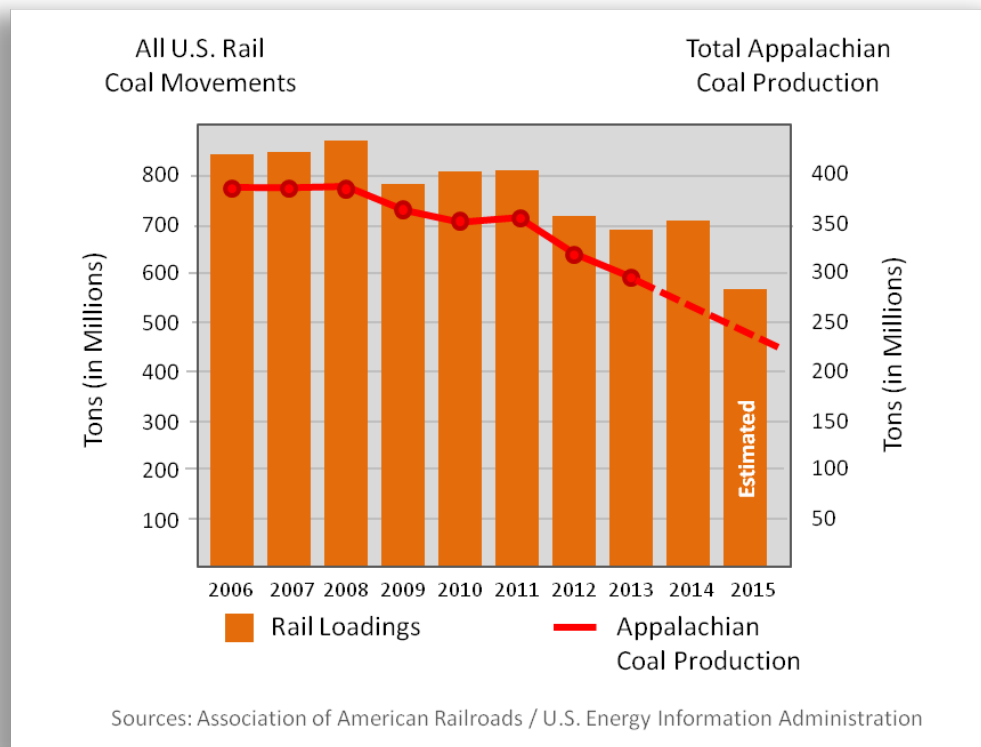
Traditionally, in the post-World War II era, a little more than half of U.S. electricity production has relied on coal. Coal is also used in steel production and other industrial processes. Steam and metallurgical coal have both been routinely exported to international consumers. Within the past decade, however, each of these end-market uses for coal has diminished considerably, and any sort of meaningful rebound is unlikely.<sup>1</sup> Moreover, while energy markets are global, the demand for any region's coal

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<sup>1</sup> Domestic consumption of steam coal peaked in 2008 and has fallen by nearly one-third since that year. This reflects the retirement or conversion to natural gas of 126 generating facilities across 31 states between 2010 and 2016. See Institute for Energy Research <http://instituteforenergyresearch.org/wp-content/uploads/2014/10/Power-Plant-Updates-Final.pdf>. Further, while improvements in production and transport efficiencies may, in the years ahead, make Appalachia's metallurgical coal more competitive in the international marketplace, the lasting strength of those markets remains suspect.

depends heavily on specific coal characteristics (primarily, Btu and sulfur content), region-specific mining costs, and transportation costs to end-use markets. In all, the combination of these factors has led to particularly precipitous declines in the production, movement, and consumption of coal from Appalachia, where annual outputs have fallen from 390 million tons in 2008 to a projected volume of less than 224 million tons in 2016.<sup>2</sup>

Figure 1 – Railroad Coal Volumes / Appalachian Coal Production



The effects of this diminished coal production and consumption on railroad transportation and their financial performance have been pronounced. Figure 1 depicts railroad coal car loadings in total tons between 2008 and 2015 for all U.S. carriers. This same figure also shows the total Appalachian coal production noted above.<sup>3</sup> As a result of these outcomes, CSX estimates that total revenues over the three-year period from

<sup>2</sup> Coal production volumes (historical and projected) were developed from various products discriminated through the U.S. Department of Energy’s Energy Information Administration. See: <http://www.eia.gov/coal/>

<sup>3</sup> Railroad coal volumes are based on weekly data collected and discriminated by the Association of American Railroads, with total 2015 projections based on our assessment of the week-over-week declines between 2014 and 2015 observed to date. Appalachian coal production values are available through the U.S. Department of Energy’s Energy Information Administration, with 2014 and 2015 projected values obtained through a simple linear trend.

2013 to 2015 are more than \$1.3 billion less than it projected. Similarly, Norfolk Southern (NS) recently announced that 2015 Q3 year-over-year profits are down 19 percent, a result it attributes to declining coal revenues.<sup>4</sup> As the Region moves forward, these types of impacts will likely worsen.

## The Railroad Industry Response

Beginning in September 2015, both CSX and NS responded aggressively to the changing Appalachian landscape with an initial round of cuts. The results include closed maintenance shops in Tennessee and Kentucky, mothballed line-segments in Tennessee, Kentucky, and West Virginia, and corresponding employee layoffs throughout the Region. Industry experts also cite the weakened financial position of the eastern railroads as an explanation for the Canadian Pacific Railway's recent actions to acquire Norfolk Southern. Importantly, however, neither CSX nor NS has taken any steps toward actual route abandonments, line sales, or the actual disposal of terminal facilities. Thus, neither carrier has yet to undertake any action that either requires regulatory approval or that cannot be reversed.

The looming question, of course, is what further railroad responses might be expected, and when. Both eastern carriers have indicated that, while the downward trend in coal-related activity was expected, the decline in Appalachian coal traffic and losses in revenues came more quickly and with more force than anticipated. This may explain why the initial responses of both railroads seemed to come without warning. Now, however, all parties should be aware of the potential for further railroad service, facility, and employment cuts.

### ROUTES AT RISK

One of the first to sound an alarm regarding the implications of declining coal traffic was noted railroad columnist, Fred Frailey. In an August 2015 *TRAINS* magazine column, regarding a likely railroad response, Frailey wrote,

“You can cut costs. With fewer trains on their coal routes, it doesn't make sense to maintain them to the same high standard. . . . Trouble is cost cutting doesn't always get you far. So next, you cut back[trackage].”

He then continues to predict the elimination of CSX's Big Sandy Subdivision and its adjoining Clinchfield route – a prediction that largely came true only weeks later. Additionally, Frailey suggests that Norfolk Southern might consider selling or leasing its *Heartland* routing to a short-line or regional railroad.

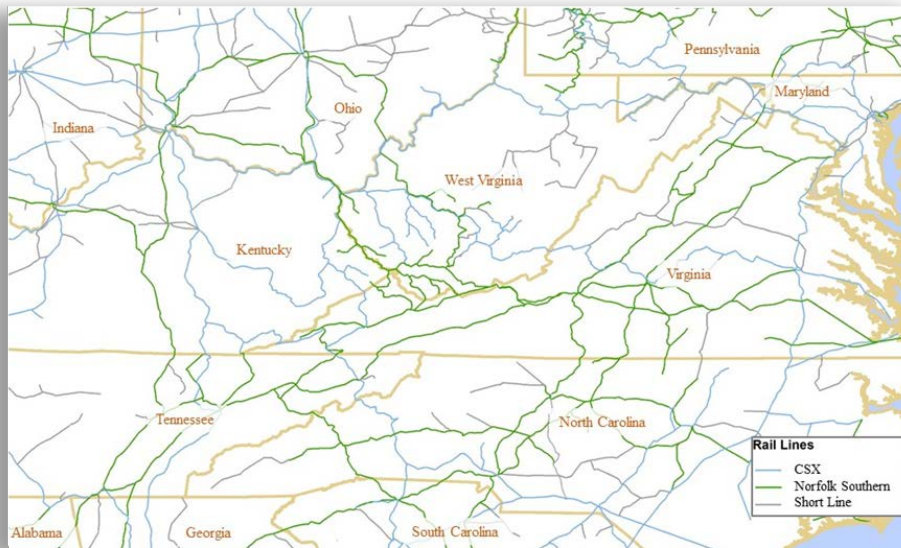
Finally, with regard to both railroads' financial vulnerability, Frailey writes,

“Both railroads must feel the hot breath of deep-pocketed, activist investors who would come in and make the cuts if they won't.”

<sup>4</sup> See “Here's what caused the rail coal market to plummet — and how CSX plans to adapt,” *Jacksonville Business Journal*, September 28, 2015 and Robert McCabe, “Norfolk Southern reports 19% drop in 3<sup>rd</sup> quarter profits,” *Virginian-Pilot Online*, October 29, 2015.

Figure 2 depicts both CSX and Norfolk Southern mainline trackage and most of the short-lines operating within the region. While many of the routes portrayed in this figure are used to transport commodities other than coal, coal volumes are essential for financial viability. Because of this, a significant portion of the regional network is now threatened by the significant reduction of coal production and usage. Policy-makers and the regional stakeholders they represent should assume that the integrity of the existing network, and the connectivity it provides throughout Appalachia, may be further affected by declining coal traffic. Moreover, at least in the case of the Class I railroads, decisions regarding which segments should be retained and which parts are expendable may depend on traffic and network conditions that are not immediately obvious to the public.

Figure 2 – The Regional Rail Network



In addition to providing direct rail access to many communities, the Region’s Class I railroads (CSX and NS) serve two additional functions. First, it is the Class I railroads that link the Region’s short-line freight customers to the world beyond Appalachia. Second, CSX and NS are often an important means of moving freight to and from inland navigation terminals along the Ohio River, as well as its navigable tributaries. Without question, more than Class I rail freight service is at risk. Overall, the long-term concern for Appalachia must be one of becoming more isolated and disconnected from domestic and global markets and opportunities—essentially becoming an economic island unto itself.

## The Need for Regional Public Sector Involvement

Perhaps policy-makers—or those of us who advise them—could have anticipated and prepared for what is now referred to as the “post-coal” challenge, but that did not happen. Instead, the first realities of the changing freight landscape arrived just as the public awakened to the concern, leaving many questions, few answers, and little time to prepare. Ideally, decision-makers would have detailed information predicting the extent of further railroad cuts, the impacts of those cuts on freight mobility, the specific economic and employment implications of diminished or more expensive regional freight access, and potential alternative actions designed to reallocate regional resources and ameliorate impacts. This detailed information is not available at this time. In its place is the acute understanding that seriously reduced coal volumes may lead to a new era of physical and economic isolation, and that isolation of any kind can be devastating to Appalachia.<sup>5</sup>

Effective public sector involvement is in the public’s interest. Importantly, because of the geographic and multi-jurisdictional scope of Central Appalachia, such public involvement must feature a large degree of cooperation and coordination among the states and other jurisdictions interested in preserving effective and affordable railroad service. Each of us has jurisdictional allegiances and responsibilities, and forthcoming policy responses must reflect these. But freight moves beyond, and in spite of, jurisdictional boundaries. If there are to be public-sector responses aimed at mitigating the effects of reduced coal-related transportation activity, the most successful of these responses will respect and account for regional interdependence.

## Developing a Program of Regional Response

All or part of 13 states lie within the Appalachian Region. This working group comprises individuals from five of these states where the effects of reduced coal-related railroad activity are likely to be greatest. Importantly, however, even among these five states, the purposes, content, and applications of existing state-level freight rail programs vary widely.<sup>6</sup>

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<sup>5</sup> As evidenced by its history, isolation can cripple Appalachia’s economic future, destroying any hope of commercial growth and future employment opportunities. Given this risk, there is a need for the public sector to act quickly to meet the current challenge, rather than wait to react to the broader hardships that will almost certainly emerge in years ahead.

<sup>6</sup> The variations in state programs are notable. In some cases, rail programs are housed within state DOTs; in other cases these programs are free standing. Some states already provide ongoing financial support to short-line railroads; others do not. Some states have established and rail-inclusive state-level freight advisory committees; others do not.

The aim of any new, supplemental regional assistance program should not be to replace, alter, or ignore existing state programs. Instead, a successful regional initiative will garner additional resources for existing state efforts and help guide the use of these new resources so that larger regional concerns are adequately reflected. Any regional interest involved in this process must respect the line between coordination and intrusion.

With this caveat noted, we envision a regional rail program that provides support for the following:

1. **RAIL INDUSTRY INTERACTIONS:** The need for additional state-level response is directly predicated on the future actions of both Class I and short-line railroads. Therefore, anticipating these actions is critical to evaluating potential state-level responses. Each of the states represented by the current working group already has relationships with the railroads that serve their respective states. However, a regional program sponsor may help facilitate additional interactions to secure the best and most up-to-date information from affected railroads. Sustaining and strengthening relations with existing Class I rail carriers is essential to ensuring a successful and sustainable railway network for the future that will include a balance of Class I, short line, and (as in Virginia and West Virginia) Amtrak rail passenger services.
2. **EXISTING SHORT-LINE PRESERVATION:** Today, Central Appalachia is home to more than a dozen short-line railroads. As noted above, these short-lines routinely depend on connections with Class I railroads when moving freight to and from local customers. Consequently, any regional changes that affect the availability or quality of these connections can affect a short-line's viability. A supplemental regional program could provide resources to preserve existing connectivity or help short-lines establish different Class I connections.
3. **NEW SHORT-LINE DEVELOPMENT:** Most existing short-lines are spin-offs from Class I systems. Indeed, replacing Class I operations with those of a short-line railroad has proven to be an effective way to preserve freight rail access that would otherwise disappear. Consequently, as diminished coal traffic leads CSX and NS to consider relinquishing specific route segments, the potential for a short-line alternative may, in many cases, become important. In other cases, where existing branch-lines serve only coal producers, short-line conversion may not be possible.

The Central Appalachian states have widely divergent approaches to short-line railroad development and support. Nonetheless, within the confines of these existing programs, a regional program could prove valuable to help states assist

and support the creation of additional short-line railroads, while emphasizing the importance of a sustainable, multi-state network to the Region’s economic future.

- 4. ALTERNATIVE INFRASTRUCTURE PRESERVATION:** When short-line freight railroads are not a viable option for a route and a Class I railroad plans to relinquish operations, states often choose to retain the existing right-of-way and, in some cases, infrastructure. Generically, this alternative is often referred to as “rail banking.” This type of capacity preservation can actually take many forms.

At a minimum, rail banking involves preserving rights-of-way, which sometimes can be used to support broadband fiber, wireless/cell towers, electricity, and other utility co-location. In some places, such as North Carolina, corridor preservation may entail retaining the subject line in its entirety—including trackage—and even maintaining the line (to some degree) so that renewed operations can be easily undertaken. Finally, while not in use for freight service, rights-of-way can be retained and used to support tourist train operations, helping to generate tourism-related economic opportunities for on-line or nearby communities. The envisioned regional program could provide resources and guidance for this approach to freight capacity preservation as well.

- 5. TERMINAL FACILITY PRESERVATION OR RE-USE:** Disruptions to the status quo caused by reduced coal traffic may be extensive. Therefore, both CSX and NS may elect to permanently close terminal facilities, including maintenance shops. Already, CSX has ceased operations at shops in Erwin, Tennessee and Corbin, Kentucky. Ultimately, both former train yards and retired maintenance facilities can become redevelopment opportunities. Whenever possible, repurposing these potential assets should be consistent with continuing (or resumed) nearby railroad operations.

- 6. INTERMODAL CONNECTIVITY:** Above, we note the links between regional rail service and inland navigation. A similar interdependence exists between rail and truck freight transportation in the form of bulk transfer and other truck-rail intermodal facilities. Over the past fifteen years, the Appalachian Region has successfully created these intermodal opportunities and nurtured the commerce that intermodal transportation supports.

It is the continued integrity and forward-going robustness of the Region’s entire intermodal transport network that is challenged and that, for Appalachia’s economic future, must be addressed through a cohesive multi-state approach. Intermodal connectivity will almost certainly be a focus for individual state



activities. At the same time, well-coordinated intermodal transport must also be a principal objective of any forthcoming regional effort.

- 7. COORDINATION AND TECHNICAL SUPPORT:** Each Central Appalachian state has experience evaluating and addressing rail-related projects. However, the scale and scope of these emerging challenges will likely require a level of multi-state coordination, planning, and investment that will surpass the capacity of most individual states.<sup>7</sup> Accordingly, as states engage in a larger regional initiative, multi-jurisdictional planning and coordination—including network data and analytical tools—will prove critical to preserving an effective and sustainable regional transportation network.

## Concluding Thoughts and Recommendations

Regulatory reforms enacted in the second half of the 20<sup>th</sup> century provided railroads with unprecedented freedoms to eliminate unprofitable freight routes and the local services those routes supported. As a result, between 1980 and 2012, Class I system route-miles fell from 164,822 to 95,391. This network rationalization is credited as a major contributor to the rail industry renaissance observed over the past three decades. While no one among our working group would choose to undo the ability to make such changes, the process of shrinking the nation’s rail system provided some important lessons.

The first and most powerful point is that railroad capacity, once fully abandoned, is difficult—or even impossible—to restore. The second lesson is that railroad decisions about what to retain and what to abandon, while generally well-reasoned, are not altogether perfect. A number of railroad route segments sacrificed during the 1980s and 1990s would be exceedingly useful in 2015. It has been demonstrated, time and again, that nearly all such abandonments prove impossible to restore. Finally, short-line spin-offs and state-sponsored corridor preservation programs have yielded some amazing successes throughout Central Appalachia and across the United States. Accordingly, such success stories represent a sensible middle ground between compulsory railroad service and unfettered, market-driven outcomes.

When these results are combined with the fact that for generations, Appalachia suffered the crippling effect of physical and economic isolation, we are convinced that a balanced and timely public-sector response to current rail industry retrenchments is critical to the Region’s future. While not every line segment can nor should be preserved, the future success of Appalachia’s economy will require an interconnected

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<sup>7</sup> For example the combined CSX Logan Subdivision and Clinchfield route (formally the Blue Ridge and Kingsport Subdivisions) stretch 400 miles across four states.

rail freight network to maintain the Region’s access to both domestic and international opportunity. Should policy-makers fail to proactively respond, the results of such inaction or delayed action may well contribute to a devastating and irreversible loss of regional freight capacity and network connectivity that will serve to erode the economic and employment potential for Appalachia in the 21<sup>st</sup> century. The importance of addressing Appalachian isolation was discussed in *Appalachia: A Report By the President’s Appalachian Regional Commission 1964* (p. 32):

“Developmental activity in Appalachia cannot proceed until the regional isolation has been overcome. Its cities and towns, its areas of natural wealth, and its areas of recreation and industrial potential must be penetrated by a transportation network which provides access to and from the rest of the Nation and within the region itself...The Commission recommends a mix of investment and timing which gives the single problem of access a double priority of emphasis.”

As others before us, we have offered thoughts and ideas regarding the importance of the current challenge, and also introduced an array of potential public-sector responses. These are just suggestions—a starting point for a more formal and comprehensive approach to action. Broader discussions are clearly needed. We would warn, however, that these discussions should take place soon and be conducted efficiently. Time is not a friend.

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### APPALACHIAN RAIL ACCESS WORKING TEAM

This document was prepared by an *ad hoc* working team of academic, economic development, and transportation professionals from across Central Appalachia. The team has not been compensated for its work, nor does it formally represent any single organization or institution. Instead, the group has been organized and is working together out of a collective interest in the topic-area and a shared understanding of the issue’s importance to the economic future of Appalachia. Current group members include:

Mark Burton, PhD The University of Tennessee	Mark McCaskill, AICP Roanoke Valley Alleghany Valley Regional Commission
David Clarke, PhD The University of Tennessee	Jennifer Shand, PhD Marshall University
Patrick Donovan, MS U.S. Army Corps of Engineers	Michael Smith, PhD Western Carolina University
Ted Grossardt, PhD The University of Kentucky	Reg Souleyrette, PhD The University of Kentucky
Liza Joffrion, Director, Multimodal Division Tennessee Department of Transportation	Kent Sowards, MBA Marshall University