



I-95 Corridor Coalition

Mid-Atlantic Rail Operations Study *Interim Benefits Assessment – Executive Summary*



February 2004

Mid-Atlantic Rail Operations Study

Interim Benefits Assessment – Executive Summary

Prepared for:

I-95 Corridor Coalition

Sponsored by:

Amtrak
CSX Transportation
Norfolk Southern

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Mid-Atlantic Rail Operations Study

Initial Benefits Assessment

Executive Summary

The Mid-Atlantic Rail Operations Study (MAROps) is a joint initiative of the I-95 Corridor Coalition, five member states (New Jersey, Pennsylvania, Delaware, Maryland and Virginia), and three railroads (Amtrak, CSX, and Norfolk Southern). The Federal Railroad Administration (FRA) and Federal Highway Administration (FHWA) participate as advisors. Over a two-year period, the MAROps participants crafted a 20-year, \$6.2 billion program of rail improvements aimed at improving north-south rail transportation for both passengers and freight in the Mid-Atlantic region and helping reduce truck traffic on the region's overburdened highway system.

The MAROps Summary Report¹ and its Appendices (the Report) documented existing conditions in the study area (e.g., demographics, economic conditions, transportation facilities, passenger and freight flows, etc.) and defined a three-phased program of improvements to eliminate key rail bottlenecks across the five-state study region. The Report also presented order-of-magnitude cost estimates for the projects. Finally, the Report identified a number of anticipated benefits, including:

- Transportation benefits from reduced need for highway travel by trucks and automobiles;
- Economic benefits associated with reduced freight transportation costs due to improved availability of rail; and
- Improved overall rail system capacity, reliability, and performance for freight and passengers due to the elimination of key rail chokepoints.

As the MAROps program continues to evolve and advance, it is important to quantify these benefits. This Initial Benefit Assessment is designed to provide a first approximation of the program's benefits. The information will support ongoing policy and planning discussions. The Initial Benefits Assessment is an approximation because comprehensive, rail-network capacity and operations models, which are needed for detailed analysis of costs and benefits, are not available for the Mid-Atlantic rail system. The individual railroads have network and operations models for portions of the network, but a complete and integrated set of models does not yet exist. When regional rail network and operations models become available, a more precise assessment of program costs and benefits will be possible.

¹ Copies of the Report can be obtained from the I-95 Corridor Coalition. See www.i95coalition.org. A PDF version of the report is available at <http://144.202.240.28/pman/projectmanagement/Upfiles/reports/full112.pdf>.

As a starting point, two alternative futures were defined for the Initial Benefit Assessment:

1. *Without MAROps* year 2025 scenario assumes that rail maintains its current overall volume, but does not grow its business. Rail grows its volume in certain commodity lanes, but “de-markets” in others, resulting in little or no growth in overall rail tonnage. Total rail tonnage in the *Without MAROps* 2025 scenario is significantly below the unconstrained year 2025 base case forecast. Trucking continues to grow and absorbs traffic that “wanted” to stay on rail but cannot.
2. *With MAROps* year 2025 scenario assumes that rail maintains its current overall market share (as a percentage of total freight tonnage). The scenario assumes that rail increases its share of intermodal traffic relative to trucking—up to 10 percent of MAROps truck tonnage, primarily dry van commodities and automobiles moving 400 miles or more, shifts to rail. The scenario assumed no shift of other types of truck traffic to rail.

The freight tonnage and vehicle-miles-of-travel (VMT) associated with these scenarios was determined using the TRANSEARCH dataset, a commercial database product developed by Reebie Associates. The *With MAROps* scenario reduces year 2025 truck VMT by 3.6 billion miles across the National Highway System; 33 percent of this reduction is within the five-state MAROps region.

The dollar benefits of this VMT reduction were estimated in three ways:

1. By calculating the direct cost savings to freight shippers, based on differences in truck and rail freight rates, with appropriate discount factors;
2. By calculating the direct cost savings to highway users (e.g., truckers and automobile drivers making work trips and non-work trips) using the Highway Economic Requirements System (HERS). HERS is computer simulation model that estimates the benefits and costs of highway investments and changes in VMT on the Federal-aid highway system; and
3. By using an input-output model of the economies of the five MAROps states, leased from Regional Economic Models, Inc. (REMI), to estimate how changes in transportation costs translate into increases in productivity and reductions in the cost of doing business, generating “multiplier” benefits throughout the economy.

The benefits from the MAROps program improvements are estimated at \$12.8 billion. The benefits, which are summarized in Table ES-1, include:

- \$2.9 billion in direct shipper benefits due to reduced freight transportation costs;
- \$6.3 billion in direct savings due to reduced highway congestion for vehicles still on the road—\$0.8 billion for trucks, \$0.7 billion for work-related auto trips, and \$4.8 billion for non-work auto trips; and
- \$3.7 billion in indirect economic benefits generated throughout the economy by these transportation savings.

Table ES.1 Summary of Estimated Benefits to the MAROps Region from MAROps Improvements, 2005-2025

Benefit Category	Direct Benefit (\$ millions, current)	Plus Additional Benefit from I/O Model (\$ millions, 2003)	Total Benefit (\$ millions)
Shipper Cost	\$2,888	\$3,198	\$6,086
Highway User Cost (Truck)	\$778	\$263	\$1,041
Highway User Cost (Auto, Work-Related)	\$659	\$221	\$880
Highway User Cost (Auto, Non-Work-Related)	\$4,831	-	\$4,831
Grand Total	\$9,156	\$3,682	\$12,838

The benefits are cumulative benefits for the period from year 2005 (when the initial MAROps improvements are finished) through year 2025 (when the final MAROps improvements are completed). The benefits accrue to the five-state MAROps region only. Additional benefits will accrue to regions and states outside the Mid-Atlantic region, but were not estimated as part of this Initial Benefits Assessment.

The estimated \$12.8 billion benefit of the MAROps program is significantly larger than the estimated \$6.2 billion cost of the program, suggesting a positive benefit/cost ratio. However, the full net present value of the benefits and the costs must be estimated before an accurate benefit/cost ratio can be calculated. Nevertheless, the Initial Benefits Assessment supports a preliminary conclusion that the MAROps program could return positive benefits and that more detailed development is warranted.