



*Center for Transportation Analysis
Research Capabilities Brief*
Oak Ridge National Laboratory

Cost of Implementing Transportation Security Systems

Center for Transportation Analysis (CTA) Research Areas

Aviation Safety
Air Traffic Management Analysis
Data, Statistical Analysis
Geo-Spatial Information Tools
Defense Transportation
Energy Policy Analysis
Environmental Policy Analysis
Highway Safety
Intelligent Transportation Systems
Logistics Management
Supply Chain Management
Modeling and Simulation
Transportation Operations
Planning and Systems Analysis
Transportation Security

Patricia S. Hu, Director
Center for Transportation Analysis
Oak Ridge National Laboratory
2360 Cherahala Boulevard
Knoxville, TN 37932
865.946.1349
(Fax) 865.946.1314
Website: cta.ornl.gov

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Security of our passenger and freight transportation systems is among our highest national priorities. Decision makers at all levels of government—local, state, and national—are faced with a plethora of security needs, technologies, and procedures, while resources to enhance our security are limited. The cost of implementing transportation security systems is a key input to decision making.

ORNL's Capabilities

The Center for Transportation Analysis (CTA) retains a unique set of data, models, and highly skilled analysts with backgrounds in transportation systems, operations research, economics, geographical information systems, remote sensing, and visualization. These resources have been merged to assess the engineering and economic costs of alternative security technologies for both passenger and rail. Our studies go beyond the direct engineering costs of installing and operating security systems. We also model and estimate the costs to passengers in terms of delay and less certain arrival times; and the potential costs to specific economic sectors and regions. We utilize our multimodal networks to study how a disruption in one mode at one location can reverberate throughout the supply chain and the economic sectors that depend on just-in-time delivery of goods.

ORNL is dedicated to the highest scientific, professional, and ethical standards. Our reputation for quality and unbiased research brings credibility to our research and the specific tools and

data we develop for our sponsors. We focus on the specific needs of our sponsors and provide products that are useful in real-world decision making.

Questions ORNL Can Help Answer

- Given current and projected technology, is 100 percent screening of passengers and cargo a viable option?
- Will the capital and operating costs of screening be prohibitive?
- Will potential time delay experienced by passengers and cargo be unacceptable?
- Can we place a dollar value on travel time delay and travel time uncertainty?
- Who should pay for security systems—i.e. the federal government, state and local government, passengers, industry; and what are the implications of who pays?
- To what extent are our transportation systems resilient to disruptions?
- To what degree will specific economic sectors and regions incur costs from improved security? Can we identify the winners and losers?

Experience

A wide variety of sponsors have supported transportation analysis at ORNL for more than thirty years. Sponsors include the Department of Energy, the Department of Transportation, the Department of Homeland Security, the Army Corps of Engineers, and a variety of local and state governments.

For more information regarding this research contact Randy Curlee, Center for Transportation Analysis, Oak Ridge National Laboratory, phone (865) 946-1461 or email curleetr@ornl.gov.