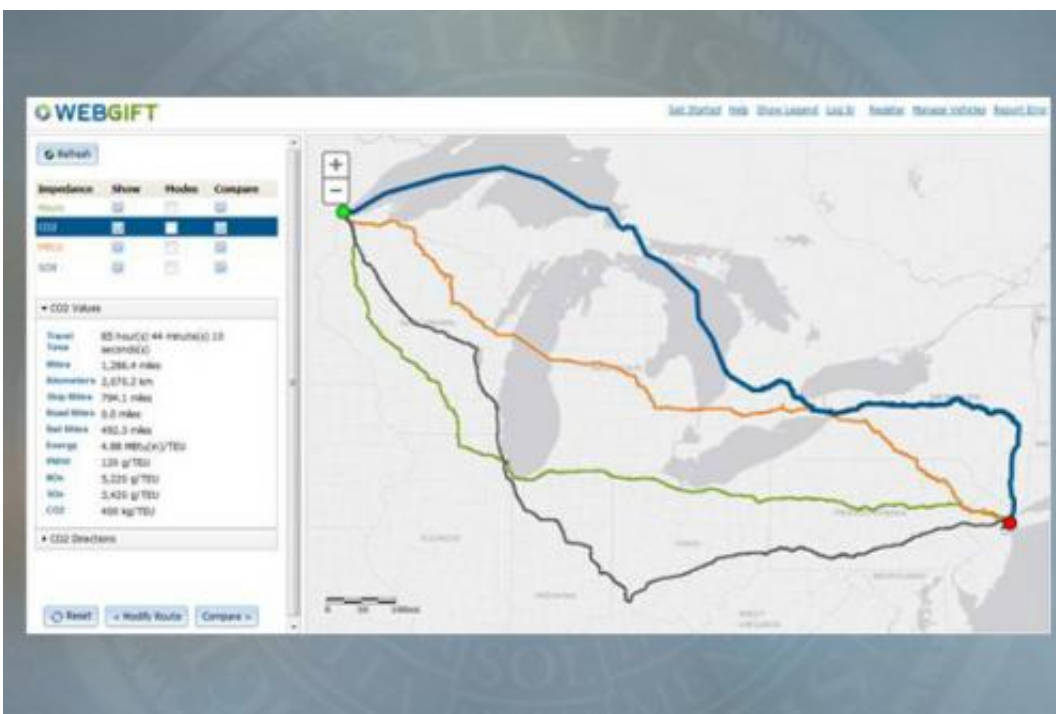


Online tool helps shipping companies analyze economic, environmental freight costs

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A new [web-based version](#) of the Geospatial Intermodal Freight Transportation Model (GIFT) has been released as part of a five-year initiative among researchers at the Rochester Institute of Technology, the University of Delaware and the U.S. Department of Transportation's Maritime Administration.

The new technology, which utilizes mapping software similar to Google Maps, analyzes the economics, time-of-delivery and environmental performance of various freight-transportation routes using rail, road and water. With this web-based version, companies and local, state and federal government agencies can make decisions that are not only financially feasible, but also environmentally sustainable.

For example, a company can evaluate the economic costs and [greenhouse gas emissions](#) associated with moving goods along various freight corridors using different transportation technologies and choose options that meet corporate goals, customer desires and regulatory mandates.

"Visualizing 21st century freight innovation will help engage all partners in the supply chain to see where energy savings, environmental targets and economic choices serve a sustainable triple bottom line," according to James Corbett, professor of marine policy in UD's College of Earth, Ocean, and Environment.

The system, called WebGIFT, includes updated transportation connections between the U.S. and Canada; road-speed data for more accurate travel calculations between origin and destination points; and tested case studies that reveal which shipping routes may produce lower emissions and lower costs.

A key feature of WebGIFT is that emissions rates, economics cost factors and other variables can be adjusted to reflect a variety of operating scenarios.

Funding was initially secured in 2010 under the Sustainable Intermodal Freight Transportation Research program, a collaborative effort aimed at improving freight decisions through innovative, data-driven, transformative research in four key areas: energy, environmental and

economics analysis; congestion and modal analysis; safety, security and infrastructure resilience; and data acquisition, storage and access.

The U.S. Department of Transportation (DOT) was an active partner in the development and rollout of WebGIFT, providing modal data necessary for the calculation of travel times, and awarding the project numerous grants through the Maritime Administration, a DOT agency.

Chief authority of the Maritime Administration, Acting Maritime Administrator Paul (Chip) Jaenichen, commented on the WebGIFT release, stating that "economic and environmental considerations must go hand-in-hand with America's growing requirements for freight movement. Thankfully, WebGIFT is just the tool planners and policy analysts need to responsibly meet our nation's mobility needs. Both the Department of Transportation and the Maritime Administration are proud of the supporting roles we played in bringing this great project to completion."

James Winebrake, dean of RIT's College of Liberal Arts and one of the primary researchers on the GIFT project, explained the value of using the new web-based system.

"For instance, a company planning to move goods from Hong Kong to New York City can use GIFT to evaluate time-of-delivery, environmental impacts and economic costs associated with this freight movement," he said. "They can also use the model to explore how environmental impacts may be reduced using alternative routes or modes of transportation, and what the economic and/or time-of-delivery tradeoffs associated with these alternatives may be.

"In one published case study, we show how the type of vessel used to move goods can greatly affect [environmental performance](#), and how trains and trucks can be used to supplement domestic and international

shipping to make the entire freight delivery system more effective and efficient."

The collaboration with the DOT's Maritime Administration builds on research conducted by Corbett, Winebrake, Karl Korfmacher of RIT and Scott Hawker of RIT.

"This work highlights our interest in interdisciplinary research," said Winebrake. "By bringing together faculty and researchers from various disciplines, we can create innovative solutions that pair economic feasibility with environmental sustainability."

Provided by University of Delaware

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