TREDIS® 5

Freight Planning & Economic Development
Live Demonstration

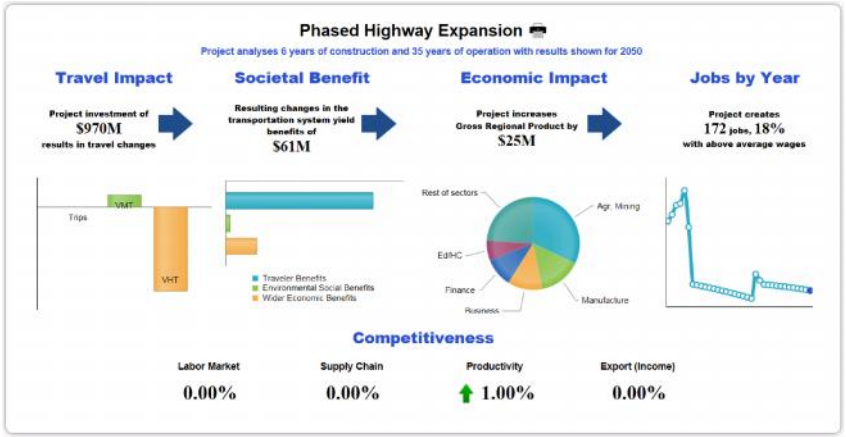
March 1, 2016

Agenda

- TREDIS Freight Considerations
- Live Demonstration
- Program and Policy Implications
- Questions & Answers

The TREDIS Software Suite

TREDIS® is a **decision support system** that helps tell the economic impact story for your transportation project.

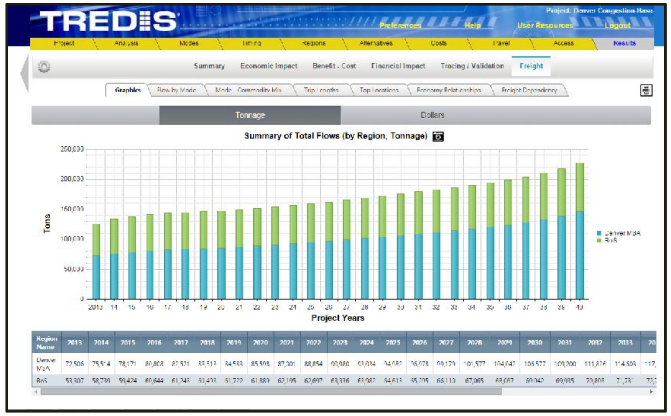


Provides **insights** to help you **make decisions**, **plan**, and **communicate** the

- economic impact,
- benefit-cost,
- financial impact, and
- **freight implications**

of your project or program.

TREDIS Freight Capabilities

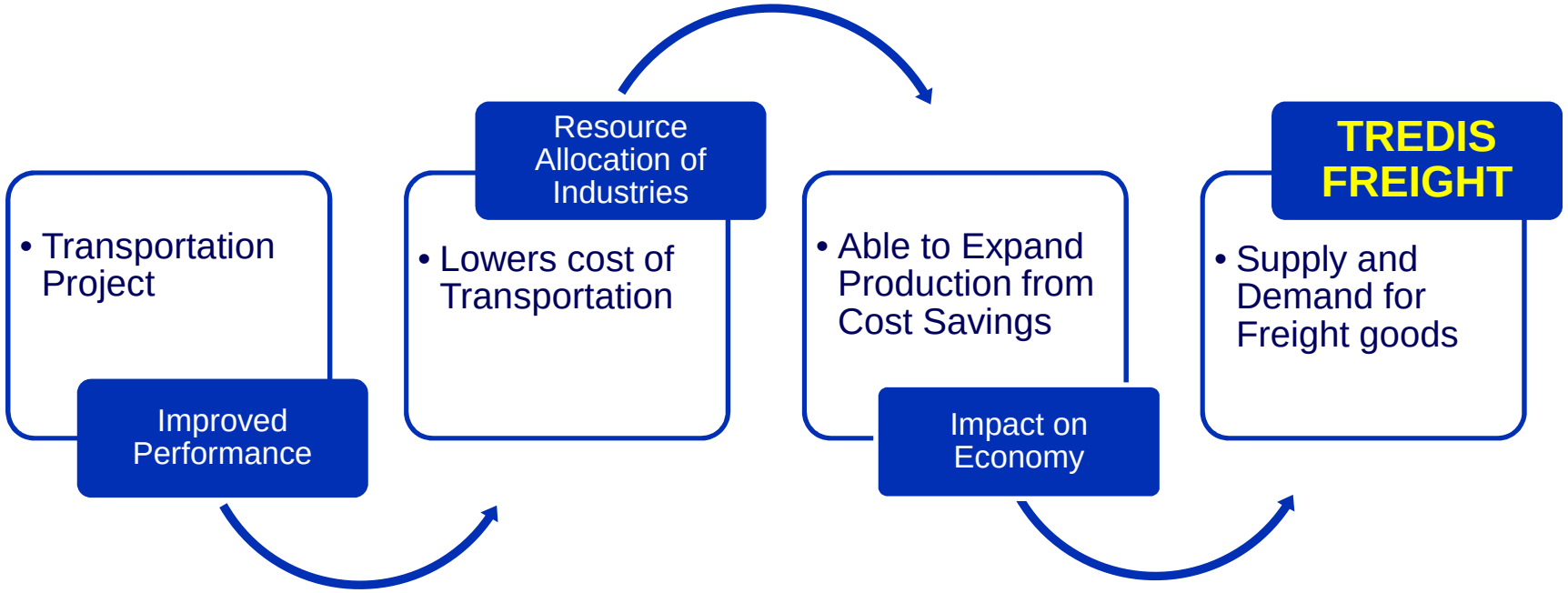


- Uses expanded freight data sets
- Analyzes county-to-county flows
- Analyzes corridors and networks
- Provides customized spatial detail
- Performs multimodal analyses
- Profiles relationship between industries, supply chains, and internal, inbound, outbound, and through flows
- Identifies freight dependent industries and economic impacts
- Analyzes economic effects of changes in freight transportation performance on communities, regions, and states
- Compares and prioritizes corridor and project level plans

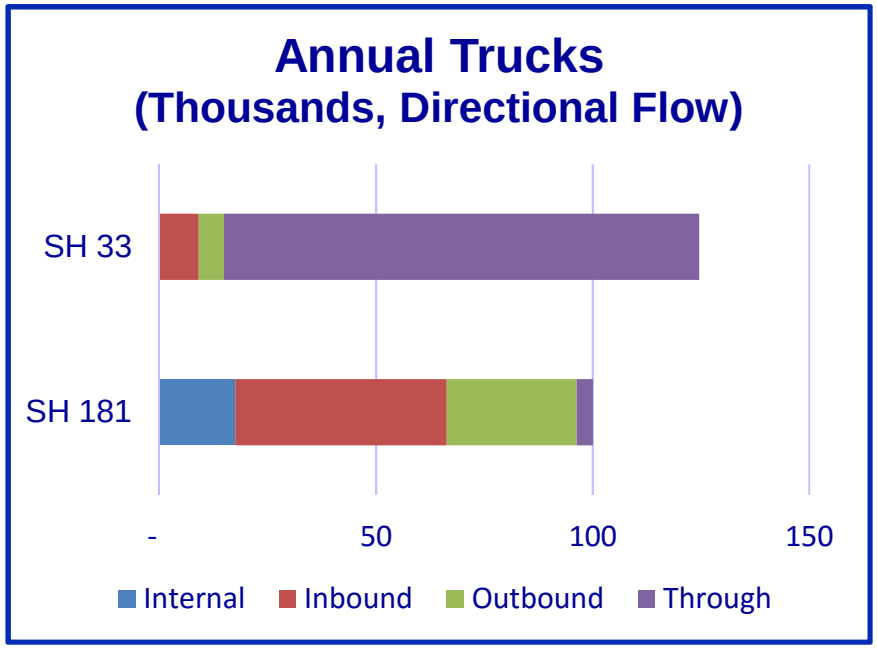
Freight Planner's Objectives

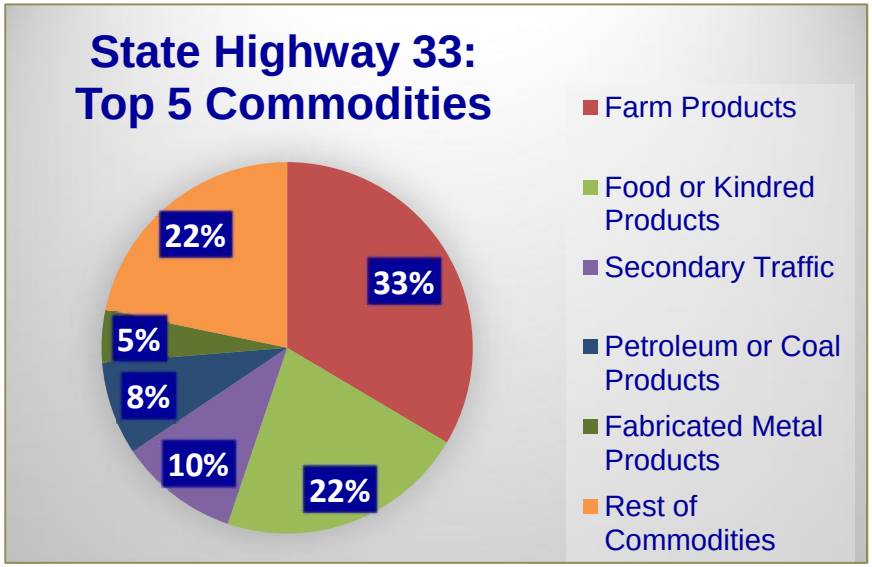
- Prepare for FASTLANE, TIGER, and other competitive freight grants
- Develop Long Range Freight Plan
- Assess how current freight transportation system is performing
- Determine industry dependence on freight
- Calculate economic impacts of proposed investments for improved performance
- Put projects in wider regional context (national significance)
- Ascertain how improvements impact future freight needs
- Provide data to explain changes and trends that drive them

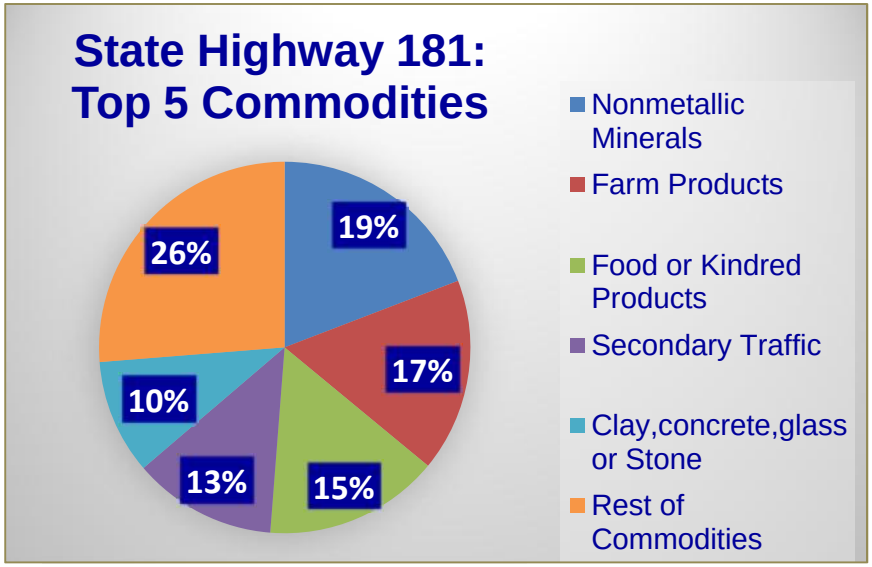
Role of TREDIS Freight



Corridor Comparisons

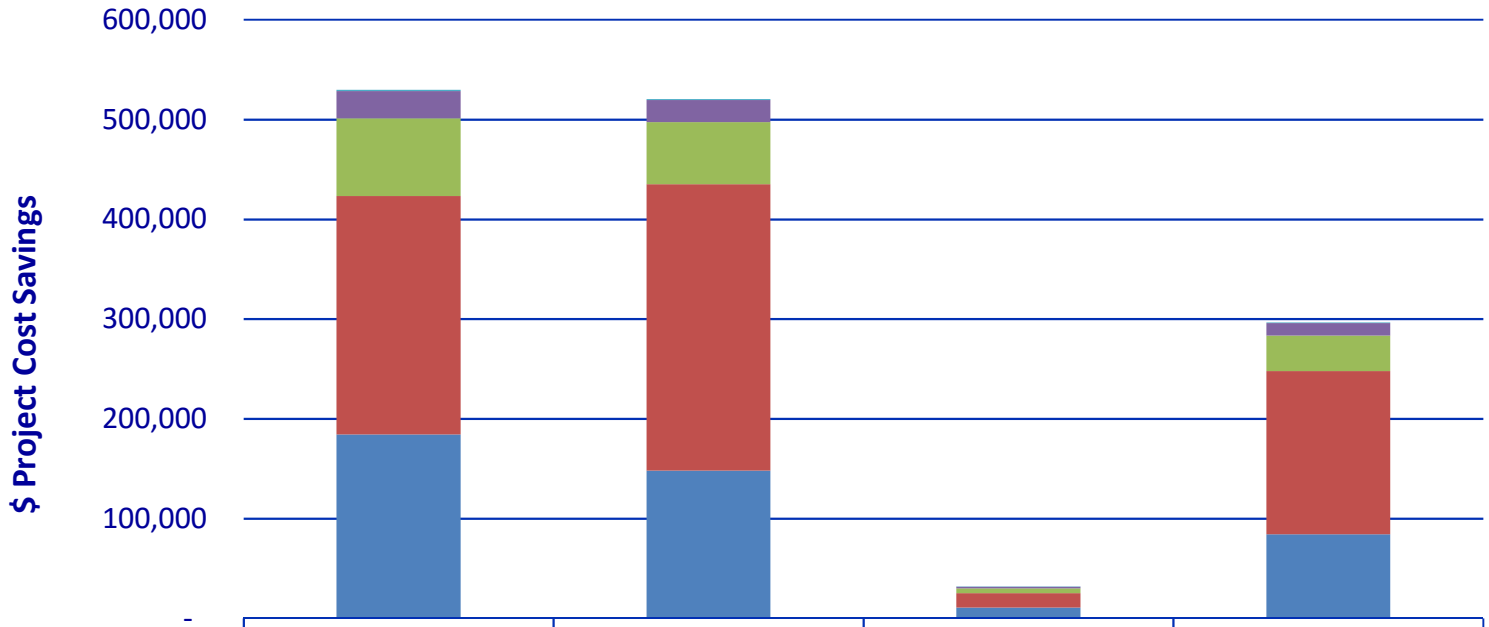






Freight Cost Savings

10 mph Speed Increase & 5% Congestion Reduction



	SH 33 National	SH 181 National	SH 33 Local	SH 181 Local
Environmental Cost	1,246	1,001	75	570
Veh Oper Cost	27,411	22,015	1,645	12,548
Reliability Cost	77,674	62,382	4,660	35,558
Freight Cost	239,084	287,080	14,345	163,636
Crew Cost	184,274	147,995	11,056	84,357

Commodity Mix Profiling

- Defined by Project
  - Regional
  - Corridor Related
- Weighted Average of Commodity Mix
  - by mode, direction
  - % in/out/internal determines composition
- Option to Overwrite

Directional Flow of Traffic

	Internal	Inbound	Outbound	Through	Total
Truck Truckload	17.5%	39.3%	16.6%	26.5%	100.0%
Truck L-T-L	7.9%	35.1%	19.2%	37.7%	100.0%
Truck PVT	27.8%	35.9%	18.5%	17.7%	100.0%
Truck NEC	0.0%	18.9%	22.8%	58.3%	100.0%
All Trucks Combined	22.4%	37.5%	17.8%	22.3%	100.0%

	Truck-Truckload	Truck-Less than Truckload	Truck-Private	Truck-Not Elsewhere Classified
Farm prods	0.2%	0.0%	0.3%	6.6%
Forest prods	0.0%	0.0%	0.0%	0.1%
Marine prods	0.0%	0.0%	0.0%	0.9%
Metallic ores	0.0%	0.0%	0.0%	0.6%
Coal	0.0%	0.0%	0.0%	0.0%
Crude oil/gas	0.0%	0.0%	0.0%	0.1%
Nonmetal minerals	0.3%	0.0%	0.5%	0.4%
Ordinance	0.0%	0.0%	0.0%	0.1%
Food prods	5.5%	3.2%	17.1%	13.3%
Tobacco prods	0.0%	0.0%	0.0%	0.4%
Textiles	0.2%	0.1%	0.0%	0.3%
Apparel	0.5%	1.4%	0.6%	1.3%
Lumber/wood	0.8%	0.1%	0.9%	1.1%
Furniture/fixtures	0.5%	1.5%	1.1%	1.3%
Paper/pulp	0.7%	0.9%	0.8%	1.1%
Printed matter	2.3%	1.0%	1.6%	1.3%
Chemicals	3.7%	7.2%	3.3%	4.4%
Petrol/coal prods	11.2%	0.3%	26.4%	5.2%
Rubber/plastics	2.0%	3.0%	1.0%	3.1%
Leather prods	0.0%	0.0%	0.0%	0.8%
Concrete/clay/stone	2.0%	1.8%	4.8%	1.6%
Primary metal prods	0.5%	0.7%	0.4%	5.7%
Manf metal prods	3.8%	9.4%	4.4%	3.7%
Machinery	5.7%	6.2%	1.0%	8.6%
Elec. equipment	2.9%	25.8%	2.0%	7.6%
Transport eqpmnt	12.2%	14.1%	5.7%	9.5%
Instruments	2.4%	9.2%	3.8%	3.8%
Misc manf prods	2.6%	2.7%	0.5%	1.7%
Waste/scrap	2.1%	4.4%	3.0%	1.0%
Misc freight	0.0%	0.0%	0.0%	0.0%
Secondary traffic	37.5%	7.0%	20.9%	14.5%
Total:	**100.0%**	**100.0%**	**100.0%**	**100.0%**

Freight Case Study

PROJECT:

Reduce congestion for nationally identified corridor of significance

OBJECTIVE:

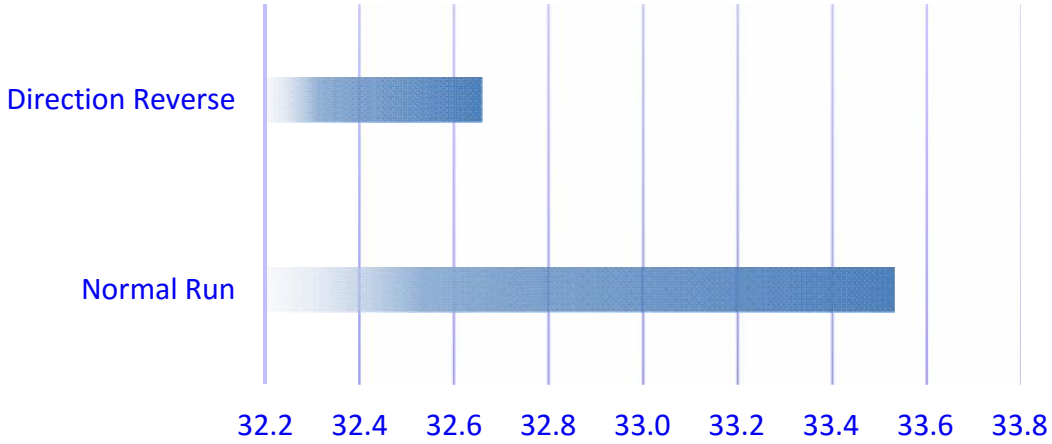
Alleviate congestion and increase speed

LIVE DEMONSTRATION

LIVE DEMONSTRATION

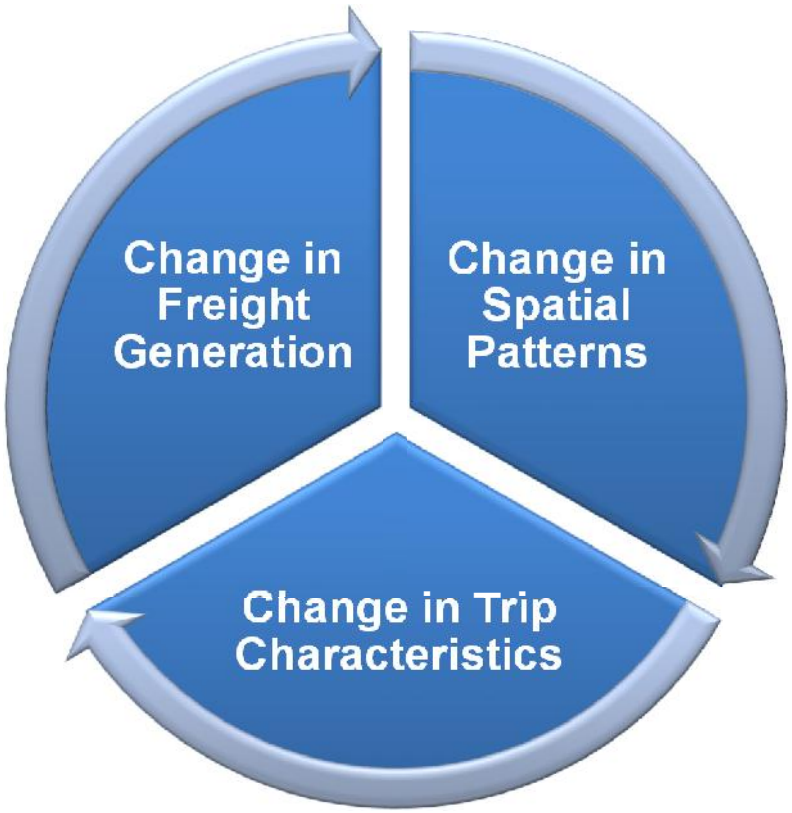
Comparison of Impacts: Reversing Flow of Goods

COMPARISON OF IMPACTS: OUTPUT ($M), 2040



NAICS	Industry	Normal Run Distributions	Reversed In & Out Distributions	Share of Normal
111-115, 211-213	Agriculture & Extraction	1.7%	1.7%	94.1%
221	Utilities	1.2%	1.2%	99.3%
230	Construction	3.0%	1.9%	61.2%
311-339	Manufacturing	44.7%	50.3%	109.5%
420	Wholesale Trade	5.3%	5.1%	93.4%
441-454	Retail Trade	3.3%	2.8%	81.3%
481-488	Transportation	2.0%	1.9%	93.2%
491-493	Postal & Warehousing	0.7%	0.6%	91.3%
511-519	Media and Information	4.9%	4.9%	97.8%
521-525, 531-533	Financial Activities	10.3%	9.9%	93.5%
541,551,561-562	Professional & Business Services	9.0%	8.7%	94.1%
611, 621-624	Education & Health Services	4.3%	3.7%	83.0%
711-713, 721-722,811-814	Leisure & Hospitality	9.2%	7.1%	74.6%
920	Government	0.2%	0.2%	94.3%

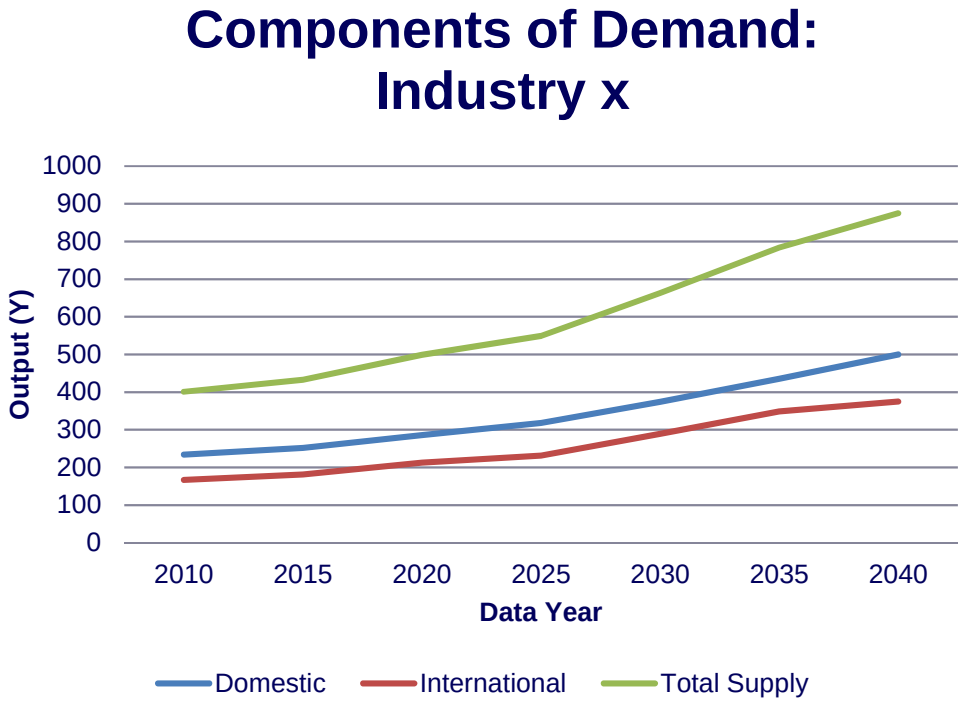
Freight Implications

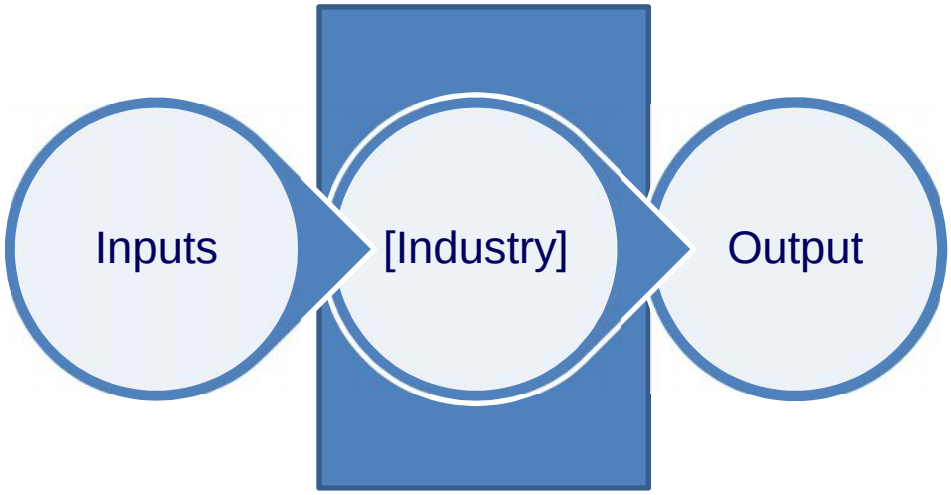


How will your project affect:

- Freight Trip Generation
- Mix of Modes/Vehicles
- Mix of Commodities
- O-D Patterns
- Trip Lengths and Traffic Levels

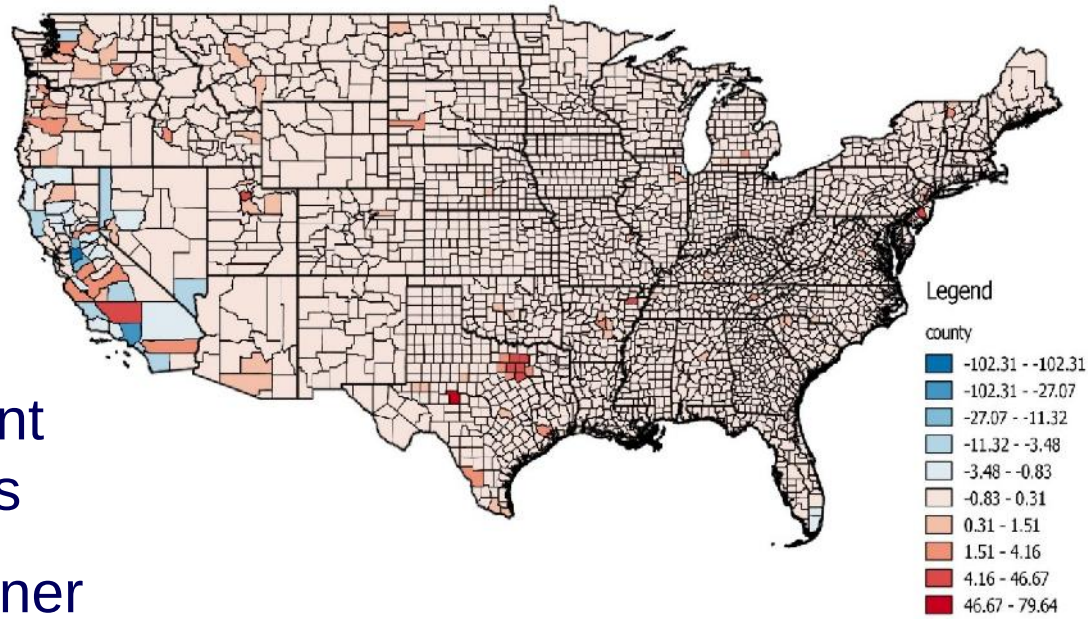
Change in Freight Generation





Change in Spatial Patterns

Comparison of Outbound Domestic Shipments of
SCTG 23 (Chemical Products) 2040 Alternative Forecast Methods



- Enables dynamic adjustment of domestic trading partners
- Based on each trading partner county's trends in Freight production (inbound), and consumption (outbound)
- Does not alter magnitude of freight being produced or consumed by your region(s)

Changes in Trip Characteristics

- Know the Magnitude of Commodity and Type of Flow
- Know the Origin – Destination Pair
- Need to estimate Mode of travel from point to point

LIVE DEMONSTRATION

Recap: Freight Case Study

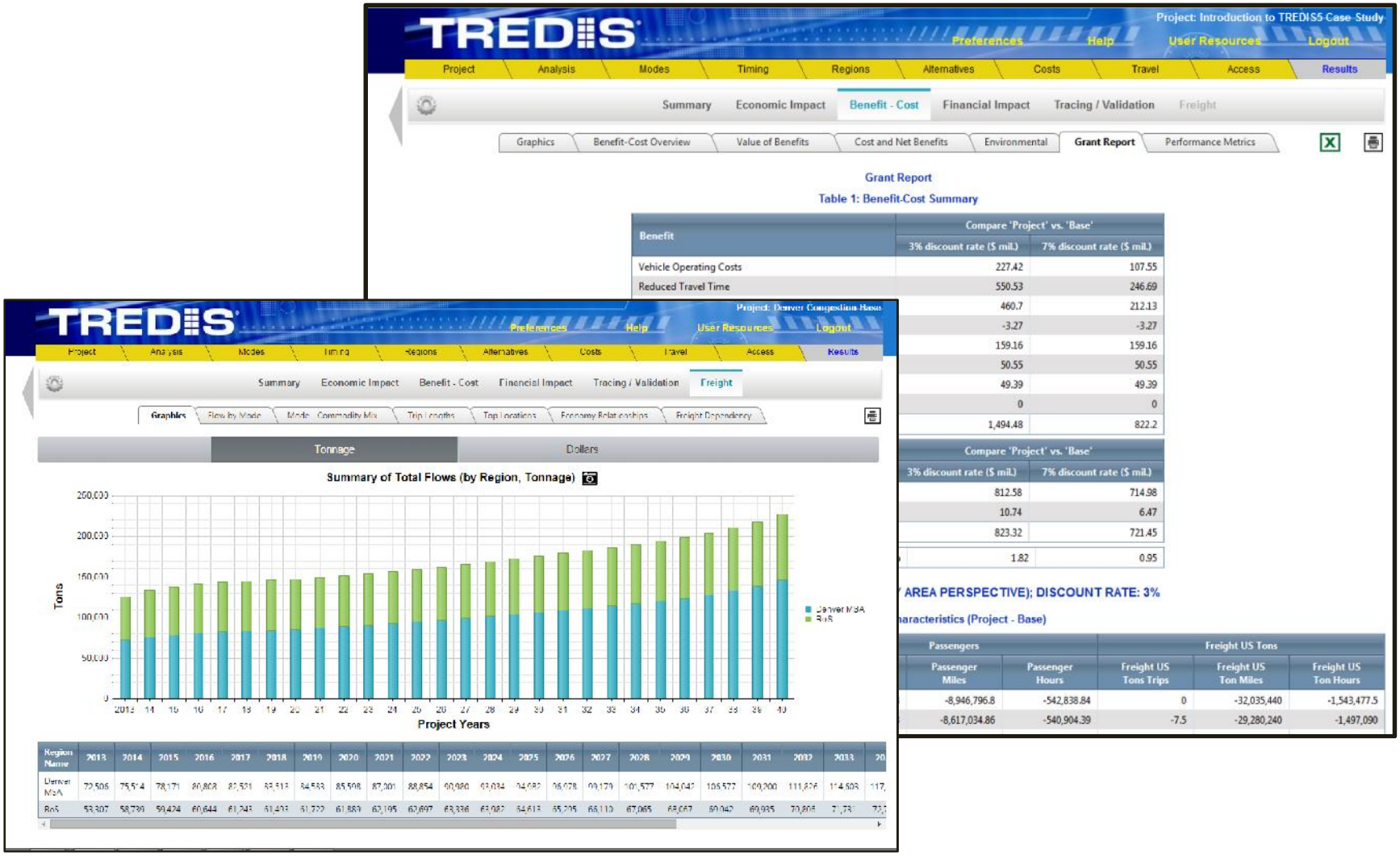
- **Project Impacts in 2040**
  - VHT Savings 18.8%
  - $35M in Societal Benefits
  - $36.8M Increase in GRP
  - 202 additional jobs
- **Freight Implications**
  - 23 Ktons of Commodities
  - 50% Moving as “Truckload – Trucks”
  - 943 Vehicles Generating ~338k of VMT
  - Traveling Average of 358 Miles per Trip

Freight Insights & Analysis in TREDIS

- Economic flows and job dependence
- Supply chain and industry dependency analysis
- Freight flow summary
- Investment scenarios

- Operates at different spatial levels
- Provides flexibility to address different questions for different audiences
- Shows how economy benefits from freight investments
- Provides stakeholders and decision makers with actionable and transparent information

TREDIS Grant and Freight Reports



Freight Policy Implications

FASTLANE Grant Details Released

https://www.transportation.gov/FASTLANEgrants

Applications for FY 2016 are due on April 14, 2016

TIGER Grant Released

https://www.transportation.gov/tiger

Applications due April 29, 2016

Successful Freight Planning Encompasses Economic Relevance

Questions?

For More Information…

TREDIS Software Group
155 Federal Street, Suite 600
Boston, MA 02110
(617) 303-0424

www.tredis.com
info@tredis.com
sales@tredis.com