

# Freight Economic Analysis Tool (FEAT)

## Rail Investment Model

Incorporating economic analysis into the transportation planning process provides critical information for the transportation investment decision making process. The ITTS states commissioned the development of FEAT to assist in providing this critical information.

The FEAT Rail Investment Model is a high level planning tool that facilitates “what if” analysis of common type of freight rail investments. The tool is meant to be used early in the project concept phase to examine the potential benefits of a rail investment based on the level of truck to rail diversion. For example, the tool could be used to establish a benchmark for the minimum amount of truck diversion required to meet benefit thresholds.

The FEAT Rail Module evaluates the potential benefits arising from diversion of freight traffic from other modes as result of three project types:

- A new intermodal yard
- Track upgrade to 286,000 pounds
- Double-tracking a mainline

The tool focuses on the potential highway user benefits arising from the diversion of freight from truck to rail costs accruing to shippers due to lower cost per ton mile of using rail compared to trucks. The model conducts benefits cost analysis based on:

- Freight rate savings
- Congestion cost savings
- Highway emission benefits
- Highway safety benefits
- Road maintenance cost savings



O&M Costs	\$0
<b>Total</b>	<b>\$10,000,000</b>
<b>Undiscounted Benefits</b>	
Safety	\$43,151,630
Emissions	\$2,859,316
Congestion	\$12,136,450
Road Maintenance	\$18,638,846
Freight Rates	\$13,315,069
<b>Total</b>	<b>\$26,193,481</b>
<b>Results (discounted)</b>	
Discounted Costs	\$10,000,000
Discounted Benefits	\$18,093,733
Net Benefits (undiscounted)	\$36,193,481
Net Present Value	\$28,093,733
Benefit-cost ratio (BCR):	<b>1.8</b>
Analysis period (years):	21

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### Overview of FEAT Rail Model Steps

Enter project information

Project Name	
Select Project Type	
Select Potential for Truck-to-Rail Diversion	
Select Percentage or Number of Trucks	
Number of Trucks	
Model Save Path	

Enter simulation options

State	Choose State	
Discount Rate	Choose discount rate for economic impact calculations	3%
Year Parameters	Starting Analysis Year	
	End of Analysis Year	
Safety Options	Estimate Fatality Impacts (Statistical Life)	
Federal Emission Standards	Includes CO2 benefits	
Freight Annual Growth Rate	Growth Rate	2%

