Regional Economic Models, Inc.

January 28th, 2021

REMI Study – The Economic Impact of RhodeWorks: An Accelerated Transportation Restoration Plan

Presented by: Ryan Saul, *Economic Associate*

REMI TranSight

Presentation Objectives

- Overview of RhodeWorks
- Focus of Analysis
- Results
- [Model Demo] TranSight 4.3: Evaluating Network Improvements

REMI TranSight

About Us

Regional Economic Models, Inc. (REMI) was founded in 1980 on a transformative idea: ***government decision-makers should test the economic effects of their policies before they're implemented***. We are the nation's leader in dynamic local, state and national policy modeling.

Our clients use REMI models to perform rigorous economic analysis that critically influences local, state and national policies.

Our team of research economists and software developers are dedicated to continued model innovation.

Our success is measured by the success of our clients. We provide unlimited expert and professional technical support to our users.

REMI TranSight

Understanding Your Needs

TranSight depicts the effects of transportation improvements on employment and economic development.

Our users rely on TranSight to validate their:

- Long-range Planning
- Project Prioritization
- Economic Impact Analysis
- Transportation Financing
- TIP and STIP Planning

REMI TranSight

Model Methodology

REMI's 35-year history of rigorous academic research and software development has led to the development of the industry standard in macroeconomic research methodology:

General Equilibrium

Input-Output

Econometrics

Economic Geography

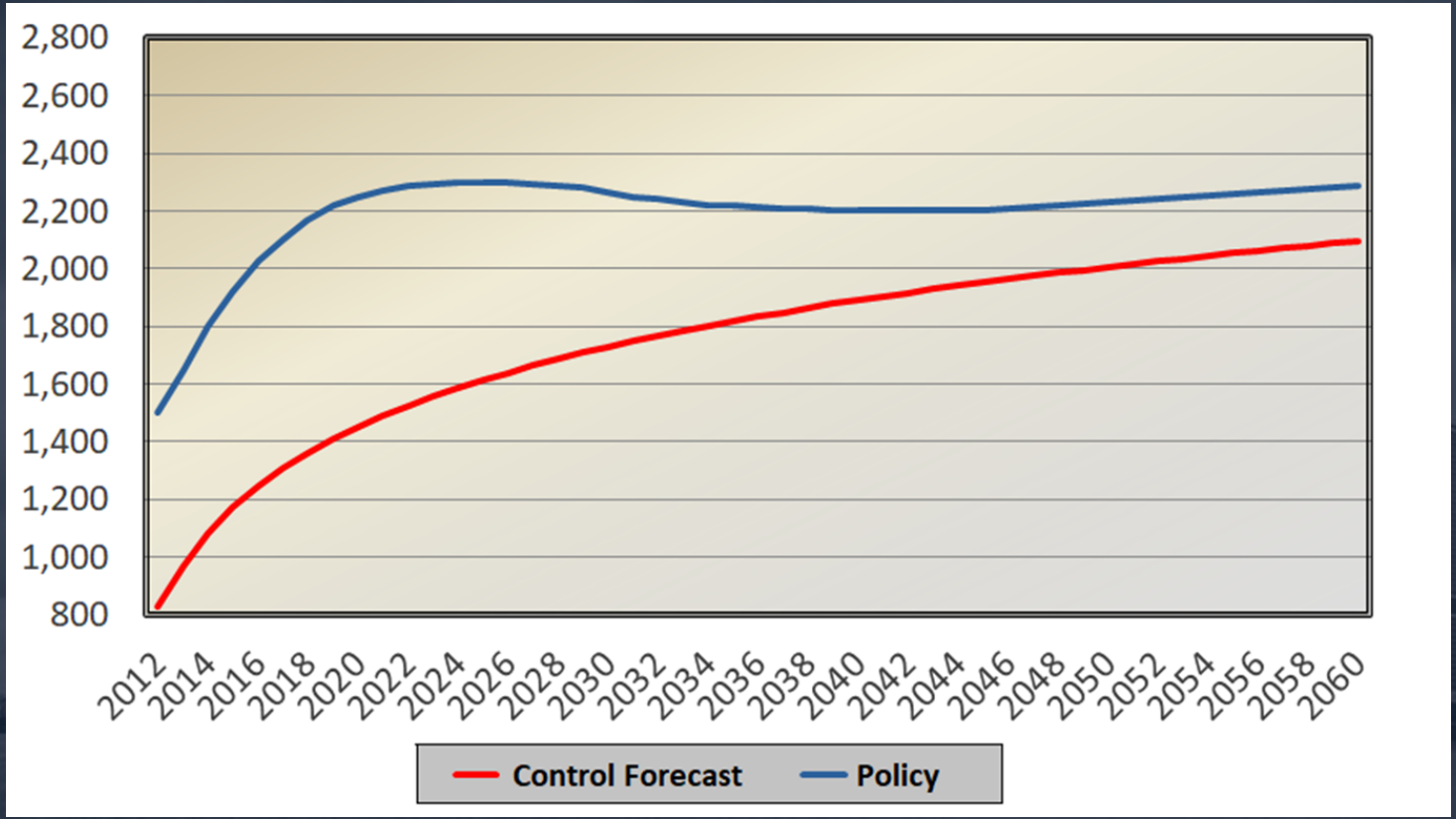
Integrated REMI economic modelling approach

Our clients include:

- AECOM
- Michigan Department of Transportation
- Cambridge Systematics, Inc.
- Illinois Department of Transportation
- Atlanta Regional Commission (ARC)
- Southern California Association of Governments (SCAG)
- New York State Department of Transportation
- United States Army Corps of Engineers Great Lakes District
- Houston-Galveston Area Council (H-GAC)

REMI TranSight

Dynamic Analysis



REMI TranSight

Static vs. Dynamic Analysis

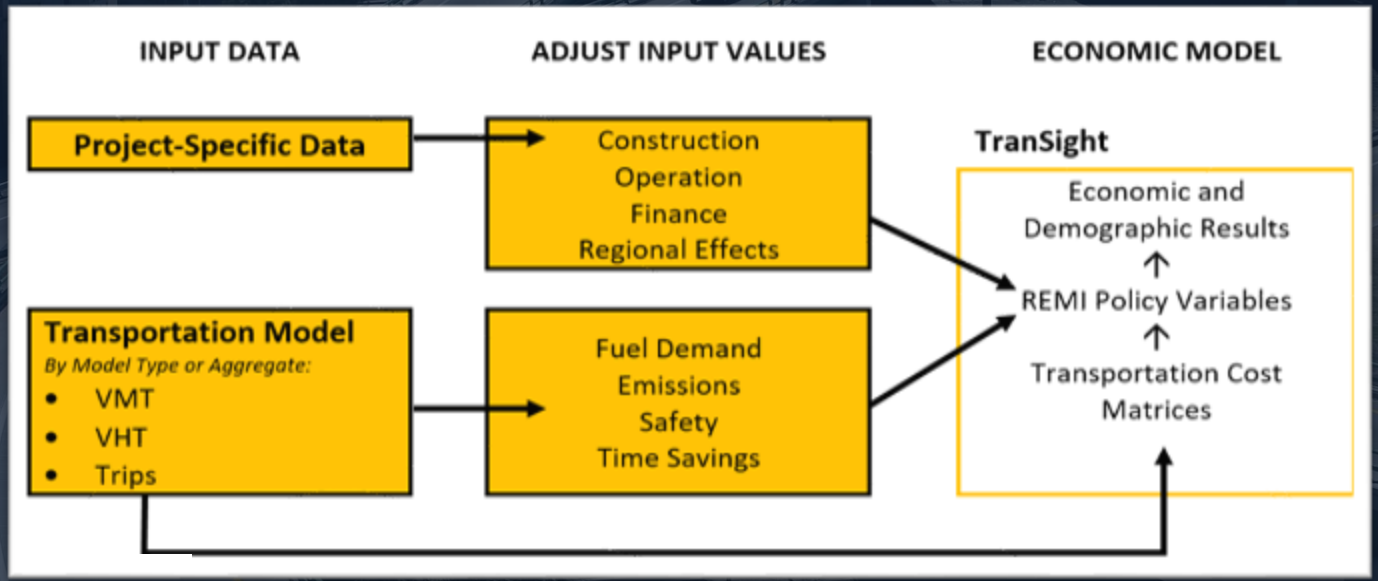
Static Analysis	Dynamic Analysis
• Construction spending • O&M spending	• Construction spending • O&M spending • Travel time savings • Emissions savings • Safety improvements • Population changes • Fuel expenditures • Non-fuel VOCs • Network speed improvements • Access to labor • Access to intermediate inputs

FHWA: TranSight is among the “best equipped to estimate *productivity* impacts”*

*https://ops.fhwa.dot.gov/publications/fhwahop15034/ch5.htm

REMI TranSight

Model Structure



About RhodeWorks: *Background*

As of 2014, Rhode Island ranked last nationally in overall bridge conditon.[1]

RhodeWorks was the accelerated transportation plan to achieve the federally mandated minimum of 90% structurally sufficient bridges by 2025.

The plan sought to improve safety, make Rhode Island a more attractive business environment, and benefit consumers.

1 FHWA data: https://www.fhwa.dot.gov/bridge/deficient.cfm. As of 2014. Shows that 23% of RI's bridges are structurally deficient, the highest rate in the country (including all 50 states, DC, and Puerto Rico).

REMI TranSight

Overview of Analysis

- REMI was engaged by RIDOR's Office of Revenue Analysis on behalf of RIDOT to model the economic and demographic impacts of RhodeWorks
- Data was provided by the DOR's OMB and RIDOT
- RIDOT provided a current road and bridge maintenance plan; implemented in absence of RhodeWorks (constrained resources transportation plan)
- Compared economic and demographic impacts of RhodeWorks to the constrained resources transportation plan

REMI TranSight

Financing

Two general financing mechanisms:

1. The costs of RhodeWorks solely financed by tolling regime
2. The tolling regime used with increase in excise gas/diesel tax rates

Two transportation infrastructure capital spending plans

1. 6/10 Highway
2. $400M in federal funding for 6/10 transit

*https://ops.fhwa.dot.gov/publications/fhwahop15034/ch5.htm

REMI TranSight

Focus of Analysis

- The REMI control forecast was calibrated to the state's consensus economic forecast
- Eight scenarios were aggregated from project components and potential outcomes that REMI modeled
- Impacts of both construction phase and financing strategy (tolling regime)

Scenarios	6/10 Highway	6/10 Transit	Bridge Tolling	Gas Tax Increase	Diesel Tax Increase
Scenario One (S1)	Y	Y	Y	N	N
Scenario Two (S2)	Y	N	Y	N	N
Scenario Three (S3)	Y	Y	Y	Y	N
Scenario Four (S4)	Y	N	Y	Y	N
Scenario Five (S5)	Y	Y	Y	N	Y
Scenario Six (S6)	Y	N	Y	N	Y
Scenario Seven (S7)	Y	Y	Y	Y	Y
Scenario Eight (S8)	Y	N	Y	Y	Y

REMI TranSight

Focus of Analysis

Economic and demographic impacts of RhodeWorks over an 11 year period:

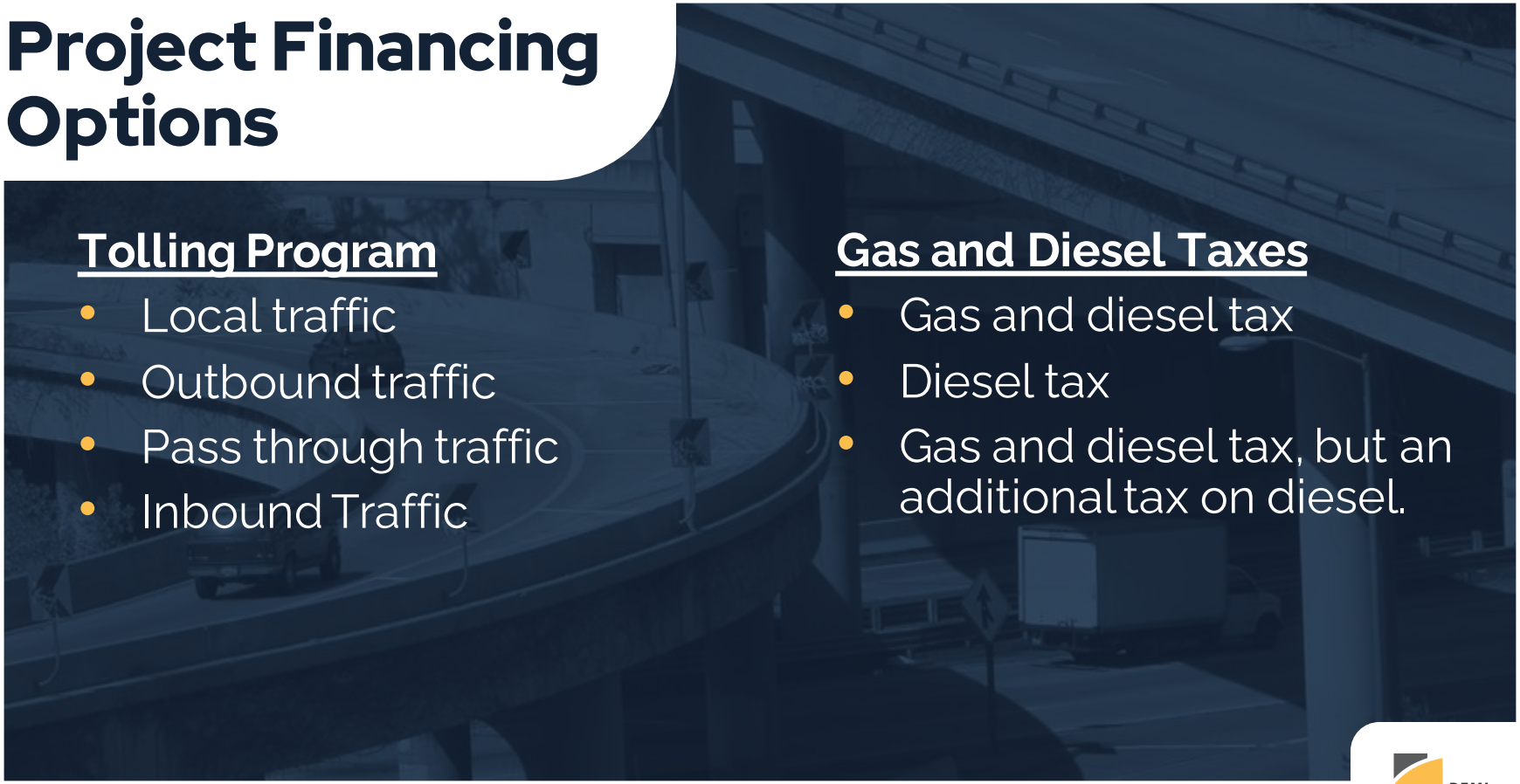
1) The construction of transportation infrastructure capital improvements
2) Construction project financing options
3) Avoided costs of bridge closings and postings to the state
4) Benefit programs to support the trucking industry included in the RhodeWorks proposal

The Construction of Transportation Infrastructure Capital Improvements

- 6/10 Highway
- 6/10 Transit
- Bridge Pipeline Capital Improvements
- Pavement Capital
- Transit Capital Projects
- Gantry Construction
- Transportation Alternatives Capital Pipeline

REMI TranSight

Construction Project Financing Options



Tolling Program

- Local traffic
- Outbound traffic
- Pass through traffic
- Inbound Traffic

Gas and Diesel Taxes

- Gas and diesel tax
- Diesel tax
- Gas and diesel tax, but an additional tax on diesel.

*https://ops.fhwa.dot.gov/publications/fhwahop15034/ch5.htm

REMI TranSight

Avoided Costs of Bridge Closings and Postings to the State

- Cost savings from avoiding detours and weight limit postings – vehicle operating costs and increased travel times
- 2018-2025: cost savings amounted to just less than $10M
- Vehicle operating costs only

REMI TranSight

Project Spending and Funding Liability

Table 2: Project Spending & State Funded Liability Total Cost 2015-2025

Metric	Units	S1	S2	S3	S4	S5	S6	S7	S8
Capital Spending	Millions of Current $	$ 896	$ 496	$ 896	$ 496	$ 896	$ 496	$ 896	$ 496
In-State Funding Liability	Millions of Current $	**$ 160**	**$ 160**	**$ 194**	**$ 194**	**$ 194**	**$ 194**	**$ 194**	**$ 194**

REMI TranSight

Summary Economic and Demographic Results

Table 1: Summary Results Total Impact 2015-2025 – Difference from Baseline

Metric	Units	S1	S2	S3	S4	S5	S6	S7	S8
Total Employment	Individuals	6,487	3,194	6,656	3,363	6,143	2,850	6,399	3,106
Gross State Product	Millions of Current $	$ 538	$ 225	$ 560	$ 247	$ 500	$ 187	$ 530	$ 217
Output	Millions of Current $	$ 963	$ 408	$ 1,010	$ 455	$ 908	$ 353	$ 959	$ 404
Personal Income	Millions of Current $	$ 521	$ 241	$ 510	$ 230	$ 485	$ 206	$ 498	$ 218
Real Disposable Personal Income	Millions of Current $	$ 344	$ 129	$ 263	$ 47	$ 287	$ 71	$ 275	$ 59
Population	Individuals	4,340	2,184	3,443	1,288	3,675	1,519	3,558	1,402

REMI TranSight

Scenario Results Comparison

Table 4: Comparison of Simulations – Difference from Scenario One as Reference Case

Category	Scenario 1 Reference	Differences 1 & 3	Differences 1 & 5	Differences 1 & 7
Total Employment	6,487	169	-344	-88
Private Non-Farm	6,148	189	-295	-54
Residence Adjusted	5,610	-111	-422	-267
Population	4,340	-897	-665	-782
Labor Force	2,800	-491	-398	-445
Gross State Product	$ 538	$ 22	$ (38)	$ (8)
Output	$ 963	$ 48	$ (55)	$ (4)
Personal Income	$ 521	$ (11)	$ (35)	$ (23)
Disposable Personal Income	$ 448	$ (11)	$ (31)	$ (21)
Real Disposable Personal Income	$ 344	$ (81)	$ (58)	$ (70)

REMI TranSight

Conclusion

Full RhodeWorks Project

- 6,487 new jobs
- $538 million in gross state product
- $521 million in nominal personal income
- $344 million in real disposable income

Alternative Funding Mechanisms

- All projected to have net positive impacts on RI
- Somewhat greater employment impacts
- But lower gains in real disposable income

REMI TranSight

Model Demonstration

Looking Ahead to Transportation Policy in a Post-COVID World and Beyond

Tomorrow: Friday, January 29th 11:30am EST

The final discussion in our REMI TranSight Presentation Series will explore the economic impacts of transportation and infrastructure investments in a post-COVID world.


REMI
TranSight
Thank you for your interest
in REMI TranSight
Email Us
info@remi.com
Call Us
(413) 549-1169
Visit our Website
www.remi.com