Transportation and Diversity, Equity & Inclusion (DEI)

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Overview

- **Background**
  - What does DEI mean in a transportation context?
  - Why does DEI matter to MPOs, DOTs, and other transportation agencies/organizations?
  - How do we expand transportation accessibility?
    - What are the trade-offs?
    - Who are the winners and losers?
- **Why economic modeling?**
  - About us
  - TranSight/DEI: a practical software solution
  - Examples of modeling uses
- **Model Demonstration**
- **Discussion**
- **Q&A**

what does REMI say? [sm]

What does DEI mean in a transportation context?

- **Diversity**
  - Do a region's transportation networks adequately connect diverse workers to job opportunities?

- **Equity**
  - Do all neighborhoods, communities, demographic and income groups have equitable access to affordable transportation?

- **Inclusion**
  - What groups have been historically underserved by the region's transportation system, and how can they be brought in to benefit from this infrastructure?

# Why does DEI matter to your organization?

- Metropolitan Planning Organizations
    - Increasing mobility and opportunity
    - Optimizing use of regional assets
    - Strengthening partnerships
- Departments of Transportation
    - Driving broad-based economic growth and development
    - Increasing regional competitiveness
- Meet federal, state and local reporting requirements
- Address stakeholder concerns

Transportation Accessibility

Figure 1. Percentage of Workers Without a Vehicle at Home by Race and Latino Ethnicity, 2011-2015
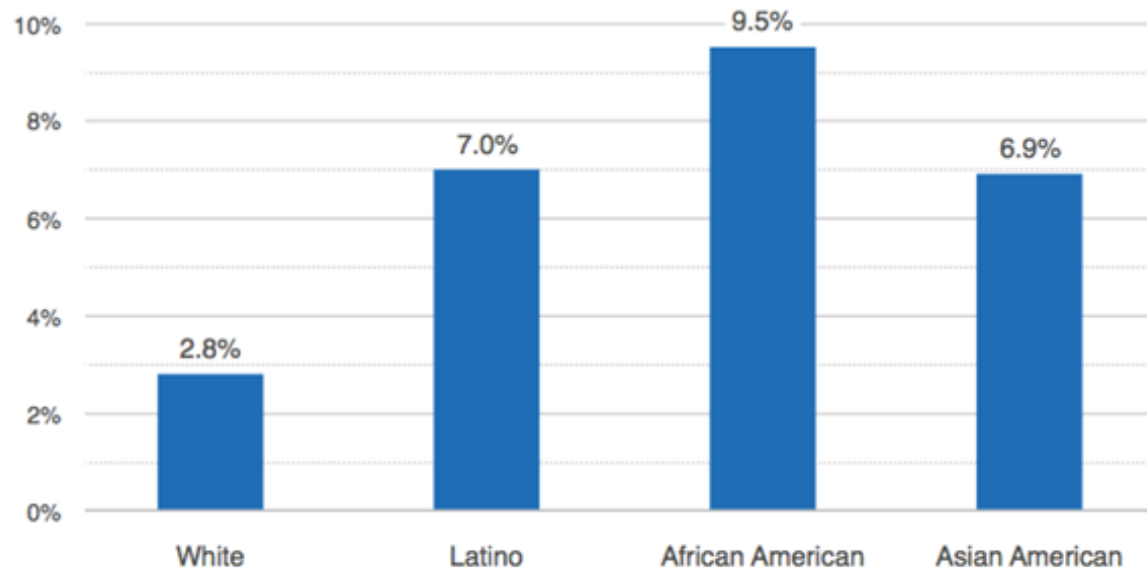
Note: Racial categories exclude Latinos.

Source: Author's analysis of American Community Survey data from IPUMS-USA, University of Minnesota, www.ipums.org.

Transportation Accessibility

Figure 3. Racial and Latino Ethnic Shares of All Workers Who Commute by Public Transit, 2011-2015

- Other 2.9%
- Asian 11.4%
- Black 22.9%
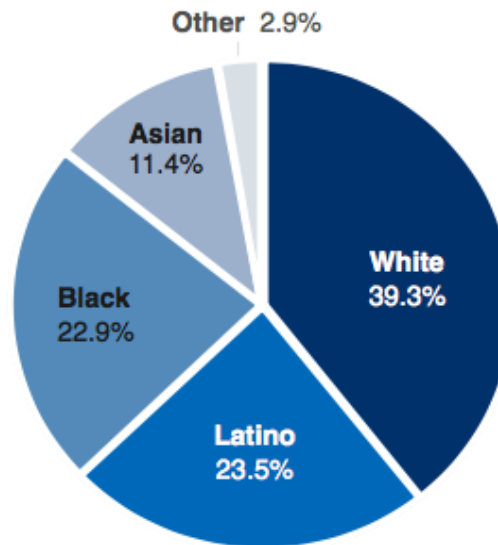- White 39.3%
- Latino 23.5%

Note: Racial categories exclude Latinos.

Source: Author's analysis of American Community Survey data from IPUMS-USA, University of Minnesota, www.ipums.org.

what does REMI say? ℠

Transportation Accessibility

Ethnicity & Race

Table 4 - Ethnic Composition of Riders and of the Population of the United States

Ethnicity	U.S.	Transit
White/Caucasian	63%	40%
Black/African American	12%	24%
Hispanic (of any race)	17%	19%
Asian/Asian American	5%	7%
Pacific Islander	<1%	2%
Multi-ethnic	<1%	1%
Native American	1%	1%
Other	<1%	6%

# of reports: 168
Average # of riders surveyed per study: 3,563
respondents: 598,662
Annual ridership:
7,841,207,954

The single largest group of riders consists of White/Caucasian riders (40%). However, when combined, communities of color make up a majority of riders (60%), with Black/African-American riders comprising the largest single group (24%) within communities of color[iii].

Transportation Accessibility
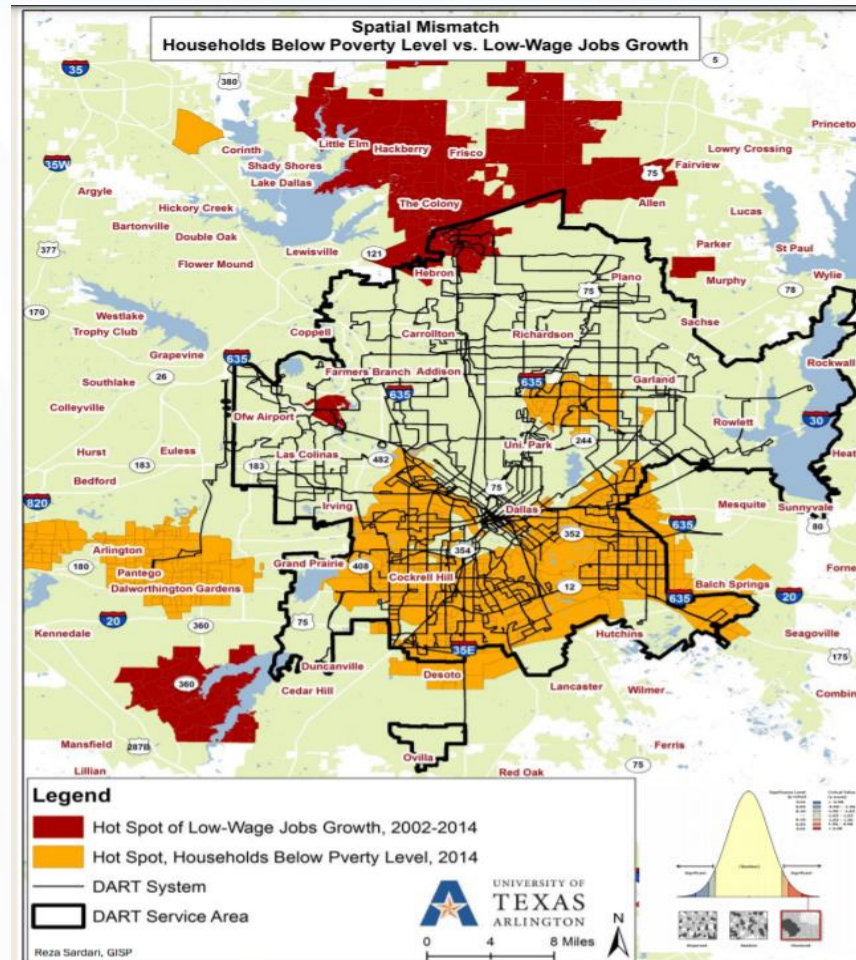
what does **REMI** say?^{sm}

Why economic modeling?

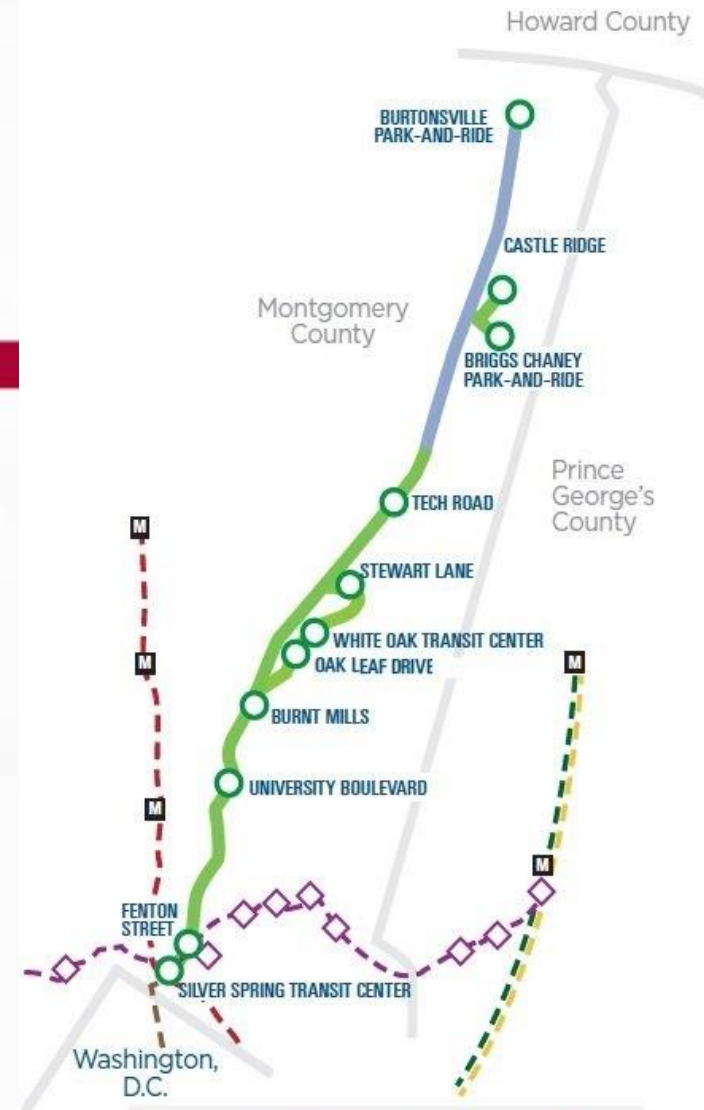- Capture direct and indirect effects of transportation/infrastructure investments & other policies

- Understand economic and demographic impacts across industries and over time periods up to 2060

- Articulate costs, benefits, and trade-offs of policies and projects

- Evaluate policy with standardized metrics before implementation

- Clarify complicated policy situations

what does REMI say? sm

About us

- Leading public policy analysis model since 1980
- Practical software solution to analyze dynamic economic and fiscal impacts of policy changes
- Models:
  - **TranSight**
  - PI+
  - Tax-PI
  - E3+
- **DEI extension** adds race/ethnicity, gender, education level, geography, income distribution dimensions to policy analysis

US 29 BRT CORRIDOR

- Located on the eastern side of the Montgomery County near the borders with Howard and Prince George's County.

- US 29 is a snapshot of America's increasingly diverse suburban areas.
  - 65% minority
  - 32% foreign born
  - 30% of corridor households earn less than half of the area median income
  - 12% of households have zero vehicles available

- The US 29 BRT will provide the most in need populations with access to jobs in Washington, DC.

what does REMI say? sm

Howard County

BURTONSVILLE PARK-AND-RIDE

CASTLE RIDGE

Montgomery County

BRIGGS CHANEY PARK-AND-RIDE

Prince George's County

TECH ROAD

STEWART LANE

WHITE OAK TRANSIT CENTER
OAK LEAF DRIVE

BURNT MILLS

UNIVERSITY BOULEVARD

FENTON STREET

SILVER SPRING TRANSIT CENTER

Washington, D.C.

ROAD CONFIGURATION FOR US 29 BRT
- Bus on Shoulder Operation
- Mixed Traffic Operation
- ◇ Purple Line Light Rail Stop (Planned)
- Purple Line Light Rail (Planned)
- Ⓜ Metrorail Station
- Metrorail Red Line
- Metrorail Green/Yellow Line
- Bus Transit Priority Corridor (Planned)
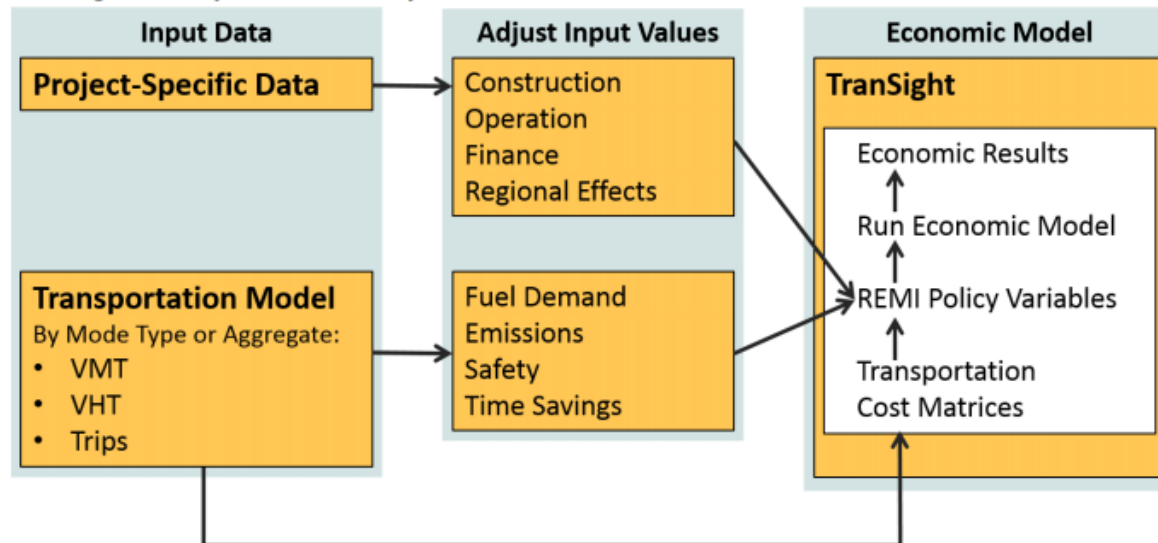
TranSight/DEI: A practical software solution

- Integrates economics with travel demand modeling

- Takes into account emissions, safety valuation factors, and fuel efficiency data

- Captures direct and indirect effects of transportation projects

- Travel demand module

TranSight/DEI: A practical software solution

TranSight Transportation Policy Evaluation Process:

Input Data	Adjust Input Values	Economic Model
Project-Specific Data	Construction Operation Finance Regional Effects	**TranSight**
Transportation Model By Mode Type or Aggregate: • VMT • VHT • Trips	Fuel Demand Emissions Safety Time Savings	Economic Results ↑ Run Economic Model ↑ REMI Policy Variables ↑ Transportation Cost Matrices

The model structure is represented above reveals both the components of the model and the manner in which information flows between them. Outputs from the transportation model are combined with built-in cost parameters and project-specific information to produce values for policy variables designed to simulate the project's direct impact. The TranSight engine processes these results to generate comprehensive forecasts of the project's macroeconomic effects.

*what does **REMI** say?* sm

Model Demo

- **Scenario:**
  - Build new **Bus Rapid Transit (BRT)** stations with enhanced BRT services in Montgomery County, specifically operate along US 29 BRT corridor.

- **Model Inputs:**
  - Costs:
    - Annual capital costs
    - Annual operation and maintenance (O&M) costs
  - Benefits:
    - Travel time savings
    - Commuting cost savings
    - Accident Reduction
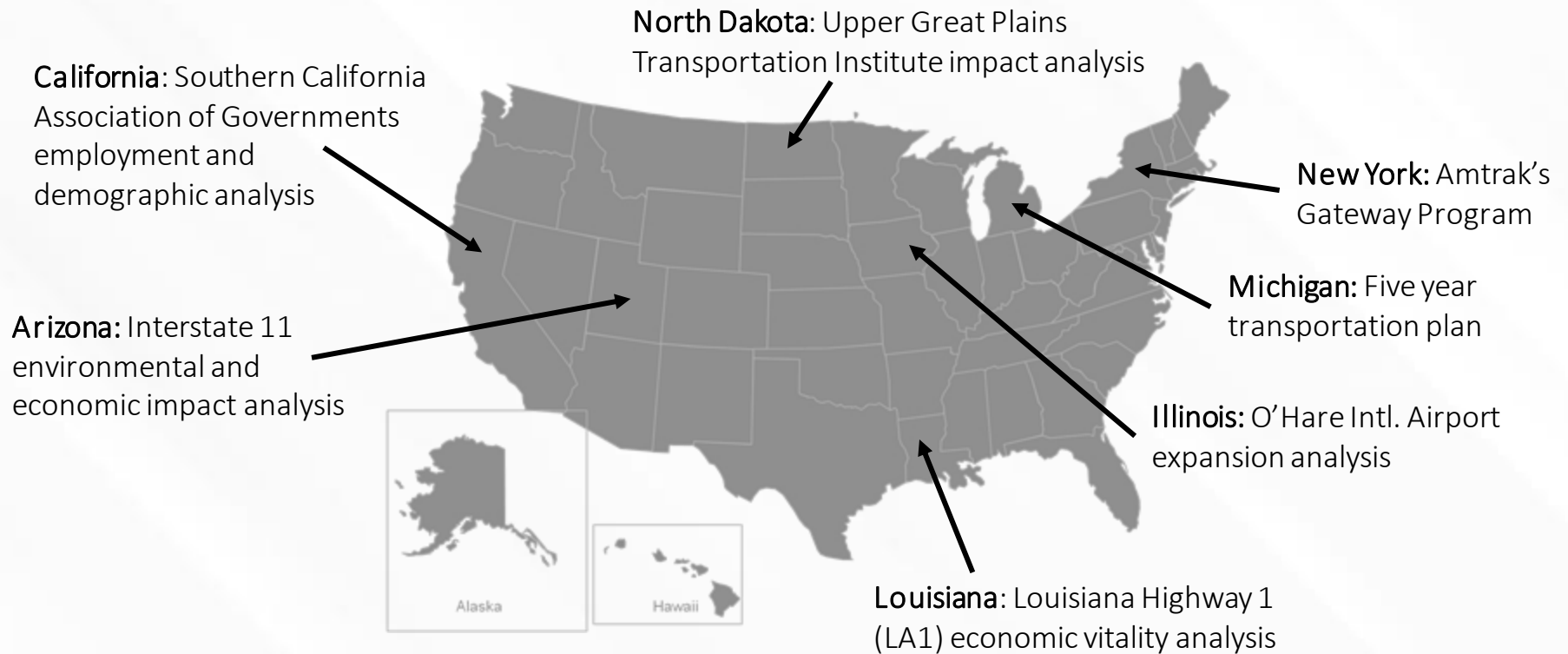   - Emissions Cost Reductions

Discussion

- Decreases in compensation rate inequality
- Increases in employment and compensation rates by industry for lowest and second-lowest income quintiles
- Notable increases in employment for Hispanic population
- Increases in labor force participation, especially for Hispanic, White Non-Hispanic, and Other Non-Hispanic groups, and for women
  - Added bus route acted as an amenity, increasing appeal of moving to the region, attracting economic migrants
- Reduction in unemployment for Montgomery County
- Increase in labor access index
  - More affordable transportation option, greater accessibility
  - Increases access of labor to employers and employment to labor

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TranSight/DEI: A practical software solution

- Only widely available economic model that accounts for these DEI issues in transportation context

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

- Authoritative: uses standard metrics to evaluate public policies

- Academic: peer-reviewed, publicly available equations

Model Applications

North Dakota: Upper Great Plains Transportation Institute impact analysis

California: Southern California Association of Governments employment and demographic analysis

New York: Amtrak's Gateway Program

Arizona: Interstate 11 environmental and economic impact analysis

Michigan: Five year transportation plan

Illinois: O'Hare Intl. Airport expansion analysis

Louisiana: Louisiana Highway 1 (LA1) economic vitality analysis

Alaska

Hawaii

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Economic Modeling: Why it matters

- Inform policy with standard metrics rather than ideology or intention
  - DEI reporting requirements at the federal, state, local levels
- Address stakeholders with evidence that communicates how policy benefits or disadvantages their communities broadly
  - DEI impact analysis needed to address stakeholder concerns
- Understand economic and demographic implications of policies before implementing them
  - Ensure that public policy serves the broad-based interests of the public

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Q&A

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