

# TRANSPORTATION LEADERSHIP ACADEMY



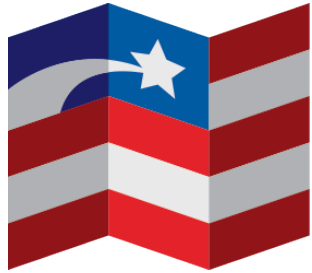
**Transportation**  
for America



U.S. Department of Transportation  
**Federal Highway  
Administration**

## DESIGNING METRICS & DIFFERENT WAYS TO APPLY PERFORMANCE MEASURES

**BETH OSBORNE & SAM SESKIN**



# Transportation for America

## Transportation Leadership Academy

May 19, 2016

Beth Osborne, Vice President for Technical Assistance

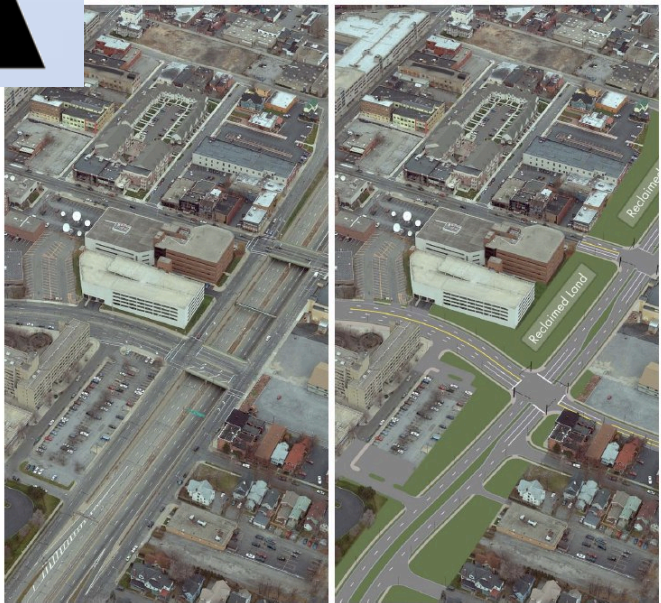
[www.T4america.org](http://www.T4america.org)

@t4america

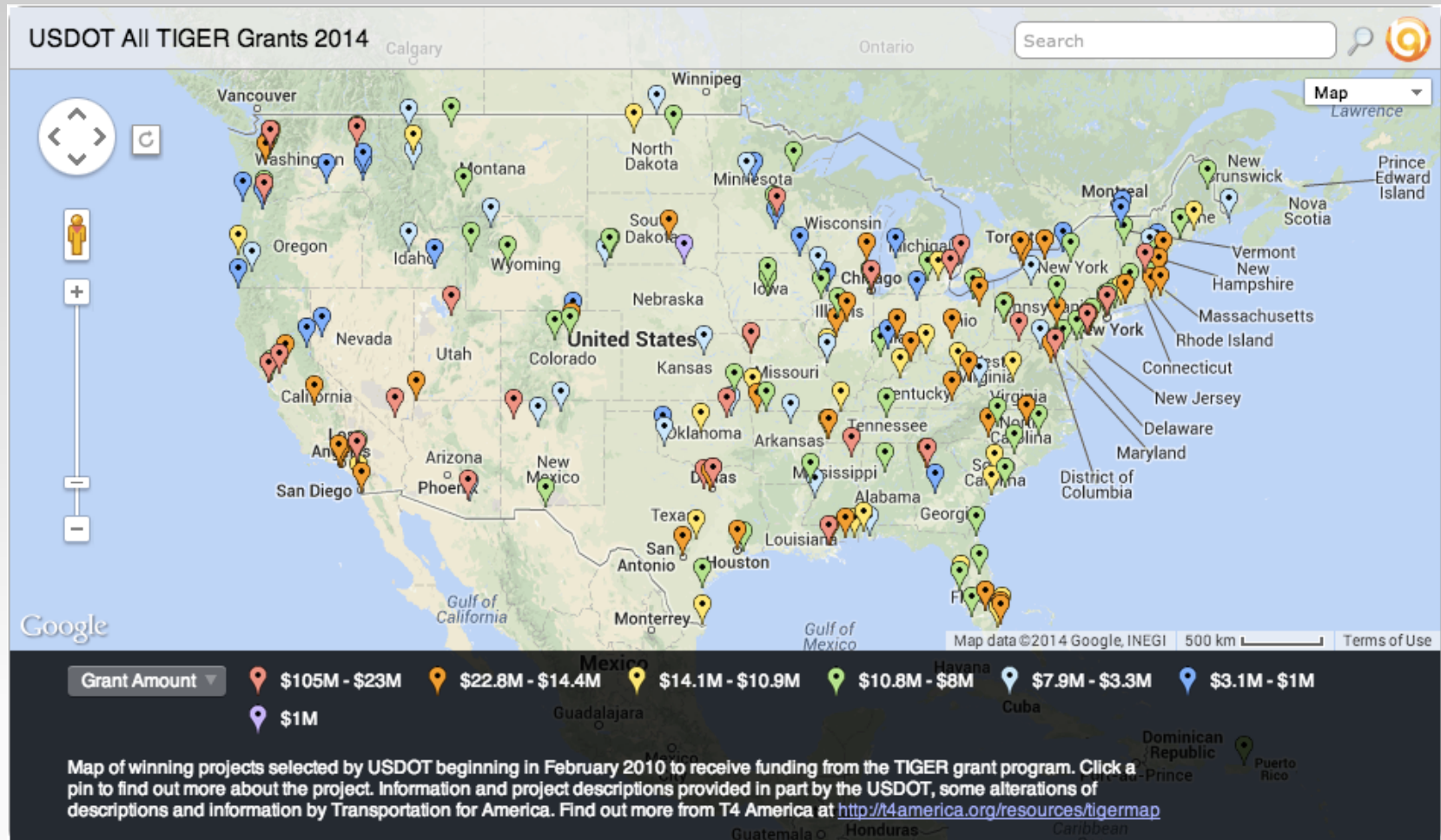
# USDOT's TIGER



**TIGER**

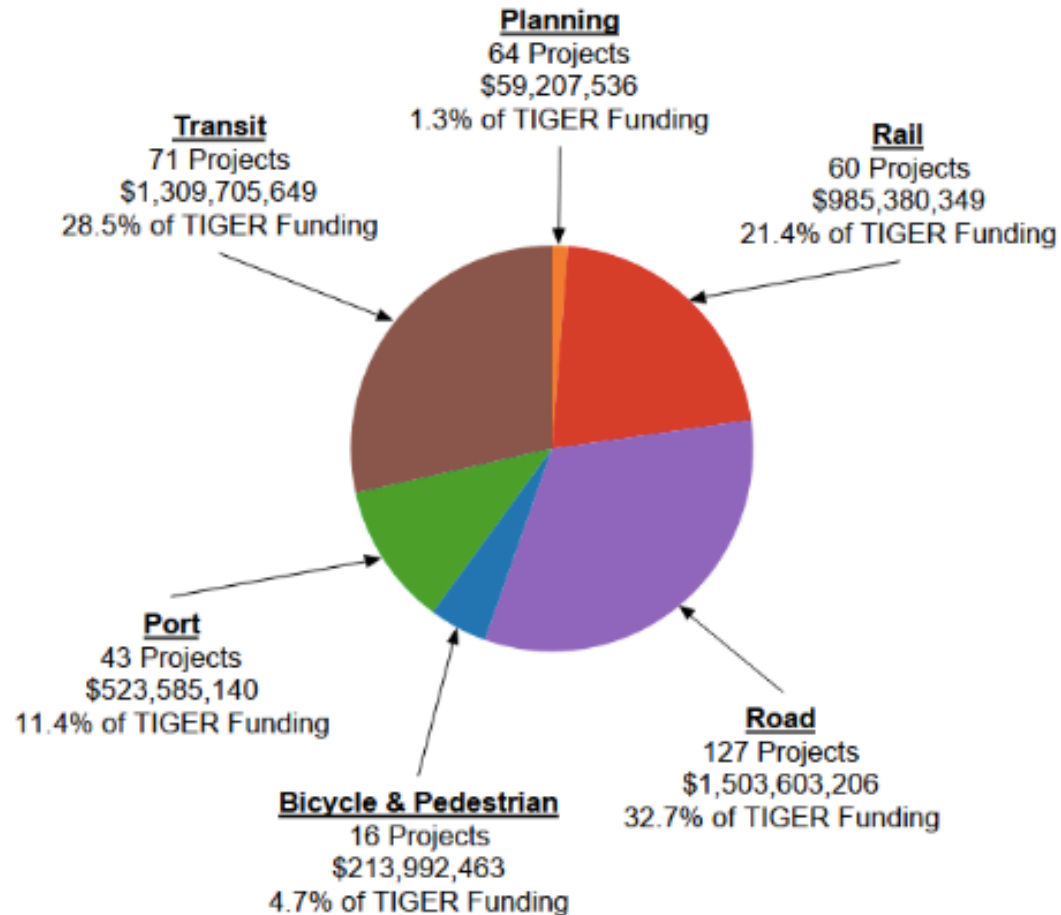


# USDOT's TIGER




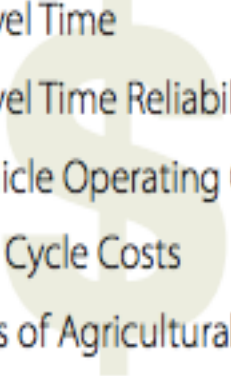

<http://www.t4america.org/maps-tools/tigermap/>

# USDOT's TIGER



# Minnesota's Corridors of Commerce

Table 2. Benefit-Cost Factors (PRISM)

Social	Economic	Environmental
<ul style="list-style-type: none"><li>• Safety</li><li>• Bicycle/Pedestrian Health Effects</li><li>• Noise</li></ul> 	<ul style="list-style-type: none"><li>• Travel Time</li><li>• Travel Time Reliability</li><li>• Vehicle Operating Costs</li><li>• Life Cycle Costs</li><li>• Loss of Agricultural Land</li></ul> 	<ul style="list-style-type: none"><li>• Emission (CO<sub>2</sub> + Criteria Pollutants)</li><li>• Wetland Effects</li><li>• Runoff</li></ul> 

# SACOG

Indicator	Specific Measures	Page(s)
Driving access	Total jobs within 30-minute drive by Community Type	73-75
Vehicles Miles Traveled (VMT)	Total weekday VMT & average annual growth rates - regionally, by county, and per capita	79
	Weekday VMT by source and total	81
	Commute share of household-generated VMT	81
	Weekday VMT by source per capita or per job	81
	Total VMT per capita	81
	Percent change in VMT per capita or per job compared to 2012	81
	Weekday household-generated VMT per capita by Community Type	82
Weekday household-generated VMT per capita by TPA	83	
	Household-generated commute VMT by Community Type and regional total	84
	Commute VMT per worker by Community Type and regional total	84
Congested Vehicle Miles Traveled (VMT)	Congested VMT total and per capita	91
	Congested VMT by source – total, per capita, per job	91
	Congested VMT for household-generated travel by Community Type	92
Transit Service	Increases in transit vehicle service hours per day by transit type	112
Transit productivity	Weekday transit vehicle service hours	123
	Weekday passenger boardings	123
	Weekday boardings per service hour	123
Bicycle Infrastructure	Farebox revenues as percent of operating costs (farebox recovery rate)	124
	Increases in miles of bicycle route mileage by county	114
	Bike route miles per 100,000 population	114
	Transit, walk and bike travel	Weekday person trips by transit, walk and bike modes
Transit, walk and bike trips per capita		119
Transit, bike and walk trips per capita by Community Type		117
Transit trips per capita by Transit Priority Area (TPA)		118
Roadway Utilization/Optimal use	Underutilized, optimally utilized, over-utilized roadways by roadway type	97
Commute Travel	Weekday commute tours by mode	108
Non-Commute Travel	Commute mode share	108
	Weekday non-commute person trips by mode	108
	Non-commute mode share	108

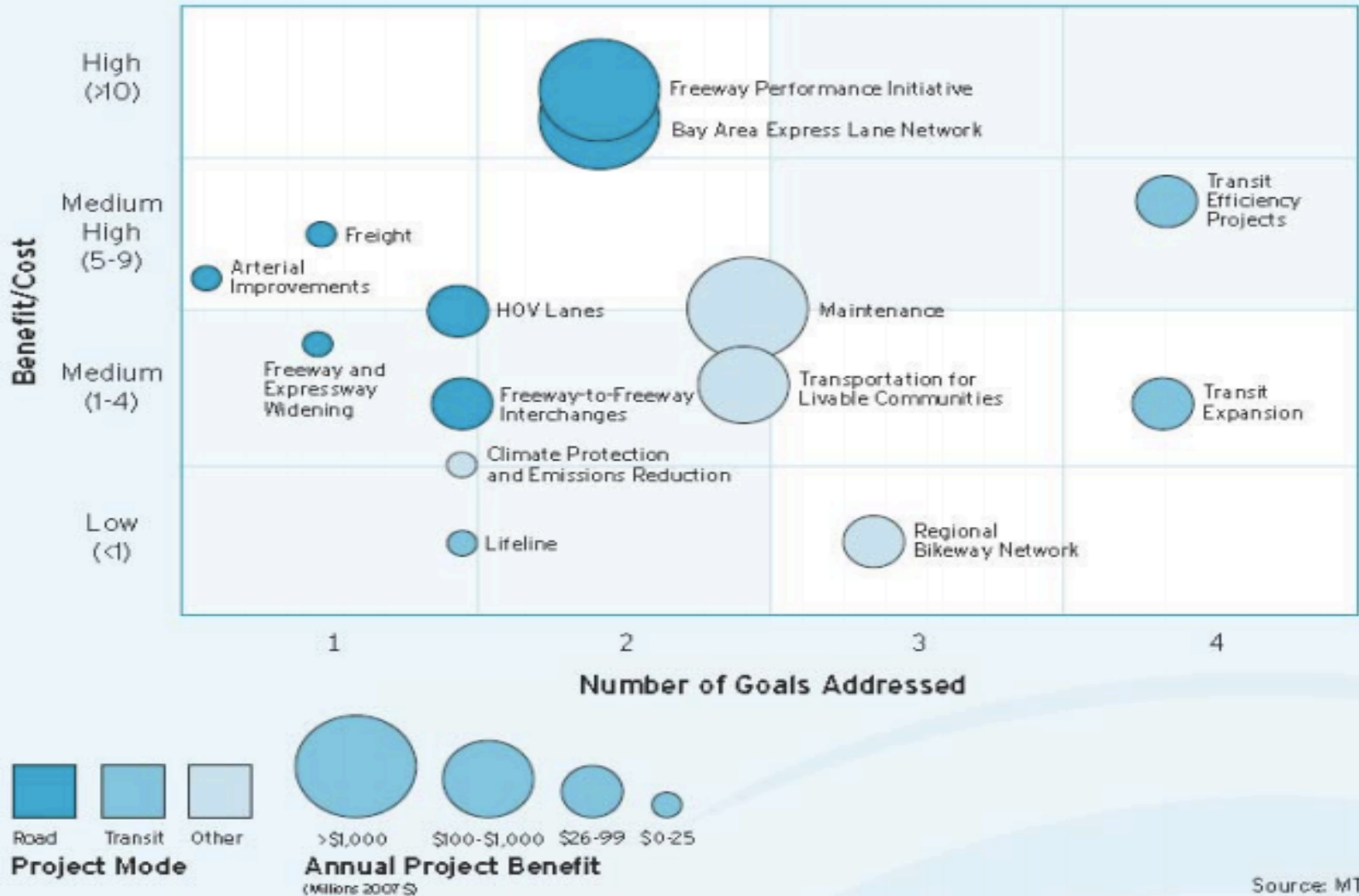
# Metropolitan Council

Criteria and Measures	Points	% of Total Points
<b>1. Role in the Regional Transportation System and Economy</b>	175	17.5%
Measure 1 - Role in Regional Economy		
Measure 2 - Current daily heavy commercial traffic		
Measure 3 - Connection to Job Concentrations, Manufacturing/Distribution Locations, Educational Institutions, and local activity centers		
<b>2. Usage</b>	175	17.5%
Measure 1 - Current daily person throughput		
Measure 2 - Forecast 2030 average daily traffic volume		
<b>3. Equity and Housing Performance</b>	100	10.0%
Measure 1 - Connection to disadvantaged populations and project's benefits, impacts, and mitigation		
Measure 2 - Housing Performance Score		
<b>4. Infrastructure Age</b>	75	7.5%
Measure 1 - Date of construction and remaining useful life		
<b>5. Congestion Reduction/Air Quality</b>	150	15.0%
Measure 1 - Cost effectiveness (project cost/vehicle delay reduced)		
Measure 2 - Cost effectiveness (project cost/kg per day reduced)		
<b>6. Safety</b>	150	15.0%
Measure 1 - Cost effectiveness (project cost/crashes reduced)		
<b>7. Multimodal Facilities and Connections</b>	100	10.0%
Measure 1 - Ridership of transit routes directly and indirectly connected to the project		
Measure 2 - Bicycle and pedestrian connections		
Measure 3 - Transit, bicycle, or pedestrian elements of the project		
<b>8. Risk Assessment</b>	75	7.5%
Measure 1 - Risk Assessment Form		
<b>Total</b>	1,000	100.0%



# Metropolitan Transportation Commission

## Project Performance



# Envision Utah

THERE IS A VISION  
FOR 11 DIFFERENT  
TOPICS



AGRICULTURE



AIR QUALITY



DISASTER  
RESILIENCE



EDUCATION



ENERGY



HOUSING & COST  
OF LIVING



JOBS & ECONOMY



PUBLIC LANDS



RECREATION

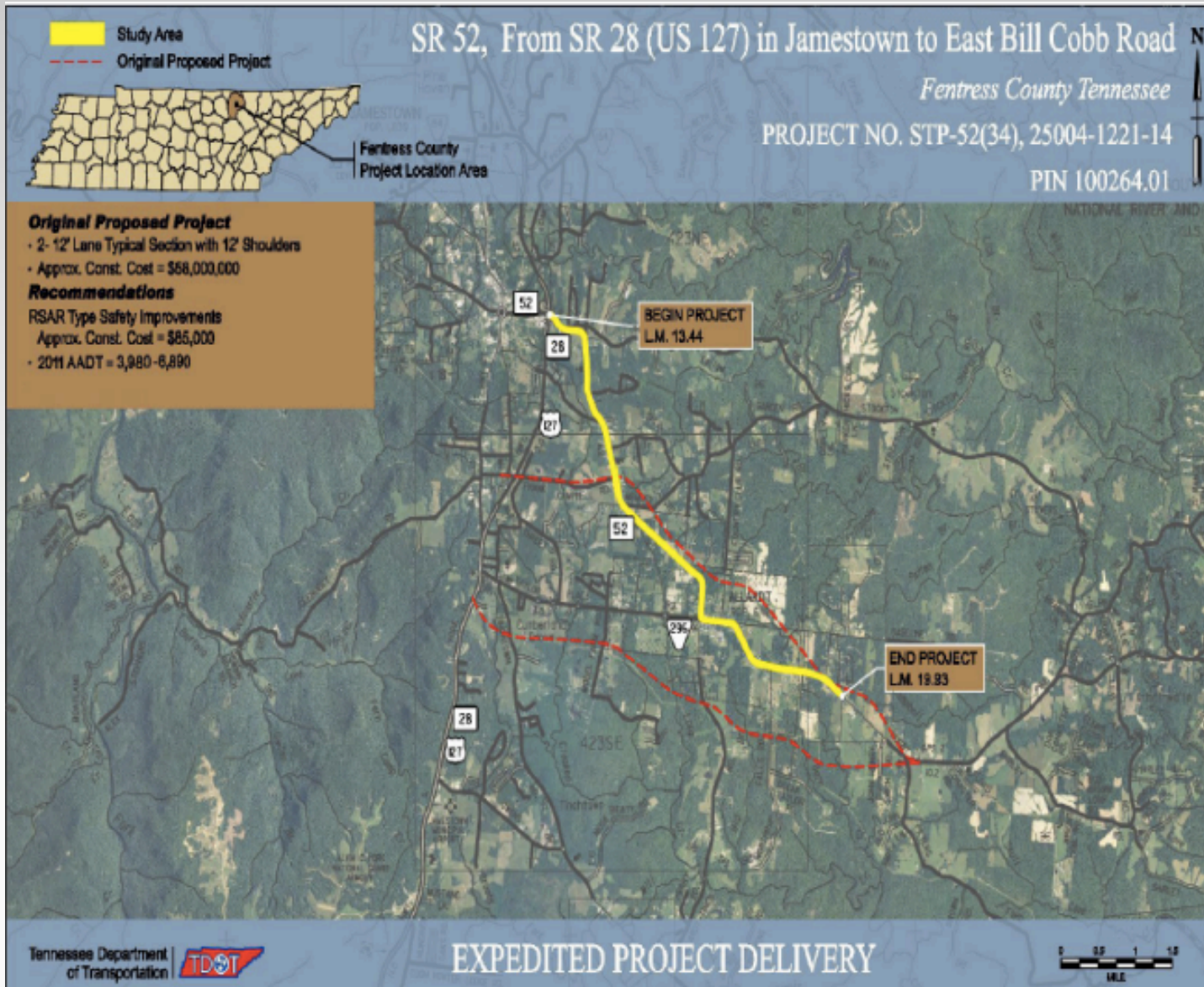


TRANSPORTATION  
AND COMMUNITIES



WATER

# Tennessee's Expedited Project Delivery



# Tennessee's Expedited Project Delivery



## Region 2 Expedited Project Delivery

### Fentress County SR 52

PIN 100264.01

From SR28 (US-127) (LM 13.44) in Jamestown  
To East Bill Cobb Rd. (LM 19.93)

#### Original Project Description:

- A 2003 Environmental Assessment (EA) proposed a two (2) lane facility with twelve (12) foot lanes and twelve (12) foot shoulders with 250 feet of R.O.W. acquired to allow for an eventual four (4) lane facility.
- Project is part of the Upper Cumberland Development Route.

#### Level of Service:

- 2011 = LOS D (3,980 to 6,890 AADT)
- 2031 = LOS D (5,910 to 10,240 AADT)

#### Crash Data:

- Total Crash Rate of 0.44 (State Avg. 1.66 for rural two (2) lane routes.)
- Severe Crash Rate of 0.031 (State Avg. 0.126 for rural two (2) lane routes.)

#### Recommendations:

- Installation of double-sided chevrons and/or curve warning signs for four (4) curves
- Installation of school speed limit signs with flashing beacons
- Replacement of stop signs for all approaches at the intersection of SR 52 and SR 296
- Replacement of several speed limit and reduced speed ahead signs
- Installation of obstacle delineation on several utility poles
- Installation of non-reflective raised pavement markers where presently installed

#### Project Costs:

- RSAR Improvement Costs: **\$85,000**
- **Total Expedited Project Delivery Cost: \$85,000**
- Original Project Cost: **\$58,000,000**
- **Projected Savings: \$57,915,000**

IT'S *NOT* ABOUT THE MEASURES.  
IT'S ABOUT HOW YOU USE THEM.

Part 1: Value Informed Decision  
Making

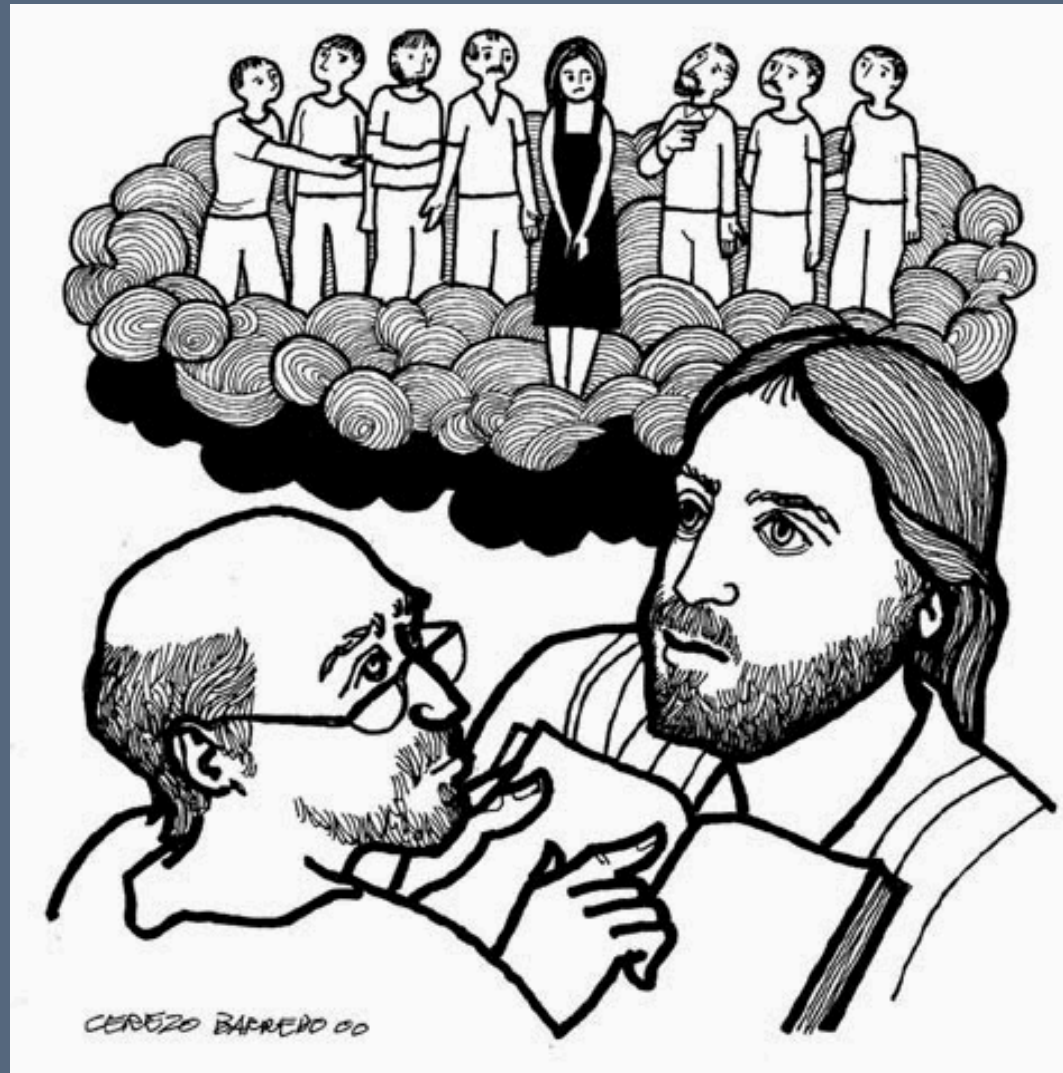
Transportation Leadership Academy  
Indianapolis Indiana  
May 2016

Samuel Seskin

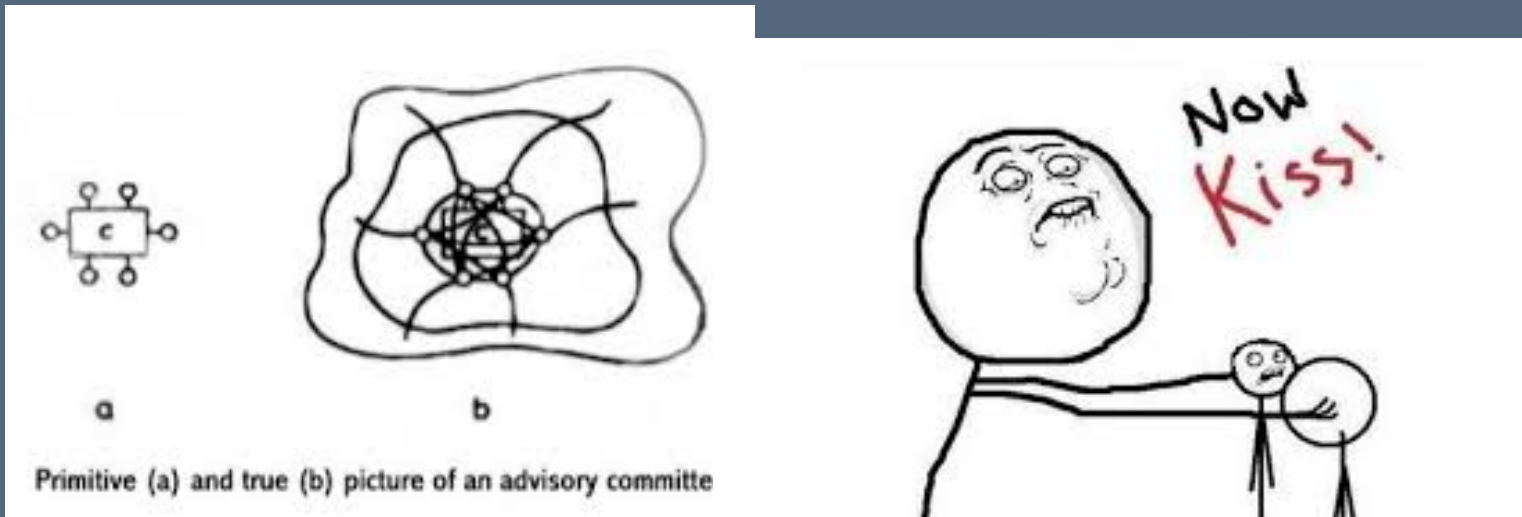
Do engineers use all the right measures?



# Do planners have all the answers?



# Is stakeholder engagement easy?





Is anything missing from political decisions?



# We agree on the goals (probably)...

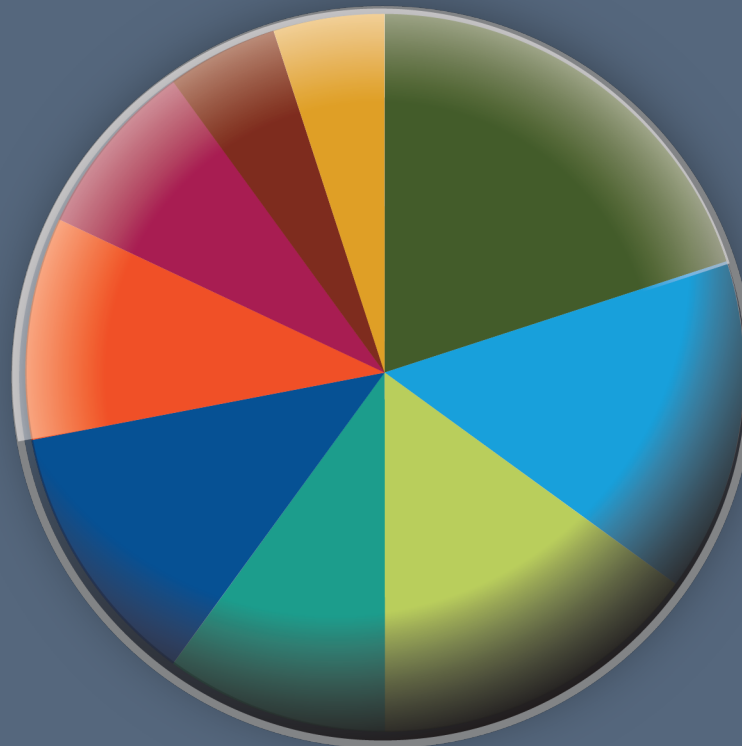


...but not their importance

<b>1</b>	<b>MOBILITY</b>	<b>%</b>
<b>2</b>	<b>ACCESSIBILITY</b>	<b>%</b>
<b>3</b>	<b>ECONOMIC VITALITY</b>	<b>%</b>
<b>4</b>	<b>ENVIRONMENTAL STEWARDSHIP</b>	<b>%</b>
<b>5</b>	<b>FUNDING THE TRANSPORTATION SYSTEM / FINANCE</b>	<b>%</b>
<b>6</b>	<b>SAFETY &amp; SECURITY</b>	<b>%</b>
<b>7</b>	<b>LAND USE &amp; GROWTH MANAGEMENT</b>	<b>%</b>
<b>8</b>	<b>QUALITY OF LIFE</b>	<b>%</b>
<b>9</b>	<b>EQUITY</b>	<b>%</b>

# The Weighting Process

- Weighting is done by stakeholders
- Stakeholders can reach agreement on how to “spend” 100 points among the categories



- Economic Vitality
- Accessibility
- Funding/Finance
- Environmental Stewardship
- Quality of Life
- Mobility
- Equity
- Safety and Security
- Land Use

Try this:

- *Imagine you were buying a car. How much weight would you put, in advance, on price as a factor in your decision, versus color?*

Now consider this:



\$17,000



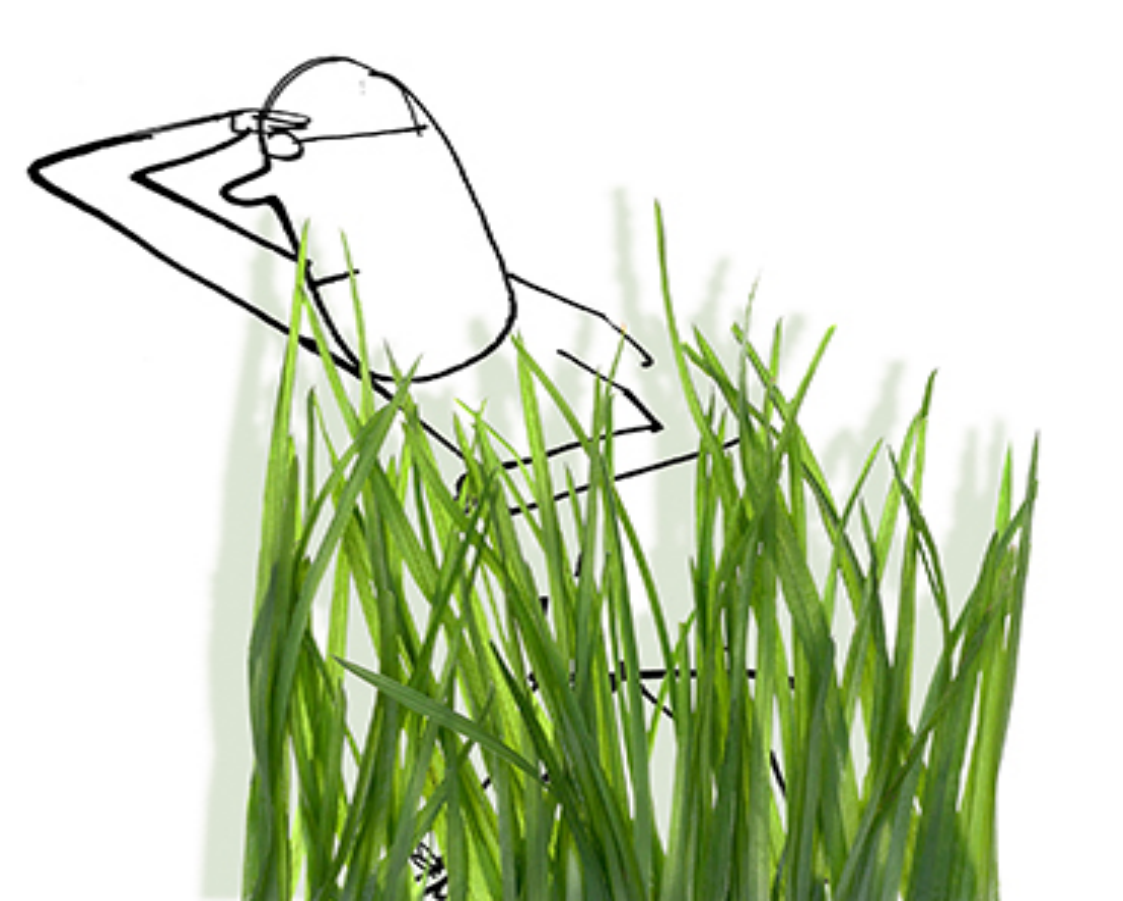
\$17,100

*Does the fact that the difference in price is very small change how much weight you give that indicator in your final decision?*

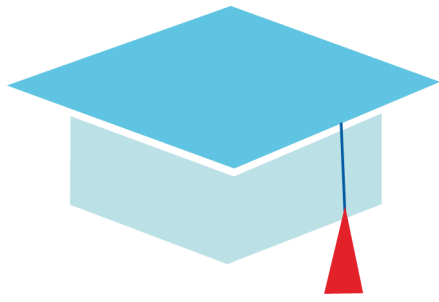
# Value-informed decision making:

- Supports learning, not debating
- Encourages discussion and exploration of value and values
- Decisions are more transparent and defensible.
- *Results inform but do not dictate decisions.*

QUESTIONS AND DISCUSSION







# TRANSPORTATION LEADERSHIP ACADEMY



**Transportation**  
for America



U.S. Department of Transportation  
**Federal Highway  
Administration**

**QUESTIONS & COMMENTS**  
**#indyTLA**