

# **ECONOMIC IMPACT ASSESSMENT FOR PUBLIC TRANSPORTATION INVESTMENT**

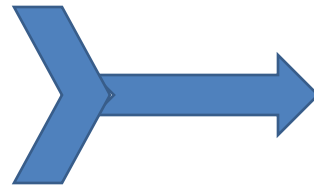
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**VTA Webinar, December 15, 2009**

# *Why Measure Economic Impact?*

1. Flow of Money in the Economy (*Where does it go?*)
2. Economic Stimulus Effect (*Jobs*)
3. Economic Competitiveness Effect (*Access*)
4. Equity of Impact (*Cost Burden & Benefit*)
5. Planning & Policy
6. Funding Decisions



# *Types of Economic Impact*

- **Short-Term Spending \$ Impacts**
  - Capital Investment Impacts
  - Operations Impacts
- **Long-Term Productivity \$ Impacts**
  - Travel Time/Cost Improvement Impacts
  - Job & Market Access Improvement Impacts
  - Government Service Cost Impact
- **Non-Money Impacts**
  - Personal Time
  - Air Quality, GHG, Other Environment
  - Quality of Life

# Short-Term Impact: Spending

## 1. Direct Spending Mix

### 29% Capital Purchases

- Purchase: Vehicles & Equipment
- Construction : Right-of-Way & Bldgs

### 71% Operations

- Drivers & Mechanics
- Dispatchers, Engineers, Management
- Fuel & Parts

## 2. Economic Model\*

### Indirect Effect

- Suppliers
- Materials
- Components

### Induced Effect

- Worker Spending

## 3. Total Effect

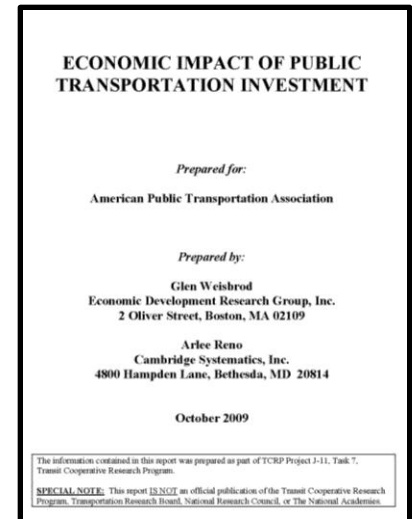
- Jobs
- Income
- Business Sales

*\*VDOT and DRPT: TREDIS model*

# Ratios: Impact of Spending on Public Transportation

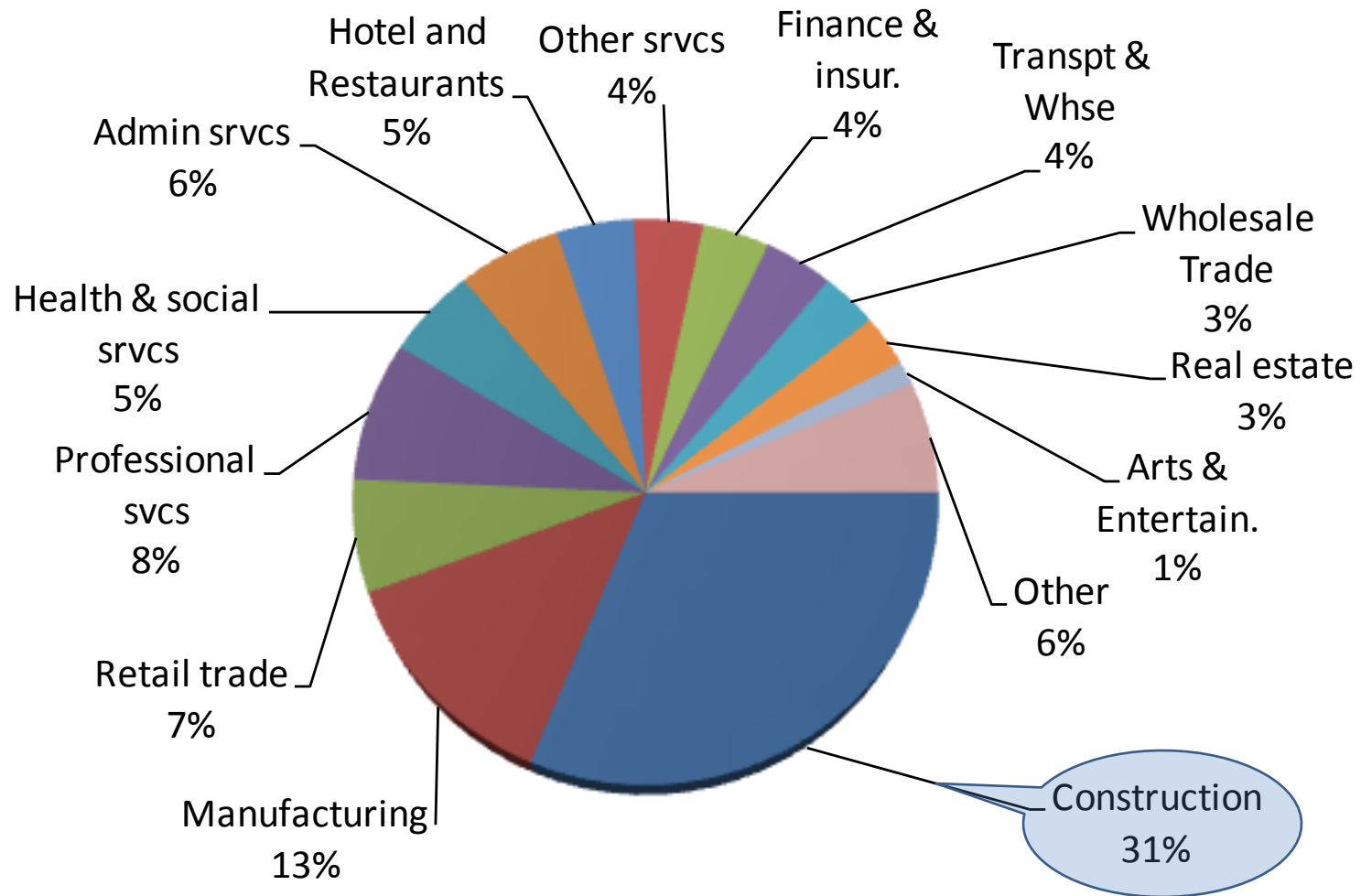
APTA / TCRP Report  
(2009)

US Economic Impact*	Per \$100 million of Average Spending <sup>B</sup>
Jobs (Employment, thousands)	3.61
Output (Sales, \$ millions)	\$ 360
GDP (Value Added, \$ millions)	\$ 180
Labor Income (\$ millions)	\$ 160
Tax Revenue (\$ millions)	\$ 49

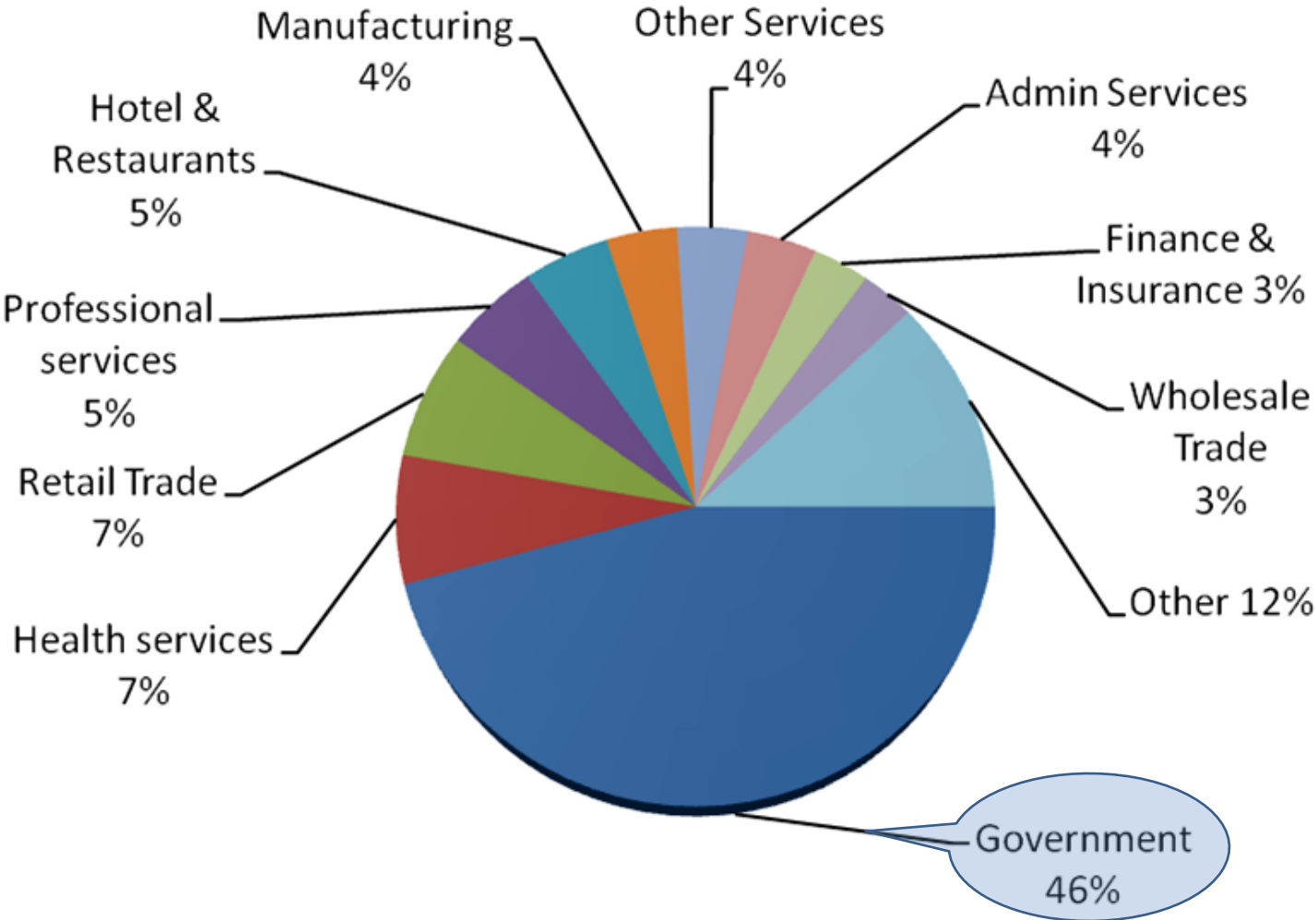


**\* State impact is typically around 2/3 - 3/4 of national impact**

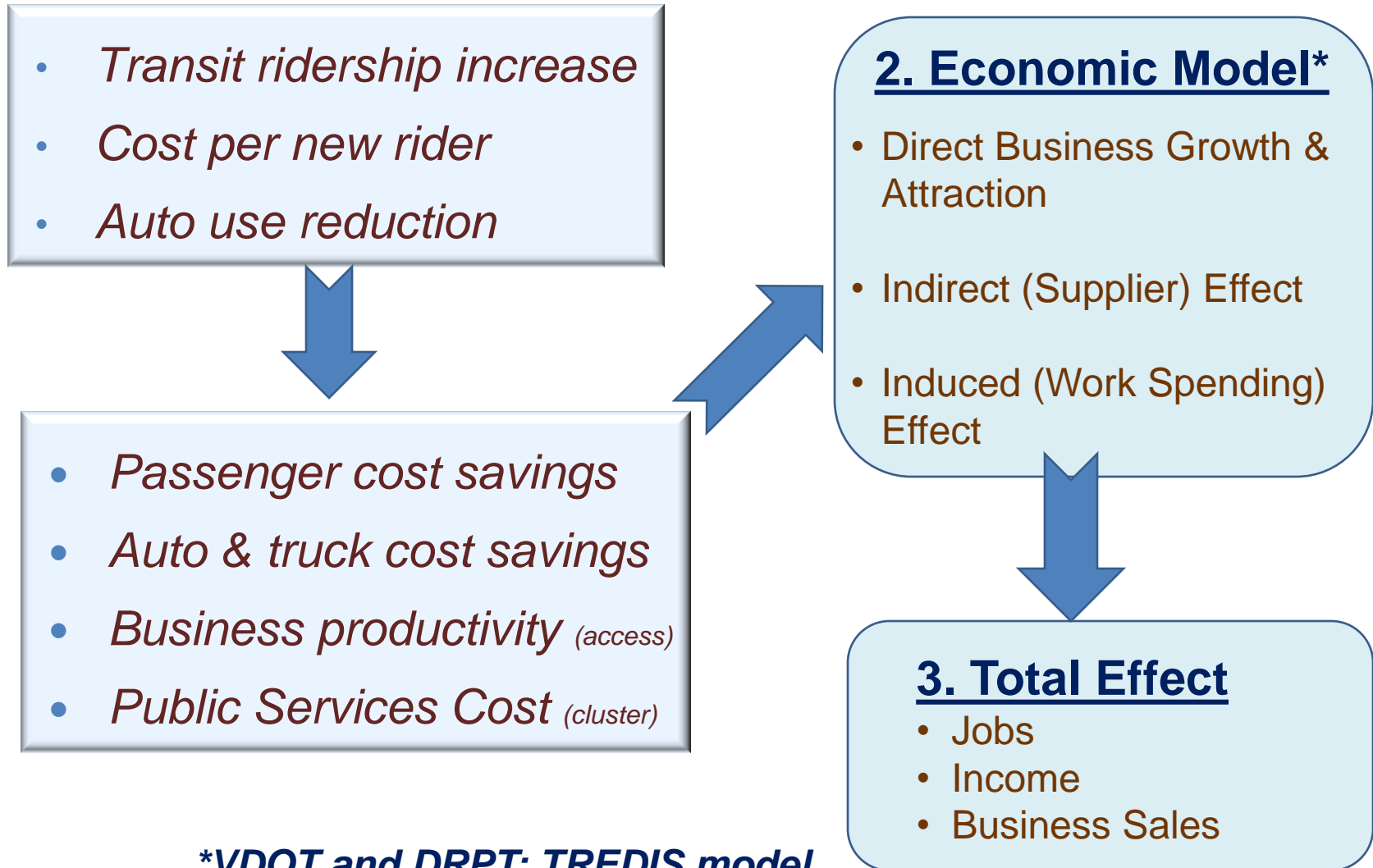
# Capital Investment: Job Impact



# Operations Spending: Job Impact



# Long-Term Impact: Productivity



*\*VDOT and DRPT: TREDIS model*

# ***Total Impact on the Economy***



# ***Moving Cooler Study: GHG Reduction***

**Moving Cooler (July 2009)**



## **GHG reductions possible by 2050:**

- 6 to 9% from more compact land use and transit
- 24% from more maximum level of all measures combined: compact land use plus increased transit, plus pricing, plus operations, etc
- Additional impact if coupled with “strong economy-wide pricing measures” (very high fuel taxes, PAYD insurance etc.)

# ***Moving Cooler Study: Equity Findings***

- **Benefit.** Analyses of national highway, public transit and other investment needs indicate over \$150 billion per year in additional investments
  - can reduce GHG emissions;
  - can address equity concerns; and
  - are economically justified with returns on investment of *2 to 1*, or *4 to 1*, or *more*.
- **Equity.** The reinvestment of revenues generated by pricing strategies into highway, transit, operations (or other programs which pass benefit-cost tests) addresses equity concerns and enables all groups to achieve net benefits.

# ***Moving Cooler: Social Equity***

- **Low Income Use.** Because low income groups utilize public transit more than average, investments in public transit can potentially target a larger percentage of benefits to low income groups, depending of course on the specific transit investments which are made.
- **Desirability.** For the reasons cited above, public transit investment is a desirable strategy to address equity concerns.

# *Equity Analysis: Return on Investment by User Group*

User Group	Pricing: \$ of Benefit Per Dollar of Tolls Paid	Combined: \$ of Benefit Per Dollar Combined
Low Income SOV Work Trips	\$.02	\$1.97
Low Middle Income SOV Work Trips	\$.14	\$2.09
High Middle Income SOV Work Trips	\$.33	\$2.28
High Income	\$.56	\$2.51
Drive Alone Non Work	\$.19	\$2.14
Carpool and Vanpool	\$.23	\$2.18
Heavy Trucks	\$.89	\$2.84
All Vehicle Classes Combined	\$.46	\$2.41

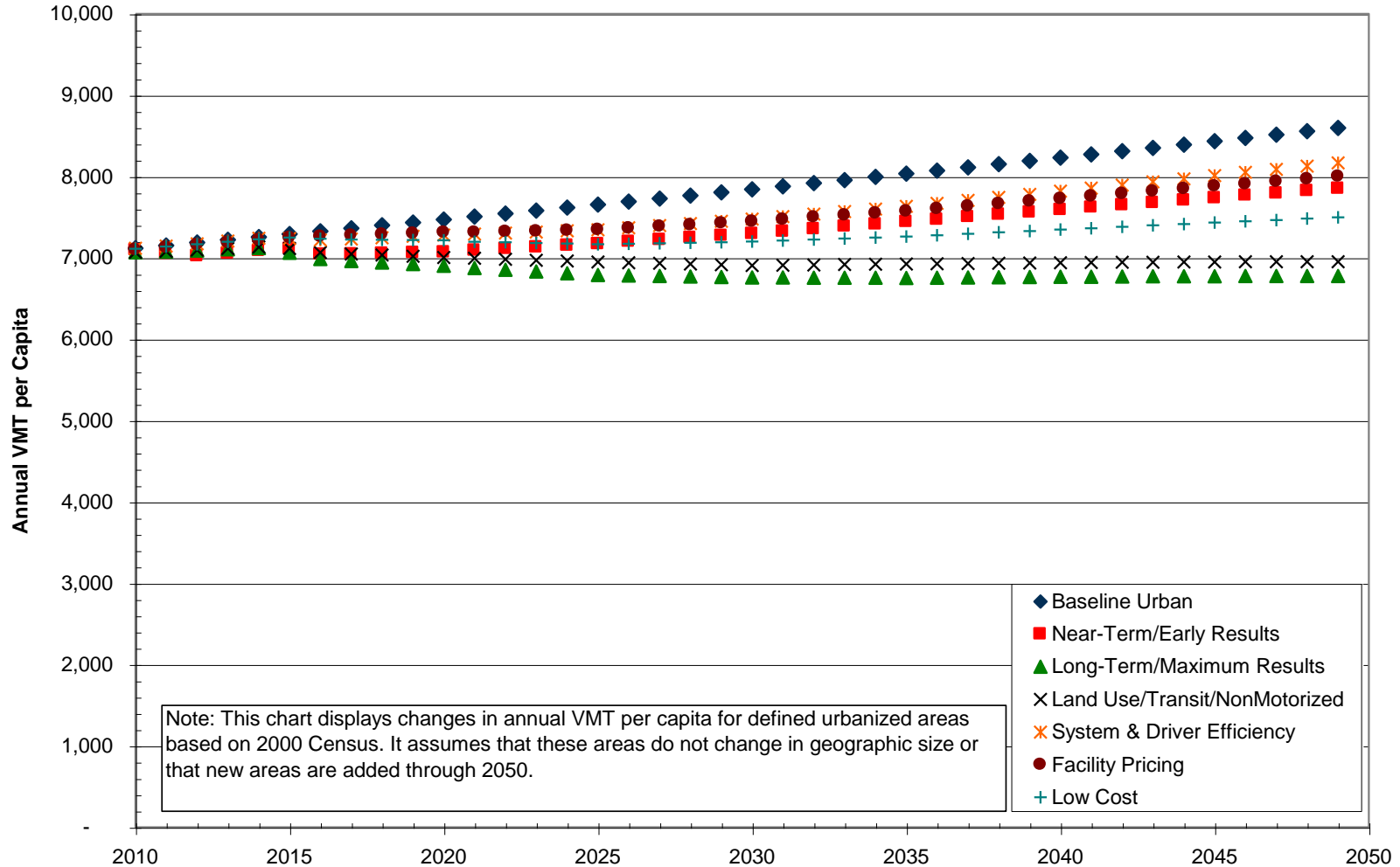
# Quantitative Equity

## Quantitative Equity of San Francisco Long Range Plan (T2035) Expenditures

	All Households	Low Income Households	All Other Households
Expenditures Per Household (\$T)	\$91.3	\$95.2	\$90.4

# Controlling VMT per Capita

Moving Cooler Urban Area VMT per Capita - Bundle at Aggressive Deployment



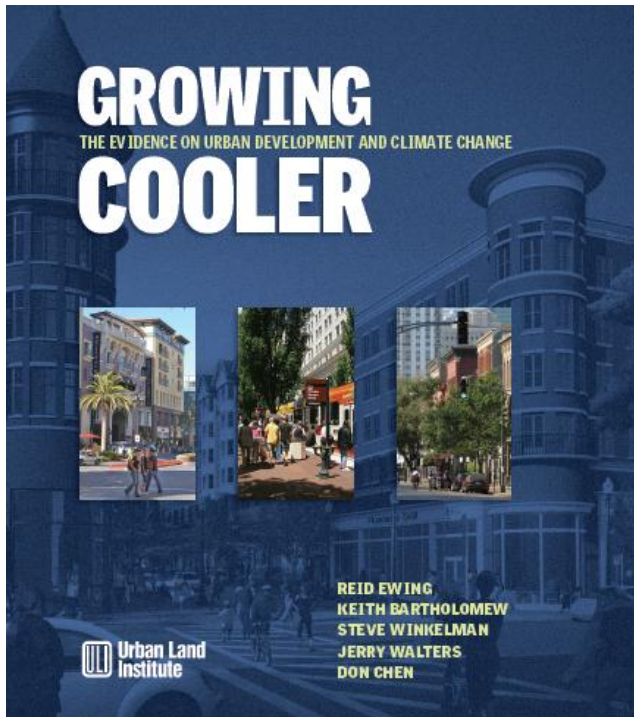
# Transit & Land Use Impact on VMT

Rodier report- California (2008)

- **Land use Policy alone:**  
2% less VMT in 10 yrs plus 2% more every 10 yrs
- **Transit Investment alone**  
0.1-1% less VMT in 10 yrs and growing after
- **Land use and Transit together**  
2-6% less VMT in 10 yrs plus 2-5% more every 10 yrs

# Growth of VMT Can be Controlled

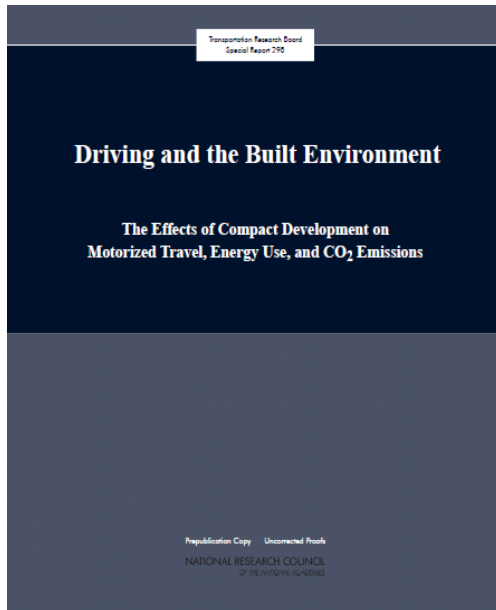
## Growing Cooler (Spring 2009)



- Growth in VMT will offset improvements in new car fuel efficiency
- Elasticity of VMT to population density is -0.3
- Compact development would reduce VMT by 7-10% by 2050

# Role of Land Use & Development

## Driving and the Built Environment (August 2009)



	Density of new development	VMT per household
BASE CASE	Current ( <i>new 0.99 DU/acre vs existing 1.66 DU/acre</i> )	Current ( <i>21,187 mi/yr</i> )
SCENARIO 1	25% of new is twice as dense	12 % less VMT if twice as dense
SCENARIO 2	75% of new is twice as dense	25% less VMT if twice as dense

# Conclusions

Recognize both short-term spending impact and long-term economic development impact.

Type and quality of jobs are also important.

Economic models are available to calculate impacts.

Consider jobs and the economy as part of a broader set planning & policy considerations.

Transit, land use & environment are intertwined and together affect both economic costs & benefits.