

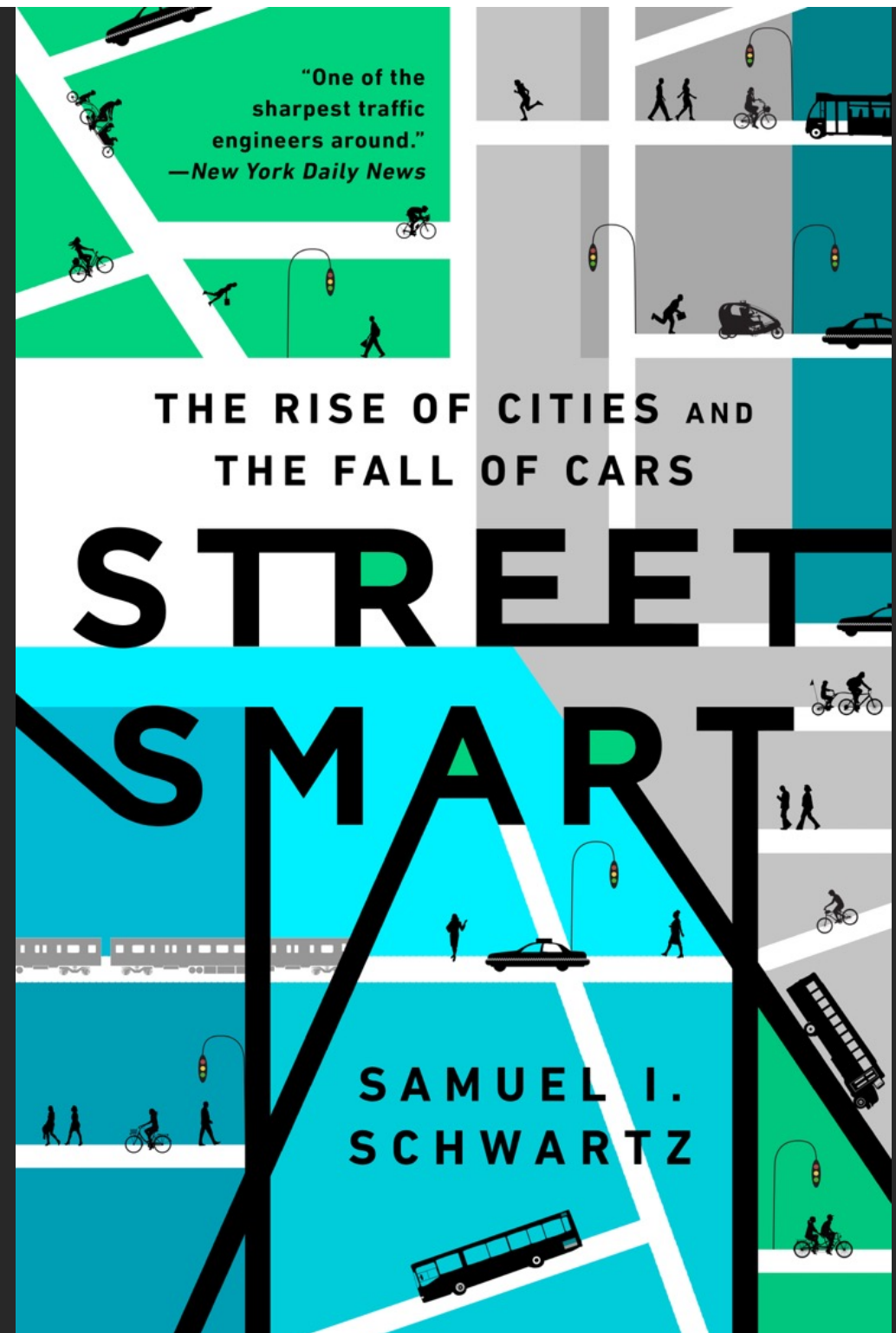
STREETSMART: The Rise of Cities and the Fall of Cars

Samuel I. Schwartz, P.E.

Annual Polis Conference

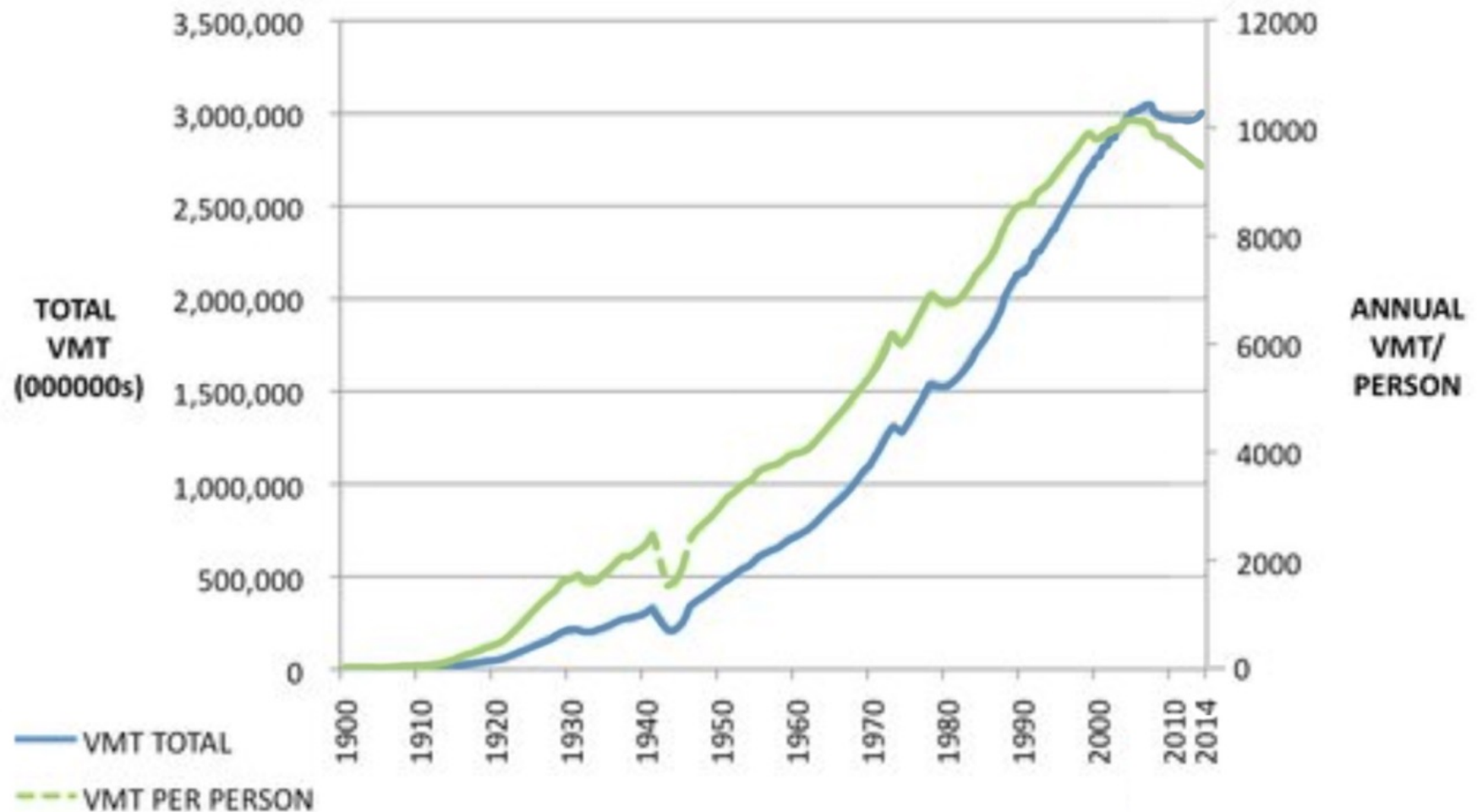
November 20, 2015

Sam Schwartz Consulting, LLC



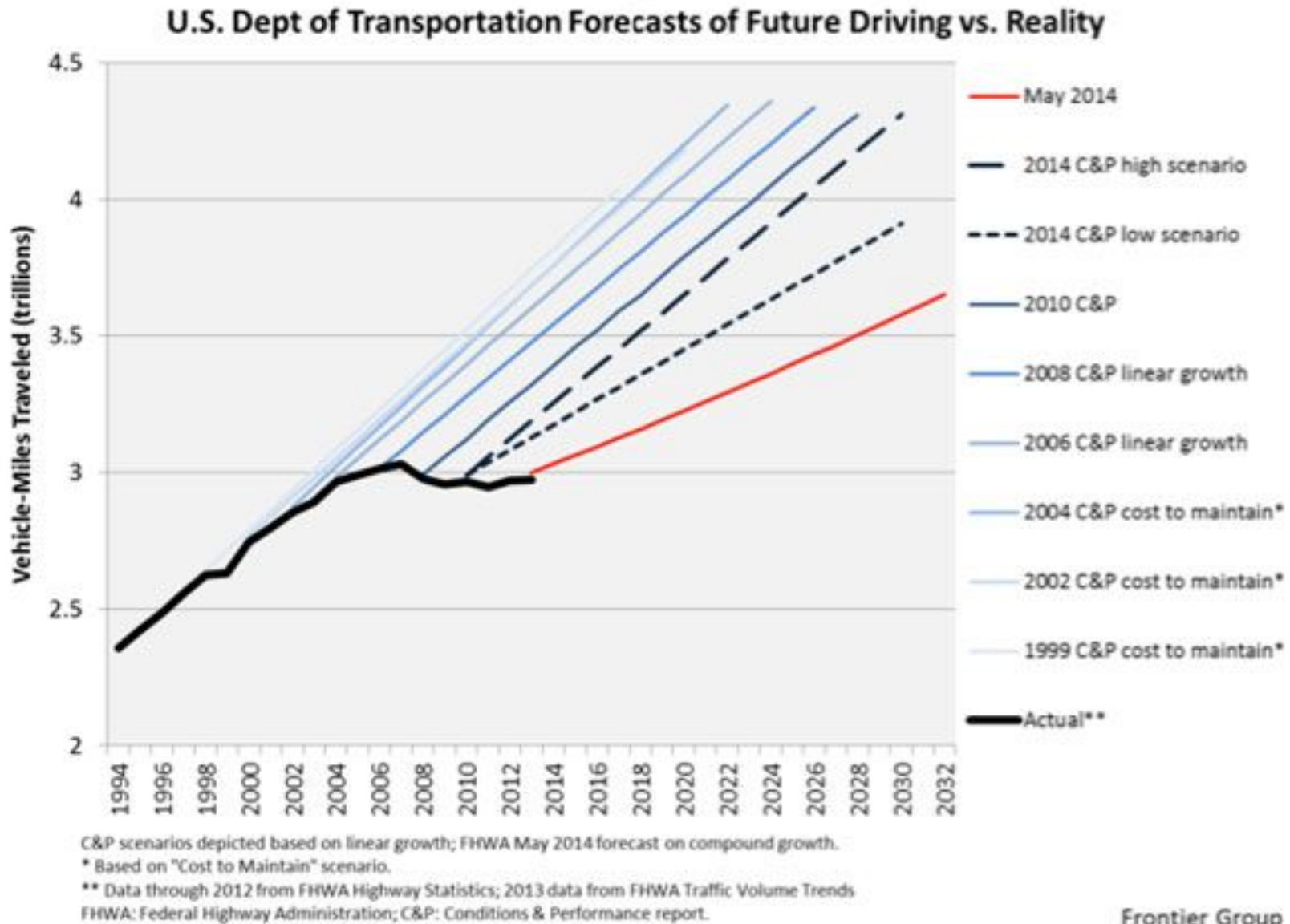
THE TRANSPORTATION REVOLUTION NO ONE PLANNED AND NO ONE SEEMED TO NOTICE

Total and Per Capita Vehicle Miles Traveled (VMT) 1900 - 2015



Sources: FHWA July 2015 Traffic Volume Trends; US Census Bureau Projections of the Size and Composition of the U.S. Population: 2014 – 2060

“IT’S TOUGH TO MAKE PREDICTIONS ESPECIALLY ABOUT THE FUTURE” – YOGI BERRA



Frontier Group

GLOBAL VKT RATES BEGIN TO PLATEAU

Figure 2.12 Traffic per person in **Belgium**

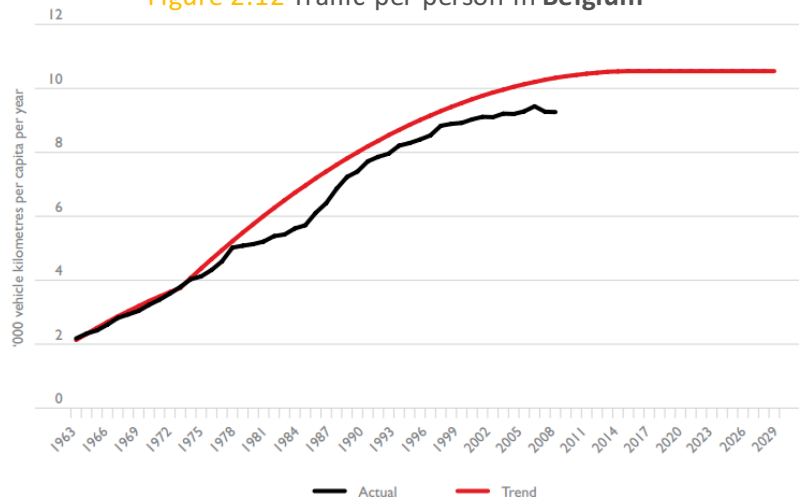


Figure 2.16 Traffic per person in **Britain**

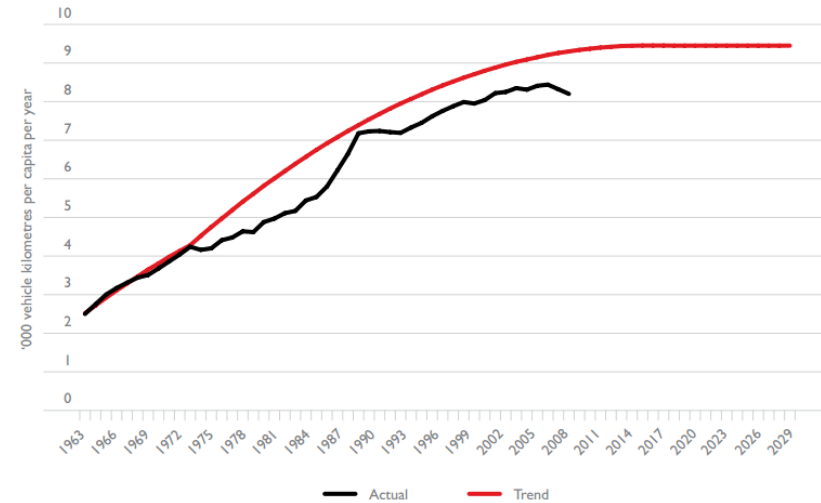


Figure 2.84 Traffic per person in **Spain**

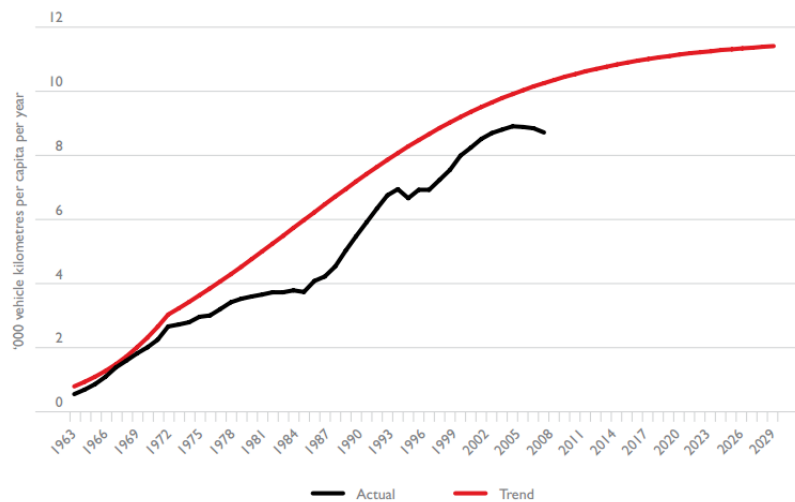
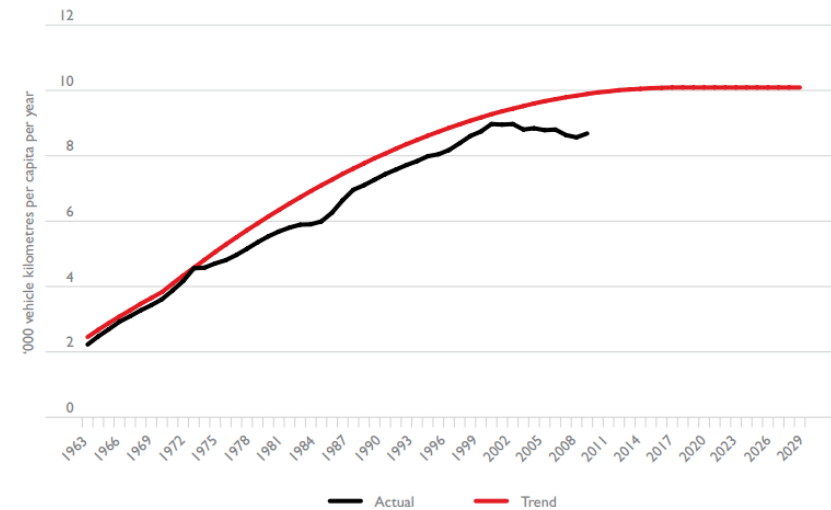


Figure 2.36 Traffic per person in **France**



Source: "Traffic Growth: Modelling a Global Phenomenon," Australian Department of Infrastructure and Transport, 2012

GLOBAL VKT RATES BEGIN TO PLATEAU

Figure 2.72 Traffic per person in the Netherlands

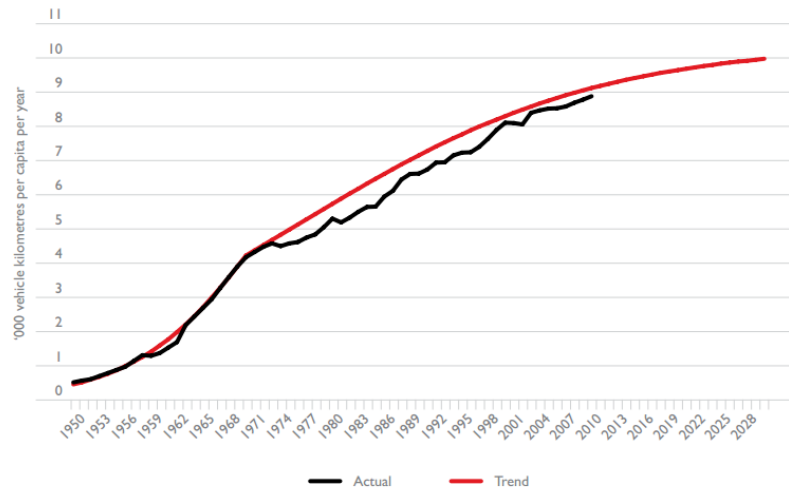


Figure 2.60 Traffic per person in Italy

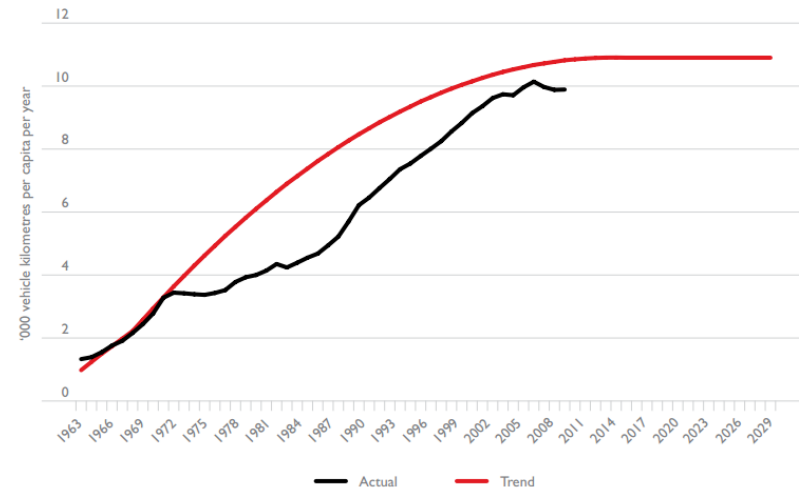


Figure 2.48 Traffic per person in Hungary

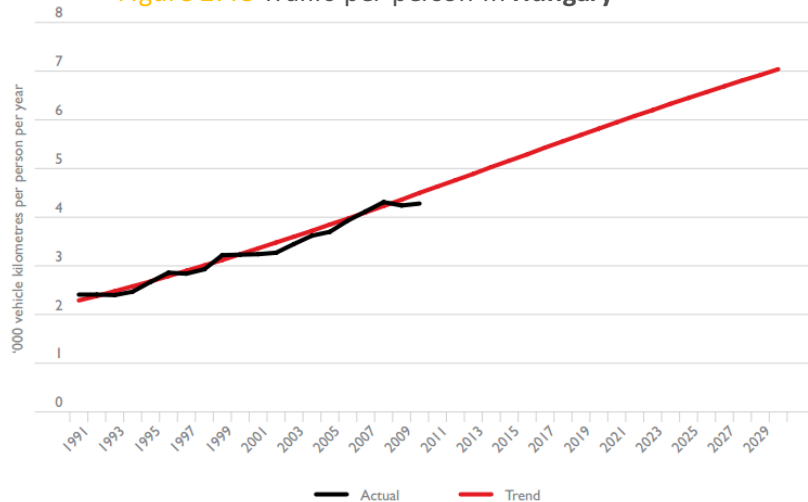
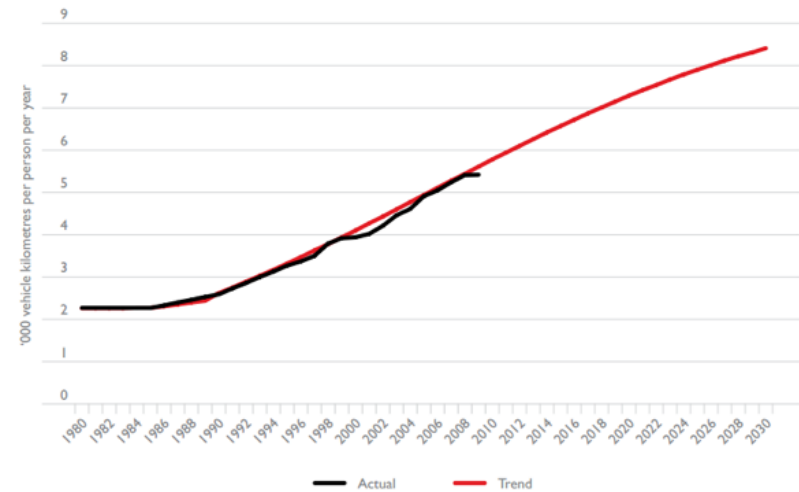


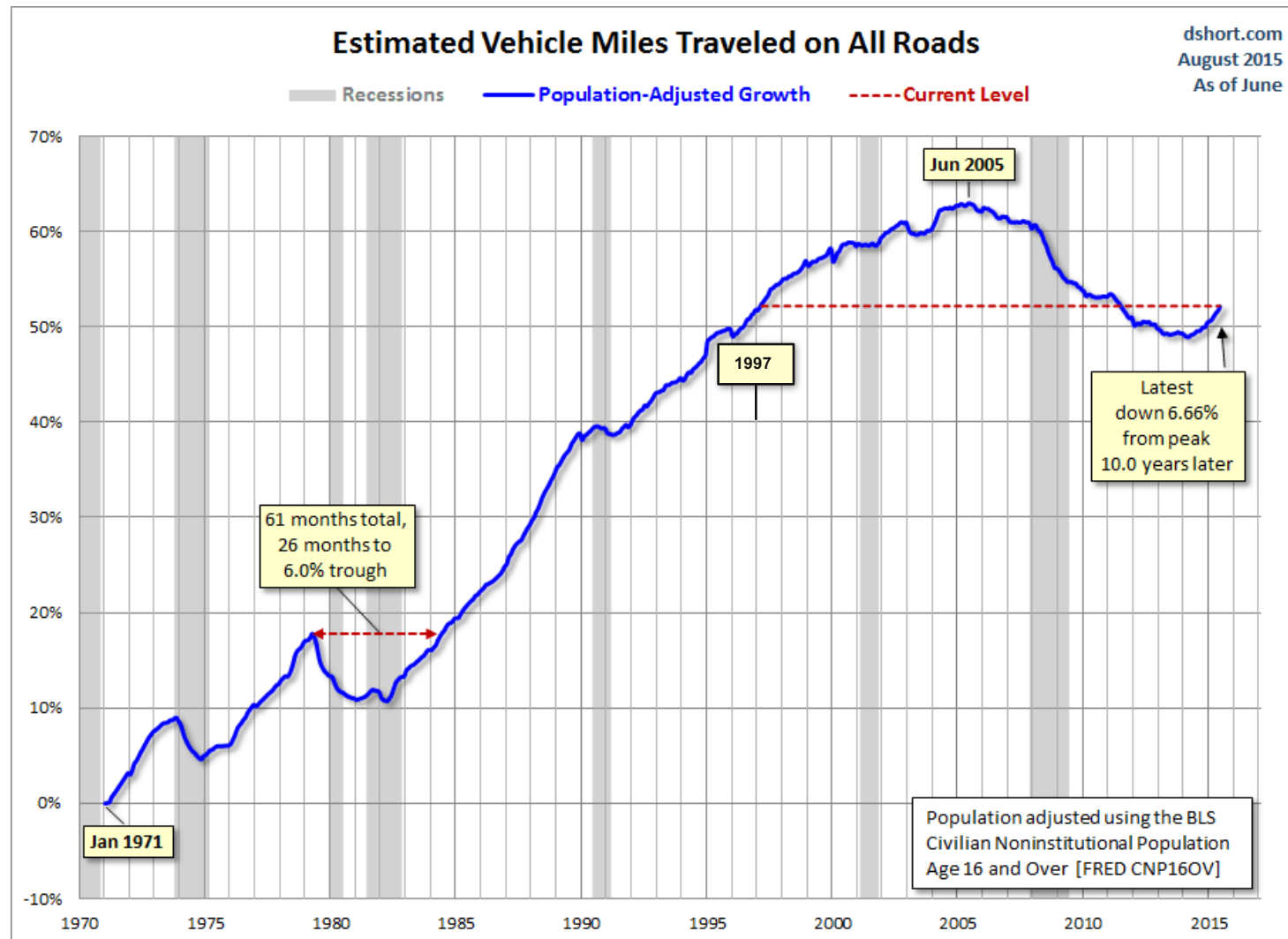
Figure 2.24 Traffic per person in Czech Republic



Source: "Traffic Growth: Modelling a Global Phenomenon," Australian Department of Infrastructure and Transport, 2012

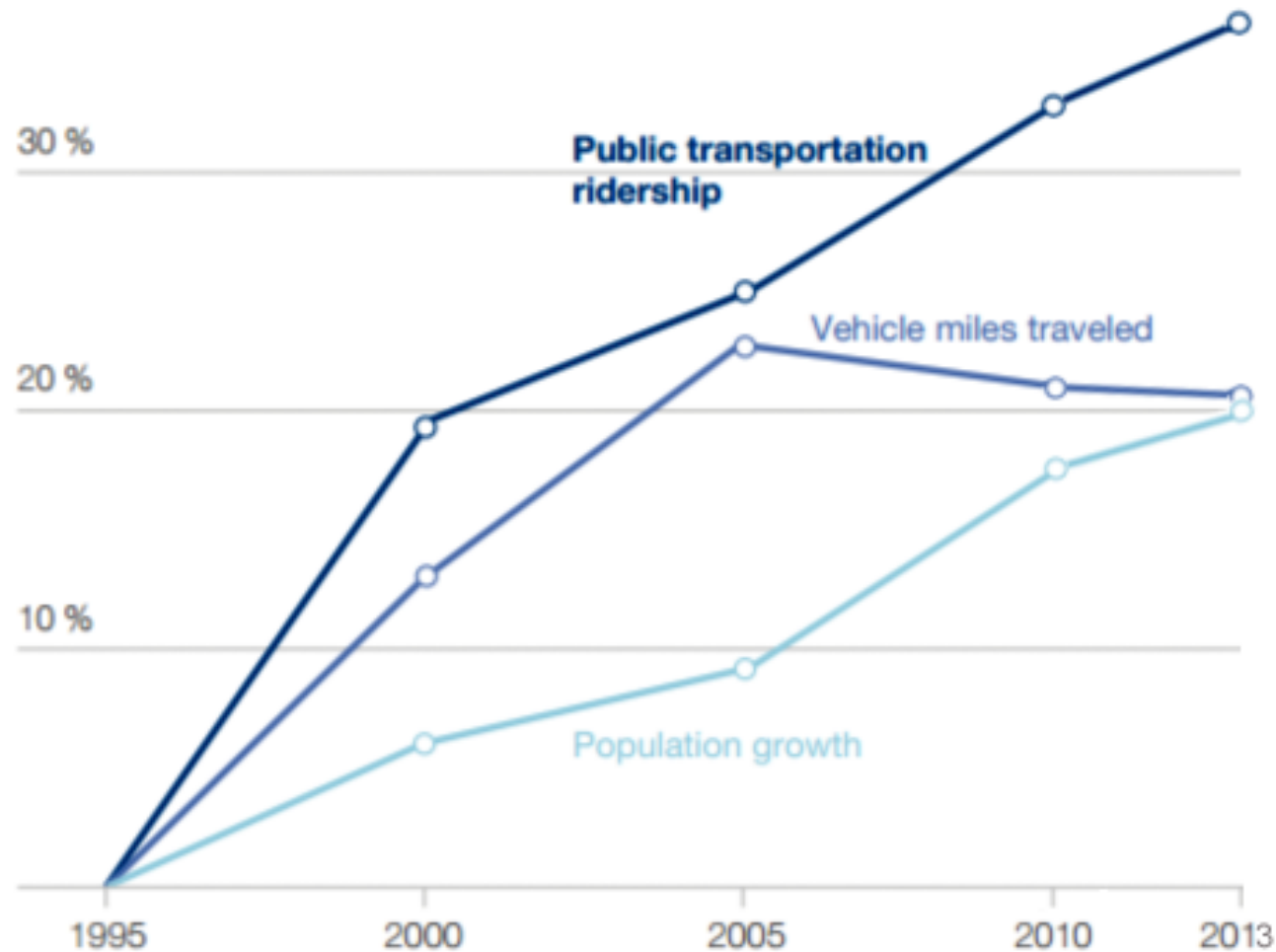
RECESSIONS DAMPEN VMT, THEN IT REBOUNDS WITH THE ECONOMY. BUT, NOT THIS TIME

Estimated Vehicle Miles Traveled on US Roads 1971-2015



Source: "Vehicle Miles Traveled on ALL Roads," Doug Short, August 2015.

PERCENT CHANGE IN TRANSIT RIDERSHIP, VMT, AND POPULATION 1995 - 2013



Sources: "America's transportation needs are huge. Too bad the way we fund them is broken," The Washington Post, 8 May 2014; 2013 US Census Population Estimates; 2013 APTA Ridership Report; 2013 FHWA Traffic Volume Trends

WHO'S DRIVING LESS?

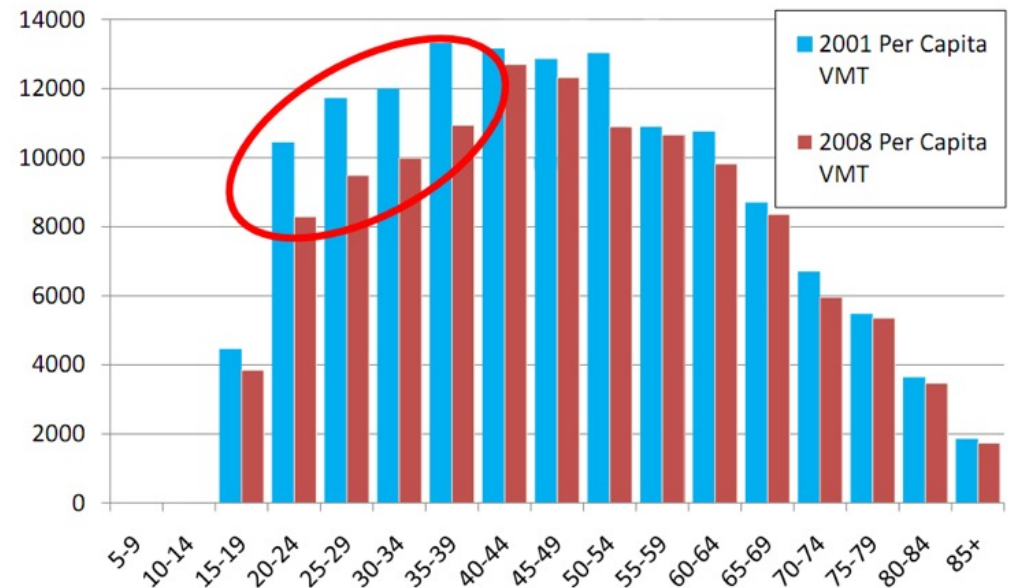
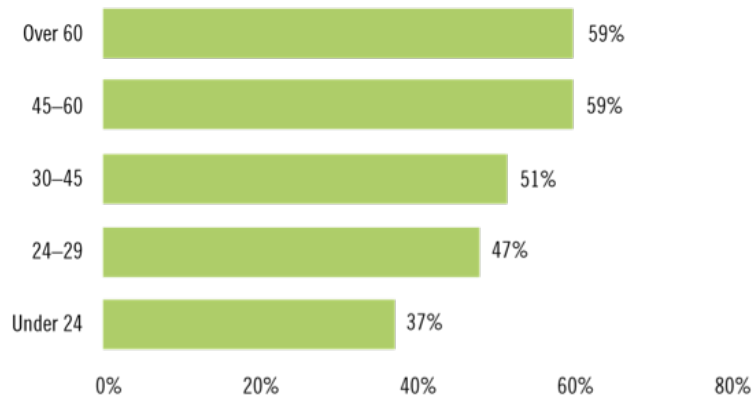


“The **Millennial generation** seems to be defying its sheltered, suburban upbringing by **delaying the acquisition of a driver’s license and choosing transit**. Meanwhile, Baby Boomers, who grew up using transit and were encouraged to do so, are defying their upbringing by avoiding transit now.”

- “Who’s On Board: 2014 Mobility Attitudes Survey,” TransitCenter, 2014

YOUNGER PEOPLE ARE DRIVING LESS

Percentage of people who obtain license at 16 years old



- The share of 16 to 24-year-olds without a driver's license rose to 33% in 2011, the highest since at least 1963
- The average annual VMT by drivers aged 16 to 34 dropped by 23% between 2001-2009
- Between 2001-2009, bike trips by 16 to 34-year-olds jumped 24% and transit passenger miles jumped 40%

Sources: "The Future Isn't What It Used to Be," Victoria Transport Policy Institute, 28 March 2014; "A New Direction," U.S. PIRG, 2013; National Household Travel Survey, 2011; "Millennials in Motion," U.S. PIRG, 2014

WHY ARE THEY DRIVING LESS?

- Neighborhood choice: 38% of under-30s live in urban areas vs. 22% of 30-60s and 14% of over-60s
- Socializing: more via social media, less in person
- Shopping: more via Amazon, less at brick and mortar shops
- Graduated Driver Licensing statutes: harder to get a license
- Sharing economy
 - Car share
 - Bike share
 - Via, Uber
- Student debt: no disposal income for a car
- Backseat rebellion: Millennials grew up watching their parents suffer while driving; mobility peaked in the 70's and 80's
- Unlocking the “mysteries” of transit
- Mode choice priorities: travel-time reliability, total travel time, and cost are the top 3 influences amongst under-30s
- Freedom Redefined

Source: “Who’s On Board: 2014 Mobility Attitudes Survey,” TransitCenter, 2014

Car Ownership WHY?

1970: Freedom =



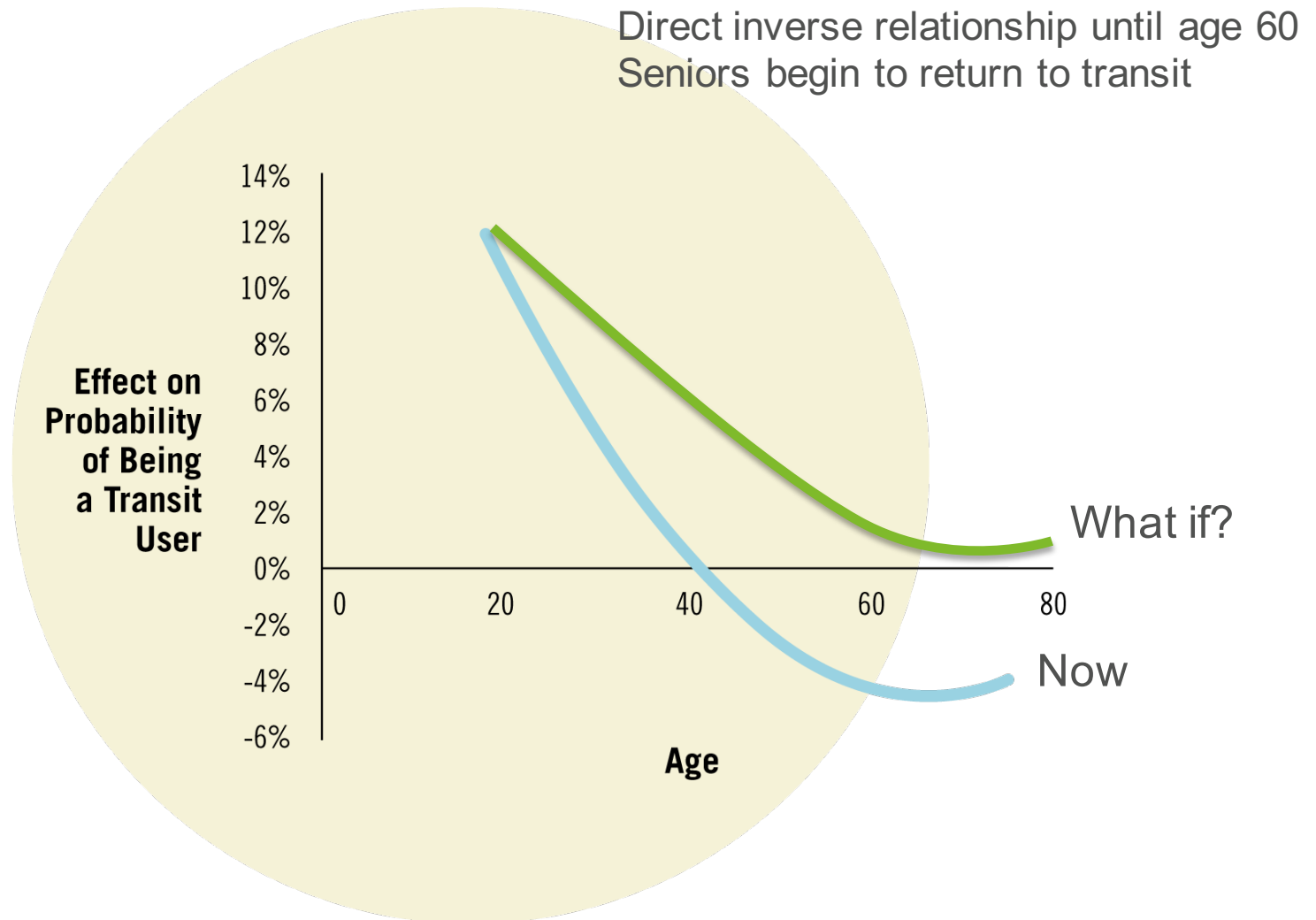
2015: Freedom =



Mobility portfolio



AGE AND TRANSIT USAGE



Source: "Who's On Board," TransitCenter, September 2014.

HOW ARE PEOPLE GETTING AROUND WITHOUT CARS?

Active Transportation

Any method of travel that is all or partly human-powered. It refers to transportation that supports walking, stair use, cycling, and transit. It includes long-term land use and transportation planning to encourage alternate (non-motor vehicle) forms of transport.



ENCOURAGING ACTIVE TRANSPORTATION

- Dense cities with mixed land-use generate short trips
- Safe, convenient cycling including bike parking
- Connected, direct, and pleasant sidewalks and paths
- Traffic systems and designs with pedestrians and cyclists in mind
- Calm residential neighborhoods
- Good transit
- Coordinate transit, cycling, and walking
- Laws and enforcement to protect peds + bikes > cars
- Education programs
- Equitable cost of transportation by mode
- Start young; encourage walk-to-school and “free-range kids”

MULTI-MODAL PERSON: WANTS TRANSPORTATION AVAILABLE ANYWHERE, ANYTIME, FOR LESS MONEY



AND EVERY CITY, IT SEEMS, WANTS A TECH HUB



metrorevolution.org

AND EVERY CITY, IT SEEMS, WANTS A TECH HUB



metrorevolution.org

WHAT DOES IT ALL MEAN?

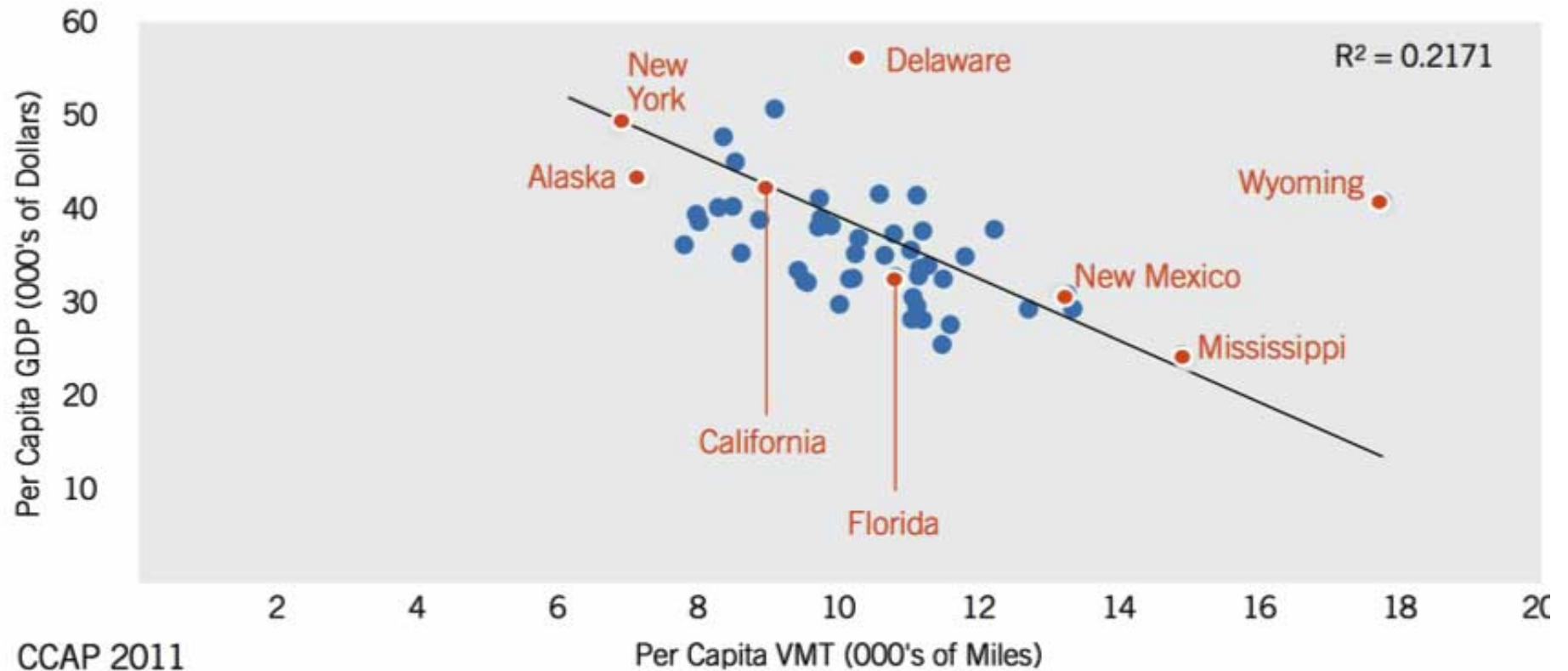
With 20% Fewer VMT in the USA Annually:

- 6000 fewer road deaths, 690,000 fewer injuries
- 94 gallons of gas per capita not consumed, 30 million gallons of gas not consumed total
- 1429 tons CO2 per capita not released, 22.8 million tons CO2 total not released
- Z healthier citizens, X fewer cars bought
- \$1.43 saved/vehicle mile shifted to active transportation; median urban trip = 3 miles, \$5 saved per trip
- Cities grow in population
- Livable cities become magnets where GDP soars

Sources: "Evaluating Active Transport Benefits and Costs," Victoria Transport Policy Institute, 24 April 2014; "Individual Emissions Calculator Methodology," Travel Matters; "Fatality Analysis Reporting System Encyclopedia," National Highway Traffic Safety Administration.

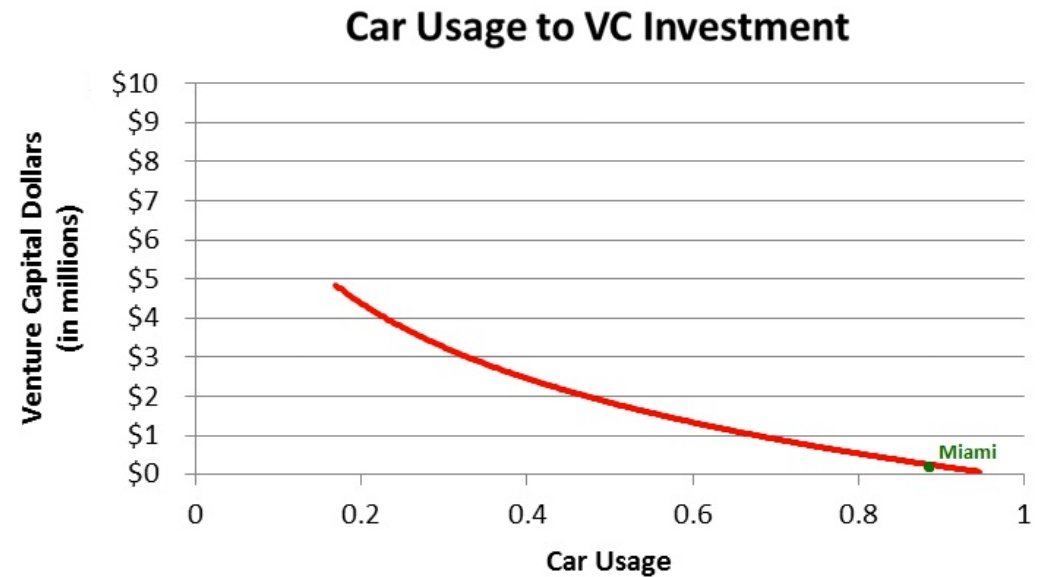
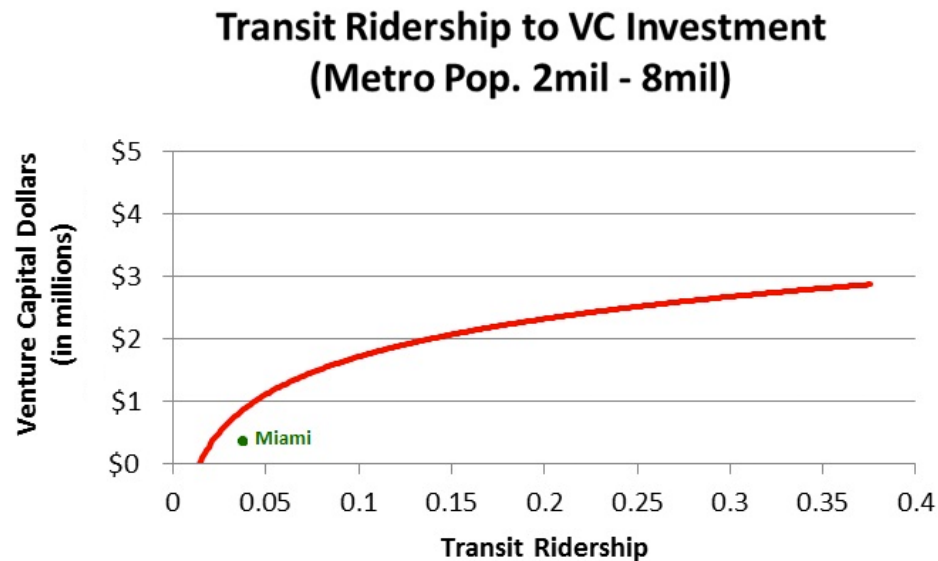
GDP INVERSELY RELATED TO VMT

Per Capita GDP and VMT for US States (2008)



Source: "Smart growth and better transit can grow wealth," Houston Tomorrow, 24 January 2011.

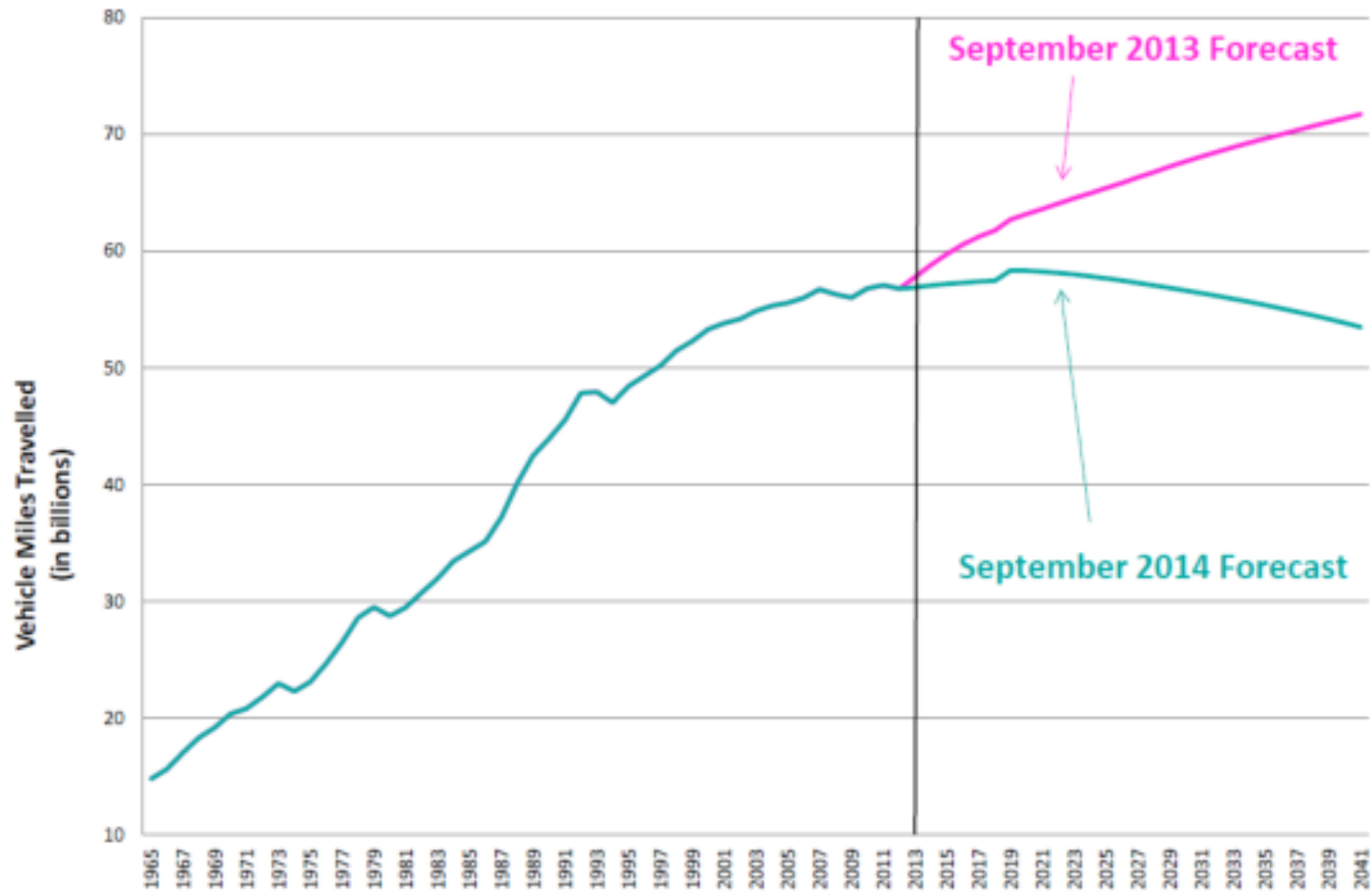
VENTURE CAPITAL INVESTMENT POSITIVELY CORRELATES WITH TRANSIT RIDERSHIP



Source: "Transit in the Start-Up City, Part 2," Transit Miami, 10 September 2013.

THE PARADIGM IS CHANGING

Washington State DOT Revises VMT Forecast

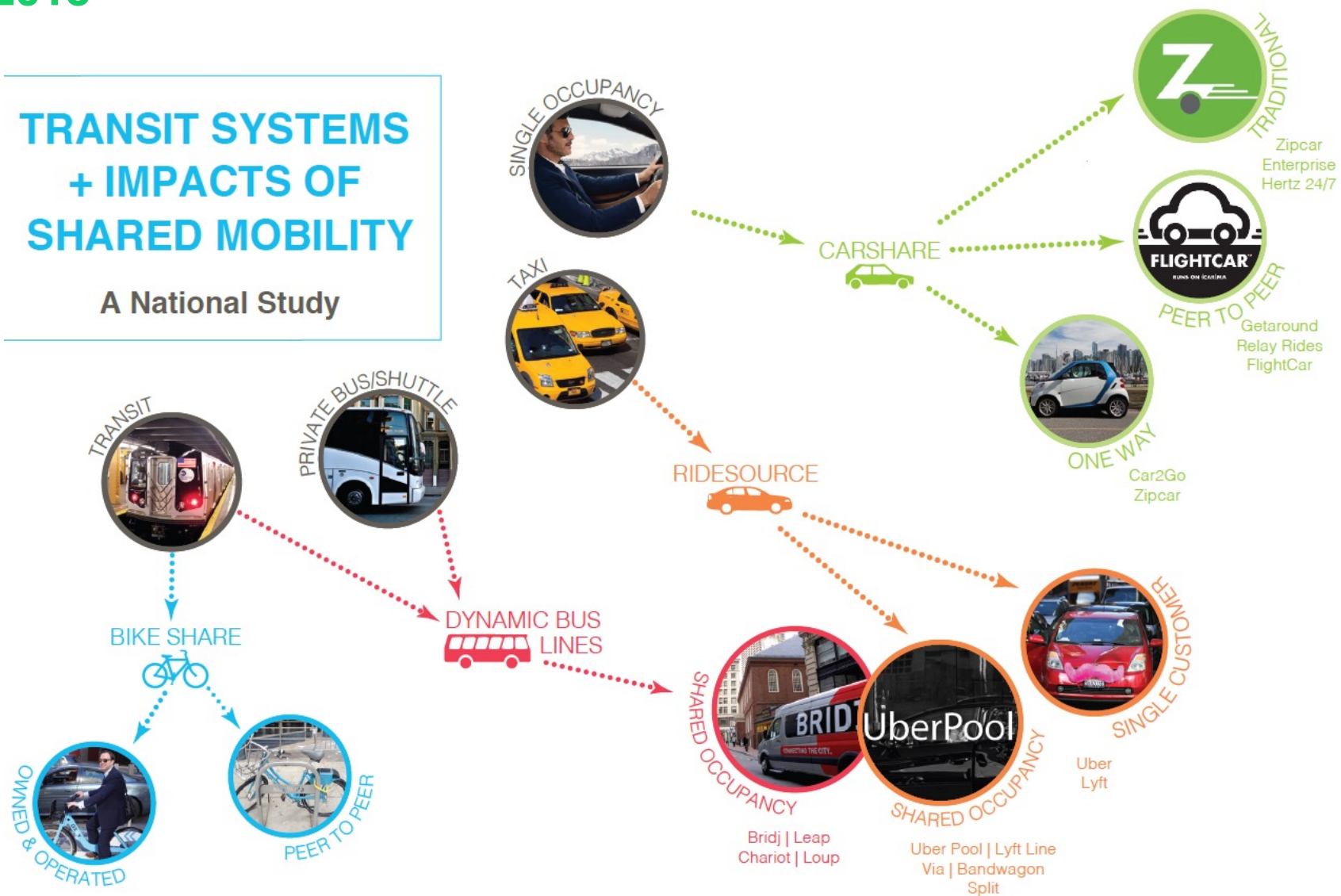


Source: "New forecast projects reduced VMT in Washington," State Smart Transportation Initiative, 3 November, 2014.

2015

TRANSIT SYSTEMS + IMPACTS OF SHARED MOBILITY

A National Study



Sam
Schwartz
Engineering
D.P.C.

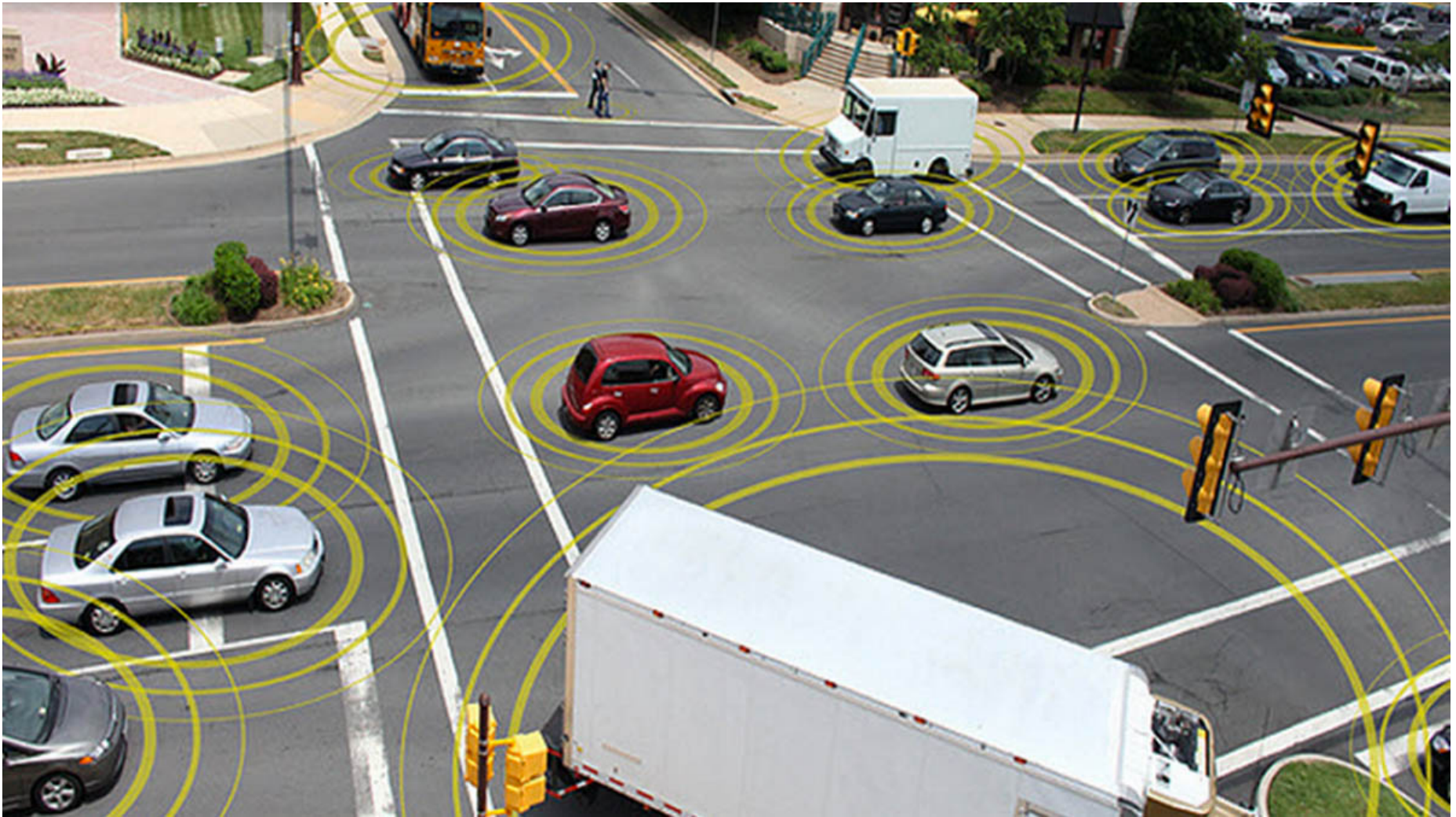
TransitCenter

SHARED-USE
MOBILITY CENTER

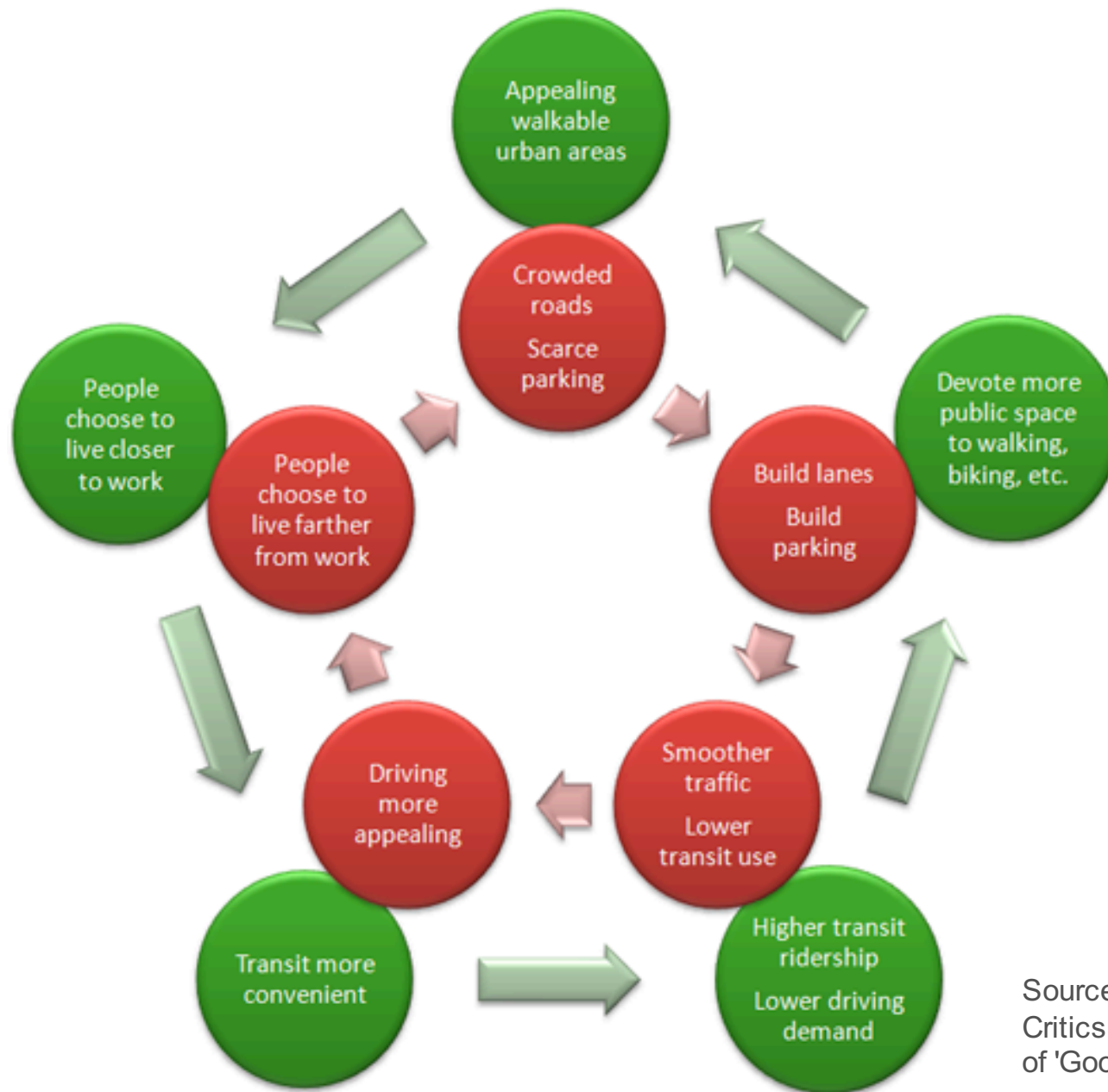
Joe Iacobucci
jiacobucci@samschwartz.com

Sam Schwartz Consulting, LLC

THE NEXT FRONTIER-AUTONOMOUS VEHICLES



CONCLUSION: PLANNERS AND ENGINEERS HAVE A CHOICE



Source: David Alpern, "Hey, Streetcar Critics: Stop Making 'Perfect' the Enemy of 'Good,'" City Lab, 1 October, 2014



New York + Jersey City + Chicago + Washington D.C. + Tampa + Los Angeles