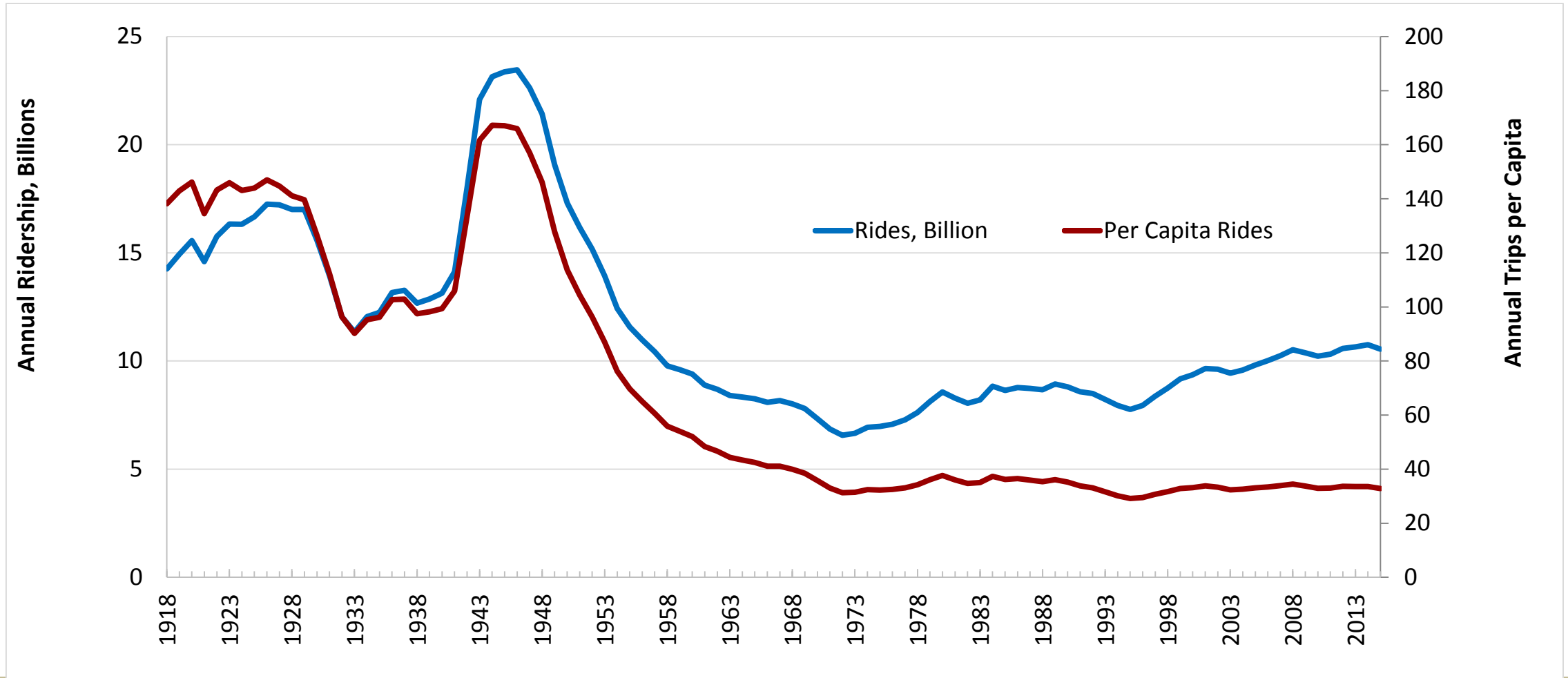




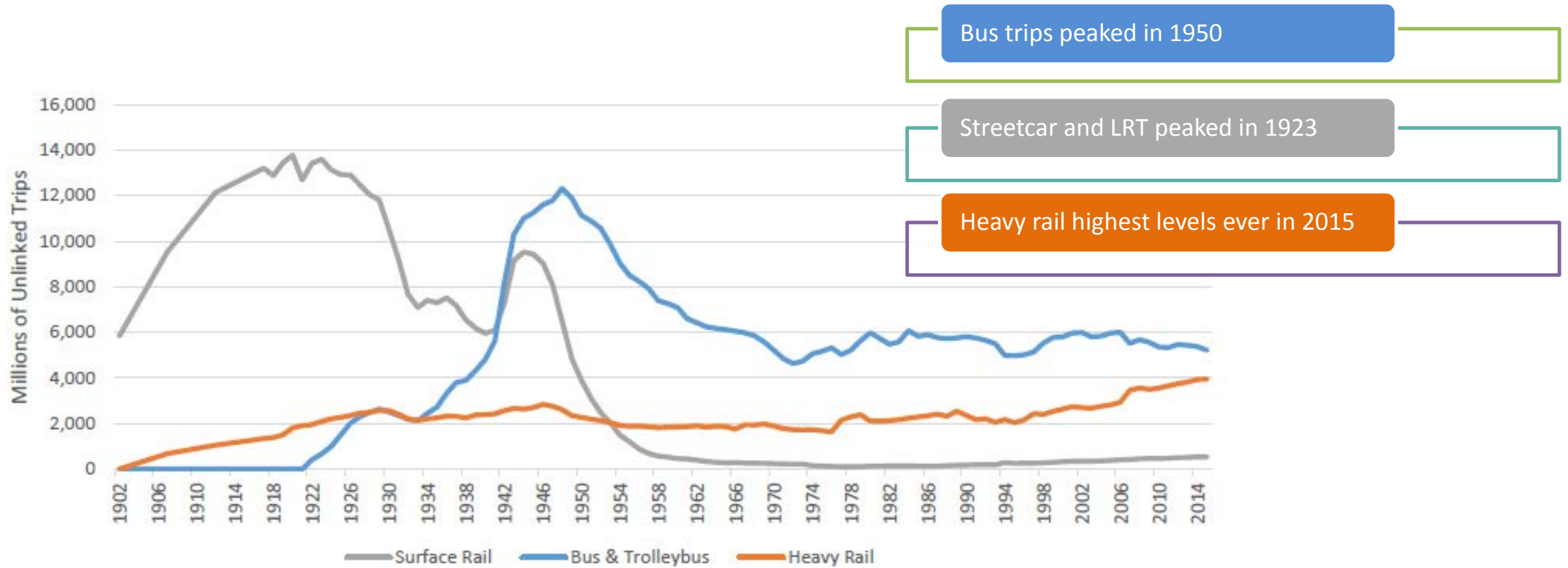
Transit Best Practices and Strategies for the Short, Mid, and Long Terms

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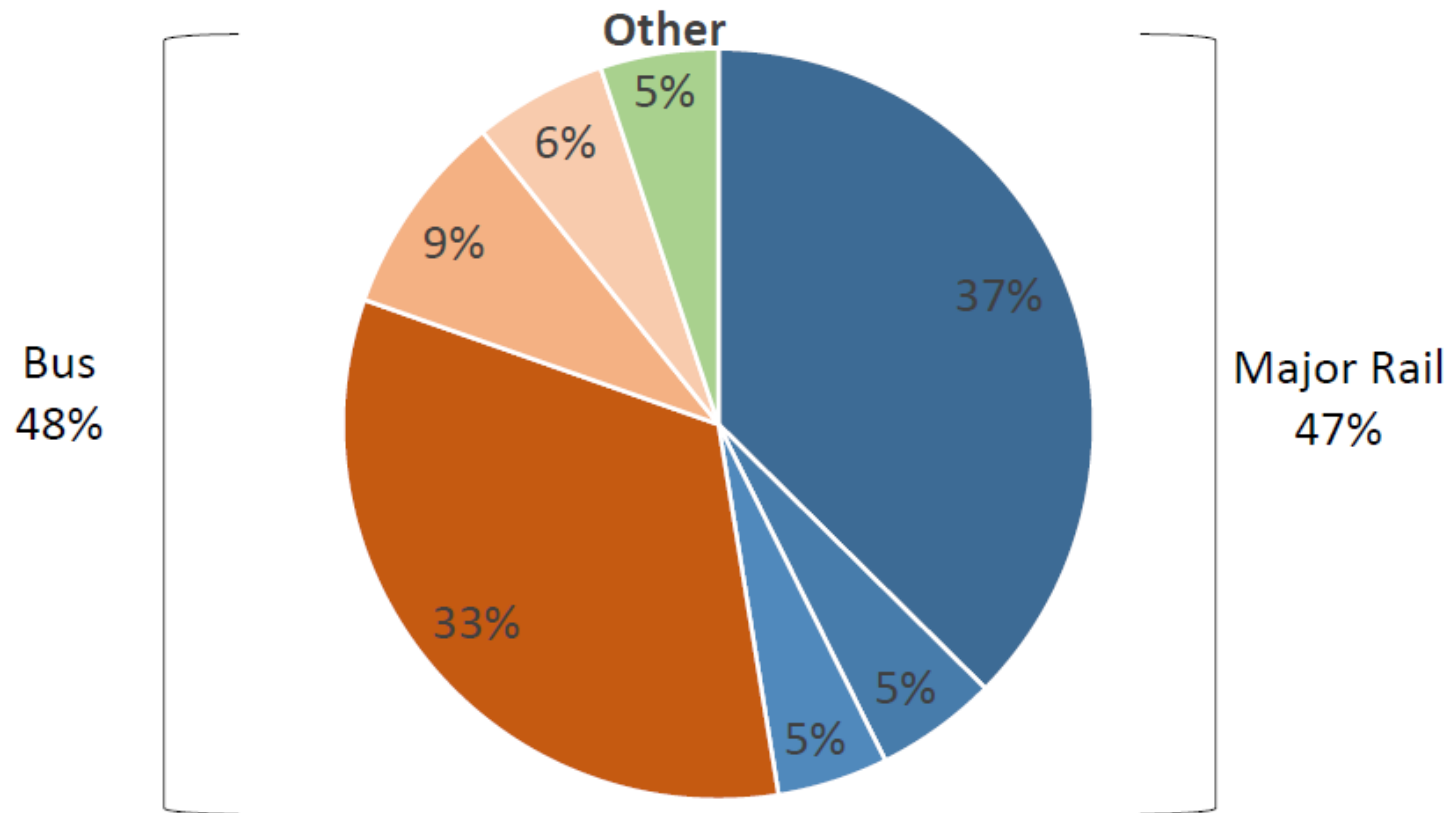
U.S. Transit Ridership and Ridership/Capita Trends



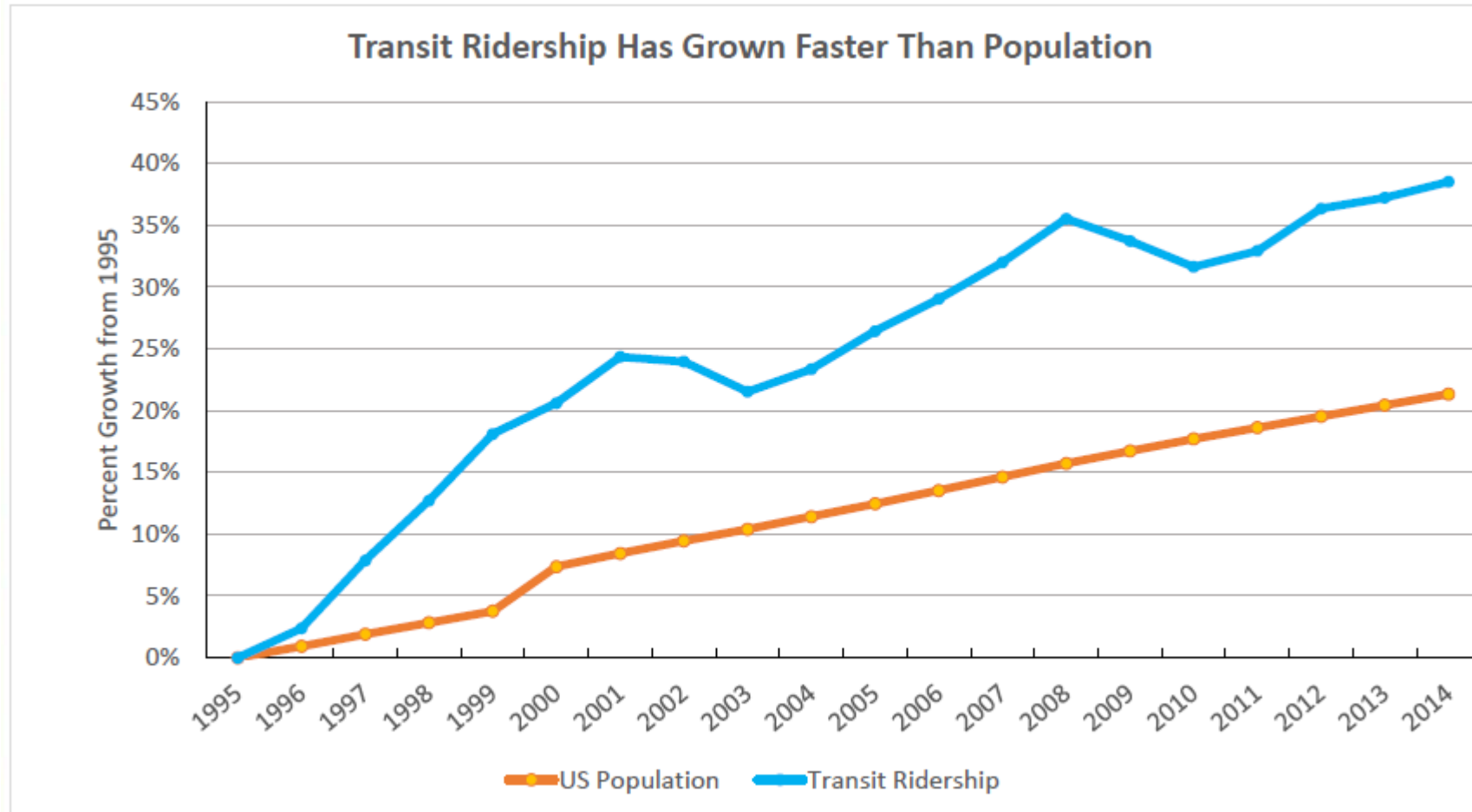
Ridership in Three Modes: 1902 - Present



Modal Breakdown



20-Year Ridership Trends have been Encouraging



Until Recently - Ridership Dipped in 2015 and 2016

2015 Calendar year

First Quarter: - 0.66%

Second Quarter: - 1.24%

Third Quarter: - 1.69%

Fourth Quarter: - 1.64%

2016 Calendar year

First Quarter: + 0.35% (leap year day)

Second Quarter: - 2.39%

Third Quarter: - 2.85%

Current National Trends

Indicator	2015 versus 2014	2016 YTD	Source
U.S. Population	+0.8%		Census
Total Employment	+1.7%		BLS
Real GDP	+2.4%		BEA (third estimate)
Gas Price	-28%		EIA
VMT	+3.5%	+3.0% thru Nov	FHWA
Public Transit Ridership	-1.3% to -2.5%	-1.96% thru Oct (NTD/BTS)	APTA and NTD
Amtrak Ridership (FY)	-0.1%		Amtrak
Airline Passengers	+5.0%		USDOT, BTS

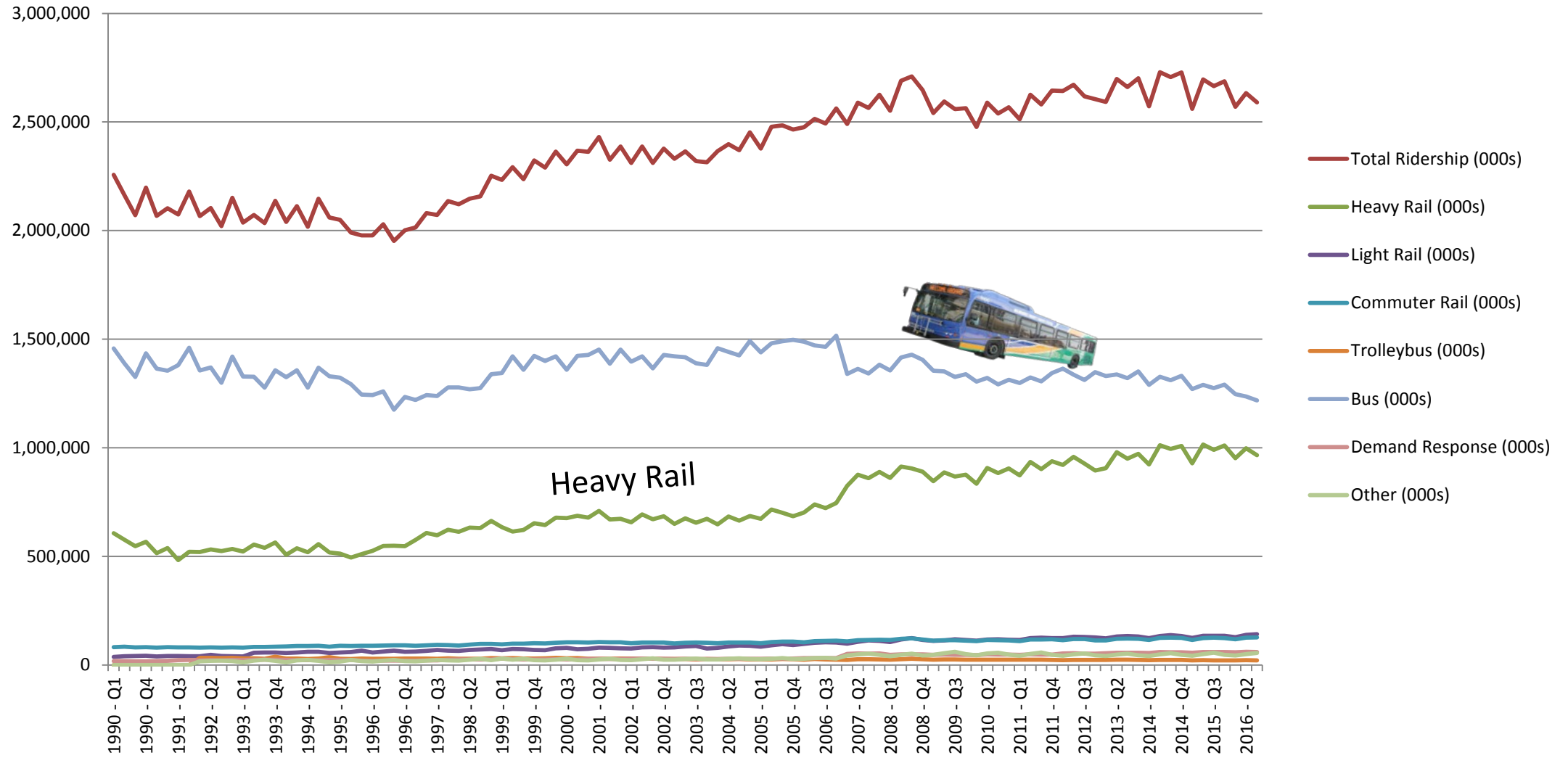
Consistently growing transit ridership is tough

Two-year Modal Snapshot (9 mo. 2014 vs. 2016)

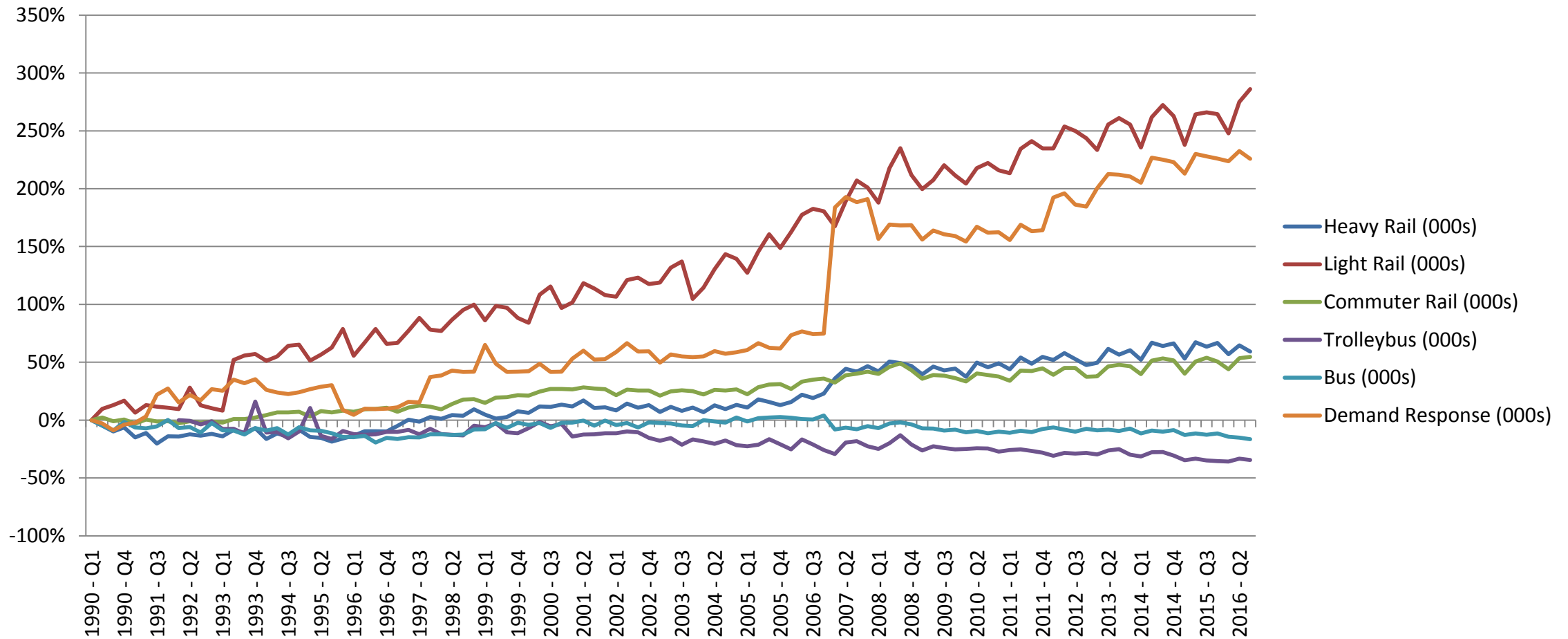
Heavy Rail	-0%
Light Rail	+1.7%
Commuter Rail	+1.9%
Trolleybus	-1.2%
Bus Population Group:	
2,000,000+	-5.9%
500,000 -1,999,999	-9.0%
100,000 – 499,999	-8.8%
Below 100,000	-4.8%
Bus Total	-6.7%
Demand Response	+1.1%
Other	+2.0%

United States Total	-3.0%
Canada Total	-4.9%

Quarterly National Ridership by Mode (000)

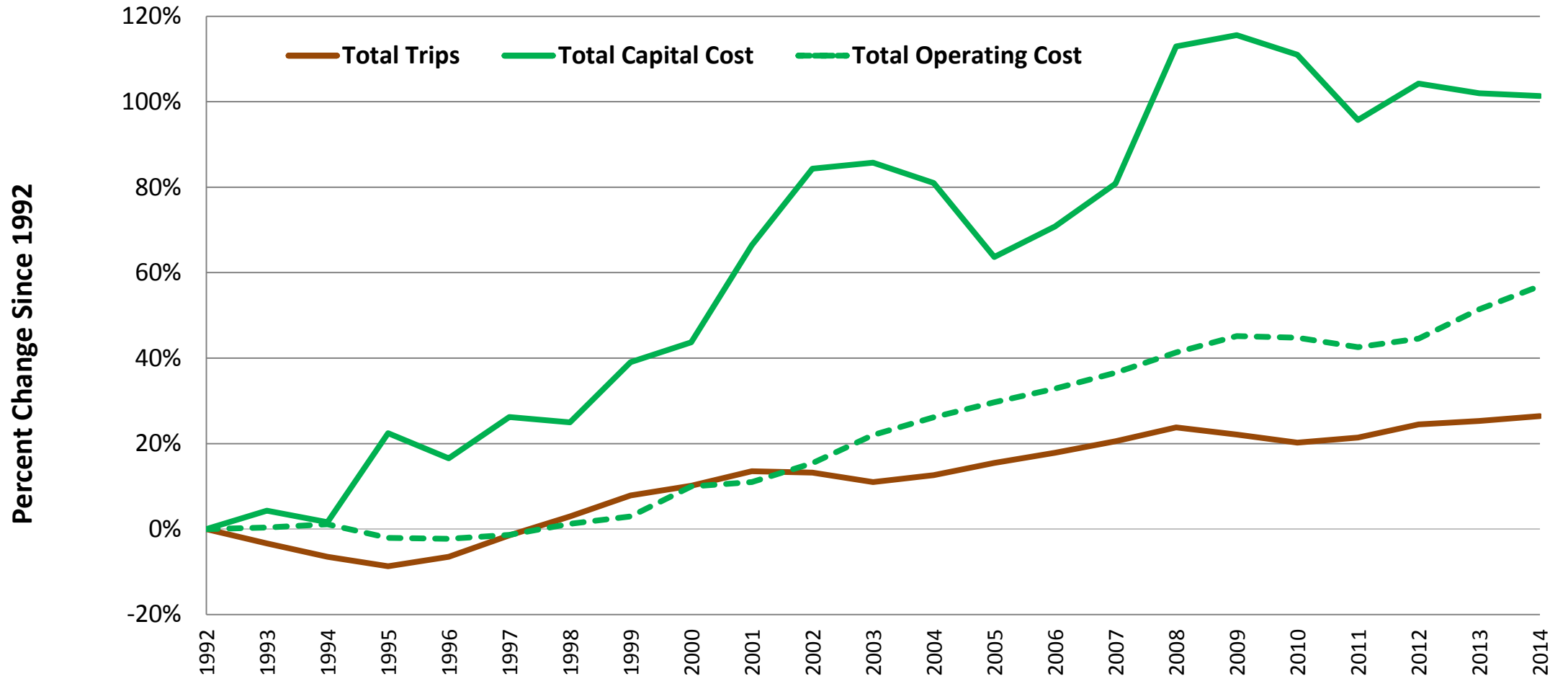


Percent Change in Quarterly National Ridership Since 1990 by Mode



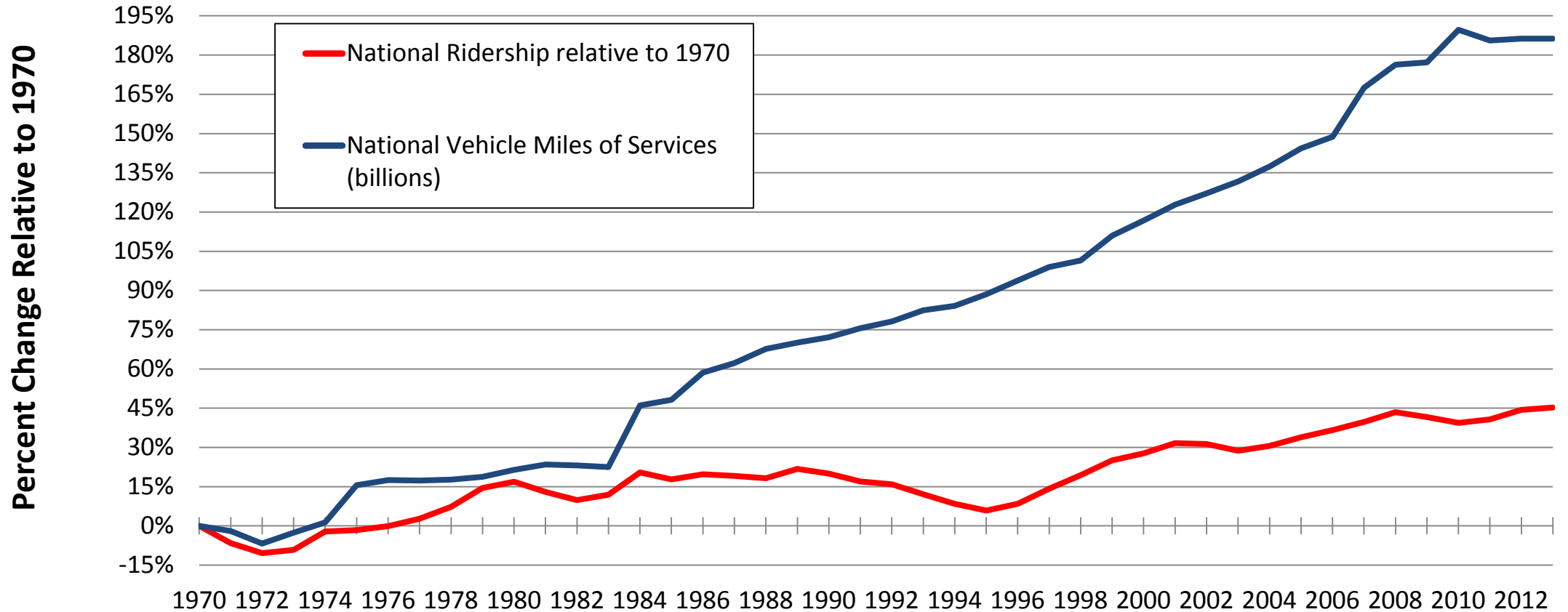
Changes Since 1992

➤ Spending far outpaces Vehicle Miles and Trips



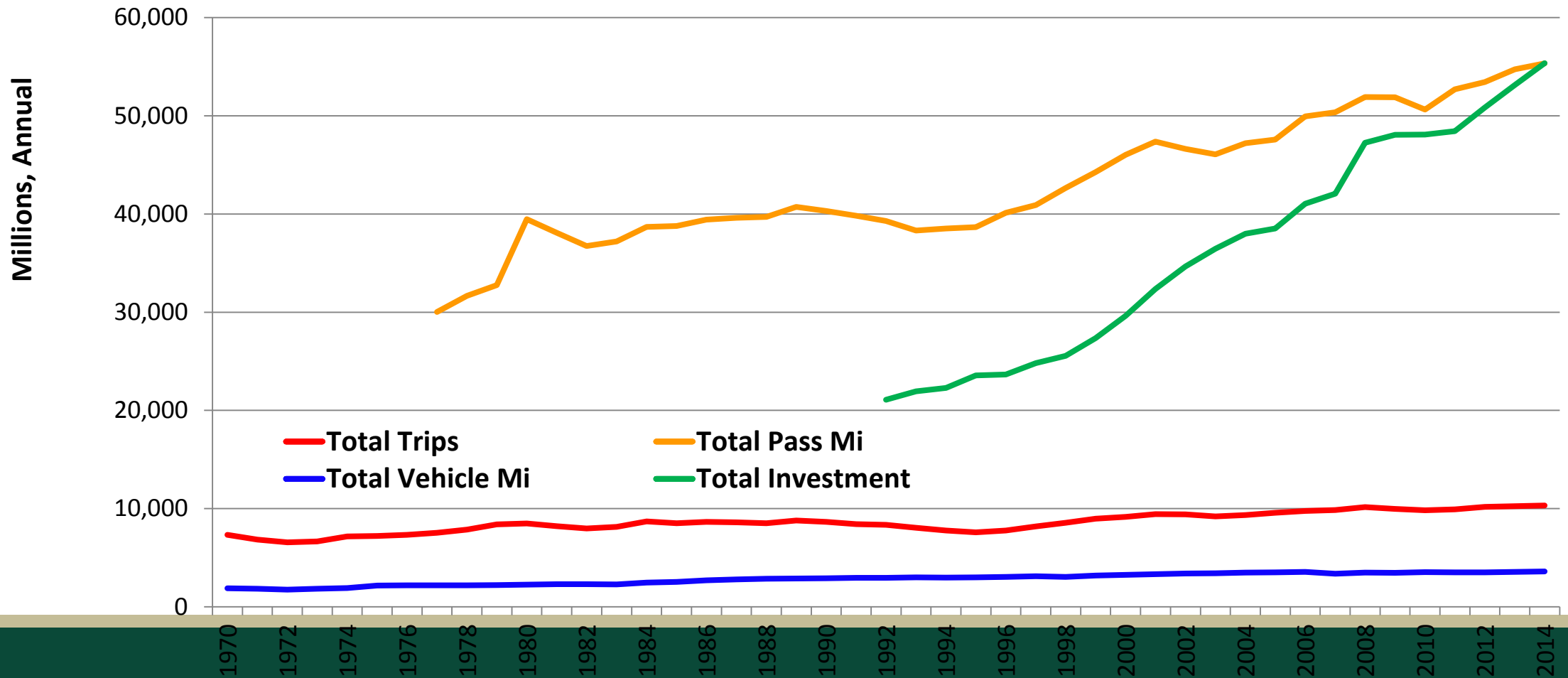
*Inflation adjustment performed using Bureau of Labor Statistics inflation calculator using CPI

Percent Change in Transit Ridership and Vehicle Miles of Service Relative to 1970

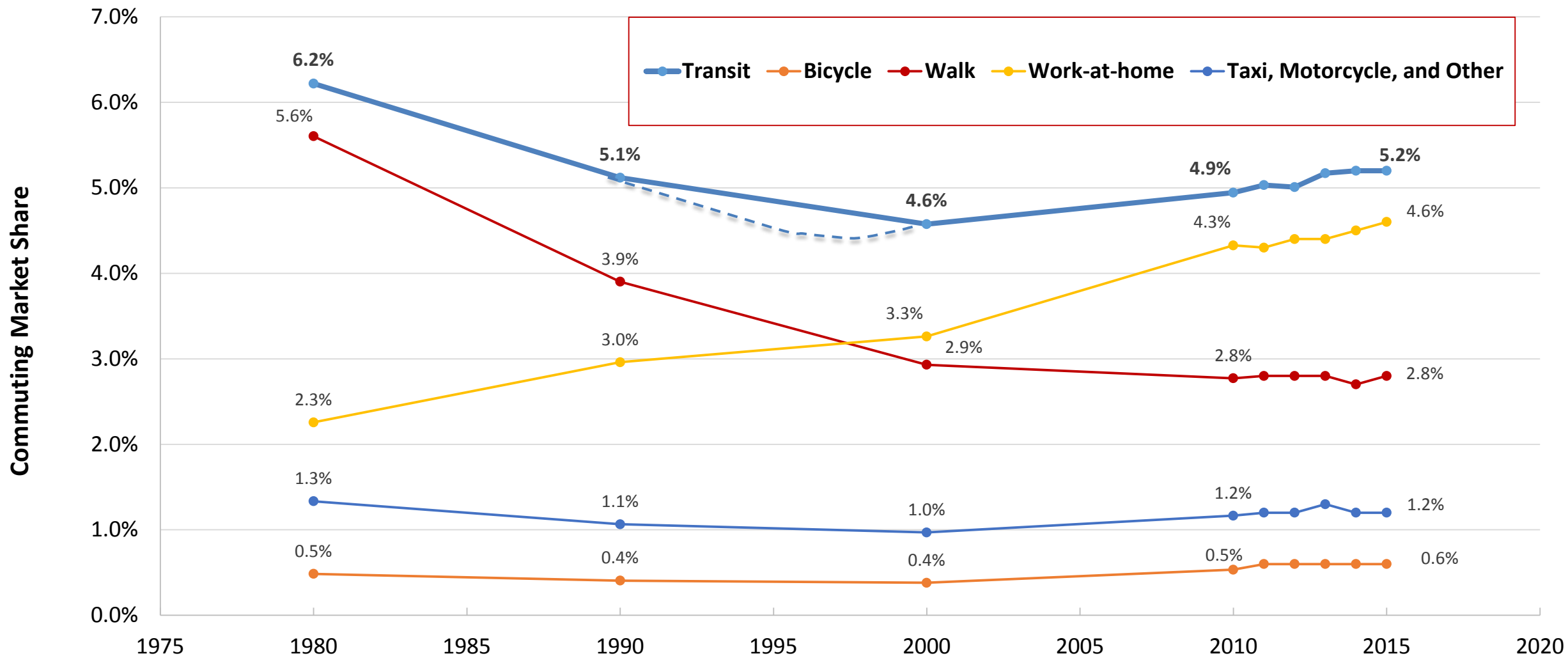


Trends in Service Supply, Use and Investment

➤ Passenger Miles and Total Investment outpace Trips and Vehicle Miles.



U.S. Non-POV Commute Market Shares



Why has Ridership Decreased? A Mix of Factors.....

Changes in the mobility ecosystem – TNCs, car sharing, bike systems

Sustained low gasoline prices

Lingering impacts of the recession (service cuts/fares)

VMT up steadily since 2014, following seven years of flat or negative trends (VMT up 2.45% in Q3).

Automobile purchases up/attitudes/cheap loans

Sprawling regions / non-competitive bus travel times

Work-at-home trends or Telecommuting

Drops in college enrollments / online courses

Service quality issues in certain regions

TOD success stories / The trip not taken

Baby Boomer retirements resulting in fewer commute trips

People are Moving from Higher to Lower Transit Areas

Top 10 Largest-Gaining Counties (Numeric Change): July 1, 2015 to July 1, 2016

County	Population	Numeric Change	Percent Change	Transit Commute Share 2015
Maricopa County, Arizona	4,242,997	81,360	1.95	2.3%
Harris County, Texas	4,589,928	56,587	1.25	2.8%
Clark County, Nevada	2,155,664	46,375	2.2	4.2%
King County, Washington	2,149,970	35,714	1.69	12.6%
Tarrant County, Texas	2,016,872	35,462	1.79	0.6%
Riverside County, California	2,387,741	34,849	1.48	1.4%
Bexar County, Texas	1,928,680	33,198	1.75	2.6%
Orange County, Florida	1,314,367	29,503	2.3	3.2%
Dallas County, Texas	2,574,984	29,209	1.15	2.9%
Hillsborough County, Florida	1,376,238	29,161	2.16	1.7%
Average				3.4%

Largest-Declining Counties or County Equivalents (Numeric Change): July 1, 2015 to July 1, 2016

County	Population	Numeric Change	Percent Change	Transit Commute Share 2015
Cook County, Illinois	5,203,499	-21,324	-0.41	18.8%
Wayne County, Michigan	1,749,366	-7,696	-0.44	2.5%
Baltimore city, Maryland	614,664	-6,738	-1.08	19.6%
Cuyahoga County, Ohio	1,249,352	-5,673	-0.45	5.1%
Suffolk County, New York	1,492,583	-5,320	-0.36	6.8%
Milwaukee County, Wisconsin	951,448	-4,866	-0.51	6.2%
Allegheny County, Pennsylvania	1,225,365	-3,933	-0.32	9.1%
San Juan County, New Mexico	115,079	-3,622	-3.05	0.3%
St. Louis City, Missouri	311,404	-3,471	-1.1	9.7%
Jefferson County, New York	114,006	-3,254	-2.78	0.0%
Average				7.8%

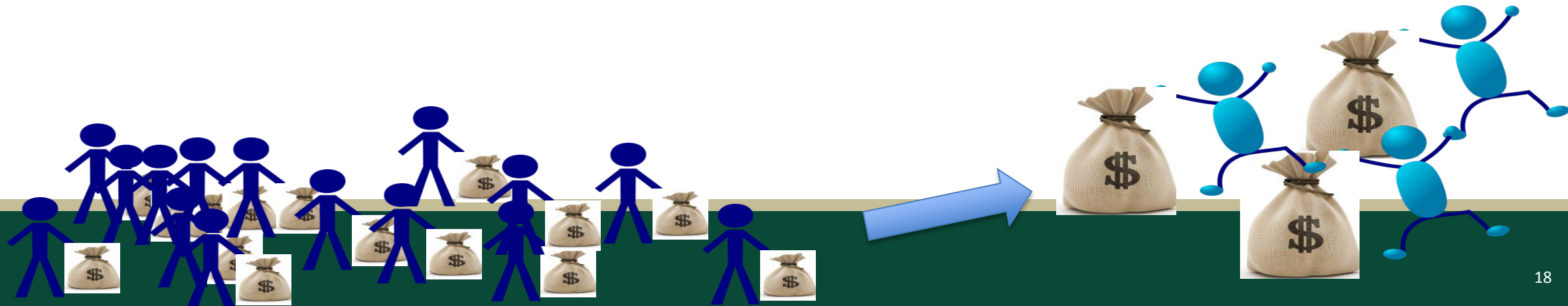
So What Does This All Mean?

Are we growing into systems such that they are getting more productive over time?

- ✓ System utilization has remained relatively constant.
- ✓ Densification, increased mode split or self selection of transit travelers to transit areas (locally or regionally) have not resulted in proven system ridership growth and/or we are expanding supply such that average utilization remains constant.

Financial Support for Transit is Good

- The public is generally supportive of the social value of transit as a mobility safety net and understands some of the other indirect benefits.
- They tolerate spending a modest amount per household even if they aren't direct beneficiaries.
- If transit use grows the cost per non-rider household may become less tolerable unless riders pay a far higher share of costs.



What does the future hold?

We have never been in a time of greater uncertainty

- Effects of AV on transit use?
- Will fuel prices remain affordable?
- Will we continue to develop outward instead of focusing on redevelopment?
- Will legacy systems be financially sustainable/will there be continued support for financing transit?
- Will there be more income equality?

What does the future hold?

- Will TNCs complement or compete with transit?
- Will telecommuting become even more widespread?
- Will there be impactful societal or demographic changes?
- Will new technologies providing new ways of being transported be developed?
- Will climate change and water shortages become more evident and critical?
- Will immigration to the U.S. and birth rates continue similar to the past?

Some Best Guesses

- AV technology will make transit a bit safer and hopefully reduce paratransit, but will probably reduce transit's appeal if cars have AV – we might tax empty cars to discourage unnecessary VMT
- On the other hand, Buses with AV would reduce transit costs and allow more/better service to be provided
- Transit agencies will probably move more toward electric power, helping to reduce operating costs
- We probably will continue to develop outward making transit less competitive in new markets (more suburbanization)
- Legacy systems will face greater challenges of financial sustainability without changes in labor agreements

Some Best Guesses

- TNCs will be both a help short term and a hindrance long term (though federal requirements may limit them)
- Telecommuting will probably grow but not continue to expand at the rate it has
- Major societal changes are hard to predict, but millennials will conform with classical patterns of travel behavior
 - Automation in the workplace will have profound impact on those with skills no longer needed
 - Rising seas will cause more alarm and carbon taxes will come into play
- There could be new systems of transport such as hyperloops, large commuter helicopters, or personal electronic vehicles

Some Strategies and Best Practices for Transit

- More transit systems will focus their resources in areas with the greatest potential for ridership while coming up with new ways to serve areas of low demand
- Take advantage of technologies and data that allow more efficient scheduling, precise analysis of ridership, and the ability to track agency performance in all areas (AI for decision support for bus tracking)
- They will all need to provide real time information and flexible payment methods
- Public-Private Partnerships should be explored when feasible for major capital projects as well as contracting for new or expanded services
- All forms of partnerships should be pursued (universities, schools, businesses, hospitals, military bases, apartment complexes, etc.)

Some Strategies and Best Practices for Transit

- Support TODs, return to the cities, and other infill development
- Paratransit expenses will be better managed and use TNCs
- Use capital funds to build more energy efficient facilities
- Automate subway operations and BRT (Europe and Asia)
- Institute wellness programs and hire the necessary expertise to find the most affordable insurance and deal with FMLA
- Maximize advertising opportunities on all vehicles and facilities and look for opportunities to sell naming rights

As it relates to the Interstate:

- Transit works best when it has more dedicated space to operate
- More opportunities for transit buses to operate on managed lanes
- More opportunities for transit to operate on Interstate shoulders
- Certain cities simply won't function without good transit

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