Metro Winners & Losers:
5 Trends to Watch

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Major Forces At Work

- Demographics: Millennials Come of Age
- Technology: Maintenance & Moving Ahead
- New Partnerships
- Increased Pressures: Affordability
- Leadership

1. Shifting Demographics: Millennials Come of Age

Major Generations

MILLENNIALS
Age 18 to 34
(also known as Generation Y)

- most diverse generation and most likely to live in cities
- most likely to move in the next five years.

BABY BOOMERS
Age 51to 69

- most likely to live in the suburbs
- more likely to move to smaller homes than larger ones in the next 5 years, some moving in

GENERATION XERS
Age 35 to 50

- predominantly owners of single-family homes
- the least likely to desire urban amenities
- many are expecting to move to larger quarters within 5 years

WAR BABIES/
SILENT GENERATION
Age 70 – 87 / 88+

- most likely to already live in rural areas and small towns
- If they move, it will be to a more convenient and accessible area.

Millennials Rising!

Boomers

- Born Between 1946 and 1964
- 51 to 69
- 74.9 Million today
- 25% Expect Never to Retire

Millennials

- Born Between 1981 and 1997
- 18-34 in 2015
- **75.4 Million today**
- 10% Expect Never to Retire

2015 Data, U.S. Census and Pew Research

One in every 3 workers now a millennial

- Most diverse generation
- Better educated
- What do they WANT?
  - Experience
  - Lifestyle
  - Affordability
- Moving to where the jobs are:
  - METROS

Companies Following Labor Force

- Amazon
- Facebook
- Google
- Marriott
- Alphabet

Offices Move

Companies Seek

- Accommodating New Work Force
- **Amenity Rich Locations**
- Access/Connectivity
- **Result:** ***New neighborhoods***
- ***Shuffling the A List***

Trend One: Millennial Metros Win

On the GO>10% 5 yr. growth

- Austin
- Atlanta
- Charlotte
- Dallas/Fort Worth
- Denver
- New Orleans
- Orlando
- Raleigh/Durham
- San Francisco
- Seattle
- Washington DC

A Slow Go <5% growth

- Albuquerque
- Baltimore
- Cleveland
- Madison
- Miami
- Philadelphia
- Pittsburgh
- Tallahassee
- Tucson

River Walk – Oklahoma City

"Economic development is really the result of creating a city where people want to be."

Mick Cornett, Mayor, Oklahoma City

Questions to Consider

- Where does your community stack up with Millennial growth and RETENTION?
- Where are they living? Working? In school?
- Can you improve and accommodate life style choices?
- How is mobility and access improving? Both Millennials and Boomers?
- Is it FUN?

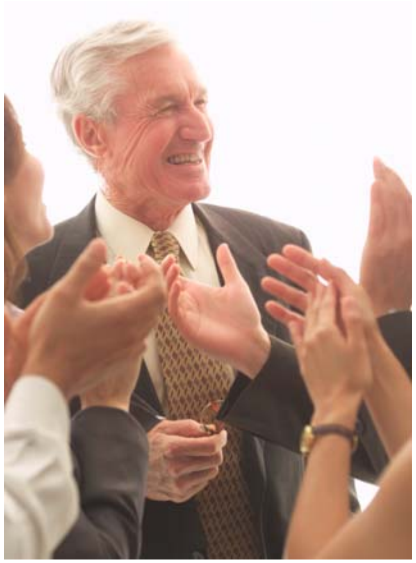
2. It’s getting harder, more complicated…..

Keeping Up as well as Keeping Ahead

How It's Changed

THEN…..

- Car ownership a "right of passage"



TODAY

- Look at cars more as "a hassle"
- Assume car technology
  - Everything a smart phone can do: blue tooth, GPS, music, phone, sync with other devices
  - Take for granted advanced information and entertainment
  - Safety features
- Full integration to the city, apps
- Ford Motor: *mobility*

Improving Management & Cooperation

- Multi-jurisdictional funding
- Improved signalization
- More integrated transit
- Reverse lanes in rush times
- Toll lanes
- Car pooling

Infrastructure in the United States Shows Slow Improvement

American Society of Civil Engineers 2013 Infrastructure Report Card

Infrastructure Sector	Grade	Trend*	
Aviation	D	–	
Bridges	C+	↑	
Dams	D	–	
Drinking Water	D	↑	A = Exceptional
Energy	D+	–	B = Good
Hazardous Waste	D	–	C = Mediocre
Inland Waterways	D-	–	D = Poor
Levees	D-	–	F = Failing
Ports	C	N/A**	
Public Parks and Recreation	C-	–	
Rail	C+	↑	
Roads	D	↑	
Schools	D	–	
Solid Waste	B-	↑	
Transit	D	–	
Wastewater	D	↑	

Source: American Society of Civil Engineers, 2013.
*Compared to 2009 Infrastructure Report Card.
**New category in 2013.

A new take on cars?

- Millennials bought more cars in CA than Baby Boomers in 2016 for the first time
- Millennials were 28% of new car market in 2016, only 17% of market in 2010
- Getting married, moving to affordable suburbs

Source: J.D. Powers

Expanding and Integrating Infrastructure

- Using one gigabit service:
- Wilson, NC provided one gig service, attracting a movie special effects studio
- Morristown TN attracts a contract furniture manufacturer adding 225 jobs because of one gig and reliable utilities
- Expanding the role of infrastructure

Integrating Future Thinking

Science and technology

The Economist February 18th 2017 65

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The future of home delivery

Heel!

SEATTLE

Pedestrians will soon have to get used to sharing the pavements with parcel-carrying robots

WHO would be a delivery driver? As if a brutal schedule, grumpy motorists, lurking traffic wardens and the risk of an aching back were not bad enough, they now face the fear of robots taking their jobs. Though the buzzing, parcel-carrying aerial drones planned by the likes of Amazon and Google get most of the press, a more serious threat may come from a new breed of 'droids that are about to take to the world's pavements.

The latest, called Gita, was unveiled earlier this month by Piaggio Fast Forward, a subsidiary of Piaggio, an Italian firm that is best known for making Vespa motor scooters. Gita's luggage compartment is a squat, drumlike cylinder that has been turned on its side. This, as the picture above shows, is fitted with two wheels of slightly larger diameter than the drum. These let the whole thing roll smoothly along, keeping the luggage compartment upright, at up to 35kph (22mph). Normally, though, Gita does not travel anything like that fast. Instead, it follows at walking pace a metre or two behind its human owner—or, more accurately, an electronic belt that the owner wears. A wireless connection to a stereoscopic camera on this belt lets it map its surroundings, better enabling it to trail its owner around street corners or through doors.

Gita can carry up to 18kg of cargo for about eight hours between charges. That makes it ideal for ferrying the shopping of those who still prefer to visit stores in person, rather than ordering goods online. Eventually, though, it will serve the online market too, using its own cameras, maps and ultrasonic sensors to carry out deliveries by itself.

Streetwalkers

Piaggio is now putting a dozen or so Gitas to work in pilot projects around America, doing things like carrying tools for workers, guiding people through airports and assisting with deliveries. And it is not alone. Starship Technologies, an Estonian company started by Ahti Heinla and Janus Friis, two of the founders of Skype, has similar ambitions. Starship's as-yet unnamed suitcase-sized robot has six small wheels, travels at 6kph and holds 10kg of cargo. Rather than doggedly following a human being, it navigates itself around using cameras and ultrasonic sensors—though a remote operator can take control of it to supervise tricky manoeuvres such as crossing roads.

Starship already has dozens of these robots trundling around delivering packages, groceries and takeaway food to customers in several European cities, and also in Washington, DC, and parts of Silicon Valley. When the kinks have been ironed out, it hopes to offer such deliveries commercially for about $1 a pop. The firm says that its robots have covered tens of thousands of kilometres and met millions of people so far, with no accidents. And although each robot currently requires its own human overseer, the plan is that, ultimately, a single person will be able to herd a flock of up to 100 of them online.

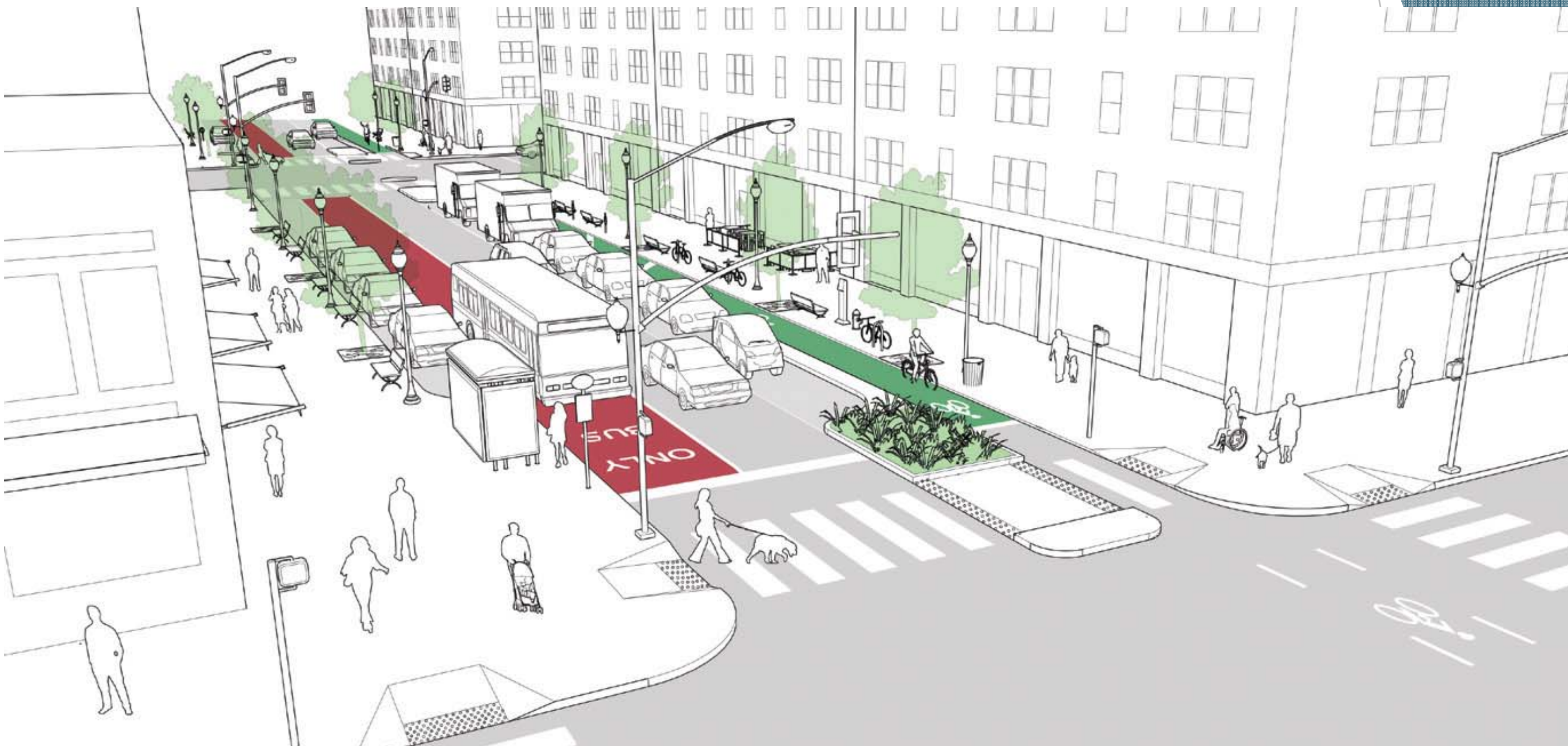
One problem faced by the designers of 'bots such as these is that unlike roads, which have well-established rules, lane markings and traffic signals to guide autonomous vehicles using them, the pavements running alongside those roads are what roboticists refer to as "unstructured environments". People can walk, jog or roller-skate wherever they please on them, and there is an ever-shifting array of dogs, prams, signs and rubbish to avoid, as well.

The key to robotic navigation is to understand the way people use the space the robot is in, says Matt Delaney, an engineer who has worked on autonomous cars and lunar rovers, and is now starting his own robotic-delivery firm, Marble, in San Francisco. "The pedestrian environment is very cultural," he says. "If you monitor people over many long repetitions in testing, a robot can learn the best routes."

Marble will not yet say exactly how its robots adapt themselves from the fast-paced streets of Manhattan to the laid-back hills of San Francisco—possibly because the Bay Area's pavements are filling rapidly with aspiring rivals. Dispatch, also in San Francisco, is testing tricycle "Carry" robots, which look a bit like beer-cooling picnic boxes on wheels, on two Californian university campuses. And, down the road in Palo Alto, another newly started firm, Robby, is also working on a delivery 'bot.

Irritating though they may eventually become to some, however, lightweight, ▸▸

- Drones
- Delivery?
- Bots
- Driverless cars
- Transit real time info



What should be included in new design thinking?

Trend Two: Use more technology to help Maintain and Move Ahead

- Where should we put and get the money?
  - Cars/roads/transit?
  - Communications technology?
  - Integration of systems? Devices? Apps?
  - Improved management and cooperation?
    - Speed cameras, smart meters?

3. Getting it Done: Creating New Infrastructure Partnerships

- Downtown Chattanooga creates a 140 acre Innovation District with one gig service
- Joins with a private developer to renovate 6 buildings for start-up companies and micro-apartments

Creative partnerships with developers: Turning Liabilities to Assets

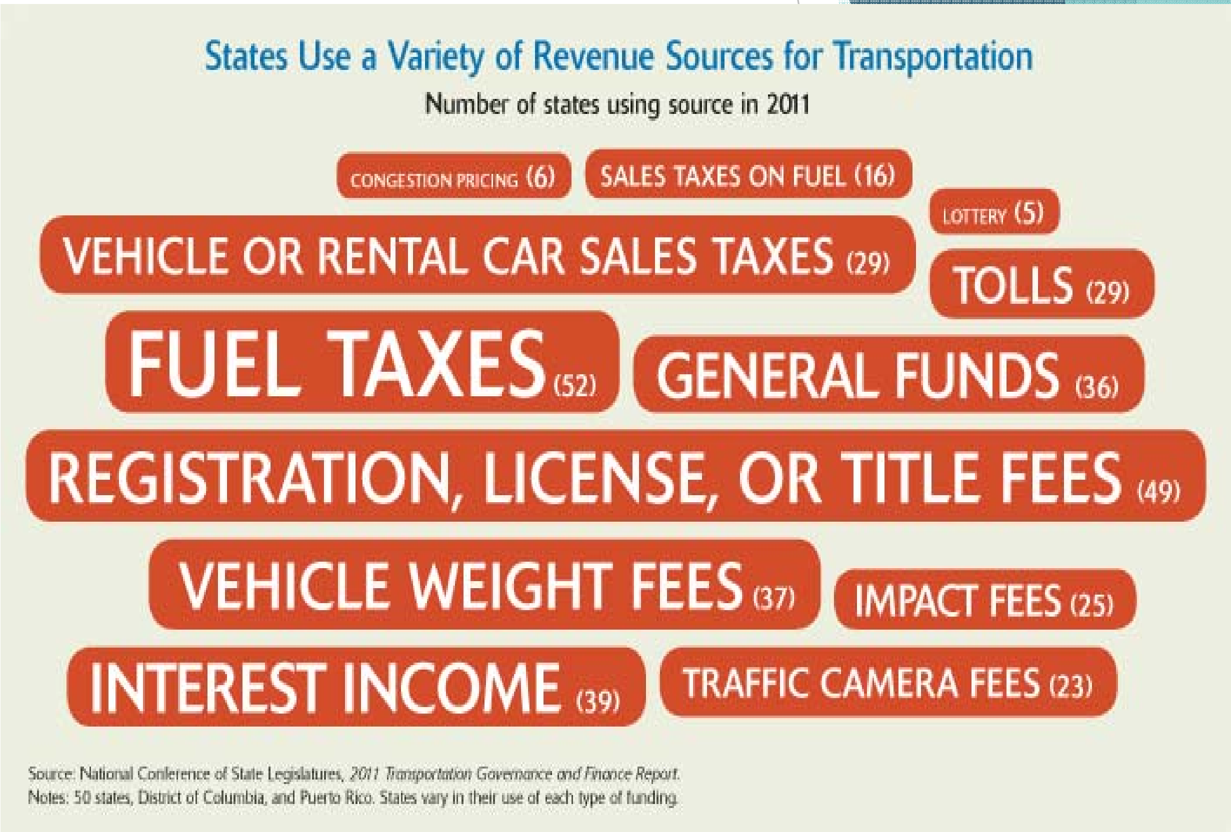
Turning old Metro cars into retail kiosks in Washington DC

Multi-jurisdictional decision-making moves ahead

- Only 60% of 18 yr. olds have driver's license, compared to 80% in the '80's
- Prefer transit, bikes, walking, parents/friends driving

Trend Three: New Partnerships

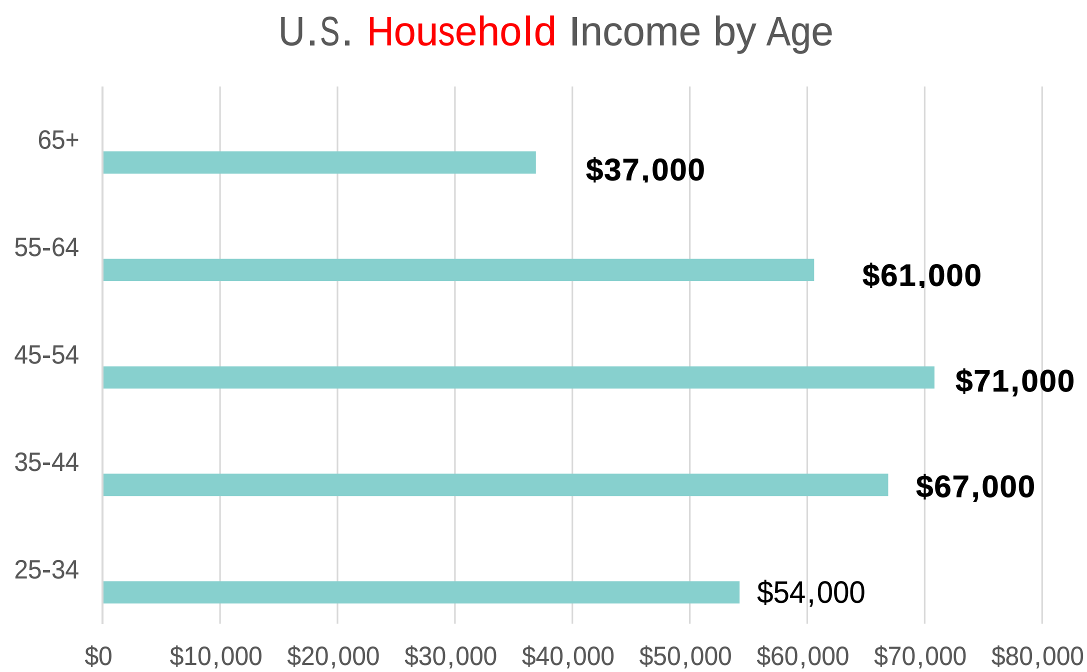
- Public Private Financings
- Get Developers to Buy IN
- Don’t Give up on Tax Increases
- Finding Dedicated Funding Sources
- Don’t WAIT



4. Income Disparity and Affordability Impact Infrastructure

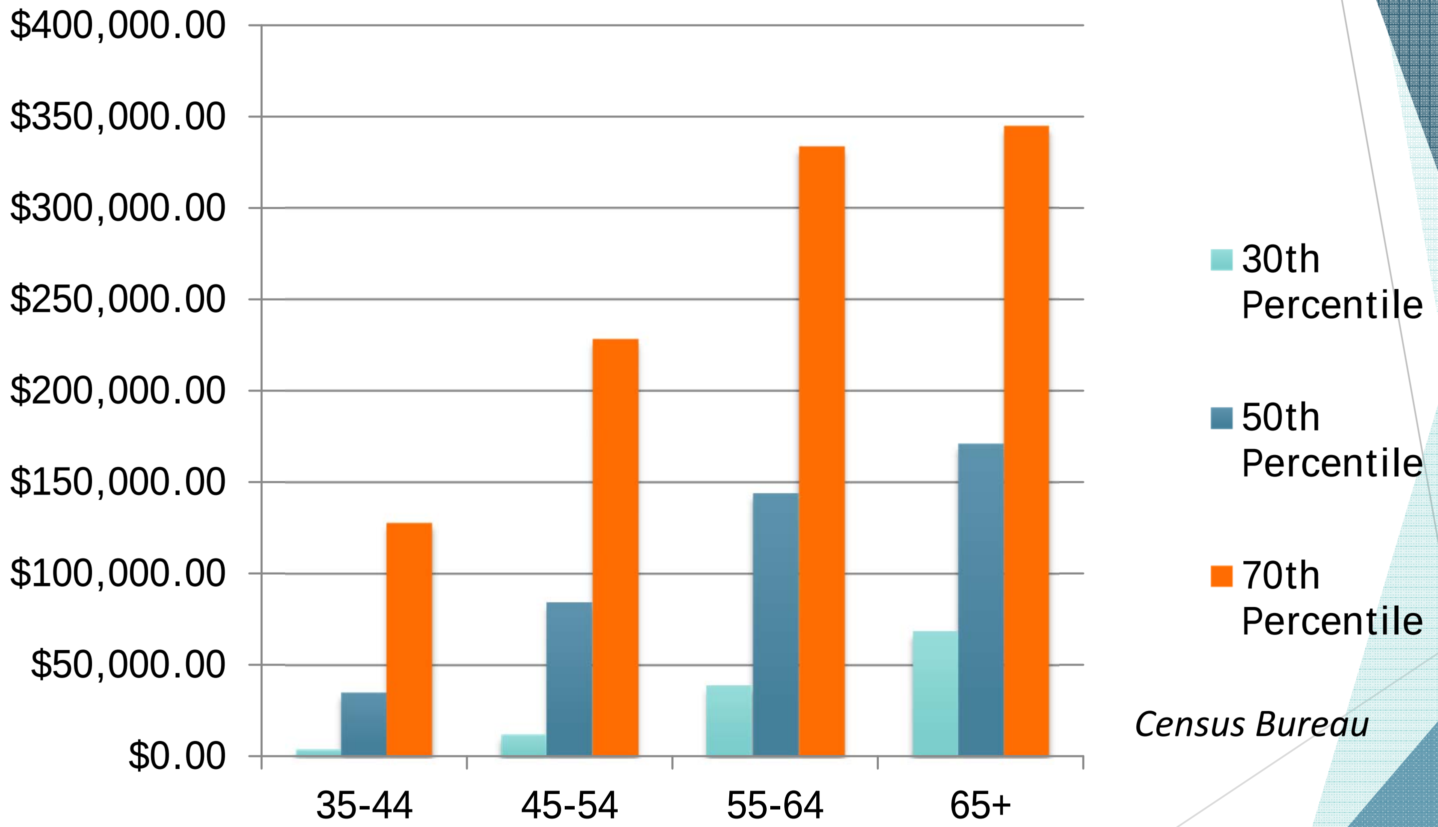
US Toll Roads Proliferating

The Rise and Fall of Income



2015 Census data and Motley Fool

Median Family Net Worth



Census Bureau

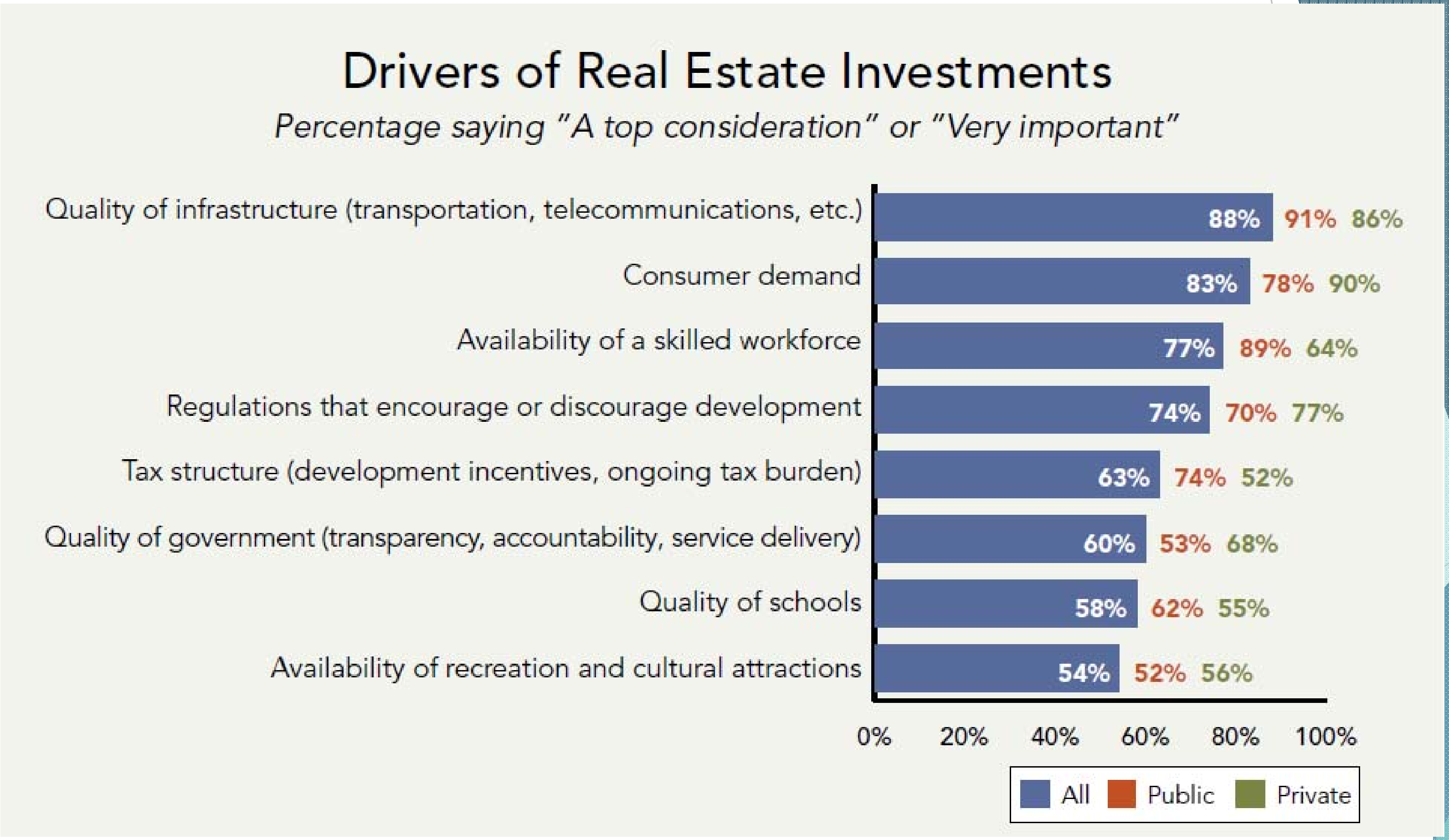
One Less Car

$ 8,000 + savings on gas, car payments, auto insurance, parking and maintenance

= $100,000

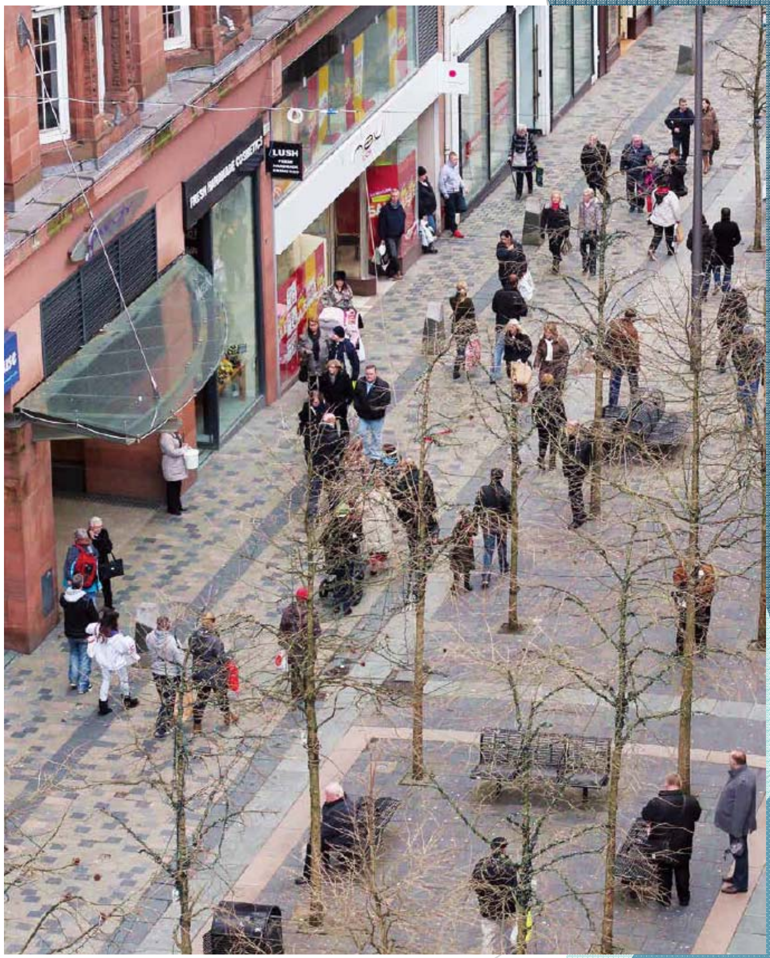
Or more, in homebuying power!

Top Drivers of Real Estate Investments: Infrastructure, Consumer Demand



Key findings

- Good infrastructure is a key driver of where real estate investment dollars go
- Improving the quality of public transit, roads and bridges, and pedestrian infrastructure are highest priorities
- Public's willingness to pay for infrastructure is a top factor that will shape cities
- Funding and financing is seen as resting on cooperation between developers and government
- Long term maintenance and operations are big concerns



Questions to consider

- What other ways can infrastructure help all parts of the community?
  - Job creation
  - Mobility
  - Access

Trend Five: Creating Workable Consensus and Leadership

The Seattle Story: Turning NO to YES

- Rapid population growth
  - Added 175,000 since 2010, 100,000 in-migrants
  - Downtown added 45,000 jobs, 14,440 residential units, 6,000 more in the pipeline
- In sync leadership between levels of government
- Strong performance of Sound Transit
- Joint effort by business, civic and governmental communities
- Leadership at all levels
- Countless meetings and CAMPAIGN thinking

Seattle Story

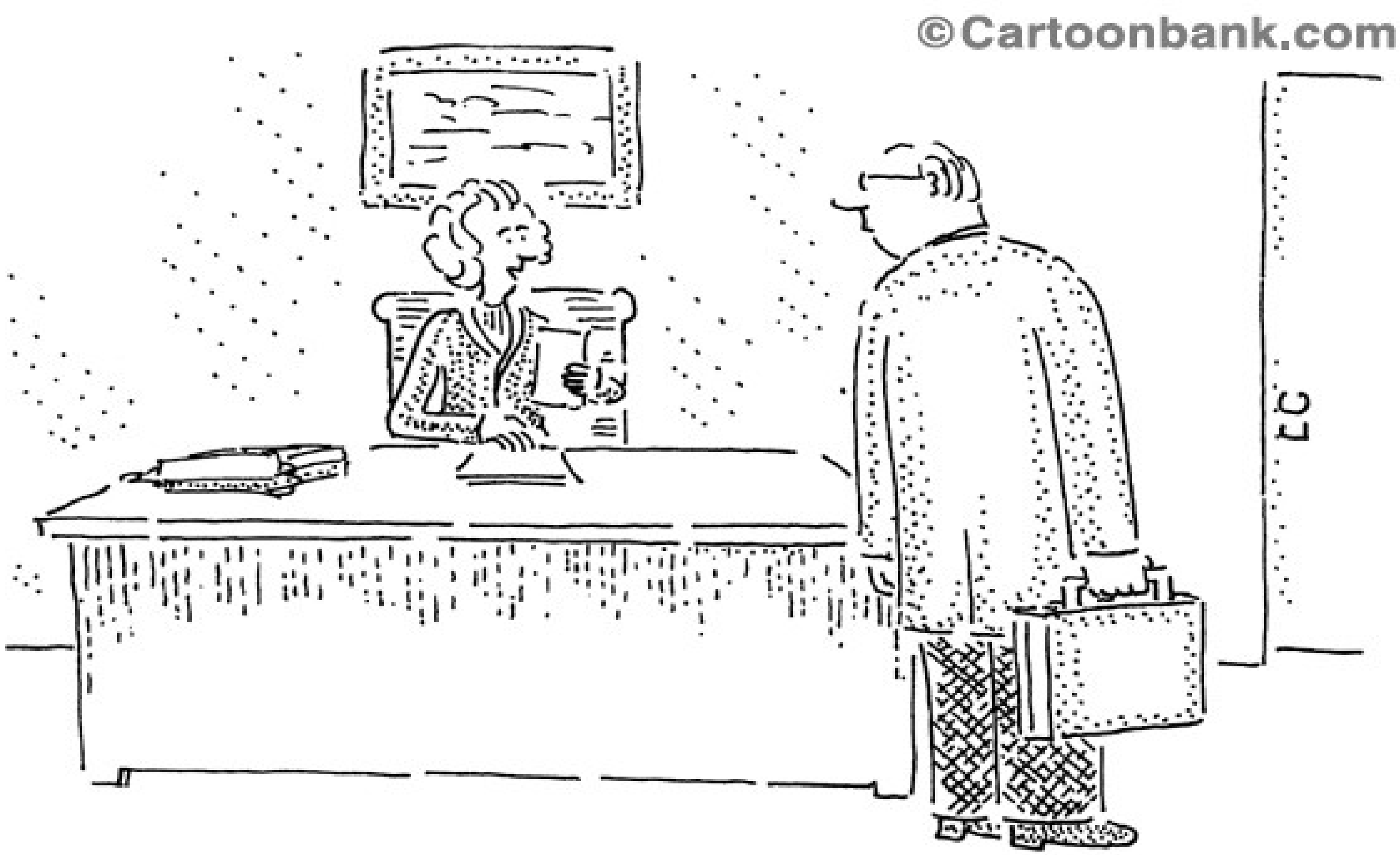
- Three tax increases in last 10 years
- Regional approval in 2016 of $53 Billion, 25 year infrastructure program
  - Expand light rail
  - BRT
  - Commuter rail

Seattle: Where the $ Comes From

- Added a property tax levy
- Added Sales Tax
- Added Motor Vehicle Excise Tax
- EQUALS dedicated, reliable funding sources

Leadership, not Size

Greenville: A Leadership Story



"Sir, the following paradigm shifts occurred while you were out."