



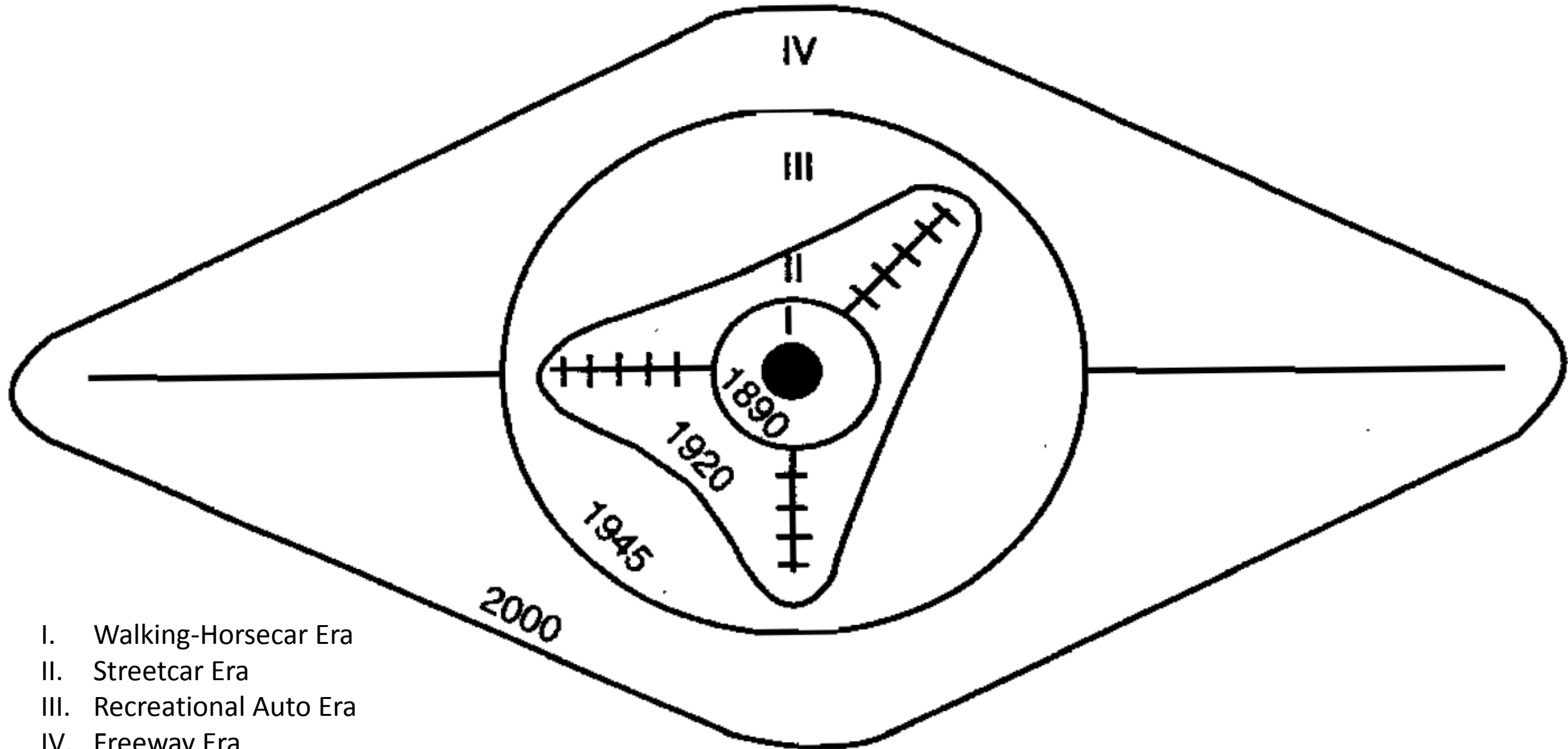
Driverless Cars: What Will They Change - and When?

A Morning Forum

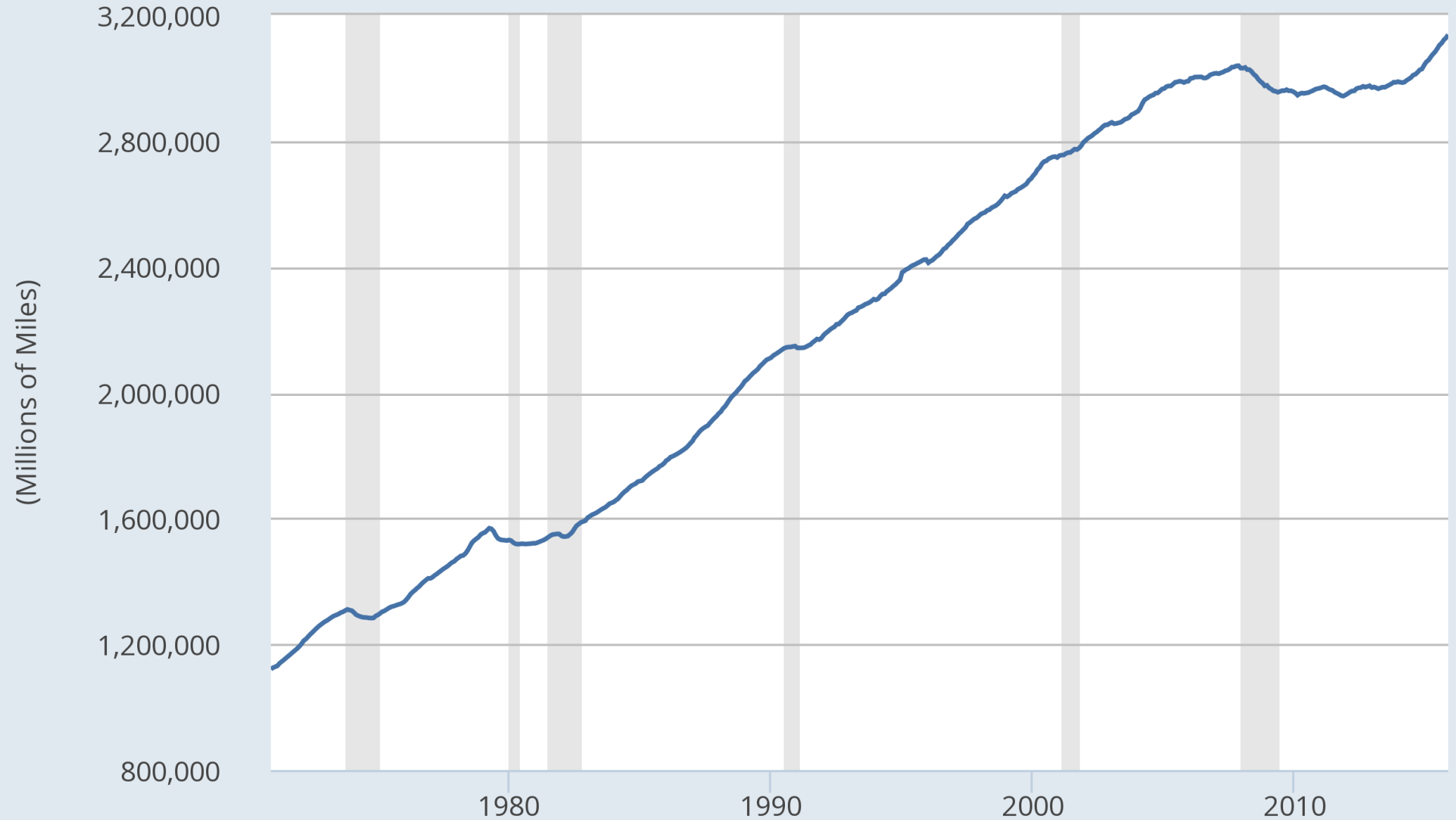
Monday, June 13, 2016
MIT Building 10-250 - Cambridge

Hosted by the Metropolitan Area Planning Council and Transportation for Massachusetts

Transport technology 'eras' and metropolitan growth patterns

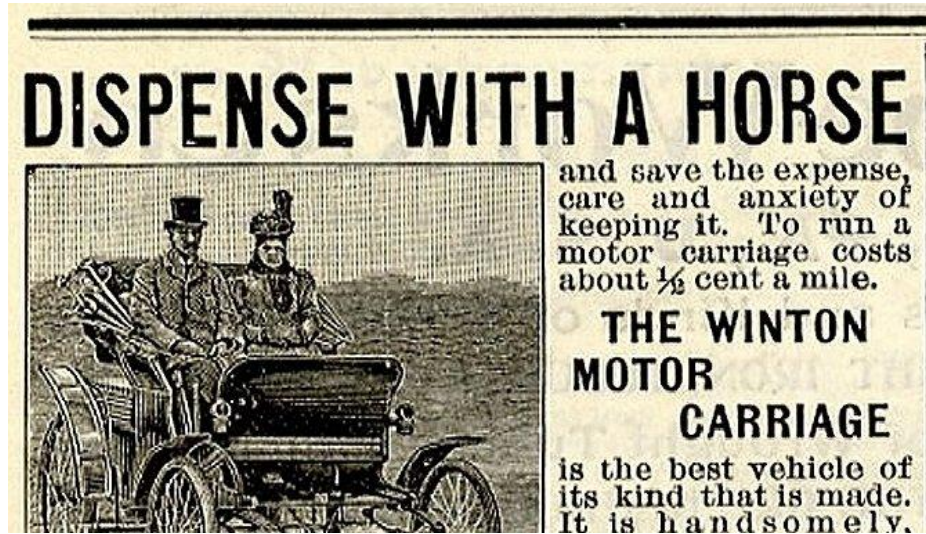


- I. Walking-Horsecar Era
- II. Streetcar Era
- III. Recreational Auto Era
- IV. Freeway Era
- V. Post-2000?

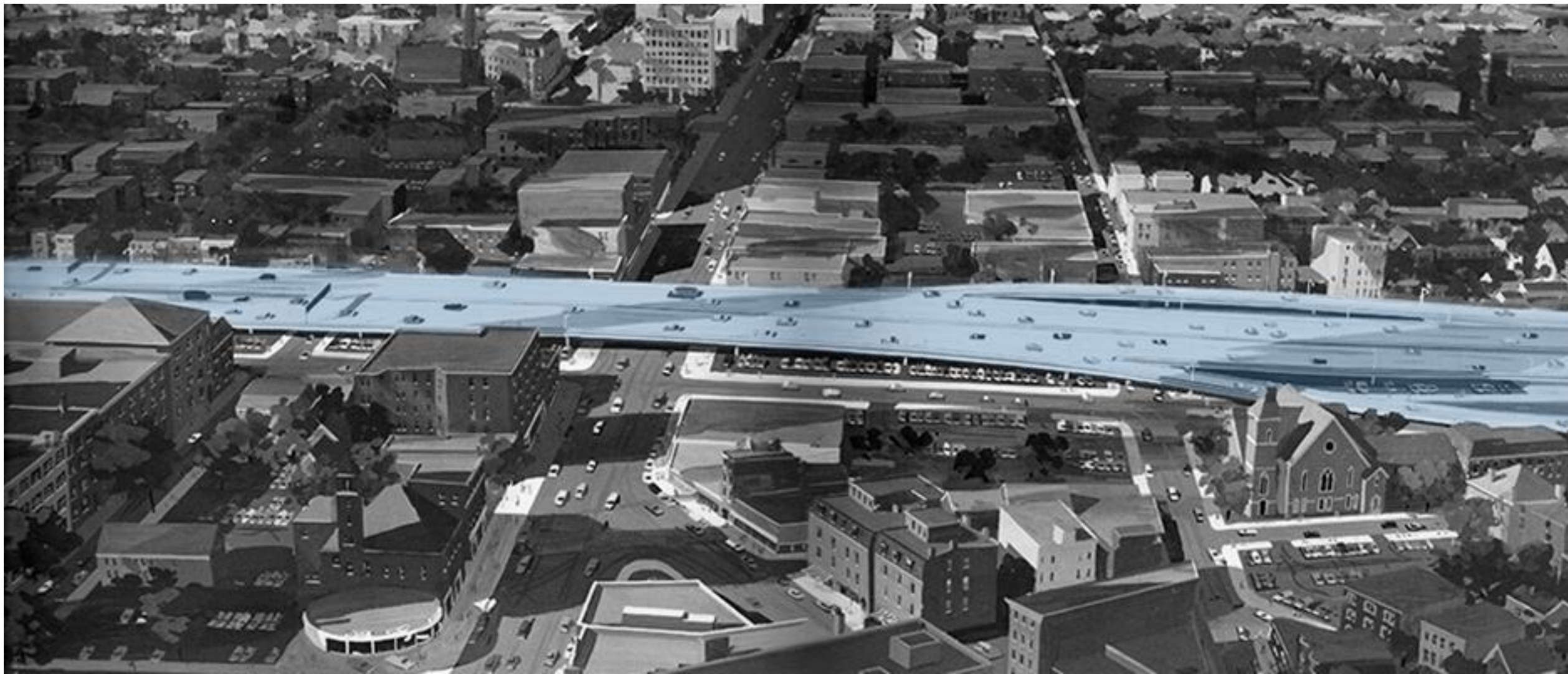


“Peak
Travel”
Era?

Planning: missing unanticipated consequences.....



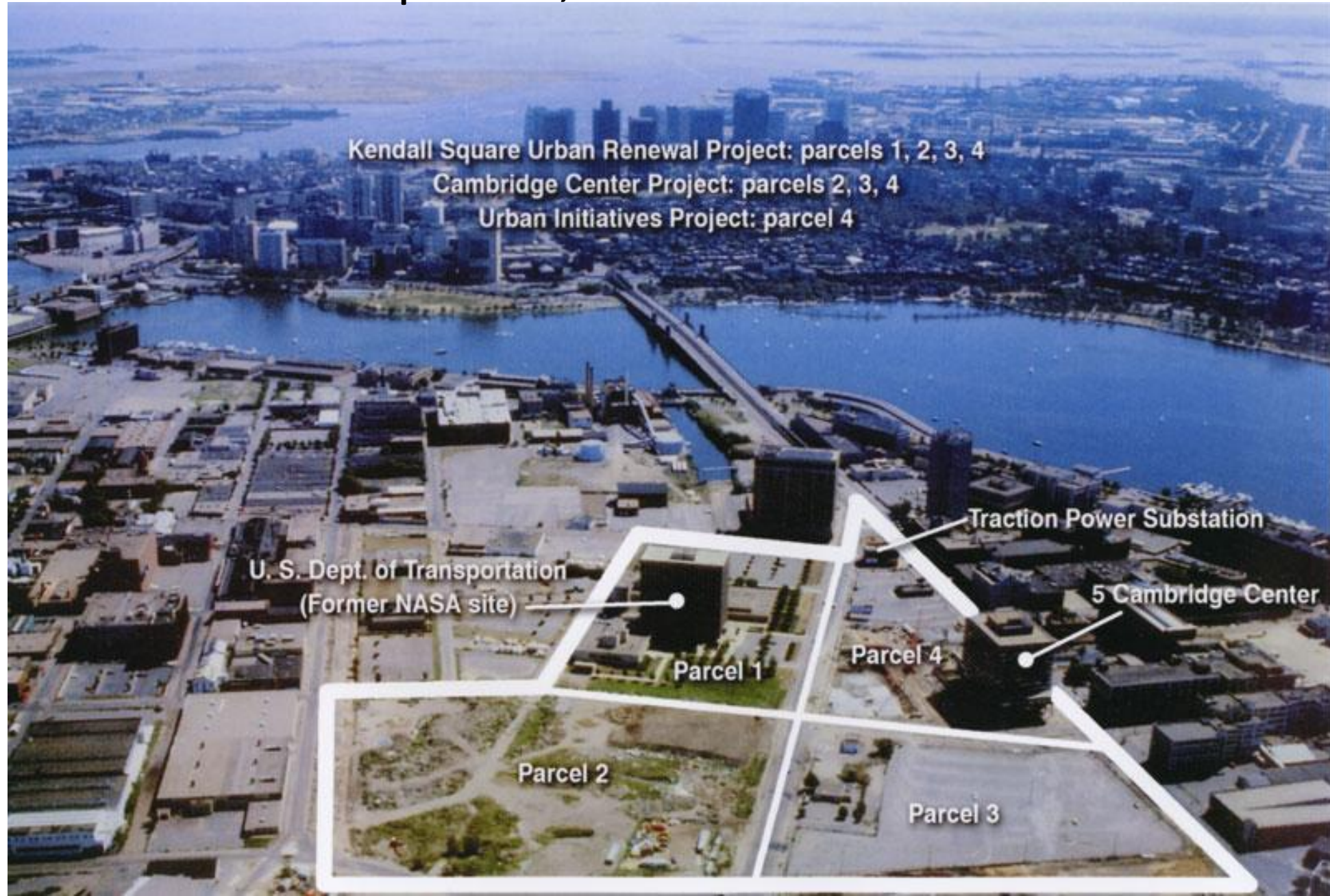
Central Square



Central Square



Kendall Square, 1980

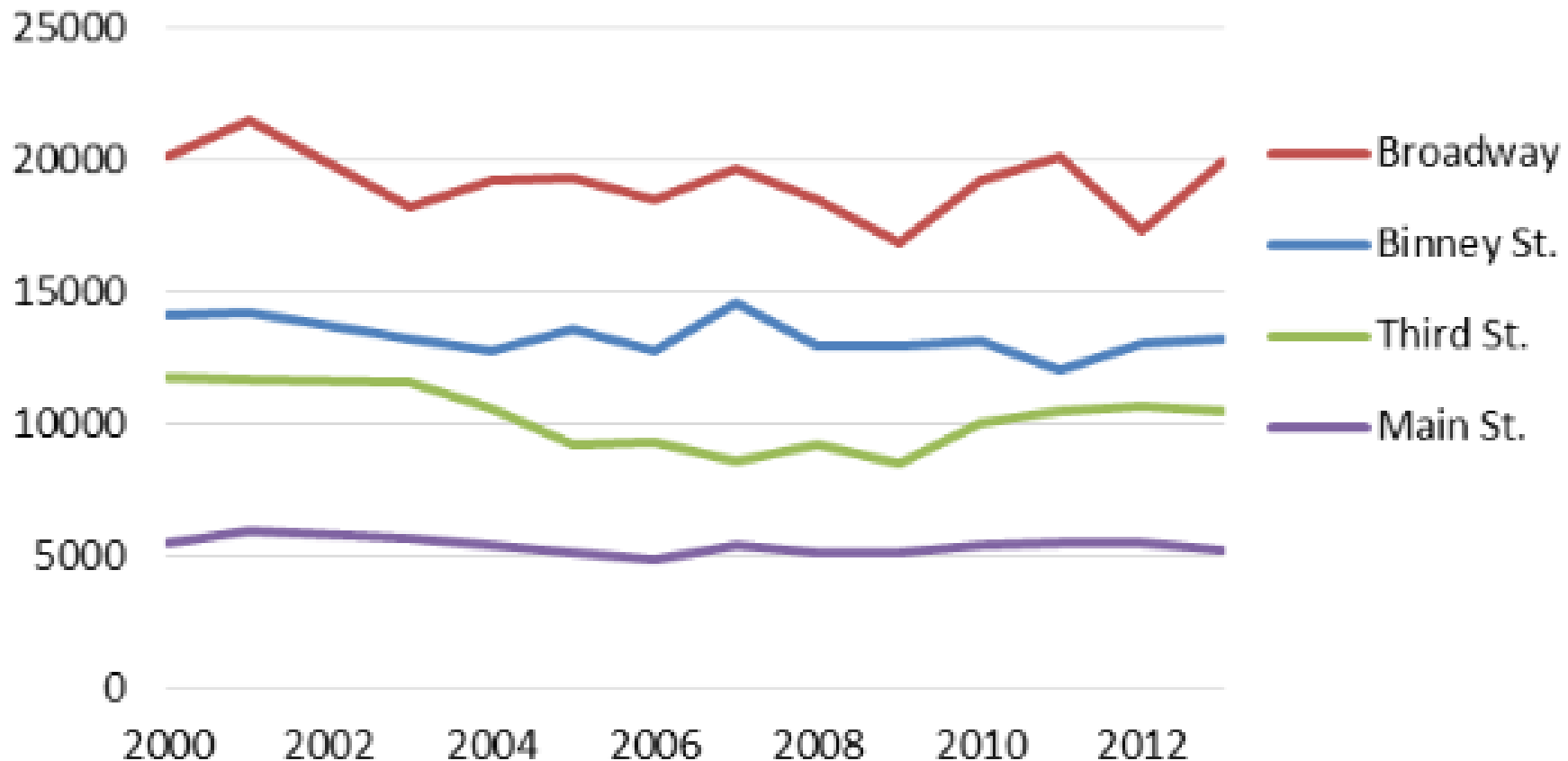


Kendall Square, Today



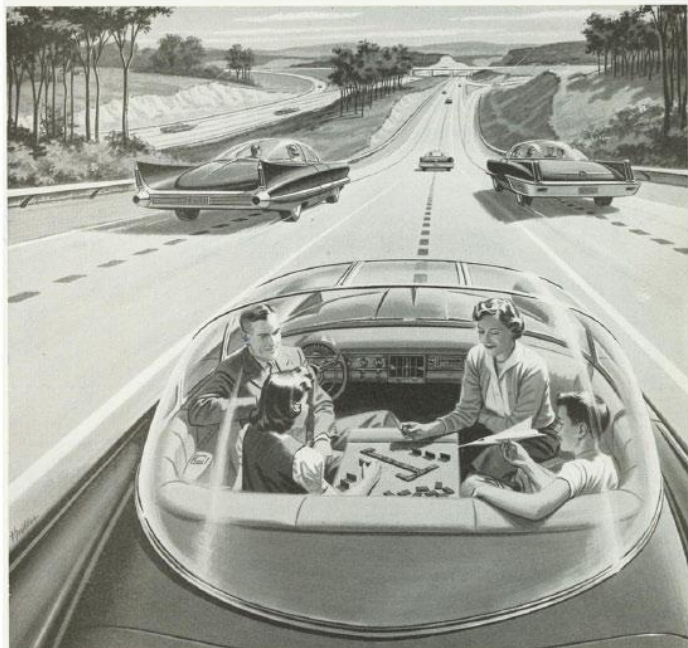
Kendall Sq: 372.000 m² constructed between 2000 y 2012

Average Daily Traffic





AVs and the value of travel time....



ELECTRICITY MAY BE THE DRIVER. One day your car may speed along an electric super-highway, its speed and steering automatically controlled by electronic devices embedded in the road. Travel will be more enjoyable. Highways will be made safe—by electricity! No traffic jams . . . no collisions . . . no driver fatigue.



Autonomy: More than cars



'it's like driving a Tesla'....

Autonomy: More than cars



Driverless Vehicles in MPO Long-Range RTPs....

Why no mention?	Influence on Why AVs not in RTP
Unawareness	Very Weak – awareness high
Skepticism	Weak – profound impacts likely
Uncertainty	Very strong – broad-ranging uncertainties (“we don’t know what the hell to do about it....”)
Too far removed from investment decision impacts	Strong – insufficient evidence for fiscally constrained plans
One of many possible ‘game changers’	Strong – 3D printing, VR, Fed’l Funding, etc.

3 MPOs AV Scenarios: Modeled

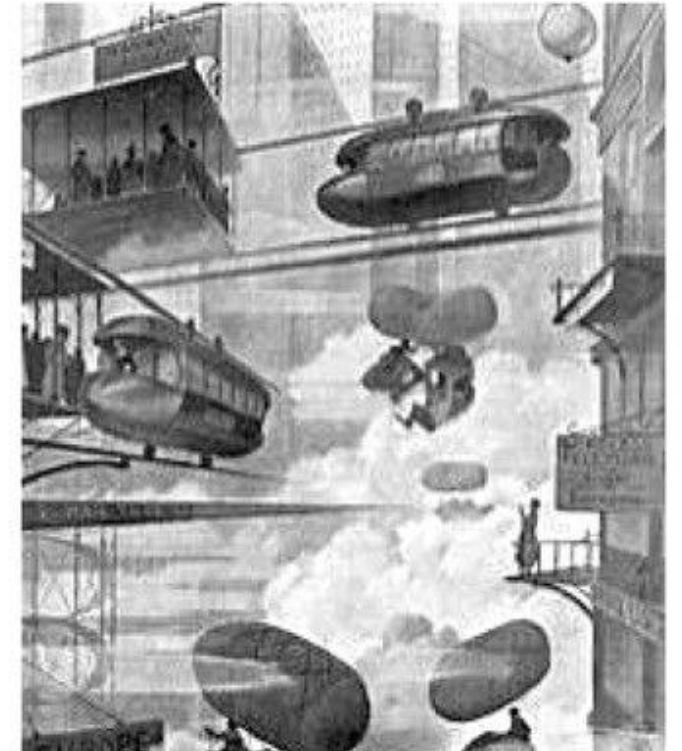
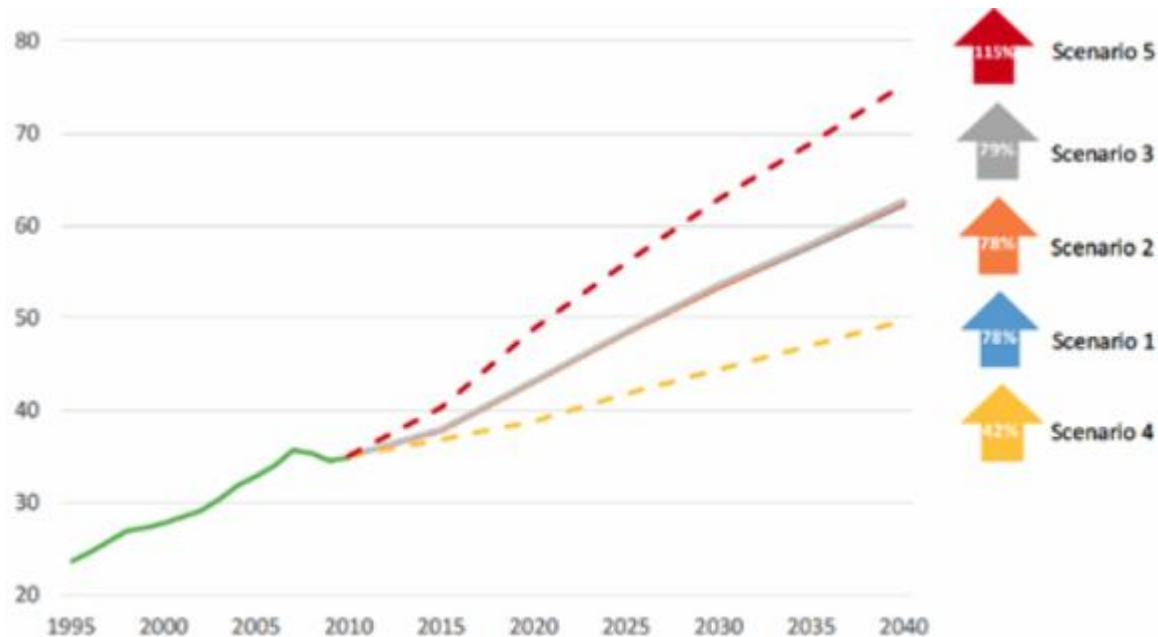
Region	In-vehicle Time Costs	Road Capacity	VMT Change
Atlanta	Zero	+50%	+3.6%
	50% of car	+50%	+12.7%
	50% of car	+50%	+23.8%
	50% of car	+50%	+23.9%
San Francisco	Same as car	+100%	+2%
	High-quality rail	+10% to +100%	+4% to +5.2%
	50% of car	+10% to +100%	+6.7% to +7.9%
	Zero	+0% to +100%	+13.2% to +14.5%
Seattle	Same as car	+30%	+3.6%
	65% of car	+30%	+5.0%
	65% of car	+30%	+19.6%
	Zero	+0%	-34.5%

AVs: to think about

- Value of time, congestion, congestion pricing....
- Infrastructure and margin for error...
- Building/public space interface
- Public Transport
- Freight (last mile)
- Infrastructure: Build for flexibility and uncertainty
- AVs and the “innovation economy” and demand for proximity

Thinking for an AV Future

- Beware of Rose-tinted glasses....
- Think outside the RTP
- The future is uncertain: capitalize on that



Next Up:
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