FUTURE of STREETS

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Mobility firms, OEMs, TNCs

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Public Sector

Infrastructure and public space design, engineering
Santa Monica Blvd and Vermont, LA
Vermont / Santa Monica Metro Station
Los Angeles, CA. Existing condition.
Automated Vehicles

Best-case scenario

Worst-case scenario
Best-case scenario

- Pedestrian and bike friendly streets with generous landscaping
- Higher density mixed-use surroundings
- Reduced traffic and parking
- Active street fronts
- New infill building
- Automated metro trains
- Shared AV stop
- Shared AV buses of variable sizes
- Wider sidewalks
- Restaurants with outdoor seating
- Santa Monica
- Vermont
Worst-case scenario

Exclusive AV elevated freeway

Railings to prevent pedestrians from crossing

Pedestrian overpass

Shared AV stop

Single-occupant AVs

Confused AV blocking traffic

No pedestrian sidewalks

Abandoned underground metro station

Jersey barriers for traffic management

“Drive-Inside” restaurant

AV Pick-up / Drop-off lot

Vermont

Santa Monica Blvd.
Five levels of uncertainty

Today’s mobility

*Personal gasoline car, TNC and transit*
Five levels of uncertainty

Best-case scenarios

*Shared-electric AV or human vans/buses*
Five levels of uncertainty

Worst-case scenarios

*Single-passenger AV and cars*
Seductive images of the future versus reality?
**Modal capacity**
Maximum people per 9ft lane per hour per direction (w/o uncomfortable congestion)

<table>
<thead>
<tr>
<th>Mode</th>
<th>Capacity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Walk</td>
<td>10,000</td>
</tr>
<tr>
<td>Bikes</td>
<td>10,000</td>
</tr>
<tr>
<td>Cars</td>
<td>2,000</td>
</tr>
<tr>
<td>Bus</td>
<td>6,000</td>
</tr>
<tr>
<td>Light rail and BRT</td>
<td>11,000</td>
</tr>
<tr>
<td>Heavy rail and metro</td>
<td>+25,000</td>
</tr>
</tbody>
</table>

*Car-based mobility solutions can not service high-density environments.*
Amara’s Law: We tend to overestimate the effect of a technology in the short run and underestimate it in the long run.

- Ford Model T 1908
- Federal Highway Act 1956
- GI Bill 1944
- Uber 2018
Five common myths
around AVs and TNCs
Myth 1: With robo-taxis, we will have fewer cars and therefore less traffic on roads?
Myth 2: Because AVs are much safer drivers than humans, streets will be more pedestrian friendly?
Myth 3: Most people will be sharing rides in TNCs and Avs?
Myth 4: AVs will revolutionize public transit by introducing flexible routes instead of fixed routes?

Source: LA Metro
Myth 5: We will need electric car chargers on each curb?
What should cities undertake NOW as safe bets?

1900

2000

2100?
1. Invest AV technology into public transit

- Variable capacity vehicles for different urban contexts.
- 30% more fixed-route lines for the same operational costs.
- More frequent and flexible scheduling including night-time service.
- New opportunities for private-public partnerships.
- Technology ready today.
2. Discourage private vehicle ownership and encourage a transition to shared, pooled AVs.

Example: Singapore’s Certificate of Entitlement (COE) policy requires each vehicle to have a 10-year COE, which are auctioned to the highest bidder. The number of COEs is kept constant, at a 0% annual increase.
3. Plan streets for people, not vehicles
4. Implement electronic systems to manage rideshare providers, dockless bikes and e-scooters that operate in the public right of way.

LA DOT
https://github.com/CityOfLosAngeles/mobility-data-specification
5. Implement

a. Bike lanes for Personal Mobility Devices,
b. High Occupancy Lanes for shared transit
c. Pick-up / drop-off stations for public transit and ride-sharing services.
Thank you!

http://cityform.gsd.harvard.edu