The Price to Pay for Easy AV Travel

Demand Management Tool Reboot
TODAY

Review Toolbox
Operator Perspective
Neighborhood Perspective & Walking Tour
Regroup
Crowdsources ideas

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San Francisco, California

At the grocery store...For those of you that live somewhere out there...This is really happening. #autonomous #uber #driverless
AV + TRAVEL DEMAND
Crowdsourcing Timing of Demand Management Tools and AV Policies

MARKET PENETRATION OF AUTOMATED VEHICLES
Based on 2016 Introduction Timeline

What new tools and policies are needed and when?
Fridays:
222,600 citywide pickups

Saturdays:
220,700 citywide pickups
Figure 12. Changes in transit use, biking, and walking after adoption of ride-hailing services

Survey question: "Since you started using on-demand mobility services such as Uber and Lyft, do you find that you use the following transportation options more or less?"
‘Shared and electric’ won’t cut it.
Too often, the orientation is **supply/provider**

More challenging… developing a system that responds to how **users** see it.

**SUPPLY** — **EXPERIENCE**

**BUILD OPTIONS**
- WeHo Bike Share
- Bus
- Rail

**MANAGE INCENTIVES**
- Sidewalks and Crossing Improvements
- Bicycle Network
- Cost and Convenience
- Ease and Availability
- Safety and Comfort
# Chart 6-2: Transportation Strategies Organization

<table>
<thead>
<tr>
<th>Transportation Measures (Five Subcategories) Global Maximum Reduction (all VMT)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Urban = 75%; compact infill = 40%; suburban center or suburban with NEV = 20%; suburban = 15%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Transportation Measures (Four Categories) Cross-Category Max Reduction (all VMT)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Urban = 70%; compact infill = 35%; suburban center or suburban with NEV = 15%; suburban = 10%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Land Use / Location</th>
<th>Neighborhood / Site Enhancement</th>
<th>Parking Policy / Pricing</th>
<th>Transit System Improvements</th>
<th>Commute Trip Reduction (assumes mixed use)</th>
<th>Max Reduction = 15% overall VMT, 25% school VMT, 65%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Max Reduction = 15% (urban = 15%), compact infill = 20%, suburban center = 10%, suburban = 5%</td>
<td>Max Reduction without NEV = 5%, with NEV = 15%</td>
<td>Max Reduction = 20%</td>
<td>Max Reduction = 10%</td>
<td>Max Reduction = 25% (work VMT)</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Density (30%)</th>
<th>Pedestrian Network (2%)</th>
<th>Parking Supply Limits (12.5%)</th>
<th>Network Expansion (8.2%)</th>
<th>CTR Program Required = 27% work VMT, Voluntary = 62% work VMT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Traffic Calming (1%)</td>
<td>Urban 5%</td>
<td>Service Frequency / Speed (2.5%)</td>
<td>Bus Rapid Transit (3.2%)</td>
<td>Transit Fare Subsidy (20% work VMT)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Location Efficiency (95%)</th>
<th>NEV Network (14.4)</th>
<th>On-Street Parking Limits (5.5%)</th>
<th>Access Improvements</th>
<th>Employee Parking Cash-out (7.7% work VMT)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Car Share Program (0.7%)</td>
<td>Residential Area Parking Permits</td>
<td>Station Bike Parking</td>
<td>Local Shuttles</td>
<td>Workplace Parking Pricing (15.7% work VMT)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Diversity (30%)</th>
<th>Destination Accessibility (20%)</th>
<th>Bicycle Network (Lanes = Parking)</th>
<th>Urban Non-Motorized Zones</th>
<th>Alternative Work Schedules &amp; Telecommute (5.5% work VMT)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Transit Accessibility (25%)</td>
<td>BMH Housing (1.2%)</td>
<td>&lt;Land Dedication for Transit&gt;</td>
<td>Park &amp; Ride Lots*</td>
<td>CTR Marketing (5.5% work VMT)</td>
</tr>
</tbody>
</table>

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<thead>
<tr>
<th>Orientation Toward Non-Auto Corridor</th>
<th>Proximity to Bike Path</th>
<th>Ride Share Program (15% work VMT)</th>
<th>Bike Share Program</th>
<th>Employer Sponsored Vanpool/Shuttle (3.4% work VMT)</th>
</tr>
</thead>
</table>

**Note:** Strategies in bold text are primary strategies with reported VMT reductions; non-bolded strategies are support or grouped strategies.
Children’s Transportation Plan will achieve by 2028:

- 30-40% fewer net new PM peak hour vehicle trips

- Approximately 500 fewer parking spots needed

- Shorten only 1 minute of travel time on Montlake
  - Montlake Boulevard NE southbound between NE 45th St and SR 520
  - Travel time today: 14 minutes
  - Future travel time with CTP: 15 minutes
  
  With Children’s transportation plan, travelling on Montlake Boulevard in 20 years will take only one minute longer than it would with no expansion.

- By 2028, the Children’s transportation plan will reduce 2,700 metric tonnes of carbon emissions every year...

  ...This is the equivalent of planting 2,700 acres of trees
Cutting Congestion

A state commission that set out to develop a solution to the severe traffic congestion problem in New York City’s central business district has proposed a zone in which motorists would be charged a daily fee to enter. Here are some of the commission’s recommendations.

- **ZONE BOUNDARY**: Manhattan south of 60th Street
- **DIRECTION OF CHARGE**: Inbound
- **FEES**: Cars $8; trucks $21; low-emission trucks $7
- **HOURS OF CHARGE**: 6 a.m. to 6 p.m., weekdays
- $1 taxi surcharge for trips that start or end in zone.
- Increased metered parking rates within zone.

*Drivers would pay once upon entering the charging zone and would be able to make additional trips in and out of the zone at no additional cost. For E-ZPass users, the value of all tolls paid on M.T.A. or Port Authority bridges and tunnels would be deducted from the fee up to $8.*
Daily greenhouse gas emissions (metric tons)
Before vs. after
Pilot vs. control areas | Weekdays 9am to 6pm

<table>
<thead>
<tr>
<th>Area</th>
<th>Before</th>
<th>Decrease</th>
<th>After</th>
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<tbody>
<tr>
<td>Pilot</td>
<td>7.0</td>
<td>30%</td>
<td>4.9</td>
</tr>
<tr>
<td>Control</td>
<td>2.7</td>
<td>6%</td>
<td>2.5</td>
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<tr>
<td></td>
<td>SEA</td>
<td>SF</td>
<td></td>
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<tr>
<td>----------</td>
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<td></td>
</tr>
<tr>
<td>Meter Revenue</td>
<td>37M</td>
<td>54M</td>
<td></td>
</tr>
<tr>
<td>Citation Revenue</td>
<td>26M</td>
<td>89M</td>
<td></td>
</tr>
<tr>
<td>Off-St. Revenue</td>
<td>8M</td>
<td>85M</td>
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AV + TRAVEL DEMAND
Crowdsourced Timing of Demand Management Tools and AV Policies

MARKET PENETRATION OF AUTOMATED VEHICLES
Based on 2016 Introduction Timeline

What new tools and policies are needed and when?
## AV + TRAVEL DEMAND

Brainstorming tools of the future

<table>
<thead>
<tr>
<th>Existing demand management tools</th>
<th>Will they be relevant in the future?</th>
<th>Will (and how) might each one need to adapt/evolve to be relevant in an AV future?</th>
</tr>
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</tbody>
</table>

What new demand management tools are needed?
THANK YOU!

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TDM Strategies. ReachNow Vision.

First-last mile: ReachNow partnered with King County Metro on a dedicated car share pilot program at Northgate Transit Center, connecting one-way shared mobility with public transit.

Mobility hubs: Members can now start or end a ReachNow trip in any non-time restricted parking space in Orenco Station, an award winning transit oriented development (TOD) near large employers.

MAAS, metasearch: A new partnership with TransitScreen, the innovative mobility information company behind the display of real-time transportation choices in downtown areas.
Go Lloyd Mission

“Go Lloyd connects people and places by creating partnerships and transportation solutions to make Lloyd extraordinary.”
Location
Transportation Infrastructure
Lloyd Demographics

- 600+ businesses
- 25,000 employees
- 3,500 residents
- 2,316 households
- 1,150 hotel rooms
Impact – Mode Split

Since 1997 Go Lloyd has reduced Drive Alone commute rates by 26%

2017 TRANSPORTATION MODE SPLIT
Universal Pass employees, 2017 vs. 1997 baseline

- Walk: 2%
- Bike: 6%
- Carpool: 7%
- Tele-Commute: 7%
- Transit: 35%
- Drive: 41%

Source: Go Lloyd Employee Commute Choice Survey 2017, n=5,028
Vehicle Miles Reduction

4.5 million VMT annually
### Emissions Reduction

<table>
<thead>
<tr>
<th>Component</th>
<th>Production or Consumption at Avg. 12,000 VMT/year</th>
<th>Annual VMT Reduced</th>
<th>Annual Reduction/Savings</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Hydrocarbons</td>
<td>28 lbs</td>
<td>4,547,147 miles</td>
<td>10,788 lbs</td>
</tr>
<tr>
<td>Smog &amp; air toxins</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Carbon Monoxide</td>
<td>248 lbs</td>
<td>4,547,147 miles</td>
<td>94,149 lbs</td>
</tr>
<tr>
<td>Poisonous gas</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Carbon Dioxide</td>
<td>9,737 lbs</td>
<td>4,547,147 miles</td>
<td>3,689,797 lbs</td>
</tr>
<tr>
<td>Climate Change</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gasoline</td>
<td>498 gallons @ $2.53 per gallon</td>
<td>4,547,147 miles</td>
<td>188,707 gallons $477,429</td>
</tr>
<tr>
<td>Imported &amp; domestic oil</td>
<td></td>
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</table>
Programs

 Transit Program
  • Universal Transit Passes – employer program
  • Transportation Store – pass/ticket sales, bike accessories, Lloyd Cycle Station, locker rentals, UPass photo IDs

 Bike Program
  • Infrastructure projects
  • Bike parking fund
  • Encouragement & education events

 Pedestrian Program
  • Infrastructure projects
  • Walking maps
  • Events (guided walks, trash mobs) & advocacy

 Transportation Fairs – employee/residence education

 Transportation Forum – quarterly educational workshops
Go Lloyd Profile

- Founded 1994 – initiated programs in 1997
- Providing services to employers for 21 years
- 6 staff – 2 full-time, 4 part-time, 1-2 summer interns
- 165 Member businesses
- Representing over 12,000 employees & residents
- Public partners:
  - Portland Bureau of Transportation
  - TriMet
  - Prosper Portland
  - Portland Streetcar
Go Lloyd’s Funding

- Lloyd Partnership Plan (PBOT, Go Lloyd, TriMet)
  - Metered on-street parking
  - Reduced parking development ratios
  - Universal Pass
  - Public/Private funding match

- Public funds are matched $1 : $1.48

Excellent value - return on investment
Meter Revenue

Go Lloyd board prioritizes projects & oversees spending in coordination with the City of Portland each year.

Each year meter revenue pays for:

- ~ $140,000 to Go Lloyd Operations
- ~ $250,000 to Projects
Lloyd Enhanced Service District (ESD)

- A property management license fee on all properties within a defined boundary
- Assessment made to the property manager is calculated using:
  - Assessed building value
  - Building square footage
  - Square footage of land
- Generates $450,000 annually
Universal Transit Pass

• Go Lloyd manages Employee Transit pass program
  ✓ Commission to Go Lloyd

• Savings to Lloyd employers = $4.1 million annually
  ✓ $384 per year vs. $1,200

• Transportation Store sales = $110,000 annually
Why?

- Instability of grant funds
- **No membership fee** – no pressure approaching a business/resident for the first time
- Leverage private funds with public investment
- More local control
Thank you!

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