Build It and They Will Come – or Will They? The Fate of the P&R

Frank Ching
LA Metro
Los Angeles

Jemae Hoffman
VIA
Seattle

Mark Gander
AECOM
New York

Michelle Liebling
Gensler
Denver

Mariana Parreiras
BART
SF Bay Area
The City Area Rapid Transit System – “CART”

Stats

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Average Weekday Trips:</td>
<td>430,000</td>
</tr>
<tr>
<td>Parking Spaces:</td>
<td>49,000</td>
</tr>
<tr>
<td>Daily Fee (first come, first served):</td>
<td>$3/day</td>
</tr>
<tr>
<td>Monthly Reserved:</td>
<td>$5/day</td>
</tr>
<tr>
<td>Daily Reserved:</td>
<td>$6/day</td>
</tr>
<tr>
<td>Parking Policy:</td>
<td>Fees capped by Board</td>
</tr>
</tbody>
</table>

Source/Credit: “CART”
## Sampling of “CART” Stations with Parking

<table>
<thead>
<tr>
<th>Station A (End of Line)</th>
<th>Station B (End of Line)</th>
<th>Station C</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Daily Entries:</strong></td>
<td>7,000</td>
<td>8,000</td>
</tr>
<tr>
<td><strong>Parking Spaces:</strong></td>
<td>2,000</td>
<td>3,100</td>
</tr>
<tr>
<td><strong>Daily/Monthly:</strong></td>
<td>$3/$105</td>
<td>$3/$105</td>
</tr>
<tr>
<td><strong>Parking Full:</strong></td>
<td>7:00 AM</td>
<td>7:45 AM</td>
</tr>
<tr>
<td><strong>Time to Permit:</strong></td>
<td>1.3 years</td>
<td>2 years</td>
</tr>
<tr>
<td><strong>Trips/Spaces:</strong></td>
<td>3.5</td>
<td>2.6</td>
</tr>
</tbody>
</table>

Source/Credit: “CART”
New Transportation Offerings

Source/Credit: AECOM
<table>
<thead>
<tr>
<th>Category</th>
<th>Current</th>
<th>Future</th>
</tr>
</thead>
<tbody>
<tr>
<td>Collisions</td>
<td>10.8 million/year</td>
<td>1.1 million/year</td>
</tr>
<tr>
<td>Commute Time</td>
<td>X</td>
<td>-50 min/day</td>
</tr>
<tr>
<td>Commute Energy</td>
<td>1.9 billion gallons/year</td>
<td>190 million gallons/year</td>
</tr>
<tr>
<td>Vehicle Fleet</td>
<td>245 million (parked 96% of the time)</td>
<td>2.4 million (parked ?)</td>
</tr>
<tr>
<td>Parking Spaces</td>
<td>700 million (6,000 sq mi)</td>
<td>? (and where?) (3,800 sq mi)</td>
</tr>
<tr>
<td>VMTs</td>
<td>3.7 trillion (2016)</td>
<td>?</td>
</tr>
</tbody>
</table>

Source/Credit: Autofacts, Google, NHTSA, 2012 TTA Urban Transportation Mobility Report, USDOT, FHWA, McKinsey
### Timing Predictions to Autonomous Vehicles

<table>
<thead>
<tr>
<th>Organization</th>
<th>Year</th>
<th>Type of Organization</th>
<th>Automation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ford Motor Company</td>
<td>2021</td>
<td>Vehicle Manufacturer</td>
<td>Level 4</td>
</tr>
<tr>
<td>Uber</td>
<td>2021</td>
<td>Transportation Network Company</td>
<td>Unspecified</td>
</tr>
<tr>
<td>Volvo</td>
<td>2021</td>
<td>Vehicle Manufacturer</td>
<td>Level 4</td>
</tr>
<tr>
<td>General Motors</td>
<td>2020</td>
<td>Vehicle Manufacturer</td>
<td>Unspecified</td>
</tr>
<tr>
<td>Tesla</td>
<td>2018</td>
<td>Vehicle Manufacturer</td>
<td>Level 3 or 4</td>
</tr>
<tr>
<td>Google</td>
<td>2020</td>
<td>Technology Company</td>
<td>Level 4</td>
</tr>
<tr>
<td>Victoria Transport Institute</td>
<td>2020-2030</td>
<td>Research Organization</td>
<td>Unspecified</td>
</tr>
<tr>
<td>National Association of City Transportation Officials</td>
<td>2020</td>
<td>Association</td>
<td>Level 4</td>
</tr>
<tr>
<td>IHS Markit</td>
<td>2020</td>
<td>Market Research Company</td>
<td>Level 4 and 5</td>
</tr>
<tr>
<td>ABI Research</td>
<td>2021</td>
<td>Market Research Company</td>
<td>Level 4 and 5</td>
</tr>
<tr>
<td>Juniper Research</td>
<td>2025</td>
<td>Market Research Company</td>
<td>Unspecified</td>
</tr>
</tbody>
</table>

Source/Credit: Beyond Speculation Automated Vehicles and Public Policy, Enon Center for Transportation. Created by Ann Henebery

Rail~Volution 2017
Data Points

- 1 Zipcar = 13 personally owned cars
- Each Zipcar covers the transportation needs of about 40 members

- Each car2go vehicle removed an estimated 10 vehicles from Seattle’s roads: more than 6,300 vehicles total

- With driverless cars, cost of TNC (Uber/Lyft) could go down to 50 cents per mile

- In Austin, without Uber or Lyft:
  - 41% turned to their own vehicle,
  - 3% switched to public transit, and
  - 2% switched to another, smaller transportation networking company

Source/Credit: Susan Shaheen; The University of California, Berkeley Transportation Sustainability Research Center (TSRC)
The University of Michigan Transportation Research Institute, Texas A&M Transportation Institute and Columbia University
(Compiled by VIA)
# Parking Pricing Examples

<table>
<thead>
<tr>
<th>Agency</th>
<th>Pricing</th>
<th>Reserved Parking</th>
<th>Payment</th>
<th>Source/Credit: RTD, CTA, DART (Compiled by VIA)</th>
</tr>
</thead>
</table>
| Denver RTD | • Free any day/time at over 1/2 of facilities  
• At some facilities:  
  - Free first 24 hrs for in-district patrons; then $2/day  
  - $4/day for out-of-district patrons | • Available 5 a.m. to 10 a.m. Mon-Fri | • Automated account with 15% discount (managed by SP+)  
• PayByPhone  
• Pay station | |
| Chicago CTA | • Daily fees range from $2 to $5 for 12 hours | • Available at 14 P&R lots  
• Fees range from $40 to $129/month | • ParkMobile | |
| Dallas DART | • Typical rate $5/day  
• Short-term metered parking $1/hr | • Available at 35 P&Rs  
• Monthly fee is $45-$65/month in addition to the regular daily parking rate | • SmarTrip® Cards | |

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Rail~~Volution 2017 09/19/17 – 8
## Parking Pricing Examples

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<th>Pricing</th>
<th>Reserved Parking</th>
<th>Payment</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>SF Bay Area BART</strong></td>
<td>• $3/day except West Oakland ($9.50/day)</td>
<td>• Monthly: $84-$105/month except West Oakland ($241.50/month)</td>
<td>• Clipper Card + EZrider</td>
</tr>
<tr>
<td></td>
<td>• Mon-Fri 4:00 am to 3:00 pm</td>
<td>• Daily: $6/day except West Oakland ($12.50/day)</td>
<td>• Select-a-Spot (reserved)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Reserved until 10:00 am</td>
<td>• Cash</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• BART blue ticket</td>
</tr>
<tr>
<td><strong>LA Metro</strong></td>
<td>• $3/day at 15 highest demand lots with transit ridership verification</td>
<td>• $59/month with minimum ridership on 10 calendar days</td>
<td>• Pay station</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Carpool permit 50% off, 3 license plates and 3 transit cards, one car parked any given time</td>
<td>• Pay by phone</td>
</tr>
</tbody>
</table>
| **Seattle & County King County Metro** | • Free at P&Rs  
• New P&R Partnership program charges in private property near transit | • Carpool Permits are free and allow permit holders to park in designated permit parking areas on weekdays during rush hour  
• Exploring SOV Permit system | |
| **Seattle & Region Sound Transit** | • Free                                                                 | • Carpool parking permits available at 7 stations  
• $5/month carpool parking permits for groups of two+  
• Exploring SOV Permit system | |

Source/Credit: BART, LA Metro, King County Metro, Sound Transit (compiled by VIA)
Technology Solution to Support Parking Management

Source/Credit: LA Metro
How Does it Work?

STEP 1: ENTER FACILITY WITH LPR
STEP 2: PARK
STEP 3: PAY (PARKING MACHINE OR BY PHONE)
STEP 4: ENJOY METRO
STEP 5: EXIT FACILITY WITH LPR

Source/Credit: LA Metro
Pricing parking finally means users can access a spot when they damn need it. 👏 #NoHo @metrolosangeles

Paid parking begins at North Hollywood and Universal City/Studio City stations on April 24
mтро.lа/оД30азоаW

BEFORE PRICING: All lots full by 7:30 am
AFTER PRICING:
• 120-150 spaces available throughout the day
• Main Lot not full until 1:00 pm
LA Metro Red Line Ridership Comparison 2016 to 2017

CONCLUSION: No observable decline in ridership due to implementation of parking pricing

Source/Credit: LA Metro
King County Metro Restriping Initiative

<table>
<thead>
<tr>
<th></th>
<th>Existing</th>
<th>Current Code</th>
<th>Proposal</th>
</tr>
</thead>
<tbody>
<tr>
<td>Compact (8'-0'')</td>
<td>50</td>
<td>155</td>
<td>-</td>
</tr>
<tr>
<td>Compact (7'-5'')</td>
<td>-</td>
<td>-</td>
<td>162</td>
</tr>
<tr>
<td>Regular (9'-0'')</td>
<td>319</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Regular (8'-6'')</td>
<td>-</td>
<td>240</td>
<td>243</td>
</tr>
<tr>
<td>ADA</td>
<td>8</td>
<td>8</td>
<td>8</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>377</td>
<td>403</td>
<td>413</td>
</tr>
<tr>
<td>% Compact</td>
<td>13</td>
<td>38</td>
<td>39</td>
</tr>
<tr>
<td>% Standard</td>
<td>85</td>
<td>60</td>
<td>59</td>
</tr>
<tr>
<td>% ADA</td>
<td>2</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>% Increase in Total Stalls</td>
<td>n/a</td>
<td>5.9</td>
<td>9.6</td>
</tr>
</tbody>
</table>

Source/Credit: VIA
Parking Supply Near Station B – Occupancy at 4 PM

Legend

Occupancy
Percent of total spaces with vehicles occupying spaces
- Green: Less than 50%
- Light Green: 50% - 75%
- Yellow: 75% - 85%
- Orange: 85% - 95%
- Red: More than 95%

King County P&R Partnership (The Aviara, Mercer Island, WA)

Source/Credit: VIA
Northgate/Thornton Place Shared Park & Ride, Seattle WA

Source/Credit: VIA
South Kirkland Shared Park & Ride, Kirkland WA

Source/Credit: VIA
Parking Design to Optimize Convertability

Sloping Floors
Two Way Circulation

Staggered Floors
One Way Circulation

Flat Floors
Helical Ramps

Flat Floors
One Way Ramps

Source/Credit: Gensler
Wisconsin Parking Garage (Built 1928)

Source/Credit: VIA

EAST-WEST SECTION LOOKING NORTH
Before & After

Source/Credit: Philadelphia Parking Facility
The MOD
Source/Credit: Gensler
“The agency says cost estimates have soared to $65 million, compared with the previous $35 million, to add as many as 550 spaces...”

“The new figures average out to $118,000 a space, though the project includes $3 million for improvements unrelated to parking, such as passenger drop-off areas, new bus shelters, walk and bike paths, and illumination.”

“Critics have objected that free parking promotes long drives to reach the stations, along a BNSF Railway route that was built decades ago to move freight.”
Thank you!

Frank Ching
LA Metro
Los Angeles
ChingF@metro.net

Jemae Hoffman
VIA
Seattle
JHoffman@via-architecture.com

Mark Gander
AECOM
New York
Mark.Gander@aecom.com

Michelle Liebling
Gensler
Denver
Michelle_Liebling@gensler.com

Mariana Parreiras
BART
SF Bay Area
MParrei@bart.gov