THE IMPACTS OF RIDE HAILING AND TNC’S ON AIRPORT OPERATIONS

How Emerging Technologies Impact Daily Operations

By: Doug Smith, HDR
01 AIRPORT CHARACTERISTICS
A KEY DRIVER FOR AIRPORTS
Understanding Impact of TNC Growth

- TNC expected to grow significantly in the next 15 years
- Between 44% and ~100% of total passengers
- Passenger landside access will have to change to accommodate growth
- Parking revenues could be significantly impacted
“In Massachusetts, the agency that oversees Logan Airport will vote today to kill Uber and Lyft's business at the airport. The Massport board will decide whether to ban the ride-hailing services from dropping off and picking up passengers at terminals, relegating them instead to two sections of central parking because there's nothing tired travelers like better than schlepping their luggage for several minutes to find their ride in a parking garage. (Hope there's Internet service in there.) The services' dropoff and pickup fees would increase from $3.25 to $5. By the way, neither of these drastic changes would apply to taxis.”
• **LAX** - Ride-hailing fees generated $44.3 million in fiscal 2018 and $33.7 million in fiscal 2017, up sharply from the $8.9 million in fiscal 2016. LAX parking revenue totaled $96.7 million in fiscal 2018, unchanged from 2017.

• **Hollywood Burbank Airport** - Parking revenue rose 3%, or $553,000, in the 2018 fiscal year over the year before, and ground transportation money jumped 60%, or $1.9 million, in the same period.

• **Ontario International Airport** - Fees charged to Uber and Lyft increased about $230,000, up 85%, in the six months ended Dec. 31, 2018, while car rental fees bought in an extra $530,000, up 13.4%, and parking revenue was little changed.

• **Long Beach Airport** - Parking revenue rose to $10 million in 2018, up 10%, while fees from rental car businesses climbed 2.7% to $3.24 million. The airport took in $1.6 million in fees from TNC’s last year.

**REGIONAL AIRPORTS**
JOHN WAYNE AIRPORT
(Airport Code: SNA)

• John Wayne Airport, Orange County owned and operated by the County of Orange
• Only commercial service airport in Orange County
• Approximately 35 miles south of Los Angeles between the cities of Costa Mesa, Irvine, and Newport Beach.
• Service area more than three million people
• In 2016, over 10 million annual passengers (MAP)
• Experience a change in Traveler Characteristics
JWA ROADWAY AND PARKING MAP
02 EXISTING CONDITIONS DATA

PROPOSED PROJECT
CURRENT TNC CONDITIONS

• Collected Data in August and November 2018.
• JWA moved TNC pick up locations to parking structures A2, B2 and C in September 2018.
• Resulted in a shift in vehicular and pedestrian traffic from lower to upper roadways.
ADT COMPARISON ALONG UPPER JWA ROADWAY (August vs November)

Traffic Shifts to Upper Roadway

Hourly Volumes on Upper JWA Rdwy Btw. Terminals B & C
August vs November

Traffic Volume per Hour

Time of Day (hh:mm)

- August
- November
ADT COMPARISON ALONG LOWER JWA ROADWAY (August vs November)

Traffic Shifts From Lower Roadway After TNC Locations Move

Hourly Volumes on Lower JWA Rdwy Btw. Terminals B & C
August vs November

Time of Day (hh:mm)

Traffic Volume per Hour

- August
- November
PEAK PEDESTRIAN CROSSINGS
(August and November)

TNC Drop off/Pick Up Locations Drive Pedestrian Movements

Peak Pedestrian Volumes
August and November 2018

Crosswalk Location

Pedestrian Maximum Hourly Volume

- August_Sunday
- November_Sunday
- August_Monday
- November_Monday
MAXIMUM HOURLY TNC PICKUPS

Maximum Hourly TNC Pickups
November 2018

<table>
<thead>
<tr>
<th>Location</th>
<th>Sunday</th>
<th>Monday</th>
</tr>
</thead>
<tbody>
<tr>
<td>Structure A2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Structure B2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Structure C</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
03 FUTURE PROJECTIONS
TNC TREND AT AIRPORTS

The following steps taken to calculate mode split at the John Wayne Airport:

1. Identify the existing transportation mode split as a percentage of passengers using the traffic volumes collected, TNC pickup and drop-off and enplaning/deplaning data.

2. Determine the TNC mode share as percent of passengers under Medium term (2021) and Long term (2026) conditions.

3. Determine the transportation mode split as a percentage of passengers.
FUTURE MODE SPLIT

Based on:

TNC Mode Share Estimate

Parking Revenue per Passengers
FUTURE PROJECTIONS

Based on the TNC Mode Share Data and Industry Trends estimated Future JWA Modes Share

TNC Mode Share Projection

Transportation Mode Share Per Passenger
RESULTING MODE SHARE

• Studied the following scenarios:
  • Existing Conditions with current baseline (up to 10.8 MAP)
  • 2021 (increase to 11.8 MAP)
  • 2026 (increase to 12.5 MAP)

<table>
<thead>
<tr>
<th>Transportation Mode</th>
<th>Year 2018</th>
<th>Year 2021</th>
<th>Year 2026</th>
</tr>
</thead>
<tbody>
<tr>
<td>TNC</td>
<td>18%</td>
<td>25%</td>
<td>32%</td>
</tr>
<tr>
<td>Taxi</td>
<td>3%</td>
<td>2%</td>
<td>1%</td>
</tr>
<tr>
<td>Shuttle</td>
<td>3%</td>
<td>2%</td>
<td>1%</td>
</tr>
<tr>
<td>Rental Cars</td>
<td>27%</td>
<td>25%</td>
<td>23%</td>
</tr>
<tr>
<td>Private Vehicle Parking</td>
<td>11%</td>
<td>8%</td>
<td>5%</td>
</tr>
<tr>
<td>Private Vehicle Curbside*</td>
<td>38%</td>
<td>38%</td>
<td>38%</td>
</tr>
</tbody>
</table>

*Private Vehicle Curbside includes Valet Service
LANDSIDE ROADWAY VOLUMES

- Analysis indicates that volumes on Landside Roads at Curbside will increase in 2021 and 2026.
- The combination of TNC Trips, Pedestrian Traffic and Vehicular Volumes require Improvements.
PEDESTRIAN CROSSING VOLUMES

- Increase in volumes impact congested landside roadway operations.
TNC TRIPS

- Hourly TNC Pick Ups Continue to Rise through 2026 with associated increase in MAP
CONCLUSIONS/SUMMARY
CONCLUSIONS

• Our parking utilization analysis shows spare capacity at all structures for alternative uses except for structure B2.

• With spare capacity and a shrinking percentage of passengers using parking (until percentage of passengers using TNCs maxes out), it’s hard to argue for more parking infrastructure. One exception would be transferring off-site parking to on-site facilities that would result in substantial cost savings over time.

• The future parking analysis reveals that parking structures A1 and B2 experience higher demand than their capacity on peak days. To a lesser extent, the cell phone lot could also experience demands greater than capacity.
CONCLUSIONS (Continued)

• Data in August and November 2018 indicates the significant effect of TNC vehicles on the operation of airport’s landside facilities.

• The results indicate significant congestion on the upper JWA Roadway during peak hours. Vehicles often cannot find and enter a curbside space. Through and maneuvering lanes are also affected due to queuing of vehicles waiting to enter a curbside space.

• The enplanements and deplanements show the total peak demand occurs at 7-8 am in the morning and 3-4 pm in the afternoon.

• Adequate capacity is provided at the parking structure A2, B2 and C TNC pickup areas.
SUMMARY

• Extensive Data Collection in August and November 2018
• Future Forecasts using MAP projections and Trip Generation Study indicated the need for circulation and capacity improvements
• Analysis was performed using HCM 2010 and TRB Research (QATAR) as well as national TNC data
• Traffic operations indicated the following peak hour needs due to the shift towards TNC’s:
  • Curbside Roadway Improvements
  • Parking Reallocation and Improvements
  • TNC Operations Improvements and Fee Adjustments
  • Pedestrian Facility Improvements
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