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TRANSPORTATION RESEARCH BOARD

How Ridehailing Companies Affect Airport Revenues and Operations

May 13, 2021

@NASEMTRB
#TRBWebinar

Learning Objectives

- Identify strategies to integrate TNC operations and customer service into overall airport ground access system
- Evaluate benefits and drawbacks of customer service, revenue generation, current operations, and long-term facility planning

American Association of Airport Executives (AAAE)

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TRB Webinar

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ACRP AIRPORT COOPERATIVE RESEARCH PROGRAM

Today's Presenters

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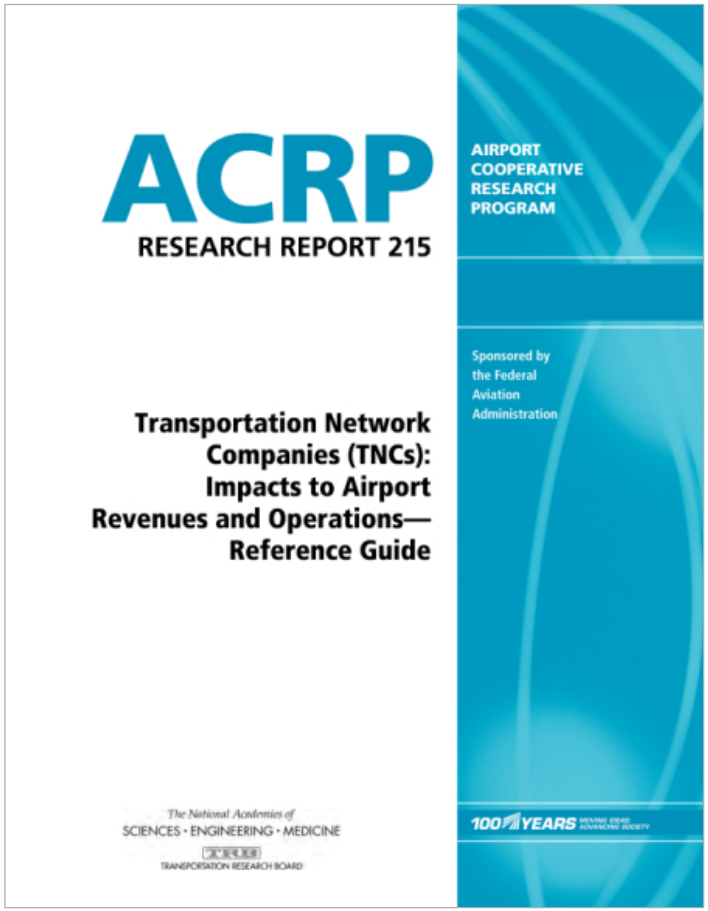
ACRP Report 215 Panel

- Eva Maria Cheong, SFO, *Chair*
- Bakari Brock, Lyft
- Tracy R. Harrison, ATL
- Mr. Kiran S. Limaye, KSL LLC
- Geoff Morrison, The Cadmus Group, Inc.
- Gary L. Myers, MWAA
- Laurie Noyes, TPA
- Susan A. Shaheen, University of California
- Aneil Patel, ACI
- Sarah Pilli, AAAE
- Kathleen Brockman, FAA
- Rodney Clark, FAA



Theresia H. Schatz, Senior Program Officer

Learning Objectives

At the conclusion of this webinar, you will be able to:

- Use the Reference Guide to identify practical strategies to integrate TNC operations into the overall airport ground access system
- Recognize the impact of TNCs on airport revenues and operations
- Understand the structure and application of a tool to estimate TNC impacts on mode share and revenue

Webinar Agenda

- Research problem and process
- Airport Survey
- Research summary
  - Operations
  - Revenues
- Applying the research: Tools and Practices
- Reference Guide
- Current topics/Conclusion
- Q & A

Research Problem

- Assess TNC impacts on non-aeronautical revenues and operations: parking and rental cars
- Identify best practices that airport operators can use to manage the impacts of TNCs on ground transportation operations
- Develop a data base and tools so that airport operators can estimate impacts on airport revenues
- Prepare a Reference Guide for airport operators

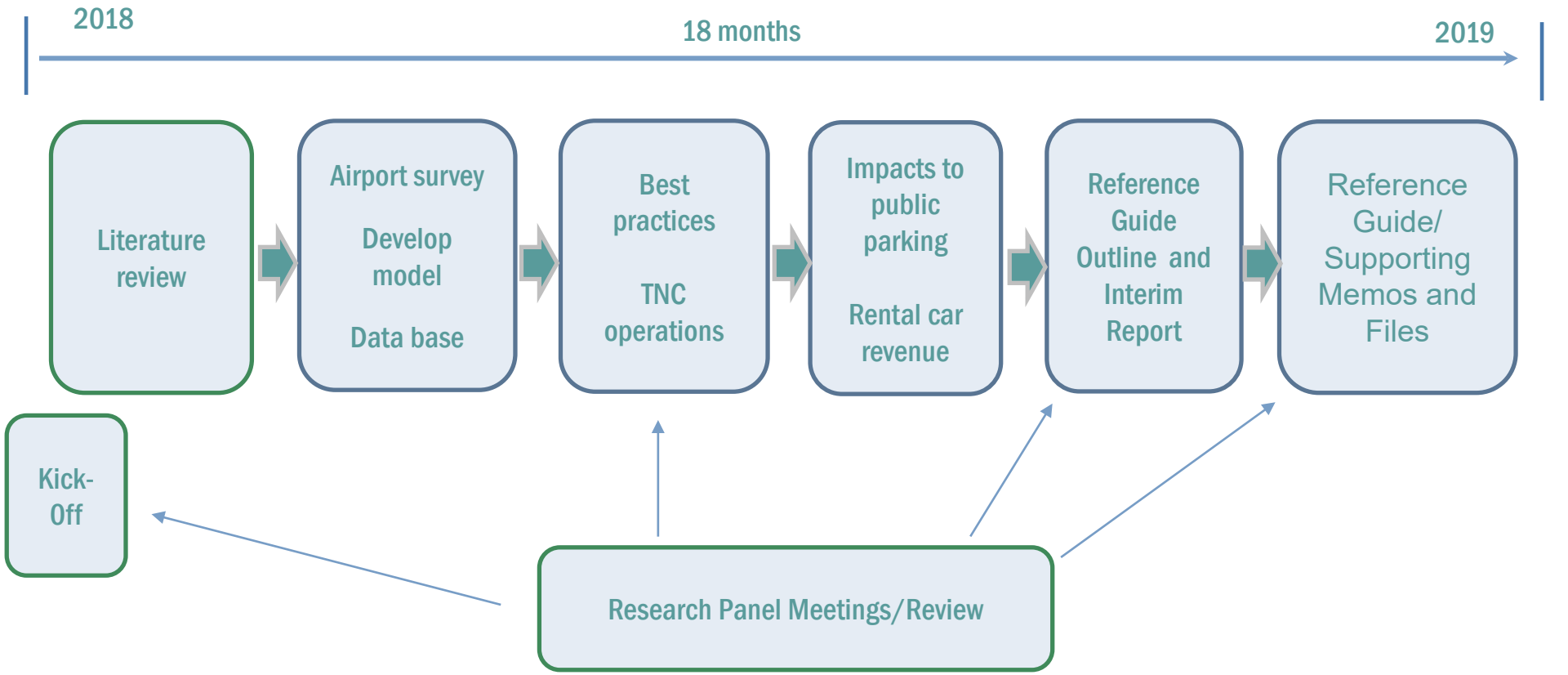
What is a Best Practice?

- The definition used for the Reference Guide is based on ACRP 146: *Commercial Ground Transportation at Airports*:

"...those practices, which, when implemented, help achieve or support the...goals of airport management."

- Standards
- Strategies
- Rules/regulations
- Fees
- Operational methods
- Facility configurations
- Other programs used by airport operators to provide, monitor, control, regulate and enforce commercial ground transportation services

Research Process



Information/Data Sources

- Literature review
- Airport survey
- Interviews
  - Airport operators
  - TNCs
  - Industry organizations
- Revenue
  - FAA Certification Activity Tracking System
  - Airport specific

Airport Survey (2018)

- Questions about ground access patterns, TNC practices, fees and operations
- 50 participants from top 100 US airports by enplanements
  - Large Hub: 22 – 44%
  - Medium Hub: 13 – 26%
  - Small Hub: 15 – 30%
- As of 2018, ~90% had permitted TNCs
- Created database of survey responses
- Obtained additional ground access and airports to support further analysis

Airport Survey (2018): Investments

Larger airports, particularly, have needed to make capital investments to keep up with TNC demand

TNC growth has required airports to be both nimble (re-assigning curb space and re-locating staging areas) and forward-thinking (major capital investments to support TNCs)

INVESTMENTS/ OPERATIONAL CHANGES	LARGE HUB	MEDIUM HUB	SMALL HUB	ALL AIRPORTS*
Made landside capital investments due to TNCs	82%	38%	40%	58%
Have changed pick-up/drop-off locations of other modes due to TNC presence	45%	23%	13%	30%
Developed dedicated staging lot for TNCs	82%	62%	60%	70%

Unweighted results

Airport Survey (2018): Operations

CATEGORY	LARGE	MEDIUM
Primary drop-off locations	76% designate the private vehicle departure/ticketing curb; 19% designate private vehicle/baggage claim curb.	75% designate the private vehicle departure/ticketing curb; others have designated the private vehicle/baggage claim curb and commercial vehicle only locations on both departure/arrival levels.
Primary pick-up locations	45% designate private vehicle/baggage claim curb; 32% designate the departures level curb; the rest designate commercial vehicle only curbs or nearby parking structures/lots.	45% designate private vehicle/baggage claim curb; 31% designate the departures level curb.
Has TNC presence led to change in pick-up/drop-off locations of other modes?	45%	23%
TNC staging lot location/number spaces	82% dedicated lot; 9% combined taxi + TNC lot mean =222 spaces	62% dedicated lot; 8% combined taxi + TNC lot mean = 74 spaces
Rematch status	52% do not allow; 38% allow with some restrictions; 10% allow with no restrictions.	58% do not allow; 8% allow with some restrictions; 33% allow with no restrictions.
Operational requirements	Most airports designate specific pick-up and drop-off curbs, require display of trade dress, and place a limit on dwell time in staging areas; 9% of large hubs have a vehicle fuel-efficiency requirement.	
Have TNCs impacted landside operating costs?	Yes: 91%	Yes: 62%
TNC impact on roads, curbs, crosswalks?	Yes: 86%	Yes: 85%
Level of TNC wayfinding	64% have signage equivalent to that of parking or other ground access modes; 23% had no TNC-related wayfinding.	54% have signage equivalent to that of parking or other ground access modes; 46% have no TNC-related wayfinding.

Industry Interviews

Airports	
Hartsfield-Jackson Atlanta International Airport	Planning Manager
Boston Logan International Airport	▪ Ground Transportation Unit managers ▪ Capital Programs Director
Denver International Airport	Parking and Transportation Systems Director
Dallas Fort Worth International Airport	Ground Transportation Manager
Pittsburgh International Airport	Terminal Operations Manager
Reno-Tahoe International Airport	Landside Operations Manager
San Francisco International Airport	Landside Operations Manager
TNC Companies/Drivers	
Organizations	
American Association of Airport Executives	Member Service Manager
Airports Council International	Air Policy Director
Airport Ground Transportation Association	Executive Director

Research Summary: Operations

CATEGORY	DESCRIPTION	NOTES
Recalibrate pick-up and drop-off locations	▪ Flex between Departures and Arrivals levels to reallocate TNC activities to less congested locations. ▪ Consider the role of non-terminal locations (nearby garages and surface lots) for pick-up; if garages are used, spaces should be designed to allow for pull-through rather than backing into travel aisles. ▪ Consider establishing intermodal centers for all commercial ground transportation operations. ▪ Analyze proposed changes w/microsimulation model, e.g., VISSIM, or with the spreadsheet tool developed for ACRP Report 40.	▪ Many large hubs have proactively and creatively reassigned pick-up and drop-off locations to make efficient use of available curbs and designate "underutilized" airport property, such as nearby garages and mini staging areas for pick-up.
Driver training	▪ As a permit condition, require TNC companies to prepare guides that accurately reflect current airport regulations.	▪ The method of delivery at the discretion of the company: e.g., handouts, instructions on website.
Wayfinding	▪ Install wayfinding at least to a level of information/guidance comparable to that provided for other ground transportation services. Consider using the AAAE Common Standard for Wayfinding (August 2018) term and icon.	▪ Consider adding walk-time information to signs
Special operations	▪ Rematch has the potential to reduce dead-head trips, relieve hold lot demand, improve customer service by reducing wait times, and may also reduce vehicle miles of travel on an airport's access roads. They should be considered a best practice subject to the configuration of an airport's access roads.	▪ Rematch works well on a single-level roadway system; airports with upper and lower drives must verify the system lends itself to rematch operations.
Enforcement	▪ Vehicles should display trade dress and any other airport commercial ground transportation tags. Drop-off/pick-up only in designated areas; drivers must not dwell for excessive time at the curb, or solicit riders.	▪ Penalties for violations should be included in permits.

Research Summary: Operations

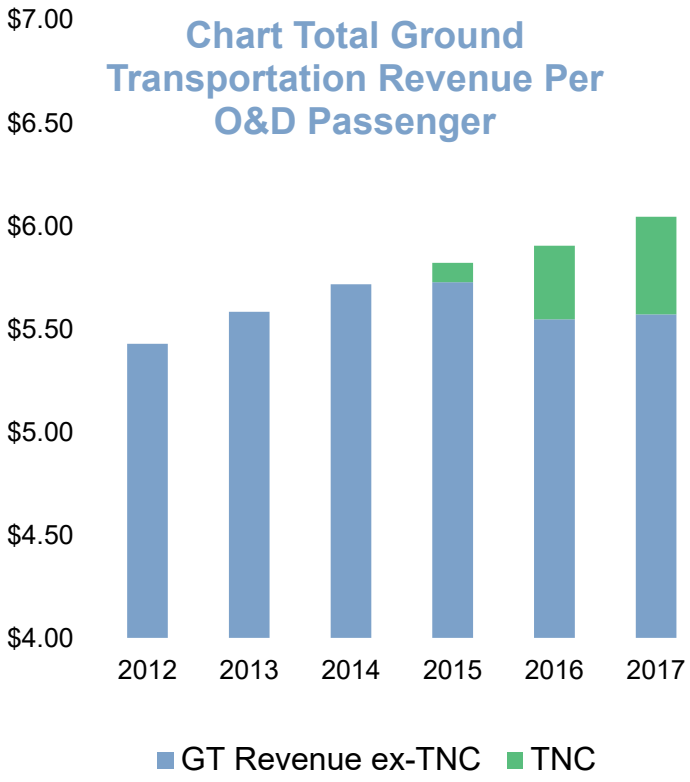
CATEGORY	DESCRIPTION	NOTES
Planning and customer service	▪ Integrate TNC operations into broader commercial ground transportation environment. ▪ Establish passenger wait-time standards.	▪ Establish mode share goals. ▪ Enforce ADA requirements. ▪ Consider planning ground transportation centers that are flexible and adaptable to changes in mode share, app platforms, and technology.
Environmental impacts	▪ Permit operations that reduce dead trips (e.g., rematch). ▪ Establish fuel-efficiency requirements. ▪ Provide incentives for use of alternative fuel/electric vehicles.	▪ SEA: Environmental Key Performance Indicator requires use of vehicles with >45 miles-per-gallon fuel rating; also allows rematch, which reduces deadhead trips. ▪ PHX: 10 percent discount on trip fees for dedicated alternative fuel vehicles.
Road/ curb congestion	▪ Use GIS mapping and video monitoring to supplement simulation models and to identify curb "hot spots." ▪ Check nearby intersections for capacity to handle TNC design hourly volumes.	▪ Apply VISSIM model to each of the four curbside roadways serving the domestic and international terminals. ▪ Modify TNC routing in response to peak-period congestion.

Research Summary: Revenues

- The research incorporated four different sources of data to evaluate the impact of TNCs on airport revenues over a three-year period:
  - Survey results from 50 airports
  - FAA Certification Activity Tracking System (CATS) with annual airport financial reporting
  - Publicly available airport data from bond disclosure documents and airport financial reporting
  - Proprietary airport data with monthly revenue and transaction detail across multiple modes ground transportation
- The diverse set of data supported comprehensive qualitative and quantitative analyses that identified common trends across different types of airports.

Research Summary: Revenues

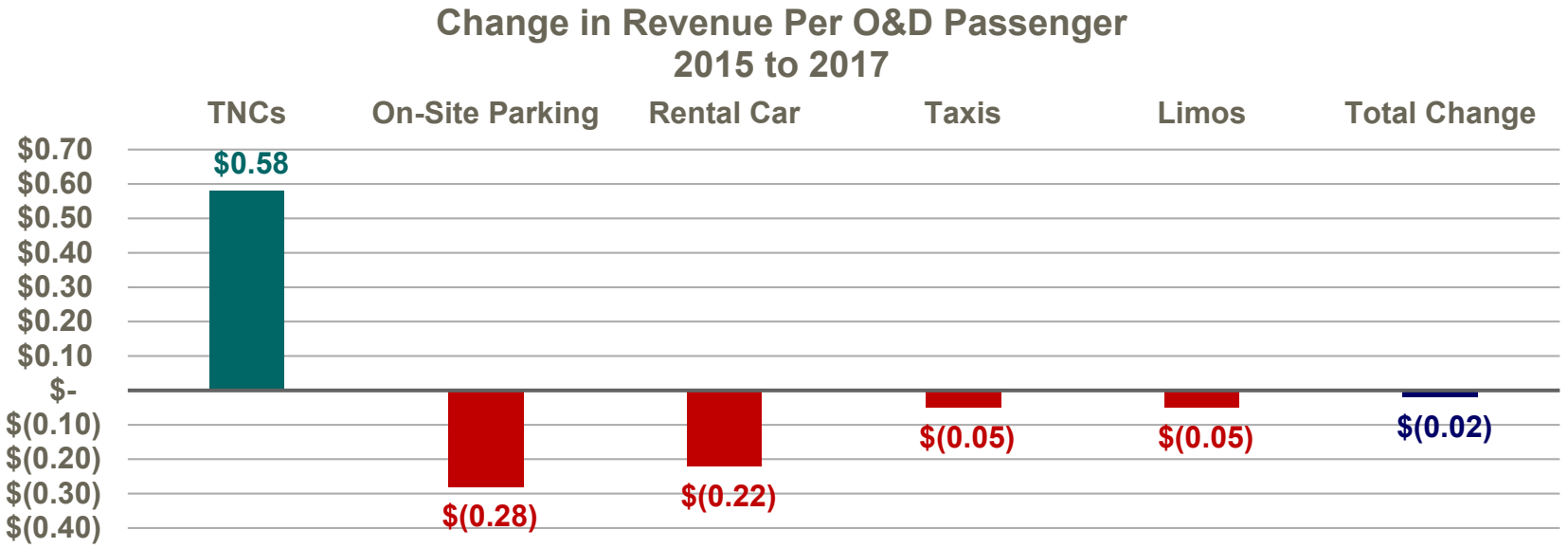
- The use of TNCs reduced revenues derived from taxi and limos at most airports.
- The impact on parking, rental cars and other modes was less clear as changes in rates and duration per transaction also impacted revenues.
- TNCs generated revenues that typically offset the losses from other modes.
- While difficult to measure, it's understood that TNCs generated incremental revenue by substituting private vehicles, which do not generate revenue at most airports.



Notes:
GT – Ground Transportation
TNC – Transportation Network Company
Sources: Federal Aviation Administration, Certification Activity Tracking System, 2018; RSG, Task 3 Survey, R

Research Summary: Impacts on Revenues

- Proprietary airport data indicated that revenue from TNCs nearly offset losses from other modes on a per O&D passenger basis.
- Analysis of different data sources revealed similar revenue patterns at most airports.



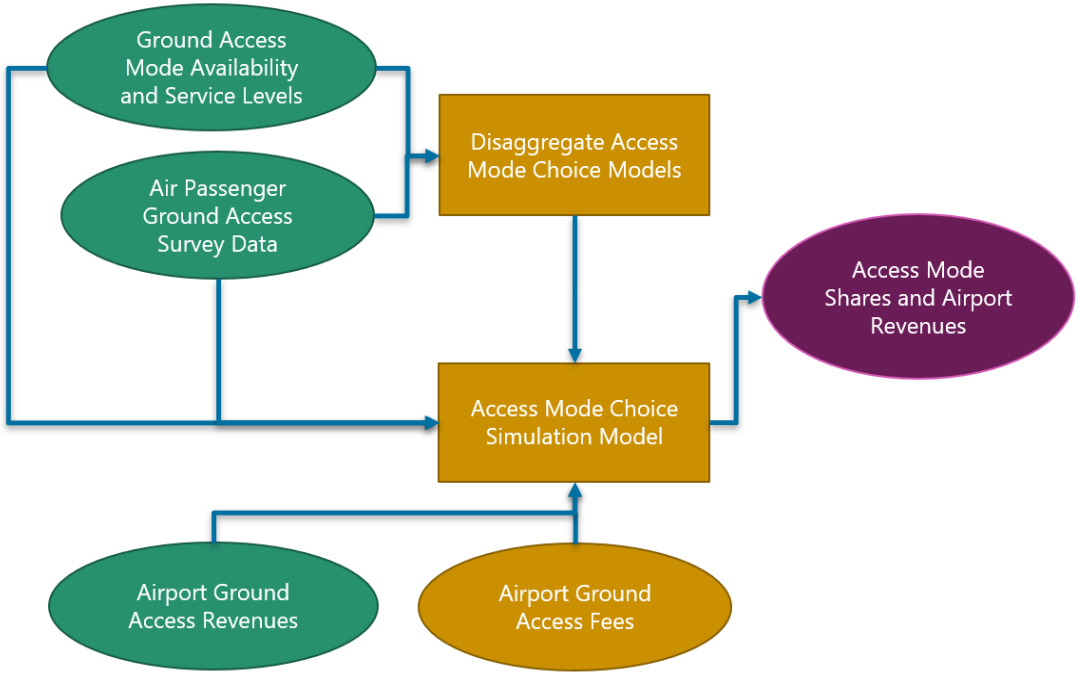
Notes:
O&D – Origin and Destination
TNC – Transportation Network Company
Sources: Ricondo & Associates, Inc., analysis of proprietary data provided by select large-hub airports, February 2019

Applying the research: four examples

- Revenue and mode share modeling
- Regulations
- Curb management
- Ground transportation centers

1. Tool to Estimate Future Ground Access Mode Shares and Revenues

- TNCs compete with all other ground access alternatives
- Changes in fees, prices and service levels of any one alternative can affect all others
- Ground access **mode choice models** can be used to estimate the shifts in mode shares that would result from these changes
- Ground access **fee structure** determines effects of mode shifts on revenues



Ground Access Mode Choice Models

- ACRP Synthesis 5 details approaches for developing these models
  - Many airports already have data needed to build mode choice models
    - Passenger ground access surveys
    - Data on service levels and prices for existing modes
  - Previously-developed mode choice models may need updating to account for TNCs
- Mode choice models That explicitly include TNCs were developed for DCA and SFO
  - Used most recent available air passenger survey data
  - Augmented with price and service data for all available modes
  - Nested logit models developed using statistical estimation

Tool for Estimating Airport Ground Access Shares and Revenues

- Combines ground access mode choice model with fee data and revenue calculations
- Pilot implementations for SFO and DCA, demonstrate that:
  - There are significant differences among airports in how TNCs affect mode shares and revenues
  - TNCs compete with all ground access options, not just taxi and on-airport parking
  - Raising TNC fees can result in only modest increases or even declines in revenue due to shifts to private vehicle drop-offs
  - Price elasticities are quite high, meaning that raising parking prices may result in further reductions in revenues

Simulator Scenario Inputs

Airport Mode Choice and Ground Transportation Revenue Simulator Template

ACRP 01-35

Transportation Network Companies (TNCs): Impacts to Airport Revenues and Operations

Created by RSG

August 2019

This template is designed to introduce ground transportation planning practitioners to the inner workings of a mode choice model and simulator. This template uses data and models developed for SFO as part of ACRP 01-35. Model and simulator specification is intended for this use only and should otherwise only be considered illustrative of what a tool may look like in any other context.

Adjust multiplier or additive inputs to see the mode share and revenue impacts for that particular policy change

	SFO Inputs			
Inputs	**cost multiplier**	**cost additive**	**time multiplier**	**time additive**
Private vehicle drop off	1	0	1	0
Parking- domestic garage	1	0	1	0
Parking- international garage	1	0	1	0
Parking- long-term lot	1	0	1	0
Parking- off-airport	1	0	1	0
Rental car	1	0	1	0
Taxi	1	0	1	0
TNC (Uber, Lyft)	1	1.5	1	0
Limo	1	0	1	0
Shared-ride van	1	0	1	0
Other scheduled bus	1	0	1	0
Transit	1	0	1	0
multiplier for asc_tnc	1			

dashboard | data | calibration | models

Simulator Output (Increase TNC fees by $1.50)

SFO Mode Shares				
	Mode Share	Base Mode Share	Absolute Change	Percent Change
Private vehicle drop off	25.7%	25.7%	0.1%	0.3%
Parking- domestic garage	2.8%	2.8%	0.0%	0.3%
Parking- international garage	0.7%	0.7%	0.0%	0.3%
Parking- long-term lot	3.4%	3.4%	0.0%	0.3%
Parking- off-airport	3.8%	3.8%	0.0%	0.3%
Rental car	16.1%	16.1%	0.0%	0.2%
Taxi	12.2%	12.1%	0.0%	0.4%
TNC (Uber, Lyft)	10.6%	10.8%	-0.2%	-2.3%
Limo	4.5%	4.5%	0.0%	0.4%
Shared-ride van	6.4%	6.4%	0.0%	0.2%
Other scheduled bus	1.8%	1.8%	0.0%	0.2%
Transit	12.0%	12.0%	0.0%	0.3%
	100.0%	100.0%		

SFO Revenue (in $1000)				
	Scenario Revenue	Base Revenue	Change in Revenue	Percent Change in Revenue
Private vehicle drop off	$ -	$ -	$ -	0.0%
Parking- domestic garage	$ 36,128	$ 36,016	$ 112	0.3%
Parking- international garage	$ 8,604	$ 8,582	$ 23	0.3%
Parking- long-term lot	$ 29,888	$ 29,793	$ 94	0.3%
Parking- off-airport	$ 29,256	$ 29,163	$ 93	0.3%
Rental car	$ 52,955	$ 52,857	$ 98	0.2%
Taxi	$ 5,765	$ 5,742	$ 22	0.4%
TNC (Uber, Lyft)	$ 11,363	$ 11,629	$ (266)	-2.3%
Limo	$ 3,802	$ 3,787	$ 15	0.4%
Shared-ride van	$ 861	$ 859	$ 2	0.2%
Other scheduled bus				
Transit				
Total Parking Revenue	$ 103,876	$ 103,554	$ 322	0.3%
Total Fees	$ 74,746	$ 74,875	$ (129)	-0.2%
Total Revenue Parking + Fees	$ 178,622	$ 178,429	$ 193	0.1%

Private vehicle drop-offs increase 0.3%

TNC shares decline by 2.3%

Total revenues increase by only 0.1%

Increase airport parking price 10%

SFO Mode Shares				
	Mode Share	Base Mode Share	Absolute Change	Percent Change
Private vehicle drop off	26.0%	25.7%	0.3%	1.2%
Parking- domestic garage	2.5%	2.8%	-0.3%	-10.5%
Parking- international garage	0.6%	0.7%	-0.1%	-9.0%
Parking- long-term lot	3.2%	3.4%	-0.2%	-6.1%
Parking- off-airport	3.6%	3.8%	-0.2%	-5.1%
Rental car	16.1%	16.1%	0.0%	0.2%
Taxi	12.2%	12.1%	0.1%	0.6%
TNC (Uber, Lyft)	11.0%	10.8%	0.1%	1.3%
Limo	4.5%	4.5%	0.0%	0.8%
Shared-ride van	6.4%	6.4%	0.0%	0.7%
Other scheduled bus	1.8%	1.8%	0.0%	1.5%
Transit	12.1%	12.0%	0.1%	0.9%
	100.0%	100.0%		

SFO Revenue (in $1000)				
	Scenario Revenue	Base Revenue	Change in Revenue	Percent Change in Revenue
Private vehicle drop off	$ -	$ -	$ -	0.0%
Parking- domestic garage	$ 34,008	$ 36,016	$ (2,007)	-5.6%
Parking- international garage	$ 8,291	$ 8,582	$ (291)	-3.4%
Parking- long-term lot	$ 29,915	$ 29,793	$ 121	0.4%
Parking- off-airport	$ 29,685	$ 29,163	$ 522	1.8%
Rental car	$ 52,952	$ 52,857	$ 95	0.2%
Taxi	$ 5,776	$ 5,742	$ 34	0.6%
TNC (Uber, Lyft)	$ 11,776	$ 11,629	$ 147	1.3%
Limo	$ 3,818	$ 3,787	$ 30	0.8%
Shared-ride van	$ 866	$ 859	$ 6	0.7%
Other scheduled bus				
Transit				
Total Parking Revenue	$ 101,900	$ 103,554	$ (1,655)	-1.6%
Total Fees	$ 75,187	$ 74,875	$ 312	0.4%
Total Revenue Parking + Fees	$ 177,087	$ 178,429	$ (1,342)	-0.8%

Private vehicle drop-offs increase 1.2%

TNC shares increase by 1.5%

Total revenues decrease by 0.8%

Impose $5 private vehicle drop-off fee

SFO Mode Shares				
	Mode Share	Base Mode Share	Absolute Change	Percent Change
Private vehicle drop off	24.4%	25.7%	-1.3%	-4.9%
Parking- domestic garage	2.9%	2.8%	0.1%	1.8%
Parking- international garage	0.7%	0.7%	0.0%	1.9%
Parking- long-term lot	3.5%	3.4%	0.1%	2.2%
Parking- off-airport	3.9%	3.8%	0.1%	2.3%
Rental car	16.3%	16.1%	0.2%	1.3%
Taxi	12.3%	12.1%	0.2%	1.3%
TNC (Uber, Lyft)	11.1%	10.8%	0.2%	2.2%
Limo	4.5%	4.5%	0.1%	1.6%
Shared-ride van	6.5%	6.4%	0.1%	1.8%
Other scheduled bus	1.9%	1.8%	0.0%	2.3%
Transit	12.2%	12.0%	0.2%	1.6%
	100.0%	100.0%		

SFO Revenue (in $1000)				
	Scenario Revenue	Base Revenue	Change in Revenue	Percent Change in Revenue
Private vehicle drop off	$ 17,269	$ -	$ 17,269	0.0%
Parking- domestic garage	$ 36,755	$ 36,016	$ 740	2.1%
Parking- international garage	$ 8,764	$ 8,582	$ 182	2.1%
Parking- long-term lot	$ 30,539	$ 29,793	$ 746	2.5%
Parking- off-airport	$ 29,915	$ 29,163	$ 751	2.6%
Rental car	$ 53,560	$ 52,857	$ 703	1.3%
Taxi	$ 5,815	$ 5,742	$ 73	1.3%
TNC (Uber, Lyft)	$ 11,884	$ 11,629	$ 254	2.2%
Limo	$ 3,848	$ 3,787	$ 60	1.6%
Shared-ride van	$ 875	$ 859	$ 15	1.8%
Other scheduled bus				
Transit				
Total Parking Revenue	$ 105,973	$ 103,554	$ 2,419	2.3%
Total Fees	$ 93,250	$ 74,875	$ 18,374	24.5%
Total Revenue Parking + Fees	$ 199,223	$ 178,429	$ 20,793	11.7%

Private vehicle drop-offs decrease 4.9%

TNC shares increase by 2.2%

Total revenues increase by 11.7%

2. Best Practices: Regulations

- Require that TNCs and/or TNC drivers carry primary insurance coverage that specifically covers TNC activity
- Require TNCs to provide proper training for TNC drivers to ensure compliance with airport rules and regulations and familiarity with roadways and curbsides.
- Establish minimum requirements for accessible vehicles and other policies to accommodate passengers with disabilities.
- Develop flexible policies and arrangements that can address changes in TNC technology and business models.
- Collaborate with TNCs to address issues of mutual concern for airports and TNCs:

  - TNC driver permitting
  - Background checks
  - Driver supply
  - Surge pricing

3. Best Practices: Curb Management

- Reassign pick-up/drop-off locations
  - Utilize Departures and Arrivals level
- Rematch
  - Pax drop-off, then pick-up without returning to hold lot
  - Reduce VMT and passenger wait time
- Pin code: connect pax with next available driver
- Express Match/Tiered Queuing
  - Stage vehicles along the curb; reduces wait times/improves physical distancing
  - At > 12 U.S. airports

4. Best Practices: Inter-modal Facilities

- Ground Transportation (GT) Centers
  - Support customer choice by accommodating:
    - commercial vehicles: TNCs, taxis, limos, shared-ride vans
    - shuttles: scheduled service, employees, hotel/off-airport parking
  - Assign pick-up/drop-off curbs according to demand
  - As market share for a mode grows/shrinks, and as new technologies emerge, GT centers offer flexibility to accomodate
  - GT centers can support complementary services, such as remote bag check
- Examples
  - LAX
  - MSP
  - BNA
  - PDX

Reference Guide Overview

Topics and best practices:

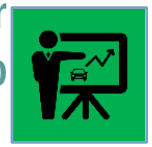
- Assigning efficient passenger **drop-off** and **pickup** areas
- Installing effective **wayfinding**
- Developing **permitting** procedures
- Sizing and managing vehicle **staging areas** and **hold** lots
- Establishing **trip fees** charged to TNCs and collecting and auditing
- **Modeling the effects of changing trip fees** on revenue and mode share
- Updating capital plans to support **evolving ground transportation operations**

The Guide details 24 best practices organized into four categories

1. **Policy development and permits:** broad initiatives and regulatory tools

2. **Landside management, operations, and analysis:** tools available to airport operators for maintaining efficient and effective TNC operations on terminal roadways, curbs, and stagi areas

3. **Financial and business development, revenue analysis, and capital programming:** methods for monitoring revenue impacts, including the model that can estimate the broad impacts of trip changes on mode share and revenue based on supply and demand



4. **Technology** covers current and emerging practices that use automated vehicle identification, PIN matching, and other technology-based tools and concepts.

Example: Curb Management

OBJECTIVES	Reduce airport access road and curb congestion; make best use of available landside capacity.
DESCRIPTION OF PRACTICE	Flex between departure and arrival levels to reallocate TNC activities to less congested locations. Consider the role of nonterminal locations (nearby garages and surface lots) for pick-up and drop-off; if garages are used, spaces should be designed to allow drivers to pull through rather than back into travel aisles. Consider using (or establishing) intermodal centers for all commercial ground transportation operations. Analyze proposed changes with a microsimulation model, such as VISSIM, or with the spreadsheet tool developed for *ACRP Report 40*. Monitor mode market share every 6 months and adjust curb assignments (linear feet, location) commensurate with demand. Ensure vehicles display trade dress and any other airport commercial ground transportation tags. Drop-off and pick-up should only be in designated areas, and drivers must not block lanes, dwell for excessive time at the curb, or solicit for riders.
EXAMPLES OF HOW IT HAS WORKED	The operators of BOS, DFW, DEN, LAX, SEA, and SFO have proactively and creatively reassigned pick-up and drop-off locations to make efficient use of available curbs and to designate "underutilized" airport property, such as nearby garages and mini staging areas, for pick-up. New drop-off/pick-up location for Uber and Lyft at DEN; TNC passengers will now use Level 5 (commercial GT level), not Level 6; airport staff began researching options for pick-ups and drop-offs earlier this year and worked closely with the TNCs to streamline procedures. At Montréal–Pierre Elliott Trudeau International Airport, clear striping indicates designated TNC zones. The BNA sponsor created a TNC pick-up area on the ground floor of a new short-term parking garage. The MSP operator is building a new transit center that will enable the airport to Allow taxicabs and TNCs to pick up in the same area. Relocate off-airport parking shuttles. Relocate limousine operations. Relocate courtesy and corporate shuttles. Relocate charter and employee buses.
LONG-TERM PLANNING CONSIDERATIONS	Design landside infrastructure with flexibility in mind. Given that existing modes of ground transportation may gain or lose popularity, and new modes may materialize, infrastructure should be built and designed to accommodate a range of growth scenarios and mode shifts.
ADDITIONAL RESOURCES	ACRP Project 03-47, "Rethinking Airport Parking Facilities to Protect and Enhance Non-Aeronautical Revenue" *ACRP Report 40: Airport Curbside and Terminal Area Roadway Operations*

Example: Rematch

OBJECTIVES	Reduce deadhead trips and emissions; reduce customer pick-up wait times. Rematch can be an effective solution for airports with congested staging lots, as it reduces the number of drivers dispatched from the staging lots.
DESCRIPTION OF PRACTICE	Rematch is a dispatch technology that allows a TNC vehicle to drop off a passenger and immediately become eligible to pick up a new passenger within a defined period of time. Feasibility of this practice depends on the specific airport roadway layout; the practice works best where drop- offs and pick-ups can occur on the same level or in a separate nearby area, such as a surface lot or garage. Some airport operators have established a rematch-specific entrance for a shorter loop that allows recirculation to all airport terminal roadways. Rematch has the potential to reduce Deadheading and congestion. Total vehicle miles driven per passenger. Vehicles in staging lot. Passenger wait times and cancellations.
EXAMPLES OF HOW IT HAS WORKED	At airports where rematch has been implemented, passenger pick-up wait times have been reduced by over 30 percent. At SEA, Lyft achieved reductions in deadheading through the rematch program and received an Aviation Environmental Excellence Award from the Port of Seattle in 2018.
LONG-TERM PLANNING CONSIDERATIONS	The rematch algorithm calculates the estimated travel time between a drop-off location and a pick- up location. The driver with the shortest route to the pick-up point will receive a request in lieu of a new driver being dispatched from the waiting lot. As long as roadways accurately appear in mapping software, rematch will dispatch an eligible driver with the quickest route to the pick-up point, even if that routing requires switching levels or using an airport return/U-turn roadway.

Current Topics

- Employee classification
- New entrants
  - Blacklane – chauffer hailing; airport concierge service; available in Los Angeles, Miami, New York City
- Monetizing the curb
  - Access fees
  - Congestion pricing
- Technology
  - Contactless/Frictionless, etc.
  - Travel time/congestion information

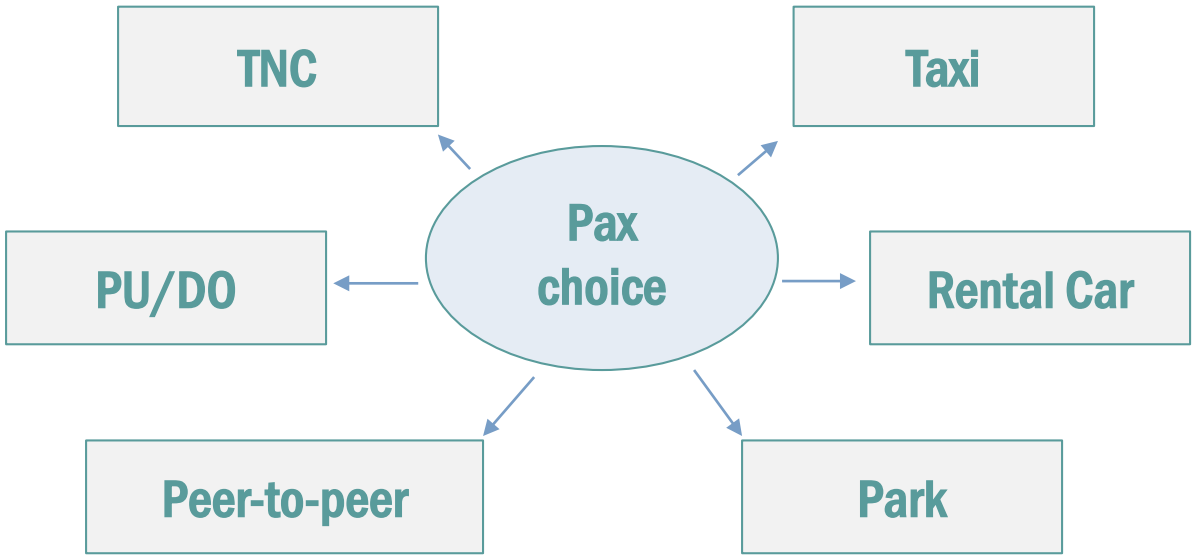
Pandemic Impacts

- OSHA guidance for rideshare and taxi workers:

  https://www.osha.gov/sites/default/files/publications/OSHA4021.pdf

- Responses: Airports, TNCs/Commercial Providers and Pax

Ground Access Options



Remaining Current

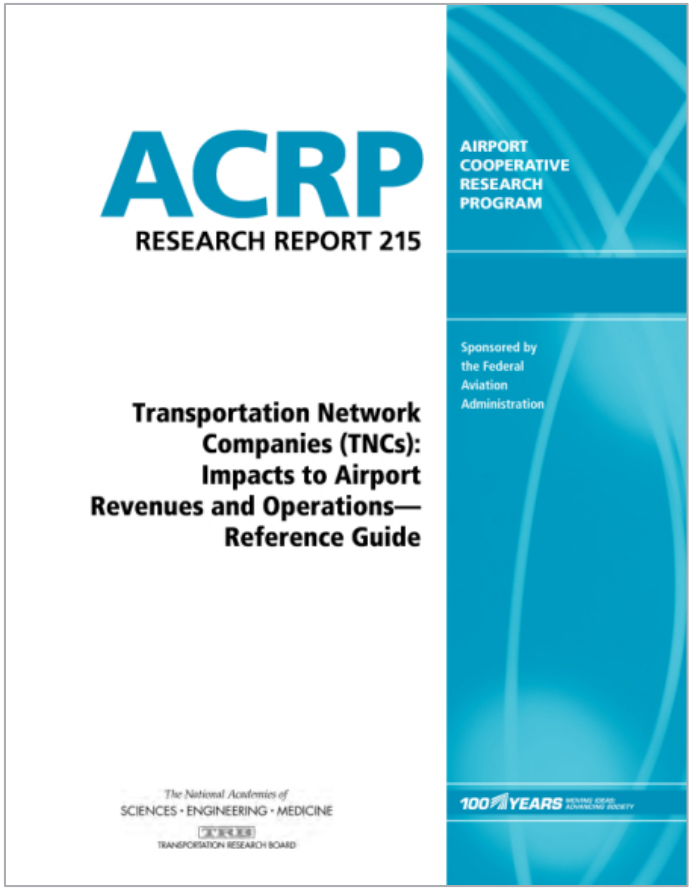
- TRB Committee AV050: Airport Terminals and Ground Access

  Mid-year meeting – May 27th, 2021, 3:30 PM (EST) register at:

  https://nasem.zoom.us/meeting/register/tJwkdOqgqDorE9VInhXM9e--qwqLTi_I5AgN

- TRB Annual Conference, January 9-13, 2022
- Airport Ground Transportation Association (AGTA) "Let's Talk About It" online webinars twice a month
- AAAE Parking and Landside Management Workshop, November 7-9, 2021 (virtual)
- ACI Business of Airports Conference, Spring 2022

FOR ADDITIONAL INFORMATION



- Survey Database
- Simulator Template

Available at:

https://www.nap.edu/catalog/25759/transportation-network-companies-tncs-impacts-to-airport-revenues-and-operations-reference-guide

Related TRB Titles

- ACRP Report 146: Commercial Ground Transportation at Airports
- ACRP Report 225: Rethinking Airport Parking Facilities to Protect and Enhance Non-Aeronautical Revenues
- ACRP Impacts on Practice: A New Framework for Ground Transportation at Phoenix Sky Harbor Airport, Feb. 2018
- ACRP Report 40: Airport Curbside and Terminal Area Roadway Operations (*research update in progress*)
- Special Report 319: Between Public and Private Mobility — Examining the Rise of Technology-Enabled Transportation Services
- TCRP Report 195: Broadening Understanding of the Interplay Among Public Transit, Shared Mobility, and Personal Automobiles

Q & A

Moderator: Eva Maria Cheong