



# Emerging Challenges in the Master Planning Process

Airport Master Plans: Standing the Test of Time

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**ACI-NA**  
Annual Conference  
& Exhibition  
September 7-10  
Atlanta, GA

- **Industry Changes**
- **Passenger Characteristics**
- **Comprehensive Issues**
- **Terminal Facility Challenges**
- **Landside Facility Challenges**
- **Airfield Facility Challenges**
- **Other Issues/Trends**



# INDUSTRY AND PASSENGER CHANGES

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# Industry Changes



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- Continuing Consolidation of the Airline Industry

- Changing carrier networks

- Changes in flows over hubs
- Changes in spoke to hub connections

- Consolidation of facilities at airports

- Potential economies of scale in operations and administrative spaces
- Consolidation of support facilities (maintenance hangars, airline cargo facilities, etc.)

- Hub airport

- Winners and losers depending on geography, hub redundancy, and geographic strengths of combined carrier leading to either increased or decreased facility needs

- Spoke airport

- Potential for new non-stop markets
- Potential to lose hub service



# Industry Changes



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- Changing Domestic Fleet

- Continued growth in average aircraft size

- retirement of older and smaller narrow-bodied aircraft in the mainline fleet,
    - increasing share of mainline over regional carriers,
    - increasing regional carrier size with the retirement of 50 seat aircraft.

- In general passengers growing faster than operations

- airfield capacity not as significant of issue as historically
    - gate size growing more than gate number



- Aging Travelers



- The number of aging travelers will continue to increase
  - Percent of US population over 65 will increase 40% between 2015 and 2035
  - The propensity of older travelers to travel by air will increase
- Unique challenges facing aging travelers (ACRP Synthesis 11-03/Topic S07-01)
  - Wayfinding (roads, parking, terminal)
  - Fatigue (walking distances, baggage handling, queues)
  - Vertical circulation
  - New technology acceptance
- Provision of seating in baggage claim, way stations, adequate space for scooters/personal wheelchairs, etc.



# COMPREHENSIVE ISSUES

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# Comprehensive Issues



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- More Businesslike Approach to Planning and Development Decision-making
  - Detailed analysis of renewal versus replacement decisions
  - Monetizing underutilized space/property and repurposing
  - Consider infrastructure benefits beyond capacity (added value/revenue opportunities, new market opportunities, reduce operating expenses)
  - Packaging capacity expansion to be “just in time” to maintain flexibility to respond to changing environment



- Aging Infrastructure and Facilities
  - Many facilities are reaching the end of their useful life depending on historical maintenance practices (parking garages, terminals, concourses, etc.)
  - Renewal projects can become significant cost components of CIP
  - Technology and other requirements of current and future facilities requiring detailed analyses of renewal versus replacement
  - Facility re-lifing/modernization, rehabilitation, replacement

# Comprehensive Issues



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- Continued Focus on Non-aeronautical Opportunities
  - Additional revenue
  - Job creation
  - Utilization of available property
  - Commercial development opportunities providing additional amenities to travelers (pet kennels, travel plazas, etc.)
  - Commercial development opportunities with airport synergies (hotel, office, etc.)





# SPECIFIC FACILITY ISSUES

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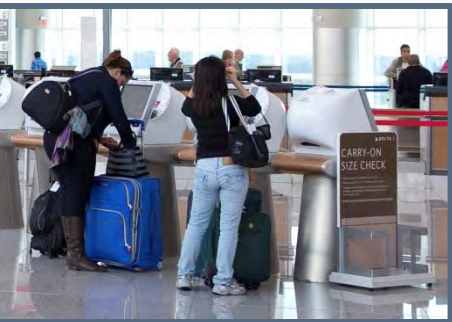


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# Terminal Facility Challenges



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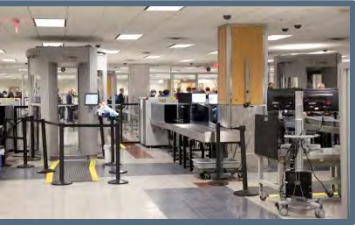


- Passenger Processing
  - Continued evolution of airline terminal functions/process
    - self check-in, bag tagging and bag drop
    - changes to area requirements and physical layout
    - To the extent demand at the “counter” is reduced, condensed show-up profiles that could impact other processes could occur
  - Unknowns resulting in conservative approach to facility sizing to allow flexibility

# Terminal Facility Challenges



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- Increasing Segmentation of Passenger Service Delivery
  - Airline check-in options (process and service level)
  - TSA programs (known crewmember, TSA Pre™, frequent flyer elite)
  - CBP (Global Entry, APC kiosk, US/Canadian, visa waivers, permanent resident aliens, others)
  - Processing time improvements but with space implications

# Terminal Facility Challenges



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- Evolution of the “Passenger Experience”

- The blurring of lines between transit space (corridors, holdrooms) and concessions

- In-holdroom concessions

- In-holdroom food ordering

- Non traditional seating

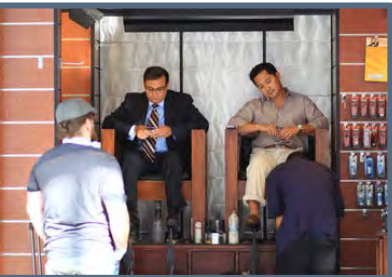
- Space requirements

- Holdroom space

- Specialized seating

- Technology requirements (ordering tablets)

- Concession space for order fulfilment and delivery



# Landside Facility Challenges



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- Parking Facilities

- Increased use of technology

- Use of Parking Apps
- Improved parking management (smart systems)
- Parking access control (LPR)
- E-payment
- result in improved customer service and operational efficiency

- Consideration of Variable Pricing

- To maximize revenue
- To manage constrained facilities
- Impacts requirements and mix of products



# Landside Facility Challenges



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- Parking Facilities (continued)

- Meet and Greet Parking

- On-line reservation-based valet
    - Remote storage facilities and high density utilization
    - Need for close-in Meet and Greet Facility, and remote parking storage



# Landside Facility Challenges



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- Car Sharing

- Competes with Rental Car Industry

- Company (Zip Car, Silvercar, Hertz On-Demand, Enterprise CarShare)
- Peer to Peer (FlightCar, Hubber)

- Impact to Rental Car Requirements

- Reduction in rentals and rental car requirements
  - Passengers opt for hourly rentals for specific activities requiring a car (Zip Car, Enterprise Share Car)
  - Passengers rent personal cars through car sharing company (Hubber, Flight Car)
- Reduction in parking revenue and requirements
  - Instead of parking at the Airport, car sharing passengers park at car share company facility and take courtesy vehicle to Airport



# Landside Challenges



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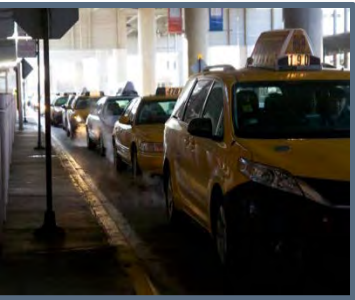
- Ride Booking

- Competes with Taxi Cab Industry

- Company (Uber, Hailo)
- Peer to Peer (lyft, UberX) Transportation Network Company (TNC)

- How will they operate at airports?

- Potential impact to taxi staging/curbfront requirements



# Landside Challenges



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Source: Wiki Commons, [http://commons.wikimedia.org/wiki/File:Google%27s\\_Lexus\\_RX\\_450h\\_Self-Driving\\_Car.jpg](http://commons.wikimedia.org/wiki/File:Google%27s_Lexus_RX_450h_Self-Driving_Car.jpg) (accessed September 5, 2014)

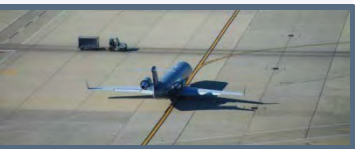
# Airside Facility Challenges



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- NextGen

- Promises significant capacity benefits by delivering a system capable of performing more consistently more often
  - Can significantly change spatial requirements and use of runway systems (especially to meet IMC requirements)
  - Little is certain at this time relative to ultimate capabilities and timing
- Near-term procedural improvements (ReCAT, RNAV DP) and other incremental capacity and safety projects (EAT, other) are the focus, with a wait-and-see approach for commitment to redefining major airfield planning parameters
  - Generally slow growth (or even declines) in activity permits delayed decisions
  - Maintains flexibility to respond when time is right





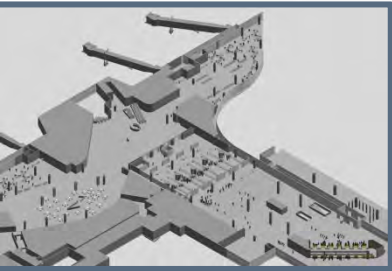
# OTHER TRENDS

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- Simulation modeling



- More detailed scrutiny of development decision is requiring more sophisticated analyses (operational simulation, revenue modeling)
- Once developed, models provide the added benefit simplified “what-if” analysis and operational analysis for implementation planning



- Sustainability

- FAA continues to evaluate the results of the pilot program which will help to determine how master plans are viewed through the lens of sustainability
- Airports will continue to seek ways to minimize environmental and social impacts





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# COMMENTS/QUESTIONS