Tulsa International Airport

Working Papers One & Two/ Public Information Meeting

September 2015

Master Plan Update
Agenda

- Introductions and Opening Comments
- Project Overview, Process, and Schedule
- Review Materials from Working Papers One & Two
- Comments, Questions, and Discussion
- Adjourn
Project Overview/Planning Process

- Project Initiation/Working Group Start-up
- Public Involvement Program
- Inventory of Existing Conditions
- AGIS Survey & Mapping Update
- Aviation Activity Demand Forecast
- Capacity & Facility Requirements Determination
- Airport Development Alternatives & Plan Formulation
- Implementation Analysis (Facilities & Operation)
- Documentation & Deliverables (Working Papers, Draft & Final Reports, ALP Drawing Set Update)
Project Overview/Planning Process

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- Documentation & Deliverables (Working Papers, Draft & Final Reports, ALP Drawing Set Update)
Project Schedule

Project Task

<table>
<thead>
<tr>
<th>Notice to Proceed</th>
<th>2015 FEB</th>
<th>MAR</th>
<th>APR</th>
<th>MAY</th>
<th>JUN</th>
<th>JUL</th>
<th>AUG</th>
<th>SEP</th>
<th>OCT</th>
<th>2016 JAN</th>
<th>FEB</th>
<th>MAR</th>
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Time Frame

KO Kickoff Meeting

SC Study Committee Meeting

WP Working Papers

P Public Information Meeting

DFR Draft Master Plan Final Report

AT Airport Improvement Trust/Plan Approval

FR Master Plan Final Report

FAA Airport Layout Plan Review

Tulsa International Airport
Inventory of Existing Conditions

- Airport Facilities (Airside)
- Airport Facilities (Landside)
- Airspace System/NAVAIDS
- Airport Environs
- Environmental Overview
Existing Airport Layout

- 4,404.4 acres
- Three (3) Runways
- Supporting Taxiway System
- Fifteen (15) IAPs
- Passenger Terminal Area
- Commercial, Corporate, & Industrial Aviation Facilities
- Cargo Facilities
- Air & Army National Guard
Existing Passenger Terminal Area Site Plan

- 2-Pier Concourse w/ 22 gates
- Looped Access Roadway
- Parking Facilities: Public, Rental Car, & Employee
- Cargo Facilities
- Hotel Facilities
- Corporate GA & FBO Facilities
Forecasts of Aviation Activity

- Overview of Airport Market Area
- Trends/Issues Influencing Future Growth
- Historic/Current Aviation Activity
- Projections of Aviation Demand
- Forecast Summary
- Critical Aircraft Analysis/Confirmation
Projections of Aviation Demand

- Historical Activity
- Commercial Service Enplanements/Operations Forecasts
- Air Cargo Activity Forecasts
- Air Freight/Mail Forecasts
- Military Activity Forecasts
- General Aviation Activity Forecasts
- Based Aircraft Forecast
Forecast Summary

Table B20 SUMMARY OF AVIATION ACTIVITY FORECASTS 2014-2034

<table>
<thead>
<tr>
<th></th>
<th>2014</th>
<th>2019</th>
<th>2024</th>
<th>2034</th>
<th>CAGR 2014-2034</th>
<th>% Difference from TAF</th>
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<tr>
<td>Passenger Enplanements</td>
<td>1,375,399</td>
<td>1,497,055</td>
<td>1,622,924</td>
<td>1,933,490</td>
<td>1.7%</td>
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<td>Operations</td>
<td></td>
<td></td>
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<tr>
<td>Commercial Service</td>
<td>39,530</td>
<td>41,459</td>
<td>43,398</td>
<td>50,687</td>
<td>1.3%</td>
<td>10.0%</td>
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<td>Narrow Body Jets</td>
<td>17,674</td>
<td>20,466</td>
<td>23,653</td>
<td>27,639</td>
<td>2.3%</td>
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<td>66+ Seat Regional Jets</td>
<td>6,404</td>
<td>13,509</td>
<td>17,205</td>
<td>21,130</td>
<td>6.2%</td>
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<tr>
<td>37-50 Seat Regional Jets</td>
<td>15,452</td>
<td>7,484</td>
<td>2,541</td>
<td>1,918</td>
<td>-9.9%</td>
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<tr>
<td>Turboprop</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0.0%</td>
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<tr>
<td>General Aviation+ Air Taxi</td>
<td>34,061</td>
<td>35,023</td>
<td>36,925</td>
<td>43,805</td>
<td>1.3%</td>
<td>17.2%</td>
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<td>Military</td>
<td>16,817</td>
<td>17,000</td>
<td>17,000</td>
<td>17,000</td>
<td>0.0%</td>
<td>0.0%</td>
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<td>Air Cargo</td>
<td>4,790</td>
<td>5,110</td>
<td>5,450</td>
<td>6,202</td>
<td>1.2%</td>
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<td>Total Operations</td>
<td>95,198</td>
<td>98,592</td>
<td>102,773</td>
<td>117,694</td>
<td>1.1%</td>
<td>8.8%</td>
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<tr>
<td>Based Aircraft (excl. military)</td>
<td>157</td>
<td>161</td>
<td>170</td>
<td>202</td>
<td>1.3%</td>
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<td>Air Cargo (tons)</td>
<td>58,627</td>
<td>64,097</td>
<td>70,077</td>
<td>83,763</td>
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Capacity Analysis

- Airfield Capacity Forecast Summary, 2014-2034 (Table C5)

<table>
<thead>
<tr>
<th>Year</th>
<th>Annual Operations</th>
<th>Design Hour Operations</th>
<th>Annual Service Volume (ASV)</th>
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<tbody>
<tr>
<td>2014</td>
<td>95,198</td>
<td>30</td>
<td>255,928</td>
</tr>
<tr>
<td>2019</td>
<td>98,592</td>
<td>30</td>
<td>265,052</td>
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<td>2024</td>
<td>102,773</td>
<td>30</td>
<td>276,292</td>
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<tr>
<td>2034</td>
<td>117,694</td>
<td>30</td>
<td>316,406</td>
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Facility Requirements

- **Airside**
  - Airfield Dimensional Criteria
  - Runway/Taxiway Layout Configuration
  - Runway Length
  - Airfield Instrumentation & Lighting

- **Landside**
  - Existing/Future General Aviation Development Areas
  - Access Taxiway Development
  - Aviation-Related/Non-Aviation Industrial Development
  - Air National Guard Expansion
  - Utility & Infrastructure Expansion
  - Airport Vehicular Access
  - Infill Redevelopment
  - Support Facilities
### Facility Requirements

- **Runway 18L/36R**
- **Design Standards Matrix – RDC D-IV-1600 (< ¾-Mile Visibility Minimums)**

<table>
<thead>
<tr>
<th>Item</th>
<th>Existing Dimension</th>
<th>FAA Criteria</th>
<th>Standard Met</th>
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<td><strong>RUNWAY DESIGN</strong></td>
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<tr>
<td>Runway Width</td>
<td>150 FT</td>
<td>150 FT</td>
<td>Yes</td>
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<tr>
<td>Shoulder Width</td>
<td>50 FT</td>
<td>25 FT</td>
<td>Yes</td>
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<tr>
<td>Blast Pad Width</td>
<td>200 FT</td>
<td>200 FT</td>
<td>Yes</td>
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<tr>
<td>Blast Pad Length</td>
<td>200 FT</td>
<td>200 FT</td>
<td>Yes</td>
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<tr>
<td>Crosswind Component</td>
<td>20 Knots</td>
<td>20 Knots</td>
<td>Yes</td>
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<td><strong>RUNWAY PROTECTION</strong></td>
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<tr>
<td>Runway Safety Area (RSA) - Both Runway Ends</td>
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<tr>
<td>Length beyond departure end</td>
<td>1,000 FT</td>
<td>1,000 FT</td>
<td>Yes</td>
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<tr>
<td>Length prior to threshold</td>
<td>600 FT</td>
<td>600 FT</td>
<td>Yes</td>
</tr>
<tr>
<td>Width</td>
<td>500 FT</td>
<td>500 FT</td>
<td>Yes</td>
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<tr>
<td>Runway Object Free Area (ROFA) - Both Runway Ends</td>
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<tr>
<td>Length beyond departure end</td>
<td>1,000 FT</td>
<td>1,000 FT</td>
<td>Yes</td>
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<tr>
<td>Length prior to threshold</td>
<td>600 FT</td>
<td>600 FT</td>
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<tr>
<td>Width</td>
<td>800 FT</td>
<td>800 FT</td>
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<td>Runway Obstacle Free Zone (ROFZ) - Both Runway Ends</td>
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<tr>
<td>Length</td>
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<tr>
<td>Width</td>
<td>400 FT</td>
<td>400 FT</td>
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<td>Precision Obstacle Free Zone (POFZ) - Both Runway Ends</td>
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<td>Length</td>
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<tr>
<td>Width</td>
<td>800 FT</td>
<td>800 FT</td>
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<tr>
<td>Approach Runway Protection Zone (RPZ)</td>
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<tr>
<td>Length</td>
<td>2,500 FT/2,500 FT</td>
<td>2,500 FT/2,500 FT</td>
<td>Yes 1,2</td>
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<tr>
<td>Inner Width</td>
<td>1,000 FT/1,000 FT</td>
<td>1,000 FT/1,000 FT</td>
<td>Yes 1,2</td>
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<td>Outer Width</td>
<td>1,750 FT/1,750 FT</td>
<td>1,750 FT/1,750 FT</td>
<td>Yes 1,2</td>
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<td>Departure Runway Protection Zone (RPZ)</td>
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<tr>
<td>Length</td>
<td>1,700 FT</td>
<td>1,700 FT</td>
<td>Yes 1,2</td>
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<td>Inner Width</td>
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<td>Yes</td>
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<td>Outer Width</td>
<td>1,010 FT</td>
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<td>Yes</td>
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<td>Runway centerline to:</td>
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<td>Parallel runway centerline</td>
<td>5,104 FT</td>
<td>5,000 FT</td>
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<td>Holding position</td>
<td>250 FT</td>
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<td>Parallel taxiway/taxilane centerline (TW &quot;E&quot;)</td>
<td>400 - 750 FT</td>
<td>400 FT</td>
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<td>Parallel taxiway/taxilane centerline (TW &quot;J&quot;)</td>
<td>500 FT</td>
<td>400 FT</td>
<td>Yes</td>
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<td>Parallel taxiway/taxilane centerline (TW &quot;G&quot;)</td>
<td>712 FT</td>
<td>400 FT</td>
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<td>Aircraft parking area (east)</td>
<td>780 FT</td>
<td>500 FT</td>
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<td>Aircraft parking area (west)</td>
<td>844 FT</td>
<td>500 FT</td>
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Facility Requirements

- Airfield Dimensional Criteria
  - Runway 18L/36R (Primary Runway)
    - RDC D-IV-1600 (< ¾-Mile Visibility Minimums)
    - Meets or Exceeds Criteria
Facility Requirements

- **Airfield Dimensional Criteria**
  - Runway 8/26 (Crosswind/Secondary Runway)
    - RDC D-III-4000 (¾-Mile Visibility Minimums)
    - Meets or Exceeds Criteria
Facility Requirements

- **Airfield Dimensional Criteria**
  - 18R/36L (Secondary Runway)
    - RDC D-II-4000 (¾-Mile Visibility Minimums)
    - Existing Non-Standard Conditions
      - RSA Length North & South
      - ROFA Length South
Facility Requirements

- Existing Runway Length Information
  - 18L/36R (Primary Runway @ 10,000’)
  - 8/26 (Crosswind/Secondary Runway @ 7,376’/7,776’)
  - 18R/36L (Secondary Runway @ 6,101’)
  - 18L/36R (3rd Parallel Runway @ 9,000’/12,000’)

Mead & Hunt

Tulsa International Airport
Facility Requirements

- Existing Aircraft Runway Takeoff Length Options, In Feet
  - Secondary Air Carrier Runway @ 8,500’
  - Secondary GA Runway @ 7,000’
Facility Requirements

- Runway 18R/36L Takeoff Length Options, In Feet
  → Secondary GA Runway @ 7,000'
Facility Requirements

- Runway 18R/36L Takeoff Length Options, In Feet
  → Secondary Air Carrier Runway @ 8,200’
Facility Requirements

- Taxiway Dimensional Criteria
  - Runway 18L/36R Taxiway System
    - Airplane Design Group (ADG) IV
    - Taxiway Design Group (TDG) 5
    - Parallel TWs Meet or Exceed Criteria
    - Review TW Exit Geometry
    - Runway/Taxiway Hot Spot Resolution
Facility Requirements

- **Taxiway Exit Criteria**
  - Runway 18L/36R Exit Taxiway System
  - North Flow
  - South Flow
  - 5,500’ to 7,500’ exit range
  - 90 degree vs. High Speed
Existing Passenger Terminal Area

- 2-Pier Concourse w/22 gates
- Looped Access Roadway
- Terminal Curb
- Parking Facilities: Public, Rental Car, & Employee
- Cargo Facilities
- Hotel Facilities
- Corporate GA & FBO Facilities
Potential GA Infill Development Areas

- Five (5) Areas (36.5 Acres)
- Development Constraints
  - ATCT Line-of-Sight
  - Vehicular Access
  - Utility Infrastructure
Potential On-Airport Development Areas

- Aircraft Maintenance & Assembly
- General Aviation
- Retail/Hotel
- Industrial
- Military
Existing Air Traffic Control Tower (ATCT)

- Five (5) Shadow Areas
- Aging Structure (1960s Construction)
- Future ATCT Previously Identified/Site Confirmation Required
- New ATCT Technology Development Considerations
Existing Environmental Conditions

- Wetlands
- Floodplain (100 & 500-Year)
- Prime Farmland
- Historic Property
Draft Planning Issues Summary

- Confirm Future Layout of Airport’s Runway/Taxiway System
  - 3rd Parallel Runway
  - Runway 18R/36L Extension/Upgrades
- Confirm Runway Design Code (RDC) for each Runway
  - Design Aircraft
- Update Airfield Dimensional Criteria & Design Standards
  - Runway/Taxiway Design Geometry
  - Hot Spots
  - ATCT Line-of-Sight
- Maximize/Diversify Airport Revenue Generating Capabilities
  - Passenger Terminal Area Improvements
  - Aviation & Aviation-Related Industrial Land Leases
  - Non-Aviation Industrial/Commercial Land Leases
- Airport Compliance
  - Grant Assurances
  - Land Release Guidelines (Concurrent Land Use/Release from Aeronautical vs. Interim Land Use vs. Sale of Property)
  - Land Use Compatibility
Draft Planning Issues Summary

- **Passenger Terminal Area Improvements**
  - Automobile Parking Expansion
  - Terminal Curb Improvements/Expansion
  - Terminal Roadway Reconfiguration
  - New U.S. Customs Facility (Passenger Processing & Aircraft Parking)
  - New Retail/Commercial Development
Tulsa International Airport

Questions & Comments

Master Plan Update
Next Steps

- Production & Distribution of 4th Working Paper
  → *Discuss Recommended Development Plan*
- Public Information Meeting (March – April, 2016 Timeframe)
Contacts

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  - Tulsa International Airport
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  - Email Address: mikekerr@tulsaairports.com

- Cody Fussell, Aviation Services
  - Mead & Hunt, Inc.
  - Phone Number: 918.586.7273
  - Email Address: cody.fussell@meadhunt.com