Acrojets – The Fighter School @ Williams AFB
Agenda

- Introductions and Opening Comments
- Expected Outcomes for Master Planning Process
- Project Approach and Schedule
- Role of the Stakeholder Working Group
- Inventory of Existing Conditions
- Key Planning Issues Identification
- Forecasts of Aviation Activity
- Questions & Comments
- Next Steps
Project Team

- Phoenix-Mesa Gateway Airport Authority and Staff
- Federal Aviation Administration/Arizona Department of Transportation
- Consultants
  - Mead & Hunt
  - PSM²
  - Unison Consulting
  - Intervistas
Master Plan

✓ Statement of Policy
  ▪ Anticipate What We Think Will Happen
  ▪ Influence What We Want to Happen
Expected Outcomes

- Comprehensive Recommendations for Layout of Future Airport Facilities
- Reasonable Long-Term Capital Improvement Plan
- Appropriate Documentation of Considerations and Influences
- FAA Approved Airport Layout Plan
Public Outreach

✓ Airport Authority Briefings (as requested)
✓ Stakeholder Committee Meetings
✓ Technical Committee Meetings
✓ Public Outreach Workshops
Project Approach

- Follow FAA Guidance
- Building Block Process
  - Inventory
  - Forecasts
  - Facilities Needs Determination
  - Alternatives and Development Plan Formulation
  - Financial Plan
Project Schedule: Airport Master Plan

Project Task
- Vision, Goals & Objectives
- Stakeholder & Technical Advisory Meetings
- Public Outreach Workshops
- Draft Work Products
- Public Involvement Program
- Inventory of Existing Conditions
- Aviation Forecasts
- Facility Requirements
- Alternatives Development & Evaluation
- Environmental Considerations
- Airport Layout Plan (ALP)
- Facilities Implementation Plan
- Financial Feasibility Analysis
- Sustainability
- Master Plan Complete (Draft Final Report)
- ALP Approved by FAA

NOTICE TO PROCEED
- March 1
- April
- May
- June
- July
- August
- September
- October
- November
- December
- January
- February
- March
- April
- May
- June
- July
- August
- September

2018

NOTE: Schedule updated February 2, 2018. Subject to change.
Role of Stakeholder Working Group

✓ Committee is made up of a variety of interest groups with interests in local and regional influences associated with the airport, many with government expertise and knowledge which will help to direct the airport’s future development

✓ Provide feedback on draft work products from your perspective

✓ Not a voting group, consensus is not required, but your INPUT is CRITICAL!
Inventory of Existing Conditions

- Airport Role
- Airport Background
- Airport Facilities Inventory
  - Airside Facilities
  - Landside Facilities
  - Airspace System and Naviads
- Airport Environ
- Issues Summary
Airport Role – Location
Airport Role – Local Government Relationships
Airport Role – Airport Facilities
Airport Role – Terminal Area Facilities
Airport Role

- Within National System Plan (3,400 airports)
- Within State System Plan (83 airports)
- Commercial passenger activity center
- General aviation operational center
- Flight training operational center
- Military activity operational center
- Regional economic development support center
Key Planning Issues Discussion

- Maximize safety and efficiency in layout of airport facilities.
- Consideration of the significant amount of marketable airport property.
- Consideration of demand by future critical aircraft types.
- Base recommendations for future passenger terminal facilities on reasonable expectation of demand, with scalable improvements associated with defined trigger points.
- Comprehensive landside improvement recommendation (ATCT, ARFF, fuel storage and delivery, storage hangars, air cargo facilities, etc.).
- Continue working with surrounding communities to support land use compatibility initiatives.
- Promote financially sustainable Capital Improvement Plan.
- Consider all passenger transportation modes in development of terminal improvement recommendations.
- Recognize environmental constraints.
Aviation Activity Forecast Development
Comprehensive Forecast Development Process

✓ Analysis of the airport’s business environment
✓ Analysis of the airport’s historical activity trends
✓ Assessment of future air service development possibilities
✓ Forecast development and risk assessment
The Airport Business Environment

- Airport Activity
- Regional Economy
- Aviation Industry
- National / Global Economy
Airport Service Area

- 1-hour drive area covering most of the Phoenix-Mesa-Scottsdale, AZ, MSA
A Shared Airport Service Area

- 30-minute drive areas from IWA and PHX
Phoenix MSA Population

<table>
<thead>
<tr>
<th>City</th>
<th>Population</th>
</tr>
</thead>
<tbody>
<tr>
<td>Phoenix-Mesa-Scottsdale</td>
<td>4,737,270</td>
</tr>
<tr>
<td>Tucson</td>
<td>1,022,769</td>
</tr>
<tr>
<td>Prescott</td>
<td>228,168</td>
</tr>
<tr>
<td>Yuma</td>
<td>207,534</td>
</tr>
<tr>
<td>Lake Havasu City-Kingman</td>
<td>207,200</td>
</tr>
<tr>
<td>Flagstaff</td>
<td>140,776</td>
</tr>
<tr>
<td>Sierra Vista-Douglas</td>
<td>124,756</td>
</tr>
</tbody>
</table>

Share of Arizona State Population

- Phoenix-Mesa-Scottsdale: 68%
- Other MSAs: 32%
East Valley

- Rapidly growing area
- 1.3 million population in 2017
- >26% of Phoenix MSA population
Employment and Income Growth Trends

The Phoenix MSA is creating jobs faster than the nation.

The Phoenix MSA is catching up with the nation in income growth.
GDP Growth Trends

The Phoenix MSA economy outperforms the U.S. economy.
Commercial Passenger Traffic
IWA Enplanement Trends

<table>
<thead>
<tr>
<th>CY</th>
<th>EP (1,000s)</th>
<th>AGR</th>
</tr>
</thead>
<tbody>
<tr>
<td>2008</td>
<td>178.2</td>
<td>626.1%</td>
</tr>
<tr>
<td>2009</td>
<td>287.8</td>
<td>61.5%</td>
</tr>
<tr>
<td>2010</td>
<td>401.4</td>
<td>39.4%</td>
</tr>
<tr>
<td>2011</td>
<td>477.5</td>
<td>19.0%</td>
</tr>
<tr>
<td>2012</td>
<td>694.3</td>
<td>45.4%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>CY</th>
<th>EP (1,000s)</th>
<th>AGR</th>
</tr>
</thead>
<tbody>
<tr>
<td>2013</td>
<td>680.2</td>
<td>-2.0%</td>
</tr>
<tr>
<td>2014</td>
<td>625.3</td>
<td>-8.1%</td>
</tr>
<tr>
<td>2015</td>
<td>641.3</td>
<td>2.5%</td>
</tr>
<tr>
<td>2016</td>
<td>677.1</td>
<td>5.6%</td>
</tr>
<tr>
<td>2017</td>
<td>681.9</td>
<td>0.7%</td>
</tr>
</tbody>
</table>
A Regional Demand Perspective

IWA captures a share of just under 5% in recent years.
IWA’s Enplanement Growth Relative to Regional and National Trends
Air Carriers That Have Served IWA
Hybrid Forecast Development Framework

NEAR TERM: Bottom-Up
- Airline schedules for IWA

LONG-TERM: Top-Down
- Regional demand
- Market drivers
- Multivariate time series regression
- Share analysis
Multivariate Regression
Model Variables

- MSA Real Per Capita Income
- U.S. Real GDP
- Real Passenger Yield

Regional Enplanements
## Forecast Enplanements at IWA

![Graph showing forecast enplanements over years with data points for Master Plan (MP), TAF, and TAF (in CY).]

<table>
<thead>
<tr>
<th>Scenario</th>
<th>Actual 2017</th>
<th>Est. 2018</th>
<th>Forecast 2023</th>
<th>Forecast 2028</th>
<th>Forecast 2038</th>
<th>Compound Annual Growth Rate 2017-2018</th>
<th>Compound Annual Growth Rate 2018-2023</th>
<th>Compound Annual Growth Rate 2023-2028</th>
<th>Compound Annual Growth Rate 2028-2038</th>
</tr>
</thead>
<tbody>
<tr>
<td>Master Plan (MP)</td>
<td>681,892</td>
<td>770,526</td>
<td>849,894</td>
<td>933,157</td>
<td>1,145,806</td>
<td>13.0%</td>
<td>2.0%</td>
<td>1.9%</td>
<td>2.1%</td>
</tr>
<tr>
<td>TAF</td>
<td>690,071</td>
<td>746,858</td>
<td>834,370</td>
<td>919,037</td>
<td>1,115,554</td>
<td>8.2%</td>
<td>2.2%</td>
<td>2.0%</td>
<td>2.0%</td>
</tr>
<tr>
<td>TAF (in CY)</td>
<td>704,268</td>
<td>751,856</td>
<td>838,428</td>
<td>923,717</td>
<td>1,120,895</td>
<td>6.8%</td>
<td>2.2%</td>
<td>2.0%</td>
<td>2.0%</td>
</tr>
<tr>
<td>Ratio MP - TAF (in CY)</td>
<td>0.97</td>
<td>1.02</td>
<td>1.01</td>
<td>1.01</td>
<td>1.02</td>
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### Forecast Commercial Passenger Aircraft Operations

<table>
<thead>
<tr>
<th>Scenario</th>
<th>Actual</th>
<th>Est.</th>
<th>2023</th>
<th>2028</th>
<th>2038</th>
<th>2017-2018</th>
<th>2018-2023</th>
<th>2023-2028</th>
<th>2028-2038</th>
</tr>
</thead>
<tbody>
<tr>
<td>Master Plan (MP)</td>
<td>10,372</td>
<td>11,670</td>
<td>12,704</td>
<td>13,867</td>
<td>16,908</td>
<td>12.5%</td>
<td>1.7%</td>
<td>1.8%</td>
<td>2.0%</td>
</tr>
<tr>
<td>TAF</td>
<td>11,365</td>
<td>12,424</td>
<td>13,834</td>
<td>15,198</td>
<td>18,353</td>
<td>9.3%</td>
<td>2.2%</td>
<td>1.9%</td>
<td>1.9%</td>
</tr>
<tr>
<td>TAF (in CY)</td>
<td>11,630</td>
<td>12,505</td>
<td>13,899</td>
<td>15,273</td>
<td>18,439</td>
<td>7.5%</td>
<td>2.1%</td>
<td>1.9%</td>
<td>1.9%</td>
</tr>
<tr>
<td>Ratio MP - TAF (in CY)</td>
<td>0.89</td>
<td>0.93</td>
<td>0.91</td>
<td>0.91</td>
<td>0.92</td>
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</tr>
</tbody>
</table>

### Forecast Commercial Passenger Aircraft Landed Weight

<table>
<thead>
<tr>
<th>Scenario</th>
<th>Actual</th>
<th>Est.</th>
<th>2023</th>
<th>2028</th>
<th>2038</th>
<th>2017-2018</th>
<th>2018-2023</th>
<th>2023-2028</th>
<th>2028-2038</th>
</tr>
</thead>
<tbody>
<tr>
<td>Master Plan (MP)</td>
<td>698,565</td>
<td>786,738</td>
<td>857,167</td>
<td>935,753</td>
<td>1,141,333</td>
<td>12.6%</td>
<td>1.7%</td>
<td>1.8%</td>
<td>2.0%</td>
</tr>
</tbody>
</table>
Non-Commercial Aviation Activity
Trends in Noncommercial Aviation Activity at IWA
Local and Itinerant GA Operations at IWA
Based Aircraft at IWA
Trends in GA Operations at IWA and the U.S.
# The Region’s GA Airports

<table>
<thead>
<tr>
<th>Airport</th>
<th>GA</th>
<th>Military</th>
<th>Based Aircraft</th>
<th>Market Share of Based Aircraft</th>
</tr>
</thead>
<tbody>
<tr>
<td>DVT</td>
<td>378,631</td>
<td>134</td>
<td>934</td>
<td>38%</td>
</tr>
<tr>
<td>FFZ</td>
<td>287,374</td>
<td>4,074</td>
<td>635</td>
<td>26%</td>
</tr>
<tr>
<td>IWA</td>
<td>271,446</td>
<td>7,503</td>
<td>116</td>
<td>5%</td>
</tr>
<tr>
<td>CHD</td>
<td>193,859</td>
<td>348</td>
<td>154</td>
<td>6%</td>
</tr>
<tr>
<td>SDL</td>
<td>167,482</td>
<td>639</td>
<td>378</td>
<td>15%</td>
</tr>
<tr>
<td>GYR</td>
<td>107,567</td>
<td>3,397</td>
<td>192</td>
<td>8%</td>
</tr>
<tr>
<td>PHX</td>
<td>49,761</td>
<td>2,296</td>
<td>78</td>
<td>3%</td>
</tr>
</tbody>
</table>
Top-Down Approach to GA Forecast Development

- Regional GA Operations: Multivariate Time Series Regression Analysis
- IWA GA Operations: Share Analysis
Separate Models for Local & Itinerant Operations

- Drivers of Local GA Operations
  - Phoenix MSA population
  - Phoenix MSA nonfarm employment

- Drivers of Itinerant GA Operations
  - Phoenix MSA real per capita GDP
  - Jet fuel price
### Forecast Non-Commercial Aviation Activity at IWA

<table>
<thead>
<tr>
<th>Measure/Scenario</th>
<th>Actual</th>
<th>Est.</th>
<th>Forecast</th>
<th>2017-2018</th>
<th>2018-2023</th>
<th>2023-2028</th>
<th>2028-2038</th>
</tr>
</thead>
<tbody>
<tr>
<td>General Aviation</td>
<td>271,446</td>
<td>282,596</td>
<td>296,256</td>
<td>311,455</td>
<td>345,401</td>
<td>4.1%</td>
<td>0.9%</td>
</tr>
<tr>
<td>Itinerant</td>
<td>104,927</td>
<td>114,236</td>
<td>115,835</td>
<td>119,407</td>
<td>128,625</td>
<td>8.9%</td>
<td>0.3%</td>
</tr>
<tr>
<td>Local</td>
<td>166,519</td>
<td>168,360</td>
<td>180,421</td>
<td>192,048</td>
<td>216,776</td>
<td>1.1%</td>
<td>1.4%</td>
</tr>
<tr>
<td>Military</td>
<td>7,503</td>
<td>7,503</td>
<td>7,503</td>
<td>7,503</td>
<td>7,503</td>
<td>0.0%</td>
<td>0.0%</td>
</tr>
<tr>
<td>Based Aircraft</td>
<td>109</td>
<td>116</td>
<td>121</td>
<td>126</td>
<td>139</td>
<td>6.4%</td>
<td>0.8%</td>
</tr>
</tbody>
</table>
Forecast GA Operations Compared with the TAF

<table>
<thead>
<tr>
<th>Measure/Scenario</th>
<th>Actual</th>
<th>Est.</th>
<th>Forecast</th>
<th>Compound Annual Growth Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>GA Total</td>
<td>271,446</td>
<td>282,596</td>
<td>296,256</td>
<td>311,455</td>
</tr>
<tr>
<td>Itinerant</td>
<td>104,927</td>
<td>114,236</td>
<td>115,835</td>
<td>119,407</td>
</tr>
<tr>
<td>Local</td>
<td>166,519</td>
<td>168,360</td>
<td>180,421</td>
<td>192,048</td>
</tr>
<tr>
<td>TAF (in CY)</td>
<td>269,167</td>
<td>282,758</td>
<td>290,167</td>
<td>297,796</td>
</tr>
<tr>
<td>Ratio GA Total-TAF (in CY)</td>
<td>1.01</td>
<td>1.00</td>
<td>1.02</td>
<td>1.05</td>
</tr>
</tbody>
</table>
Next Steps: Quantitative Forecast Risk Analysis

- Monte Carlo simulation
- Scenario analysis
24 Miles Up, Felix Baumgartner Jumps!
Master Plan = Spin Control

✓ Anticipate What We Think Will Happen
✓ Influence What We Want to Happen
Questions & Comments
Next Steps

- Monte Carlo forecast simulation analysis
- Forecast revisions
- Submission of forecasts to FAA for approval
- Facility needs documentation
- Identification of preliminary airport development alternatives
- Publication of Working Paper Two
- Technical Advisory Committee Meeting #2
- Stakeholder Working Group Meeting #2
- Public Outreach Workshop #1
- Next Meetings Late October or Early November 2018
Project Contact Information

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  ▪ Chris Hacker
    • Chris.Hacker@MeadHunt.com
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Thank You Partners and Goodbye for Now!

"...But it's a dry heat!"