Flying Cloud Airport
Joint Airport Zoning Board

Simple Example of Airport Zoning

Zone A

Zone B

Zone C

26 October 2017
JAZB Meeting #2
Meeting Agenda

• Approval of Minutes from September 21, 2017 JAZB Meeting
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  • Airfield configuration updates
  • Safety Risk Study updates
  • Economic Impact Study updates
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JAZB Goals

- To develop an FCM zoning ordinance for review and approval by the Commissioner of Transportation for subsequent adoption by the Board and then by local communities.
- Update relevant sections of 2010 draft Zoning Ordinance to reflect current conditions
- Ensure appropriate level of stakeholder/community engagement
Proposed Airfield Configuration Updates

Runway 18-36 Length
- Draft Ordinance – 2,800 feet
- Updated Ordinance – 2,691 feet (existing length)
  - Affects RPZ and safety zone starting point (200 feet from runway end)
  - Affects safety zone A & B length
Proposed Airfield Configuration Updates

Runway 10L–28R Designation

- Draft Ordinance – “Other Than Utility”
- Updated Ordinance – “Utility”
  - Proposed to enhance runway safety
  - Increased space for aircraft to hold on taxiways prior to the runway
  - Smaller Runway Protection Zone/JAZB Zone A
  - No change to JAZB Zone B shape/size
  - Steeper approach surface slope
  - Slightly smaller Zone C radius
Proposed Airfield Configuration Updates
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Safety Risk Study Updates

General Study Methodology

1. Identify applicable risk probability standard
   • 1.0 accidents per 10m operations (1 x 10⁻⁷)
2. Calculate airport-specific accident rate
3. Define airport areas to be analyzed
4. Distribute accident location data to selected airport areas and count
5. Determine forecast operations by runway end
6. Calculate accident probabilities by runway end
7. Compare probabilities to selected standard
8. Break out existing and planned occupant areas
9. Assess results
Safety Risk Study Updates

**Historical Accident Rate (per 100k aircraft operations)**

- **Draft Ordinance – 1989 to 2008**
  - 28 accidents
  - 3.7m operations
  - 0.75 accidents/100k operations
- **Updated Ordinance – 1997 to 2016**
  - 23 accidents
  - 2.7m operations
  - 0.84 accidents/100k operations
Safety Risk Study Updates

Analysis Areas
- On Airport
- Runway Protection Zones
- Model State Safety Zone A
  Outside RPZ
- Model State Safety Zone B
- Off Airport (Beyond Model State Safety Zones A & B)

DRAFT
Safety Risk Study Updates

Analysis Areas

• On Airport
• Runway Protection Zones
• Model State Safety Zone A
  Outside RPZ
• Model State Safety Zone B
• Off Airport (Beyond Model State Safety Zones A & B)
Safety Risk Study Updates

Analysis Areas

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Safety Risk Study Updates

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Safety Risk Study Updates

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Safety Risk Study Updates

Analysis Areas

- On Airport
- Runway Protection Zones
- Model State Safety Zone A Outside RPZ
- Model State Safety Zone B
- Off Airport (Beyond Model State Safety Zones A & B)
Safety Risk Study Updates

Accident Location Data

- GA accident locations with land use compatibility implications
- Different data sets based on runway length
  - < 4,000’ for RWY 18/36 and 10L/28R
  - 4,000’ – 5,999’ for RWY 10R/28L
Safety Risk Study Updates

Example – Runway 18 end

- Accident locations from source study superimposed on Runway 18 end
  - Runway 18 arrivals – yellow
  - Runway 36 departures – blue
- Shows locations where accidents have occurred nationwide
  - NOT actual accidents at FCM!
- Used to count accident locations by area
  - Example: 69 in RPZ
Safety Risk Study Updates

FCM Runway Use CY2016

<table>
<thead>
<tr>
<th>Runway</th>
<th>% Arrivals</th>
<th>% Departures</th>
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<tr>
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<td>23%</td>
<td>19%</td>
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<tr>
<td>28R</td>
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<td>32%</td>
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</table>

FCM 2040 Estimated Operations

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<th>Runway</th>
<th># Arrivals</th>
<th># Departures</th>
<th>Total</th>
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<tr>
<td>18</td>
<td>5,073</td>
<td>7,153</td>
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<td>36</td>
<td>2,070</td>
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<td>8,541</td>
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<td>Total</td>
<td>50,521</td>
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Forecast Operations by Runway

- Update runway use percentages
  - Based on CY 2016 flight track data
- Update forecast year operations (2040)
  - 2035 forecast extrapolated to 2040
  - 101,042 total operations projected for 2040
- Updates accident rate by runway end
Safety Risk Study Updates

Occupant Areas

- Areas with congregations of people, either existing or future
- Updating to include possible MAC non-aeronautical development parcels
- Used to calculate accident risk/probability in occupant areas within the safety zones
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Economic Impact Study Updates

Estimate economic impact to surrounding community of implementing State Model Zoning Ordinance vs. JAZB Proposal

- Lost Commercial Development potential
- Lost Residential Development potential
- Annual Property Tax Losses
- Lost Job Creation Opportunities
- Lost MAC non-aeronautical revenue

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JAZB ECONOMIC IMPACT ANALYSIS - 2017
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Next Steps / Timeline

Next Steps

• Finalize updates to Draft Zoning Ordinance analyses
  ▪ October / November 2017

• Determine if updated analyses warrant any changes to 2010 Draft Ordinance

• Prepare Updated Draft Zoning Ordinance for JAZB review
  ▪ November / December 2017

• Proceed with Public Hearing #1
  ▪ January 2018
Flying Cloud Airport
Joint Airport Zoning Board

Thank you for your participation!