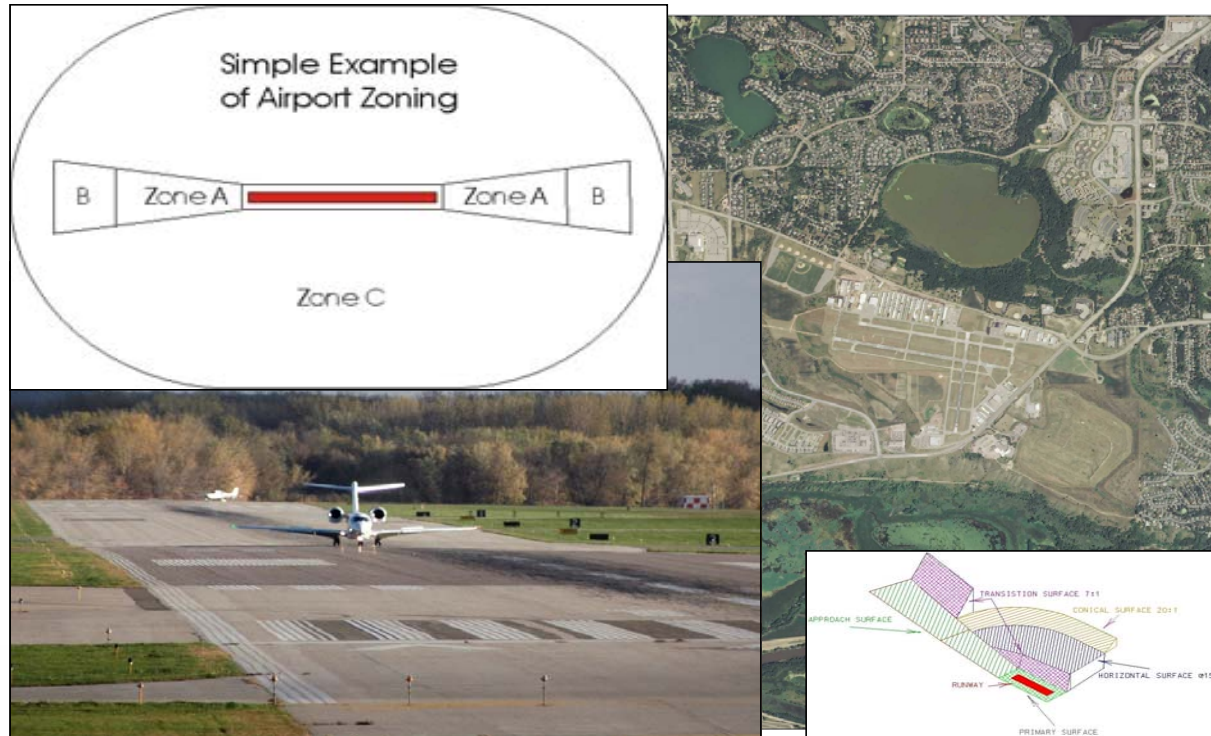


Flying Cloud Airport

Joint Airport Zoning Board

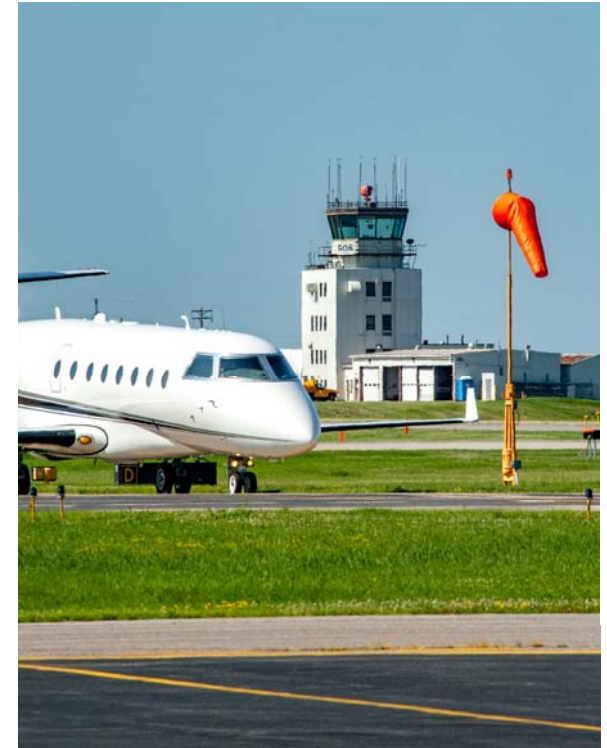


26 October 2017
JAZB Meeting #2



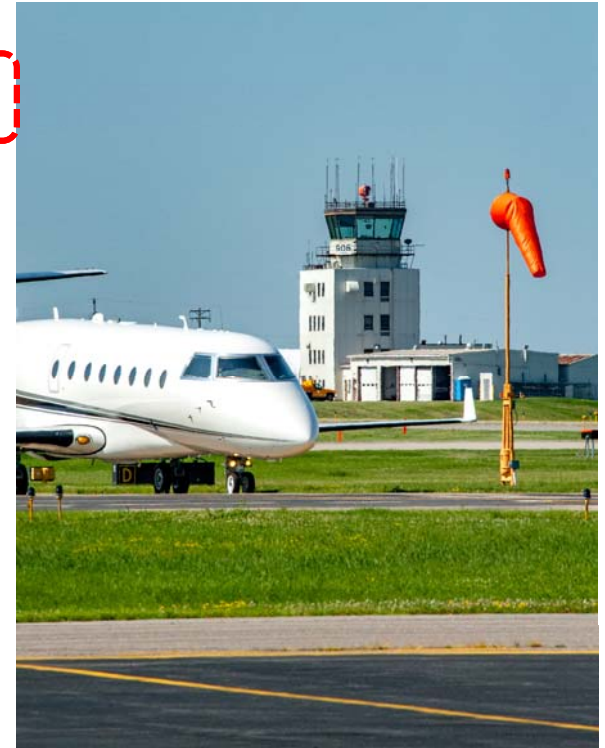
Meeting Agenda

- Approval of Minutes from September 21, 2017 JAZB Meeting
- Introduction of new JAZB member (Eden Prairie representative)
- Proposed updates to 2010 Draft FCM Airport Zoning Ordinance
 - Airfield configuration updates
 - Safety Risk Study updates
 - Economic Impact Study updates
- Board Member input on items to be updated
- Next steps/timeline for preparing Updated Draft FCM Airport Zoning Ordinance
- Next Meeting Date



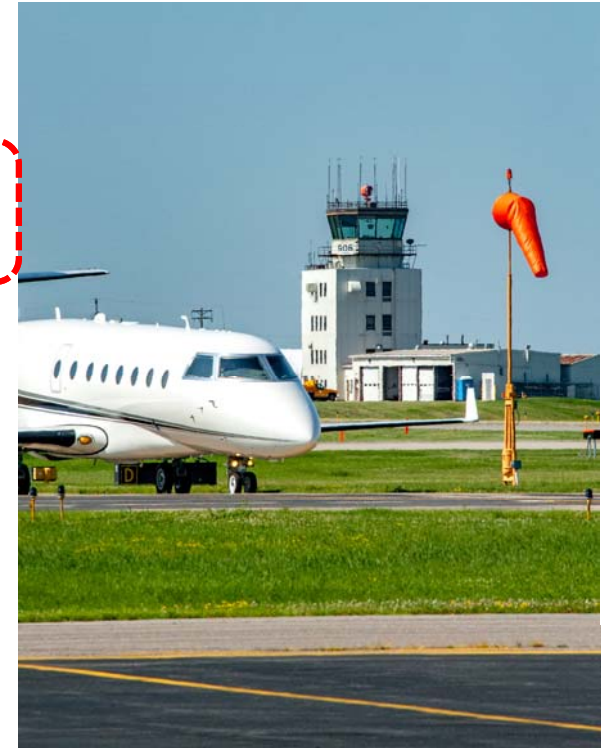
Meeting Agenda

- Approval of Minutes from September 21, 2017 JAZB Meeting
- Introduction of new JAZB member (Eden Prairie representative)
- Proposed updates to 2010 Draft FCM Airport Zoning Ordinance
 - Airfield configuration updates
 - Safety Risk Study updates
 - Economic Impact Study updates
- Board Member input on items to be updated
- Next steps/timeline for preparing Updated Draft FCM Airport Zoning Ordinance
- Next Meeting Date



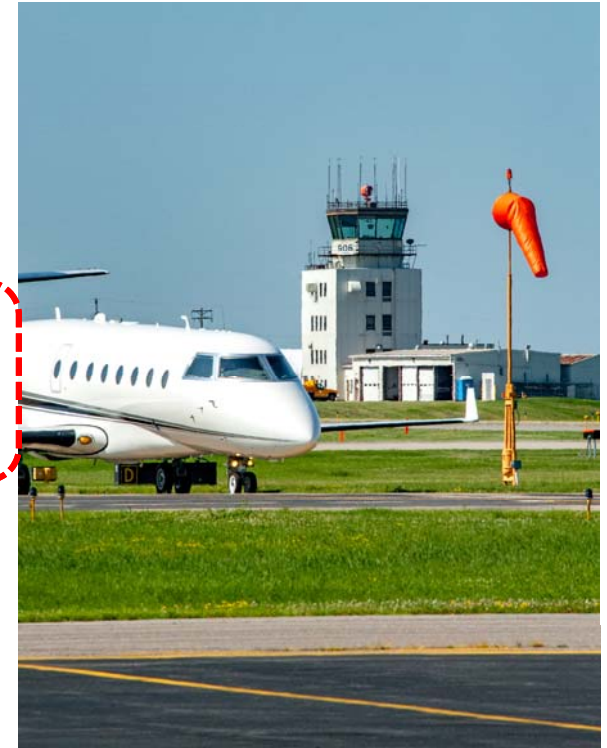
Meeting Agenda

- Approval of Minutes from September 21, 2017 JAZB Meeting
- Introduction of new JAZB member (Eden Prairie representative)
- Proposed updates to 2010 Draft FCM Airport Zoning Ordinance
 - Airfield configuration updates
 - Safety Risk Study updates
 - Economic Impact Study updates
- Board Member input on items to be updated
- Next steps/timeline for preparing Updated Draft FCM Airport Zoning Ordinance
- Next Meeting Date



Meeting Agenda

- Approval of Minutes from September 21, 2017 JAZB Meeting
- Introduction of new JAZB member (Eden Prairie representative)
- Proposed updates to 2010 Draft FCM Airport Zoning Ordinance
 - Airfield configuration updates
 - Safety Risk Study updates
 - Economic Impact Study updates
- Board Member input on items to be updated
- Next steps/timeline for preparing Updated Draft FCM Airport Zoning Ordinance
- Next Meeting Date

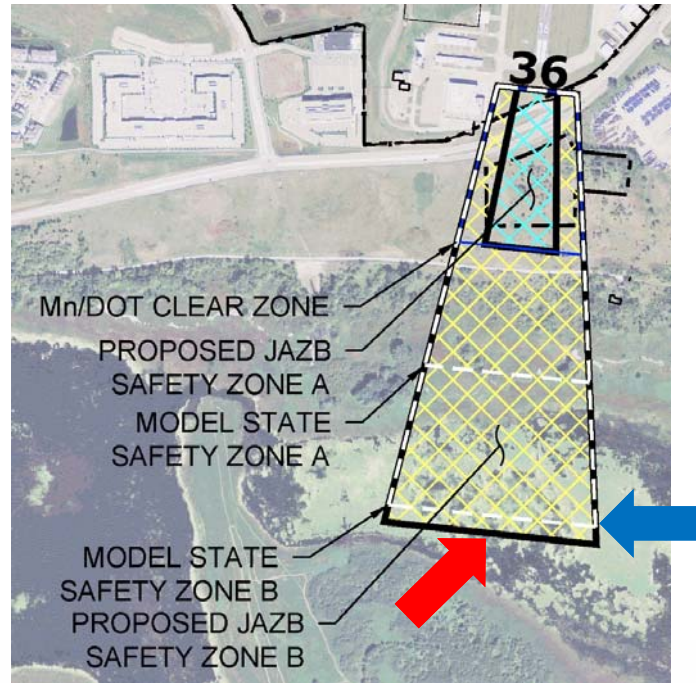
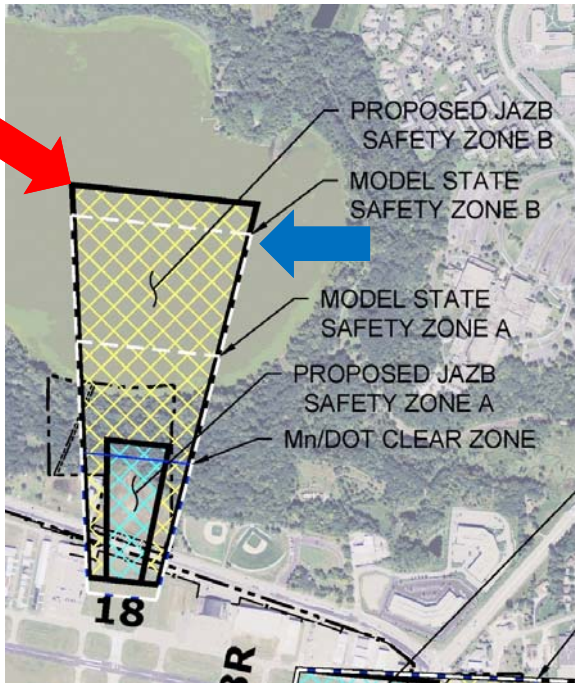


JAZB Goals

- 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



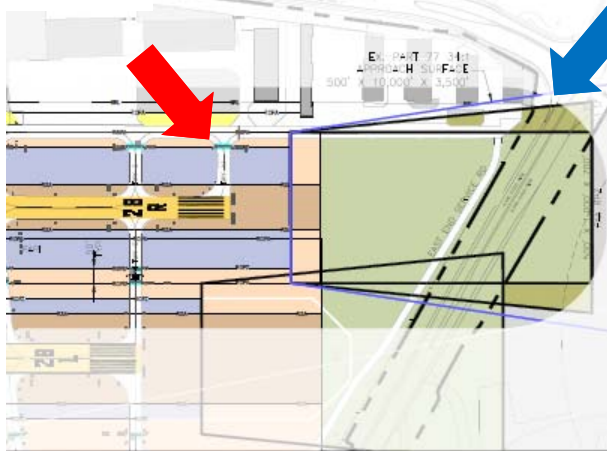
Runway 18-36 Length

- 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

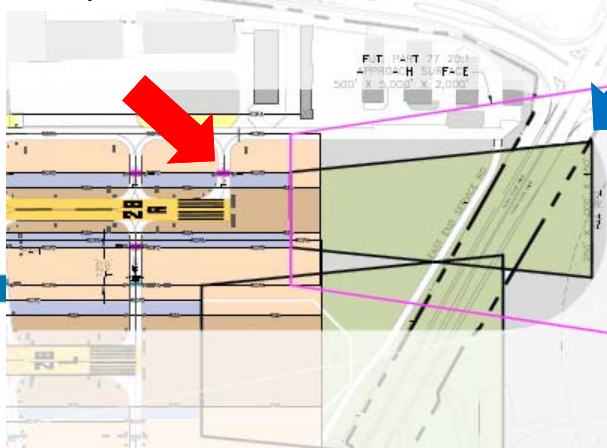
2010 Draft



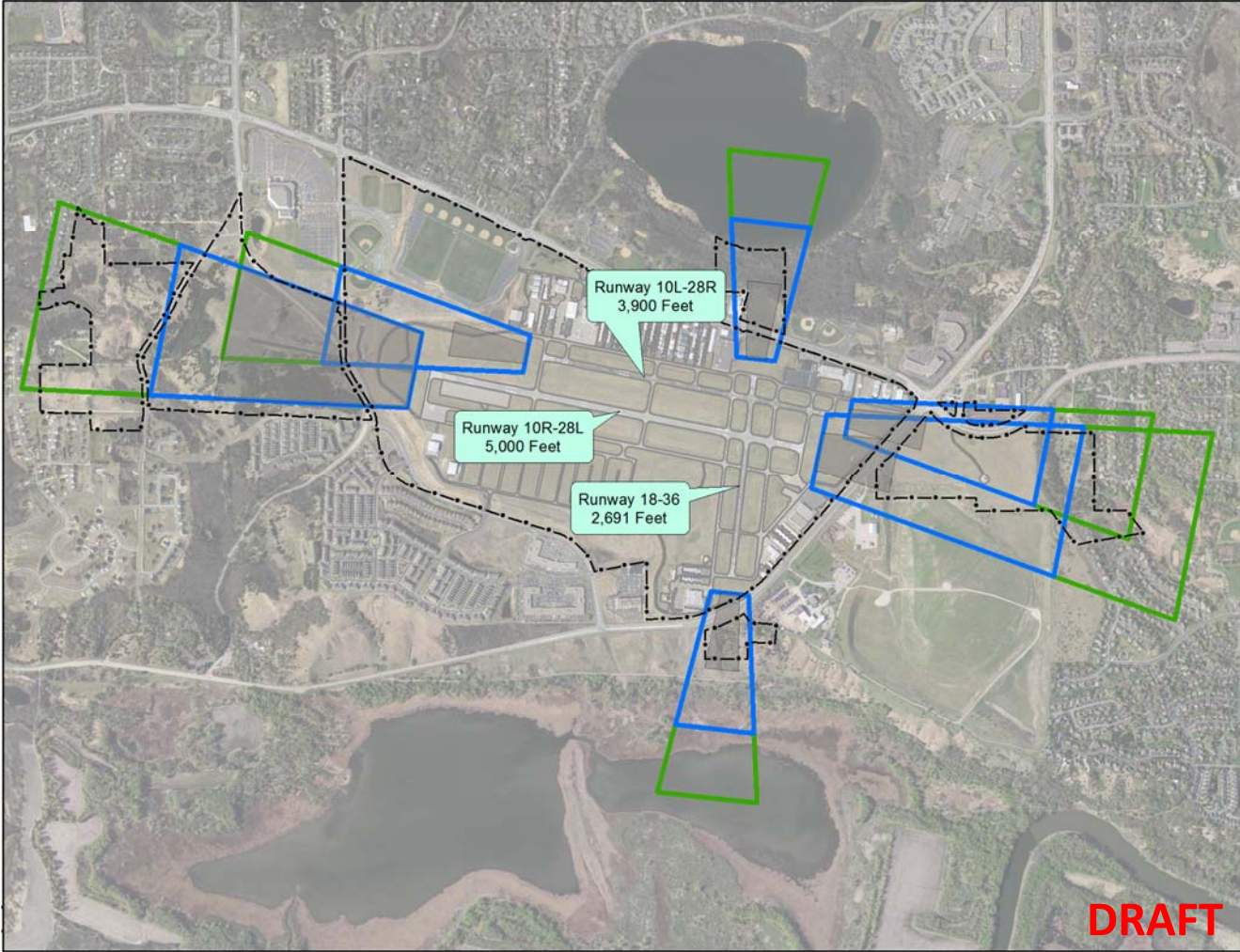
Runway 10L–28R Designation

- 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

2017 Update

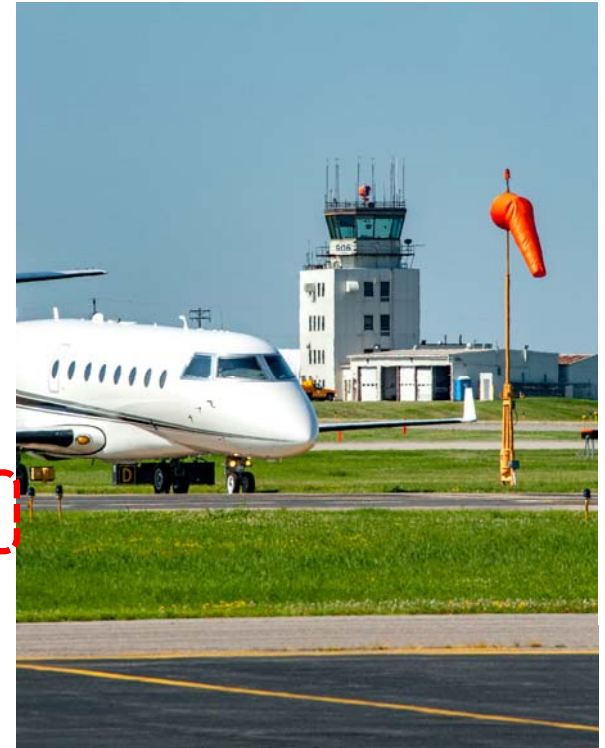


Proposed Airfield Configuration Updates



Meeting Agenda

- Approval of Minutes from September 21, 2017 JAZB Meeting
- Introduction of new JAZB member (Eden Prairie representative)
- Proposed updates to 2010 Draft FCM Airport Zoning Ordinance
 - Airfield configuration updates
 - Safety Risk Study updates
 - Economic Impact Study updates
- Board Member input on items to be updated
- Next steps/timeline for preparing Updated Draft FCM Airport Zoning Ordinance
- Next Meeting Date



Safety Risk Study Updates

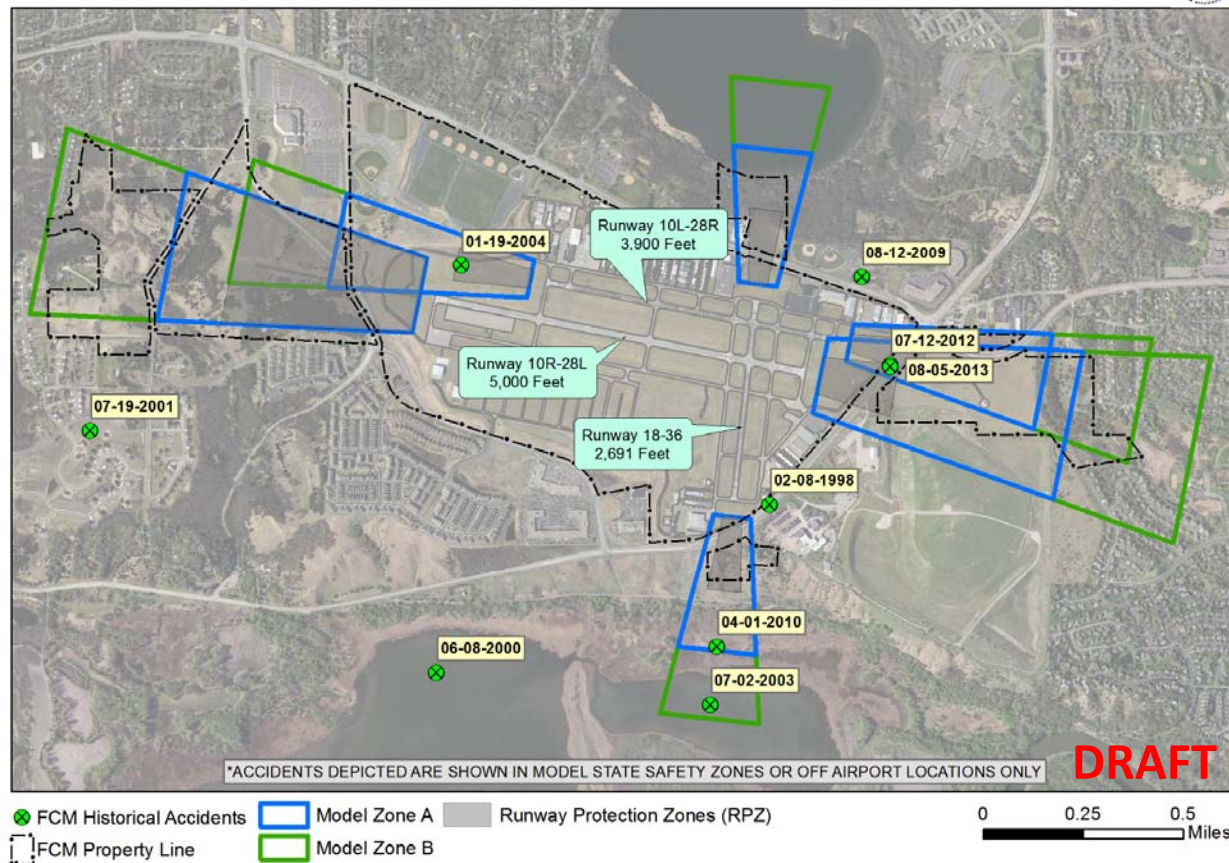
General Study Methodology

1. Identify applicable *risk probability standard*
 - 1.0 accidents per 10m operations (1×10^{-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

FLYING CLOUD AIRPORT (FCM)
APPROXIMATE ACCIDENT LOCATIONS (1997 - 2016)

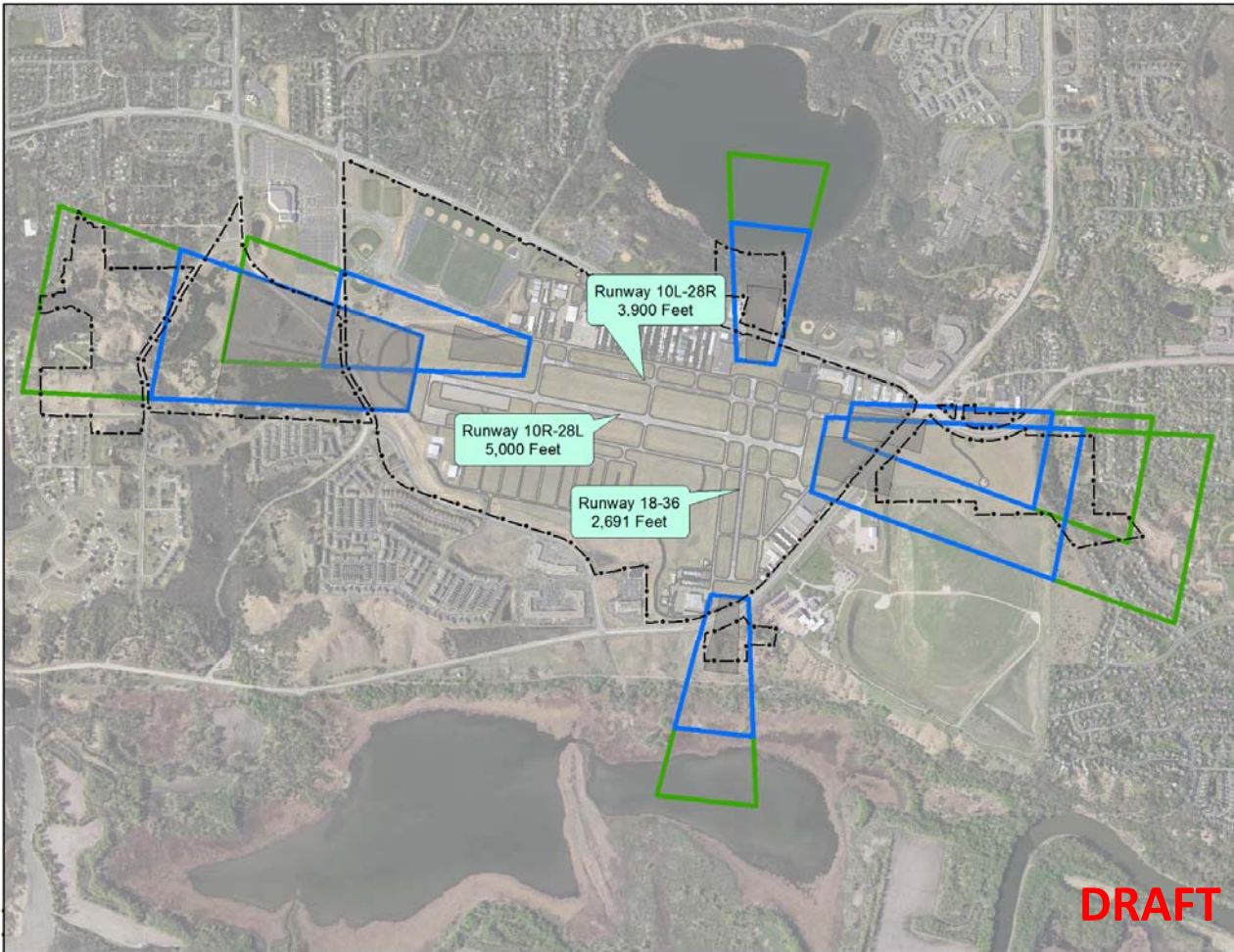


Historical Accident Rate (per 100k aircraft operations)

- 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

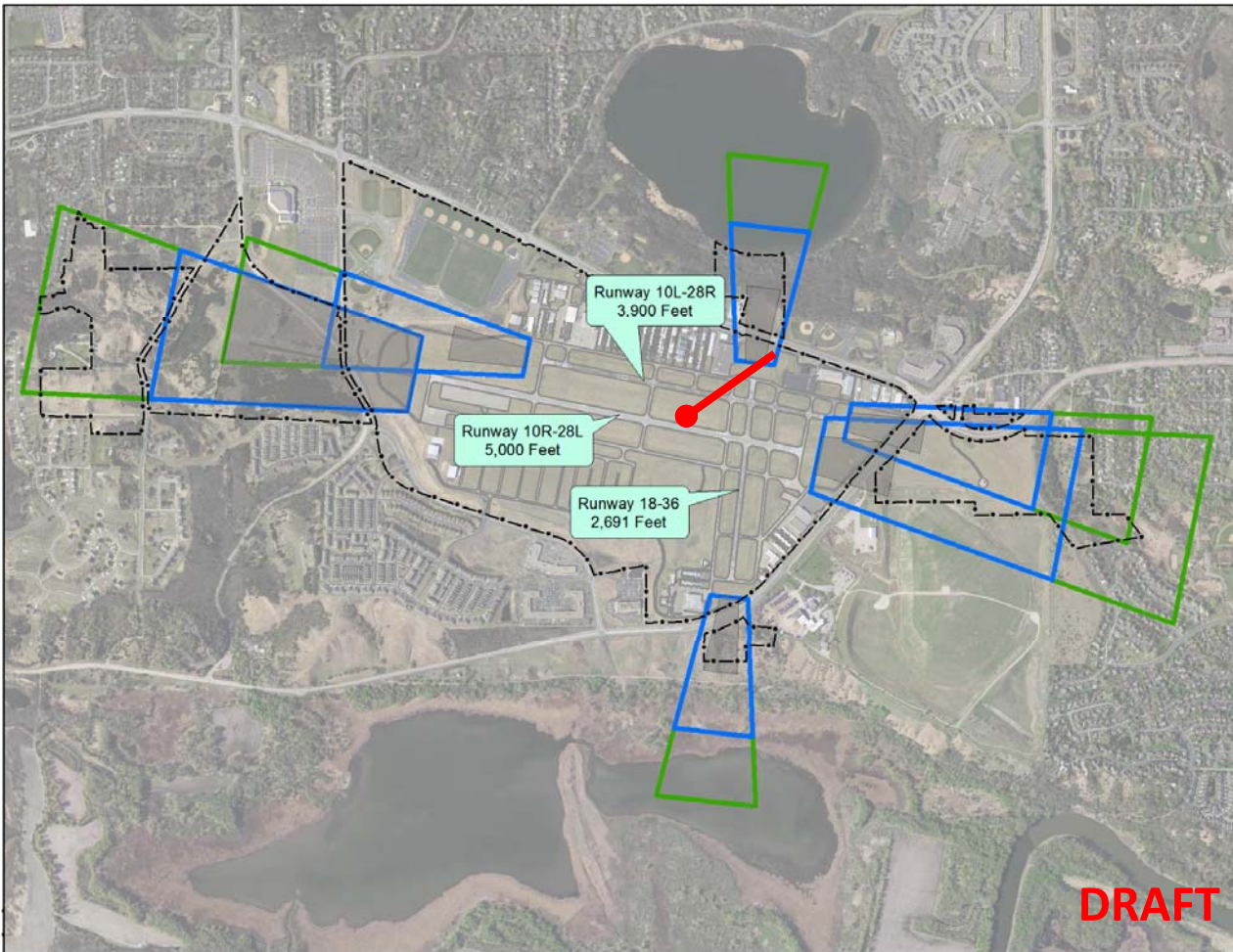


Analysis Areas

- 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)



Safety Risk Study Updates

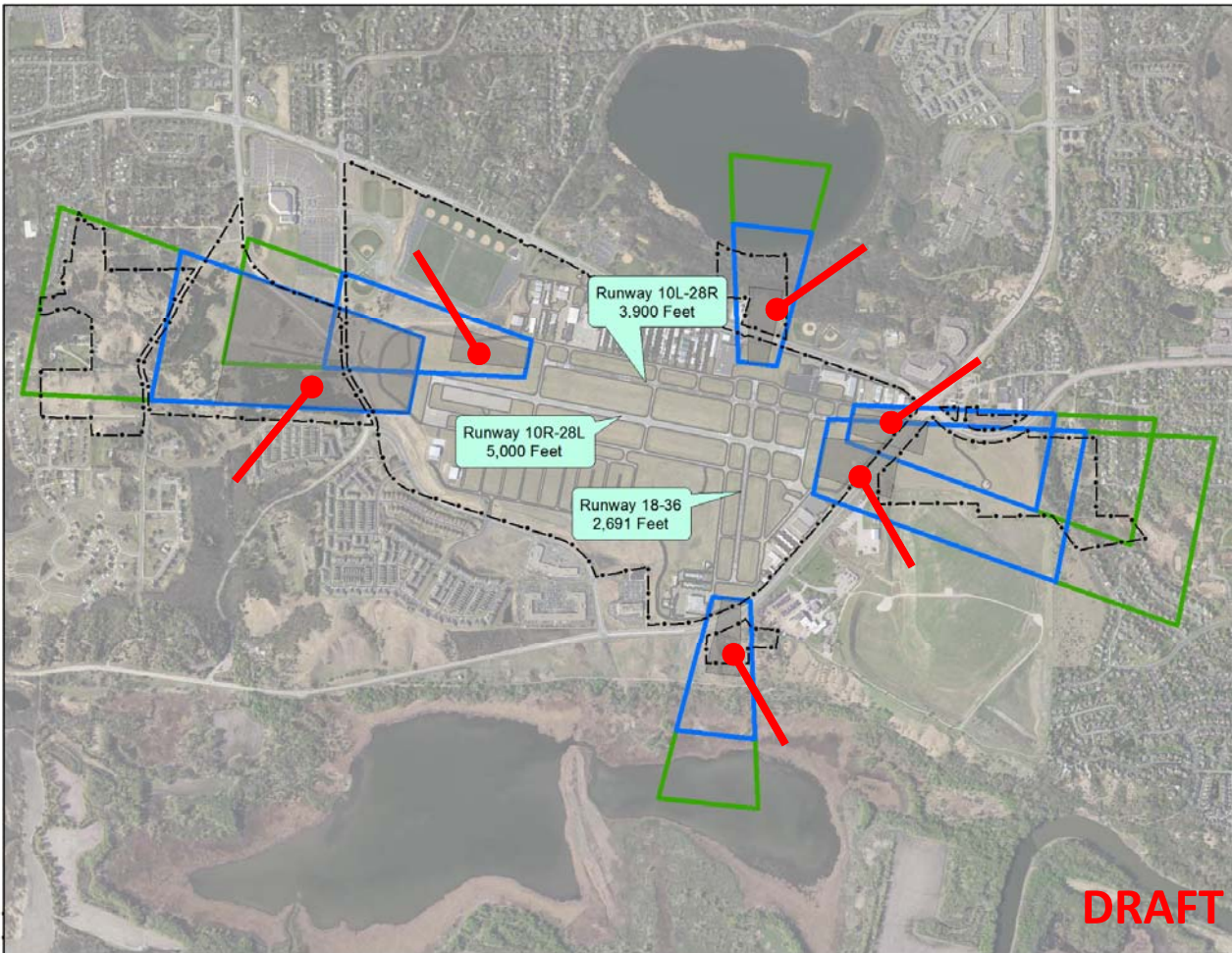


Analysis Areas

- 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

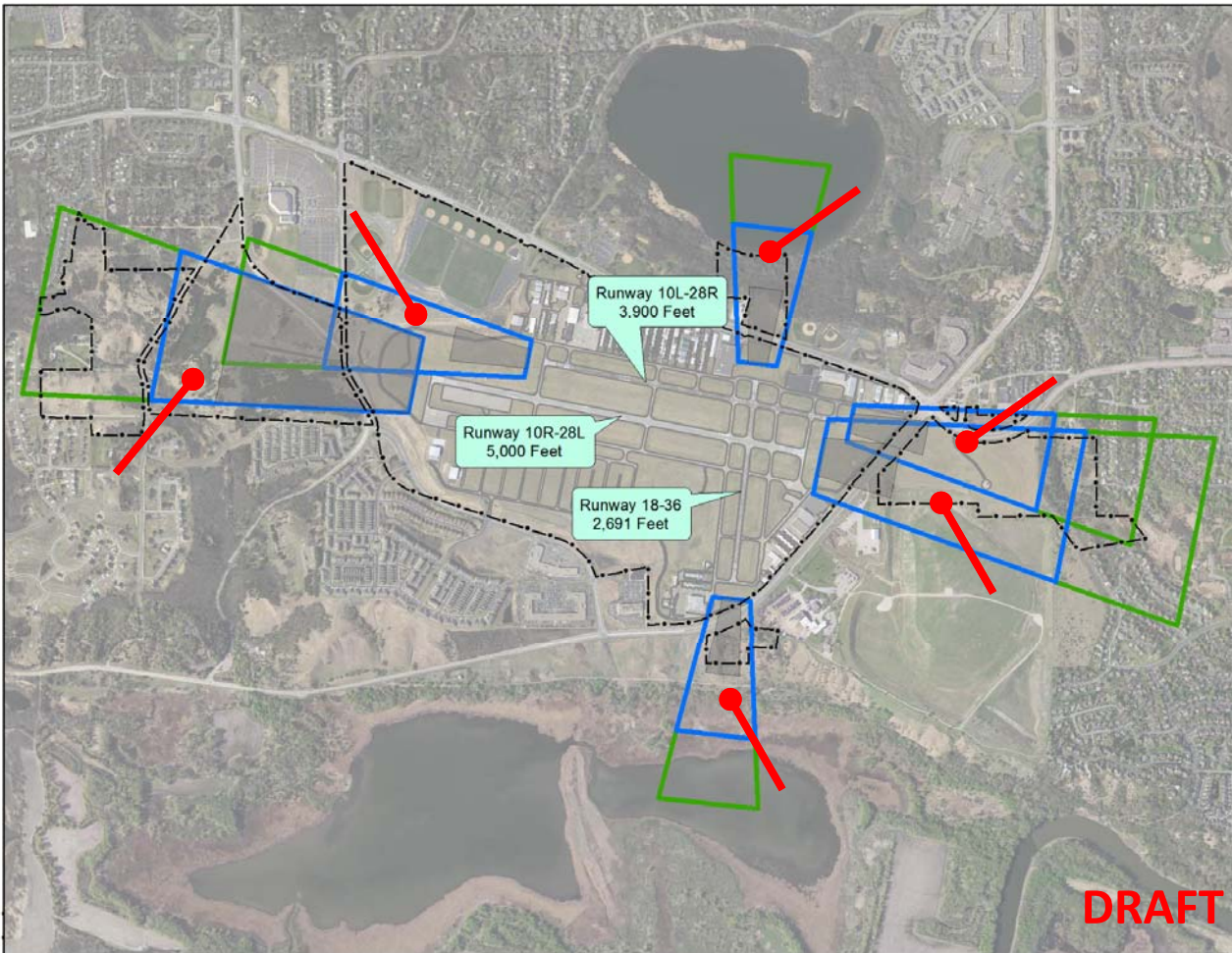


Analysis Areas

- 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

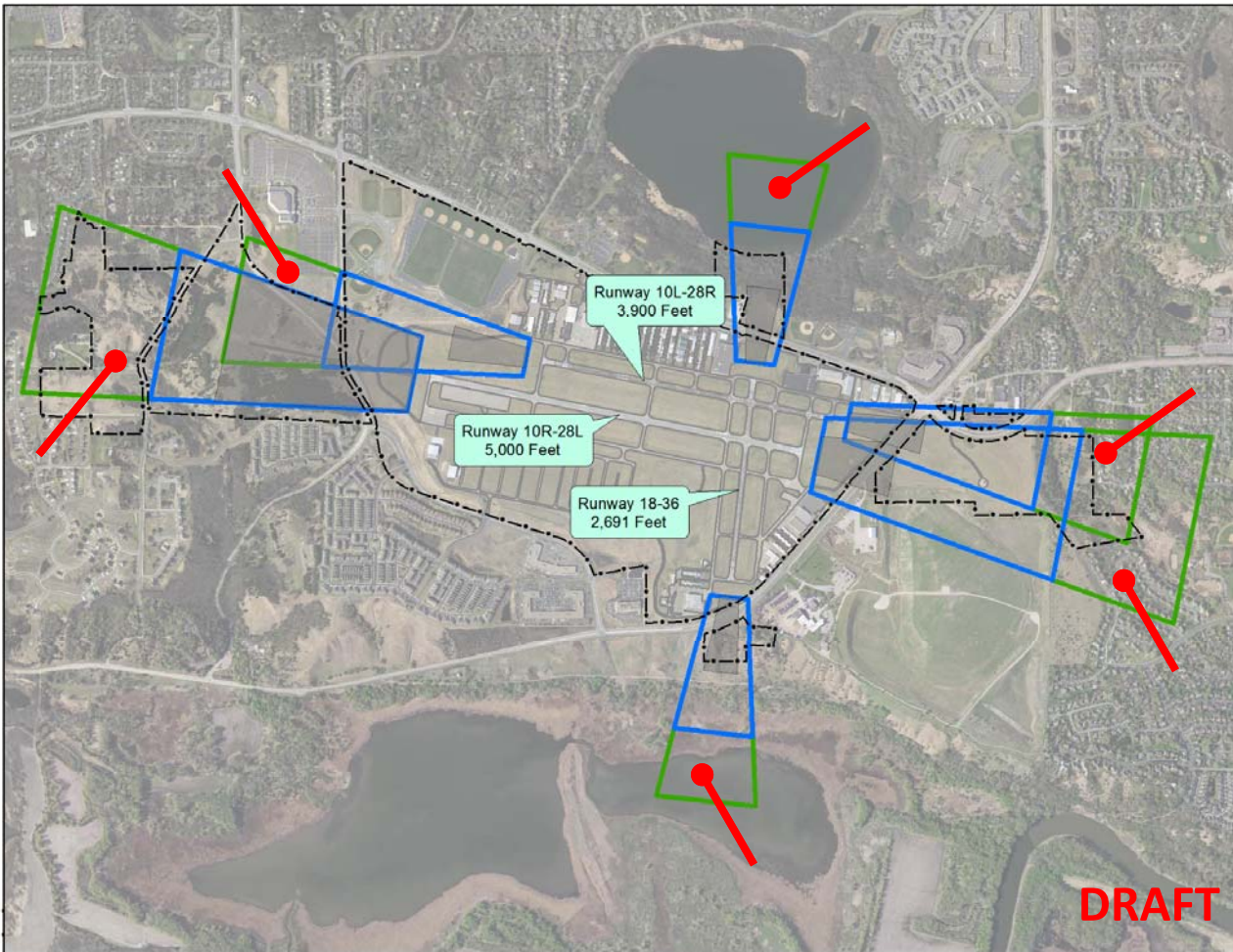


Analysis Areas

- 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

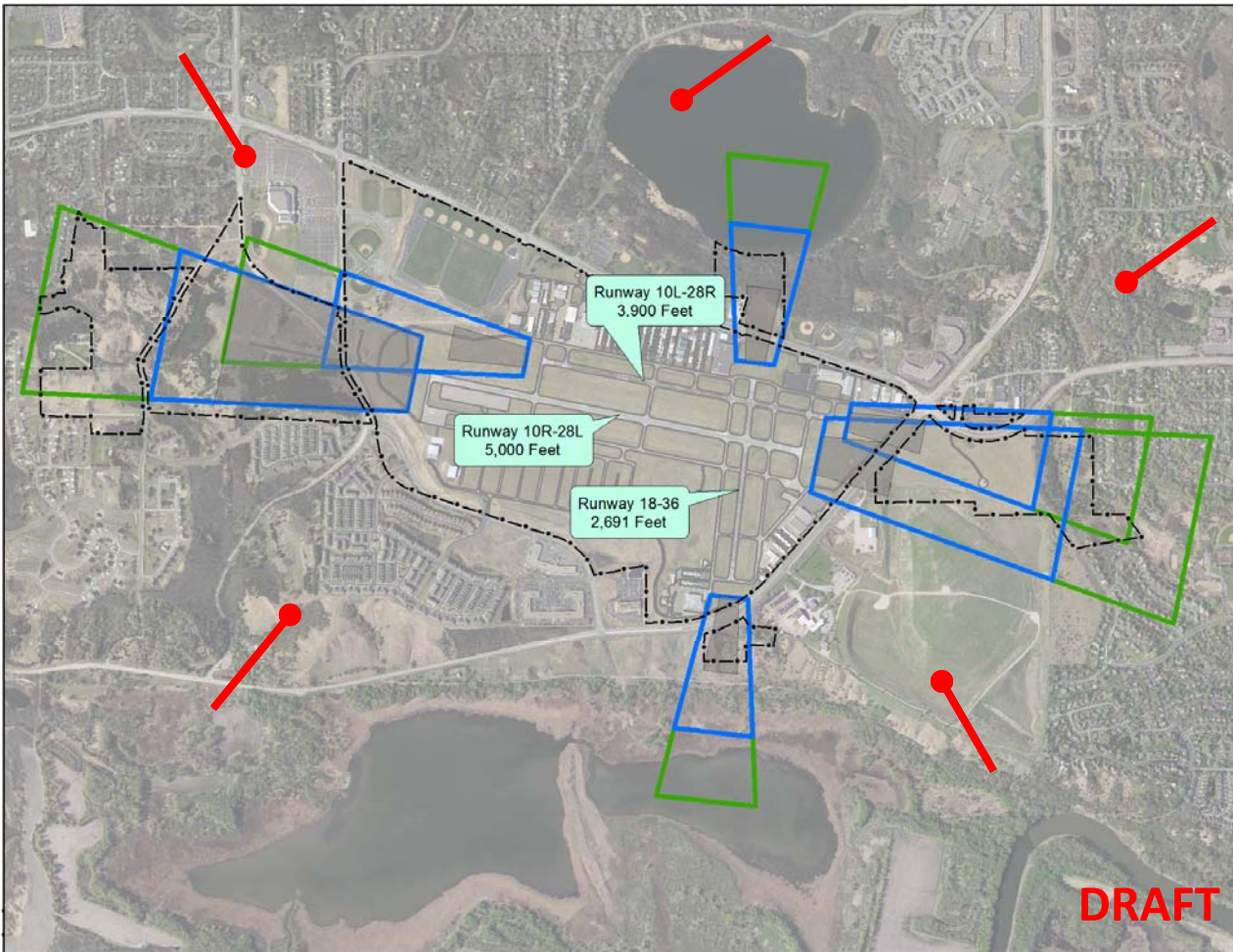


Analysis Areas

- 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

- 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

F RISK CONCEPTS

RISK CONCEPTS F

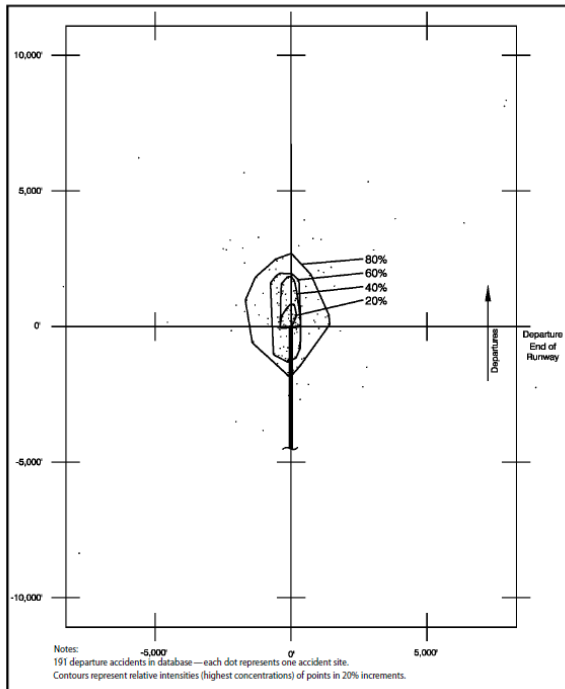


FIGURE F5
General Aviation Accident Distribution Contours –
Departure Accidents on Runways of Less than 4,000 Feet

F-20 California Airport Land Use Planning Handbook

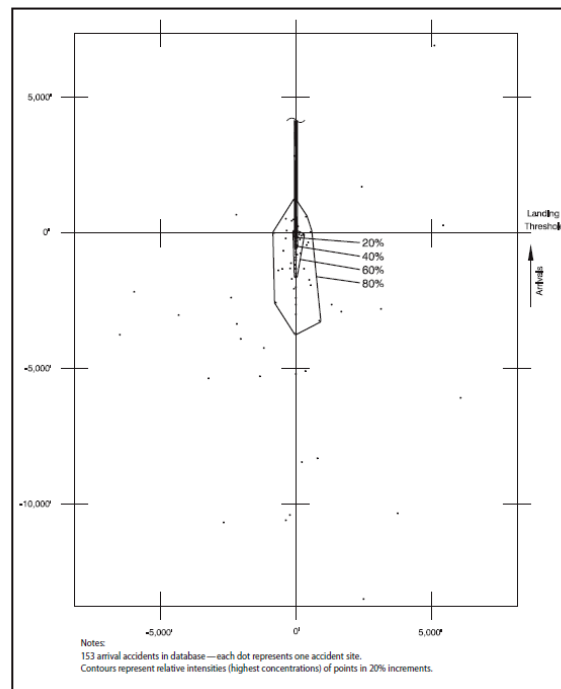


FIGURE F4
General Aviation Accident Distribution Contours –
Arrival Accidents on Runways of Less than 4,000 Feet

California Airport Land Use Planning Handbook

F-19

Accident Location Data

- Source: California Airport Land Use Planning Handbook (2002 & 2011)
- 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

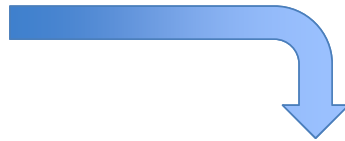


DRAFT

Safety Risk Study Updates

FCM Runway Use CY2016

Runway	% Arrivals	% Departures
18	10%	14%
36	4%	5%
10L	17%	15%
10R	20%	15%
28L	23%	19%
28R	26%	32%



FCM 2040 Estimated Operations

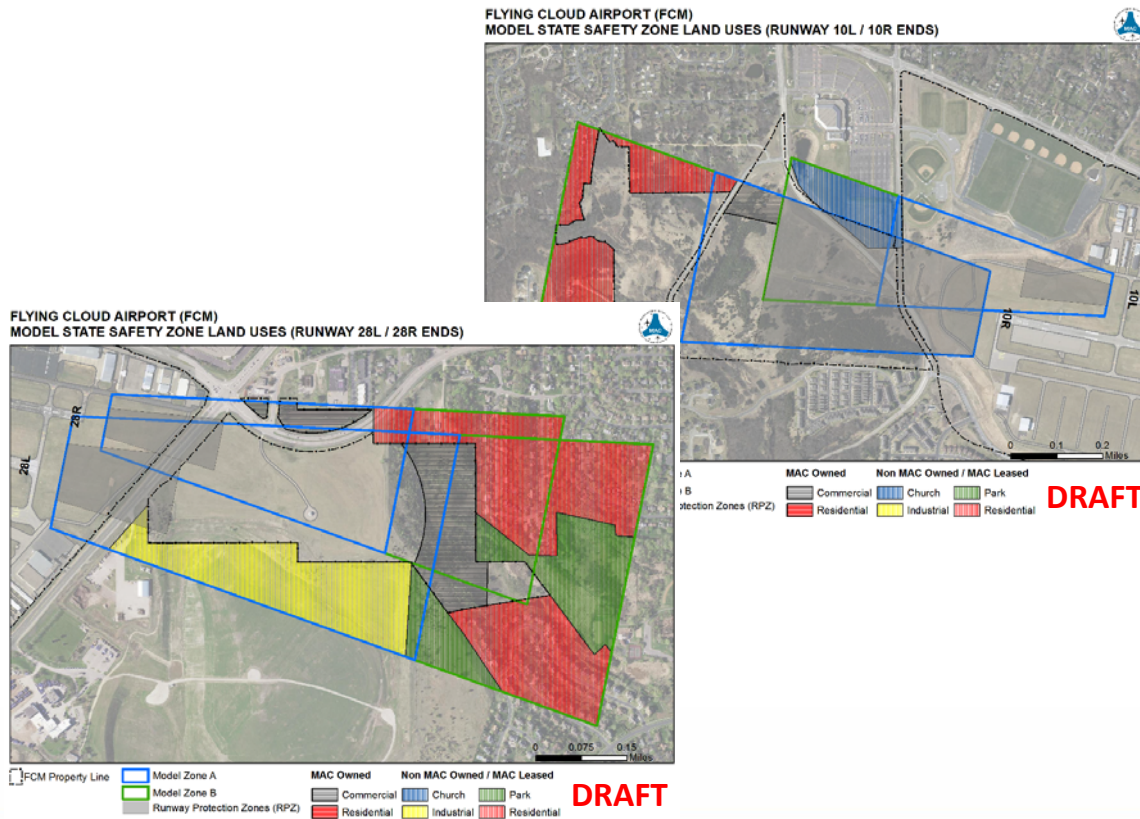
Runway	# Arrivals	# Departures	Total
18	5,073	7,153	12,226
36	2,070	2,412	4,482
10L	8,541	7,599	16,140
10R	9,906	7,548	17,454
28L	11,779	9,824	21,603
28R	13,152	15,985	29,137
Total	50,521	50,521	101,042

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



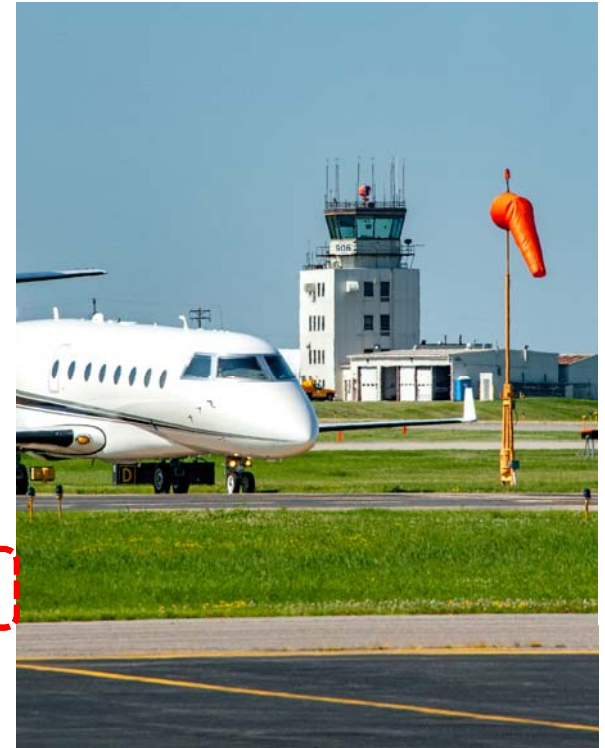
Occupant Areas

- 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



Meeting Agenda

- Approval of Minutes from September 21, 2017 JAZB Meeting
- Introduction of new JAZB member (Eden Prairie representative)
- Proposed updates to 2010 Draft FCM Airport Zoning Ordinance
 - Airfield configuration updates
 - Safety Risk Study updates
 - Economic Impact Study updates
- Board Member input on items to be updated
- Next steps/timeline for preparing Updated Draft FCM Airport Zoning Ordinance
- Next Meeting Date



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

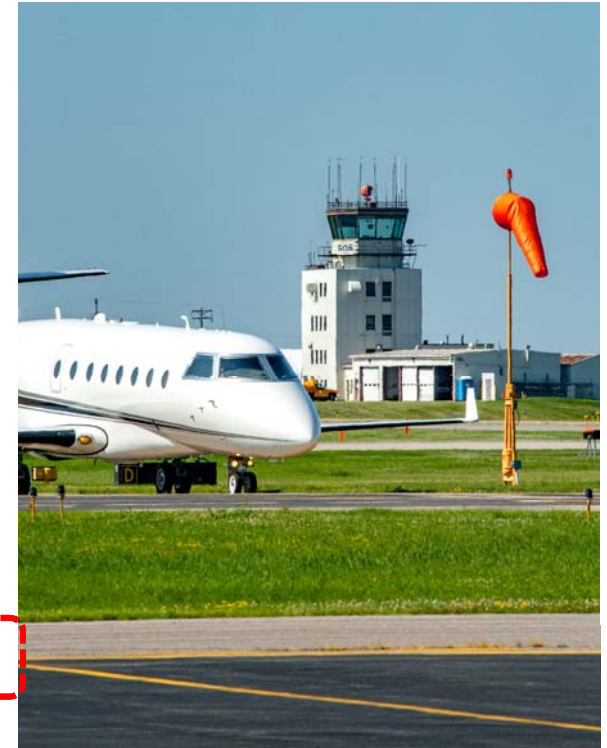
JAZB ECONOMIC IMPACT ANALYSIS - 2017

Undeveloped Property Ownership	Total Acreage	Residential Land Use Classification (2008 Guide Plan)	Commercial or Office Land Use Classification (2008 Guide Plan)	Total Development with State Rules (sq. ft/# of homes)	Total Development with JAZB Rules (sq. ft/# of homes)	Total Value of Development
MAC						
Private Owners						
Totals	NA	NA				



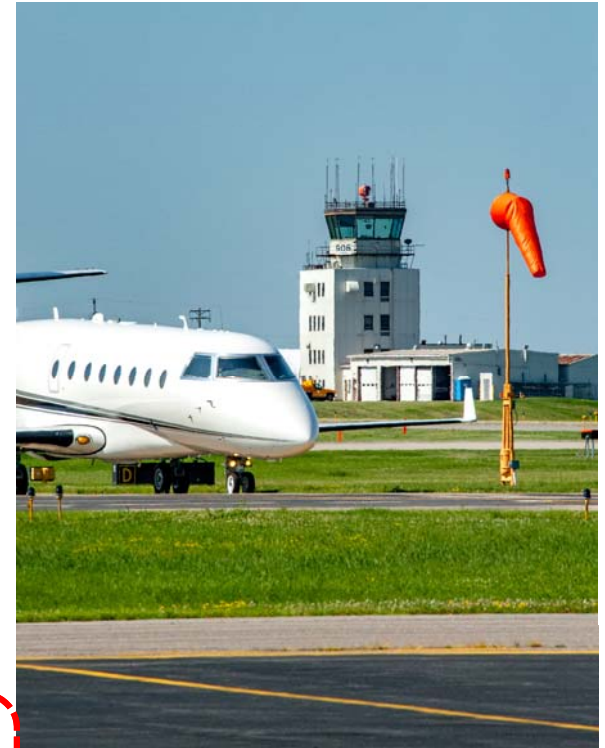
Meeting Agenda

- Approval of Minutes from September 21, 2017 JAZB Meeting
- Introduction of new JAZB member (Eden Prairie representative)
- Proposed updates to 2010 Draft FCM Airport Zoning Ordinance
 - Airfield configuration updates
 - Safety Risk Study updates
 - Economic Impact Study updates
- Board Member input on items to be updated
- Next steps/timeline for preparing Updated Draft FCM Airport Zoning Ordinance
- Next Meeting Date



Meeting Agenda

- Approval of Minutes from September 21, 2017 JAZB Meeting
- Introduction of new JAZB member (Eden Prairie representative)
- Proposed updates to 2010 Draft FCM Airport Zoning Ordinance
 - Airfield configuration updates
 - Safety Risk Study updates
 - Economic Impact Study updates
- Board Member input on items to be updated
- Next steps/timeline for preparing Updated Draft FCM Airport Zoning Ordinance
- Next Meeting Date



Next Steps / Timeline

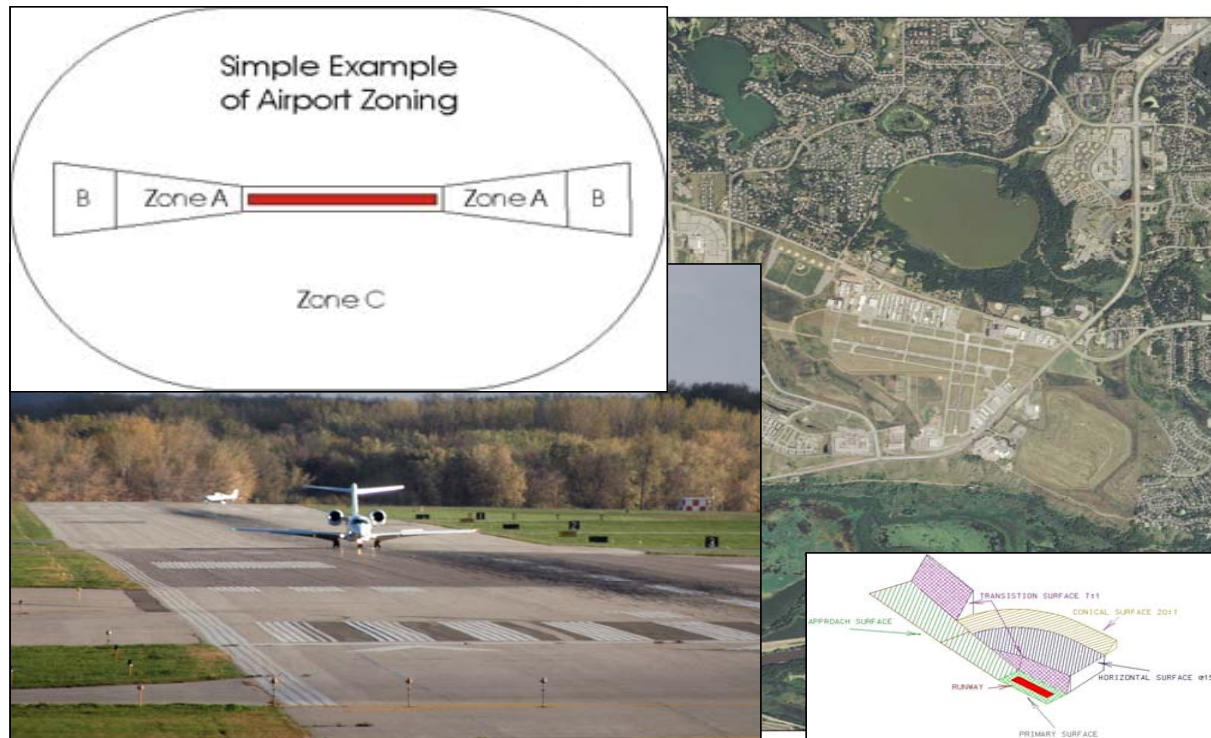
Next Steps

- 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!

