

Lake Elmo Airport

Draft 2035 Long-Term Comprehensive Plan (LTCP)



18 August 2015 – Washington County Board Workshop
Presentation of Draft LTCP & Preferred Development Alternative



Introduction to the MAC



- Purpose & Legislative Mandate
- Organizational Structure
- Overview of the Reliever Airport System
- Relationship to Federal Aviation Administration (FAA) and MnDOT Aeronautics



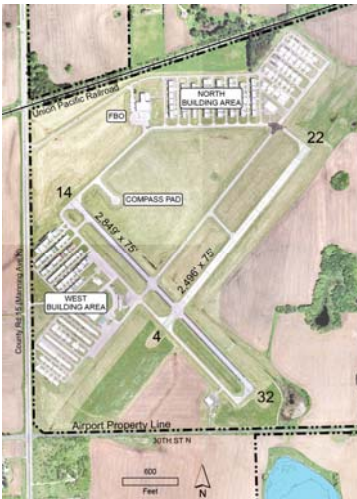
Briefing Agenda

- Airport Role & Opportunities
- LTCP Purpose & Key Planning Issues
- Aviation Activity Forecasts
- Airfield Facility Requirements
- Alternatives Analysis
- Noise Analysis
- Stakeholder Engagement
- Summary



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Lake Elmo Airport Role



- Primary Role of Lake Elmo Airport
 - Integral part of the regional Reliever Airport system
 - Accommodates Personal, Recreational, and some Business Aviation users
 - Design Aircraft is and will continue to be small, propeller driven aircraft with < 10 passenger seats
 - Role not expected to change in forecast period
- Existing facility & activity level overview
 - 205 Based Aircraft (January 2015)
 - ~26,000 Aircraft Operations in CY 2014
- Airport Context



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Aircraft Using the Airport Today

- Design Aircraft Family
 - Small Propeller-Driven Airplanes
 - Fewer Than 10 Passenger Seats



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FAA Runway Protection Zone (RPZ) Guidance

- Runway Protection Zone (RPZ)
 - Role is to enhance safety and protection of people and property on the ground off runway ends
 - Airport control is emphasized
- FAA's *Interim Guidance on Land Uses Within a RPZ* issued in 2012
 - Clarifies and tightens up former guidance on compatible land uses in RPZs
 - Several incompatible land uses in existing RPZs at Lake Elmo (roads, railroad, non-owned property)
 - RPZ Alternatives Analysis now required for triggering events (e.g., Manning Avenue Improvements)



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Today's Opportunities



- Runway Protection Zones
 - Have MAC-owned property to meet FAA requirements
- Manning Avenue Improvements
 - Accommodate roadway needs
- Zoning Questions for Neighbors
 - Resolve uncertainties for County, City and Townships
- Failing Infrastructure
 - Runway pavements need to be reconstructed
- Airport Improvements for Users
 - Provide longer runway per FAA Guidance



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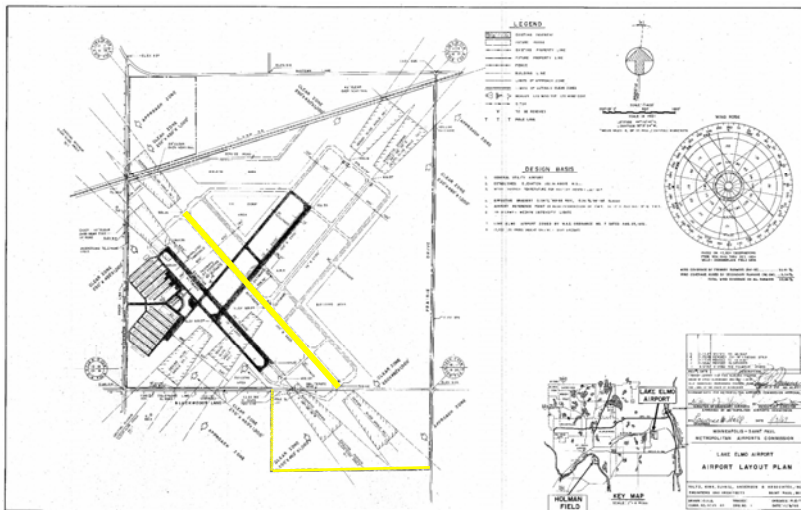
LTCP Purpose

- LTCP Purpose
 - First step in the overall process
 - Update view of future facility needs
 - Serve as the “road map” to guide our development strategy and shape our 7-Year Capital Improvement Program
 - Does not authorize construction
- Updates on a ~5-year cycle
- The LTCP is still in DRAFT form



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Planning Legacy



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Key Planning Objectives

- Key Planning Objectives
 - Enhance safety for all aircraft operations
 - Improve operational capabilities for aircraft using the airport
 - Achieve compliance with FAA RPZ criteria
- Facility improvements; not a change in role or property footprint



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AVIATION ACTIVITY FORECAST



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Aviation Activity Forecast: 2015 - 2035

Table 5: Forecast Comparison by Scenario –Lake Elmo.

Year	Total Based Aircraft				Total Number of Operations				
	Base Case	High Range	Low Range	Extended Runways (3,300 and 3,600 feet)	Base Case	High Range	Low Range	Extended Runway (3,300 feet)	Extended Runway (3,600 feet)
2012	229	229	229	229	26,709	26,709	26,709	26,709	26,709
2015	226	272	182	226	25,454	29,322	20,944	25,454	25,454
2020	218	287	167	218	24,232	30,128	19,456	24,418	24,539
2025	209	300	154	209	23,908	32,460	18,629	24,125	24,261
2030	211	315	142	211	25,200	35,610	18,041	25,459	25,615
2035	208	332	133	208	26,138	39,119	17,835	26,442	26,620

Source: *Reliever Airports Activity Forecasts Technical Report*; HNTB, July 2013

- Base Case Forecast
- Scenarios
 - Low Range
 - High Range
 - Extended Runway
 - 3,300 feet
 - 3,600 feet



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- Base Case Forecast
- Scenarios
 - Low Range
 - High Range
 - Extended Runway
 - 3,300 feet
 - 3,600 feet
 - No change in total based aircraft



Aviation Activity Forecast: 2015 - 2035

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- Base Case Forecast
- Scenarios
 - Low Range
 - High Range
 - Extended Runway
 - 3,300 feet
 - 3,600 feet
 - 1-2% increase in traffic from Base Case



AIRFIELD FACILITY REQUIREMENTS



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Runway Length

- Design Aircraft Family
 - Small Propeller-Driven Airplanes
 - Fewer Than 10 Passenger Seats
- Primary Runway Length
 - FAA Guidance: Range of 3,300 – 3,900 feet
 - Aircraft-specific analysis: ~3,600 feet optimal length for long-term future planning
 - Enhances safety and operational capability for the design aircraft family of propeller airplanes
 - Does NOT consider length requirements for jets
- Crosswind Runway Length
 - Small extension to ~2,750 feet



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DEVELOPMENT ALTERNATIVES



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Base Case

- Existing airfield configuration and runway lengths
- Focus on reconstruction of existing pavements
- Runway 14 RPZ Land Acquisition
 - FAA grant requirement



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Base Case

- **Benefits**
 - No change to existing conditions/flight patterns
 - Lowest development cost
- **Areas of Concern**
 - Cannot achieve optimal 3,600' runway length
 - RPZ incompatibilities not addressed
 - Private property acquisition
 - Manning Avenue conflict not addressed; improvements trigger RPZ study requiring FAA review and approval



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Alternative A

- Extend Crosswind Runway 04-22 to 3,200'
- Maintain existing Runway 14-32 configuration
- Runway 14 RPZ Land Acquisition
 - FAA grant requirement
- Preferred Alternative from 2008 LTCP



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Alternative A

- **Benefits**
 - Provides a longer runway than existing condition
 - Development cost
- **Areas of Concern**
 - Cannot achieve optimal 3,600' runway length
 - Primary runway not aligned for optimal wind coverage
 - RPZ incompatibilities not addressed
 - Private property acquisition
 - Manning Avenue conflict not addressed
 - Shifts primary runway traffic patterns to northeast & southwest
 - Some wetland mitigation



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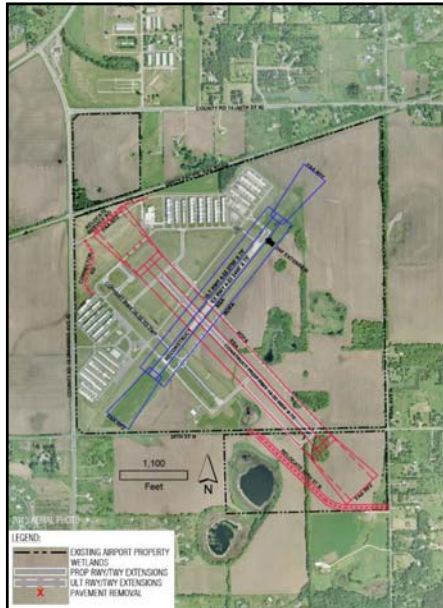


Alternative B

- Relocate and extend primary Runway 14-32 to 3,600'
- Relocate 30th Street N
- Realign north airport access road
- Convert existing Runway to Taxiway
- Extend crosswind Runway 04-22 to 2,750'



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Alternative B

- **Benefits**
 - Achieves optimal 3,600' runway length
 - Achieves RPZ compatibility on MAC-owned land
 - Primary runway aligned for optimal wind coverage
 - Minimizes operational disruptions during construction
- **Areas of Concern**
 - Requires realignment of 30th Street N
 - Shifts primary runway traffic patterns to southeast
 - Some wetland mitigation
 - Most expensive alternative



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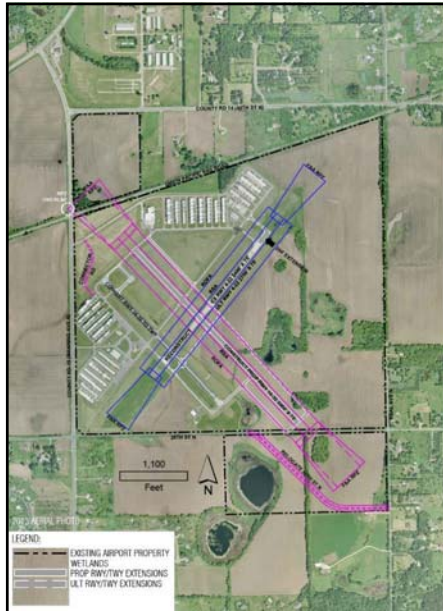


Alternative C

- Relocate and extend primary Runway 14-32 to 3,900'
- Relocate 30th Street N
- Convert existing Runway to Taxiway
- “Legacy” alternative from previous planning
- Extend crosswind Runway 04-22 to 2,750'



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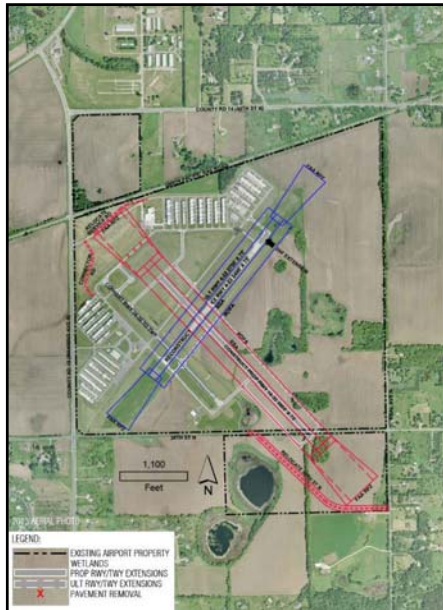


Alternative C

- **Benefits**
 - Achieves optimal 3,600' runway length (and longer)
 - Primary runway aligned for optimal wind coverage
 - Minimizes operational disruptions during construction
- **Areas of Concern**
 - RPZ incompatibilities will trigger RPZ study
 - Requires relocation of 30th Street N
 - Shifts primary runway traffic patterns to southeast
 - Some wetland mitigation
 - Development cost



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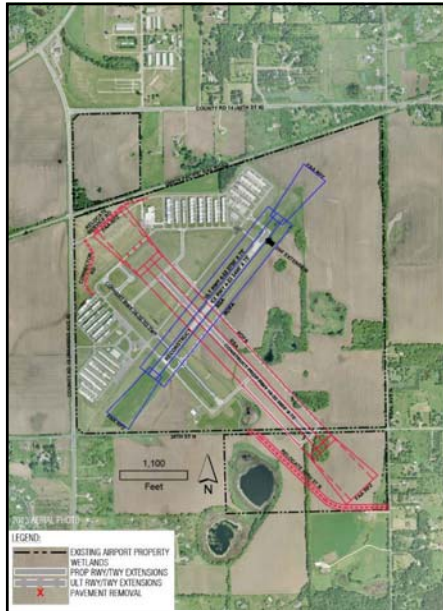
Preferred Alternative

Alternative B

- **Rationale for Selection**
 - Runway Protection Zone Compatibility
 - No additional land acquisition needed
 - Ability to provide optimal 3,600' primary runway length
 - No additional primary runway extensions contemplated during planning horizon
 - Provides certainty for surrounding communities
 - Optimizes use of existing airport property
 - Including that purchased decades ago for a longer primary runway
 - Minimizes operational disruptions during construction



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Preferred Alternative

Alternative B

- Impacts
 - Small increase in aircraft traffic levels (only 1 - 2%) over base case; similar to 2012 levels
 - Better accommodates more sophisticated propeller-driven aircraft
 - May attract a small number of small jets but runway length, instrument approaches, and amenities will be limiting factors
 - 30th Street N realignment will place additional traffic on Neal Avenue and introduce longer travel times for some
 - MAC will provide right-of-way and construct the relocated portion of road
 - Lights on the crosswind runway will only be on when activated by pilots
 - Noise footprint shrinks slightly but shifts southeast



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EVALUATION OF NOISE IMPACTS



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Existing and Forecast Aircraft Types

- Approximately 69 average daily operations are currently occurring at the airport.
- An anticipated 68 average daily operations are expected to occur in 2035.

	Single-Engine Piston	Helicopter	Multi-Engine Piston	Turboprop	Light Jet	Total
Existing	67.1	1.1	0.3	0.2	0.0	68.6
2035 Forecast	64.5	1.6	0.3	1.0	0.5	67.9

(1 takeoff or 1 landing each day)

(1 takeoff or 1 landing every other day)



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Aircraft Types and Associated Noise Levels

Aircraft Category	Aircraft Category Operations	Representative Aircraft Type	Seats	Part 36 Takeoff Noise Level (dBA)
Single-Engine Piston	Existing: 67.1/day Forecast: 64.5/day	Cessna 172 	4	74.3
		Cirrus SR22 	4-5	83.7
Turboprop	Existing: 0.2/day Forecast: 1.0/day	Beechcraft King Air 200/250 	7-9	79.2
		Pilatus PC-12 	6-9	77.7
Light Jet	Existing: 0.0/day Forecast: 0.5/day	Cessna Citation Mustang 	6	73.9
Multi-Engine Piston	Existing: 0.3/day Forecast: 0.3/day	Piper Navajo Chieftain 	6-8	78.0

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Environmental Considerations – Noise Contours



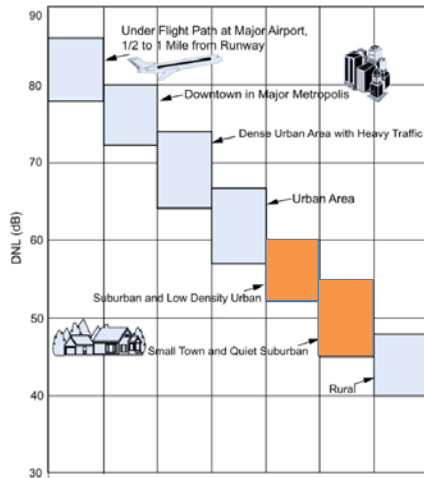
The FAA considers 65 dB DNL to be the threshold for incompatible land use (e.g., residential).

The 65 and 60 db DNL noise contour extend off airport property in the Existing Condition, but are both contained on the airport in the Preferred Alternative Condition.

The 55 dB DNL noise contour includes 11 more residential parcels in the Preferred Alternative Condition as compared to the Existing Condition.



Typical Outdoor Community Day-Night Average Sound Levels



Source: U.S. Department of Defense, Departments of the Air Force, the Army, and the Navy, 1978. Planning in the Noise Environment, AFM 19-10, TM 5-803-2, and NAVFAC P-970. Washington, D.C.: U.S. DoD.

Levels

The DNL metric is calculated by cumulatively averaging sound levels over a 24-hour period with a 10 dB penalty between 10 p.m. and 7 a.m.

Community noise levels in Small Town and Quiet Suburban areas are typically in the range of **45 dB to 55 dB DNL**. This includes small town cul-de-sacs and wooded residential areas.

Community noise levels in Suburban and Low Density Urban areas are typically in the DNL range of **52 dB to 60 dB DNL**.



STAKEHOLDER ENGAGEMENT



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Stakeholder & Public Engagement

- 1st Phase – Initial Stakeholder Engagement

- Partner Agencies
 - FAA, MnDOT, Met Council
- Municipal Representatives
 - Lake Elmo, Baytown & West Lakeland Townships, Washington County
- Tenant Briefing

Phase 1 Stakeholder Outreach Meetings

Audience	Materials Covered	Date	Location
FAA	LTCP Process, Review of Alternatives	8/21/2014	MAC
FAA, MnDOT, Met Council, County	LTCP Process, Review of Alternatives, Preliminary Findings	9/22/2014	MAC
City, County, Townships	LTCP Process, Review of Alternatives, Preliminary Findings	10/13/2014	LE City Hall
FBO	LTCP Process, Review of Alternatives, Preliminary Findings	10/29/2014	FBO
Airport Users and Tenants	LTCP Process, Review of Alternatives, Preliminary Findings	11/18/2014	Airport
MAC Reliever Advisory Council	LTCP Process, Review of Alternatives, Preliminary Findings	12/9/2014	MAC
FAA	LTCP Technical Review Session	2/18/2015	FAA
City, County, Townships	Review of Draft LTCP Recommendations & Public Engagement Plan	4/21/2015	LE City Hall



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Stakeholder & Public Engagement

- 2nd Phase – Public Outreach Program
 - Distribute Draft LTCP Report
 - Available June 22, 2015
 - Formal Public Review Period
 - June 22 – August 26 (extended from August 5)
 - Two Public Information Meetings
 - July 9 (Baytown) and July 16 (Lake Elmo)
 - ~150 attendees
- 3rd Phase – Plan Finalization
 - Consider & Incorporate Feedback
 - Final MAC Adoption & Met Council Formal Review

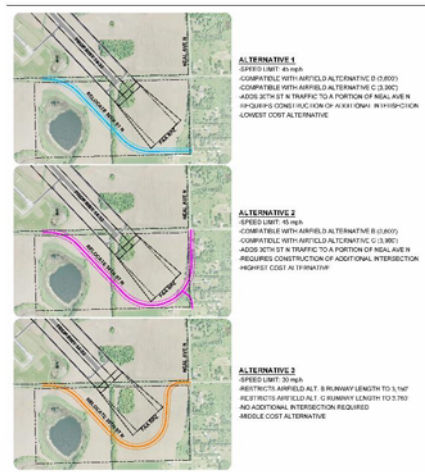


Audience	Date	Location
General Public	July 9	Baytown
General Public	July 16	Lake Elmo

Public Comment Period: June 22, 2015 – August 26, 2015



Citizen Concerns



- Citizen concerns we are hearing:
 - 30th Street North realignment
 - Disruption to existing traffic patterns
 - Increased aircraft traffic levels and noise levels
 - Introduction of significant levels of jet aircraft activity
 - Impact on property values
 - Impact of airfield lighting
 - Overall need for the improvements – the airport is fine as it is today



The Road Ahead

- LTCP Finalization
- MAC Adoption of LTCP
 - The LTCP does not authorize construction
 - The 7-Year Capital Improvement Program is the implementation vehicle of the MAC
- Metropolitan Council Formal Review
- Airport Layout Plan (ALP)
 - Reviewed/Approved by FAA
- Environmental Review
 - Another opportunity for public comment/input
- Grant Funding
- Project Engineering/Design



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Summary

- Real challenges to address
 - “Do Nothing” is no longer an option
- Preferred Alternative is an opportunity to:
 - Address RPZ compliance without complicating the Manning Avenue improvement project or acquiring more private property
 - Provide certainty of airport footprint for municipal planning
 - Address long-standing runway length deficiency
 - Meet objectives of improving safety and increasing operational capabilities for aircraft using the airport



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