

Lake Elmo Airport

Environmental Assessment (EA)/ Environmental Assessment (EAW) Worksheet



August 8, 2017 – Community Engagement Panel Meeting #3
Alternatives Evaluation Process & Identification of Preferred Alternatives



Agenda

- Proposed public event format changes
- Efforts to address stakeholder input
- Recap – Purpose & Need
- Alternatives evaluation process
- Identification of Preferred Alternatives
- Panel discussion
- 10-minute comment period



Proposed Public Event Format Changes

- Use of a facilitator
- Q&A format changes
- Top concerns sticker board at sign-in
- Improve readability of presentations



Efforts to address stakeholder input

- Updated frequently asked questions posted to website
- Baseline and forecast aircraft operations
- 30th Street North design alternatives
- Project schedule update



Baseline and Forecast Aircraft Operations

- 2016 MACNOMS flight tracking system data analyzed to establish baseline for noise analysis
- 25,596 total estimated aircraft operations in 2016 is consistent with the LTCP forecast for 2016
- Based on analysis of aircraft type information in MACNOMS, operations by the different aircraft classes were estimated
- These baseline and forecast operations by aircraft type will be included in the EA/EAW

Aircraft Type	2016 Baseline		2025 Forecast (Extended Forecast Scenario)	
	Operations	Percentage	Operations	Percentage
Single Engine Piston	24,053	93.97%	22,563	93.00%
Multi-Engine Piston	498	1.95%	607	2.50%
Turboprop	63	0.25%	243	1.00%
Jet	3	0.01%	24	0.10%
Helicopter	979	3.82%	825	3.40%
Total Operations	25,596		24,261	



30th Street North Realignment Alternatives

- The LTCP considered three concepts.
- Supplemental planning identified two additional concepts as presented at the May CEP meeting.



ALTERNATIVE 1

- SPEED LIMIT: 45 mph
- COMPATIBLE WITH AIRFIELD ALTERNATIVE B (3,600')
- COMPATIBLE WITH AIRFIELD ALTERNATIVE C (3,900')
- ADDS 30TH ST N TRAFFIC TO A PORTION OF NEAL AVE N
- REQUIRES CONSTRUCTION OF ADDITIONAL INTERSECTION
- LOWEST COST ALTERNATIVE



ALTERNATIVE 2

- SPEED LIMIT: 45 mph
- COMPATIBLE WITH AIRFIELD ALTERNATIVE B (3,600')
- COMPATIBLE WITH AIRFIELD ALTERNATIVE C (3,900')
- ADDS 30TH ST N TRAFFIC TO A PORTION OF NEAL AVE N
- REQUIRES CONSTRUCTION OF ADDITIONAL INTERSECTION
- HIGHEST COST ALTERNATIVE

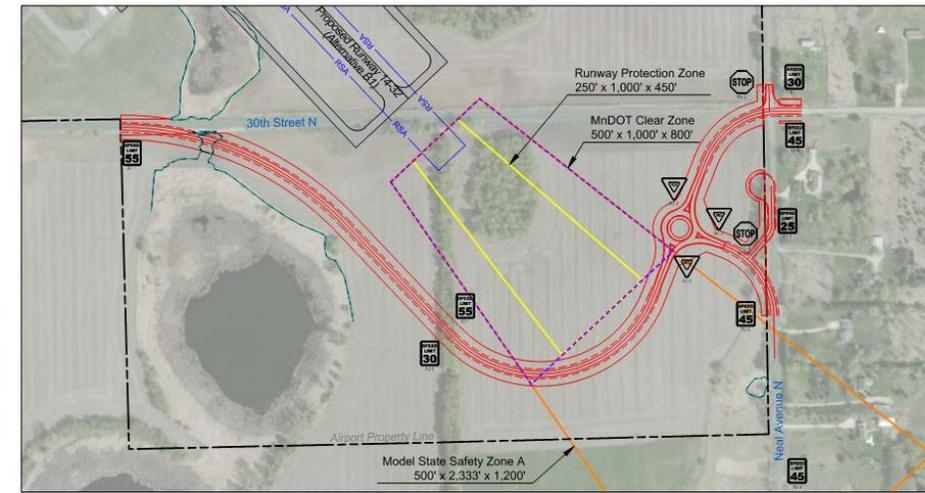
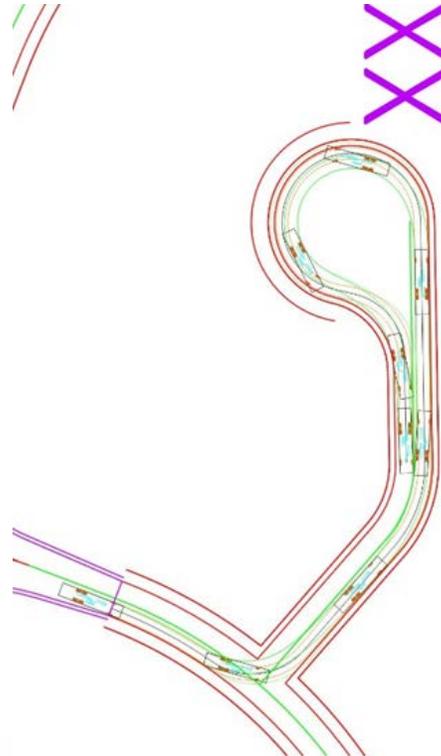


ALTERNATIVE 3

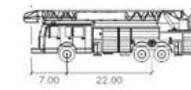
- SPEED LIMIT: 30 mph
- RESTRICTS AIRFIELD ALT. B RUNWAY LENGTH TO 3,150'
- RESTRICTS AIRFIELD ALT. C RUNWAY LENGTH TO 3,760'
- NO ADDITIONAL INTERSECTION REQUIRED
- MIDDLE COST ALTERNATIVE

30th Street North Design Alternatives

- Met with West Lakeland CEP members and homeowners most affected by new Alternatives 4A & 4B
- Met with Bayport Fire Chief
 - Modeled specific vehicle turning movements for cul-de-sac
 - Identified specific concerns regarding availability of fire hydrants and potential mitigation measures
- Evaluated alternate designs to address three primary concerns expressed by the CEP and community:
 - Estimated construction cost
 - Compared design characteristics
 - Quantified travel time differences
- Based on project cost and initial CEP response, Alternatives 4A & 4B will not be considered further

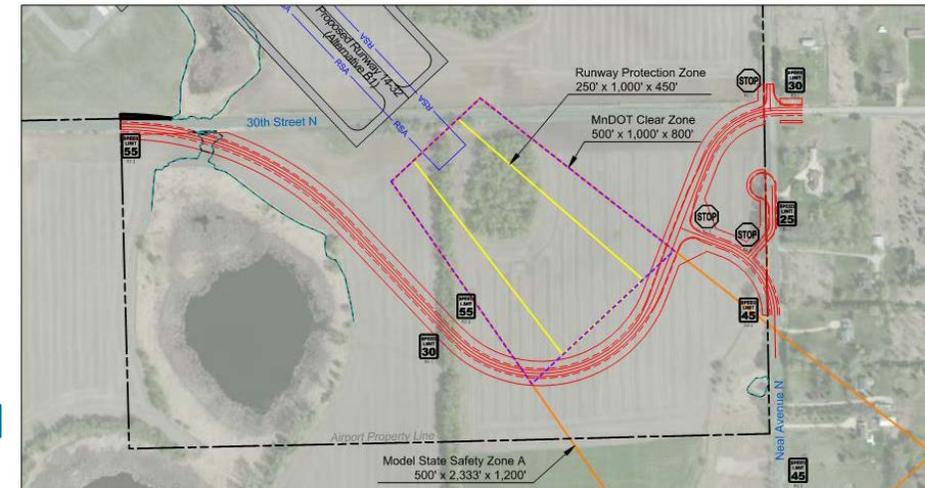


Alternative 4A



Ladder 2109

	feet
Width	8.50
Track	8.50
Lock to Lock Time	6.0
Steering Angle	33.3



Alternative 4B

- Proposed Realignment
- Approximate Wetland Areas (U.S. Fish and Wildlife Service National Wetlands Inventory)
- Delineated Wetland Boundary

EA Project Timeline



Project Schedule Update

- Time Frame
- Kickoff Meeting
- Public Event
- Community Engagement Panel (CEP) Meeting
- Public Hearing

Note: Schedule updated August 8, 2017. Subject to change.



Recap – Purpose and Need

The **Purpose** of the project at Lake Elmo Airport is to pursue the following broader goals:

- 1) Address failing end-of-life infrastructure
- 2) Enhance safety for airport users and the general public
- 3) Improve facilities for the aircraft currently operating at the airport

The **Need** for the project at Lake Elmo Airport is based on the following specific objectives:

- 1) Improve the runway pavement conditions
- 2) Minimize incompatible land uses in the runway protection zones (RPZs)
- 3) Meet runway length needs for existing users
- 4) Upgrade the instrument approach procedures



Range of Alternatives Considered

FAA Guidance

- Alternatives considered should:
 - Represent the range of reasonable alternatives.
 - Provide a clear basis for choice among options.
- No requirement for specific number or range of alternatives.
- Generally, the greater the degree of environmental effects, the wider the range of alternatives that should be considered.
- An EA may limit alternatives to the proposed action and no action if there are no conflicts concerning alternative uses of available resources.
- A preferred alternative should be identified by the EA.
- The EA should briefly explain why certain alternatives were eliminated from further study.



Range of Alternatives Considered

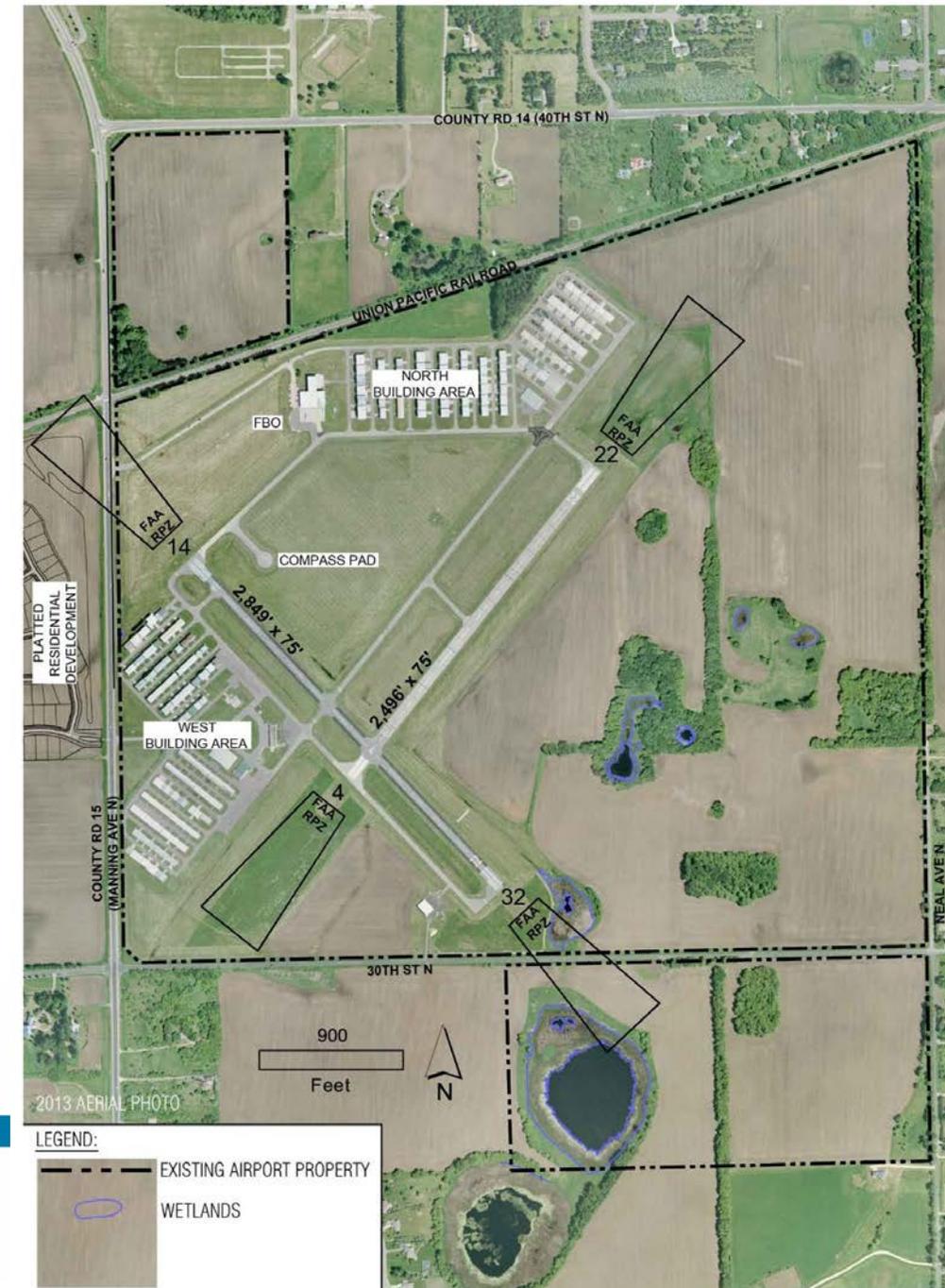
- Five categories of alternative concepts will be considered by the EA/EAW:
 - No-Action Alternative
 - Primary Runway 14/32 Alternatives
 - 30th Street North Realignment Alternatives
 - Crosswind Runway 04/22 Alternatives
 - Instrument Approach Alternatives



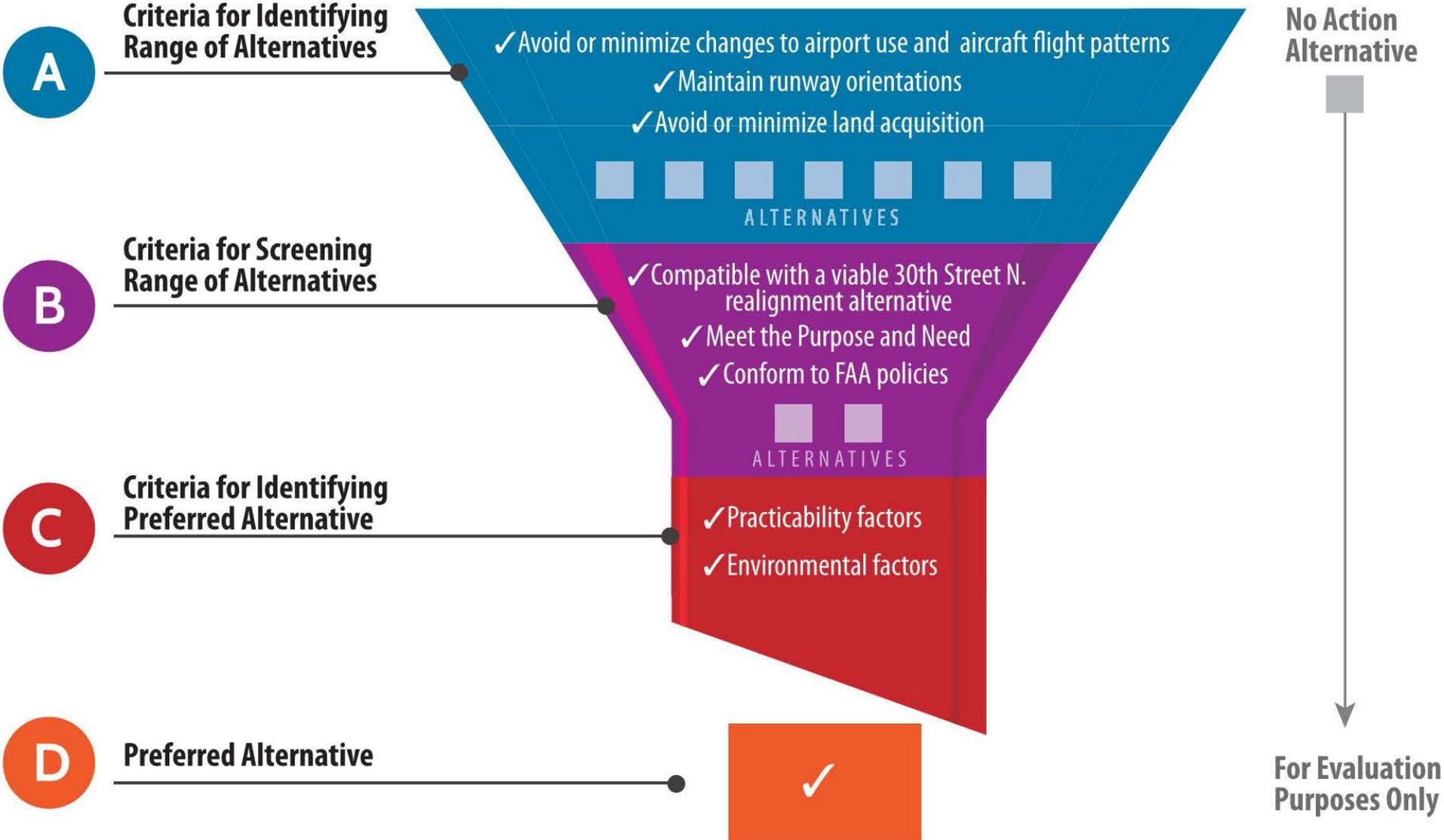
Figure ES-1: Existing Airport Layout

No-Action Alternative

- Must be carried forward throughout the environmental review for comparison with the preferred alternative.
- Under this scenario, no improvements would be made beyond maintaining the existing airfield configuration.
- This alternative does not meet the Purpose & Need.



Primary Runway 14/32 Alternatives Evaluation Process



Primary Runway 14/32 Alternatives

- The LTCP considered five concepts.
- Supplemental planning identified three additional concepts.

Figure 5-1: Base Case Alternative Layout



Figure 5-2: Alternative A Layout

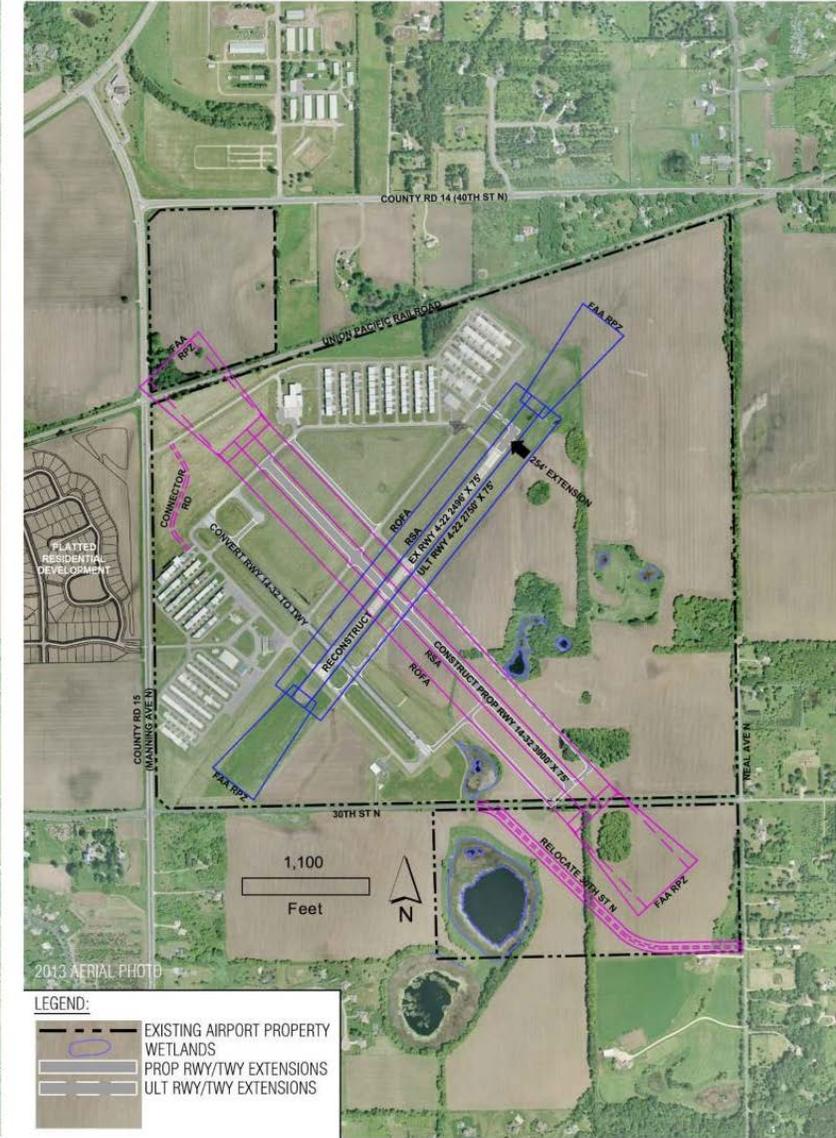
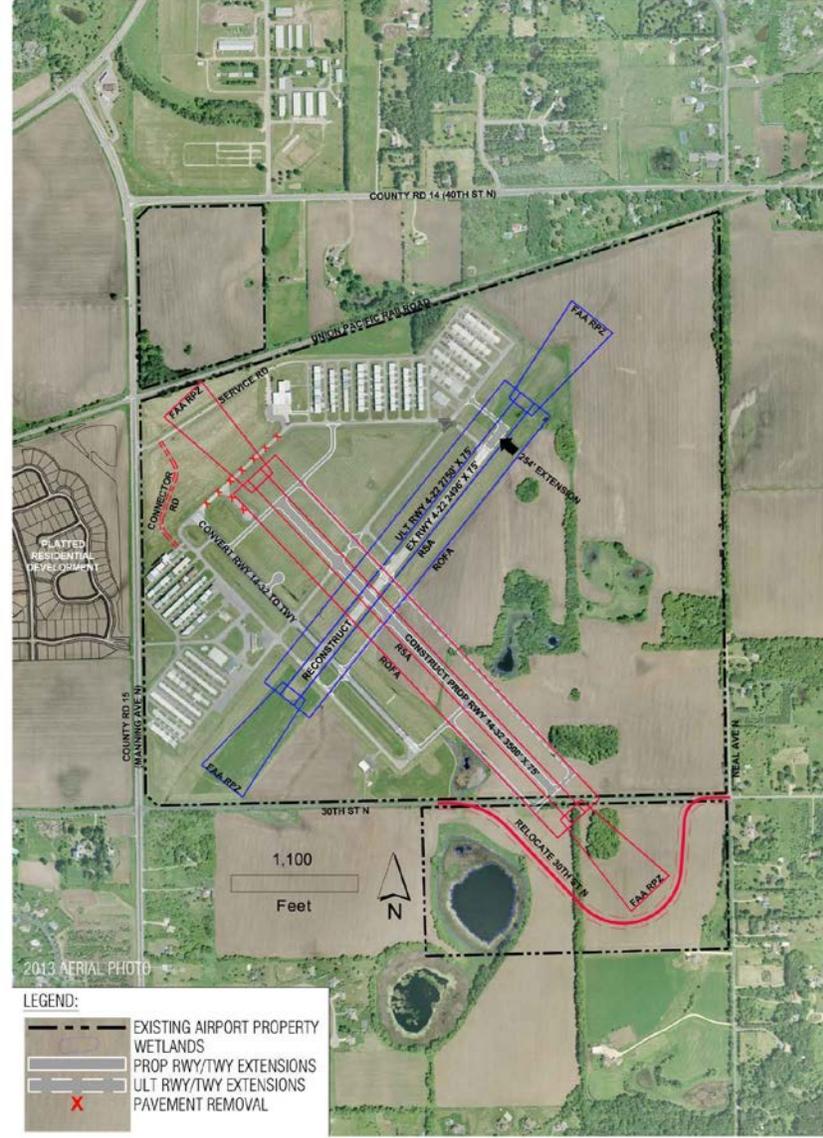
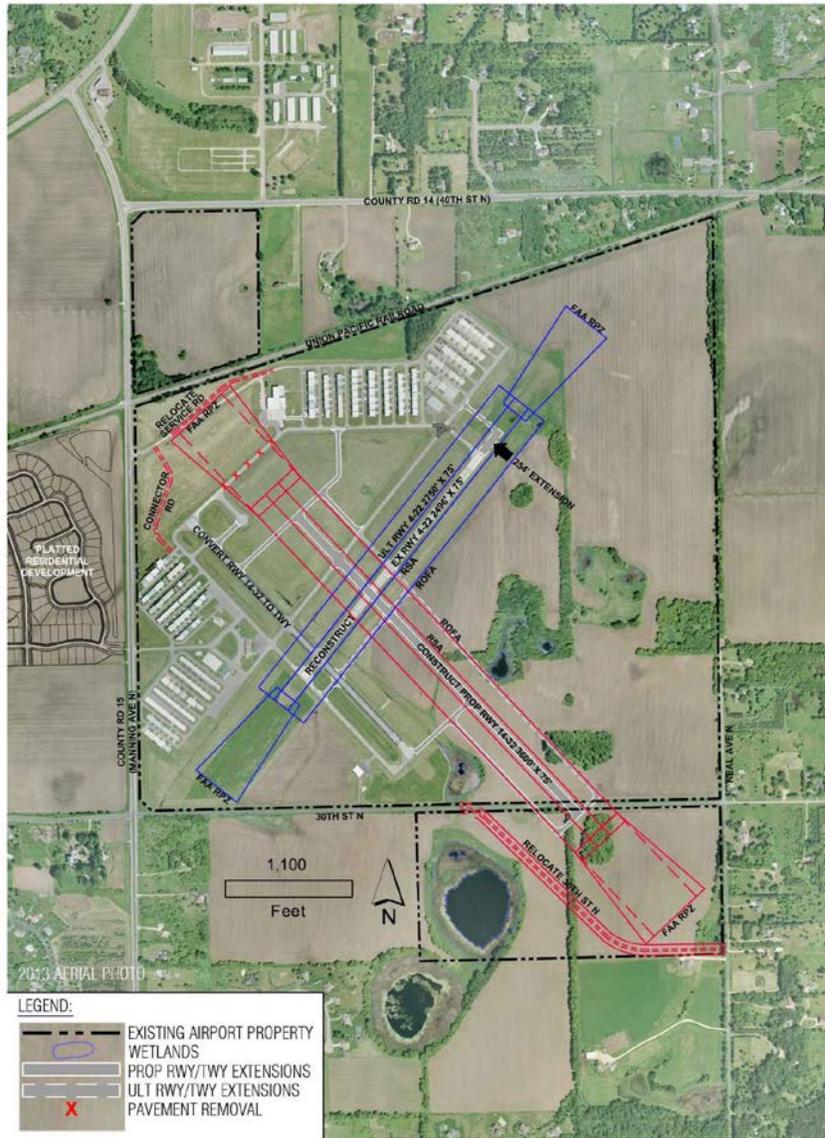


Primary Runway 14/32 LTCP Alternatives

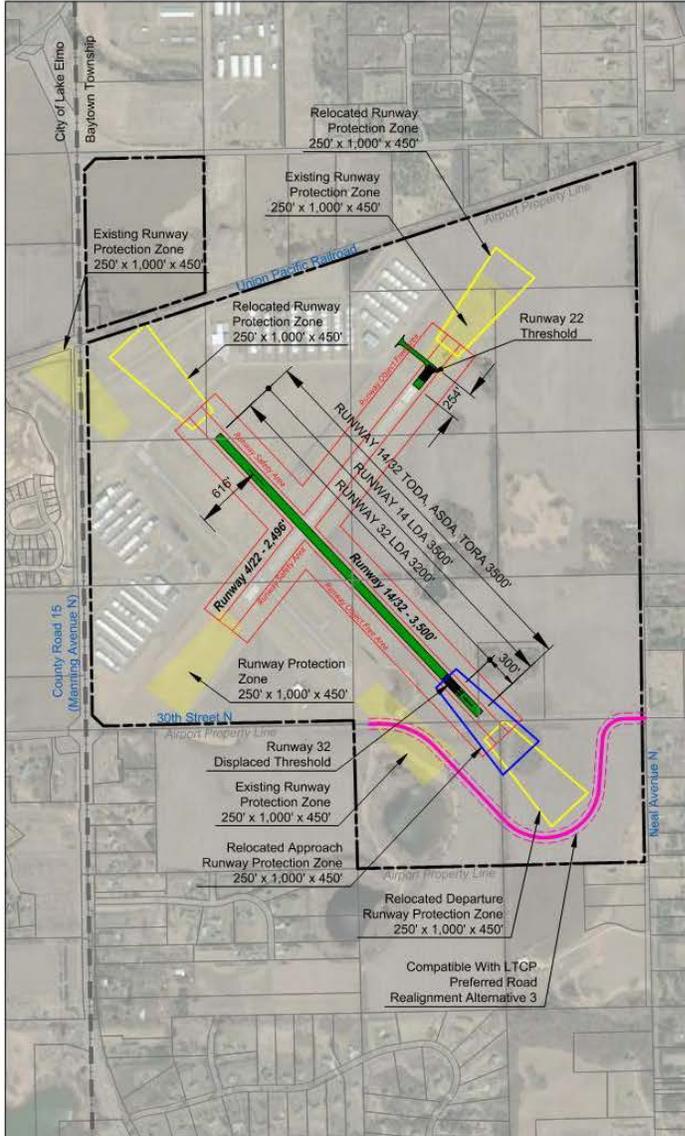
Figure 5-3: Alternative B Layout

Figure ES-5: Alternative B1 (Final Preferred Alternative)

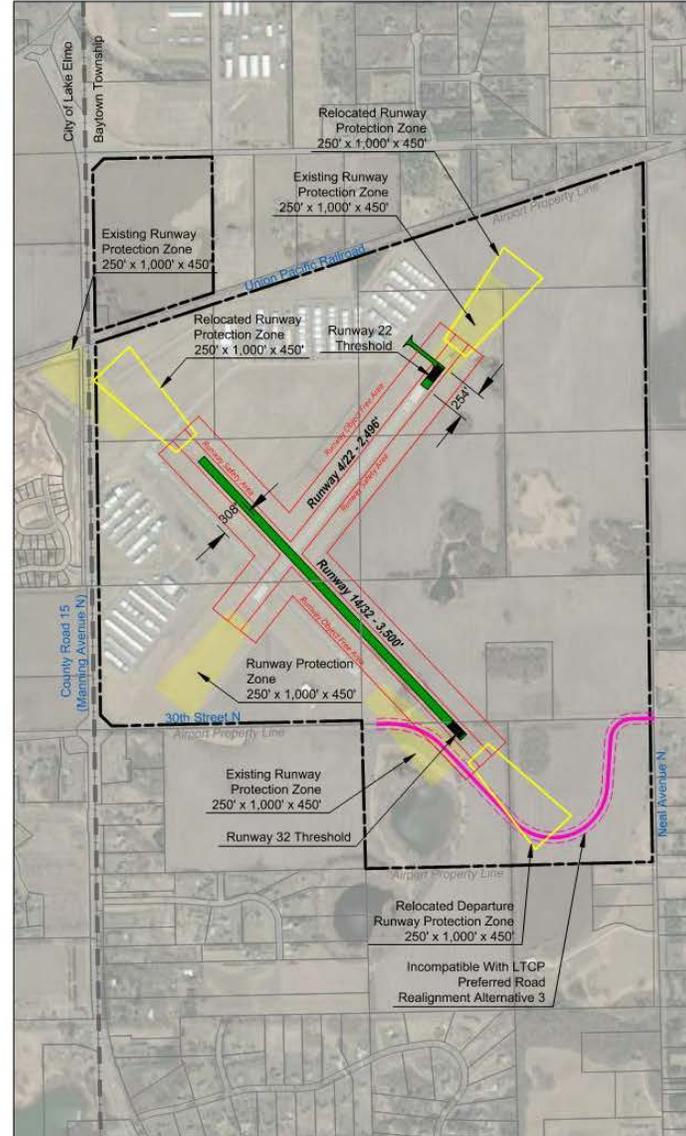
Figure 5-4: Alternative C Layout



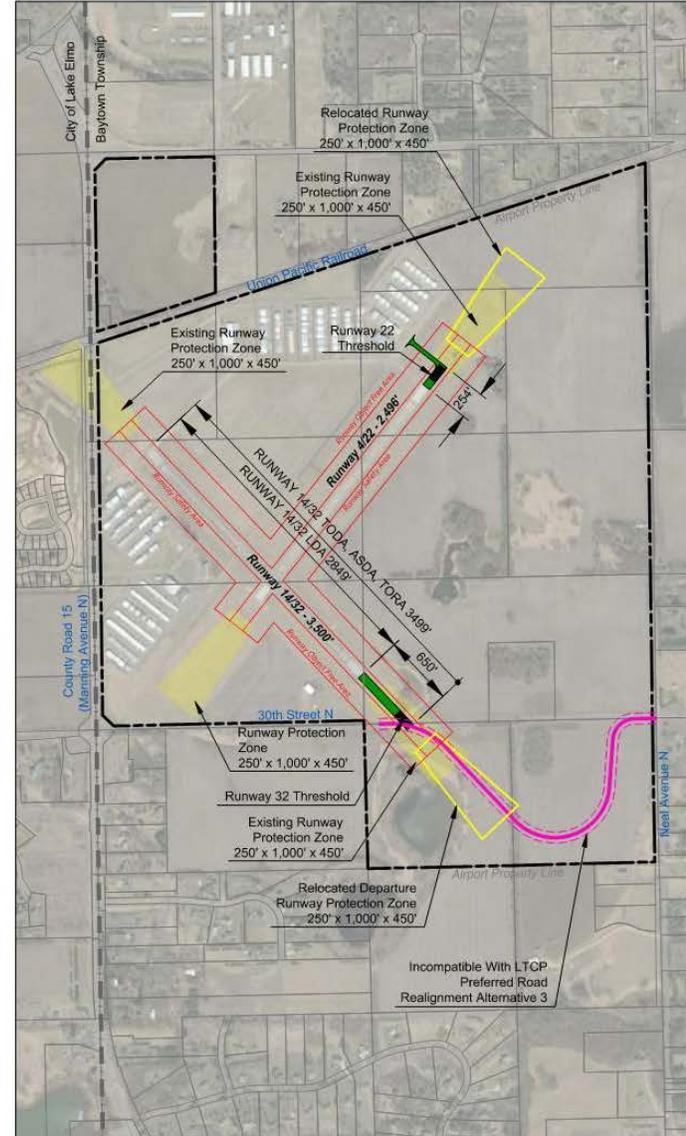
Primary Runway 14/32 Supplemental Alternatives



Primary Runway Alternative B2



Primary Runway Alternative D



Primary Runway Alternative E



Primary Runway 14/32 Alternatives Screening

Table 3-1: Primary Runway Alternatives Screening

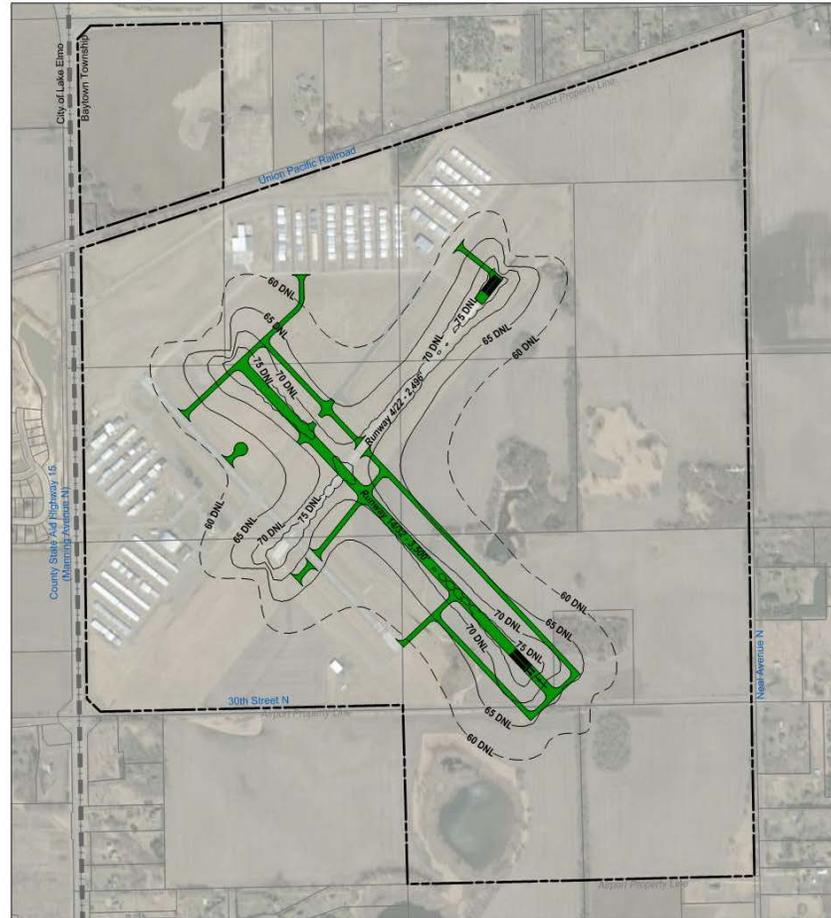
Alternative	Purpose & Need Objective 1	Purpose & Need Objective 2	Purpose & Need Objective 3	Purpose & Need Objective 4	Conform to FAA Policies	Viable 30th Street Realignment Alternative
	Improve the runway pavement condition	Minimize incompatible land uses in the RPZs	Meet runway length needs for existing users	Upgrade the instrument approach procedures		
No-Action Alternative	Yes	No	No	No	No	Yes
Alternative A	Yes	No	No	Yes	No	Yes
Alternative B	Yes	Yes	Yes	Yes	Yes	Yes
Alternative B1	Yes	Yes	Yes	Yes	Yes	Yes
Alternative B2	Yes	Yes	Yes	Yes	No	Yes
Alternative C	Yes	No	Yes	Yes	No	Yes
Alternative D	Yes	Yes	Yes	Yes	No	No
Alternative E	Yes	No	Yes	Yes	No	No



FAA Policy for Implementing Displaced Thresholds



Alternative B1



Alternative B2

- The FAA considers the 65 DNL contour to be the threshold of significance for noise impact around airports.
- The 2025 60-DNL noise contour does not extend off airport property.
- AEDT DNL grid point analysis confirmed no change in DNL levels at the nearest residential area on extended runway centerline with a 300-foot displacement (less than 20-foot difference in altitude).
- Displacing the runway threshold as a noise mitigation tactic at Lake Elmo Airport is not consistent with FAA policy.

Note: 60 DNL shown for informational purposes only.



MAC Ongoing Efforts to Reduce Noise



Lake Elmo Airport — K21D

Noise Abatement Plan

The voluntary Noise Abatement Plan for Lake Elmo Airport (21D) has been prepared in recognition of the need to make the airport and the surrounding community as environmentally compatible as possible.

NOTE: FAA regulations and requirements take precedence over noise abatement procedures. RECOMMENDED PROCEDURES ARE NOT INTENDED TO CONFLICT WITH INSTRUCTIONS FROM ATC OR THOSE WHICH ARE THE EXCLUSIVE AUTHORITY OF THE FAA.

LAKE ELMO AIRPORT IS NOISE SENSITIVE

Avoid Noise Sensitive Residential Areas
Pilots are asked to operate with consideration for the residents located near Lake Elmo Airport (21D). Please avoid flying low and follow the established noise abatement procedures to help ensure a peaceful environment for everyone.

Voluntary Nighttime Procedures In Effect

1. Closed traffic pattern training operations are discouraged between the hours of 2400 local and 0700 local.
2. Intersection takeoffs are discouraged at all times. Intersection takeoffs between the hours of 2200 local and 0700 local are prohibited.
3. Any aircraft not meeting Federal Air Regulation Part 36 is prohibited between the hours of 2200 local and 0700 local.

Preferred Runway Use

1. When the winds are calm (less than 5 knots) the preferred runway shall be 32.
2. When wind, weather or traffic density do not dictate the runway to be used, the following priorities are recommended when selecting a runway:

Piston Engine Aircraft or Turbo Prop Aircraft
Arrivals: 32, 14, 22, 4
Departures: 32, 14, 4, 22

Jet Aircraft
Arrivals/Departures: 32, 14




AIRPORT DIAGRAM
LAKE ELMO, MINNESOTA
LAKE ELMO AIRPORT (21D)



**K21D
Pilot Guide**

AIRPORT INFORMATION

Field Elevation: 933
TPA: 1933 (1000)

RUNWAY INFORMATION

RWY 14 - 32 2850 x 75
Asphalt, Single Wheel Weight 11,000 lbs.

RWY 14: REIL, Runway Edge Lights, Left t/c: Road, trees.
RWY 32: REIL, PAPI - 3.0° (on right), Left t/c: Road, trees.

RWY 4 - 22 2497 x 75
Asphalt, Single Wheel Weight 13,000 lbs.

RWY 4: Left t/c.
RWY 22: Left t/c.

COMMUNICATIONS

CTAF: 122.8
UNICOM: 122.8
WX AWOS-3: 120.075
WX AWOS PHONE (651) 779-5949

MINNEAPOLIS APP/DEP: 121.2
CLEARANCE DELIVERY: 118.625

Voluntary Noise Abatement Plan

- Preferred flight procedures
- Preferred runway use
- Designated maintenance run-up areas
- Nighttime training procedures

Fly Neighborly signs

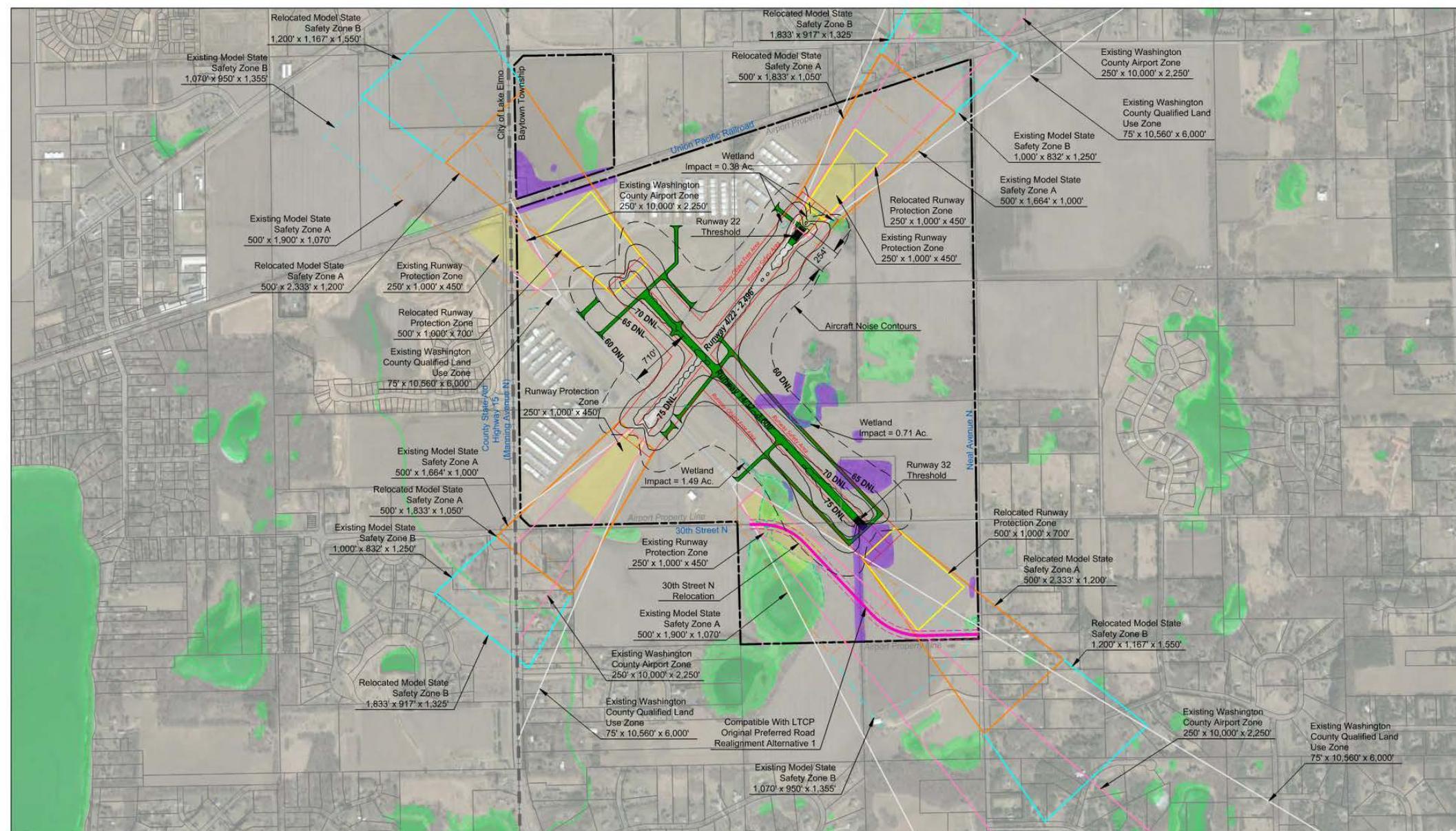
Pilot Outreach and Resources

- Pilot Briefings
- Pilot Guides

Pilot/Community Events

- Lake Elmo Airport Father's Day Pancake Breakfast
- Experimental Aircraft Association Chapter 54 events





Note: Aircraft noise contour 60 DNL is shown for informational purposes only.

- Approximate Tree Removal
- Approximate Wetland Areas (U.S. Fish and Wildlife Service National Wetlands Inventory)
- Delineated Wetland Boundary



**Lake Elmo Airport
Runway 14-32**

**FIGURE 3-8
Alternative B**



Primary Runway 14/32

Comparison of Finalist Alternatives

Criterion		No-Action Alternative	Alternative B	Alternative B1
			Relocate 700' & Extend to 3,600'	Relocate 616' & Extend to 3,500'
Practicability Factors	Construction Cost	\$5.4 million	\$8.6 million	\$8.3 million
	Logistical Factors	Future Manning Avenue widening will trigger FAA RPZ review	30th Street N realignment options are limited	None
Environmental Factors	Wetland Fill Area (approx.)	NA	2.32 acres	1.85 acres
	Wildlife Considerations: RW 32 Threshold to Nearest Wetland (approx.)	400 feet	700 feet	700 feet
	Tree Clearing Area (approx.)	NA	22 acres	20 acres
	Residential Parcels with Structures in Model Safety Zone A	0	6	3
	Residential Parcels with Structures in Model Safety Zone B	2	9	10
	Private Properties within 65 DNL in 2025	None	None	None



30th Street North Realignment Alternatives

- The LTCP considered three concepts.
- Supplemental planning identified two additional concepts, which will not be considered further based on project cost and CEP input.
- Alternative 3 will be carried forward as the preferred alternative.



ALTERNATIVE 1

- SPEED LIMIT: 45 mph
- COMPATIBLE WITH AIRFIELD ALTERNATIVE B (3,600')
- COMPATIBLE WITH AIRFIELD ALTERNATIVE C (3,900')
- ADDS 30TH ST N TRAFFIC TO A PORTION OF NEAL AVE N
- REQUIRES CONSTRUCTION OF ADDITIONAL INTERSECTION
- LOWEST COST ALTERNATIVE



ALTERNATIVE 2

- SPEED LIMIT: 45 mph
- COMPATIBLE WITH AIRFIELD ALTERNATIVE B (3,600')
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- HIGHEST COST ALTERNATIVE



ALTERNATIVE 3

- SPEED LIMIT: 30 mph
- RESTRICTS AIRFIELD ALT. B RUNWAY LENGTH TO 3,150'
- RESTRICTS AIRFIELD ALT. C RUNWAY LENGTH TO 3,760'
- NO ADDITIONAL INTERSECTION REQUIRED
- MIDDLE COST ALTERNATIVE

Crosswind Runway 04/22 Alternatives

- LTCP Preferred Alternative: Extend Runway 04/22 by 254 feet northeast
- There are no other alternatives that meet the same criteria used for identifying the range of primary runway alternatives



Instrument Approach Alternatives

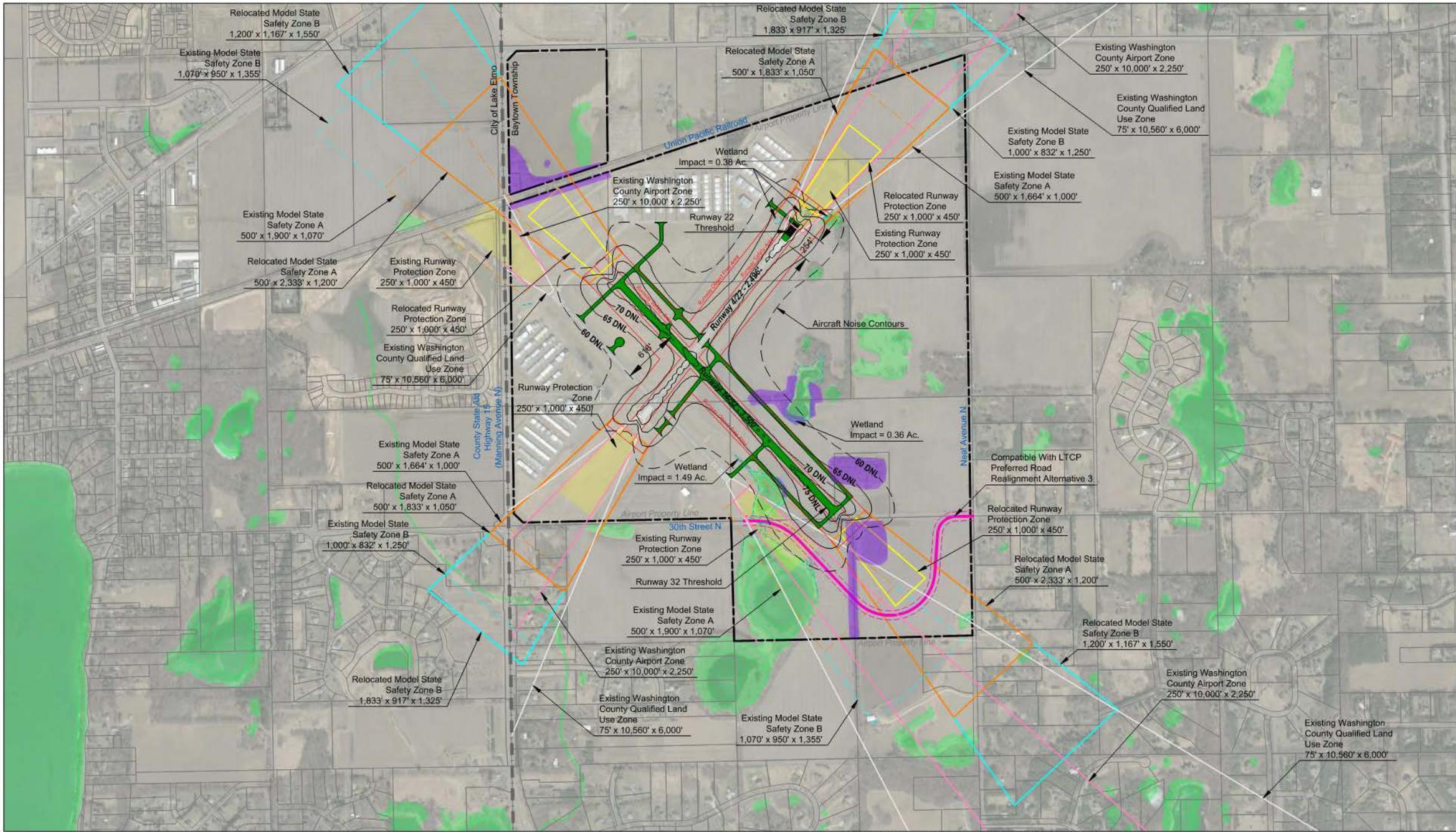
- LTCP Preferred Alternative: Upgrade Instrument Approaches
- There are no other alternatives that meet the Purpose & Need Objective #4



Set of Preferred Alternatives

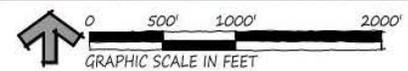
- Based on the preceding, the following alternatives will be carried forward as the preferred alternatives for full environmental review:
 - No-Action Alternative
 - Primary Runway 14/32 = Alternative B1
 - 30th Street North = Alternative 3
 - Crosswind Runway 04/22 = Extend Runway 04/22 by 254 feet northeast
 - Instrument Approaches = Upgrade Instrument Approaches





- Approximate Tree Removal
- Approximate Wetland Areas (U.S. Fish and Wildlife Service National Wetlands Inventory)
- Delineated Wetland Boundary

Note: Aircraft noise contour 60 DNL is shown for informational purposes only.



Discussion/Questions

- CEP Meeting #4 to be held sometime the week of October 16
- Topics for the next meeting will include:
 - Debrief of second public event
 - Review full range of environmental impacts associated with the set of preferred alternatives

