



MSP 2020 IMPROVEMENTS

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

**March 19, 2012 MAC Commission Meeting
Update Briefing**



Presentation Overview

Background

Purpose and Need

Alternatives

Affected Environment/Environmental
Consequences

Mitigation

Public and Agency Involvement and
Next Steps



Background

MSP 2030 Long Term Comprehensive Plan Update

2030 LTCP Update

- Identified the development needed to efficiently serve the Twin Cities' commercial air transport demand through 2030
- Initial basis for defining the Proposed Action
- LTCP Enplanements and Operations forecast was updated for the EA/EAW to incorporate aviation related changes:
 - Lagging economic recovery
 - Merger of SouthWest and AirTran
 - Changes in airline fleet mix





Why an EA/EAW

- National Environmental Policy Act (NEPA)
- All federal agencies must examine the environmental consequences of **federal actions** and conduct a decision-making process that incorporates public input
- Environmental Assessment (EA) – selected by FAA as the level of environmental documentation required per environmental regulations
 - Proposed action is not within the categorical exclusions listed in FAA Order 1050.1E
 - Proposed action does not require an EIS (paragraph 903 of FAA Order 5050.4B)
- Environmental Assessment Worksheet (EAW) – requirement of MN Statutes 1986, Chapter 473, as amended



Purpose and Need

Purpose

Accommodate expected demand at MSP such that the level of service is acceptable through the 2020 planning timeframe.

Need

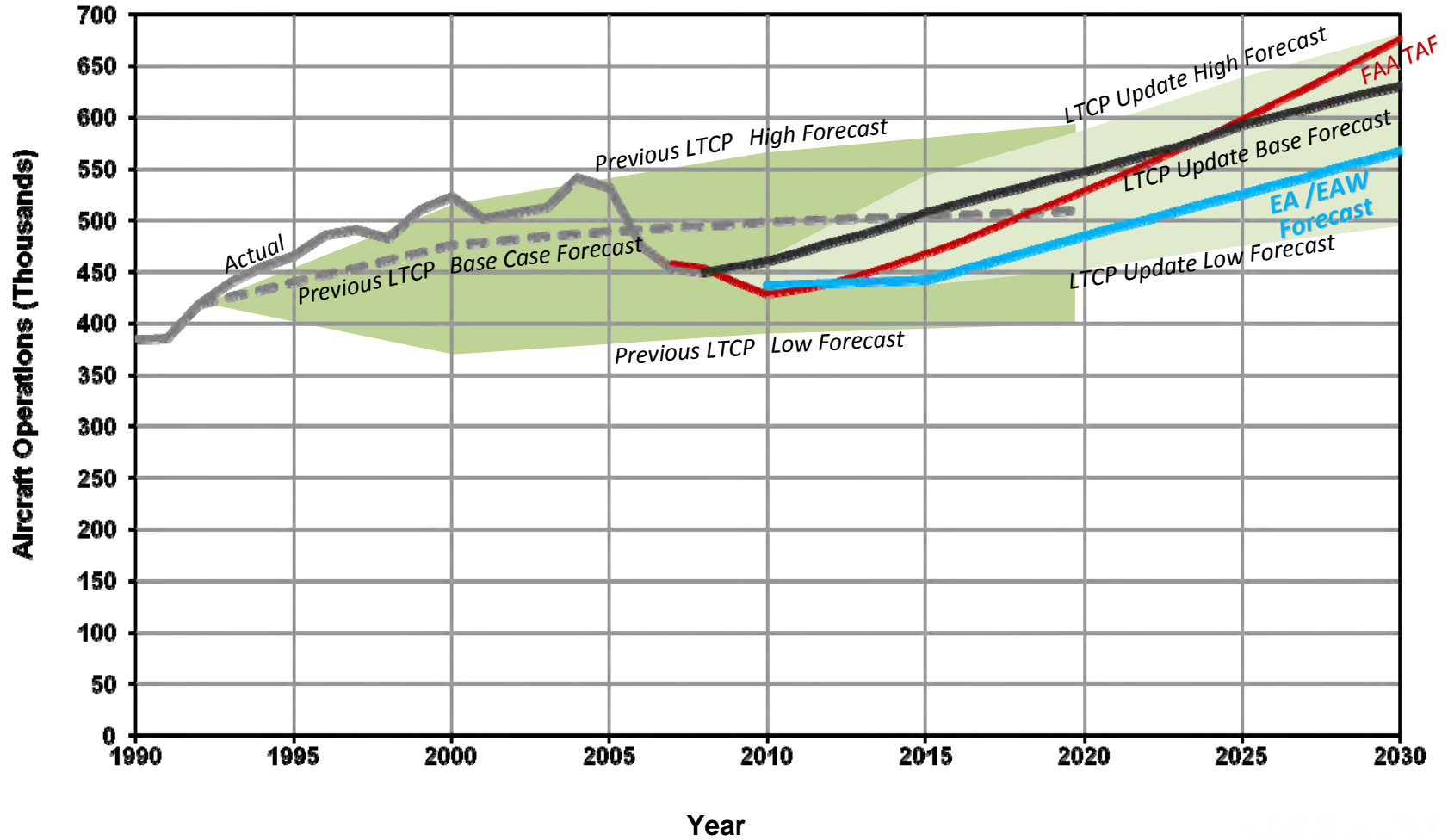
Unacceptable levels of service at MSP terminal and landside facilities under current and 2020 conditions.

For example: Passenger Check-in, Security screening, Baggage Claim, International Arrivals, Roadways, Rental Car Quick-turn-around, Parking, Terminal Curbs, Commercial Ground Transportation Centers, Concourse Improvements and Gate Frontage



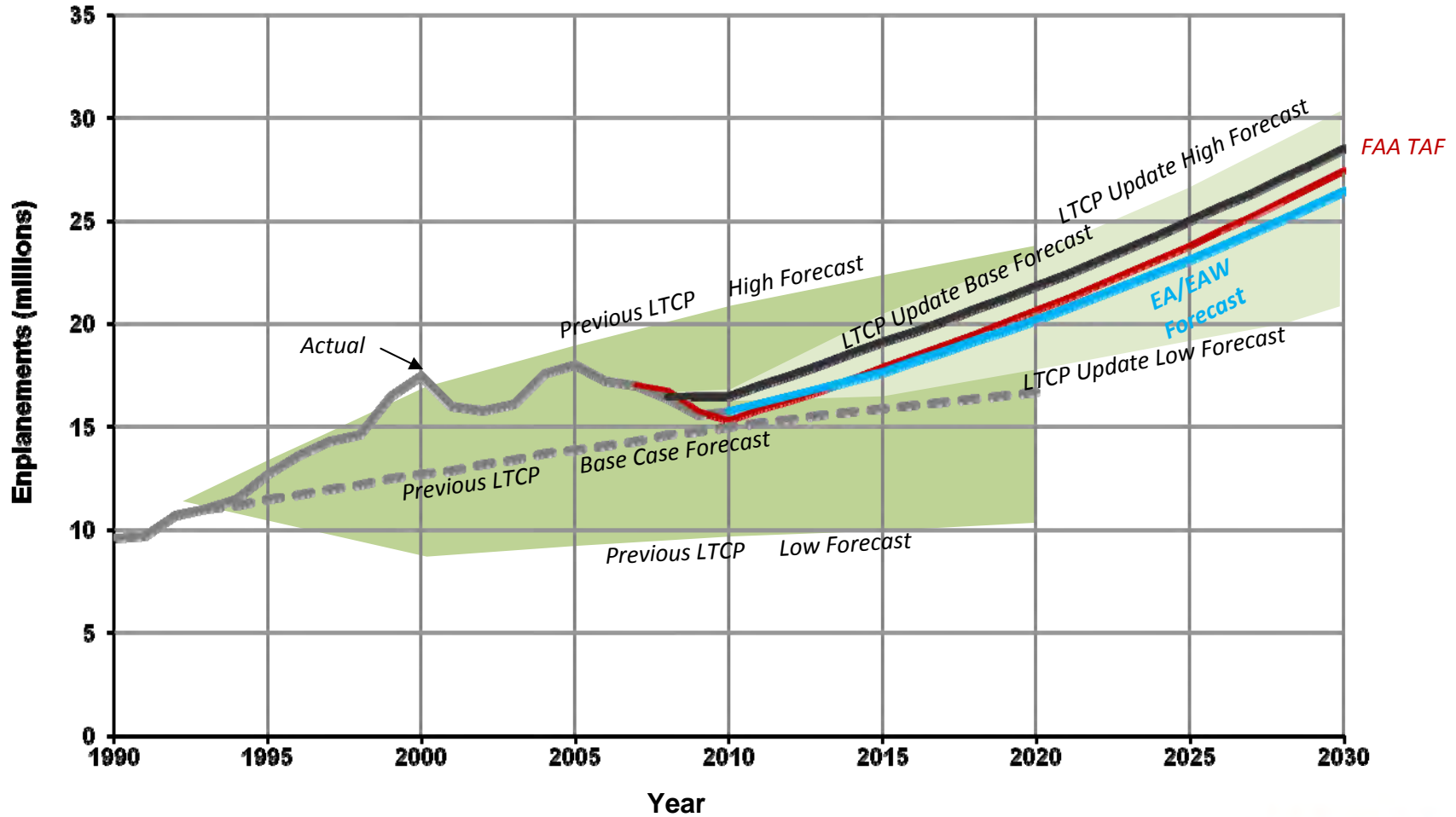


Aircraft Operations Forecasts





Passenger Enplanement Forecasts





EA/EAW Forecasts

Year	Aircraft Operations							Passenger Enplanements		
	Domestic Scheduled	International Scheduled	Charter	All-Cargo	GA	Military	Total	Domestic	International	Total*
2010	367,851	26,556	103	12,499	27,921	2,145	437,075	14,568,881	1,141,442	16,267,639
2015	370,360	26,992	86	12,598	29,751	2,145	441,932	16,302,440	1,331,486	18,259,481
2020	410,410	29,532	96	12,764	29,934	2,145	484,881	18,608,747	1,564,093	20,888,462
2025	448,074	32,888	106	12,826	30,003	2,145	526,042	21,260,499	1,815,445	23,894,551
2030	486,180	35,988	118	12,956	30,011	2,145	567,398	24,294,325	2,109,421	27,340,406
CAGR**	1.4%	1.5%	0.7%	0.2%	0.4%	0.0%	1.3%	2.6%	3.1%	2.6%

* Includes charter and non-revenue passengers.
 ** Compounded Annual Growth Rate

- This chart presents information based on the Draft EA/EAW Forecast.
- The data shown is subject to change and considered preliminary pending FAA acceptance of the EA/EAW Forecast.
- Historically, in 2004 MSP accommodated 541,093 operations and in 2005 processed 18,831,832 passenger enplanements



Alternatives

Alternatives analysis is key to the NEPA process.

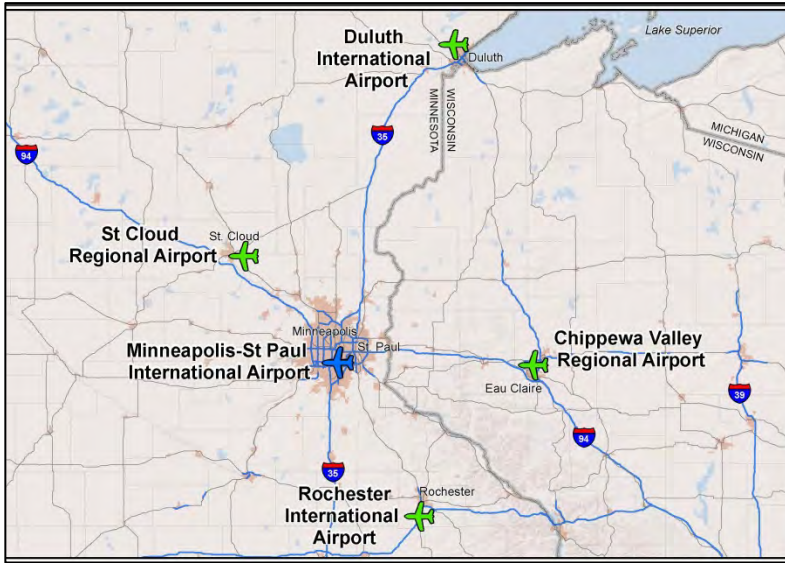
- ➔ Consider both off- and on-site alternatives.
- ➔ Evaluate alternatives to determine if they are reasonable, i.e. meet the purpose and need.
- ➔ Screen alternatives to determine which alternatives will be carried forward for detailed analysis.



Alternatives

Off-Site

Other Airports



Other Modes of Transportation



Meets Purpose and Need? Yes No

Carried Forward ? Yes No

Meets Purpose and Need? Yes No

Carried Forward ? Yes No

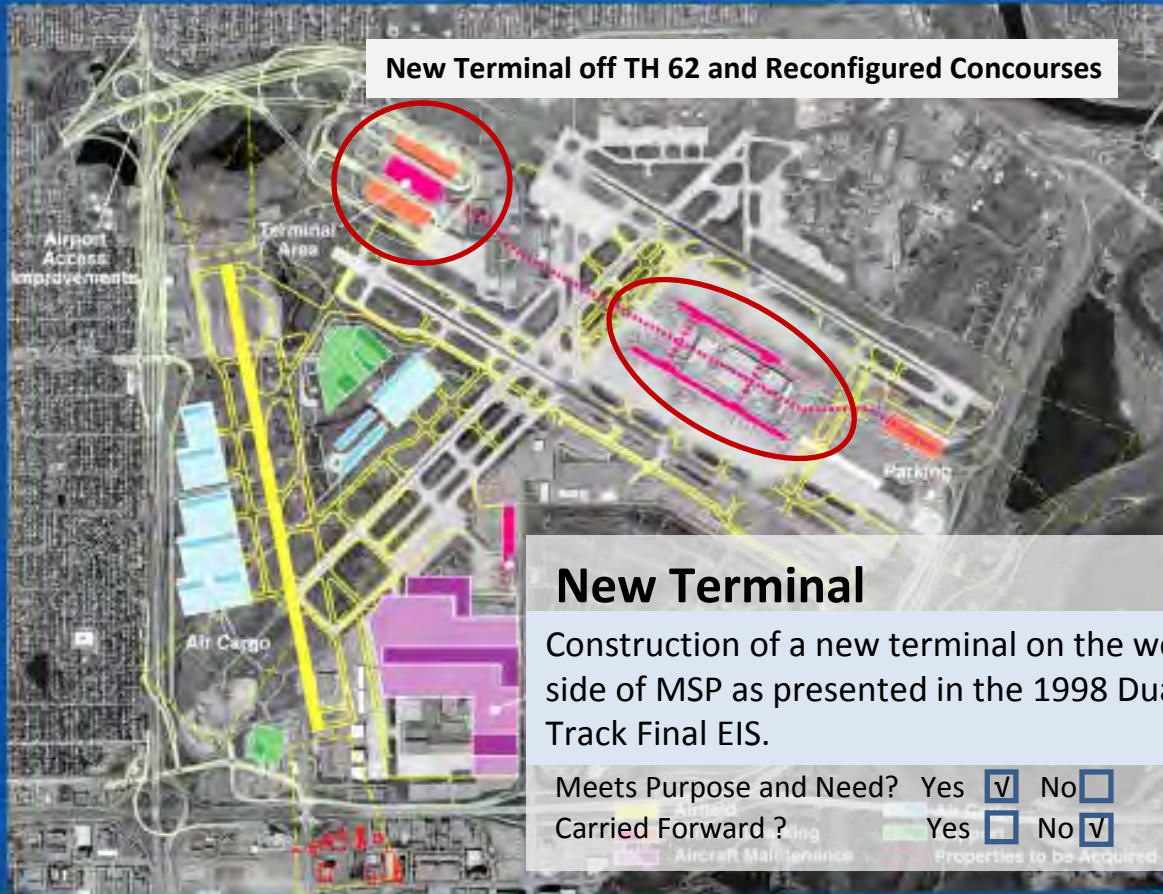


Alternatives

On-Site

MSP 2020 Conceptual Plan

New Terminal off TH 62 and Reconfigured Concourses



New Terminal

Construction of a new terminal on the west side of MSP as presented in the 1998 Dual Track Final EIS.

Meets Purpose and Need? Yes No

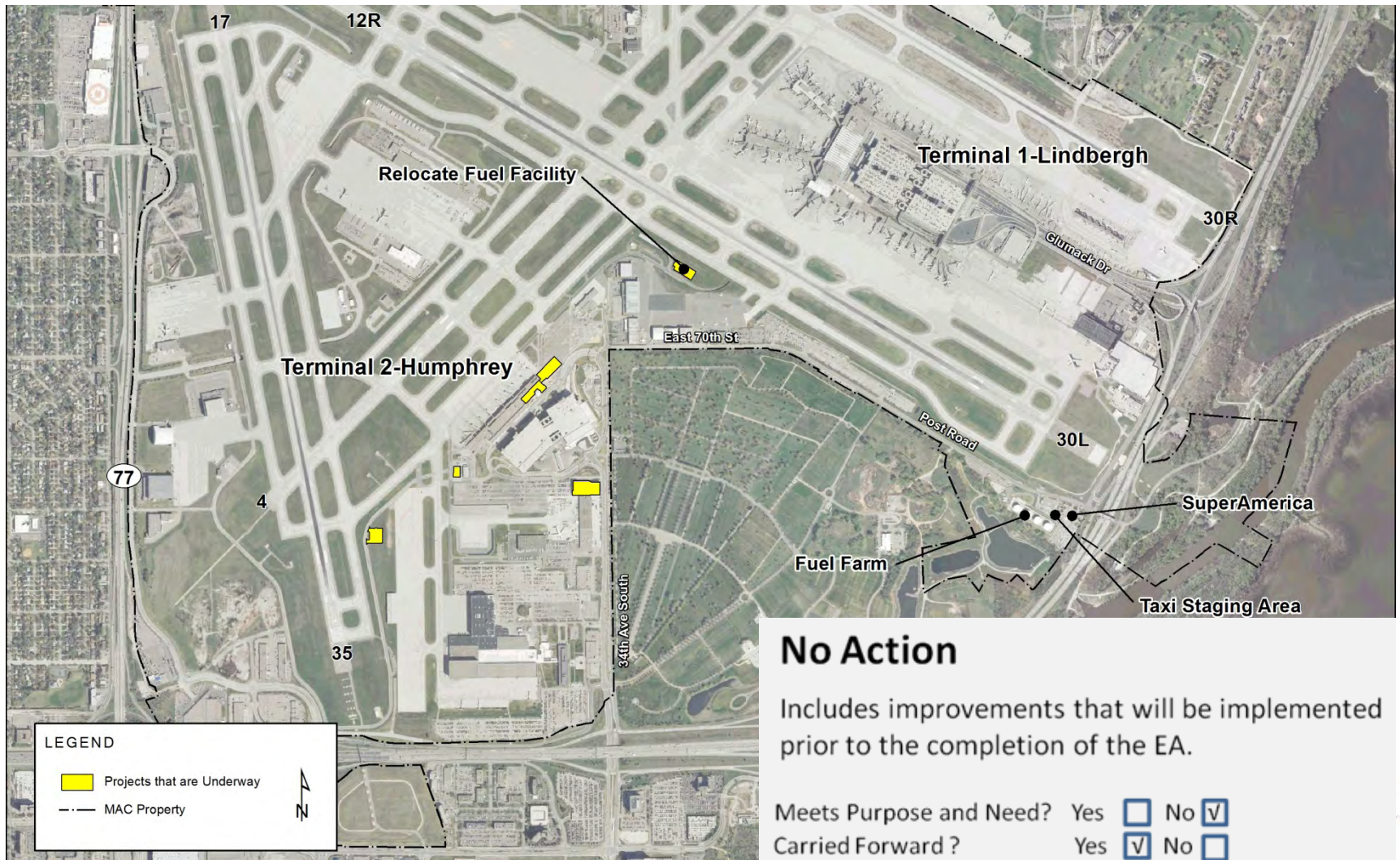
Carried Forward? Yes No





Alternatives

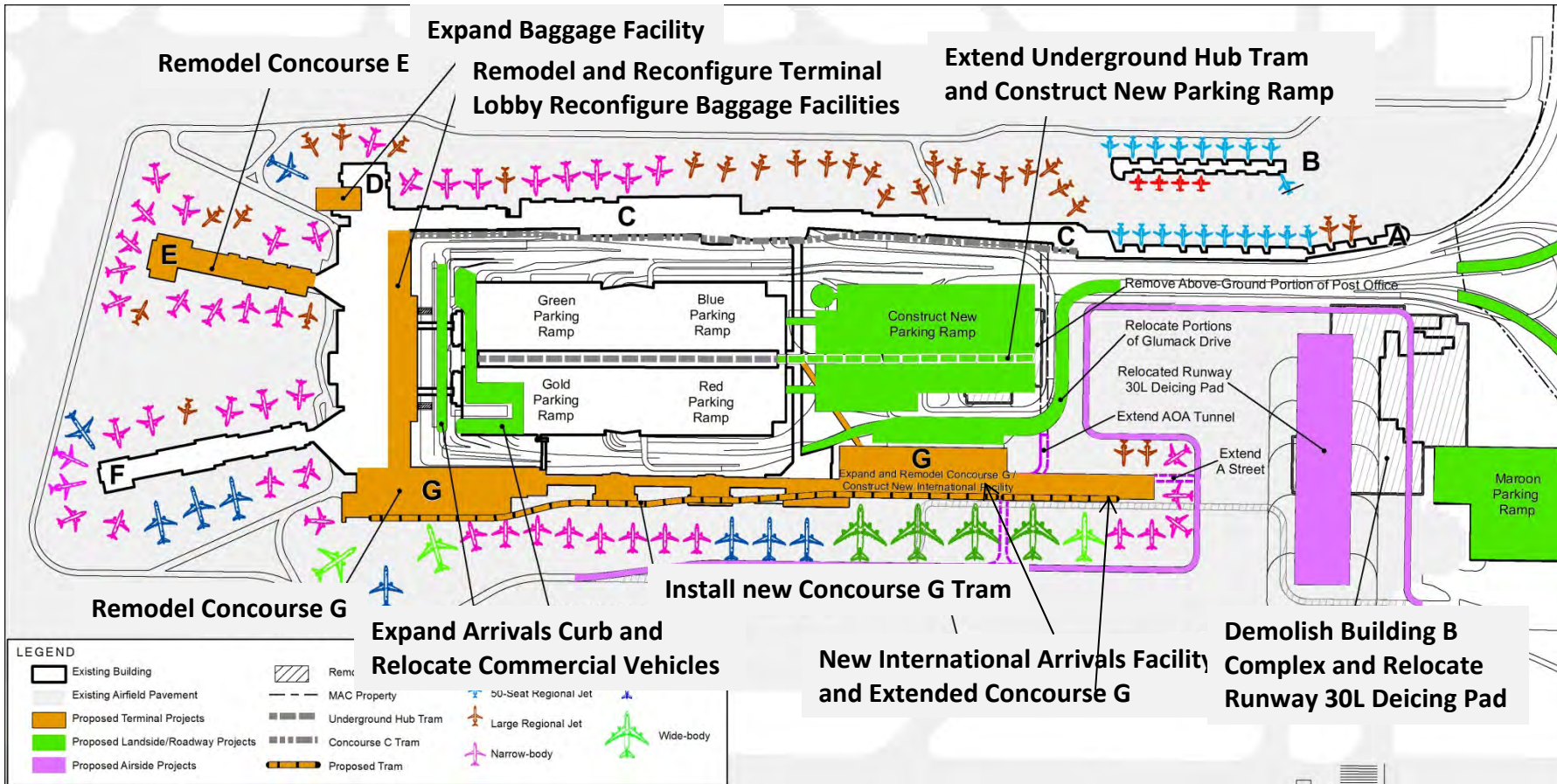
No Action Alternative





Alternative 1 – Airlines Remain

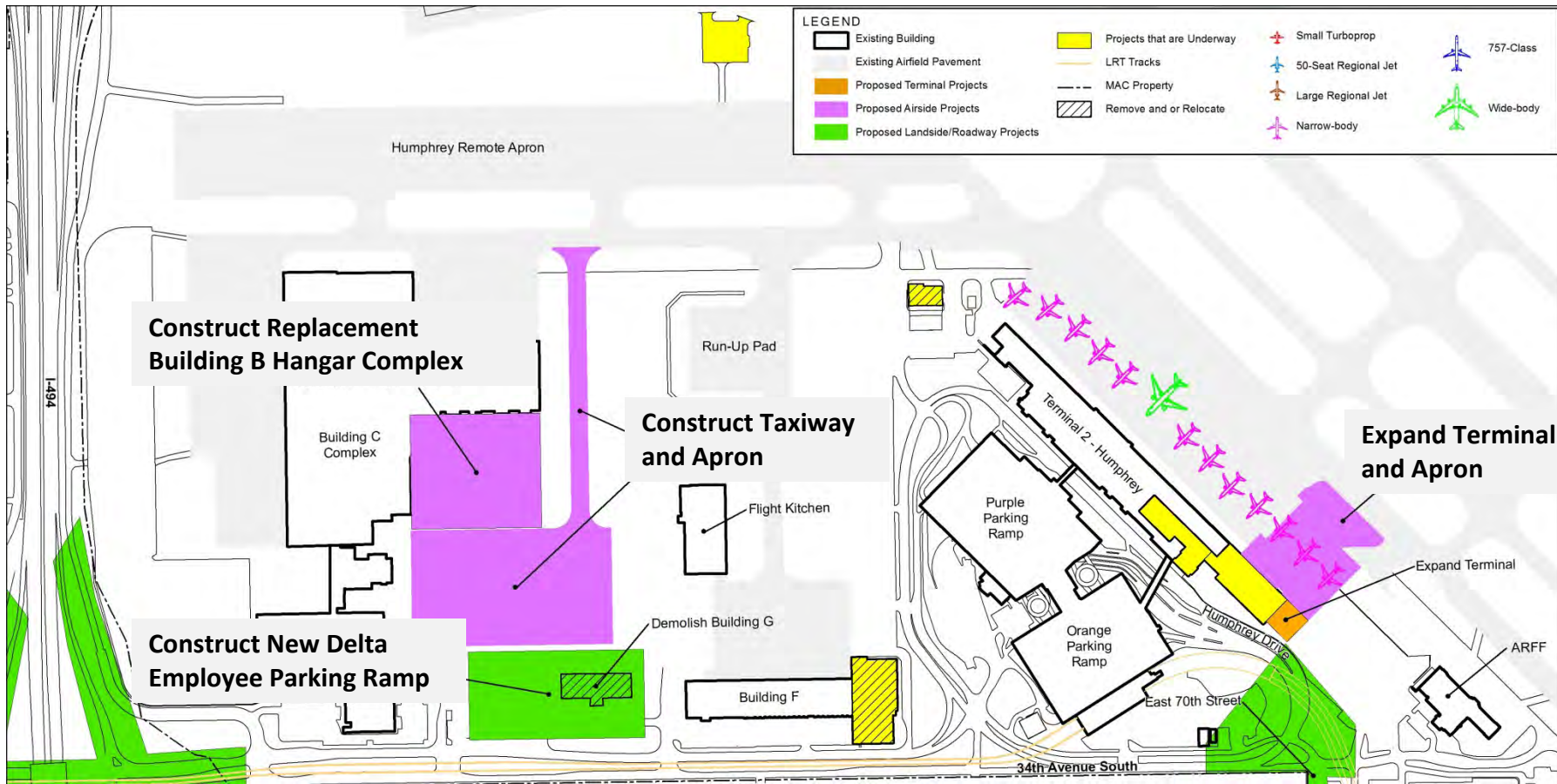
Non- Sky Team Airlines Remain at Terminal 1-Lindbergh





Alternative 1 – Airlines Remain

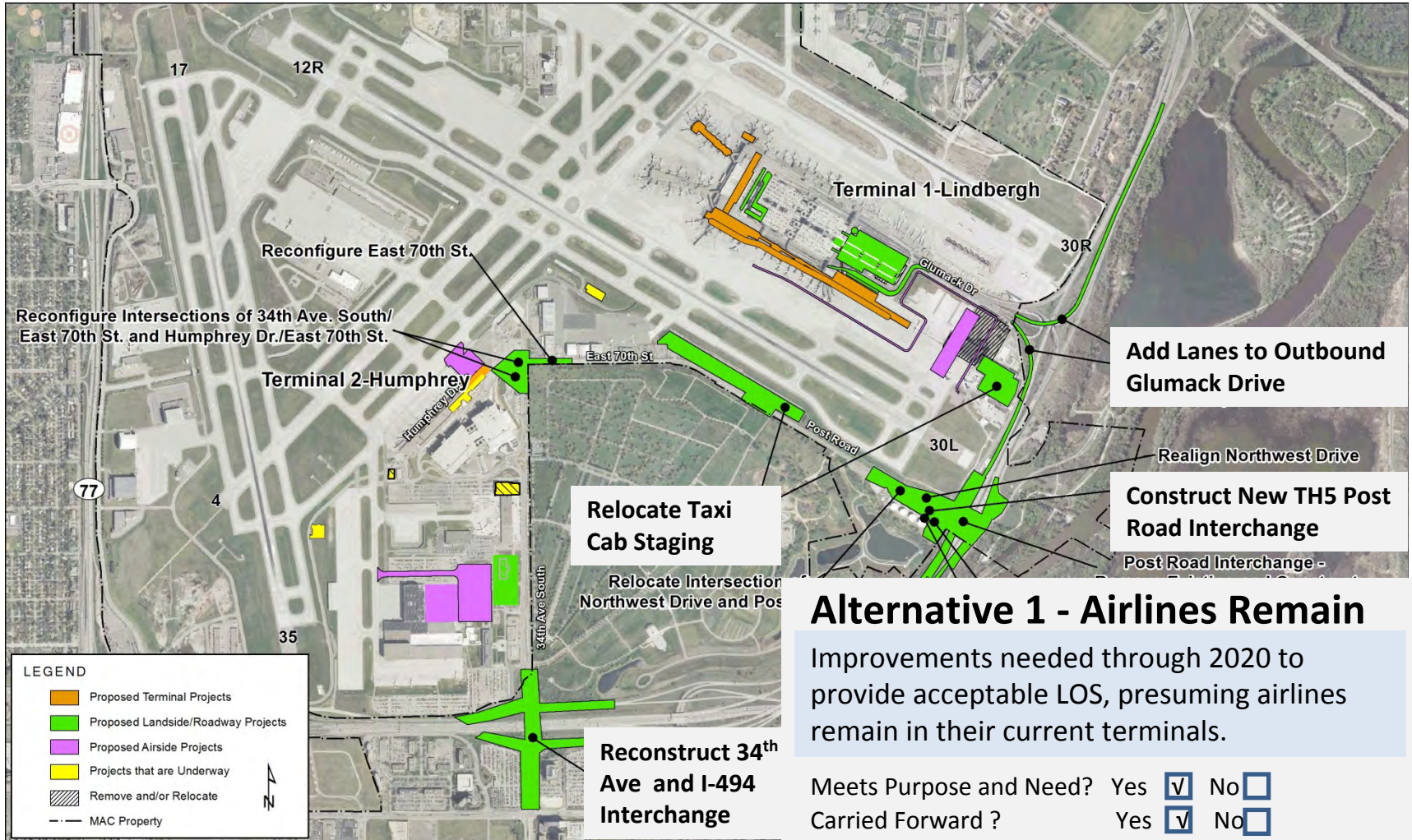
Existing Airlines Remain at Terminal 2-Humphrey





Alternatives

Alternative 1 – Airlines Remain



Alternative 1 - Airlines Remain

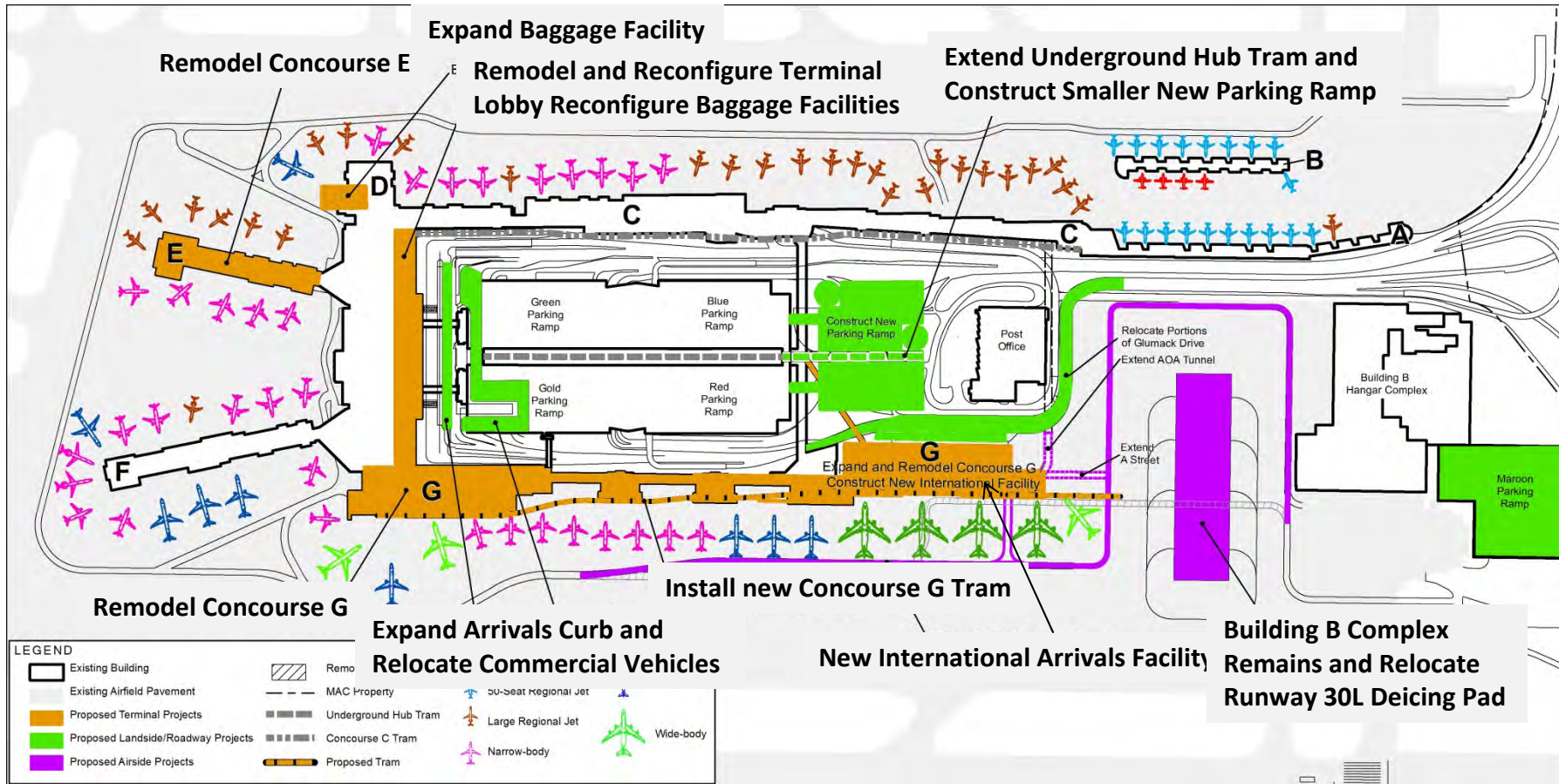
Improvements needed through 2020 to provide acceptable LOS, presuming airlines remain in their current terminals.

Meets Purpose and Need? Yes No
 Carried Forward? Yes No



Alternative 2 – Airlines Relocate

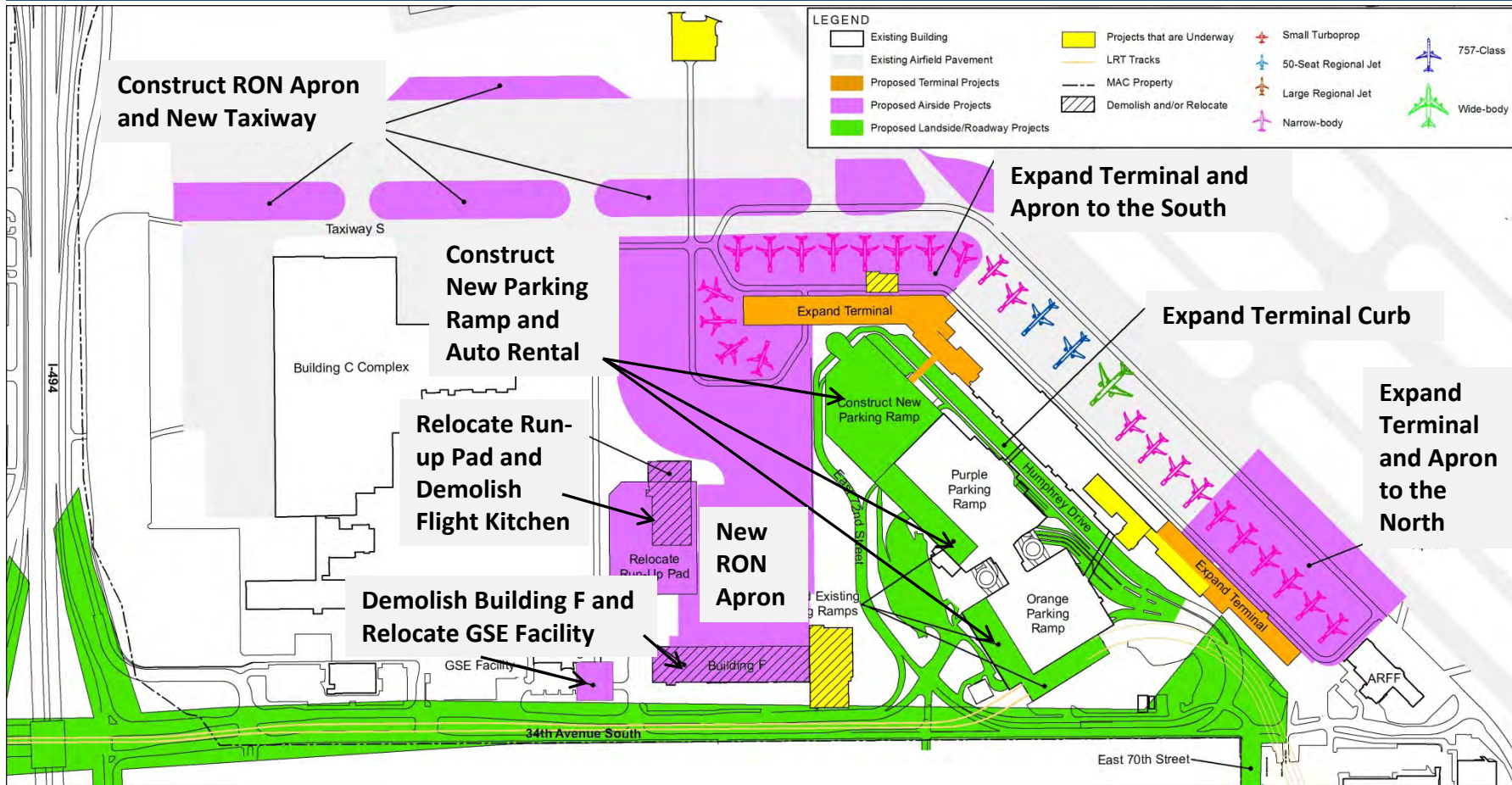
Non- Sky Team Airlines Relocate from Terminal 1-Lindbergh





Alternative 2 – Airlines Relocate

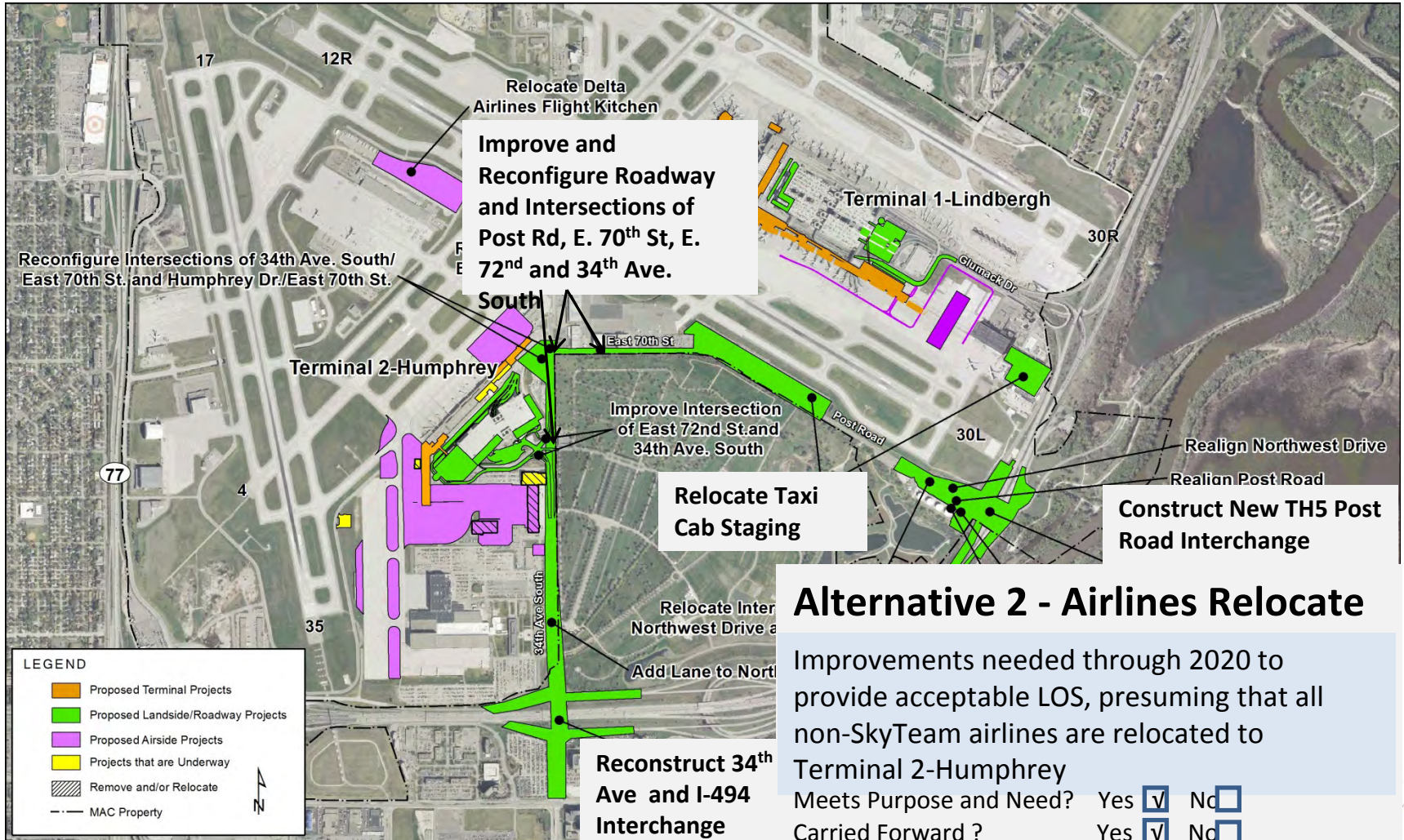
Non- Sky Team Airlines Relocate to Terminal 2-Humphrey





Alternatives

Alternative 2 – Airlines Relocate (Sponsor’s Preferred Alternative)





Affected Environment

General Study Area





Environmental Consequences

Environmental Categories

- Coastal Resources
- Construction
- Department of Transportation Act: Section 4(f)
- Farmlands
- Fish, Wildlife and Plants
- Floodplains
- Hazardous Materials
- Light Emissions and Visual Effects
- Natural Resources and Energy Supply
- Secondary (Induced) Impacts
- Socioeconomic, Environmental Justice and Children's Health and Safety Risks
- Wetlands
- Wild and Scenic Rivers

- Air Quality
- Historic Resources
- Noise and Compatible Land Use
- Traffic and Circulation
- Water Quality



Air Quality

Emissions Inventories

Method	<ul style="list-style-type: none"> Operation- and construction-related emissions inventories for all criteria pollutants were generated using the FAA's Emissions and Dispersion Modeling System (EDMS) and emission factors from the USEPA NONROAD and MOBILE6.2 models.
Results	<ul style="list-style-type: none"> MSP is in an area designated as in attainment for all criteria pollutants except carbon monoxide (CO) for which MSP is in a maintenance area. CO emissions would not exceed conformity <i>de minimis</i> levels of 100 tons per year.

Summary of CO Operations and Construction Emissions Inventory (tons per year)		
Year	Alternative 1 – Airlines Remain	Alternative 2 – Airlines Relocate
2012	1.08	1.23
2013	15.9	12.6
2014	11.4	20.1
2015	12.2	22.2
2016	13.9	25.2
2017	13.5	16.4
2018	11.1	5.39
2019	5.74	5.22
2020	5.72	5.20
Less than <i>de minimis</i> level?	Yes	Yes

Source: Wenck Associates, Inc., KB Environmental Sciences, Inc., and David Braslau Associates, Inc., 2011.

Summary of CO Operations and Construction Emissions Inventory (tons per year)					
No Action Alternative		Alternative 1 – Airlines Remain		Alternative 2 – Airlines Relocate	
2020	2025	2020	2025	2020	2025
4,705	5,256	4,707	5,174	4,706	5,285
Difference from No Action		2	-82	1	29
Less than <i>de minimis</i> level?		Yes	Yes	Yes	Yes

Source: Wenck Associates, Inc., KB Environmental Sciences, Inc., and David Braslau Associates, Inc., 2011.



Environmental Consequences

Historic Resources

Background

A historic resource is defined as one that is listed, or eligible for listing, on the NRHP. Historic resources are protected by multiple laws including the National Historic Preservation Act of 1966.

Methodology

Conduct early consultation with the SHPO and THPO

Establish the APE and identify historic resources

Determine if there would be an adverse effect in consultation with the SHPO

Results

Reconnaissance assessment revealed that there are no historic structures in the APE that would be eligible for listing.

Archaeological assessment indicated that there may be archaeological evidence associated with Native Americans at one location within the APE. Coordination with the SHPO will define future evaluation requirements.



Noise

Method

- The FAA's Integrated Noise Model (INM) was used to develop noise contours for the alternatives in 2020 and 2025.
- Detailed analysis was conducted to identify the type and number of residential units, as well as the total population within the respective noise exposure contours.

Results

- There are no areas of sensitive land uses that would experience a 1.5 dB or greater increase within the 65 dB DNL noise contour when comparing the noise exposure levels from the Airlines Remain Alternative and the Airlines Relocate Alternative to the noise exposure levels from the No Action Alternative.

Comparison of DNL Noise Contour Acreage and Affected Units and Population by Parcel

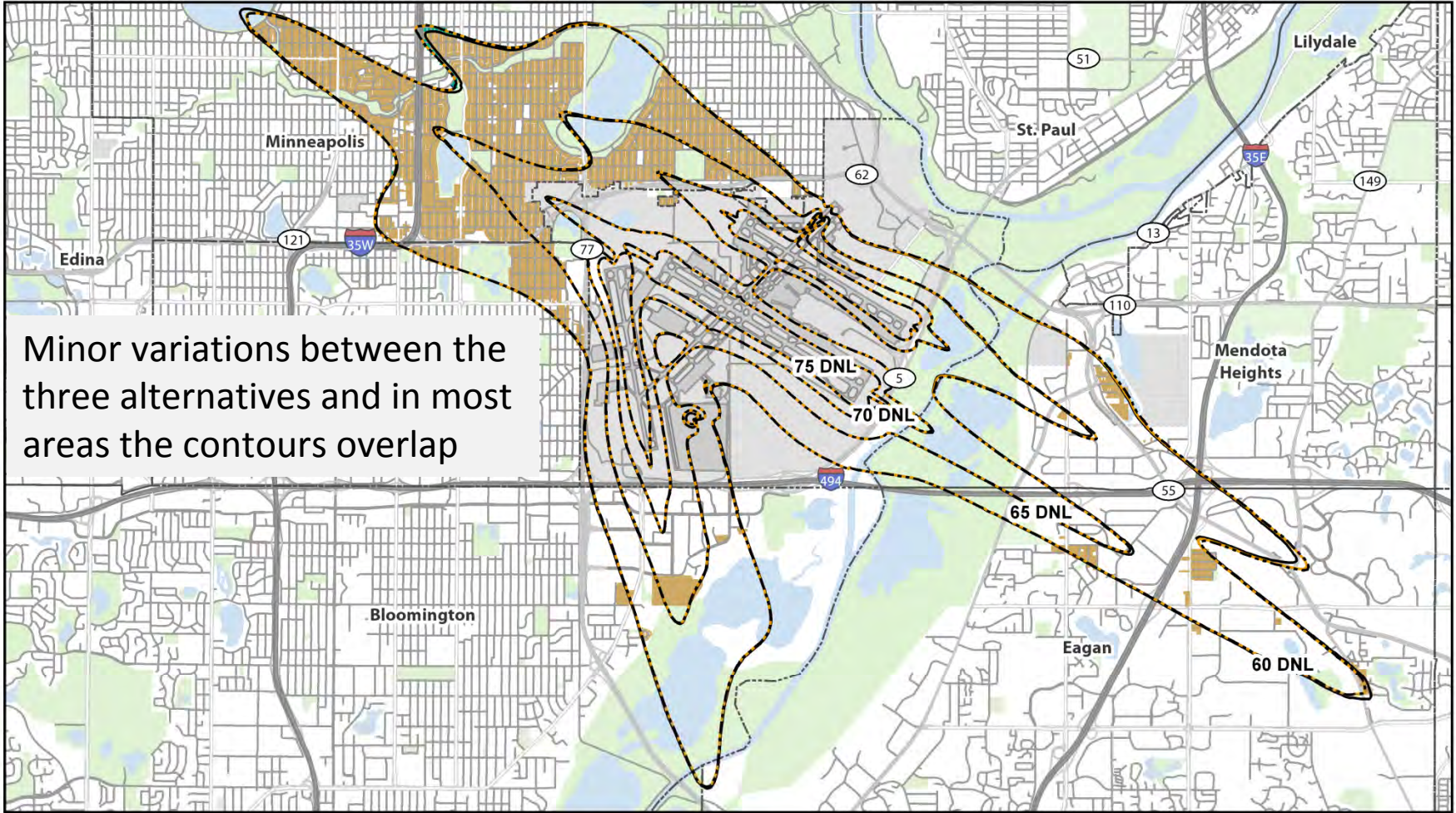
DNL Noise Contours		60-64	65-69	70-74	75+	Total ¹	
2020	No Action	Acreage	8513	2798	959	690	10960
		Units	9513	2315	38	0	11866
		Population	22634	5419	96	0	28149
	Alternative 1 – Airlines Remain	Acreage	8504	2795	958	689	10946
		Units	9533	2324	38	0	11895
		Population	22685	5442	96	0	28223
	Alternative 2 – Airlines Relocate	Acreage	8506	2794	959	690	10949
		Units	9432	2318	28	0	11776
		Population	22443	5427	65	0	27935
2025	No Action	Acreage	7376	3161	1124	764	12425
		Units	10254	2754	74	0	13082
		Population	24387	6532	198	0	31107
	Alternative 1 – Airlines Remain	Acreage	7340	3187	1121	761	12409
		Units	10314	2895	63	0	13072
		Population	24521	6394	159	0	31064
	Alternative 2 – Airlines Relocate	Acreage	7333	3151	1126	762	12373
		Units	10374	2843	76	0	13293
		Population	24679	6757	193	0	31629

Note: 1. Sum of acreage may not equal total due to rounding, parcel intersect methodology, unit count reflects single-family and multi-family; population reflects estimation based on multipliers provided by Met Council.

Source: MAC analysis, 2011.



Noise Contour Comparison – 2020



LEGEND

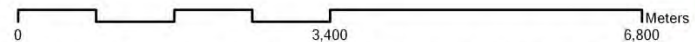
Noise Contours

- No Action
- Alternative 1
- Alternative 2

Affected Parcels

- Inside Alternative 2 60 DNL
- Between No Action 60 DNL and Alternative 2
- Between Alternative 1 60 DNL and Alternative 2

2020 Forecast DNL Noise Contour Comparison and Affected Parcels

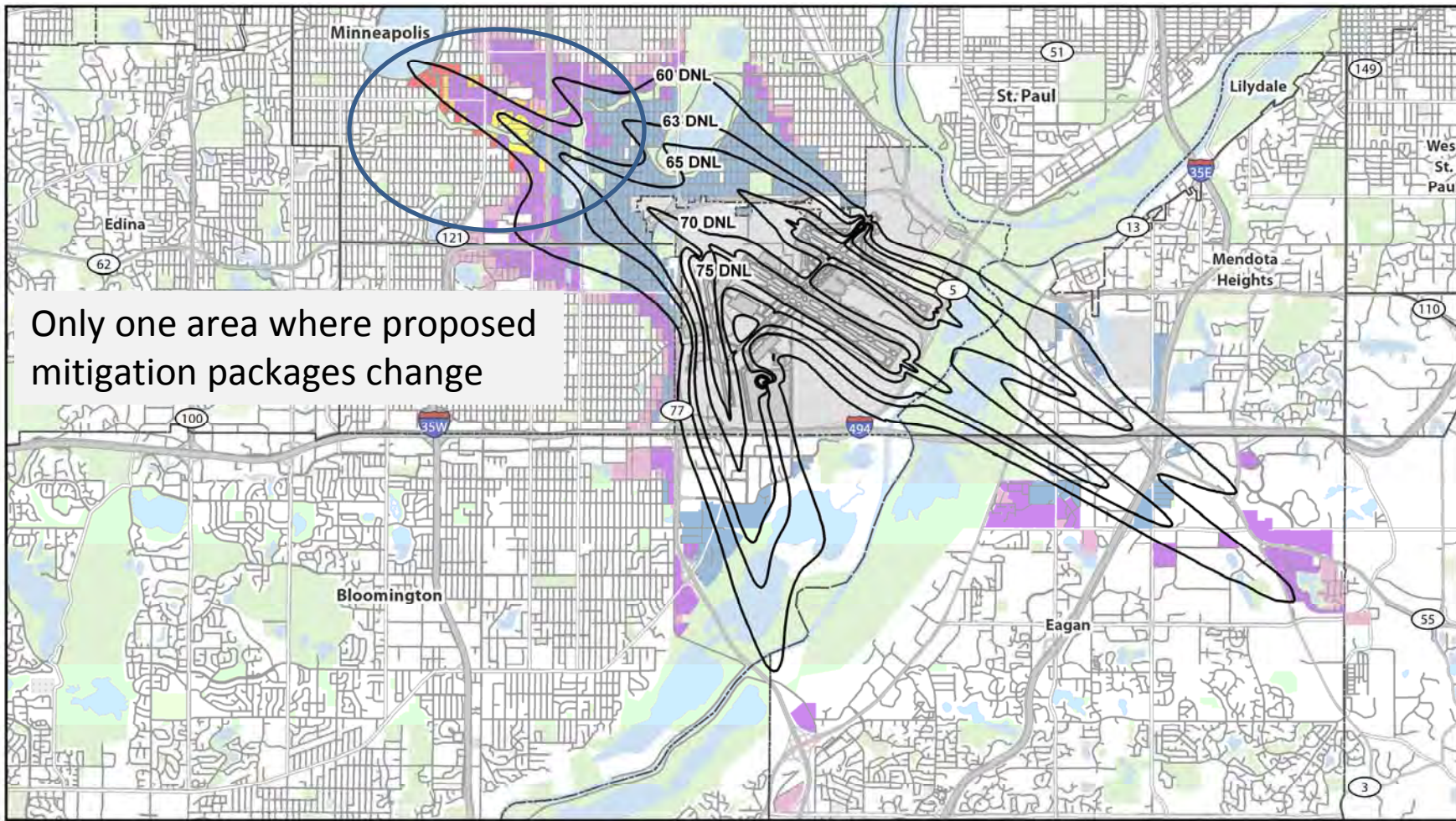


Disclaimer: This map was generated by the Metropolitan Airports Commission using GIS (Geographic Information System) software. No claims are made to the accuracy or completeness of the information shown herein nor to its suitability for a particular use. The scale and location of all mapped data are approximate.





Proposed Mitigation – Noise



Only one area where proposed mitigation packages change

MAC Existing Noise Mitigation Program and 2020 Alternative 2 - Airlines Relocate DNL Noise Contours

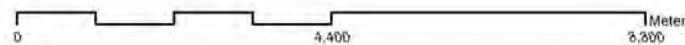
LEGEND

MAC Existing Noise Mitigation Packages

- Reimbursement
- Central AC & \$4K or \$14K
- 5 dBA Modifications

2020 Alternative 2 - Airlines Relocate Changes

- 2020 Alternative 2 Noise Contours
- Blocks in 2020 63 DNL previously in 2007 60-62 DNL
- Blocks in 2020 60 DNL previously between 2005 and 2007 60 DNL
- Blocks in 2020 60 DNL previously outside 2005 and 2007 60 DNL



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Noise Mitigation Impact Analysis

Summary of 2020 DNL Alternative 2 – Airlines Relocate Noise Contour Single-Family Unit and Population Counts by Block

City	Mitigation	Count	60-62	63-64	65-69	70-74	75+	Total
Minneapolis	In 2020 Forecast Contours previously mitigated under existing noise mitigation program	Units	4548	1929	2227	66	-	8768
		Population	11479	4889	5638	168	-	22173
2020 Forecast Changes	In 2020 63-64 DNL previously in 2007 60-62 DNL	Units	-	256	-	-	-	256
		Population	-	646	-	-	-	646
	In 2020 60-62 DNL previously between 2005 and 2007 60 DNL	Units	237	-	-	-	-	237
		Population	598	-	-	-	-	598
	In 2020 60-62 DNL previously outside 2005 and 2007 60 DNL	Units	293	-	-	-	-	293
		Population	746	-	-	-	-	746
TOTAL		Units	5078	2185	2227	66	-	9554
		Population	12823	5535	5638	168	-	24162
Bloomington	In 2020 Forecast Contours previously mitigated under existing noise mitigation program	Units	32	51	3	0	-	86
		Population	82	130	6	0	-	218
Richfield	In 2020 Forecast Contours previously mitigated under existing noise mitigation program	Units	517	185	87	0	-	789
		Population	1343	483	227	0	-	2053
Eagan	In 2020 Forecast Contours previously mitigated under existing noise mitigation program	Units	148	63	0	0	-	211
		Population	416	177	0	0	-	593
Mendota Heights	In 2020 Forecast Contours previously mitigated under existing noise mitigation program	Units	45	0	1	0	-	46
		Population	119	0	3	0	-	122
All Cities	In 2020 Forecast Contours previously mitigated under existing noise mitigation program	Units	5288	2228	2318	66	-	9900
		Population	13439	5678	5874	168	-	25159
2020 Forecast Changes (All Minneapolis)	In 2020 63-64 DNL previously in 2007 60-62 DNL	Units	-	256	-	-	-	256
		Population	-	646	-	-	-	646
	In 2020 60-62 DNL previously between 2005 and 2007 60 DNL	Units	237	-	-	-	-	237
		Population	598	-	-	-	-	598
	In 2020 60-62 DNL previously outside 2005 and 2007 60 DNL	Units	293	-	-	-	-	293
		Population	746	-	-	-	-	746
TOTAL		Units	5818	2484	2318	66	66	10686
		Population	14783	6324	5874	168	168	27149

Note: Block Intersect Methodology; Single-Family=1-3 Units; Population Reflects Estimation Based on Multipliers Provided by Met Council

Source: MAC analysis, 2011



Noise Mitigation Impact Analysis

Summary of 2020 DNL Alternative 2 – Airlines Relocate Noise Contour Multi-Family Unit and Population Counts by Block

City	Mitigation	Count	60-64	65-69	70-74	75+	Total
Minneapolis	In 2020 Forecast Contours previously mitigated under existing noise mitigation program	Units	872	520	-	-	1392
		Population	1448	869	-	-	2316
	Additional	Units	98	-	-	-	98
		Population	159	-	-	-	159
TOTAL		Units	970	520	-	-	1490
		Population	1606	869	-	-	2475
Bloomington	In 2020 Forecast Contours previously mitigated under existing noise mitigation program	Units	1065	-	-	-	1065
		Population	1715	-	-	-	1715
Richfield	In 2020 Forecast Contours previously mitigated under existing noise mitigation program	Units	69	-	-	-	69
		Population	116	-	-	-	116
Eagan	In 2020 Forecast Contours previously mitigated under existing noise mitigation program	Units	-	-	-	-	0
		Population	-	-	-	-	0
Mendota Heights	In 2020 Forecast Contours previously mitigated under existing noise mitigation program	Units	-	-	-	-	0
		Population	-	-	-	-	0
All Cities	In 2020 Forecast Contours previously mitigated under existing noise mitigation program	Units	2006	520	-	-	2526
		Population	3278	869	-	-	4147
	Additional (All Minneapolis)	Units	98	-	-	-	98
		Population	159	-	-	-	159
TOTAL		Units	2104	520	-	-	2624
		Population	3437	869	-	-	4306

Note: Block Intersect Methodology; Multi-Family > 3 Units; Population Reflect Estimation Based on Multipliers Provided by Met Council

Source: MAC analysis, 2011.



Traffic and Circulation

Parking Ramps and Curb Roadways

Method

- Parking ramps and curb roadways evaluated by comparing demand to capacity.

Results

- The conditions of parking ramp and curb roadways with the Action Alternatives would be better than or the same as the conditions with the No Action Alternative.

Comparison of Alternatives

Alternative/Intersection	No Action		Alternative 1 – Airlines Remain		Alternative 2 – Airlines Relocate		
	2020	2025	2020	2025 ¹	2020	2025 ¹	
Parking							
	8,000 Space Deficit	13,000 Space Deficit	Sufficient Parking Available	3,200 Space Deficit	Sufficient Parking Available	3,600 Space Deficit	
Curb Roadways							
Terminal 1-Lindbergh Departure	At or Under Capacity	At or Under Capacity	At or Under Capacity	At or Under Capacity	At or Under Capacity	At or Under Capacity	
Terminal 1-Lindbergh Arrival	Over Capacity	Over Capacity	At or Under Capacity	At or Under Capacity	At or Under Capacity	At or Under Capacity	
Terminal 2-Humphrey	At or Under Capacity	Over Capacity	At or Under Capacity	At or Under Capacity	At or Under Capacity	At or Under Capacity	
Note:	1 Includes only those improvements associated with the respective alternative, i.e. assumes no improvements between 2020 and 2025.					Source: HNTB analysis, 2011	



Traffic and Circulation

On- and Off-Airport Roadways

Method	<ul style="list-style-type: none">• VISSIM modeling used to examine measures of effectiveness such as speed and density, as well as to determine LOS.
Results	<ul style="list-style-type: none">• In general, on- and off-airport roadways would operate markedly better with the Airlines Remain and Airlines Relocate Alternatives than with the No Action Alternative. However the Action Alternatives result in a deficient LOS at a few off-airport roadway segments and intersections. Therefore, potential mitigation options are being considered.

Mitigation

Alternative 2 – Airlines Relocate 2025 Conditions

- Southbound intersection movements at the Taxi Staging Access would operate at a LOS of F. To mitigate, a traffic signal would be installed post-2020.
- Several movements would operate at an undesirable LOS at the 34th Avenue South and American Boulevard. Potential mitigation options:
 - Modify southbound double right to a triple right at the westbound I-494 ramps.
 - At the southern ramps, convert the eastbound left and right turn lanes from double to triple turn lane movements and the northbound right to a triple right turn lane.
 - Extending or adding lanes



Proposed Interchange Improvements

Both the Airlines Remain Alternative and the Airlines Relocate Alternative include improvements at the 34th Avenue South and I-494 interchange as well as the TH 5 and Post Road Interchange.



Reconstruct the interchange at 34th Avenue South and I-494 using the diverging diamond interchange configuration



Construct a new TH 5 and Post Road diamond interchange including a new bridge over TH 5



Water Quality

Surface Water

Method	<ul style="list-style-type: none"> Evaluated stormwater network hydrology, total suspended solids removal, organic loading and the potential for petroleum/fuel releases.
Results	<ul style="list-style-type: none"> Insignificant impacts to the peak discharges in the Minnesota River. Insignificant decreases in stormwater pond treatment efficiency. Reduced overall organic loading to the Minnesota River. No anticipated change in petroleum surface water discharges.

Summary of Surface Water Quality Impacts				
	Water Quality Category			
	Storm Sewer Network Hydrology	Total Suspended Solids (TSS)	Organic Loadings – Aircraft De-icing Fluid Impacts	Petroleum/Fuel Impacts
BACKGROUND	MSP storm sewer collection system utilizes stormwater ponds near outfalls for each of the three primary drainage areas.	TSS is controlled at MSP by BMPs and stormwater ponds. TSS is a pollutant of concern because the Minnesota River has very high TSS loads.	Organic loadings in the airport's stormwater discharges are largely due to impacts from deicing aircraft with aircraft deicing fluid (ADF). The airport operates a Glycol Recovery Program to collect spent ADF.	
No Action	- Minimal construction results in no impact on localized flooding and peak discharges to Minnesota River.	- Represents existing conditions, therefore no changes in impacts.	- Same glycol collection performance as is currently available.	<ul style="list-style-type: none"> Spill prevention, response and clean-up are an integral part of airport operations at MSP. A Spill Response Plan and spill control mechanisms are currently in place. The total number of operations does not change based on the alternative, therefore fueling operations and volume of fuel does not change. Location of fueling operations may vary but is not expected to impact petroleum surface water discharges.
Alternative 1 – Airlines Remain	<ul style="list-style-type: none"> Net increase of 7.1 acres of impervious surface. Insignificant relative to ~2,700 acres draining from MSP. 	<ul style="list-style-type: none"> Pond 1 has increased net impervious area of 2.6 acres. Model shows decrease in Pond 1 treatment efficiency from 93.6% to 93.5% TSS removal. 	<ul style="list-style-type: none"> Overall collection efficiencies would increase by 0.7%, due to the migration of deicing activities to the new plug and pump (PnP) systems installed at the new gates. 	
Alternative 2 – Airlines Relocate	<ul style="list-style-type: none"> Net increase of 29.2 acres of impervious surface. Insignificant relative to ~2,700 acres draining from MSP. 	<ul style="list-style-type: none"> Pond 1 has increased net impervious area of 27.5 acres. Model shows decrease in Pond 1 treatment efficiency from 93.6% to 92.4% TSS removal. 	<ul style="list-style-type: none"> Overall collection efficiencies would increase by 1.7%, due to the migration of deicing activities to the new PnP systems installed at the new gates. 	



Public and Agency Involvement

The MSP 2020 EA/EAW document has not yet been approved by the FAA or MAC for release to the public for comment – this is an informational presentation

Public and agency coordination is conducted throughout the NEPA process to ensure exchange of information relevant to the Proposed Action and its potential impacts





Next Steps – Draft Schedule

2012	Late April	FAA and MAC complete Draft EA/EAW
	May/June	Selection of Preferred Alternative and Mitigation Approval of Draft EA/EAW for public review Comment period begins MAC conducts a Public Hearing
	June	Comment period ends
	Mid July	FAA and MAC complete responses to comments and Finalize EA/EAW
	Late September	FAA and MAC Issue Findings
	Early October	Notice of findings are published in the EQB Monitor and Newspapers



March 19, 2012 EA/EAW Update Briefing

