



5.0 Preferred Development Plan

This chapter describes the preferred development plan, which is a combination of each of the selected alternatives described in Chapter 4. This chapter also explores project phasing and includes rough order of magnitude (ROM) costs.

5.1 Preferred Development Plan Overview

The preferred development plan was the culmination of an iterative and robust alternatives development process as described in Chapter 4, involving stakeholder engagement and feedback. The preferred alternative combined the MAC and stakeholder selected options into an overall development plan from which initial implementation phasing was developed.

The preferred development plan differs from the three runway alternatives originally presented to the public in May 2023, as further discussions between MAC and FAA resulted in further study and refinement of a westward Taxiway A extension and potential EAT (detailed in Section 4.2.1). The original three runway alternatives were not modified, rather, the preferred development plan incorporates the refinements and iterations of the various alternative components. Key elements of the preferred development plan are listed below:

- Runway Alternative 1
- Taxiway A Extension
- Runway Exit Taxiway G
- Taxiway D Alternative 3
- Runway 28L Hold Bay Reconfiguration
- Ground Run up Enclosure Alternative 1
- Central ASOS Relocation
- Northwest Hangar Development
- Southeast Hangar Development

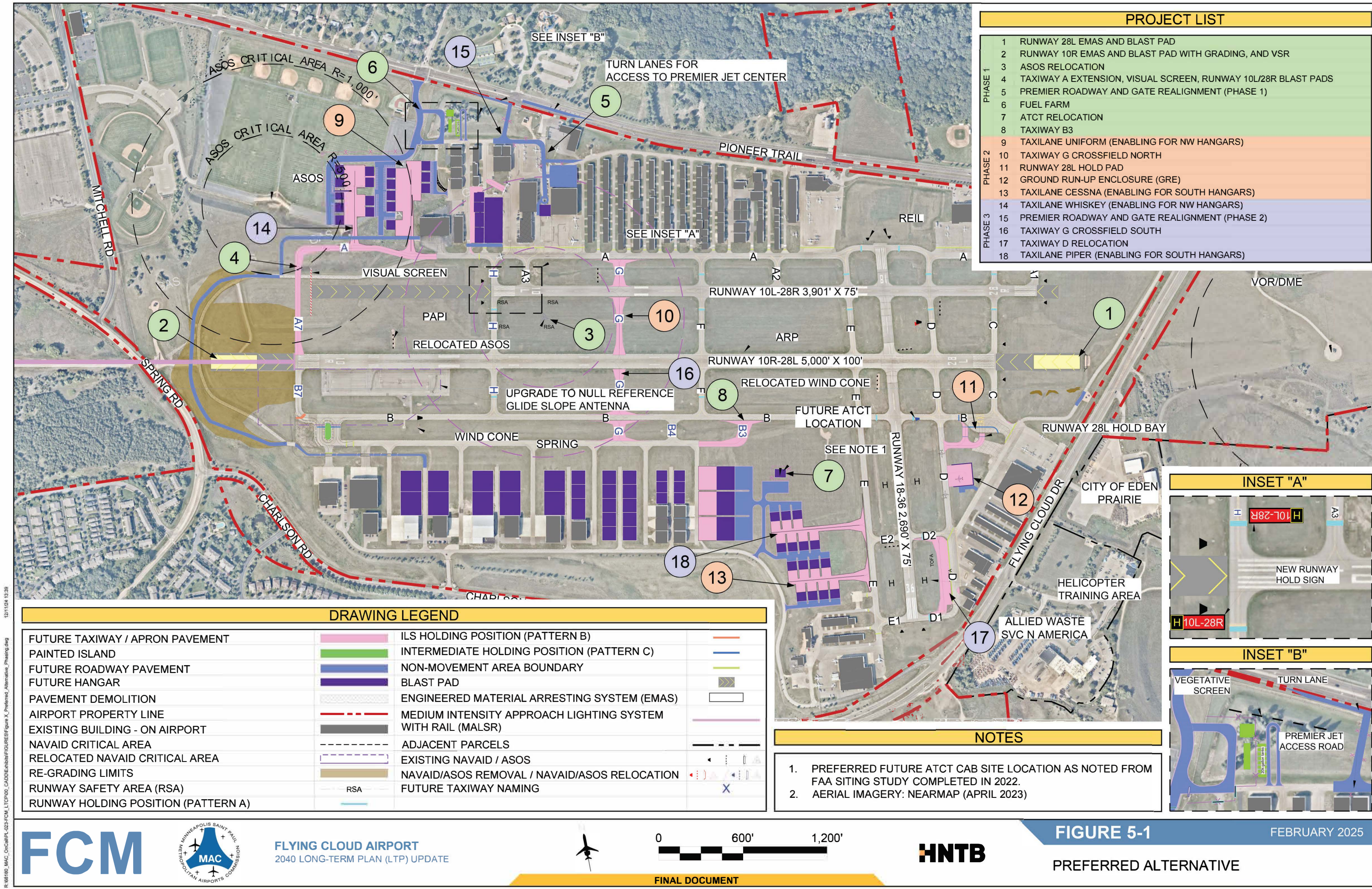
The preferred alternative is shown in **Figure 5.1** and the projects that comprise the preferred alternative are listed in **Table 5-1**, along with the key driver for the project and an anticipated implementation timeline.

It is important to note that the LTP is a high-level planning document and does not authorize any construction. Adoption of the LTP is only the first step in the project implementation process. Implementation of proposed projects within the preferred alternative will need to be conditionally approved on the Airport Layout Plan (ALP) and will require environmental approvals/actions prior to design and construction. For those projects that may require a Modification of Standard (MOS), such as the proposed Taxiway A extension, additional coordination and approvals will be required ahead of environmental approvals or actions as well.

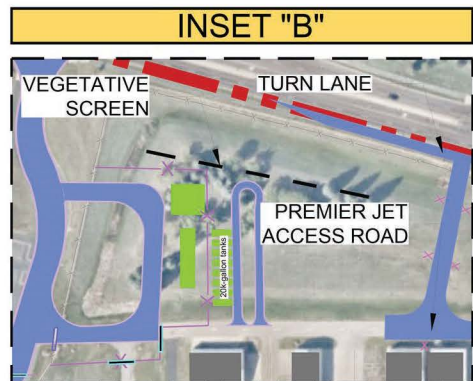
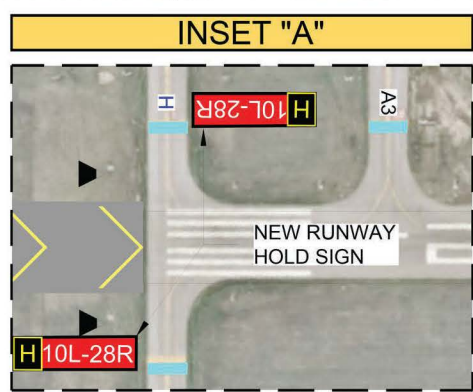
Once approved, the project(s) will compete for funding through FAA and/or State grant programs. To compete effectively for funding, the project(s) must have solidly documented justification. Once funding is secured, final project engineering and design will take approximately one year to complete.

**Table 5-1: Preferred Alternative Projects**

Project No.	Description	Key Driver
Phase 1 Projects (0 – 5 years)		
CIP #1	28L EMAS and Blast Pad	FAA Compliance
CIP #2	10R EMAS and Blast Pad; West Grading: VSR Relocation	FAA Compliance
CIP #3	ASOS Relocation	FAA Compliance
CIP #4	Taxiway Alpha Extension	Airfield Safety
CIP #7	Premier Roadway and Gate Alignment (Phase 1)	Aeronautical Development
CIP #9	Fuel Farm (Alternative 1)	Airfield Safety
CIP #10	ATCT Relocation	Airfield Safety
CIP #13	Taxiway B2	Aeronautical Development
Phase 2 Projects (6 – 10 years)		
CIP #5	Taxilane Uniform (enabling for NW hangars)	Aeronautical Development
CIP #11	Taxiway G North (Crossfield)	Airfield Safety
CIP #14	Runway End 10R Hold Pad	Airfield Safety
CIP #15	Ground Run-Up Enclosure	Noise Attenuation
CIP #18	Taxilane Cessna (enabling for South hangars)	Aeronautical Development
Phase 3 Projects (11 – 20 years)		
CIP #6	Taxilane Whiskey (enabling for NW hangars)	Aeronautical Development
CIP #8	Premier Roadway and Gate Alignment (Phase 2)	Aeronautical Development
CIP #12	Taxiway G South (Crossfield)	Airfield Safety
CIP #16	Taxiway D Relocation	FAA Compliance
CIP #17	Taxilane Piper (enabling for South hangars)	Aeronautical Development



PROJECT LIST	
PHASE 1	1 RUNWAY 28L EMAS AND BLAST PAD
	2 RUNWAY 10R EMAS AND BLAST PAD WITH GRADING, AND VSR
	3 ASOS RELOCATION
	4 TAXIWAY A EXTENSION, VISUAL SCREEN, RUNWAY 10L/28R BLAST PADS
	5 PREMIER ROADWAY AND GATE REALIGNMENT (PHASE 1)
	6 FUEL FARM
	7 ATCT RELOCATION
	8 TAXIWAY B3
PHASE 2	9 TAXILANE UNIFORM (ENABLING FOR NW HANGARS)
	10 TAXIWAY G CROSSFIELD NORTH
	11 RUNWAY 28L HOLD PAD
	12 GROUND RUN-UP ENCLOSURE (GRE)
	13 TAXILANE CESSNA (ENABLING FOR SOUTH HANGARS)
PHASE 3	14 TAXILANE WHISKEY (ENABLING FOR NW HANGARS)
	15 PREMIER ROADWAY AND GATE REALIGNMENT (PHASE 2)
	16 TAXIWAY G CROSSFIELD SOUTH
	17 TAXIWAY D RELOCATION
	18 TAXILANE PIPER (ENABLING FOR SOUTH HANGARS)



DRAWING LEGEND		
FUTURE TAXIWAY / APRON PAVEMENT		ILS HOLDING POSITION (PATTERN B)
PAINTED ISLAND		INTERMEDIATE HOLDING POSITION (PATTERN C)
FUTURE ROADWAY PAVEMENT		NON-MOVEMENT AREA BOUNDARY
FUTURE HANGAR		BLAST PAD
PAVEMENT DEMOLITION		ENGINEERED MATERIAL ARRESTING SYSTEM (EMAS)
AIRPORT PROPERTY LINE		MEDIUM INTENSITY APPROACH LIGHTING SYSTEM WITH RAIL (MALSR)
EXISTING BUILDING - ON AIRPORT		ADJACENT PARCELS
NAVAID CRITICAL AREA		EXISTING NAVAID / ASOS
RELOCATED NAVAID CRITICAL AREA		NAVAID/ASOS REMOVAL / NAVAID/ASOS RELOCATION
RE-GRADING LIMITS		FUTURE TAXIWAY NAMING
RUNWAY SAFETY AREA (RSA)		
RUNWAY HOLDING POSITION (PATTERN A)		

- NOTES
- PREFERRED FUTURE ATCT CAB SITE LOCATION AS NOTED FROM FAA SITING STUDY COMPLETED IN 2022.
 - AERIAL IMAGERY: NEARMAP (APRIL 2023)



5.2 Project Phasing

Project phasing shown in **Figure 5.2** to **Figure 5.4** was developed to address the highest priority airfield needs first. Projects were selected into one of three construction timeframes with Phase 1 between 0 to 5 years, Phase 2 between 6 to 10 years, or Phase 3 between 11 to 20 years.

The highest priority projects are those which bring the Runway 10R-28L RSAs into C-II compliance. These projects include the EMAS bed and Taxiway A extension project. Additional priorities in the first phase include developing hangar infrastructure on the northwest side of the airfield

Phase 2 projects are associated with ATCT relocation, which is currently expected to be completed in approximately 2028. Once the ATCT relocation has been completed, projects in Phase 2 include those that support development within the southwest hangar area, such as the 28L hold pad, GRE, and Taxiway G exit taxiway.

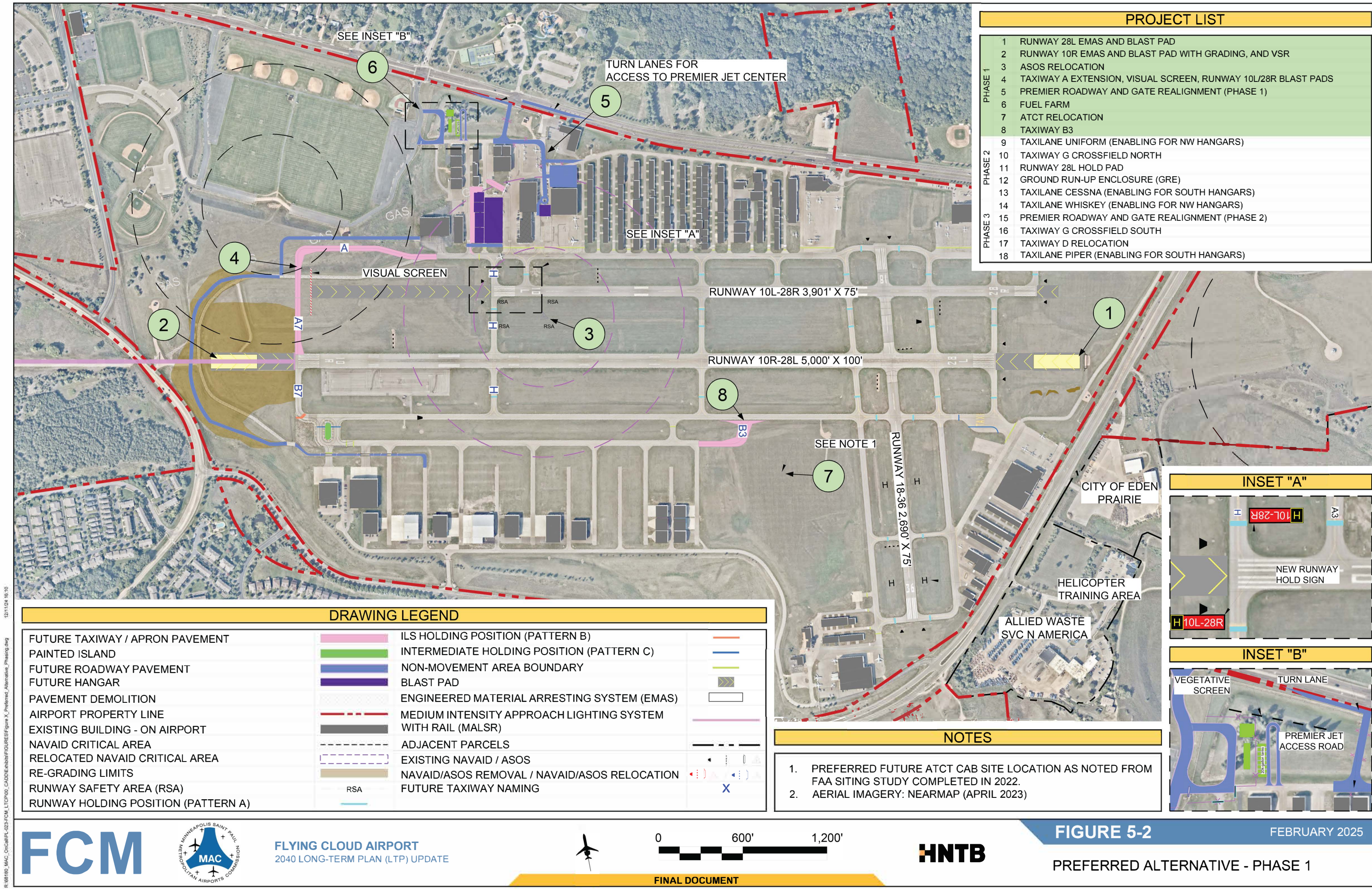
Phase 3 projects include those that allow the 20-year hangar requirement to be met, as well as additional taxilanes in the south area of the airfield.

5.3 Environmental Implementation

The implementation of the LTP projects are expected to constitute Federal actions, which will require National Environmental Policy Act (NEPA) analysis and documentation. As a Federal agency, the FAA must ensure that the requirements of NEPA are met prior to taking any action that has the potential to affect the environment. This section is intended to identify the potential level of NEPA analysis and environmental agency review required for the projects; however, it does not constitute a National Environmental Policy Act (NEPA) analysis.

There are three levels of documentation typically used to satisfy NEPA requirements prior to the development of projects:

- **Categorical Exclusion (CATEX):** A categorical exclusion addresses actions which the FAA and the Council on Environmental Quality (CEQ) have determined do not normally have the potential to generate significant environmental impacts. A wide range of actions have been identified as categorical exclusions. These actions are generally related to repair and maintenance of existing facilities, minor development not likely to result in significant impacts, landscaping, equipment acquisition, projects to carry out noise compatibility programs, property acquisition for these purposes, and Federal release of airport land. In addition, the construction and expansion of passenger handling facilities is categorically excluded. If a normally excluded action might generate significant impacts, an Environmental Assessment (EA) is required. This requirement also applies to actions which are likely to be highly controversial on environmental grounds. As indicated in **Table 5-1**, the majority of the LTP projects are considered CATEX actions.
- **Environmental Assessment (EA):** An EA is conducted to determine if the action under consideration could generate significant impacts requiring preparation of an Environmental Impact Statement (EIS). If no significant impacts are identified in the EA, a Finding of No Significant Impact (FONSI) would be issued. In accordance with FAA Order 1050.1F, the following LTP projects constitute FAA actions which normally require preparation of an EA:
 - Establishment of fuel storage and distribution systems
 - Establishment or relocation of an Airport Traffic Control Towers (ATCT)



PROJECT LIST	
PHASE 1	1 RUNWAY 28L EMAS AND BLAST PAD
	2 RUNWAY 10R EMAS AND BLAST PAD WITH GRADING, AND VSR
	3 ASOS RELOCATION
	4 TAXIWAY A EXTENSION, VISUAL SCREEN, RUNWAY 10L/28R BLAST PADS
	5 PREMIER ROADWAY AND GATE REALIGNMENT (PHASE 1)
	6 FUEL FARM
	7 ATCT RELOCATION
	8 TAXIWAY B3
PHASE 2	9 TAXILANE UNIFORM (ENABLING FOR NW HANGARS)
	10 TAXIWAY G CROSSFIELD NORTH
	11 RUNWAY 28L HOLD PAD
	12 GROUND RUN-UP ENCLOSURE (GRE)
PHASE 3	13 TAXILANE CESSNA (ENABLING FOR SOUTH HANGARS)
	14 TAXILANE WHISKEY (ENABLING FOR NW HANGARS)
	15 PREMIER ROADWAY AND GATE REALIGNMENT (PHASE 2)
	16 TAXIWAY G CROSSFIELD SOUTH
	17 TAXIWAY D RELOCATION
	18 TAXILANE PIPER (ENABLING FOR SOUTH HANGARS)

DRAWING LEGEND		
FUTURE TAXIWAY / APRON PAVEMENT	ILS HOLDING POSITION (PATTERN B)	
PAINTED ISLAND	INTERMEDIATE HOLDING POSITION (PATTERN C)	
FUTURE ROADWAY PAVEMENT	NON-MOVEMENT AREA BOUNDARY	
FUTURE HANGAR	BLAST PAD	
PAVEMENT DEMOLITION	ENGINEERED MATERIAL ARRESTING SYSTEM (EMAS)	
AIRPORT PROPERTY LINE	MEDIUM INTENSITY APPROACH LIGHTING SYSTEM WITH RAIL (MALSR)	
EXISTING BUILDING - ON AIRPORT	ADJACENT PARCELS	
NAVAID CRITICAL AREA	EXISTING NAVAID / ASOS	
RELOCATED NAVAID CRITICAL AREA	NAVAID/ASOS REMOVAL / NAVAID/ASOS RELOCATION	
RE-GRADING LIMITS	FUTURE TAXIWAY NAMING	
RUNWAY SAFETY AREA (RSA)		
RUNWAY HOLDING POSITION (PATTERN A)		

- NOTES
1.

PREFERRED FUTURE ATCT CAB SITE LOCATION AS NOTED FROM FAA SITING STUDY COMPLETED IN 2022.
2.

AERIAL IMAGERY: NEARMAP (APRIL 2023)

R:\98180_MAC_Oncall\PL-2023-FCM_LTC\000_CADD\Enblas\Figures\Figure 5_Prefered_Alternative_Phasing.dwg 12/11/24 16:10



FLYING CLOUD AIRPORT
2040 LONG-TERM PLAN (LTP) UPDATE



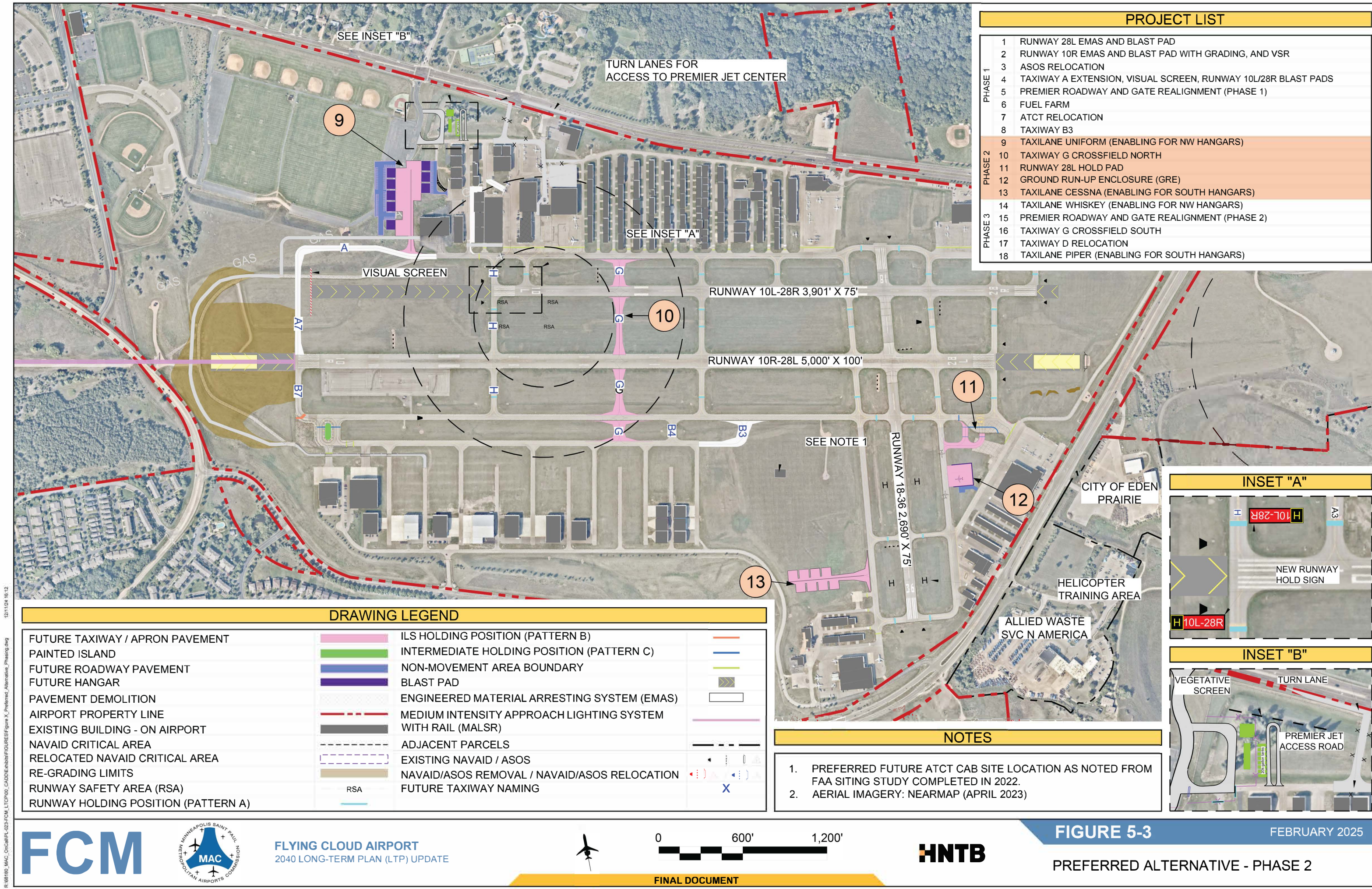
FINAL DOCUMENT



FIGURE 5-2

PREFERRED ALTERNATIVE - PHASE 1

FEBRUARY 2025



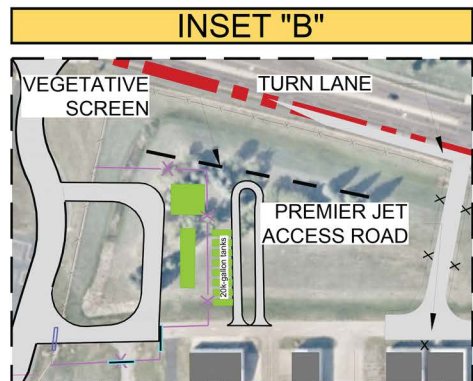
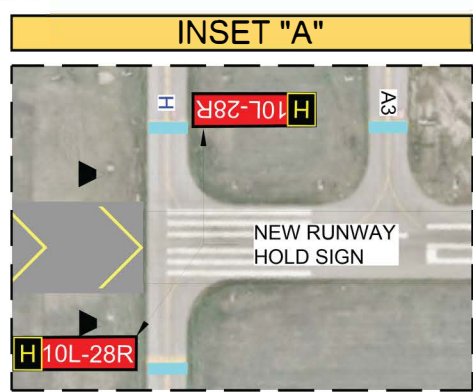
PROJECT LIST	
PHASE 1	1 RUNWAY 28L EMAS AND BLAST PAD
	2 RUNWAY 10R EMAS AND BLAST PAD WITH GRADING, AND VSR
	3 ASOS RELOCATION
	4 TAXIWAY A EXTENSION, VISUAL SCREEN, RUNWAY 10L/28R BLAST PADS
	5 PREMIER ROADWAY AND GATE REALIGNMENT (PHASE 1)
	6 FUEL FARM
	7 ATCT RELOCATION
	8 TAXIWAY B3
PHASE 2	9 TAXILANE UNIFORM (ENABLING FOR NW HANGARS)
	10 TAXIWAY G CROSSFIELD NORTH
	11 RUNWAY 28L HOLD PAD
	12 GROUND RUN-UP ENCLOSURE (GRE)
	13 TAXILANE CESSNA (ENABLING FOR SOUTH HANGARS)
PHASE 3	14 TAXILANE WHISKEY (ENABLING FOR NW HANGARS)
	15 PREMIER ROADWAY AND GATE REALIGNMENT (PHASE 2)
	16 TAXIWAY G CROSSFIELD SOUTH
	17 TAXIWAY D RELOCATION
	18 TAXILANE PIPER (ENABLING FOR SOUTH HANGARS)

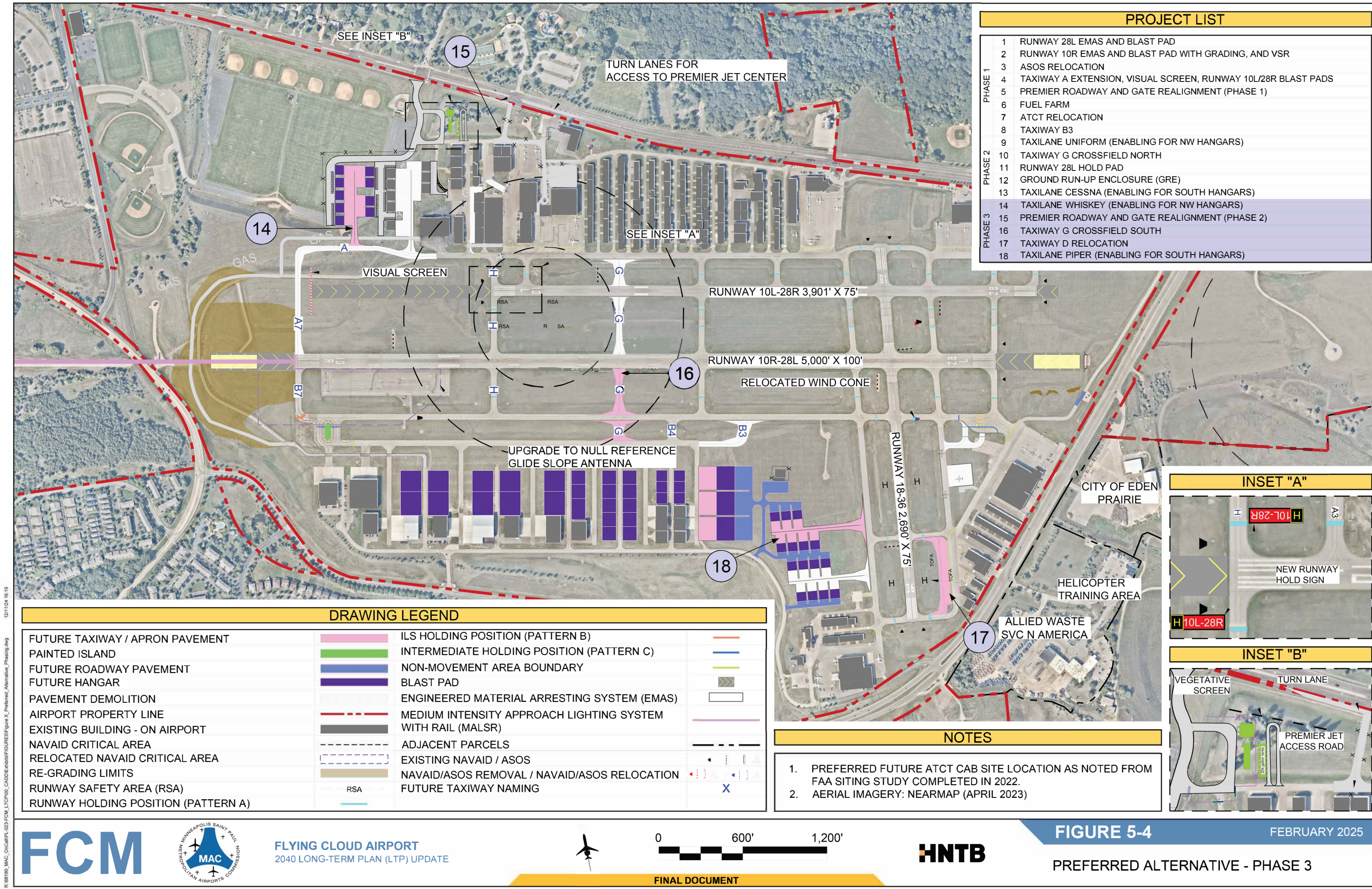
DRAWING LEGEND		
FUTURE TAXIWAY / APRON PAVEMENT		ILS HOLDING POSITION (PATTERN B)
PAINTED ISLAND		INTERMEDIATE HOLDING POSITION (PATTERN C)
FUTURE ROADWAY PAVEMENT		NON-MOVEMENT AREA BOUNDARY
FUTURE HANGAR		BLAST PAD
PAVEMENT DEMOLITION		ENGINEERED MATERIAL ARRESTING SYSTEM (EMAS)
AIRPORT PROPERTY LINE		MEDIUM INTENSITY APPROACH LIGHTING SYSTEM WITH RAIL (MALSR)
EXISTING BUILDING - ON AIRPORT		ADJACENT PARCELS
NAVAID CRITICAL AREA		EXISTING NAVAID / ASOS
RELOCATED NAVAID CRITICAL AREA		NAVAID/ASOS REMOVAL / NAVAID/ASOS RELOCATION
RE-GRADING LIMITS		FUTURE TAXIWAY NAMING
RUNWAY SAFETY AREA (RSA)		
RUNWAY HOLDING POSITION (PATTERN A)		

- NOTES
1.

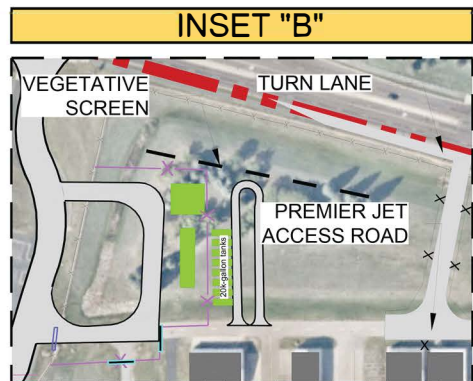
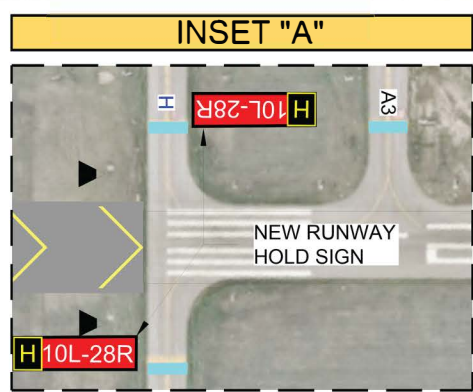
PREFERRED FUTURE ATCT CAB SITE LOCATION AS NOTED FROM FAA SITING STUDY COMPLETED IN 2022.
2.

AERIAL IMAGERY: NEARMAP (APRIL 2023)





PROJECT LIST	
PHASE 1	1 RUNWAY 28L EMAS AND BLAST PAD
	2 RUNWAY 10R EMAS AND BLAST PAD WITH GRADING, AND VSR
	3 ASOS RELOCATION
	4 TAXIWAY A EXTENSION, VISUAL SCREEN, RUNWAY 10L/28R BLAST PADS
	5 PREMIER ROADWAY AND GATE REALIGNMENT (PHASE 1)
	6 FUEL FARM
	7 ATCT RELOCATION
PHASE 2	8 TAXIWAY B3
	9 TAXILANE UNIFORM (ENABLING FOR NW HANGARS)
	10 TAXIWAY G CROSSFIELD NORTH
	11 RUNWAY 28L HOLD PAD
	12 GROUND RUN-UP ENCLOSURE (GRE)
	13 TAXILANE CESSNA (ENABLING FOR SOUTH HANGARS)
	14 TAXILANE WHISKEY (ENABLING FOR NW HANGARS)
PHASE 3	15 PREMIER ROADWAY AND GATE REALIGNMENT (PHASE 2)
	16 TAXIWAY G CROSSFIELD SOUTH
	17 TAXIWAY D RELOCATION
	18 TAXILANE PIPER (ENABLING FOR SOUTH HANGARS)



12/11/24 16:19
R:\98180_MAC_Oncall\PL-2023-FCM_LTC\000_CADD\enblis\Figures\Figure 5_Prefered_Alternative_Phasing.dwg



FLYING CLOUD AIRPORT
2040 LONG-TERM PLAN (LTP) UPDATE



FINAL DOCUMENT



FIGURE 5-4

FEBRUARY 2025

PREFERRED ALTERNATIVE - PHASE 3



Additionally, normally categorically excluded actions involving extraordinary circumstances or the potential for a significant impact, particularly when controversy exists because of a special purpose law, may require preparation of an EA. The proposed Taxilane Uniform, Taxilane Whiskey, and Premier roadway and gate realignment projects (enabling projects for the proposed NW hangars) would directly impact Flying Cloud Fields, a Section 4(f) resource located on Airport property. Therefore, these projects may require preparation of an EA.

- **Environmental Impact Statement (EIS):** An EIS addresses projects having the potential to create significant environmental impact and, unlike other environmental documentation led by the airport sponsor, an EIS is led by the FAA. The LTP projects would not necessitate preparation of an EIS.

Table 5-1 summarizes the proposed LTP projects and the appropriate level of NEPA review necessary. The determination for environmental documentation is based on FAA Order 1050.1F. All projects are anticipated to be able to be cleared through the National Environmental Protection Act (NEPA) via a Categorical Exclusion (CATEX) or Environmental Assessment (EA).

Table 5-2: Preferred Alternative Projects – Environmental Review

Project No.	Description	Environmental	CATEX #
Phase 1 Projects (0 – 5 years)			
CIP #1	28L EMAS and Blast Pad	CATEX	5-6.4e
CIP #2	10R EMAS and Blast Pad; West Grading: VSR Relocation	CATEX	5-6.4e
CIP #3	ASOS Relocation	CATEX	5-6.3c
CIP #4	Taxiway Alpha Extension	CATEX	5-6.4e
CIP #7	Premier Roadway and Gate Alignment (Phase 1)	CATEX	5-6.4a
CIP #9	Fuel Farm (Alternative 1)	EA	--
CIP #10	ATCT Relocation	EA	--
CIP #13	Taxiway B2	CATEX	5-6.4e
Phase 2 Projects (6 – 10 years)			
CIP #5	Taxilane Uniform (enabling for NW hangars)	EA	--
CIP #11	Taxiway G North (Crossfield)	CATEX	5-6.4e
CIP #14	Runway End 10R Hold Pad	CATEX	5-6.4e
CIP #15	Ground Run-Up Enclosure	CATEX	5-6.4q
CIP #18	Taxilane Cessna (enabling for South hangars)	CATEX	5-6.4e
Phase 3 Projects (11 – 20 years)			
CIP #6	Taxilane Whiskey (enabling for NW hangars)	EA	--
CIP #8	Premier Roadway and Gate Alignment (Phase 2)	CATEX	5-6.4a
CIP #12	Taxiway G South (Crossfield)	CATEX	5-6.4e
CIP #16	Taxiway D Relocation	CATEX	5-6.4e
CIP #17	Taxilane Piper (enabling for South hangars)	CATEX	5-6.4e



The environmental review process cannot begin until a sufficiently detailed plan is available to evaluate. The MAC will initiate the environmental review for the preferred development plan following the review by Metropolitan Council and formal adoption by the MAC Board. A full study of these environmental impact items currently falls outside the scope of this document.

Once a project horizon approaches, it is recommended the MAC coordinate with FAA accordingly to verify the exact environmental evaluation prior to programming the projects, as the anticipated level of environmental review shown in Table 7.1 is based on the perceived impact to the airport and surrounding environment. Depending upon project implementation schedules, multiple projects may be combined into one NEPA document. For example, time sensitive near-term projects could be combined into a single CATEX and/or EA. Additionally, for projects requiring preparation of an EA, CATEX projects may be combined into an EA Proposed Action if implementation schedules align.

5.4 Cost Estimates

Rough order of magnitude (ROM) cost estimates were developed for each of the projects in the preferred alternative. Quantities were estimated from planning-level alternatives. Unit prices were sourced from recent MAC projects, regional construction efforts, and other specialty aviation projects. Unit prices were applied to the quantities and a soft cost was applied to include design, project controls, mobilization. No escalation has been applied to these costs, as the exact timing of projects still depends on a variety of factors. **Table 5-3** shows the ROM costs for each project. A more complete buildup of the estimates is shown in **Appendix A**.

**Table 5-3: Preferred Alternative Projects – ROM Cost Estimate Summary**

Project No.	Description	Cost
Phase 1 Projects (0 – 5 years)		
CIP #1	28L EMAS and Blast Pad	\$20,925,433
CIP #2	10R EMAS and Blast Pad; West Grading: VSR Relocation	\$42,497,637
CIP #3	ASOS Relocation	\$977,791
CIP #4	Taxiway Alpha Extension	\$9,570,711
CIP #7	Premier Roadway and Gate Alignment (Phase 1)	\$4,892,945
CIP #9	Fuel Farm (Alternative 1)	\$5,773,608
CIP #10	ATCT Relocation	\$2,236,203
CIP #13	Taxiway B2	\$1,782,475
Phase 2 Projects (6 – 10 years)		
CIP #5	Taxilane Uniform (enabling for NW hangars)	\$10,126,432
CIP #11	Taxiway G North (Crossfield)	\$2,486,407
CIP #14	Runway End 10R Hold Pad	\$1,540,706
CIP #15	Ground Run-Up Enclosure	\$7,885,657
CIP #18	Taxilane Cessna (enabling for South hangars)	\$4,004,375
Phase 3 Projects (11 – 20 years)		
CIP #6	Taxilane Whiskey (enabling for NW hangars)	\$4,118,089
CIP #8	Premier Roadway and Gate Alignment (Phase 2)	\$2,682,356
CIP #12	Taxiway G South (Crossfield)	\$2,496,665
CIP #16	Taxiway D Relocation	\$2,582,833
CIP #17	Taxilane Piper (enabling for South hangars)	\$7,990,787
Total ROM costs		\$134,571,109