



BKL Airport Layout Plan (ALP) Update

Project Advisory Committee Meeting #2

July 30, 2021



Agenda

- Schedule Update
- Facility Requirements Overview
- Runway Alternatives
- Next Steps



Schedule Update



Airport Reference Code (ARC)

- System used by the FAA to classify airports
- Based on wingspan and approach speed
- Critical Aircraft
 - Aircraft or grouping of aircraft that operate > 500 times/year
- 2017 ALP Airport Reference Code – C-II

Approach Category	
Airspeed (knots)	
A	< 91
B	91 ≤ 121
C	121 ≤ 141
D	141 ≤ 166
E	166+

Design Group	
Wingspan (feet)	
I	< 49
II	49 ≤ 79
III	79 ≤ 118
IV	118 ≤ 171
V	171 ≤ 214
VI	214 ≤ 262

Existing Critical Aircraft

D-II ARC



Learjet 35/36 (D-I)



Cessna Citation XL (C-II)

2019 Operations			
AAC		ADG	
A	2,086	I	4,282
B	7,376	II	7,480
C	2,032	III	438
D	772	IV	76
n/a	14	V	4
12,280			



Future Critical Aircraft

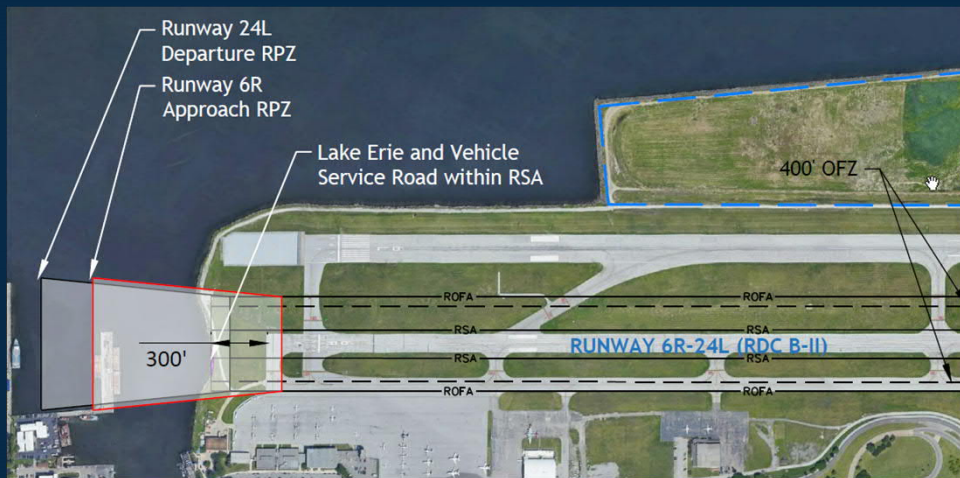
Design Standards

- Runway Safety Area (RSA) —
 - A defined surface surrounding the runway suitable for reducing aircraft damage in the event of an undershoot, overshoot, or excursion from the runway.
- Object Free Area (OFA) —
 - An area centered on a runway provided to enhance the safety of aircraft operations by remaining clear of objects.
- Runway Protection Zone (RPZ) —
 - An area beyond the runway end to enhance the safety and protection of people and property on the ground.

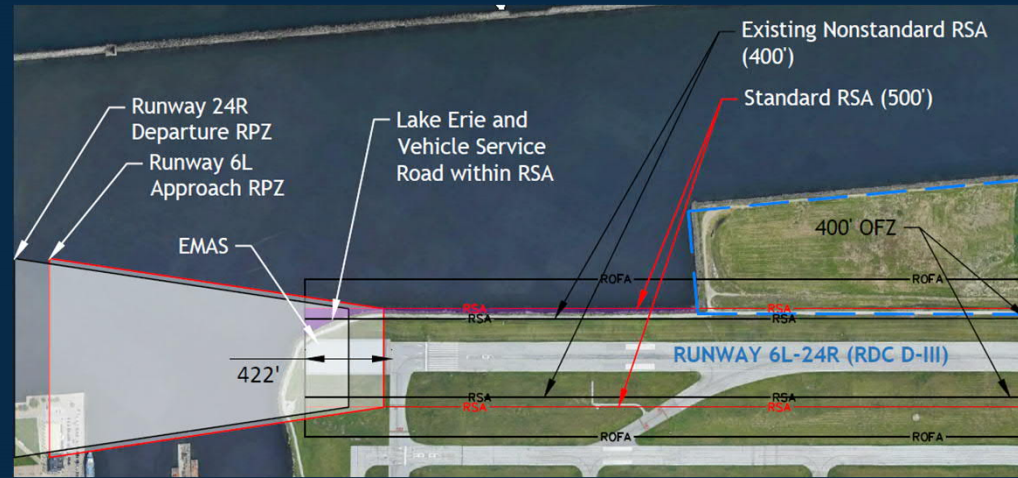


Runway Safety Areas

Runway 6R-24L



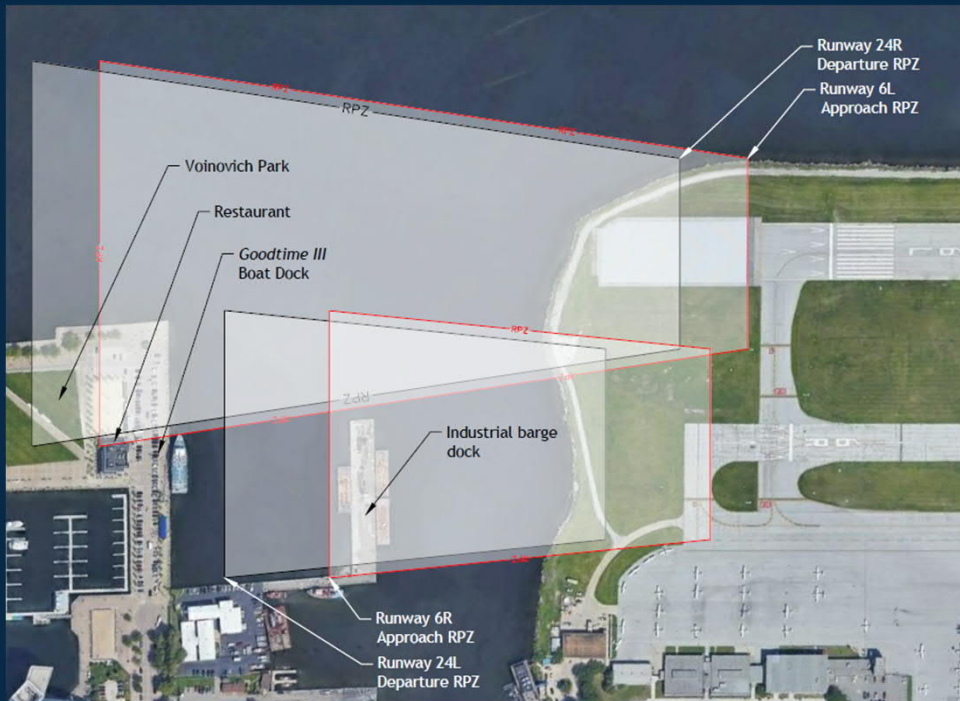
Runway 6L/24R



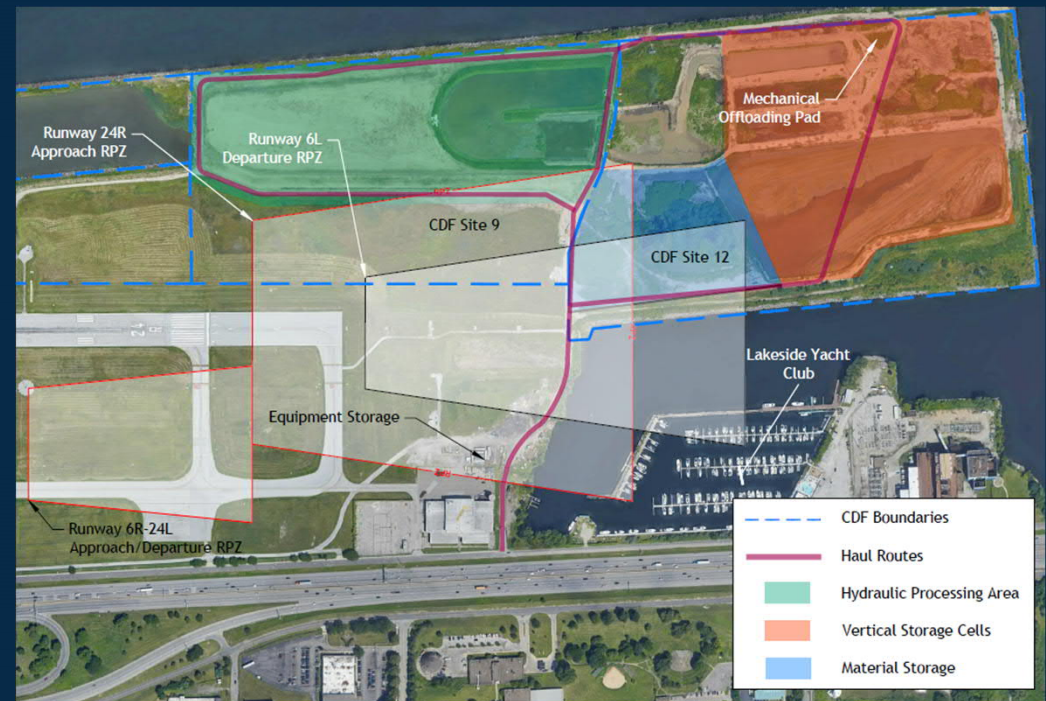
RSA for both runways impacted by Lake Erie and Vehicle Service Road

Runway Protection Zones

Runways 6L & 6R



Runways 24L & 24R



Other Runway Factors

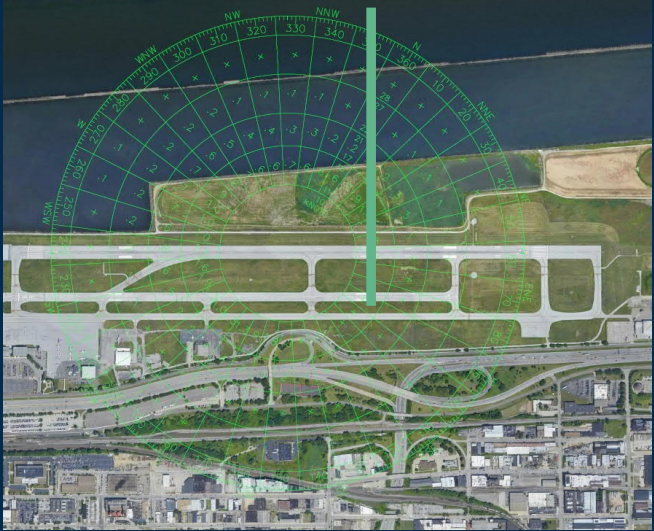
Runway Length

Aircraft Model	Takeoff Length at MTOW (feet)	Takeoff Length at Typical Operating Weight* (feet)	Existing Runway Takeoff Length (feet)
Cessna Citation XL5	4,230	2,710	6,603
Gulfstream V	6,110	4,750	
Boeing 757-200	8,250	5,450	

Runway Wind Coverage

	10.5 Knots	13 Knots	16 Knots	20 Knots
All Weather	81.20%	88.35%	95.09%	98.61%
VFR Conditions	81.67%	88.86%	95.62%	98.91%
IFR Conditions	78.23%	85.05%	91.70%	96.77%

Coverage below 95% is considered insufficient



Runway Design Standards

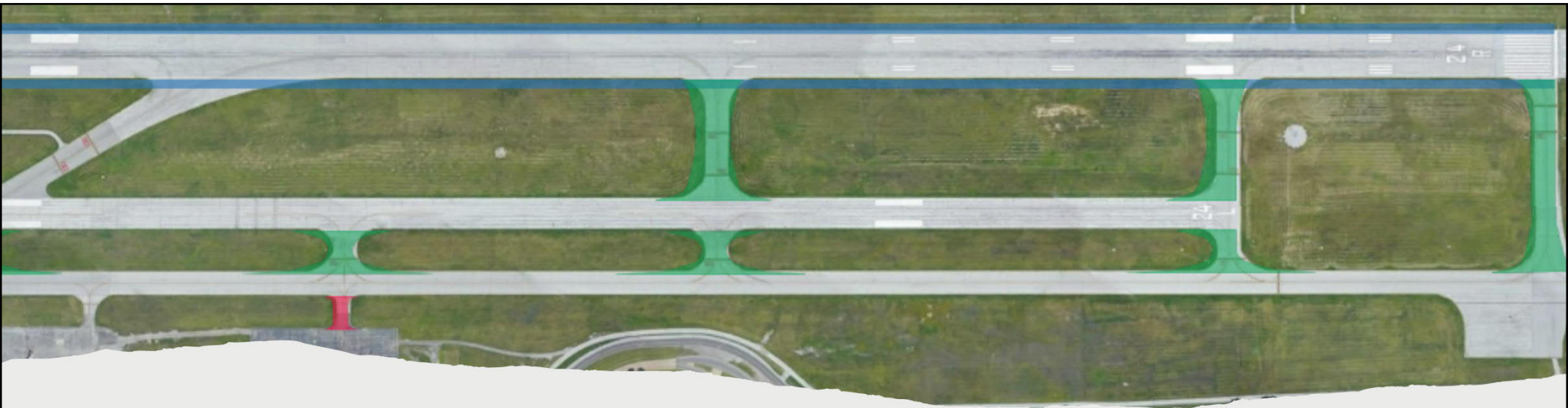
Design Standard	Existing Conditions	
	6L-24R	6R-24L
	D-II/III (3/4 mi.)	B-II (visual)
Runway Width	150'	100'
RSA Width	400'	150'
RSA Length Past RW End	422'/1,000'	300' / 300'
ROFA Width	800' / 800'	500' / 500'
ROFA Length Past RW End	422'/1,000'	300' / 300'
Runway OFZ Width	400'	400'
Runway Centerline to Parallel Taxiway/Runway Centerline	500' (to RW 6R-24L)	218' (to TW G)
Runway Centerline to Edge of Aircraft Parking	820'	320'
Runway Centerline to Hold line	250'	152'



Airfield Capacity



- Runway 6R-24L has been classified as an 'additional' runway as opposed to a 'secondary' runway
- Analysis of current two runway configuration shows sufficient capacity for operations
- An additional analysis was performed for a single-runway configuration which also yielded adequate airfield capacity for the forecast period



Other Geometry

- Fillet geometry of taxiway turns (in green) do not meet latest FAA design standards
- Standards do not allow direct taxiway access from apron-to-runway (in red)
- D-III runways require 25' paved shoulders (in blue)

Nonstandard Issue Overview

Design Area	Runway	
	6L-24R	6R-24L
Runway Length	Adequate	Adequate
Runway Width	Adequate (needs 25' paved shoulders)	Adequate
Runway Safety Area (RSA)	Impacted by Lake Erie and Service Road	Impacted by Lake Erie and Service Road
Runway Object Free Area (ROFA)	Impacted by Lake Erie and Service Road	Impacted by Lake Erie and Service Road
Runway Protection Zones (RPZ)	Impacted by boat docks, park, and restaurant	Impacted by CDF operations, marina
Approach Lighting	Adequate	Adequate
Airfield Lighting	Adequate	Adequate
Instrument Approaches	Adequate	Adequate
Pavement Conditions	Mill & overlay	Adequate

Design Area	Taxiways
Taxiway Width	Adequate
Parallel Taxiway Offset	TW G to 6R-24L below standards
Direct Apron-to-Runway Access	Four direct access along TW G
Fillet Geometry	TW C, D, E, F, H noncompliant
Pavement Conditions	Rehab Taxiway G



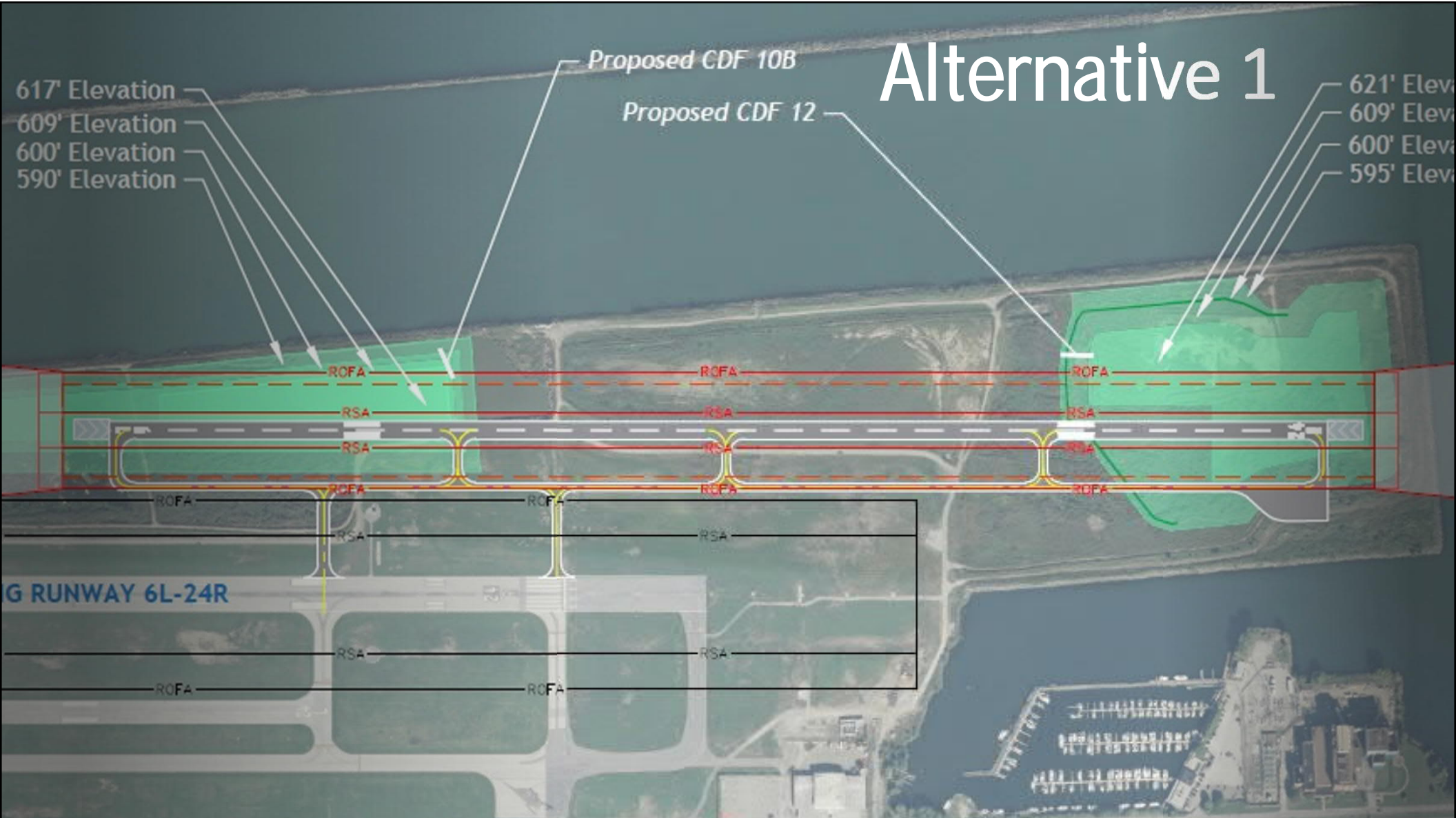
**AIRFIELD
DEVELOPMENT
ALTERNATIVES**

Alternatives Evaluation

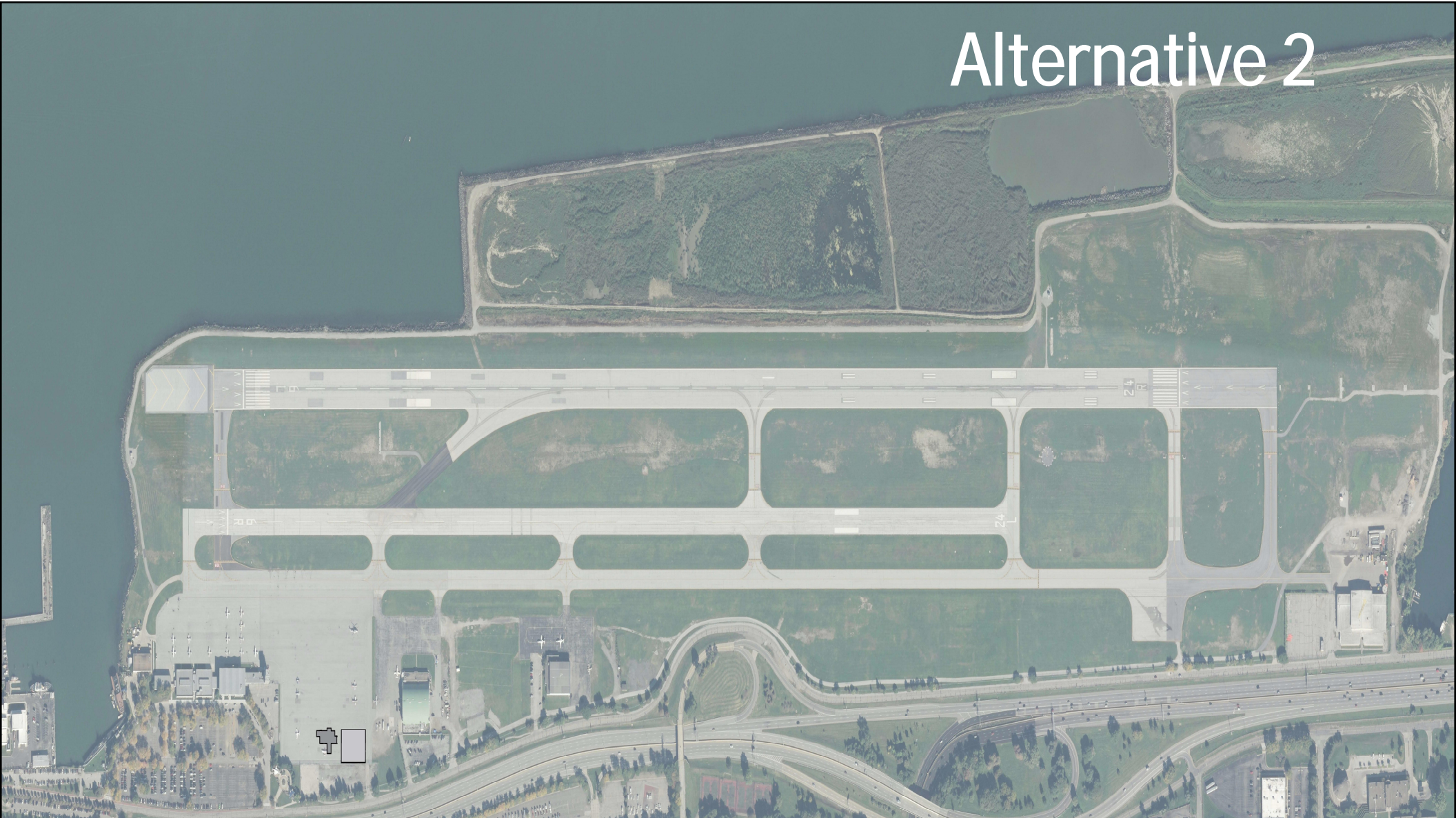
- Meet FAA Design Standards
- Limits impact to existing airfield
- Accommodates existing and future aviation demand
- Provides an ultimate airfield layout for safe operations by both aviation users and the CDF operation (on-going and proposed) both on and off obligated airport property.



Alternative 1



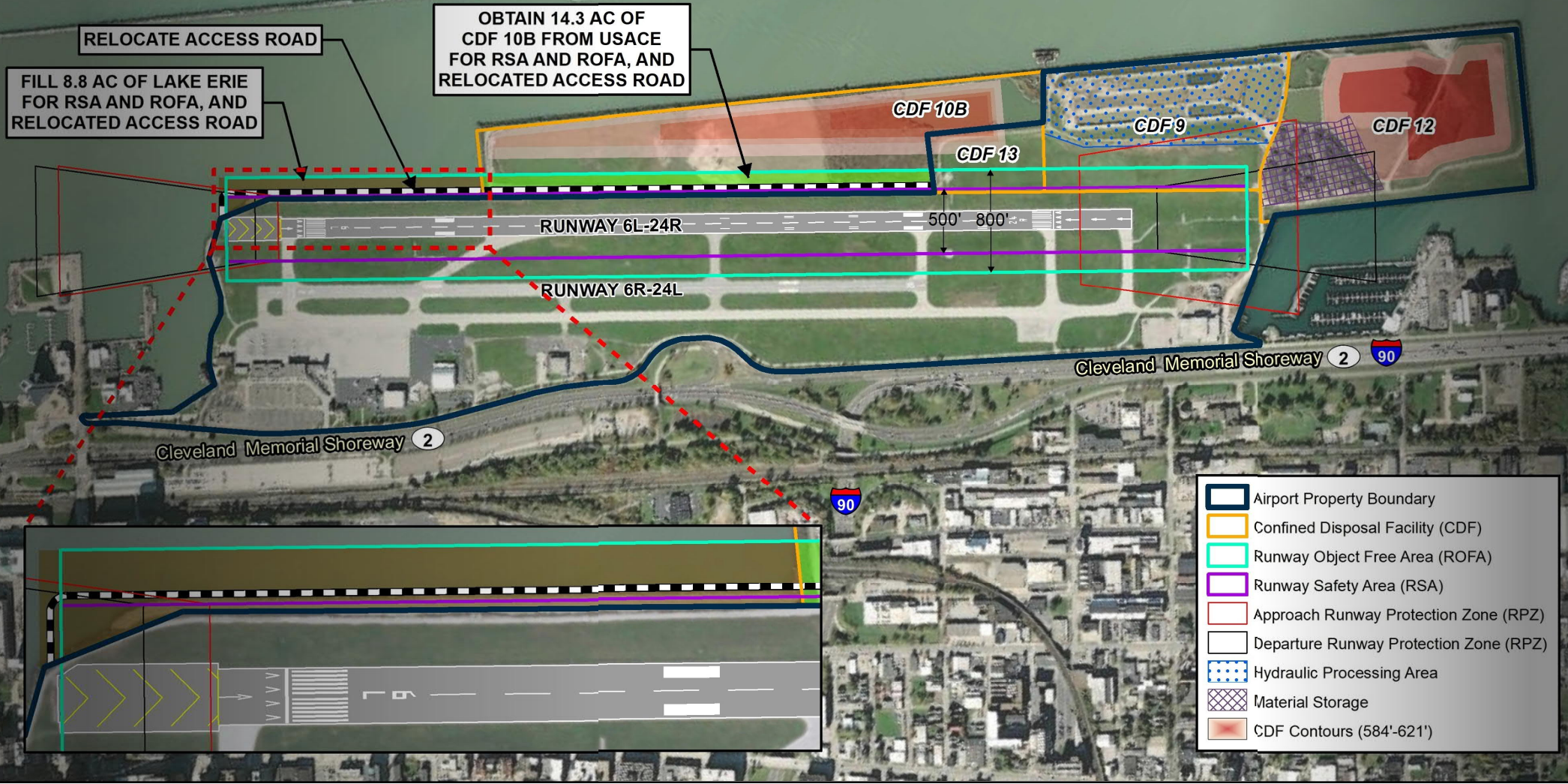
Alternative 2



Alternative 3



Alternative 4

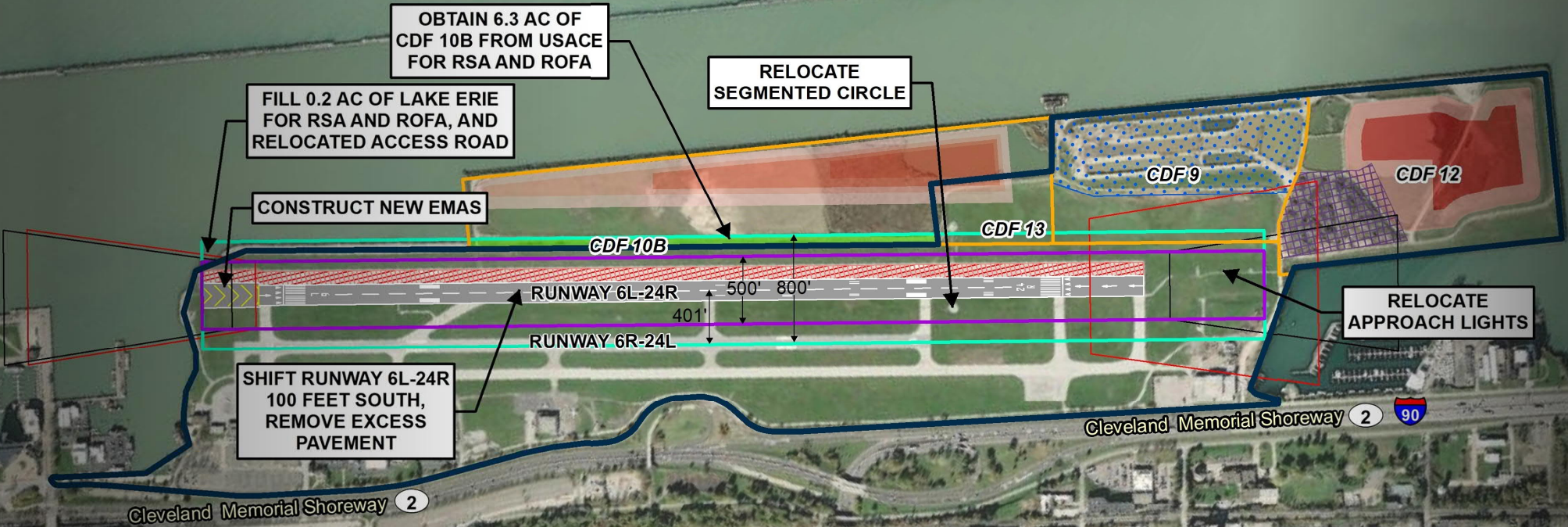


- Airport Property Boundary
- Confined Disposal Facility (CDF)
- Runway Object Free Area (ROFA)
- Runway Safety Area (RSA)
- Approach Runway Protection Zone (RPZ)
- Departure Runway Protection Zone (RPZ)
- Hydraulic Processing Area
- Material Storage
- CDF Contours (584'-621')



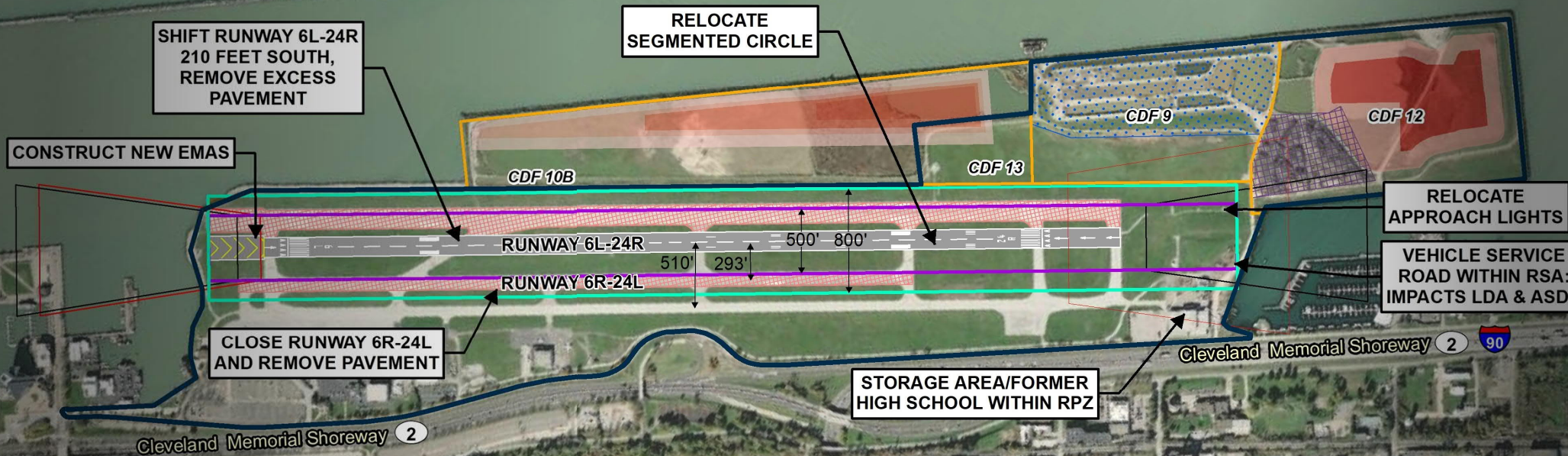
Alternative 4

Alternative 5



- Airport Property Boundary
- Confined Disposal Facility (CDF)
- Runway Object Free Area (ROFA)
- Runway Safety Area (RSA)
- Approach Runway Protection Zone (RPZ)
- Departure Runway Protection Zone (RPZ)
- Hydraulic Processing Area
- Material Storage
- CDE Contours (584'-621')

Alternative 6

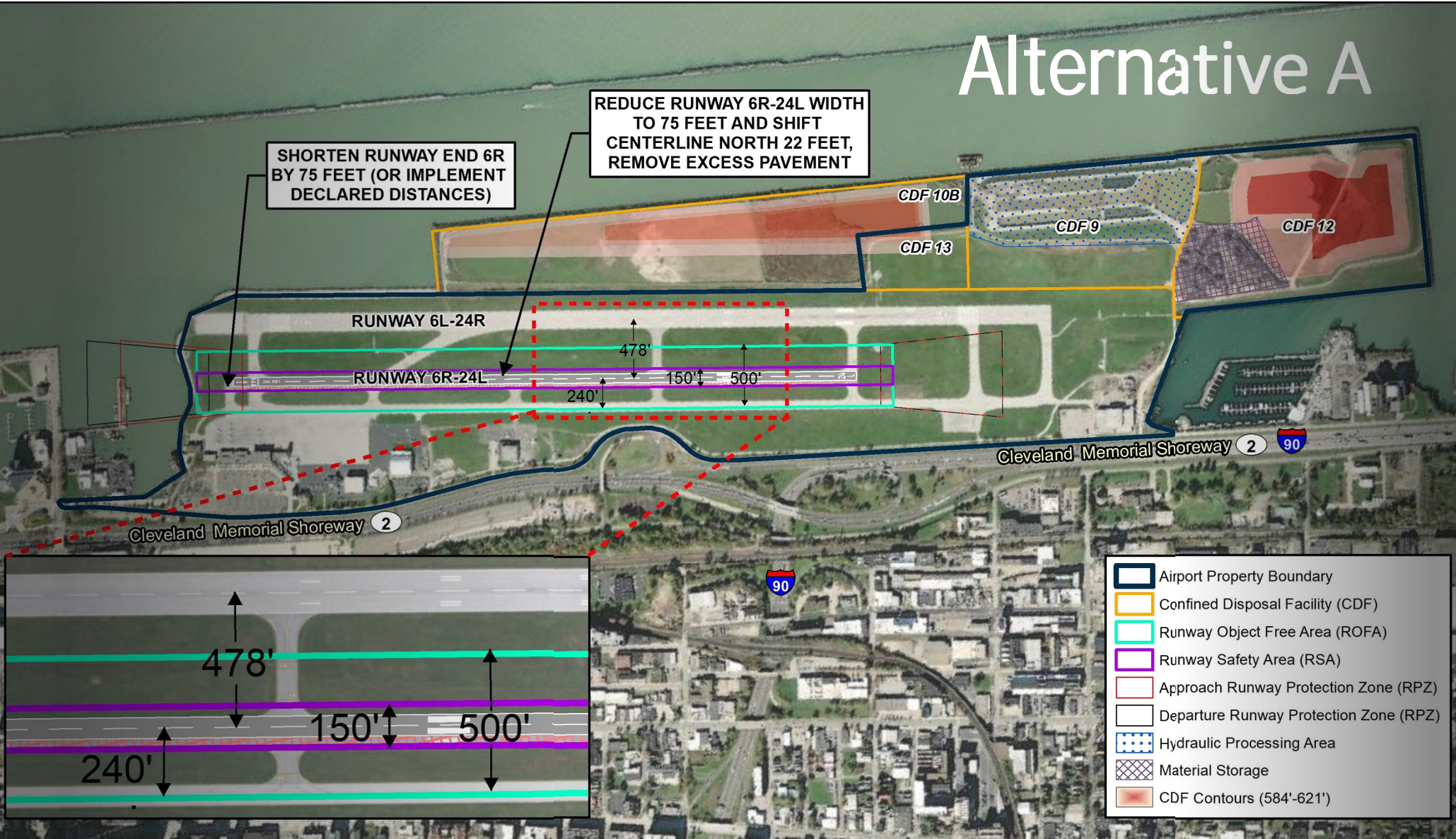


- Airport Property Boundary
- Confined Disposal Facility (CDF)
- Runway Object Free Area (ROFA)
- Runway Safety Area (RSA)
- Approach Runway Protection Zone (RPZ)
- Departure Runway Protection Zone (RPZ)
- Hydraulic Processing Area
- Material Storage
- CDF Contours (584'-621')

Alternative A

SHORTEN RUNWAY END 6R BY 75 FEET (OR IMPLEMENT DECLARED DISTANCES)

REDUCE RUNWAY 6R-24L WIDTH TO 75 FEET AND SHIFT CENTERLINE NORTH 22 FEET, REMOVE EXCESS PAVEMENT



- Airport Property Boundary
- Confined Disposal Facility (CDF)
- Runway Object Free Area (ROFA)
- Runway Safety Area (RSA)
- Approach Runway Protection Zone (RPZ)
- Departure Runway Protection Zone (RPZ)
- Hydraulic Processing Area
- Material Storage
- CDF Contours (584'-621')

Alternative B

SHORTEN RUNWAY END 6R BY 75 FEET (OR IMPLEMENT DECLARED DISTANCES)

CDF 10B

CDF 13


CDF 9

CDF 12

RUNWAY 6L-24R

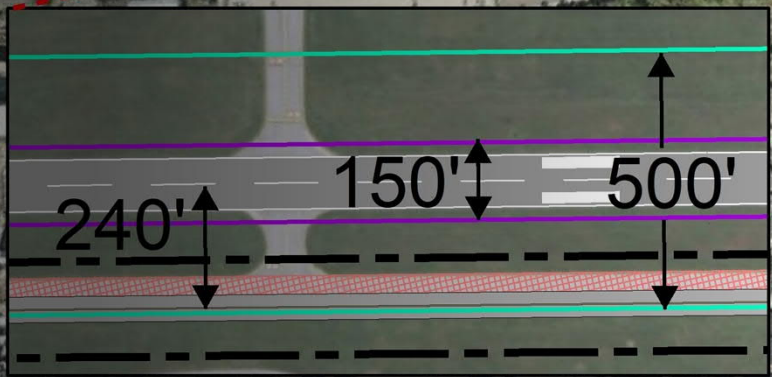
RUNWAY 6R-24L

240' 150' 500'

Cleveland Memorial Shoreway 2 

Cleveland Memorial Shoreway 2

REDUCE TAXIWAY 'G' WIDTH TO 50 FEET AND SHIFT CENTERLINE 22 FEET SOUTH, REMOVE EXCESS PAVEMENT



-  Airport Property Boundary
-  Confined Disposal Facility (CDF)
-  Runway Object Free Area (ROFA)
-  Runway Safety Area (RSA)
-  Approach Runway Protection Zone (RPZ)
-  Departure Runway Protection Zone (RPZ)
-  Hydraulic Processing Area
-  Material Storage
-  CDF Contours (584'-621')

Alternative C

SHORTEN RUNWAY END 6R BY 75 FEET (OR IMPLEMENT DECLARED DISTANCES)

REDUCE RUNWAY 6R-24L WIDTH TO 75 FEET, REMOVE EXCESS PAVEMENT

RUNWAY 6L-24R

RUNWAY 6R-24L

150'
500'
300'

TAXIWAY OBJECT FREE AREA (TOFA)


REDUCE TAXIWAY 'G' WIDTH TO 50 FEET AND SHIFT 300 FEET SOUTH, REMOVE EXCESS PAVEMENT

CDF 10B

CDF 13

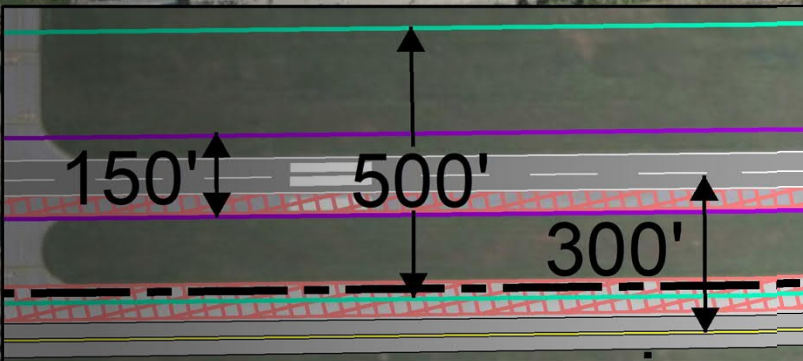
CDF 9




CDF 12

Cleveland Memorial Shoreway 2 

Cleveland Memorial Shoreway 2





-  Airport Property Boundary
-  Confined Disposal Facility (CDF)
-  Runway Object Free Area (ROFA)
-  Runway Safety Area (RSA)
-  Approach Runway Protection Zone (RPZ)
-  Departure Runway Protection Zone (RPZ)
-  Hydraulic Processing Area
-  Material Storage
-  CDF Contours (584'-621')

Alternative D

CLOSE RUNWAY 6R-24L AND REMOVE PAVEMENT

RUNWAY 6L-24R

NEW TAXIWAY 'G'

RUNWAY 6R-24L

NEW TAXILANE

CONVERT TAXIWAY 'G' TO TAXILANE FOR AIRFIELD DEVELOPMENT

CREATE NEW 50' WIDE PARALLEL TAXIWAY

400'


152'


CDF 10B

CDF 13

CDF 9

CDF 12

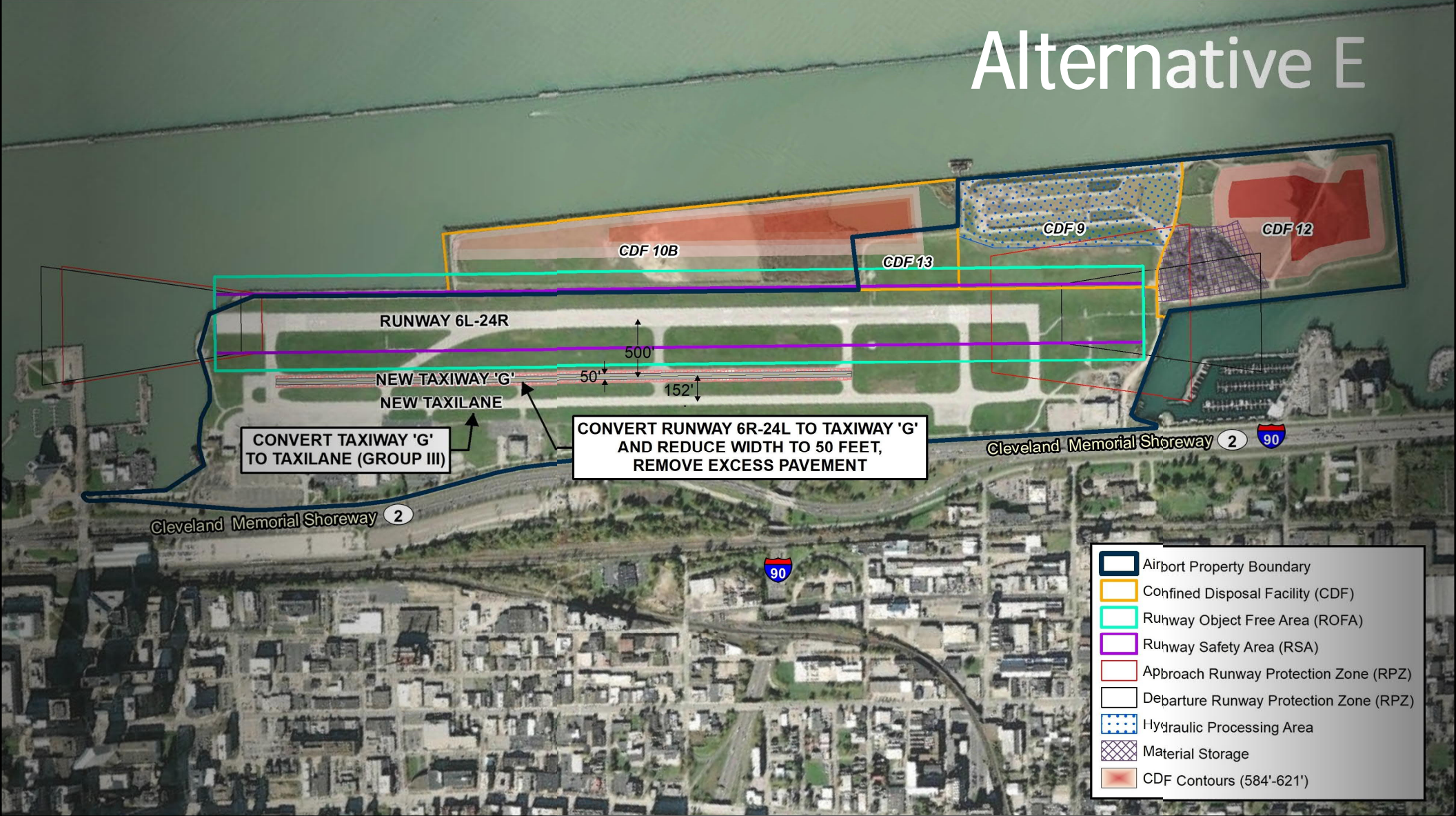
Cleveland Memorial Shoreway 2 

Cleveland Memorial Shoreway 2 

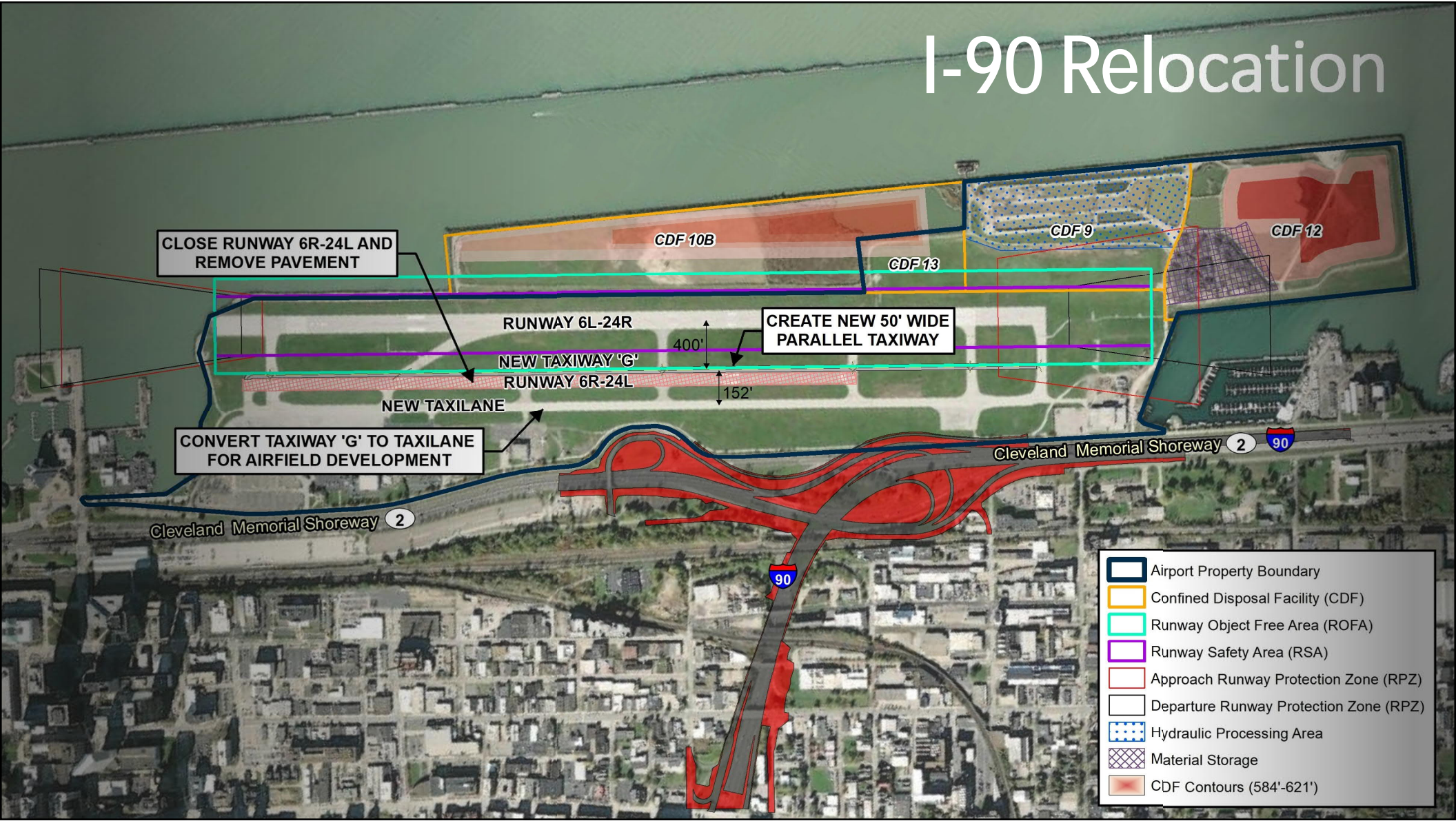


-  Airport Property Boundary
-  Confined Disposal Facility (CDF)
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-  Departure Runway Protection Zone (RPZ)
-  Hydraulic Processing Area
-  Material Storage
-  CDF Contours (584'-621')

Alternative E



I-90 Relocation



- Airport Property Boundary
- Confined Disposal Facility (CDF)
- Runway Object Free Area (ROFA)
- Runway Safety Area (RSA)
- Approach Runway Protection Zone (RPZ)
- Departure Runway Protection Zone (RPZ)
- Hydraulic Processing Area
- Material Storage
- CDF Contours (584'-621')

Preliminary Recommendation

An aerial photograph of an airport runway and taxiway system. The runway is a long, straight concrete strip with white markings, extending from the foreground towards the background. It is flanked by green grass. In the distance, a city skyline with various buildings is visible under a cloudy sky. The overall scene is a wide, open area with a clear path for aircraft.

- Runway 6L-24R – Alternative 4
- Runway 6R-24L – Decision
 - ✓ Close & convert to parallel taxiway
 - ✓ Correct non-standard separation

Next Steps



- Select Preferred Airfield Alternative
- Update ALP Set and Exhibit A
- Next Project Advisory Committee Meeting – Early September 2021
- Final Public Meeting – Late September 2021



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Questions or Comments?



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