



BKL Airport Layout Plan (ALP) Update

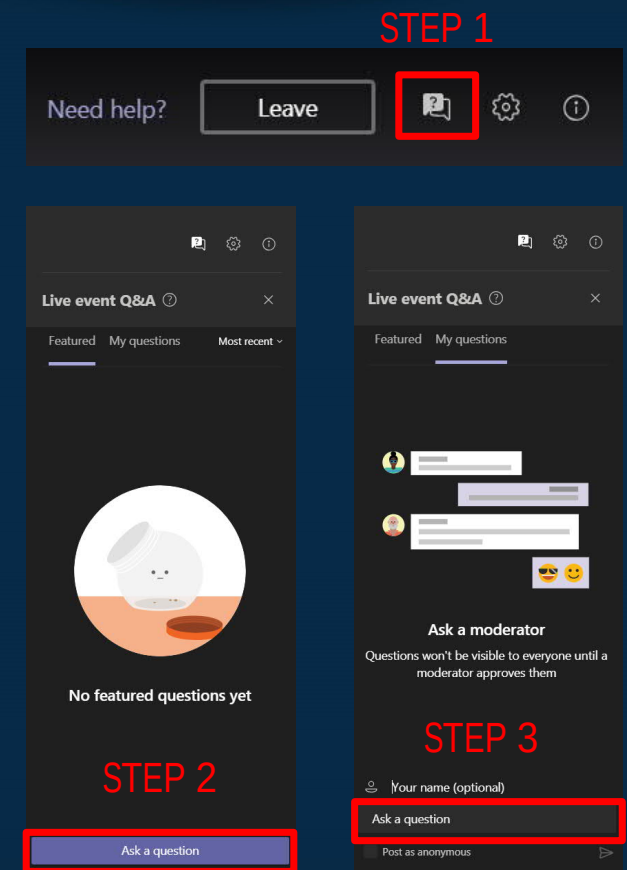
Public Meeting #1

June 30, 2021



Comment Instructions

- As an attendee, you will only be able to view and listen to the presentation. However, there is an option to submit questions and comments throughout the meeting.
- In the upper right-hand corner. Click the “Q&A” icon to bring up the Q&A window (Step 1)
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Agenda

- Introductions
- Opening Remarks
- Overview of ALP Update Process
- Background & History
- Airport Inventory
- Forecasts Update
- Facility Requirements Overview
- Next Steps



Tonight's Speakers



Mark
Heckroth
CHA
Consulting



Jackson
Harris
CHA
Consulting



Jay
Rauschenbach
CHA
Consulting



Director Robert
Kennedy
Department of
Port Control

Scope of Work

- Update 2017 ALP
- Update Aviation Forecasts
- Exhibit 'A' Property Map



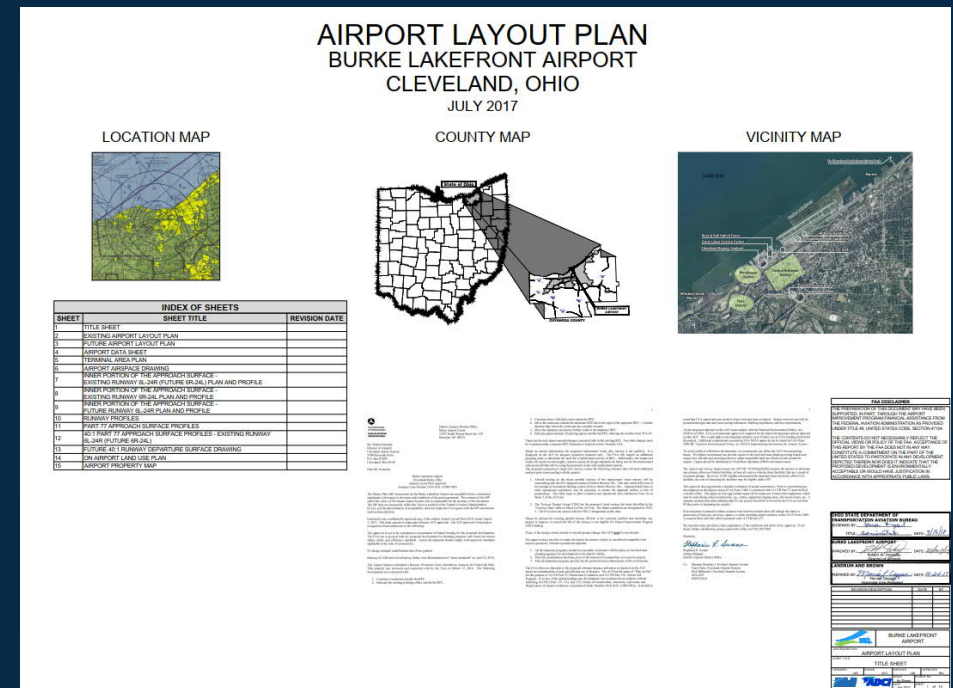
What is an ALP?

- Critical planning tool
- Federal requirements
 - Existing airport facilities, structures, and buildings
 - Proposed projects on all areas owned by BKL for airport purposes
 - Existing & proposed non-aeronautical areas and improvements

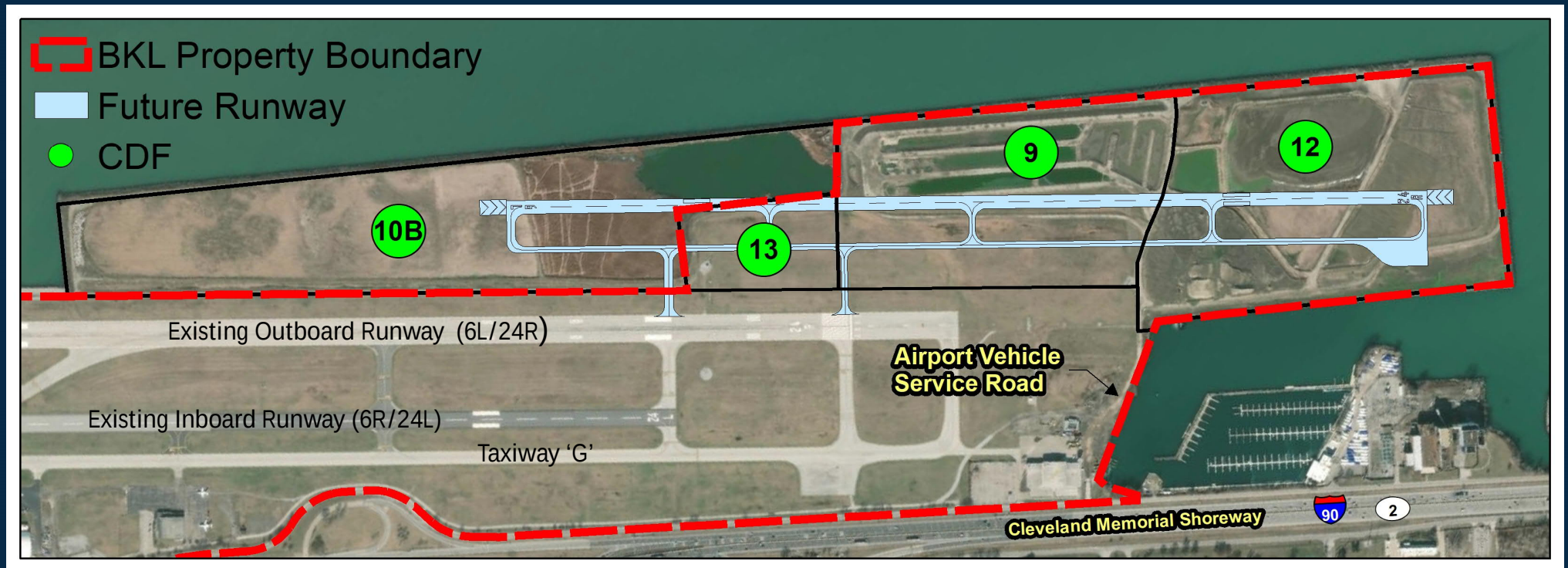


Why is the ALP Updated?

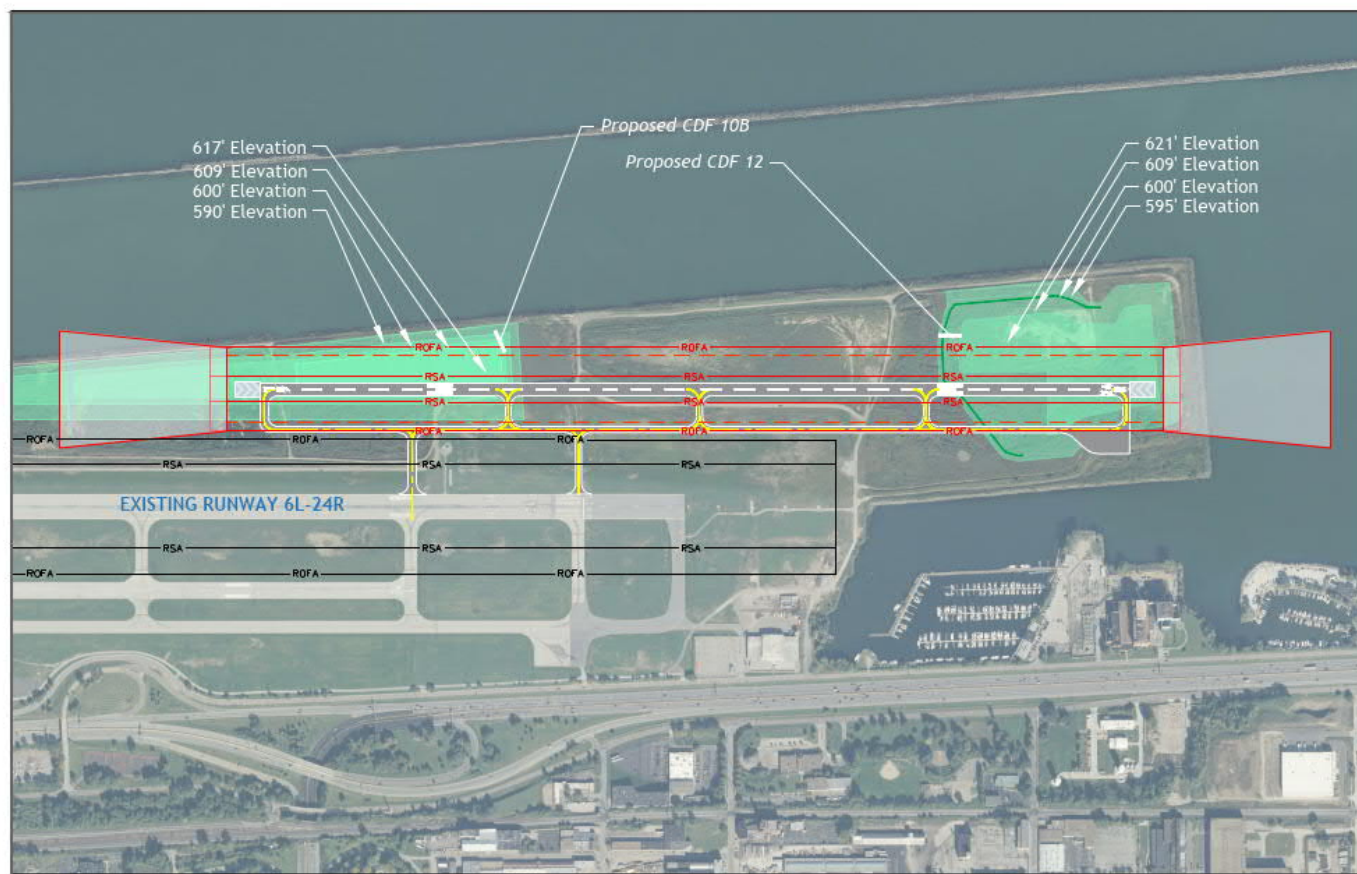
- Construction project(s)
 - Change in airfield geometry
 - New buildings
 - Acquisition or release of airport property
- Other
 - Future development shown on an approved ALP that is no longer needed to meet future demand or is impacted by other project(s)



Project Background/History



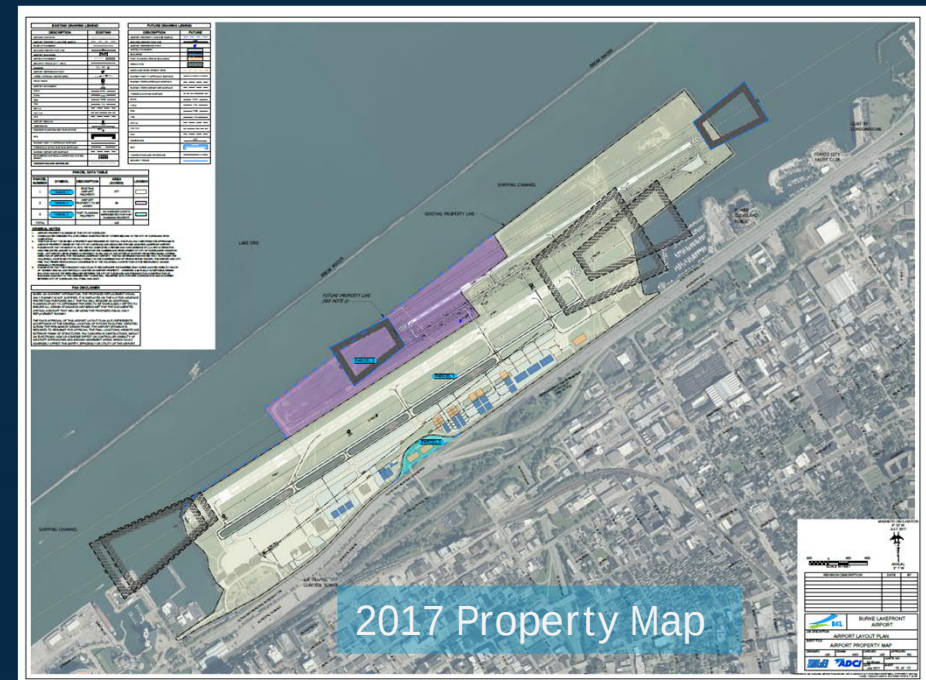
Project Background/History



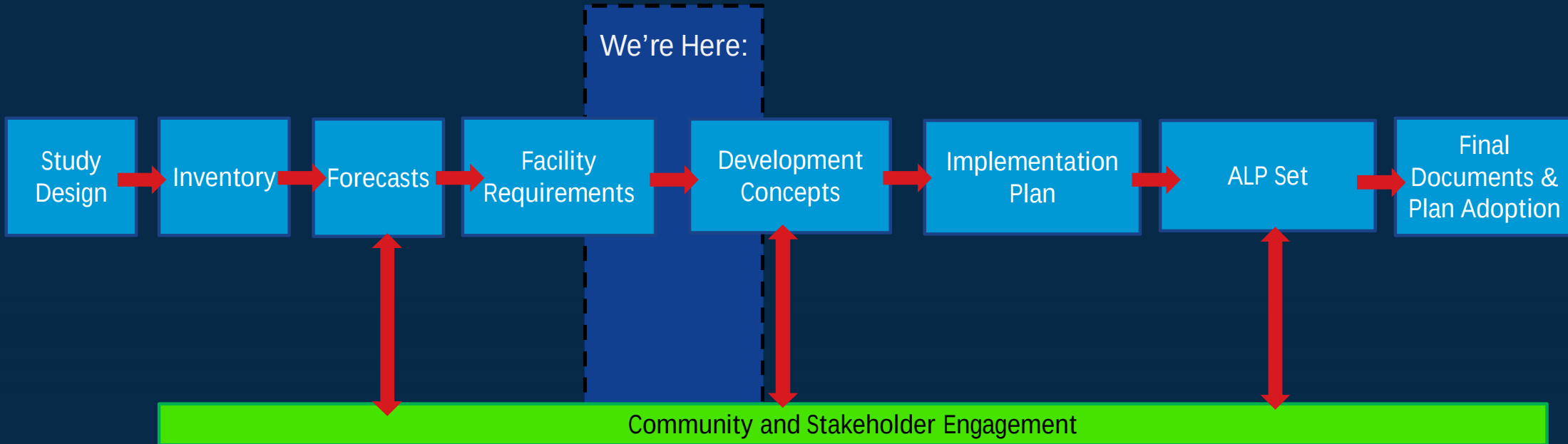
What is an Exhibit 'A'?

- An inventory of parcels that make up dedicated airport property
- Indicates how the land was acquired, the funding source for the land and if the land was conveyed as Federal surplus land or Government Property
- Must show all dedicated airport property regardless of the type of funds (AIP, state, local, etc.) used to acquire that property

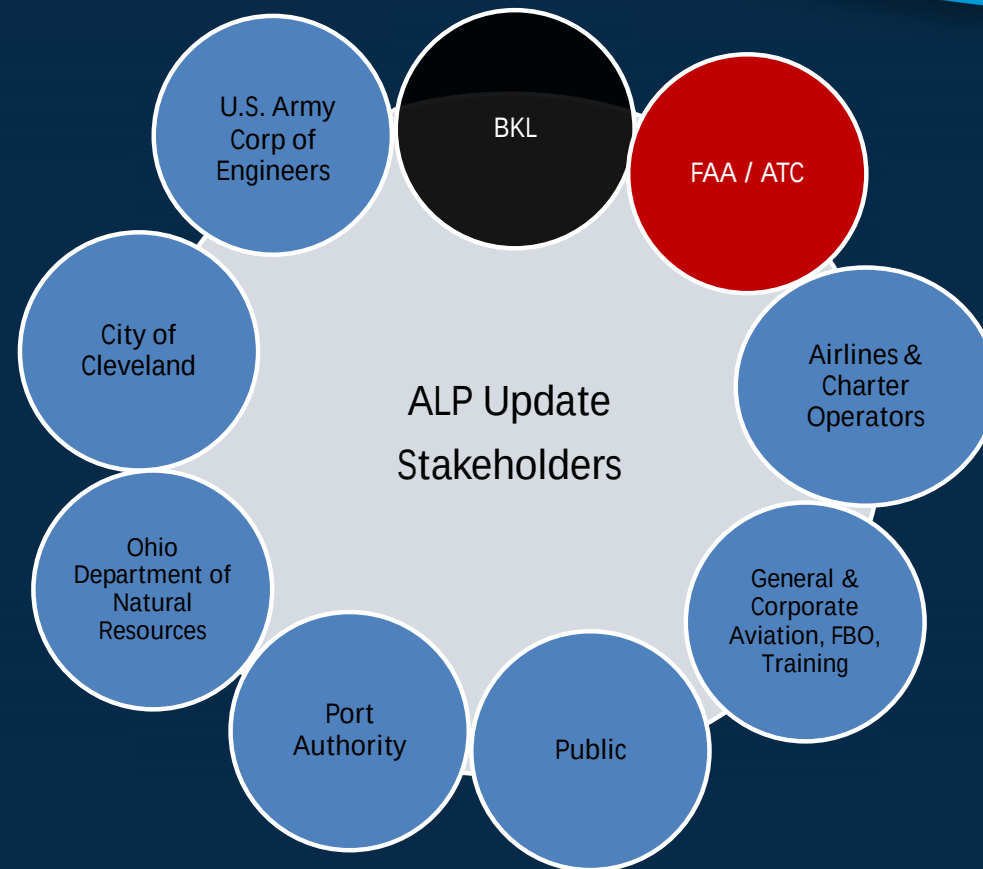
-FAA ARP SOP 3.0



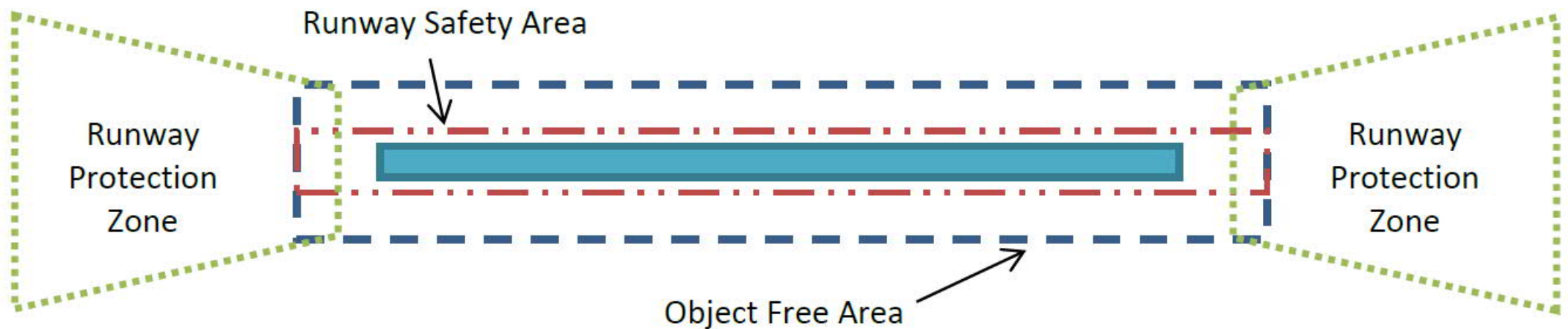
ALP Update Process



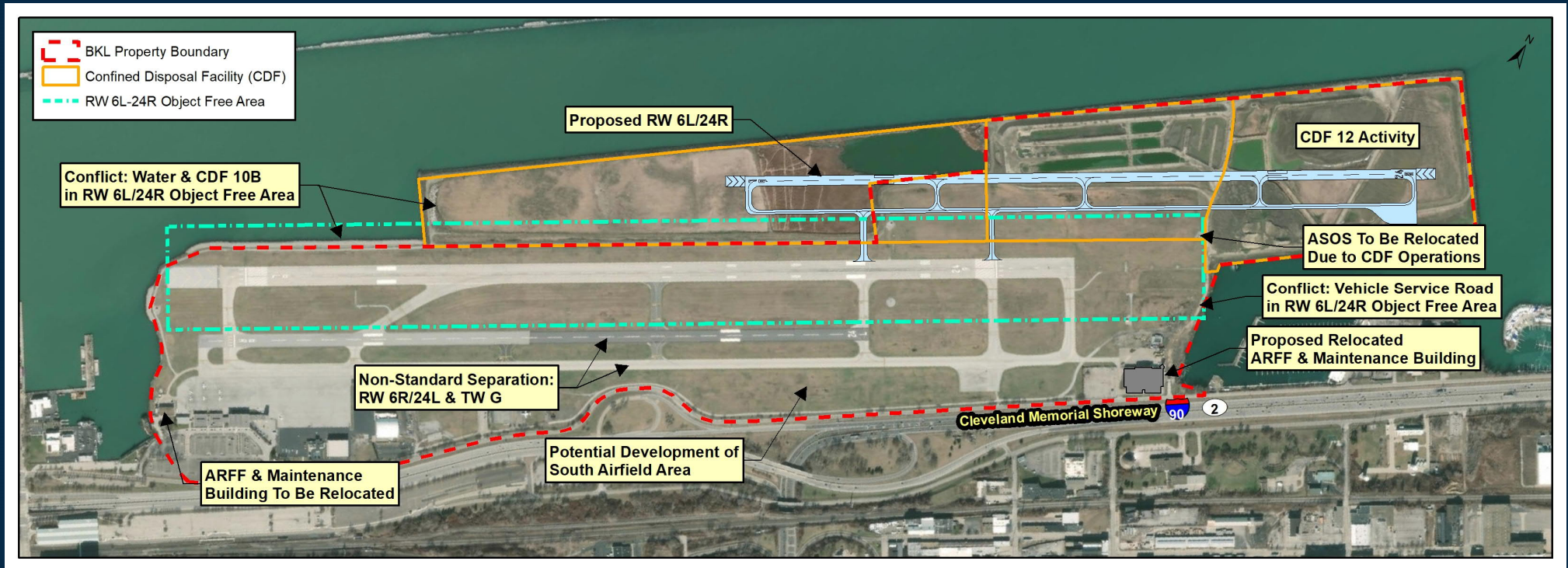
Key Stakeholders



Design Standards



Issues & Focus Areas



INVENTORY

Summary of Key Facilities



Summary of Key Facilities

Two runways:

- 6L-24R at 6,603 x 150' with instrument approach
- 6R-24L at 5,197' x 100'

Apron space:

- Approx. 500,000 SF of apron space surrounding terminal and FBO facility
- Approx. 130,000 SF of additional hangar apron space

Hangar storage:

- Three corporate hangars: approx. 54,000 SF of combined space

Item	Runway 6L	Runway 24R	Runway 6R	Runway 24L
Runway Length (feet)	6,603		5,197	
Displaced Threshold (feet)	178	600	275	
Width (feet)	150		100	
Runway End Elevation (feet above MSL)	561.1	582.4	580.5	582.5
Pavement Type	Asphalt		Asphalt	
Pavement Load Bearing and Pavement Classification Number	Single wheel: 93.0 Double wheel: 113.0 Double tandem: 170.0 PCN: 84/F/C/X/T		Single wheel: 43.0 Double wheel: 50.0 Double tandem: 82.0 PCN: 63/F/C/X/T	
Declared Distances	LDA: 6,325' TODA: 6,503' TORA: 6,503' ASDA: 6,503'	LDA: 6,003' TODA: 6,603' TORA: 6,603' ASDA: 6,603'	LDA: 4,924' TODA: 5,199' TORA: 5,199' ASDA: 5,199'	LDA: 5,199' TODA: 5,199' TORA: 5,199' ASDA: 5,199'
Aircraft Approach Category	C-II		B-II	
Runway Markings	Precision		Basic	
Runway and Approach Lighting	HIRL, PAPI-4, REIL	-	-	HIRL, REIL
Navigational Aids	-	LOC/ILS, MALSF, GPS	-	-
Runway Design Code	C-II-VIS	C-II-4000	B-II-VIS	B-II-VIS

Based Aircraft

Helicopter

Medical Services, Local News Outlets

Projected to increase
based on FAA
Aerospace Forecast
for Single Piston, Jets,
and Helicopters from
2020-2024

Jet

Corporate Tenants, Charter Flights

Single-Piston

Flight Training, Recreational Use

McDonnell Douglas



Bell 206B



Cessna Citation



Cessna 172



Diamond DA-40



Top Operators in 2019/2020

Aircraft	Group	2019 Operations	2020 Operations
Cessna Citation V/Ultra/Encore	B-II	1,124	820
Fairchild Dornier 328 Jet	B-II	932	330
Cessna Citation Excel/XLS	B-II	526	254
Beech 200 Super King	B-II	480	264
Cessna Citation Sovereign	B-II	446	358
Dassault Falcon 2000	B-II	440	196
Embraer Phenom 300	B-II	378	310
Hawker 800	B-II	368	220
Cessna Citation Jet/CJ1	A-I	306	330
Cessna Citation II/Bravo	B-II	242	260
Bombardier Learjet 35/36	D-I	240	104
Gulfstream IV/G400	D-II	205	106
Gulfstream V/G500	D-III	140	74
Dassault Falcon F7X	B-III	67	33

AVIATION FORECASTS

Activity Demand Forecasts

- Provide an initial timetable for facility improvements
- Basis for the development of alternatives to meet the projected demand
- Basis for environmental analyses and economic and financial plans
- Used as support for airport funding



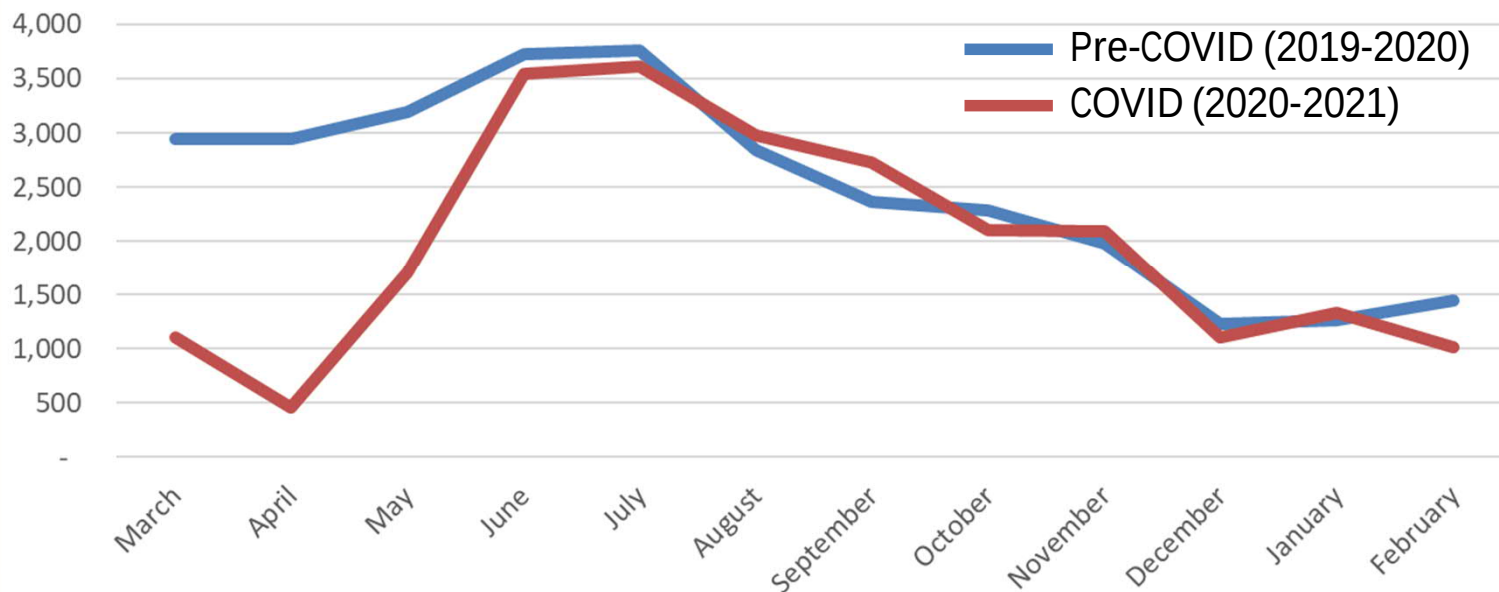
Forecast Process

- Traditionally includes 5, 10, 20-year estimates of aviation activity compared against the FAA Terminal Area Forecast (TAF)
- “Optimistic” and “Pessimistic” COVID-19 Recovery Forecasts
- Post-Recovery Forecasts
 - ✓ General Aviation
 - ✓ Commercial
 - ✓ Enplanements
 - ✓ Based Aircraft



COVID-19 Impacts on GA Operations

General Aviation



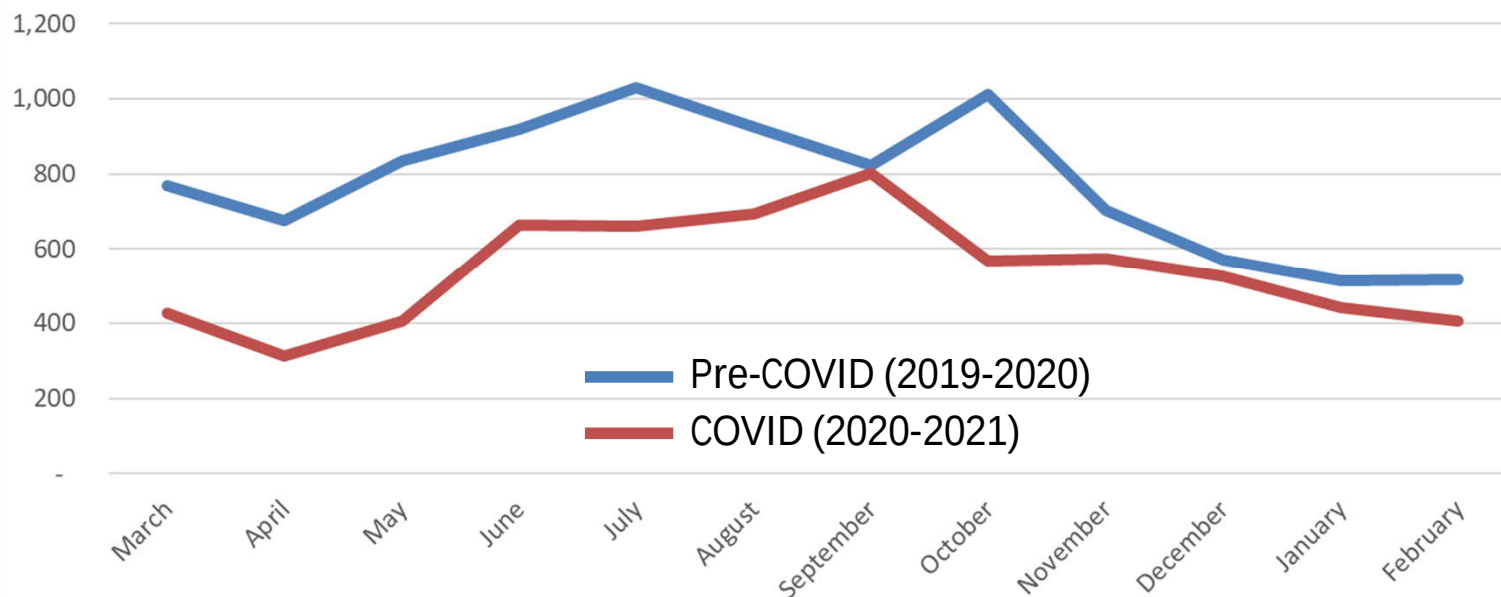
12-Month Comparison

- Down 21% overall
- Down 18% avg/month
- March 2020 – down 63%
- April 2020 – down 85%
- May 2020 – down 47%

Mostly recovered by June with some months above previous year.

COVID-19 Impacts on Commercial Operations

Commercial Operations



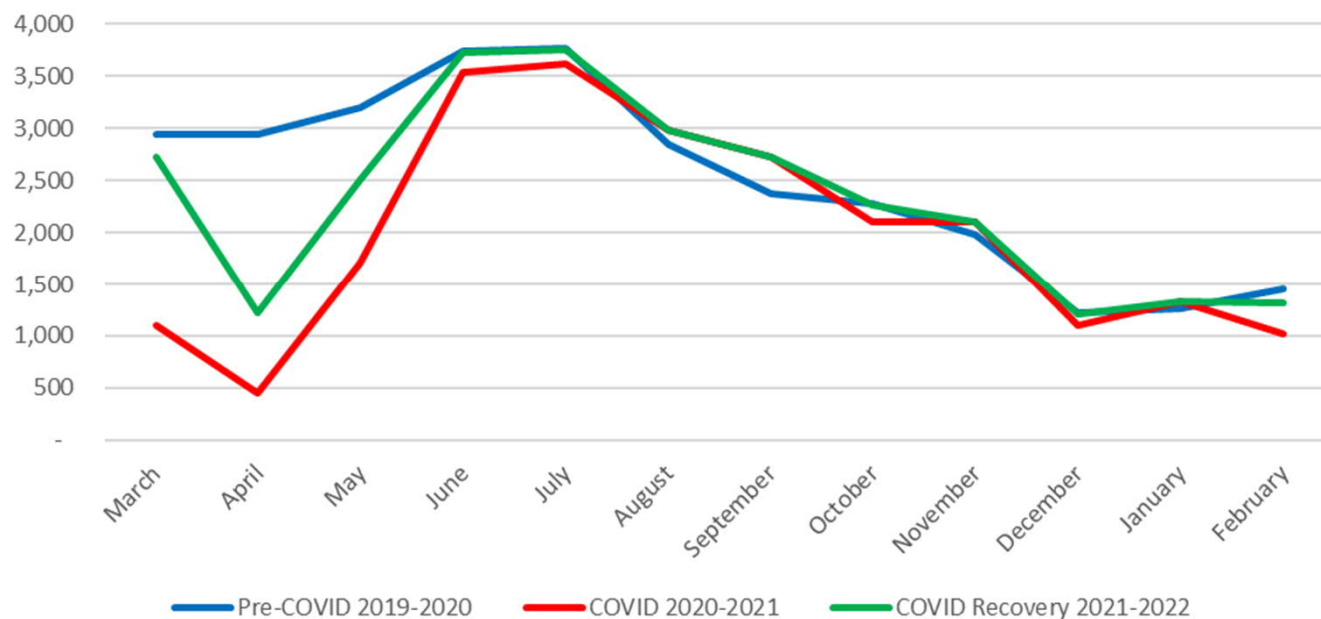
12-Month Comparison

- Down 30% overall
- Down 29% avg/ month
- Down every month ranging from 54% (April) to 3% (September)

Exacerbated by Ultimate Air temporarily ceasing operations.

GA COVID-19 Recovery

Optimistic GA Operations Recovery Forecast



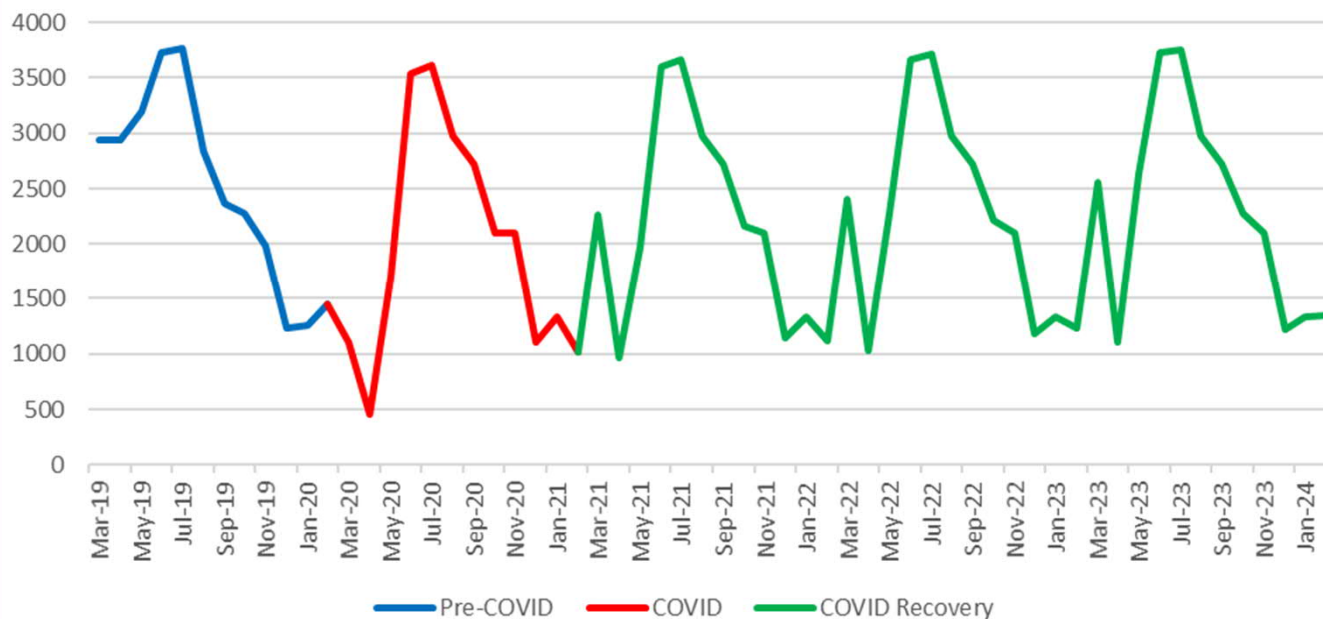
“Optimistic” Forecast

Recover 93% of operations within 1 year

- July 2020 was down 4%, therefore July 2021 will have 104% of operations from July 2020
Note: March and April treated special
- If operations during COVID were above previous year, this is retained

GA COVID-19 Recovery

Pessimistic GA Operations Recovery Forecast



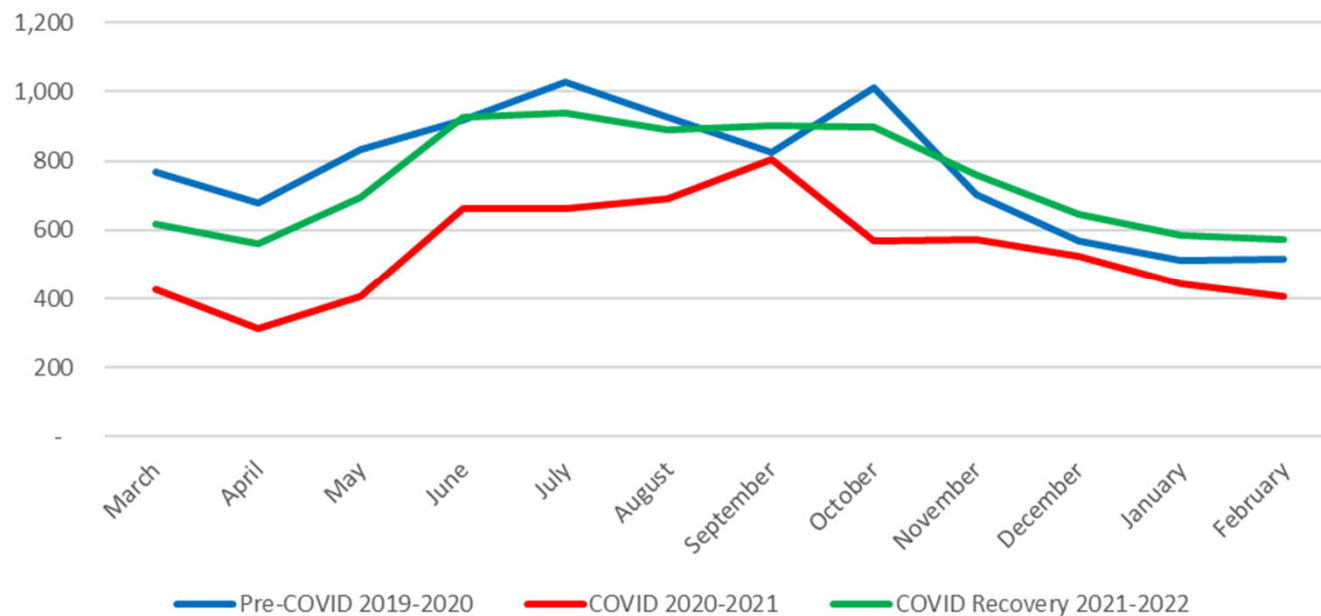
“Pessimistic” Forecast

Recover 93% of operations within 3 years

- Logic same as “optimistic” except the recovery rate is divided by 3
Note: March and April 2021 treated special, then follows normal math
- If operations during COVID were above previous year, this is retained constant every year

Commercial COVID-19 Recovery

Optimistic Commercial Operations Recovery Forecast



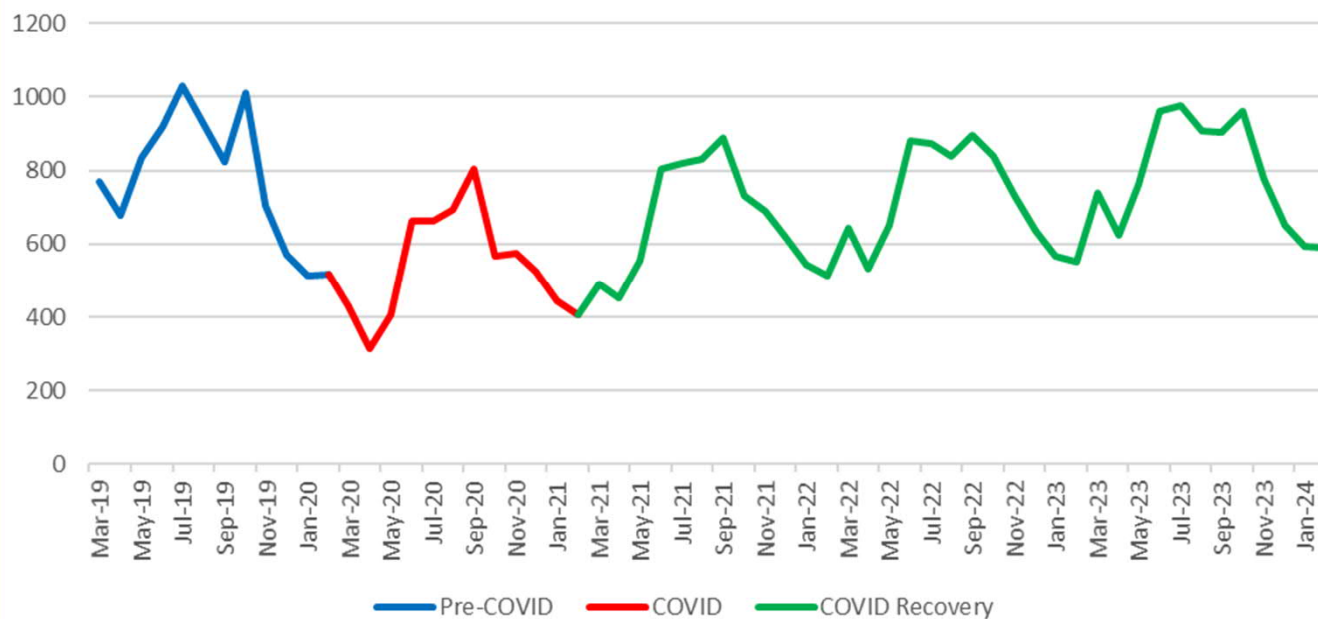
“Optimistic” Forecast

Recover 97% of operations within 1 year

- Logic same as GA “optimistic” recovery
- Ultimate Air restores service in April 2021

Commercial COVID-19 Recovery

Pessimistic Commercial Operations Recovery Forecast



“Pessimistic” Forecast

Recover 98% of operations within 3 years

- Logic same as GA “pessimistic” recovery
- Ultimate Air restores service in April 2021

Commercial & GA Operations Forecast

Assumptions

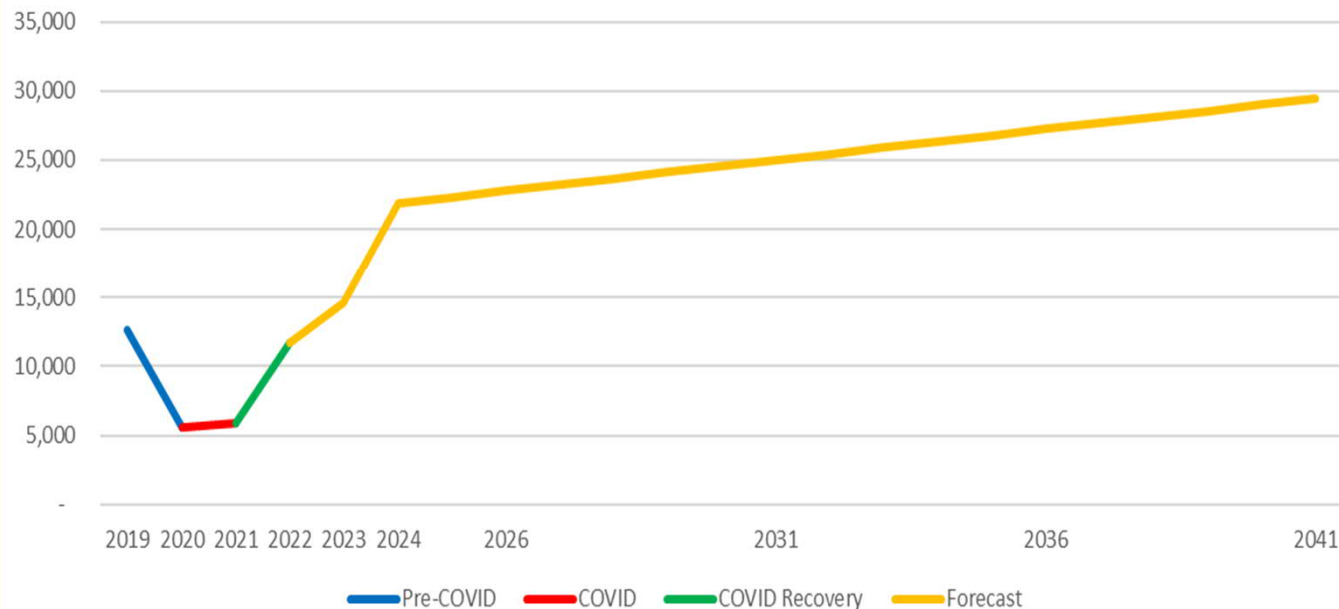
- Commercial and GA operations experience “optimistic” recovery
- Commercial operations forecast based on employment econometrics
- GA operations forecast based on FAA Aerospace Forecast 2020-2040
- Military operations forecast remains constant from COVID-19 recovery forecast (*not shown*)
- Ultimate Air restores pre-COVID commercial service in April 2021, adds new mid-day service to Cincinnati in April 2023, and adds new service to an unnamed Midwest Airport in April 2024

Year	Commercial	GA	Military	Total Operations
2020	7,283	24,333	363	31,979
2021	8,046	27,285	366	35,698
2026	10,516	27,688	366	38,571
2031	10,793	28,097	366	39,256
2036	11,019	28,512	366	39,897
2041	11,203	28,933	366	40,503

127% growth 2020-2041

Enplanement COVID-19 Recovery & Forecast

Enplanement COVID Recovery & Forecast



Assumptions

- Ultimate Air restores pre-COVID commercial service in April 2021
- Ultimate Air adds new mid-day service to Cincinnati in April 2023
- Ultimate Air adds new service to an unnamed Midwest Airport in April 2024

FACILITY REQUIREMENTS

Airport Reference Code (ARC)

- System used by the FAA to classify airports
- Based on size and approach speed of critical aircraft
- Critical Aircraft
 - Aircraft or grouping of aircraft that operate > 500 times/year
- Dictates dimensional requirements of the airfield
- 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

Current Critical Aircraft



Cessna Citation XL (C-II)



Learjet 35/36 (D-I)

2021 ALP
Update

D-II ARC

Future Critical Aircraft

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			

2021 ALP
Update

D-III ARC



Based on forecast that ADG III operations will continue its upward trend and rise above 500 in the future.

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.

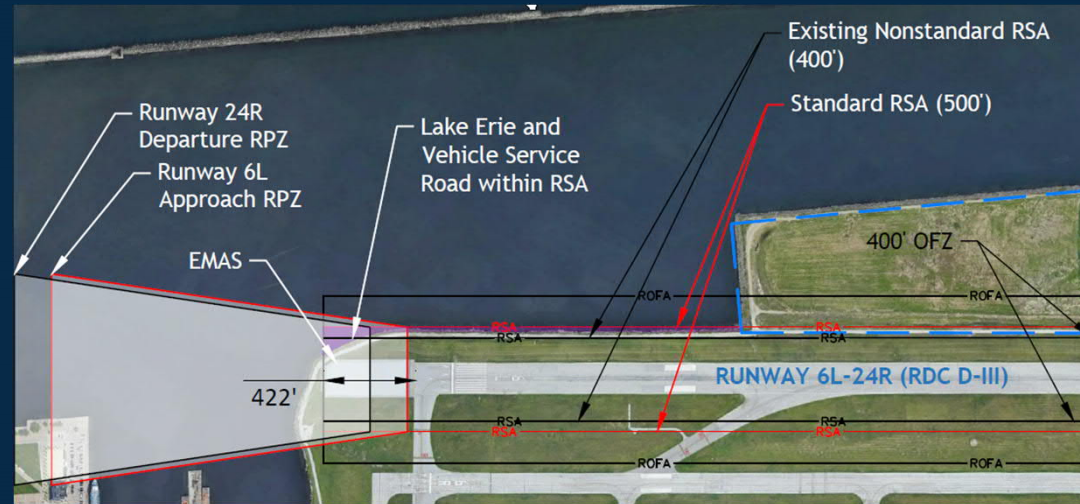


Runway Safety Areas

Runway 6R-24L



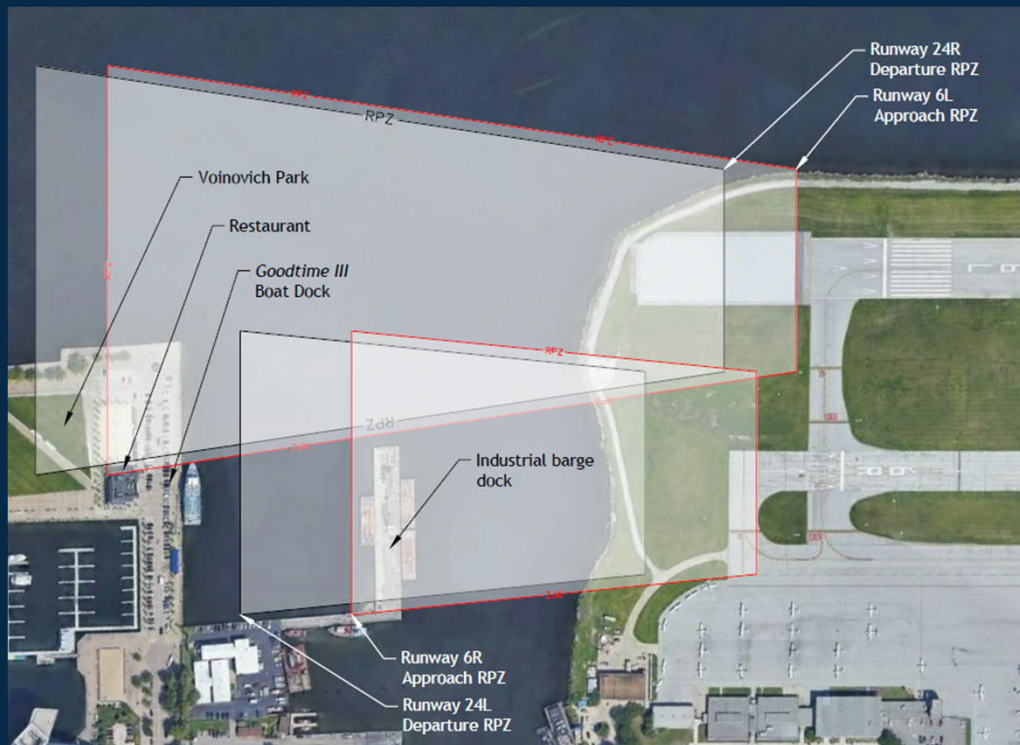
Runway 6L/24R



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

Runway Protection Zones

Runways 6L & 6R



Runways 24L & 24R



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'



- RSA 6L-24R moving from 400' width to D-III standard 500' width
- Insufficient separation between Runway 6R-24L and Taxiway G

Airfield Capacity

- Runway 6R-24L has been classified as an 'additional' runway as opposed to a 'secondary' runway
 - Ineligible for federal funding
- 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

Aircraft Storage Evaluation

- Itinerant apron space is utilized for visiting aircraft, as opposed to apron space used for long-term parking of based aircraft
- The apron space is anticipated to be adequate through the forecast period
- Hangar space, however, has an increasing demand



Support Facilities

- Aircraft Rescue and Fire Fighting (ARFF) Facility
 - Location, size, facilities adequate
- Maintenance Buildings
 - Adequately sized
 - Lacking certain facilities
 - Insufficient covered storage space for ground service equipment
- Fueling Facilities
 - Location, capacity, conditions adequate
- Air Traffic Control Tower
 - Location, height, conditions adequate. No line-of-sight issues
- Deicing Facilities
 - Desire for dedicated deicing area



Facility Requirements Overview

Airfield

- Consider removing proposed outboard runway from Future ALP
- Reclassify, if operations warrant, Runway 6L-24R from RDC D-II to D-III in the planning period
- Construct standard ROFA for Runway 6L-24R
- Consider paved shoulders for Runway 6L-24R
- Consider paved taxiway shoulders
- Address RSA beyond Runway 6R
- Consider standard blast pads for Runway 24R, 24L, and 6R
- Explore regaining 100' of runway length for Runway 6L operation
- Correct non-standard separation between Runway 6R-24L and Taxiway 'G' to meet ADG Group II separation standards
- Correct non-standard direct access from apron to Runway 6R-24L
- Correct nonstandard fillet geometry on Taxiways C, D, E, F, and H
- Consider relocating the existing ASOS
- Prioritize and address airfield pavements via rehabilitation/reconstruction

Support Facilities

- Expand box hangar/corporate hangar space where available
- Consider developing additional T-hangar space
- Establish designated deicing space on Terminal Apron
- Consider expanding covered storage area for maintenance/snow removal equipment
- Consider reevaluating siting of new ARFF facility

Next Steps



- Forecast Approval
- Alternatives Development
- Next Project Advisory Committee Meeting – Late July 2021
- ALP Set Update
- Final Public Meeting – Late September 2021

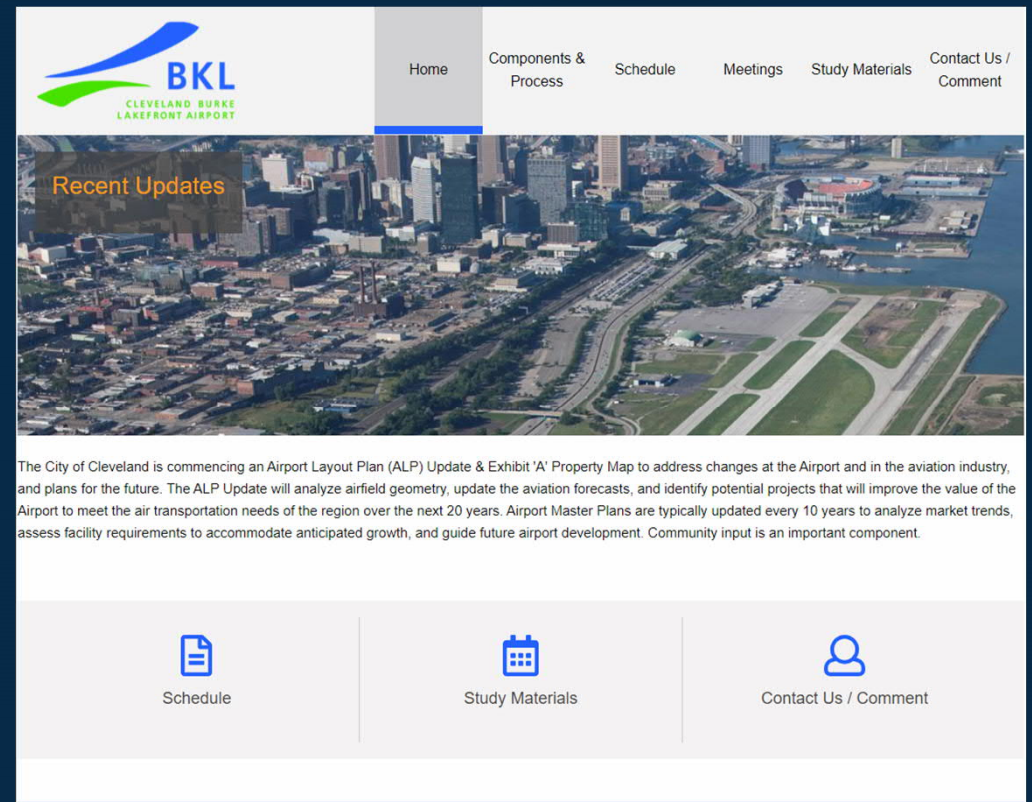
Study Website

Serves as a central hub and repository to provide information about BKL and the project, including public meetings and reports.

www.bkl-alpupdate.com

COMMENT FORMS ONLINE!

www.bkl-alpupdate.com



Questions or Comments?



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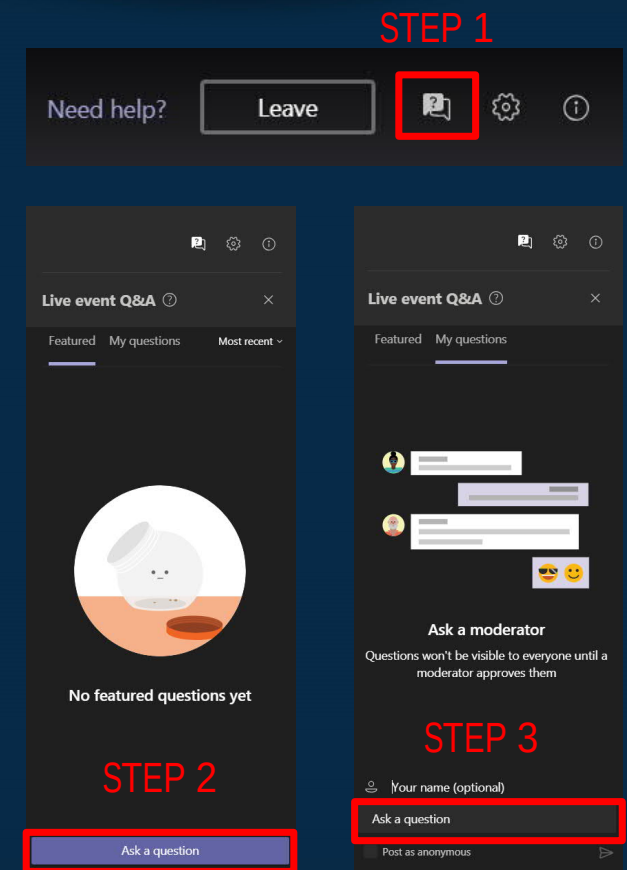
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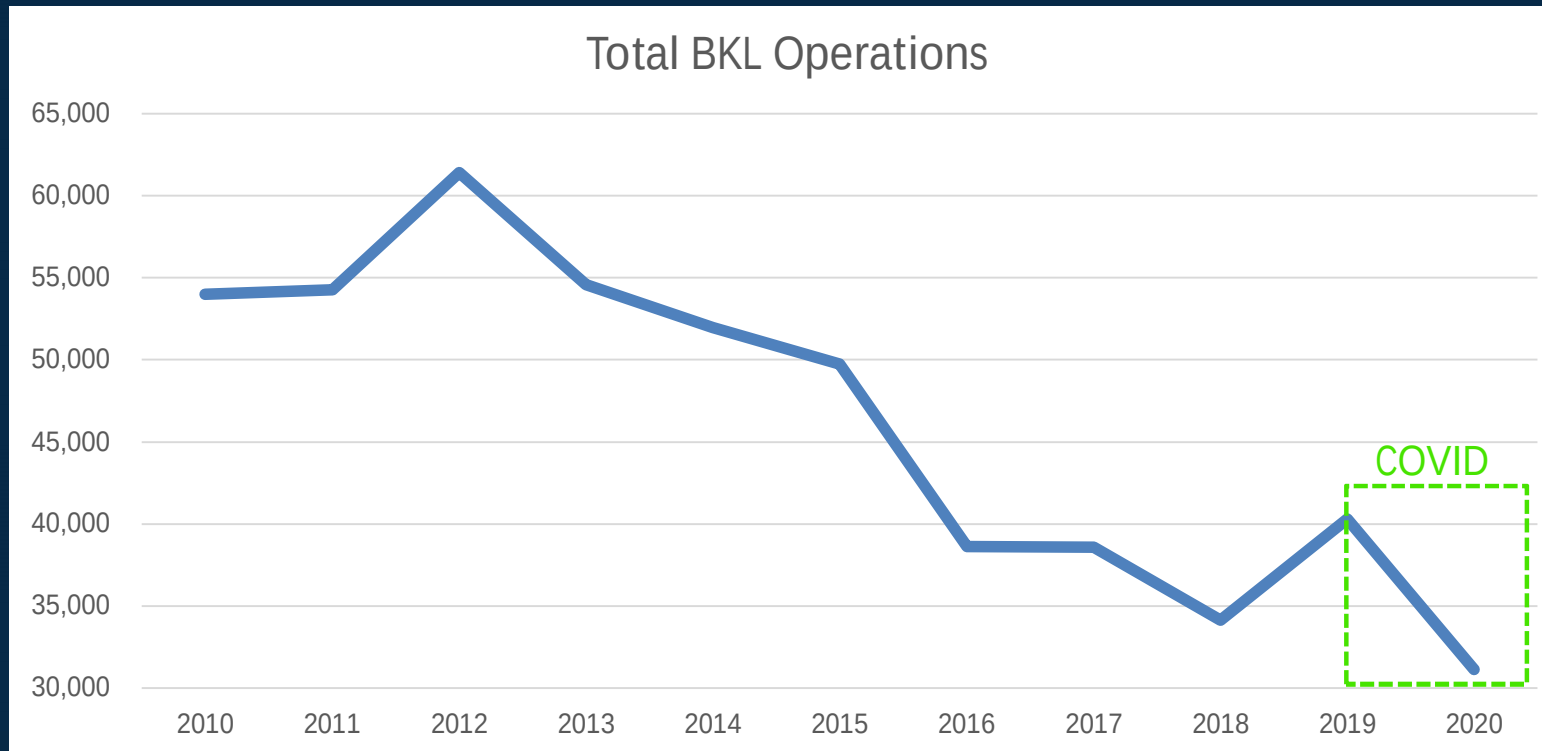
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Responsibly Improving the World We Live In

Historical Operations



2010 – 2015
54,330 avg. operations

2016 – 2019
37,925 avg. operations

2020 COVID-19
31,107 operations