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Chapter 7 – ALP Narrative

The Cincinnati/Northern Kentucky International Airport (CVG) is located approximately 8 ½ miles southwest of the central business district of Cincinnati, Ohio in unincorporated Boone County, Kentucky. The Airport’s approximately 7,000 acres of land is located near the City of Hebron, Kentucky within the Ohio River Valley, in the upland South region of the United States. The airport is situated south of I-275, just west of the I-75/I-275 interchange.

CVG’s previous 2025 Master Plan Update, completed in 2007, was based upon sound planning principles, but the economic and market conditions upon which it was based have changed dramatically necessitating a new planning approach.

Specifically, CVG’s role has also shifted considerably – from a major hub for connecting domestic and international passengers to an airport serving primarily local (origin/destination or O&D) traffic, and competing for that traffic with other airports in the region. As such, the Kenton County Airport Board (KCAB) recognized that a more strategic approach was needed in this Plan, to evaluate how to navigate the uncertainty in the market while maintaining good stewardship of the airport and a high level of customer service.

The 2035 Master Plan informs Airport decision-making to address business and facility issues arising in the near term from reduction in air service levels at the airport and transformation to primarily local passengers, and in the long term from the surplus of aging facilities and the need to realign the airport physical plant to match projected needs.

The various elements of the 2035 Master Plan are detailed in a graphic depiction of the facilities required to meet the forecast demand during the planning period (2016 through 2035). These drawings are combined to form the Airport Layout Plan (ALP) set and are summarized in the Airport Layout Plan drawing, which is reviewed and approved by the airport sponsor and the FAA. The ALP has been developed in accordance with FAA Advisory Circular Airport Design 150/5300-13A, and the current FAA southern region guidelines.

The complete ALP set includes the following:

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7.1. AIRPORT LAYOUT PLAN (EXISTING CONDITIONS)

The Existing ALP is a drawing depicting the existing airport facilities. The drawing includes required facility identifications, description labels, imaginary surfaces, runway protection zones (RPZ), Runway Safety Areas (RSA) and basic airport dimensions.

The existing airport reference code (ARC) for CVG is D-V. CVG airfield facilities meet, and in some cases exceed, FAA standards to accommodate all of the aircraft that operate at the airport in 2011, up to and including the critical design aircraft, the B-747-400.

The CVG airfield has three north/south runways: 18L-36R, 18C-36C, and 18R-36L, all of which can accommodate air carrier, cargo and general aviation aircraft. In addition, Runway 9-27 serves as the crosswind (east/west) runway and is also capable of serving all aircraft types that utilize CVG. Runways 18C-36C and 9-27 are the only intersecting runways on the airfield. The existing dimensions associated with each runway are outlined below:

- Runway 9-27 – 12,000’ x 150’
- Runway 18L-36R – 10,000’ x 150’
- Runway 18C-36C – 11,000’ x 150’
- Runway 18R-36L – 8,000’ x 150’

The CVG airfield is served by an intricate system of taxiways, most of which are 75 feet wide (Group V) and are designed to provide efficient access to all areas of the Airport. Portions of the taxiway system are greater than 75 feet wide to accommodate Very Large Aircraft (Group VI) on designated areas of the airfield.

Each runway is served by at least one parallel taxiway. High-speed exits are provided for aircraft landing on Runways 9, 18L, 18R, 36L and 36R.
In addition to the above-mentioned taxiways, several on-apron taxilanes provide circulation and guidance in and around the apron areas.

Several facilities on the Airport are designated “to be removed” due to their age and/or proposed new facilities in their existing locations. These facilities are shown within the Existing Airport Layout Plan.

7.2. AIRPORT LAYOUT PLAN (FUTURE CONDITIONS)

The CVG ALP (Future Conditions) depicts the existing and future airport facilities. The drawing includes required facility identifications, description labels, imaginary surfaces, RPZs and RSAs. The future development depicted on the ALP drawing is that development required to meet the 2035 aviation demand forecast. Ultimate development, depicted separately on the ALP, is shown for land use compatibility purposes for post-2035 improvements.

Future and ultimate airfield development carried over from the previously approved ALP includes:

- Taxiway “M” extension to the approach end of Runway 9: Taxiway “M” would be widened and upgraded to meet FAA standards for the very large aircraft being introduced into DHL’s fleet.
- Extension of the aircraft de-ice pad between Taxiway “J” and Taxiway “K”: Enhance de-ice capacity on the west end of the airfield
- Extension of Taxiway “C” to the approach end of Runway 36C: Extension to Taxiway “C” serve aviation-related development in the south airfield area
- Extension of Taxiway “E” to the approach end of Runway 36C: Extension to Taxiway “E” serve aviation-related development in the south airfield area
- Extension of Taxiway “K” to Taxiway “S”: Improves access to the approach end of Runway 27 for DHL aircraft
- The addition of a high speed exit off of Runway 18L-36R, between existing Taxiway “T6” and “T7”: To be installed as needed after a high-speed exit location study is conducted
- Ultimate east/west runway southwest of Runway 9-27 and 18C-36C: Retained from the previous Master Plan to protect land use compatibility. Under the current forecast scenarios an additional runway would not be needed until beyond 2035
- Ultimate north/south runway east of Runway 18L-36R: Retained from the previous Master Plan to protect land use compatibility. Under the current forecast scenarios an additional runway would not be needed until beyond 2035
- Relocated Airport Surveillance Radar (ASR) to the west airfield area: When the FAA upgrades the ASR to an ASR-9, it should be relocated to the west airfield area to allow for future expansion of the general aviation and/or DHL developments
New future and ultimate airfield development not shown on the previously approved ALP includes:

- **Upgrade of Runway 9-27 to Group VI**: Runway 9-27 would be widened to 200 feet and upgraded to meet FAA standards for the very large aircraft being introduced into DHL’s fleet.

- **A new aircraft de-ice pad south of Taxiway “A”**: The de-ice pad in this location would allow for future aviation-related development north of Taxiway “A”, where vehicle access is currently provided.

- **Dual Group V South Access Taxiway’s southeast of the approach end of Runway 36C**: To provide two-way access to future south airfield development.

- **Extension of Taxiway “N” to Taxiway “T”**: To improve aircraft flow between DHL and the runways, Taxiway N will be extended from Taxiway “S” to Taxiway “T”.

- **The following note has been added to the general notes in the ALP set**: “Partial parallel taxiways located on the holding pads at each end of RWY 18L/36R do not meet design Group V separation standards. The parallel section of TWY T will be closed when a Group V aircraft enters the hold pad. CVG will pursue a LOA with ATCT staff that would close the partial parallel taxiway and parallel section of TWY T when a Group V aircraft enters the hold pad”.

- **The Localizer south of the approach end of Runway 36L has been relocated south of future Taxiway “M”, per FAA Order 6750.16D**: In order to accommodate a future extension of Taxiway “M” to the approach end of Runway 9, the future localizer located beyond the Runway 36L end is shown south of future Taxiway “M”.

- **A future localizer location beyond the approach end of RWY 27 has been added at 698’ east of RWY 27 threshold**.

- **Future 400’ by 220’ blast pads have been added to each of the eight (8) runway ends in order to meet D-V standards**.

- **A future Airport Technology Campus extends into the Runway 18L RPZ**: The following note has been added to the ALP set in order to ensure compliance with FAA restrictions on development within and RPZ - “Development in the portion of the Airport Technology Campus within the Runway 18L RPZ will be subject to land use restrictions in accordance with FAA Advisory Circular 150/5300-13A and current FAA guidance on Land Uses within a Runway Protection Zone. The FAA Office of Airports must evaluate and approve any land use not specifically allowed by the Advisory Circular. No development in this area shall negatively impact aviation. Heights of all buildings and structures must remain below the 62.5 to 1 surface used by operators for one engine inoperative performance and planning.”

- **Future taxiway shoulders have been added in accordance with AC 150/5300-13A**.

In addition to the airfield improvements described above, additional access from I-275 to the area between Runways 18C-36C and 18R-36L has been depicted on the ALP drawing to provide improved access and promote growth for aviation related development in this portion of the airfield.
7.3. TECHNICAL DATA SHEET

The airport and runway data tables required by the FAA’s southern region are depicted in the Technical Data Sheet. The Technical Data Sheet depicts both existing and future dimensions and dimensional criteria. A majority of the data, including the types of instrument approaches to each runway end, is similar to that of the previously approved ALP. In addition, the non-standard conditions dated February of 2004 and February of 2008 were on the previously-approved ALP.

The major changes since the previous update include:

- Future changes in Runway 9-27 critical aircraft from a B-747-800 to a B-747-8F: This change result in future Group VI dimensional criteria from Runway 9-27
- Updated survey data to reflect accurate elevations associated with the runway ends and runway centerline profiles.

7.4. COMMERCIAL TERMINAL AREA DRAWING

This drawing is a 1” to 200’ scale depiction of the Central Terminal Area. This area is the primary focus of the 2035 Master Plan.

Redevelopment of the terminal area landside will be the focus of many near term projects to increase parking capacity from 7,431 spaces to 12,150 spaces and improve customer service. Prior to 2015, Terminals 1 and 2 will be demolished. The Terminal 1 Garage will be demolished early in the planning period and inbound terminal roadways will be realigned to enable development of a close-in Intermodal CONRAC (Consolidated Rental Car) Facility, which would include rental car customer service counters, rental car pick-up and drop off, and an area in which vehicles could be serviced between rentals. Approximately 1,650 public hourly parking spaces and a TANK bus stop will also be incorporated into the facility. The cell phone lot will be relocated and nearly doubled in size. Vehicle access to the ground transportation center (GTC) on the west side of Terminal 3 will be reconfigured and access control updated to improve operational efficiency.

In the 2020 timeframe, the outbound terminal roadway will be realigned to the north to allow expansion of Garage 3 to add 3,150 more spaces. Garage expansion will include a new entry plaza, up and down helices, and reconfiguration of the exit plaza. The realignment improves traffic flow by eliminating multiple merges and allows enough space to support an additional parking expansion beyond 2035.

Condition assessments and cost of ownership analyses found that significant investments will be needed in Concourses A and B in approximately 2025 and 2030, respectively. Therefore, alternatives evaluated replacement or renovation of those facilities in those timeframes. Until then, airside facilities can continue to serve passenger needs. If facility conditions warrant, the planning and design of a new Concourse A will begin at the end of the Near Term (2016 – 2025) with construction to follow. The new concourse will replace existing Concourses A and B, which would be demolished as the new concourse is completed.

In the longer term, as additional parking is needed, the Terminal 2 Garage would be demolished and replaced with a 7-story expansion from the Terminal 3 Garage, providing an additional 4,200 spaces. A conditioned walkway would tie the new garage to Terminal 3 for a more direct
route for passengers using the new Garage 2. Beyond 2035, if needed, this garage could be expanded to the west.

In keeping with the region’s plan for light rail to connect Northern Kentucky – and particularly CVG – to the Cincinnati central business district, an intermodal station location is planned in the ValuPark (long-term parking) lot. A light rail corridor alignment is maintained to connect the future regional rail line into the terminal area just west of future Garage 2.

7.5. EAST AREA DRAWING
This drawing is a 1” to 200’ scale depiction of the east service area and the areas immediately north of Donaldson Road.

The significant changes from the previous ALP depicted on this sheet include addition of a Future Airport Technology Campus-type land use north of Donaldson Road. A study was conducted early-on in the master plan process to determine the highest and best use for this area. The determination of the study was that a technology campus that benefited from the visibility associated with I-275 and the access available was the best use of this area. It would support private commercial and industrial development similar to that in the surrounding area, with a focus on technology-related businesses. The Campus could be extended to the east past employee parking. The extent of this would be limited by clearances for the future north-south runway.

7.6. NORTHWEST AREA DRAWING
This drawing is a 1” to 200” scale drawing primarily centered on the West Service Area.

Redevelopment of the West Service Area, with some of the oldest infrastructure in the airport, will be accomplished in the Near Term. The area will continue to serve rental car maintenance centers and miscellaneous uses that make sense to be close to the terminal. A new multi-tenant cargo building would be constructed to replace the existing aging structure. Space is reserved for a second cargo building if needed. Redevelopment of utilities and roadways would support redevelopment for cargo, general aviation, corporate aviation, and other aviation-related development. A new convenience store and service station is proposed north of Donaldson Road. An alternate cell phone lot site could be used with consolidation of rental car maintenance facilities after the Intermodal CONRAC Facility opens.

Public remote parking (in the existing long term lot) will be expanded to the east and then to the west in two phases in the near term to add approximately 2,230 spaces for a total of 8,430 spaces. The second phase requires relocation of Loomis Road, and is anticipated to be under construction around 2018. In the northwest airfield, generally the area between runways, future development would be aviation-related businesses. Deicing pad locations have been sited to serve development, if needed.

7.7. SOUTH AREA DRAWING
This drawing is a 1” to 200’ scale drawing primarily centered on the DHL area.

The south airfield is dominated by DHL’s facility. Area has been reserved for DHL’s expansion to the north and south of their current site. Wendell Ford Boulevard would be extended to the south to tie into Aero Parkway (which has been constructed since the previous ALP approval),
with a spur to the west to serve Airport development in this area. Large tracts west of DHL and Wendell Ford Boulevard are envisioned to be developed by air cargo and aviation-related businesses.

Commercial development is envisioned on Airport property south of Aero Parkway. This would be comparable to development in the surrounding areas, which is a mix of warehouse, distribution and industrial offices. Utility infrastructure improvements are proposed to support that development.

7.8. AIRPORT AIRSPACE DRAWING (SHEET 1)
Title 14 CFR Part 77, Objects Affecting Navigable Airspace, defines this as a drawing depicting obstacle identification surfaces for the full extent of all airport development. While the obstacle penetrations identified in this drawing have not changed significantly from the previous ALP, there are several penetrations of the primary surface that are in need of grading in order to properly dispose of the obstruction itself.

7.9. AIRPORT AIRSPACE DRAWING (SHEET 2)
The Airport Airspace Drawing (Sheet 2) is a 1” to 2,000’ scale drawing that depicts the Part 77 obstacle identification surfaces to the extents of the Conical Surface. The drawing also provides a profile view of approach surface penetrations. Similar to the “Airport Airspace Drawing (Sheet 1)” there are several trees penetrating Part 77 surfaces. More specifically, a majority of these penetrations exist within the 50:1 approach surface of Runway 9 and Runway 27.

7.10. INNER PORTION OF THE APPROACH DRAWING 9/27
This drawing contains the plan and profile view of the inner portion of the approach surface to Runway 9-27 and a tabular listing of all surface penetrations. The drawing depicts the 50:1 approach surface and a 40:1 departure surface as Runway 9-27 is a precision instrument runway. In addition, all significant traverse way elevations and their associated approach surface clearances are depicted.

As indicated in the “Airport Airspace Drawing (Sheet 2) description, significant tree obstructions are identified off each runway end of Runway 9-27.

7.11. INNER PORTION OF THE APPROACH DRAWING 18R/36L
This drawing contains the plan and profile view of the inner portion of the approach surface to Runway 18R-36L and a tabular listing of all surface penetrations. The drawing depicts the 50:1 approach surface and a 40:1 departure surface as Runway 18R-36L is a precision instrument runway. In addition, all significant traverse way elevations and their associated approach surface clearances are depicted.

The area of primary concern is the approach end of Runway 18R where numerous trees penetrate both the approach and departure surfaces within the approach Runway Protection Zone (RPZ).

7.12. INNER PORTION OF THE APPROACH DRAWING 18C/36C
This drawing contains the plan and profile view of the inner portion of the approach surface to Runway 18C-36C and a tabular listing of all surface penetrations. The drawing depicts the 50:1...
approach surface and a 40:1 departure surface as Runway 18C-36C is a precision instrument runway. In addition, all significant traverse way elevations and their associated approach surface clearances are depicted.

No significant areas of object penetrations are were identified in the development of this drawing.

7.13. INNER PORTION OF THE APPROACH DRAWING 18L/36R
This drawing contains the plan and profile view of the inner portion of the approach surface to Runway 18L-36R and a tabular listing of all surface penetrations. The drawing depicts the 50:1 approach surface and a 40:1 departure surface as Runway 18L-36R is a precision instrument runway. In addition, all significant traverse way elevations and their associated approach surface clearances are depicted.

While no significant concentrations of trees have been identified as obstructions, several individual trees do penetrate the approach and departure surface at the approach end of Runway 18L. Mitigation recommendations are included in the obstruction table on the drawing.

7.14. LAND USE DRAWINGS
This drawing depicts the existing and future land uses within airport property. A majority of these land uses have already been described in detail earlier in this report. A few of the functional areas that have yet to be discussed are outlined here.

7.14.1. WEST AIRFIELD
The west airfield, southwest of Runway 18R-36L, will continue to be set aside for aviation reserve (needed to protect runway and taxiway clearance requirements) and aviation-related development. Aside from infrastructure improvements near the south end of Runway 18C-36C, there are no development projects identified for the west airfield.

7.14.2. EAST AIRFIELD
The area east of Runway 18L-36R will continue to be reserved for aviation-related and commercial development, compatible with other land uses in the area. Properties obtained for noise compatibility will be retained.

7.15. PROPERTY MAPS
This drawing depicts the airport property boundary, the various tracts of land that were acquired to develop the airport, as well as easements beyond airport property. This drawing is not a substitute for the Exhibit “A”; however, it was developed in close coordination with Kenton County Airport Board (KCAB) staff using their dynamic parcel database. This property map is essentially a snapshot in time as KCAB is continually updating their database as needs change over time.

The drawing depicts a total of approximately 7,000 acres of land used for airside, landside, non-aviation related revenue and noise compatibility purposes. The drawing also outlines several subdivisions that have been acquired and require detailed drawings to properly depict their boundaries. These details are provided on the sheet titled “Property Map Details”, which provides 1” to 300’ scale drawings of each subdivision to allow the reader the ability to discern details from individual parcels of land.
7.16. CONCLUSION
The ALP set depicts existing airport facilities and proposed developments as determined from the planners’ review of the aviation activity forecasts, facility requirements, and alternatives analysis. A more detailed description of each of these elements is provided in the 2035 Master Plan Update Report.

Once reviewed and approved by the FAA, KCAB will use the ALP as a guideline to ensure that development maintains airport design standards, safety requirements and is consistent with airport and community land use plans.

7.17. AIRPORT LAYOUT PLAN SET OF DRAWINGS
Airport layout plan drawings are shown at reduced scale on the following pages.