

## APPENDIX L – ELIMINATED ALTERNATIVES

This Appendix provides a summary of alternatives that were analyzed but removed from consideration.

### Runway 9-27

Based on the demands outlined in **Chapter 4**, the current length of the secondary GA Runway 9-27 (4,000 feet) is adequate for the vast majority of current and future general aviation service aircraft that operate on the runway; however, a challenge that the Board will encounter in the near term is keeping commercial operations continuing at LEX while Runway 4-22 undergoes maintenance and reconstruction. At the time of construction on Runway 4-22, Runway 9-27 may need to temporarily serve as the primary runway at the Airport. Runway 9-27 would be required to be lengthened and widened to overtake at least some of the commercial operations temporarily. Additionally, parallel Taxiway F would need to be widened if Runway 9-27 were to act as the primary runway. Due to Taxiway F's location in proximity to Runway 4-22 on the Runway 22 end, a runway extension on the 27 ends would require Taxiway F to have a "jug handle," illustrated in the following alternatives. Due to its location within the airport property, extensions to Runway 9-27 present multiple challenges, as listed below, which are described for each specific alternative under its respective section.

Alternative 1 through Alternative 5 depict extensions to Runway 9-27 that are necessary if it is to temporarily be the primary runway at LEX while Runway 4-22 is undergoing construction.

### Runway 9-27 Temporary Primary Runway Alternatives

#### Challenges Common to All Concept Alternatives

- ✈ At a runway-to-taxiway separation distance of 300', the runway object free area (ROFA) would encompass Taxiway F pavement. A Modification to Standards would be necessary.
- ✈ Existing air operations area (AOA) perimeter fence on the northside of the runway would be in the new ROFA and need to be relocated approximately 150' to the north.
- ✈ Gumbert Road relocation or tunneling required for extension on Runway 9 end. Would not meet the necessary runway-to-taxiway centerline requirement of 400'. A Modification to Standards would be necessary.
- ✈ Longer taxi time and distance for aircraft to and from the terminal apron.
- ✈ Aircraft parking would not be allowed on the north side of WestLEX aprons due to penetrating Part 77 Primary Surface.
- ✈ "Jug Handle" would require aircraft departing from Runway 27 to cross over the runway to utilize the full runway length for departure.

Impacts to existing NavAids during construction are listed in **Table L-1**. The impacts to these specific NavAids are consistent through all alternatives modifying Runway 9-27 to serve as temporary primary runway (Alternatives 1 through 5). Impacts are those occurring during the most disruptive construction phase.

**Table L-1**  
**Impacts to Navaids (Alternatives 1 through 5)**

Navaid	Runway 9-27 Lengthening	Runway 4-22 Reconstruction
Rwy 4 GS	None	Relocate
Rwy 4 PAPI	None	Relocate
Rwy 4 RVR	None	Inoperative
Rwy 4 LOC	None <sup>1</sup>	Inoperative
Rwy 4 MALSR	None <sup>1</sup>	Inoperative
Rwy 22 GS	None <sup>1</sup>	Relocate
Rwy 22 PAPI	None <sup>1</sup>	Adjust
Rwy 22 REIL	None <sup>1</sup>	Relocate
Rwy 22 LOC	None	Inoperative
Rwy 9 PAPI	Relocate	None
Rwy 9 REIL	Relocate	None
Rwy 27 PAPI	Relocate	Relocate
Rwy 27 REIL	Relocate	Relocate
DASR-II	None	TBD
Wind Cone	Relocate <sup>4</sup>	Relocate <sup>3</sup>

<sup>1</sup> Inoperative during construction inside critical area

<sup>2</sup> Airport-owned facility relocated to temporary runway

<sup>3</sup> Wind cone near Runway 22 PAPI

<sup>4</sup> Wind cone near Taxiway F6

<sup>5</sup> RVR could be relocated closer to GS, reducing Taxiway B offset distance from runway

#### **Alternative 1: Gumbert Road Relocation West**

Alternative 1 modifies and temporarily extends Runway 9-27, widening it by 12.5' on either side of the runway for a total width of 100'. It extends the runway 1,300' on the Runway 27 end and 1,300' on the Runway 9 end for a total length of 6,600'. Taxiway F would be widened to 50' and extended to a full parallel taxiway on the Runway 9 end. On the Runway 27 end, a "jug handle" would flip Taxiway F onto the other side of the runway for the entire 1,300' extension. As shown in Alternative 1, portions of Gumbert Road would need to be rerouted to stay out of the ROFA on the Runway 9 end. The declared distances for this alternative are listed in **Table L-2**.

**Table L-2**  
**Alternative 1 Declared Distances**

Declared Distance	Runway 9	Runway 27
TORA	6,485'	6,400'
TODA	6,485'	6,400'
ASDA	6,300'	6,600'
LDA	5,485'	6,460'

**Alternative 2: Gumbert Road Tunnel**

Alternative 2, similar to Alternative 3, widens Runway 9-27 to a total width of 100' and extends the Runway 1,300' on either end for a total length of 6,600'. This alternative also includes the "jug handle" extension and widening of Taxiway F. What makes this alternative different from Alternative 3 is the modifications to Gumbert Road. Instead of rerouting Gumbert Road to avoid the runway safety area (RSA), Gumbert Road would be tunneled 10' beyond each end of the RSA just off of the Runway 9 end, resulting in a 520' tunnel. While a tunnel and related infrastructure costs would be significantly higher than an at-grade road relocation, the tunnel would drastically improve travel times on Gumbert Road. A Modification to Standards may also be necessary to reroute this road through the runway protection zone (RPZ). The declared distances for this alternative are listed in **Table L-3**.

**Table L-3**  
**Alternative 2 Declared Distances**

Declared Distance	Runway 9	Runway 27
TORA	6,485'	6,400'
TODA	6,485'	6,400'
ASDA	6,300'	6,600'
LDA	5,485'	6,460'

**Alternative 3: Gumbert Road Tunnel Under Runway 9 with Runway 9 EMAS**

Alternative 3 widens Runway 9-27 to a total width of 100'. It extends the runway by 700' on the Runway 27 end and 1,900' on the Runway 9 end. Additionally, a 600' engineered material arresting system (EMAS) bed is installed on the extended Runway 9 end. The purpose of the EMAS bed is to allow the RSA to be shorted beyond the runway end and within airport property. The runway extensions are the only major difference between this alternative and Alternative 4. With the changes in runway extensions compared to Alternative 4, the proposed Gumbert Road tunnel would be approximately 500' down the Runway 9 displaced threshold. Also, like Alternative 4, the tunnel and related infrastructure costs would be significantly higher than an at-grade road relocation, and the tunnel would drastically improve travel times on Gumbert Road. A Modification to Standards may also be necessary to reroute this road through the RPZ. The declared distances for this alternative are listed in **Table L-4**.

**Table L-4**  
**Alternative 3 Declared Distances**

Declared Distance	Runway 9	Runway 27
TORA	6,600'	5,995'
TODA	6,600'	5,995'
ASDA	6,600'	6,600'
LDA	5,180'	6,600'

**Alternative 4: Gumbert Road Tunnel Under Runway 27 with Runway 9 EMAS**

Alternative 4 includes extending the runway by 700' on the Runway 27 end and by 1,900' on the Runway 9 end, with a 600' EMAS bed installed on the extended Runway 9 end. Where this alternative differs from the previous alternative is the Gumbert Road relocation and tunnel. In this alternative, Gumbert Road would connect to Versailles Road at Old Clubhouse Lane and would include two different tunnels. The first tunnel would be 560' in length and go underneath the Taxiway F "jug handle", and the 27 end of Runway 9-27 would start and end 10' beyond the RSA on either side. The second tunnel would be 240' in length underneath Taxiway G and begin 10' beyond the taxiway safety area (TSA) on either side. It is noted that the relocated Gumbert Road would travel through the AOA, creating security issues and conflicts with airport access roads. The declared distances for this alternative are listed in **Table L-5**.

**Table L-5**  
**Alternative 4 Declared Distances**

Declared Distance	Runway 9	Runway 27
TORA	6,600'	5,995'
TODA	6,600'	5,995'
ASDA	6,600'	6,600'
LDA	5,180'	6,600'

**Alternative 5: Gumbert Road Relocation South with Runway 9 EMAS**

Alternative 5 includes the same runway and taxiway modifications as the previous two alternatives; however, the difference lies again in the relocation of Gumbert Road. Rather than one or multiple tunnels near Runway 9-27, this alternative relocates Gumbert Road to connect to Parkers Mill Road near the end of Runway 4. Extending Gumbert Road south of Runway 9-27 would dead-end at some point west of WestLEX, possibly at ATCT Candidate Site E (**Chapter 5**). North of Runway 9-27, Gumbert Road would change to an access road for the aircraft rescue and firefighting (ARFF) training facility only. It is noted that vehicles going to WestLEX would share the road with airport vehicles, refuelers, and equipment accessing the construction staging area. The declared distances for this alternative are listed in **Table L-6**.

**Table L-6**  
**Alternative 5 Declared Distances**

Declared Distance	Runway 9	Runway 27
TORA	6,600'	5,995'
TODA	6,600'	5,995'
ASDA	6,600'	6,600'
LDA	5,180'	6,600'

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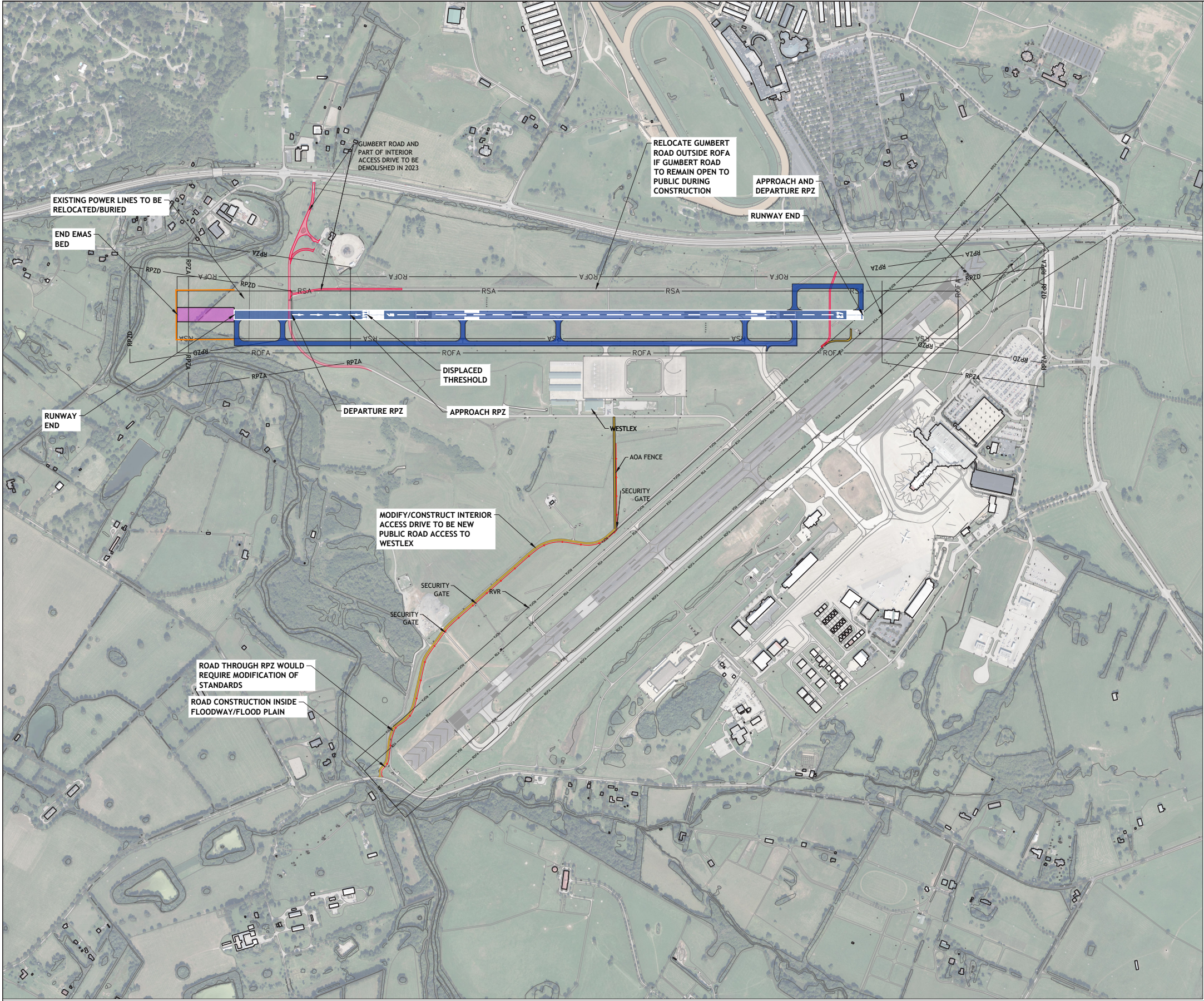





















GRAPHIC SCALE (FEET)  
0 250 500 1000


**PHASING LEGEND**

-  GUMBERT/PERIMETER ROAD REROUTING
-  RUNWAY 9-27 EXTENSION AND WIDENING
-  TAXIWAY F WIDENING
-  ROADWAY DEMOLITION
-  RUNWAY EMAS BED



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SUB:

Designed By:	Drawn By:	Checked By:
XX	XX	XX
Issue Date:	Project No:	Scale:
DATE	PROJECT	AS SHOWN

REV	BY	DESCRIPTION	DATE

PROJECT:

BLUEGRASS AIRPORT AIRPORT  
MASTER PLAN STUDY - 2023

TITLE:

RUNWAY 9-27 CONCEPT  
ALTERNATIVE NO. 5

CERTIFICATION:

N/A

DRAWING NO.

5 OF 5