

## ***Development Program***

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### ***Introduction***

The airfield and landside facility requirements necessary to satisfy the forecast aviation demands for Jefferson County Airport have been placed into three phases: short-range (1992), intermediate-range (1997), and long-range (2007). These facility requirements are illustrated graphically by time period on the phasing plan and cost estimates presented on the following pages. The time periods in which specific projects are listed in this Master Plan are not intended to dictate when those projects will be developed. The development of specific projects will be dictated by the demand for those particular airport facilities.

### ***Cost Estimates***

Cost estimates have been categorized by: the total cost for each facility requirement; that portion of the total cost eligible for participation by the Federal Aviation Administration under the Airport Improvement Program (AIP) or similar program; and that portion to be borne by the community, the airport or related entity. The local share can include additional sources such as regional commissions and organizations, and other local organizations and units of government.

The percentage of costs borne by each of these agencies is subject to change depending upon their appropriate funding legislation and policy at the time of construction. The relationship between local and anticipated federal funding as shown in this document is based on current FAA participation of ninety percent (90%) of the total project cost. However, before detailed planning on a particular project is developed, FAA funding structures and requirements should be identified and determined to reflect the current funding policies. It may be necessary for Jefferson County Airport to fund a *greater* share of the Development Program costs than is shown in Table 20 - Table 23, if federal funding levels are reduced. All project cost estimates presented in this report are based on 1987 costs.

## **Phasing Plan**

The following illustrations and cost estimates indicate the suggested phasing for projects during the short-, intermediate- and long-range planning periods. These are suggested schedules and variance from them may be necessary, especially during the latter time periods. Attention has been given the first five-years as being the most critical and the scheduled projects outlined in that timeframe should be adhered to as much as possible and feasible. The demand for certain facilities, especially in the latter timeframe, and the economic feasibility of their development are to be the prime factors influencing the timing of individual project construction. Care must be taken to provide for adequate lead time for detailed planning and construction of facilities in order to meet aviation demands. It is also important to minimize the disruptive scheduling where a portion of the facility may become inoperative due to construction and to prevent extra costs resulting from improper project scheduling. All land acquisition and clear zone easements have been scheduled for the short-range time period. This is to protect the airport's ability to implement the plan and to eliminate long term uncertainty on the part of the property owner.

The Development Plan for Jefferson County Airport is based on two ultimate development scenarios. The following graphic illustrations and development project lists represent a potential phasing program or sequence for the development of Jefferson County Airport, allowing conditions to be assessed, demands to be evaluated and decisions to be made based on various options and prevailing fiscal and physical considerations in the future. The first two phases, during the 0-5 year timeframe and the 5-10 year timeframe, are the same whether ultimate development Scenario A or Scenario B is followed. During the 10-20 year timeframe, or as demand dictates, a decision will be made to follow development Scenario A, the development of the existing secondary parallel runway to 7,000 feet in length, or Scenario B, the abandoning of existing Runway 11R/29L and the construction of a new parallel runway. Each phase as presented herein represents a complete activity in itself, but each phase also becomes an element of the overall development scheme. Each phase can be commenced and completed without sacrificing the integrity of the overall development program as well as becoming a step toward the succeeding phase.

It should be noted that Scenario B calls for the development of the new Runway 11R/29L to a length of 5,000 feet initially during Phase III development and subsequently lengthened to its ultimate length of 7,000 feet later in Phase III development. One purpose for the initial development of 5,000 feet was to avoid the relocation of State Highway 128, although the elevation of the highway will be lowered somewhat to meet approach slope criteria. Because of clear zone requirements, approach slope criteria and the extensive amount of earth embankment required for the development of the new Runway 11R/29L on its

southeast end, the initial development of the northwest 5,000 feet of the new runway and the relocation of Highway 128 may result in a less expensive and more practical first step in the development of a new secondary parallel runway at Jefferson County Airport. These questions can best be addressed during design engineering for this runway facility.

### **Summary**

As presented in the accompanying table, the Development Plan cost estimates for the twenty-year planning period, not including maintenance and operation expenses, amount to approximately \$36,692,000 in Scenario A, and \$66,521,000 in Scenario B. Earthwork represents the majority of the expense in the development of the relocated Runway 11R/29L, and since the earthwork expense is dependant upon detailed engineering involving soils analysis, slope analysis and cut and fill calculations, the above referenced \$66,521,000 cost represents a "maximum cost" view of possible development expenditures involved with Scenario B. A "least cost" view of possible development cost involved with Scenario B would reduce this amount by approximately \$12,632,000, for a total cost of \$53,889,000. The least cost view is based upon balanced cut and fill requirements, thus minimizing earthwork costs. This document will reference the more expensive cost figure, although it should be realized that final engineering will greatly impact development expense. The eligible FAA share is approximately \$20,858,000 in Scenario A and \$47,186,000 in Scenario B, with the local share being approximately \$15,835,000 and \$19,335,000, respectively, for Scenario A and Scenario B. Of the local share, approximately \$9,630,000 is projected to be spent on projects (e.g., hangars), which will generate revenue and which will be privately financed or could be financed using revenue bonds. It must be remebered that even though it may be eligible for FAA funding, it is not guaranteed and the FAA priority system must be taken into account. Some of the recommended projects are ineligible for federal funds, while on others the full 90% federal funding is not anticipated. This is the reason that the overall federal and local share does not follow the anticipated ninety/ten ratio.

Of the local share, approximately \$6,244,000 are required during the short-term period, \$5,214,000 during the intermediate-term period with the remaining \$4,377,000 in Scenario A and \$7,877,000 in Scenario B during the long-term period. In addition, maintenance and operation expenses, which have historically been provided by revenue generated at the airport, will increase as the airport develops and more airport facilities are completed. Revenues generated by these facilities should also increase. It is a worthy and feasible goal that operational expenses will continue to be exceeded by operational revenues at Jefferson County Airport and that those excess funds be used to help finance needed capital improvements at the airport. This relationship should, however, be monitored

closely so that future imbalances can be anticipated and provided for in the budgeting and capital improvements process.

Table 20  
**PHASE I (0-5 YEARS) PROJECT COSTS SCENARIO A\*\* & SCENARIO B\*\***  
*Jefferson County Airport Master Plan*

Project Description	Phase	Total Costs	Recommended Financing Method	
			Local	Federal
A.1 Purchase 80 Acres for Construction of Future Runway 11R/29L (\$1.45/sf)	I	\$5,050,000.00	\$505,000.00	\$4,545,000.00
A.2 Acquire Clear Zone Easements for Future Runway 11R/29L	I	\$189,000.00	\$18,900.00	\$170,100.00
A.3 Extend (1,500') & Renovate Existing Runway 11R/29L	I	\$1,183,100.00	\$118,310.00	\$1,064,790.00
A.4 Expand West FBO Apron Area	I	\$1,106,000.00	\$110,600.00	\$995,400.00
A.5 Renovate and Expand Fire/Rescue Facility To Include Airport Management Office	I	\$345,000.00	\$345,000.00	
A.6 Renovate Runway 02/20 and Replace Underground Lighting Cable	I	\$679,000.00	\$67,900.00	\$611,100.00
A.7 Install Entrance Signage	I	\$14,000.00	\$14,000.00	
A.8 Install AWOS III	I	\$95,000.00	\$9,500.00	\$85,500.00
A.9 Extend and Pave West Corporate Taxiway and Remove Old County Hangar	I	\$295,000.00	\$29,500.00	\$265,500.00
A.10 Construct 9 10-Unit T-hangars and Apron*	I	\$2,484,000.00	\$2,484,000.00	
A.11 Construct East Apron	I	\$832,000.00	\$83,200.00	\$748,800.00
A.12 Construct 5 Executive Hangars and Apron*	I	\$1,804,000.00	\$1,804,000.00	
A.13 Relocate Fuel Farm	I	\$76,000.00	\$76,000.00	
A.14 Install Electronic Gates/Security Fencing at All Airfield Entrances	I	\$185,000.00	\$185,000.00	
A.15 Extend Storm Drain System From Existing T-hangar Area to Upper Church Lake	I	\$36,000.00	\$3,600.00	\$32,400.00
A.16 Construct East Taxiway for Corporate Hangar Area	I	\$444,000.00	\$44,400.00	\$399,600.00
A.17 Relocate City of Broomfield Water Tanks	I	\$3,450,000.00	\$345,000.00	\$3,105,000.00
<b>Sub-Total/Phase I</b>		<b>\$18,267,100.00</b>	<b>\$6,243,910.00</b>	<b>\$12,023,190.00</b>

\* Subject to Revenue Bond or Private Financing

\*\* Scenario A-Extend Existing Runway 11R/29L

Scenario B-Abandon Runway 11R/29L and Construct New Parallel Runway

\*\*\* All Costs Include a 20% Contingency and 15% For Engineering, Design and Inspection

**Table 21**  
**PHASE II (5-10 YEARS) PROJECT COSTS SCENARIO A\*\* & SCENARIO B\*\***  
*Jefferson County Airport Master Plan*

Project Description	Phase	Total Costs	Recommended Financing Method	
			Local	Federal
B.1 Construct Parallel Taxiway Between Existing Apron and Runway End 20	II	\$388,000.00	\$38,800.00	\$349,200.00
B.2 Construct Additional West Aircraft Parking Apron	II	\$1,880,000.00	\$188,000.00	\$1,692,000.00
B.3 Construct 3 10-Unit T-hangars and Apron*	II	\$822,000.00	\$822,000.00	
B.4 Extend Corporate Hangar Taxiway to East	II	\$92,000.00	\$9,200.00	\$82,800.00
B.5 Construct 2 Corporate Hangars and Apron*	II	\$769,000.00	\$769,000.00	
B.6 Install Utilities for Business Aviation Development	II	\$276,000.00	\$276,000.00	
B.7 Construct Connecting Taxiways-Business Center To Runways	II	\$358,000.00	\$35,800.00	\$322,200.00
B.8 Construct Business Terminal Apron	II	\$842,000.00	\$84,200.00	\$757,800.00
B.9 Construct Business Aviation Terminal	II	\$2,070,000.00	\$2,070,000.00	
B.10 Construct Business Aviation Terminal Auto Parking and Auto Entrance off Simms Street	II	\$477,000.00	\$477,000.00	
B.11 Construct Auto Parking East of ATC Tower	II	\$444,000.00	\$444,000.00	
<b>Sub-Total/Phase II</b>		<b>\$8,418,000.00</b>	<b>\$5,214,000.00</b>	<b>\$3,204,000.00</b>

\* Subject to Revenue Bond or Private Financing

\*\* Scenario A-Extend Existing Runway 11R/29L

Scenario B-Abandon Runway 11R/29L and Construct New Parallel Runway

\*\*\* All Costs Include a 20% Contingency and 15% For Engineering, Design and Inspection

Table 22  
**PHASE III (10-20 YEARS) PROJECT COSTS SCENARIO A \*\***  
*Jefferson County Airport Master Plan*

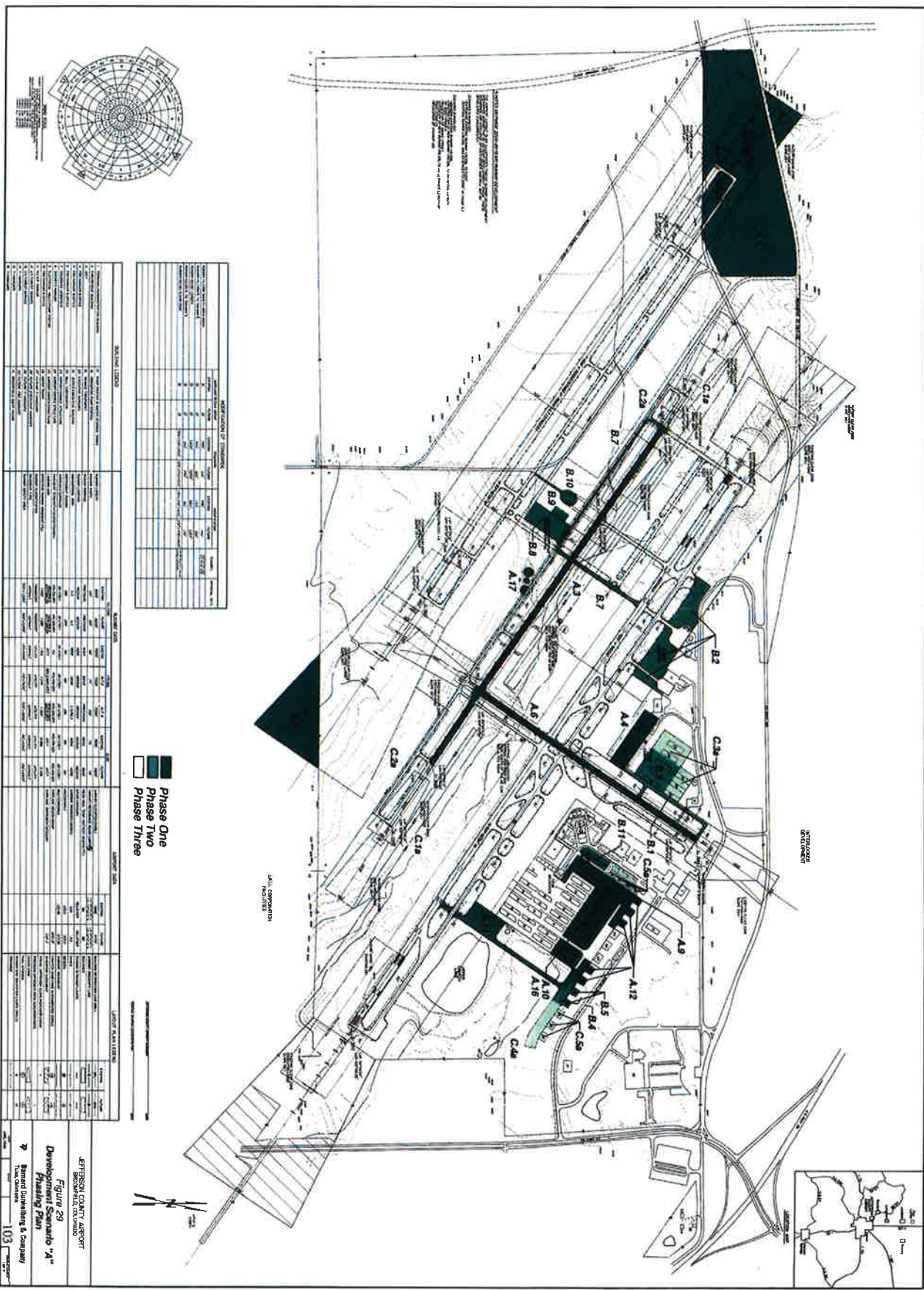
Project Description	Phase	Total Costs	Recommended Financing Method	
			Local	Federal
C.1a Extend and Widen Existing Runway 11R/29L to 7,000' by 75' and Light	IIIA	\$4,200,000.00	\$420,000.00	\$3,780,000.00
C.2a Construct and Light Parallel Taxiway for Runway 11R/29L	IIIA	\$1,528,000.00	\$152,800.00	\$1,375,200.00
C.3a Construct 5-10 Unit Hangars and Apron*	IIIA	\$1,681,000.00	\$1,681,000.00	
C.4a Extend Executive Hangar Taxiway to East	IIIA	\$138,000.00	\$13,800.00	\$124,200.00
C.5a Construct 7 Executive Hangars and Apron*	IIIA	\$2,070,000.00	\$2,070,000.00	
C.6a Install PAPI Runways 11R and 29L	IIIA	\$20,000.00	\$2,000.00	\$18,000.00
C.7a Install REILS Runways 11R and 29L	IIIA	\$18,000.00	\$1,800.00	\$16,200.00
C.8a Construct Taxiway Runway End 11R to Runway End 11L	IIIA	\$352,000.00	\$35,200.00	\$316,800.00
<b>Sub-Total/Phase IIIA</b>		<b>\$10,007,000.00</b>	<b>\$4,376,600.00</b>	<b>\$5,630,400.00</b>
<b>TOTALS (Scenario A)</b>		<b>\$36,692,100.00</b>	<b>\$15,834,510.00</b>	<b>\$20,857,590.00</b>

\* Subject to Revenue Bond or Private Financing

\*\* Scenario A-Extend Existing Runway 11R/29L

Scenario B-Abandon Runway 11R/29L and Construct New Parallel Runway

\*\*\* All Costs Include a 20% Contingency and 15% For Engineering, Design and Inspection



**Figure 29**  
**Development Scenario "A"**  
**Phasing Plan**  
 Prepared by: **Barnard Dunning & Company**  
 Tulsa, Oklahoma



Table 23  
**PHASE III (10-20 YEARS) PROJECT COSTS SCENARIO B \*\***  
*Jefferson County Airport Master Plan*

Project Description	Phase	Total Costs	Recommended Financing Method	
			Local	Federal
C.1b Relocate Simms Street	IIIB	\$831,000.00	\$83,100.00	\$747,900.00
C.2b Construct Entry Road From Highway 128 to Business Aviation Terminal	IIIB	\$310,000.00	\$310,000.00	
C.3b Relocate Highway 128	IIIB	\$925,000.00	\$92,500.00	\$832,500.00
C.4b Construct and Light New RW 11R/29L (5,000') ****	IIIB	\$14,819,000.00	\$1,481,900.00	\$13,337,100.00
C.5b Construct and Light Parallel TW - New Runway 11R/29L	IIIB	\$1,954,000.00	\$195,400.00	\$1,758,600.00
C.6b Expand Business Terminal Apron	IIIB	\$766,000.00	\$76,600.00	\$689,400.00
C.7b Expand Business Terminal Auto Parking	IIIB	\$265,000.00	\$265,000.00	
C.8b Construct 5-10 Unit T-Hangars and Apron*	IIIB	\$1,681,000.00	\$1,681,000.00	
C.9b Extend Executive Hangar Taxiway to East	IIIB	\$137,760.00	\$13,776.00	\$123,984.00
C.10b Construct 7 Executive Hangars and Apron*	IIIB	\$2,070,000.00	\$2,070,000.00	
C.11b Extend and Light New RW 11R/29L (7,000') *****	IIIB	\$13,975,000.00	\$1,397,500.00	\$12,577,500.00
C.12b Extend and Light Parallel TW for New RW 11R/29L	IIIB	\$1,801,000.00	\$180,100.00	\$1,620,900.00
C.13b Install ILS/MLS RW 11R/29L	IIIB	FAA FUNDED		
C.14b Install PAPI RW 11R and 29L	IIIB	\$20,000.00	\$2,000.00	\$18,000.00
C.15b Install REILS Runway 11R	IIIB	\$9,000.00	\$900.00	\$8,100.00
C.16b Construct Taxiway Between Business Aviation Apron and Runway End 11L	IIIB	\$272,000.00	\$27,200.00	\$244,800.00
Sub-Total/Phase IIIB		\$39,835,760.00	\$7,876,976.00	\$31,958,784.00
TOTALS (Scenario B)		\$66,520,860.00	\$19,334,886.00	\$47,185,974.00

\* Subject to Revenue Bond or Private Financing

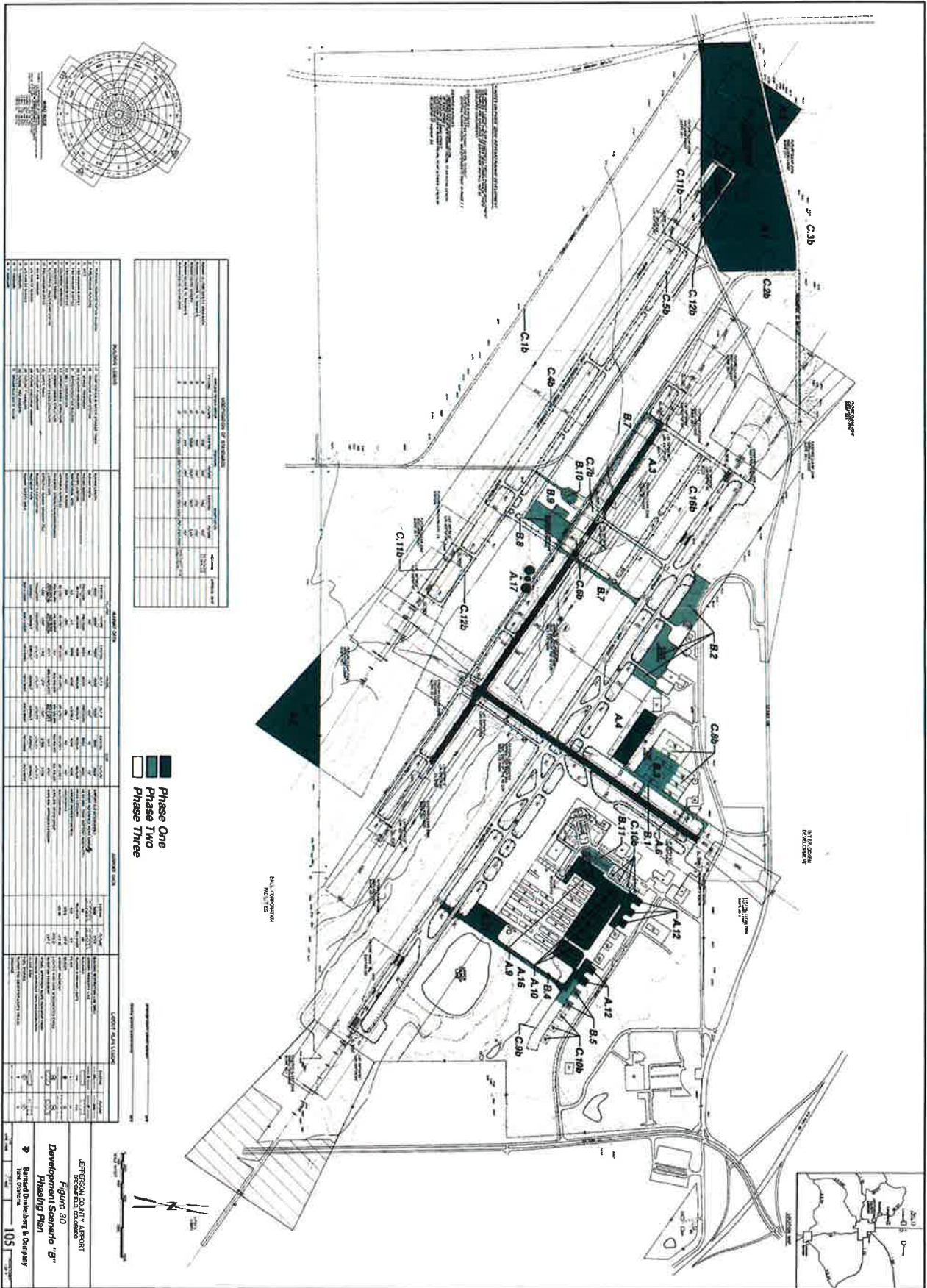
\*\* Scenario A-Extend Existing Runway 11R/29L

Scenario B-Abandon Runway 11R/29L and Construct New Parallel Runway

\*\*\* All Costs Include a 20% Contingency and 15% For Engineering, Design and Inspection

\*\*\*\* High Range Estimate-Dependant on Final Design (Low Range Estimate \$7,984,000)

\*\*\*\*\* High Range Estimate-Dependant on Final Design (Low Range Estimate \$8,077,812)



**DESCRIPTION OF FEATURES**

NO.	DESCRIPTION	PHASE	STATUS
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**PHASES**

PHASE	DESCRIPTION	STATUS
Phase One	...	...
Phase Two	...	...
Phase Three	...	...

JEFFERSON COUNTY AIRPORT  
 FORMAL AND CONCEPT  
 Figure 3D  
 Development Scenario "B"  
 Planning Plan  
 Baird Brunsberg & Company  
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