



Chapter Seven

Capital Improvement Program

INTRODUCTION

The Airport's Capital Improvement Program (ACIP) involves the compilation of a schedule of recommended capital development projects, as well as their associated probable costs, that are based on the findings of the demand forecast and facility requirements analyses. The ACIP for HFJ identifies the improvements necessary to accommodate the projected aviation demand throughout the 20-year planning period.

CAPITAL IMPROVEMENT PROGRAM PHASING

The capital improvement program for HFJ will be based on short (0-5 year), intermediate (6-10 year), and long-term (11-20 year) development requirements. The short term development phase ideally serves as an immediate action program which recognizes Federal funding capabilities. For this reason, the 0-5 year phase of development is given special attention in that projects are outlined by year due to the critical nature of the improvements and the necessary financial investments that accompany each improvement item.

The short-term improvement plan also plays a key role in formulating the ACIP submitted to MoDOT, Aviation Section, and the FAA indicating development priorities and development costs for the Airport. Aside from assisting with the development of the ACIP, the short-term implementation plan should allow for additional capital improvement items which contribute to the overall operational safety and efficiency of the facility. This includes pavement maintenance and rehabilitation as well as terminal area improvements.

The intermediate development plan consists of improvements that will affect the overall geometry and layout of the facility on the airfield and terminal area. Lastly, the long-range development phase is developed in an effort to identify the ultimate role of the Airport including a planning concept that will eventually accommodate the ultimate facility requirements.

PROJECT SCHEDULING

Decisions regarding project scheduling will evolve from numerous considerations involved with implementation of the ACIP. For instance, consideration must be given to the amount of time and effort that will be needed to acquire land and develop engineering and construction design documents in an effort to satisfy aviation demand. For this reason, the timing of particular capital development projects presented in this chapter are merely suggested planning schedules and may require some variance and reprioritizing, particularly during the 11-20

ACIP Phasing

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Project Scheduling

The timing of particular capital development projects presented in this chapter are merely suggested planning schedules and may require some variance and reprioritizing, particularly during the 11-20 year phase of airport development.

Cost Estimation

The ACIP cost estimates are based on the current dollar value (2009) without consideration being given to inflation in the latter development phases. As with project scheduling, financial considerations such as the availability and timing of Federal or state funding have the ability to impact the scheduling priority of certain improvements.

The ACIP cost estimates are intended to be utilized for planning purposes only and are recommended not to be considered an engineer's opinion of probable construction costs.

year phase of airport development. Demand for certain airfield or terminal area facilities and the accompanying economic feasibility are considered prime factors in determining the timing and construction of individual projects throughout the 20-year planning period.

MODOT CAPITAL IMPROVEMENT PROGRAM

The overall purpose of the ACIP is to provide a reasonable expectation of projected capital improvements that will be utilized by MoDOT for purposes of project prioritization and financial programming. Upon publication, the ACIP presented in this chapter, due to variances in past capital development priorities, will differ to some degree from the five-year ACIP worksheets currently maintained by MoDOT.

CAPITAL IMPROVEMENT PROGRAM COST ESTIMATES

The ACIP cost estimates are based on the current dollar value (2009) without consideration being given to inflation in the latter development phases. Facility development and construction costs are generated based on unit prices which correspond to the breadth and size of the particular capital improvement item. Likewise, the cost estimates for improvements take into consideration the unit costs as they relate to the southwest Missouri as well as the Barry, Lawrence and Newton tri-county area. As with project scheduling, financial considerations such as the availability and timing of Federal or state funding have the ability to impact the scheduling priority of certain improvements.

The ACIP cost estimates are presented by development phase within **Table 7.1** (Phase I ACIP Cost Summary) and **Table 7.2** (Phase II & Phase III ACIP Cost Summary). The 0-5 year planning period is categorized by year showing capital improvements for each respective year from 2009 to 2013. Each year of Phase I includes engineering, inspection, legal and administrative costs, which total 25 percent of the total cost for each year of the development period. Phases II and III of the ACIP include contingent costs added to the sum of the costs for the entire development phase.

The ACIP presented for airfield and terminal area facilities were derived from engineering cost estimates and engineering bid tabs taken from recent engineering projects similar to those recommended for HFJ. Absent an appraised value, costs associated with property acquisition are not included as part of the ACIP.

Lastly, the ACIP cost estimates are intended to be utilized for planning purposes only and are recommended not to be considered an engineer's opinion of probable construction costs.

Table 7.1
Phase I (0-5 Year) ACIP Cost Summary

Project Description	Projected Local City Share (5%)	Projected MoDOT/Fed. Share (95%)	Projected Total Cost (100%)
Year 1 (2009)			
1A Establish Category C/D IFP Minimums	n/a	n/a	n/a
2A Conduct Environmental Assessment (EA)	\$ 4,000	\$ 66,000	\$ 70,000
Year 1 Cost	\$ 4,000	\$ 66,000	\$ 70,000
Engineering Fees (25% of Cost)	\$ 1,000	\$ 17,000	\$ 18,000
Year 1 Total Cost	\$ 5,000	\$ 83,000	\$ 88,000
Year 2 (2010)			
3A Design and Construct T-Hangar Taxilanes	\$ 12,000	\$ 218,000	\$ 230,000
4A Construct 10-Unit T-Hangar (1)	\$ 23,000	\$ 427,000	\$ 450,000
Year 2 Cost	\$ 35,000	\$ 645,000	\$ 680,000
Engineering Fees (25% of Cost)	\$ 9,000	\$ 161,000	\$ 170,000
Year 2 Total Cost	\$ 44,000	\$ 806,000	\$ 850,000
Year 3 (2011)			
5A Acquire Tracts U-1 thru U-9 & U-14	Absent Appraised Value Costs are N/A		
6A Rehabilitate Access Road & Auto Parking	\$ 1,000	\$ 19,000	\$ 20,000
Year 3 Cost	\$ 1,000	\$ 19,000	\$ 20,000
Engineering Fees (25% of Cost)	\$ 1,000	\$ 4,000	\$ 5,000
Year 3 Total Cost	\$ 2,000	\$ 23,000	\$ 25,000
Year 4 (2012)			
7A Upgrade & Relocate AWOS-III*	\$ 30,000	\$ 270,000	\$ 300,000
8A Acquire Tracts U-10, U-11 & U-12	Absent Appraised Value Costs are N/A		
Year 4 Cost	\$ 30,000	\$ 270,000	\$ 300,000
Engineering Fees (25% of Cost)	\$ 8,000	\$ 67,000	\$ 75,000
Year 4 Total Cost	\$ 38,000	\$ 337,000	\$ 375,000
Year 5 (2013)			
9A Rehabilitate Runway 18-36 (5,000' x 75')	\$ 8,000	\$ 142,000	\$ 150,000
10A Rehabilitate North Apron	\$ 2,000	\$ 38,000	\$ 40,000
11A Construct Clear Span Hangars (3) & Apron	\$ 1,620,000	\$ 0.00	\$ 1,620,000
12A Displace Rwy 18 Threshold/Construct Twy	\$ 550,000	\$ 0.00	\$ 550,000
Year 5 Cost	\$ 2,180,000	\$ 180,000	\$ 2,360,000
Engineering Fees (25% of Cost)	\$ 545,000	\$ 45,000	\$ 590,000
Year 5 Total Cost	\$ 2,725,000	\$ 225,000	\$ 2,950,000
Total Phase I Capital Development Cost	\$ 2,814,000	\$ 1,474,000	\$ 4,288,000

Note: All costs are rounded to the nearest thousand for planning purposes.

Note: Cost projections are intended for planning purposes only.

(*) Missouri State Aviation Trust Fund. Funding share is 90% state and 10% local match.

Source: BWR.

Table 7.2
Phase II & Phase III ACIP Cost Summary

Project Description	Projected Local City Share (5%)	Projected MoDOT/ Fed. Share (95%)	Projected Total Cost (100%)
Phase II (6-10 Year) ACIP Costs			
1B Construct Runway 18-36 (6,001' x 100')	\$ 750,000	\$ 14,250,000	\$ 15,000,000
2B Construct Parallel Taxiway (6,001' x 35')	\$ 88,000	\$ 1,662,000	\$ 1,750,000
3B Install MALSR (Rwy 36)*	\$ 0.00	\$ 750,000	\$ 750,000
4B Realign/Improve FR 2025	\$ 4,000	\$ 76,000	\$ 80,000
5B Install Airfield Perimeter Fence	\$ 15,000	\$ 285,000	\$ 300,000
6B Reconstruct Aircraft Apron (16,800 sq. yd.)	\$ 41,000	\$ 769,000	\$ 810,000
7B Rehabilitate South Apron	\$ 2,000	\$ 38,000	\$ 40,000
8B Construct 10-Unit T-Hangar (1) & Taxilanes	\$ 33,000	\$ 617,000	\$ 650,000
9B Rehabilitate North T-Hangar Taxilanes	\$ 2,000	\$ 28,000	\$ 30,000
10B Construct Clear Span Hangar (1)	\$ 500,000	\$ 0.00	\$ 500,000
11B Reconstruct Access Road & Auto Parking	\$ 13,000	\$ 237,000	\$ 250,000
12B Acquire Tract U-13 (19 acres)	Absent Appraised Value Costs are N/A		
13B Update Airport Master Plan	\$ 10,000	\$ 190,000	\$ 200,000
14B Construct Aircraft/Vehicle Wash Rack	\$ 30,000	\$ 0.00	\$ 30,000
Phase II Development Cost	\$ 1,488,000	\$ 18,902,000	\$ 20,390,000
Engineering Fees (25% of Cost)	\$ 372,000	\$ 4,725,000	\$ 5,097,000
Total Phase II Development Cost	\$ 1,860,000	\$ 23,627,000	\$ 25,487,000
Phase III (11-20 Year) ACIP Costs			
1C Rehabilitate Runway 18-36	\$ 15,000	\$ 285,000	\$ 300,000
2C Rehabilitate Taxiway System	\$ 6,000	\$ 114,000	\$ 120,000
3C Rehabilitate & Expand Apron (5,500 sq. yd.)	\$ 16,000	\$ 309,000	\$ 325,000
4C Expand Passenger Facilities (1,500 sq. yd.)	\$ 15,000	\$ 285,000	\$ 300,000
5C Rehabilitate North & South T-Hangars	\$ 3,000	\$ 57,000	\$ 60,000
6C Construct 10-Unit T-Hangars (2) & Taxilanes	\$ 75,000	\$ 1,425,000	\$ 1,500,000
7C Rehabilitate Access Road & Auto Parking	\$ 1,000	\$ 19,000	\$ 20,000
8C Construct Clear Span Hangar (1)	\$ 500,000	\$ 0.00	\$ 500,000
Phase III Development Cost	\$ 631,000	\$ 2,494,000	\$ 3,125,000
Engineering Fees (25% of Cost)	\$ 158,000	\$ 624,000	\$ 782,000
Total Phase III Development Cost	\$ 789,000	\$ 3,118,000	\$ 3,907,000

MALSR acquisition will be funded through the FAA's Facilities & Equipment (F&E) Program.
Note: All costs are rounded to the nearest thousand for planning purposes.

Note: Cost projections are intended for planning purposes only.

Note: Costs to develop the eastside revenue support area (54 acres) is estimated to be \$3.3 million while the westside revenue support area (92 acres) is estimated at \$5.5 million.

Source: BWR

CAPITAL IMPROVEMENT PROGRAM SUMMARY

The 20-year ACIP cost projections for HFJ, not including direct operational and maintenance expenses, are expected to total approximately \$34 million. The anticipated MoDOT/Federal share of capital improvements is expected to total approximately \$28.2 million, while the local share is estimated to equal nearly \$5.5 million. Of the total ACIP, approximately \$3.2 million in improvements, excluding contingency costs, are ineligible for Federal Airport Improvement Program (AIP) grants and will be fully financed by the City and private investors.

Those projects ineligible for Federal funding include improvements associated with clear span hangar development, construction of the aircraft/vehicle wash rack, as well as the improvements to the Runway 18 overrun. Until recently, development projects associated with terminal building and T-hangar design and construction had been ineligible for AIP funds. Currently, AIP funds are eligible to be expended on these revenue generating projects provided that all airfield facility needs are met and in compliance with MoDOT and FAA criteria. Otherwise, these specific capital improvement items will be ineligible due to low prioritization and available AIP funds will be expended on higher priority airfield facility improvements.

The City is expected to expend approximately \$2.1 million during the short-term period, nearly \$1.9 million during the mid-term period, and an additional \$789,000 during the long-term phase of airport development. **Table 7.3** presents the total expected ACIP expenditures during the short, intermediate and long-term planning periods. The recommended financing method (i.e. MoDOT/Federal versus local funding) for ACIP projects is also included within **Table 7.3**.

Table 7.3
20-Year ACIP Total Development Costs

Development Phase	Projected Local City Share (5%)	Projected MoDOT/ Fed. Share (95%)	Projected Total Cost (100%)
Phase I (0-5 Year) Short-Term Costs	\$ 2,814,000	\$ 1,474,000	\$ 4,288,000
Phase II (6-10 Year) Intermediate Costs	\$ 1,860,000	\$ 23,627,000	\$ 25,487,000
Phase III (11-20 Year) Long-Term Costs	\$ 789,000	\$ 3,118,000	\$ 3,907,000
Grand Total HFJ ACIP Cost Estimate	\$ 5,463,000	\$ 28,219,000	\$ 33,682,000

Note: All costs are rounded to the nearest thousand for planning purposes.
Note: Cost projections are intended for planning purposes only.

Source: BWR

The following list of capital improvement items coincide with **Exhibit 7.1** in which the 20-year ACIP is presented in a phased format depicting development within the 0-5, 6-10 and 11-20-year planning periods.

ACIP Summary

ACIP cost projections for HFJ, not including direct operational and maintenance expenses, are expected to total approximately \$34 million. The anticipated MoDOT/Federal share of capital improvements is expected to total approximately \$28.2 million, while the local share is estimated to equal nearly \$5.5 million. Approximately \$3.2 million in improvements, excluding contingency costs, are ineligible for Federal Airport Improvement Program (AIP) grants and will be fully financed by the City and private investors.

The City is expected to expend approximately \$2.1 million during the short-term period, nearly \$1.9 million during the mid-term period, and an additional \$789,000 during the long-term phase of airport development.

Phase I (2009-2013) Capital Improvements

- 1A** Establish Category C/D IFP Minimums
- 2A** Conduct Environmental Assessment (EA)
- 3A** Design and Construct T-Hangar Taxilanes
- 4A** Construct 10-Unit T-Hangar (1)
- 5A** Acquire Tracts U-1 thru U-9 & U-14
- 6A** Rehabilitate Access Road & Auto Parking
- 7A** Upgrade & Relocate AWOS-III
- 8A** Acquire Tracts U-10, U-11 & U-12
- 9A** Rehabilitate Runway 18-36 (5,000' x 75')
- 10A** Rehabilitate North Apron
- 11A** Construct Clear Span Hangars (3) & Apron
- 12A** Displace Runway 18 Threshold/Construct Access Taxiway

Phase II (2014-2018) Capital Improvements

- 1B** Construct Runway 18-36 (6,001' x 100')
- 2B** Construct Parallel Taxiway (6,001' x 35')
- 3B** Install MALSR (Rwy 36)*
- 4B** Realign/Improve FR 2025
- 5B** Install Airfield Perimeter Fence
- 6B** Reconstruct Aircraft Apron (16,800 sq. yd.)
- 7B** Rehabilitate South Apron
- 8B** Construct 10-Unit T-Hangar (1) & Taxilanes
- 9B** Rehabilitate North T-Hangar Taxilanes
- 10B** Construct Clear Span Hangar (1)
- 11B** Reconstruct Access Road & Auto Parking
- 12B** Acquire Tract U-13 (19 acres)
- 13B** Update Airport Master Plan
- 14B** Construct Aircraft / Vehicle Wash Rack

Phase III (2018-2029) Capital Improvements

- 1C** Rehabilitate Runway 18-36
- 2C** Rehabilitate Taxiway System
- 3C** Rehabilitate & Expand Aircraft Apron (5,500 sq. yd.)
- 4C** Expand Passenger Terminal Facilities (1,500 sq. ft.)
- 5C** Rehabilitate North & South T-Hangar Taxilanes
- 6C** Construct 10-Unit T-Hangars (2) & Taxilanes
- 7C** Rehabilitate Access Road & Auto Parking
- 8C** Construct Clear Span Hangar (1)

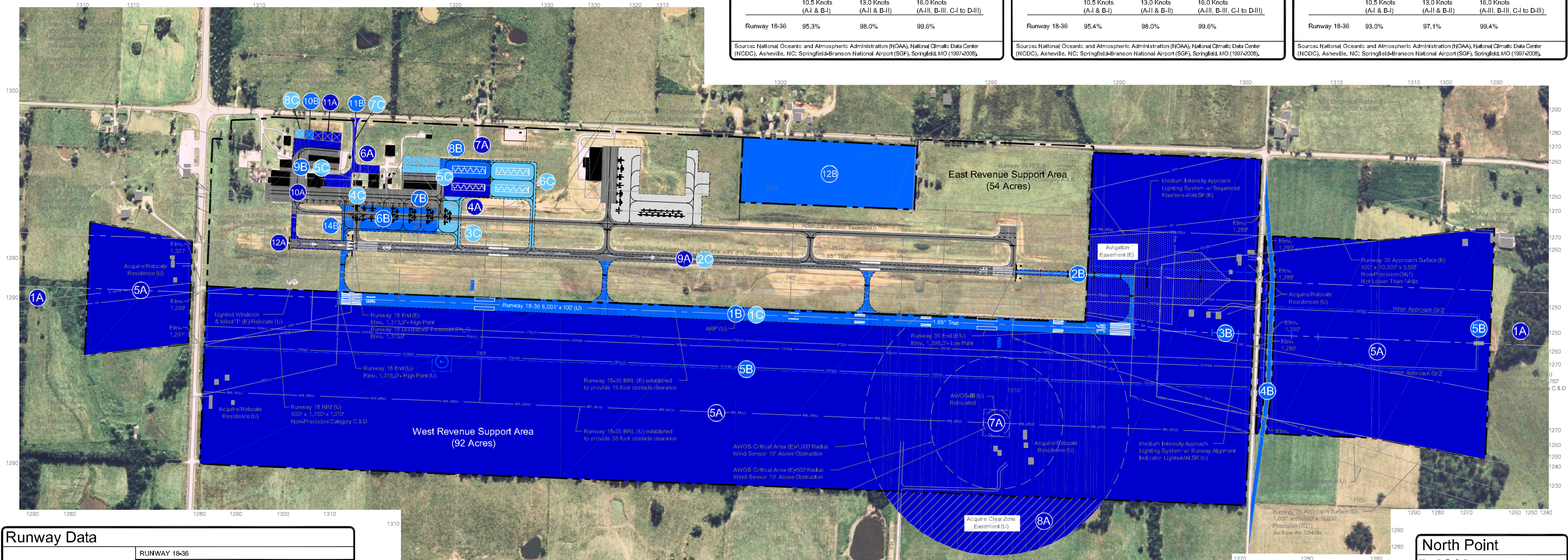
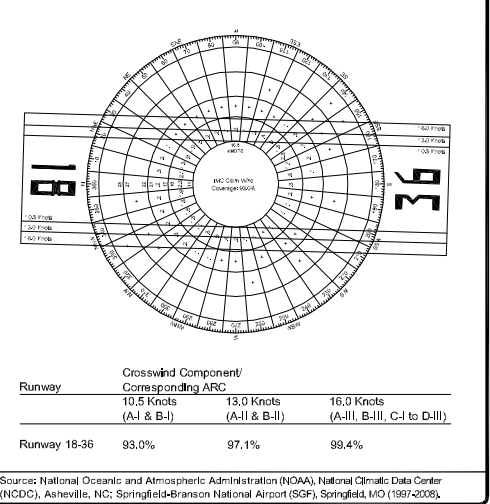
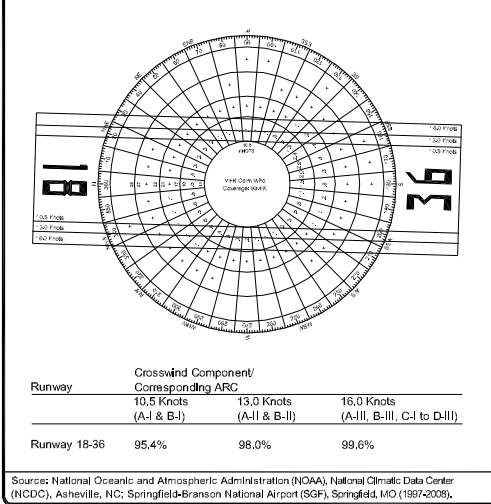
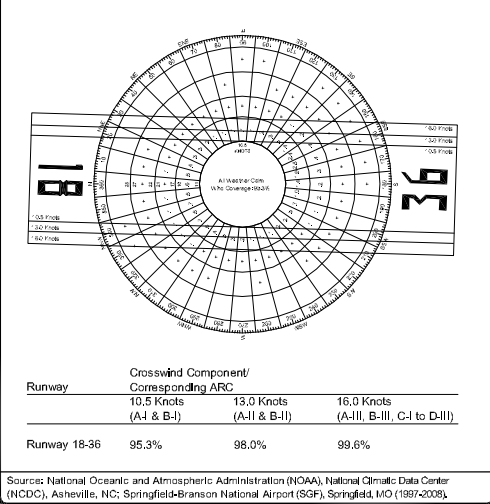
1. See the inner portion of the approach surface drawings (IPASD) and airspace drawing for obstruction/significant object clearance and clearance information for the FAR Part 77 airspace, approach and threshold siting surfaces (TSS).
2. Although the recommended ultimate runway length to accommodate projected demand is 5,930 feet, the city has elected to pursue the development of a future 6,001 foot runway.
3. The preferred development concept involves acquisition of approximately 354 acres in fee simple primarily to the north, south and west of the airport. This total also includes an additional 12 acres of easement to accommodate the AVOS-III. Additional land recommended for acquisition totals approximately 19 acres and is located immediately east of the airport.
4. The preferred development concept also involves the acquisition and relocation of six local residences located primarily to the north and south of the airport.
5. The ultimate Runway 18 threshold is sited so as to provide adequate Runway Safety and Object Free Area (RSA & OFA) standards in relation to U.S. Highway 80.
6. The interim airfield improvements involve the reconstruction of the 474' x 60' Runway 18 displaced/stopway and construction of a new 275' x 35' wide connector taxiway. This improvement will allow the Runway 18 threshold to be extended 474 feet. The displacement of the Runway 18 threshold will assist Category B & C business jet departures to the south by providing an additional 474 feet of runway length for takeoffs.
7. The proposed Runway 18 threshold improvements will involve the establishment of Declared Distances for approach and departures operations to and from Runway 18.
8. Approach and departures operations to and from Runway 36 will not involve the establishment of declared distances.
9. The runway safety area (RSA) for the Runway 18 approach end will be extended 300' x 150'; the object free area (OFA) 300' x 500'; and the obstacle free zone (OFZ) 200' x 400' beyond the runway surface.
10. Due to the complexity of this drawing, the existing and ultimate TSSs are depicted on the Inner Portion of the Approach Surface drawings.

There are no existing OFZ object penetrations.

There are existing TSS object penetrations. See Sheets 4, 5, 6 and 7 for further details.

None required.

According to the NOAA Aeronautical Survey Program (<http://www.ngs.noaa.gov/AERO/aero.html>) there are no National Geodetic Survey (NGS) Primary Airport Control Station (PACS) or Secondary Airport Control Station (SACS) survey monuments located at HFJ.



RUNWAY DETAILS		RUNWAY 18-36							
		EXISTING		PHASE I (INTERIM)		ULTIMATE			
		18	36	18	36	18	36		
Airport Reference Code (ARC)		B-II		B-II		C-II			
Runway Azimuth		181.7° True	1.7° True	Same	Same	Same	Same	Same	Same
Runway Dimensions		5,000' x 75'		5,474' x 75'		6,001' x 100'			
Displaced Threshold		None	None	474'	Same	None	None	None	None
FAR Part 77 Approach Use Type		NP	NP	Same	Same	Same	Same	Same	P
Aeronautical Survey Required for Approach		VG	VG	Same	Same	Same	Same	Same	Same
Approach Visibility Minimums		1-1/2 mile	1-1/2 mile	Same	Same	Same	Same	Same	1/2-1/4 mile
Approach Slope		34:1	34:1	Same	Same	Same	Same	Same	50:1
Runway Safety Area (RSA)		5,600' x 150'		6,074' x 150'		8,001' x 500'			
Runway Object Free Area (OFA)		5,600' x 500'		6,074' x 500'		8,001' x 800'			
Runway Obstacle Free Zone (OFZ)		5,400' x 400'		5,874' x 400'		6,401' x 400'			
Runway Pavement Strength (Thousands of lbs.)		30,000 (SW)		Same		45,000 (SW)			
Runway Pavement Material		Concrete/PCC		Same		Same			
Runway Markings		NP	NP	Same	Same	Same	Same	Same	P
Runway Gradient		0.3%		0.3%		Same		Same	
Runway Lighting		MIRL/REIL		Same		Same		MIRL/REIL	
Approach Lighting System		None		MALSF		Same		Same	
Taxiway Lighting		Reflectors		Same		Same		MITL	
Taxiway Width		35'		Same		Same		Same	
NAVAIDS		GPS-UPV		GPS-UPV		Same		Same	
Visual Approach Aids		PAPI-IL		PAPI-IL		Same		Same	
Touchdown Zone Elevation (TDZE)		1,313.9'		1,300.2'		1,315.1'		Same	
Takeoff Run Available (TORA)		n/a		n/a		5,474'		5,000'	
Accelerate-Stop Distance Available (ASDA)		n/a		n/a		5,474'		5,000'	
Landing Distance Available (LDA)		n/a		n/a		5,000'		5,000'	
Takeoff Distance Available (TODA)		n/a		n/a		5,474'		5,000'	

SW= Single Wheel Gear; NP= Non Precision; P= Precision; VG= Visual Guidance

THRESHOLD	LATITUDE	LONGITUDE	ELEVATION
Runway 18 (E)	35-54-47.07 N	94-00-45.05 W	1,313.9
Runway 16 (E)	35-53-57.65 N	94-00-45.82 W	1,298.3
Runway 18-Displaced (Ph_1)	35-54-51.75 N	94-00-44.88 W	1,315.1*
Runway 18 (L)	35-54-48.29 N	94-00-43.03 W	1,316.0
Runway 36 (L)	35-53-48.98 N	94-00-52.06 W	1,298.3

Source: FAA Aviation Systems Standards Branch (AVS) (<http://avswmwww.faa.gov>)

AIRPORT INFORMATION	EXISTING	PHASE I (INTERIM)	ULTIMATE
Airport Elevation- Mean Sea Level (MSL)	1,313.9'	1,315.1'	1,316.0'
Airport Reference Code (ARC)	C-II	Same	C-II
Critical Aircraft	Cessna Citation "Enclave" (Model 660)	Same	Cessna Citation X (Model 750)
Airport Reference Point (ARP)	36-54-22.40 N, 94-00-45.80 W	36-54-24.70 N, 94-00-45.85 W	36-54-18.64 N, 94-00-61.00
Instrument Approach Procedures	(RNAV)GPS-LPV (WAAS)	Same	Same
Mean Maximum Air Temperature	87° F	Same	Same
Weather Reporting System	AWOS-III	Same	Same
NPIAS Category	General Aviation	Same	Same
MOSASP Category/Role	Regional	Same	Same
Township and Range/Sections	T29N, R28W/ 5 and 8	Same	T29N, R28W/ 5, 8 and 32
FAA Site Number	11933, 1A	Same	Same
County	Barry	Same	Same
Total Acreage (Fee Simple & Easements)	202.09	Same	593.69 (See Sheet 11 of 12)

1. Datum: Coordinate System-FPS MO009 (Barry Co.); NAD83 State Plane Zone # 2403 (Transverse Mercator [Western Zone]; FPS State Code#40 29; NAVD83.

EXISTING	ULTIMATE	DESCRIPTION
		Payment Area
		Structures
		Airport Property Line
—BRL 35' (E)	—BRL 35' (L)	Building Restriction Line (BRL)
RSA	—RSA(O)	Runway Safety Area (RSA)
OFA	—OFA(U)	Object Free Area (OFA)
RPZ	—RPZ(L)	Runway Protection Zone (RPZ)
OFZ	—OFZ(U)	Obstacle Free Zone (OFZ)
DEP	—DEP(U)	40:1 Departure Surface
AS	—AS(U)	Part 77 Approach Slope Surface
	Same	Rotating Beacon
		Precision Approach Path Indicators (PAPI-4L)
		Lighted Wind Cone/Segmented Circle
		Runway Threshold Lighting
		Runway End Indicator Lights (REIL)
		Fence/line
		AWOS-III Station
		Ultimate Property Acquisition
		Easement
	Same	Remote Transmitter Receiver (RTR)

For Approval by:	
The City of Monett, Missouri	
Signed by:	Dated:
_____	_____
The Honorable James Orr Mayor	

City of Monett

Pride and Progress

NO.	DESCRIPTION	DATE	REVISED BY	APPROVED BY