

Planning Program

Introduction

The improvements necessary to efficiently accommodate the forecast aviation demands for Boulder Municipal Airport have been placed into three phases: phase one (Short-Term), phase two (Mid-Term), and phase three (Long-Term). The proposed improvements are illustrated graphically by time period on the *PHASING PLAN* (see Figure G1), along with the project cost estimates that are presented on the following pages.

Implementation Schedule and Project List

A list of proactive capital improvement projects has been assembled from the facility requirements documentation and recommended development plan previously presented. The project list has been coordinated with the Airport Layout Plan drawing set and the Capital Improvement Program, which is continuously updated by airport management and the Federal Aviation Administration. The projects for the first six years are listed in a general priority order. In the second and third phases (years 7-20), the projects are listed primarily as placeholders without a priority designation. Boulder Municipal Airport's phased capital improvement program (CIP) and associated costs, entitled *DEVELOPMENT PLAN PROJECT COSTS*, are presented as Tables G1, G2, and G3 of this chapter. The City of Boulder will develop a CIP and airport work plan that adheres to goals and objectives specified in this Master Plan Update. Furthermore, it is anticipated that the project phasing will invariably alter as city and federal priorities evolve over the coming months and years.

This development plan is conservative, demand driven, and focused on the maintenance and improvement of existing facilities. It is also a solid plan that represents the Airport's best opportunity to meet the needs of Boulder's general aviation community. In addition, the decision to implement or construct a project will be based on such factors as need and funding availability. The ultimate success of Boulder Municipal Airport

Table G1

PHASE I (SHORT-TERM) AIRPORT PLAN PROJECT COSTS*Boulder Municipal Airport Master Plan Update*

Project Description	Note	Total Costs	Recommended Financing Method			
			City (a)	State (b)	Private (c)	Federal (d)
Short-Term Projects						
A.1	Conduct General Aviation Aircraft Storage Market Analysis Study	\$20,000	\$0	\$20,000	\$0	\$0
A.2	Acquire Easement for Runway 8 & 8G RPZ (approx. 6.5 acres)	\$162,500	\$4,063	\$4,063	\$0	\$154,375
A.3	Conduct Runway 26 Type D Survey for VNAV GPS Approach Procedure	\$20,000	\$500	\$500	\$0	\$19,000
A.4	Promote/Manage the Airport's Voluntary Noise Abatement Program	\$12,500	\$12,500	\$0	\$0	\$0
A.5	Design/Implement the Airport's Wildlife Management Program	\$40,000	\$40,000	\$0	\$0	\$0
A.6	Implement Hangar/Building Maintenance Projects & Site Enhancement Improvements (i.e., Landscaping, Signage, etc.)	\$70,000	\$70,000	\$0	\$0	\$0
A.7	Implement Airport Lighting Improvements to Enhance Safety & Security	\$5,000	\$5,000	\$0	\$0	\$0
A.8	Implement Runway 26 VNAV GPS Approach Procedure (Publication & Marking)	\$25,000	\$625	\$625	\$0	\$23,750
A.9	Implement ADA Improvements @ General Aviation Terminal Bldg. & Apron	\$500	\$500	\$0	\$0	\$0
A.10	Install Runway 8 VASI	\$24,000	\$600	\$600	\$0	\$22,800
A.11	Construct 5 Executive Hangars & Apron within GA Development Area	\$1,000,000	\$0	\$0	\$1,000,000	\$0
A.12	Rehabilitate Taxiway "A" Pavement (i.e., West 1/2)	\$750,000	\$18,750	\$18,750	\$0	\$712,500
A.13	Construct Apron Overlay Project	\$795,000	\$19,875	\$19,875	\$0	\$755,250
A.14	Construct New Airport Access Road to Serve GA Development Area	\$135,000	\$3,375	\$3,375	\$0	\$128,250
A.15	Implement Utility Infrastructure Extensions to Serve Expanded GA Development Area	\$72,000	\$72,000	\$0	\$0	\$0
A.16	Install Perimeter Fencing (Phase One) @ 4,400 l.f. w/4 Gates	\$165,000	\$8,250	\$0	\$0	\$156,750
A.17	Construct 4 Executive Hangars & One 13-Unit T-Hangar within Northeast Development Area	\$1,110,000	\$0	\$0	\$1,110,000	\$0
A.18	Construct Aircraft Apron/Taxilane to Serve New Hangar Facilities	\$405,000	\$20,250	\$0	\$0	\$384,750
A.19	Purchase Airport Maintenance Equip.	\$25,000	\$1,250	\$1,250	\$0	\$22,500
A.20	Implement Runway 8/26 Pavement Maintenance Projects	\$35,000	\$1,750	\$1,750	\$0	\$31,500
A.21	Implement Runway 8G/26G Pavement Maintenance Projects	\$20,000	\$20,000	\$0	\$0	\$0
A.22	Implement Taxiway Pavement Maintenance Projects (Crack Seal)	\$35,000	\$1,750	\$1,750	\$0	\$31,500
A.23	Construct 1 Large Maintenance/Storage Hangar within GA Development Area	\$1,500,000	\$0	\$0	\$1,500,000	\$0
A.24	Extend Sanitary Sewer Line to Hangar "N"	\$30,000	\$30,000	\$0	\$0	\$0
Subtotal (Phase I)		\$6,456,500	\$331,038	\$72,538	\$3,610,000	\$2,442,925

Notes

Cost estimates, based upon 2005 data, are intended for preliminary planning purposes and do not reflect a detailed engineering evaluation.

- (a) Local Funding - Private, current revenues, cash reserves, bonds, etc
- (b) State Funding (Colorado Division of Aeronautics)
- (c) Third Party Funding
- (d) FAA AIP (Airport Improvement Program) - Unless Otherwise Noted

Table G2

PHASE II (MID-TERM) AIRPORT PLAN PROJECT COSTS*Boulder Municipal Airport Master Plan Update*

Project Description	Note	Total Costs	Recommended Financing Method			
			City (a)	State (b)	Private (c)	Federal (d)
Mid-Term Projects						
B.1	Construct 6 Executive Hangars within Northeast Development Area	\$1,350,000	\$0	\$0	\$1,350,000	\$0
B.2	Construct Aircraft Apron/Taxilane to Serve New Hangar Facilities	\$42,500	\$0	\$0	\$42,500	\$0
B.3	Implement the Airport's Wildlife Management Program	\$10,000	\$10,000	\$0	\$0	\$0
B.4	Promote/Manage the Airport's Voluntary Noise Abatement Program	\$10,000	\$10,000	\$0	\$0	\$0
B.5	Implement Runway Pavement Maintenance Projects (Crack Seal)	\$15,000	\$750	\$750	\$0	\$13,500
B.6	Install Perimeter Fencing (Phase Two) @ 6,000 l.f. w/4 Gates	\$205,000	\$10,250	\$0	\$0	\$194,750
B.7	Construct 1 Large Executive Hangar within Northeast Development Area	\$450,000	\$0	\$0	\$450,000	\$0
B.8	Purchase Airport Maintenance Equip.	\$25,000	\$1,250	\$1,250	\$0	\$22,500
B.9	Implement Hangar/Building Maintenance Projects & Site Enhancement Improvements (i.e., Landscaping, Signage, etc.)	\$50,000	\$50,000	\$0	\$0	\$0
B.10	Implement Apron Pavement Maintenance Projects (Crack Seal)	\$20,000	\$1,000	\$1,000	\$0	\$18,000
B.11	Widen Existing Westside Access Taxiway to Comply with ARC B-II Design Stds.	\$81,000	\$4,050	\$4,050	\$0	\$72,900
B.12	Implement Runway 8G/26G Pavement Maintenance Projects	\$13,500	\$13,500	\$0	\$0	\$0
B.13	Construct New Access Taxiway to Serve Expanded GA Development Area	\$45,000	\$2,250	\$0	\$0	\$42,750
B.14	Implement Taxiway Pavement Maintenance Projects (Crack Seal)	\$35,000	\$1,750	\$1,750	\$0	\$31,500
B.15	Replace Four 10-Unit T-Hangars within Existing Development Area	\$1,200,000	\$0	\$0	\$1,200,000	\$0
B.16	Expand Existing General Aviation Apron at East End of Ramp	\$60,000	\$3,000	\$3,000	\$0	\$54,000
Subtotal (Phase II)		\$3,612,000	\$107,800	\$11,800	\$3,042,500	\$449,900

Notes

Cost estimates, based upon 2005 data, are intended for preliminary planning purposes and do not reflect a detailed engineering evaluation.

- (a) Local Funding - Private, current revenues, cash reserves, bonds, etc
- (b) State Funding (Colorado Division of Aeronautics)
- (c) Third Party Funding
- (d) FAA AIP (Airport Improvement Program) - Unless Otherwise Noted

Table G3

PHASE III (LONG-TERM) AIRPORT PLAN PROJECT COSTS*Boulder Municipal Airport Master Plan Update*

Project Description	Note	Total Costs	Recommended Financing Method			
			City (a)	State (b)	Private (c)	Federal (d)
Long-Term Projects						
C.1	Implement the Airport's Wildlife Management Program	\$10,000	\$10,000	\$0	\$0	\$0
C.2	Promote/Manage the Airport's Voluntary Noise Abatement Program	\$10,000	\$10,000	\$0	\$0	\$0
C.3	Install Perimeter Fencing (Phase Three) @ 6,000 l.f. w/2 Gates	\$200,000	\$10,000	\$0	\$0	\$190,000
C.4	Rehabilitate Runway Pavement	\$1,673,500	\$167,350		\$0	\$1,506,150
C.5	Construct 6 Executive Hangars & One 9-Unit T-Hangar within Southeast Development Area	\$1,340,000	\$0	\$0	\$1,340,000	\$0
C.6	Construct Aircraft Apron/Taxilane to Serve New Hangar Facilities	\$275,000	\$13,750	\$0	\$0	\$261,250
C.7	Construct Three 9-Unit T-Hangars within Southeast Development Area	\$750,000	\$0	\$0	\$750,000	\$0
C.8	Construct Aircraft Apron/Taxilane to Serve New Hangar Facilities	\$330,000	\$16,500	\$0	\$0	\$313,500
C.9	Purchase Airport Maintenance Equip.	\$25,000	\$1,250	\$0	\$0	\$23,750
C.10	Implement Apron Pavement Maintenance Projects (Crack Seal)	\$25,000	\$1,250	\$1,250	\$0	\$22,500
C.11	Implement Taxiway Pavement Maintenance Projects (Crack Seal)	\$35,000	\$1,750	\$1,750	\$0	\$31,500
C.12	Implement Hangar/Building Maintenance Projects & Site Enhancement Improvements (i.e., Landscaping, Signage, etc.)	\$25,000	\$25,000	\$0	\$0	\$0
C.13	Construct Aircraft Maintenance/Storage Hangar within Northwest Development Area	\$700,000	\$0	\$0	\$700,000	\$0
C.14	Replace Two 10-Unit T-Hangars within Existing Development Area	\$600,000	\$0	\$0	\$600,000	\$0
C.15	Implement Runway 8G/26G Pavement Maintenance Projects	\$35,000	\$1,750	\$1,750	\$0	\$31,500
C.16	Construct Future Taxiway "A-3" connector	\$60,000	\$3,000	\$0	\$0	\$57,000
Sub-Total Costs (Phase III)		\$6,093,500	\$261,600	\$4,750	\$3,390,000	\$2,437,150
Total Costs/All Projects		\$16,162,000	\$700,438	\$89,088	\$10,042,500	\$5,329,975

Notes

Cost estimates, based upon 2005 data, are intended for preliminary planning purposes and do not reflect a detailed engineering evaluation.

- (a) Local Funding - Private, current revenues, cash reserves, bonds, etc
- (b) State Funding (Colorado Division of Aeronautics)
- (c) Third Party Funding
- (d) FAA AIP (Airport Improvement Program) - Unless Otherwise Noted

does not rely upon the completion of each and every capital item programmed in the development plan. To meet realistic funding expectations, it may be necessary to weigh the items of the development plan in a thoughtful and global manner.

In other words, the City may be required to selectively implement the capital items. Knowing the full scope of development possibilities enables the community to capitalize on opportunities, respond to financial realities, and select projects that are consistent with the overall planning recommendations of the Master Plan.

Cost Estimates

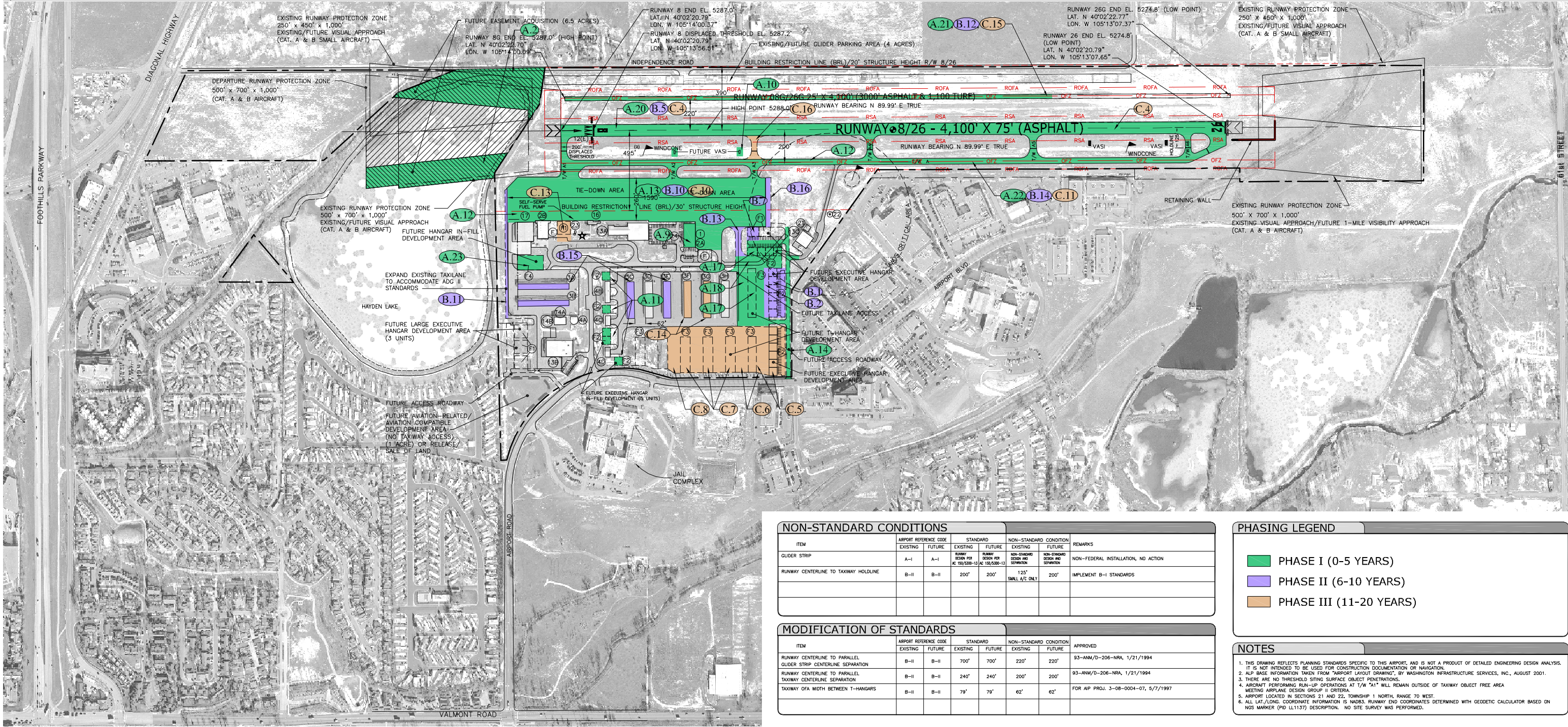
Cost estimates for individual projects, based on current dollars, have been prepared for improvements that have been identified as necessary during the 20-year planning period. Facility costs have been formulated using unit prices extended by the size of the particular facility and tempered with specific considerations related to the region, the Airport, and the development site. That being said, these estimates are intended to be used for planning purposes only and should not be construed as construction cost estimates, which can only be compiled following the preparation of detailed engineering design and documents.

Capital Improvement Program (CIP)

To assist in the preparation of the Capital Improvement Program, which the City of Boulder keeps on file and up to date with the FAA, the first phase of the project/cost list, *PHASE I (0 to 6 YEARS) DEVELOPMENT PLAN PROJECTS*, appearing on a previous page, has been organized by year, in a format similar to that used by the FAA. The projects, phasing, and costs presented in this Master Plan are the best projections that can be made at the time of formulation. The purpose of the project list, phasing, and costs listed here is to provide a progressive projection of capital needs, which can then be utilized in city and federal financial programming. It is realized that, as soon as this long-range planning document is published, the project list is dated and; therefore, it will always differ to some degree with the Airport's 6-year CIP on file with the FAA.

Phasing Plan

To supplement the information provided by the project list and project cost estimates, an illustration has been prepared. This graphic, entitled *PHASING PLAN* and included as Figure G1 of this chapter, indicates the suggested phasing for improvement projects throughout the 20-year planning period.



NON-STANDARD CONDITIONS							
ITEM	AIRPORT REFERENCE CODE		STANDARD		NON-STANDARD CONDITION		REMARKS
	EXISTING	FUTURE	EXISTING	FUTURE	EXISTING	FUTURE	
GLIDER STRIP	A-1	A-1	RUNWAY DESIGN FOR CAT. A/B	RUNWAY DESIGN FOR CAT. A/B	NON-STANDARD DESIGN AND SCHEDULING	NON-STANDARD DESIGN AND SCHEDULING	NON-FEDERAL INSTALLATION, NO ACTION
RUNWAY CENTERLINE TO TAXIWAY HOLDLINE	B-11	B-11	200'	200'	125' SMALL A/C ONLY	200'	IMPLEMENT B-11 STANDARDS

MODIFICATION OF STANDARDS							
ITEM	AIRPORT REFERENCE CODE		STANDARD		NON-STANDARD CONDITION		APPROVED
	EXISTING	FUTURE	EXISTING	FUTURE	EXISTING	FUTURE	
RUNWAY CENTERLINE TO PARALLEL GLIDER STRIP CENTERLINE SEPARATION	B-11	B-11	700'	700'	220'	220'	93-ANM/D-206-NRA, 1/21/1994
RUNWAY CENTERLINE TO PARALLEL TAXIWAY CENTERLINE SEPARATION	B-11	B-11	240'	240'	200'	200'	93-ANM/D-206-NRA, 1/21/1994
TAXIWAY OFA WIDTH BETWEEN T-HANGARS	B-11	B-11	79'	79'	62'	62'	FOR AIP PROJ. 3-08-0004-07, 5/7/1997

PHASING LEGEND

- PHASE I (0-5 YEARS)
- PHASE II (6-10 YEARS)
- PHASE III (11-20 YEARS)

- NOTES**
- THIS DRAWING REFLECTS PLANNING STANDARDS SPECIFIC TO THIS AIRPORT, AND IS NOT A PRODUCT OF DETAILED ENGINEERING DESIGN ANALYSIS. IT IS NOT INTENDED TO BE USED FOR CONSTRUCTION DOCUMENTATION OR NAVIGATION.
 - ALL BASE INFORMATION TAKEN FROM "AIRPORT LAYOUT DRAWING", BY WASHINGTON INFRASTRUCTURE SERVICES, INC., AUGUST 2001.
 - THERE ARE NO THRESHOLD SITING SURFACE OBJECT PENETRATIONS.
 - AIRCRAFT PERFORMING RUN-UP OPERATIONS AT T/W "A1" WILL REMAIN OUTSIDE OF TAXIWAY OBJECT FREE AREA MEETING AIRPLANE DESIGN GROUP II CRITERIA.
 - AIRPORT LOCATED IN SECTIONS 21 AND 22, TOWNSHIP 1 NORTH, RANGE 70 WEST.
 - ALL LAT./LONG. COORDINATE INFORMATION IS NAD83. RUNWAY END COORDINATES DETERMINED WITH GEODETIC CALCULATOR BASED ON NGS MARKER (PID: LL1137) DESCRIPTION. NO SITE SURVEY WAS PERFORMED.

AIRPORT DATA		
	EXISTING	FUTURE
AIRPORT ELEVATION (AMSL)	5288.0'	SAME
AIRPORT REFERENCE POINT (ARP)	LAT. 40°02'21"N LONG. 105°13'35"W	
MEAN MAX. TEMP. HOTTEST MONTH	87.5°F	SAME
COMBINED WIND COVERAGE VFR/FR(%) 13kt	94.64/91.90	SAME
AIRPORT REFERENCE CODE (ARC)	B-II	SAME
TAXIWAY LIGHTING	MIL	SAME
TAXIWAY STRIPING	CENTERLINE	SAME
NPIAS SERVICE LEVEL	GA	SAME

DECLARED DISTANCES		
	EXISTING	FUTURE
RUNWAY 8/26		
TAKE OFF RUN AVAILABLE	4,100'/4,100'	SAME
TAKE OFF DISTANCE AVAILABLE	4,100'/4,100'	SAME
ACCELERATE STOP DISTANCE AVAILABLE	4,100'/3,900'	SAME
LANDING DISTANCE AVAILABLE	3,900'/3,900'	SAME
RUNWAY 8G/26G		
TAKE OFF RUN AVAILABLE	4,100'/4,100'	SAME
TAKE OFF DISTANCE AVAILABLE	4,100'/4,100'	SAME
ACCELERATE STOP DISTANCE AVAILABLE	4,100'/4,100'	SAME
LANDING DISTANCE AVAILABLE	4,100'/4,100'	SAME

BUILDINGS		
NO.	DESCRIPTION	ESTIMATED ELEVATION
1	TERMINAL BUILDING "A"	5307'
2A	FIXED BASE OPERATOR (FBO) "A"	5307'
2B	FIXED BASE OPERATOR (FBO) "B"	5306'
3A	T-HANGAR "D"	5300.3'
3B	T-HANGAR "C"	5300.3'
3C	T-HANGAR "O"	5300'
3D	T-HANGAR "P"	5296'
3E	T-HANGAR "Q"	5301'
3F	T-HANGAR "R"	5301'
3G	T-HANGAR "S"	5301'
3H	T-HANGAR "T"	5296'
4A	STORAGE HANGAR "B5"	5295.5'
4B	STORAGE HANGAR	5298.5'
4C	STORAGE HANGAR	5298.5'
4D	STORAGE HANGAR "W"	5298.5'
13A	MAINTENANCE HANGAR "H"	5313'
13B	MAINTENANCE/EXECUTIVE HANGAR "B4"	5306'
13C	MAINTENANCE HANGAR	5304'
14A	PRIVATE HANGAR	5295.5'
14B	PRIVATE HANGAR	5300'
16	AIRPORT MANAGEMENT	5298'
17	LARGE EXECUTIVE HANGAR "E"	5312'
21	AIRCRAFT SALES OFFICE	5301'
22	AUTOMATED WEATHER OBSERVATION STATION (AWOS)	
23	ELECTRICAL VAULT	5293'
24	COMMUNICATIONS EQUIP. BLDG./TOWER	5295'
F1	FUTURE LARGE EXECUTIVE HANGAR	
F2	FUTURE STORAGE HANGAR	
F3	FUTURE T-HANGAR	
F4	FUTURE LARGE EXECUTIVE HANGAR	

ALL BUILDINGS MEET LATERAL CLEARANCE STANDARDS

RUNWAY DATA				
ITEM	RUNWAY 8/26		RUNWAY 8G/26G	
	EXISTING	FUTURE	EXISTING	FUTURE
APPROACH VISIBILITY MINIMUMS	VISUAL/VISUAL	VISUAL/NOV-PREC.	VISUAL/VISUAL	SAME
PART 77 APPROACH SURFACES	201'/201'	201'/201'	201'/201'	SAME
FAR PART 77 CATEGORY	VISUAL-B	VISUAL-B/NP-C	VISUAL-A	SAME
RUNWAY WIDTH AND LENGTH	75' X 4,100'	SAME	25' X 4,100'	SAME
PAVEMENT TYPE	ASPHALT	SAME	ASPHALT & TURF	SAME
PAVEMENT STRENGTH (IN 1000 LBS.)	16-SW, 30-DW	SAME	NA	SAME
RUNWAY LIGHTING	MIRL	SAME	NONE	SAME
RUNWAY MARKING	BASIC/BASIC	NP/BASIC	NONE	SAME
PERCENT GRADIENT	SAME	0.22%	0.22%	SAME
MAXIMUM GRADE WITHIN R/W LENGTH	0.48%	SAME	0.48%	SAME
LINE-OF-SIGHT REQUIREMENTS	MEETS CRITERIA	SAME	MEETS CRITERIA	SAME
VISUAL APPROACH AIDS (LIGHTING)	VASI	VASI/PAPI	NONE	SAME
INSTRUMENT APPROACH AIDS	NONE	RFS	NONE	SAME
AIRPORT REFERENCE CODE (ARC)	B-II	SAME	A-I	SAME
CRITICAL AIRCRAFT	BEECH SUPER KINGAR 8200	SAME	EIRAVION PIK-20	SAME
RUNWAY SAFETY AREA WIDTH	150'	SAME	150'	SAME
R/W SAFETY AREA LENGTH BEYOND R/W END	300'/300'	SAME	300'/300'	SAME
RUNWAY OBJECT FREE AREA WIDTH	500'	SAME	500'	SAME
R/W OBJECT FREE AREA LENGTH BEYOND R/W END	300'/300'	SAME	300'/300'	SAME
RUNWAY OBSTACLE FREE ZONE WIDTH	250'	400'	400'	400'
R/W OBSTACLE FREE ZONE LENGTH BEYOND R/W END	200'/200'	SAME	200'/200'	SAME
RUNWAY END ELEVATIONS	5287.0'/5274.8'	SAME	5287.0'/5274.8'	SAME
RUNWAY END COORDINATES	RW 8 N 40°02'20.79" W 105°13'35.61"	SAME	N 40°02'20.79" W 105°13'35.61"	SAME
DISPLACED THRESHOLD COORDINATES	RW 8 N 40°02'20.79" W 105°13'35.61"	NA	NA	NA
RUNWAY DISPLACED THRESHOLD ELEVATION	5288.0'/5287.9'	SAME	5288.0'/5287.9'	SAME
RUNWAY TOUCHDOWN ZONE ELEVATION	5288.0'	SAME	5288.0'	SAME
RUNWAY HIGHPOINT	5288.0'	SAME	5288.0'	SAME
RUNWAY LOWPOINT	5274.8'	SAME	5274.8'	SAME

LAYOUT PLAN LEGEND		
	EXISTING	FUTURE
AIRPORT PROPERTY LINE	---	---
AIRPORT SECURITY FENCE	---	---
AIRPORT BUILDINGS	---	---
AIRFIELD PAVEMENT	---	---
PAVED ROADS	---	---
AVIGATION EASEMENT	---	---
RUNWAY PROTECTION ZONE	---	---
BUILDING RESTRICTION LINE	---	---
RUNWAY SAFETY AREA	---	---
RUNWAY OBJECT FREE AREA	---	---
FUEL STORAGE AREA	---	---
AIRPORT BEACON	---	---
LIGHTED WIND CONE	---	---
AUTOMATED WEATHER OBSERVATION SYSTEM (AWOS)	---	---
VISUAL APPROACH SLOPE INDICATOR (VASI)	---	---
THRESHOLD LIGHTS	---	---
HOLDLINES	---	---
TREES	---	---
NGS SURVEY MONUMENT	---	---

REVISIONS		
NO.	DESCRIPTION	DATE

**Boulder Municipal Airport
Airport Master Plan Update**

**Figure G1
Phasing Plan
G.6**

These are suggested schedules and variance from them may be necessary, especially during the latter time periods. Attention has been given to the first six years because the projects outlined in this time frame include many critical improvements. The demand for certain facilities, especially in the latter time frame, 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's 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. These scheduling issues can be particularly critical in conjunction with the construction of new hangars, based upon the availability of existing development sites vs. the development of new areas that may require significant upfront infrastructure construction costs.

Financial Plan

Funding sources for the capital improvement program depend on many factors, including Airport Improvement Program (AIP) project eligibility, the ultimate type and use of facilities to be developed, debt capacity of the City, the availability of other financing sources, and the priorities for scheduling project completion. For planning purposes, assumptions were made related to the funding source of each capital improvement. The projects costs provided in the Development Plan Project tables are identified with likely funding sources.

Sources of Capital Funding

AIP Entitlement Grants. The Wendell H. Ford Aviation Investment and Reform Act for the 21st Century (AIR-21), enacted in April 2000, established the first-ever Non Primary Airports Entitlement Program. AIR-21 set aside grant funding for general aviation airports listed in the National Plan of Integrated Airport Systems (NIPAS) for pavement maintenance work. General aviation airports can each receive up to \$150,000 per year based on FAA's assessment of maintenance needs over a five-year period. This funding set-aside was renewed in conjunction with the Vision 100-Century of Aviation Reauthorization Act for federal fiscal years 2004-2007, and the federal/city funding allocation was revised to a 95%/5% split for the specified period. For the convenience of the airport sponsor, if a project is anticipated to cost in excess of \$150,000, the participating airport can roll over (i.e., save) the Non Primary Entitlement funds up to federal fiscal year 2007 (the end of Vision 100), at which time the accumulated total of rolled-over funds can be used for larger projects. These set-aside funds cannot be transferred to another airport and any unused funds at the end of the entitlement program revert to the FAA. The Non Primary entitlement funds are generally earmarked

for routine work to preserve and extend the useful life of runway, taxiway, and apron pavements at smaller general aviation airports. However, project eligibility was expanded under Vision 100 to include support facilities, fuel farms and hangars, in addition to the previously approved list of pavement maintenance projects (e.g., pavement seal coating, joint/crack sealing, pavement overlays, patching, marking, clearing/maintaining airfield drainage and perimeter fencing).

AIP Discretionary Grants. The FAA also provides discretionary grants (on a 95%/5% basis per Vision 100), over and above entitlement funding, to airports for projects that have a high federal priority for enhancing safety, security, and capacity of the airport and would be difficult to fund otherwise. The amount that individual grants vary can be significant in comparison to entitlements and are awarded at the FAA's total discretion. Discretionary grant applications are evaluated based on need, the FAA's project priority ranking system, and the FAA's assessment of a project's significance within the national airport and airway system.

FAA Facilities & Equipment Funds. Within the FAA's budget appropriation, money is available in the Facilities and Equipment (F&E) Fund to purchase navigational aids and air safety-related technical equipment, including Air Traffic Control Towers (ATCTs) for use at commercial service airports in the national airport system. Each F&E development project is evaluated independently through a cost/benefit analysis to determine funding eligibility and priority ranking. The qualified projects are totally funded (i.e., 100%) by the FAA, with the remaining projects likely being AIP or PFC eligible. In addition, the airport can apply for NAVAID maintenance funding through the F&E program for those facilities that are not F&E funded. It's possible that some of the proposed navigational aid-related development projects for Boulder Municipal Airport would qualify for F&E funding, if available.

State Grants. Currently, state grants for aviation projects in Colorado are administered through the Aeronautics Division of the Colorado Department of Transportation (CDOT) utilizing a combination of Fuel Tax Entitlement Disbursements and the Colorado Discretionary Aviation Grant Program. As with many states, these funds have historically been primarily utilized to provide assistance on pavement "maintenance" oriented projects, such as crack sealing and marking.

For Federal projects, CDOT has a policy of funding appropriate projects at a participation level of fifty percent (50%) of the federal required match on State apportionment and discretionary projects. For State projects, the CDOT will provide ninety percent (90%) match of the total state project (not to exceed \$250,000) unless otherwise agreed to by the Commission. The sponsor will be responsible for the remaining ten percent (10%) of the total project cost.

Private Third-Party Financing. Many airports use private third-party financing when the planned improvements will be primarily used by a private business or other organization. Such projects are not ordinarily eligible for federal funding. Projects of this kind typically include hangars, FBO facilities, fuel storage, air cargo facilities, exclusive aircraft parking aprons, industrial development areas, non-aviation commercial areas, and various other projects.

Airport Revenues. As with many smaller general aviation facilities, generating the necessary cash flow to balance the operations and maintenance costs of an airport is typically a constant challenge. The capital costs associated with an airport's development program, whether for city matching funds for a state or federal grant, or for 100 percent funding of non-grant capital projects, can be a further daunting challenge for any small airport. Smaller general aviation airports often rely on supplemental funding from a municipal or county government to assist with funding the capital needs of their facilities.

Historically, Boulder Municipal Airport has been fortunate to operate in a self-supporting manner financially, with the facility being operated as an enterprise fund that is separate from other City of Boulder funds.

Summary - Master Plan Capital Improvement Program Financial Implications

The previously presented *AIRPORT PLAN PROJECT COSTS* tables provide a reasonable estimate of the funding that will be needed to cover the costs of this progressive capital improvement program at the Airport. With the best information available today, the tables provide information related to what projects will be needed, when those projects are likely to be constructed, and how the improvements are likely to be funded (i.e., city, federal, etc.). It is realized that the timing for project implementation will change as sponsor and FAA priorities evolve; however, the projections of funding needs are reasonable estimates for long-term capital improvement planning purposes.

The financial implications for financing of Airport improvements is probably best summarized in a presentation of the total expected expenditures, broken down by phase and recommended financing method. This information is presented in the following table entitled *CAPITAL IMPROVEMENT EXPENDITURES BY PHASE*.

Table G4
CAPITAL IMPROVEMENT EXPENDITURES BY PHASE
Boulder Municipal Airport Master Plan Update

Phase	CIP Total Cost	City Funding ⁽¹⁾	Private Funding	State Funding ⁽²⁾	Federal AIP Funding ⁽³⁾
Phase I (Short-Term)	\$6,456,500	\$331,038	\$3,610,000	\$72,538	\$2,442,925
Phase II (Mid-Term)	\$3,612,000	\$107,800	\$3,042,500	\$11,800	\$449,900
Phase III (Long-Term)	\$6,093,500	\$261,600	\$3,390,000	\$4,750	\$2,437,150
Totals:	\$16,162,000	\$700,438	\$10,042,500	\$89,088	\$5,329,975

⁽¹⁾ City funding is provided by Airport Sponsor (i.e., the City of Boulder).

⁽²⁾ State funding is provided by the CDOT Aeronautics Division.

⁽³⁾ Federal funding is provided by the FAA.

As presented in the accompanying tables, the Boulder Municipal Airport Development Plan cost estimates for an approximate twenty-year planning period, not including maintenance and operational expenses, amount to approximately \$16.2 million. The anticipated FAA share is approximately \$5.3 million, with the State share of \$89,088, and the City share being approximately \$700,438. In addition, approximately \$10.0 million are projected to be spent on private projects (e.g., non FAA-eligible hangars, apron/taxiway development, etc.) that will generate revenue and could be financed through some form of private financing.

Of the *city* share, approximately \$331,038 are required during the phase one period (Short-Term), \$107,800 during the phase two period (Mid-Term), and \$261,600 during the phase three period (Long-Term). The *state* share includes approximately \$72,538 during the phase one period, \$11,800 during the phase two period, and \$4,750 during the phase three period. The *federal* share includes programmed expenditures of \$2.4 million during the phase one period, \$449,900 during the phase two period, and \$2.4 million during the phase three period.

In addition, maintenance and operation expenses 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 and revenues should balance at the Airport. This relationship should, however, be monitored closely so those future imbalances can be anticipated and provided for in the budgeting and capital improvement process.

It should also be noted that projects represented as potentially needed in this *Master Plan* are based on forecast demand; only those projects that are required to meet actual demand will be proposed for construction. If demands do not increase as rapidly as anticipated, a number of the proposed projects should be revised, delayed, or potentially eliminated.

Because demand and improvement needs can best be defined in the short-term, the Phase I project list is the most comprehensive and is generally the most challenging to finance. As indicated in the table above, federal funding needs could total as much as \$2.4 million dollars during the six years comprising Phase I; and, City funding needs to match these federal dollars, including projects ineligible for federal participation, could be approximately \$331,038. Even with the increases in AIP funding over the past few years, Boulder Municipal Airport's needs may exceed the capabilities of the FAA to participate.

Also, it may be a significant task for the Airport to fund the city share of the proposed capital improvement costs, should significant federal funds become available. Financial implications are significant for both the Airport Sponsor and FAA; yet, an attainable balance can and should be structured.