

TABLE OF CONTENTS

CHAPTER 1 – GOALS AND OBJECTIVES.....	1-1
INTRODUCTION AND PROJECT OVERVIEW	1-1
<i>General Guidelines</i>	1-1
<i>Prior Planning Documentation</i>	1-2
<i>Key Issues</i>	1-2
<i>Goals and Objectives</i>	1-3
<i>Regulatory Guidelines</i>	1-3
<i>Master Plan Process</i>	1-4
KEY PARTICIPANTS AND PUBLIC INVOLVEMENT.....	1-5
<i>Technical Advisory Committee</i>	1-5
<i>Jacksonville Aviation Authority Staff</i>	1-5
<i>City of Jacksonville Planning</i>	1-7
<i>Public Involvement Process</i>	1-7
SUMMARY	1-7
CHAPTER 2 – EXISTING CONDITIONS	2-1
OVERVIEW	2-1
<i>Background/ History of Airport</i>	2-2
<i>Airport's Aeronautical Role</i>	2-9
<i>Economic Benefit to Community</i>	2-9
INVENTORY OF EXISTING FACILITIES	2-10
<i>Airspace/ Air Traffic Management</i>	2-10
<i>Weather</i>	2-14
<i>Historical Data</i>	2-16
<i>Airfield Facilities</i>	2-17
<i>Landside Facilities</i>	2-30
<i>Support Facilities</i>	2-34
EXISTING ENVIRONMENTAL CONDITIONS.....	2-36
<i>Environmental Inventory</i>	2-36
<i>Air Quality Classification</i>	2-37
<i>Aquatic Concerns</i>	2-37
<i>Terrestrial Concerns</i>	2-41
<i>Cultural Concerns</i>	2-46
SUMMARY	2-46

CHAPTER 3 – AVIATION FORECASTS	3-1
OVERVIEW	3-1
PREVIOUS FORECASTS	3-1
FORECAST ELEMENTS AND ASSUMPTIONS	3-2
<i>Socio-Economic Analysis</i>	3-2
<i>Aviation Activity Forecasts</i>	3-11
SUMMARY	3-26
 CHAPTER 4 – DEMAND CAPACITY AND FACILITY REQUIREMENTS.....	4-1
OVERVIEW	4-1
PHYSICAL PLANNING CRITERIA	4-1
<i>Airport Role and Service Level</i>	4-2
<i>Airport Reference Code</i>	4-3
<i>Airport Fleet Mix</i>	4-6
AIRFIELD REQUIREMENTS	4-14
<i>Airfield Capacity</i>	4-14
<i>Runway Orientation and Wind Coverage</i>	4-17
<i>Runway Length Design Requirements</i>	4-18
<i>Crosswind Runway</i>	4-24
<i>Runway Width</i>	4-24
<i>Pavement Strength</i>	4-24
<i>Taxiways</i>	4-25
<i>Airfield Pavement Condition</i>	4-26
<i>Summary of Runway and Taxiway Requirements</i>	4-27
<i>Navigational Aids, Runway Approaches and Obstructions to Air Navigation</i>	4-29
<i>Lighting, Signage and Markings</i>	4-30
<i>Weather Instruments</i>	4-31
<i>Air Traffic Control Tower</i>	4-32
LANDSIDE REQUIREMENTS.....	4-33
<i>General Aviation Requirements</i>	4-33
<i>Airport Support Facilities</i>	4-40
<i>Ground Access</i>	4-45
<i>Land Use</i>	4-46
SUMMARY	4-49
 CHAPTER 5 – ALTERNATIVES ANALYSIS.....	5-1
GENERAL OVERVIEW	5-1
<i>Key Issues</i>	5-2
<i>On and Off-Airport Land Use and Zoning</i>	5-3
<i>Runway Length Requirements</i>	5-13
GENERAL.....	5-19
<i>No-Build Alternative</i>	5-19
<i>Engineering Materials Arresting System Alternative</i>	5-20
<i>Runway Overrun or Stopway Alternative</i>	5-21

RECOMMENDED DEVELOPMENT.....	5-22
<i>Long-term Development</i>	5-22
<i>Additional Airfield Development</i>	5-23
DEVELOPMENT CONSIDERATIONS.....	5-23
<i>City of Jacksonville Planning and Development</i>	5-24
<i>Airspace Restrictions</i>	5-25
<i>Environmental Considerations</i>	5-32
AIRSIDE ALTERNATIVES.....	5-32
<i>Airfield Development Alternatives</i>	5-32
<i>Airfield Capacity Improvements</i>	5-61
<i>Preferred Airfield Alternative Development</i>	5-65
PAVEMENT MAINTENANCE REQUIREMENTS.....	5-71
ON-AIRPORT LAND USE.....	5-71
<i>Development Zones</i>	5-72
LANDSIDE DEVELOPMENT.....	5-75
<i>High Priority Development Zones (Years 2007-2015)</i>	5-77
<i>Medium Priority Development Zones (Year 2016-2026)</i>	5-91
SUPPORT FACILITIES.....	5-104
<i>Security and Fencing</i>	5-104
<i>Fuel Storage</i>	5-105
<i>Air Traffic Control Tower</i>	5-105
RECOMMENDED AIRPORT DEVELOPMENT.....	5-106
SUMMARY.....	5-111
CHAPTER 6 – AIRPORT LAYOUT PLAN.....	6-1
<i>Cover Sheet</i>	6-2
<i>Airport Layout Drawing Sheet</i>	6-2
<i>General Aviation Terminal Area Drawing</i>	6-3
<i>Airport Airspace Drawings</i>	6-3
<i>Inner Portion of the Approach Surface Drawings</i>	6-4
<i>Airport Land Use Drawings</i>	6-4
<i>Airport Property Maps</i>	6-4
SUMMARY.....	6-5
CHAPTER 7 – IMPLEMENTATION PLAN.....	7-1
GENERAL.....	7-1
CAPITAL IMPROVEMENT PROGRAM.....	7-1
<i>Project Cost Estimates</i>	7-5
<i>Project Phasing</i>	7-5
<i>Project Funding</i>	7-6
<i>Maximum Capital Improvement Plan Development</i>	7-11
<i>Financially Feasible Capital Improvement Program</i>	7-23
CASH FLOW FORECAST.....	7-29
<i>Historical Financial Data</i>	7-31



Forecast Methodology..... 7-31
Cash Flow Assessment..... 7-35
SUMMARY AND RECOMMENDATIONS..... 7-35

APPENDICES

APPENDIX A – GLOSSARY OF TERMS..... A-1
APPENDIX B - REGULATORY GUIDELINES..... B-1
APPENDIX C - DEMAND CAPACITY ANALYSIS..... C-1
APPENDIX D - AIRPORT FACILITY DIRECTORY REVISION FORM..... D-1
APPENDIX E - RUNWAY LENGTH JUSTIFICATION.....E-1
APPENDIX F - LONG-TERM NOISE ASSUMPTIONATF-1
APPENDIX G - FEDERAL GUIDANCE AND RUNWAY EXTENSION LETTERS..... G-1
APPENDIX H - KEY PARTICIPANTS AND PUBLIC COMMENTS AND PARTICIPATION..... H-1
APPENDIX I - FAA PROJECT PRIORITY RATINGSI-1
APPENDIX J – PRELIMINARY PROJECT COST ESTIMATES.....J-1
APPENDIX K - FAA AND FDOT CORRESPONDENCE..... K-1
APPENDIX L - FLORIDA PUBLIC LAWL-1

LIST OF TABLES

TABLE 2-1	AIRPORTS WITHING 20 NM RADIUS OF CRG	2-12
TABLE 2-2	NAVIGATIONAL AIDS	2-23
TABLE 2-3	EXISTING APRON/ AIRCRAFT PARKING AREAS	2-30
TABLE 2-4	EXISTING AIRPORT STRUCTURES	2-31
TABLE 3-1	HISTORICAL POPULATION (1990-2004).....	3-5
TABLE 3-2	FORECAST POPULATION (2006-2026).....	3-6
TABLE 3-3	HISTORICAL PER CAPITA INCOME (1990-2004)	3-7
TABLE 3-4	FORECAST PER CAPITA INCOME (2006-2026).....	3-7
TABLE 3-5	HISTORICAL UNEMPLOYMENT RATES.....	3-8
TABLE 3-6	CRG FORECAST OF TOTAL OPERATIONS.....	3-16
TABLE 3-7	INSTRUMENT OPERATIONS FORECAST	3-17
TABLE 3-8	LOCAL/ITINERANT OPERATIONS FORECAST.....	3-17
TABLE 3-9	TAF FORECAST COMPARISON	3-18
TABLE 3-10	HISTORIC AND BASED AIRCRAFT FORECAST	3-20
TABLE 3-11	FLEET MIX OPERATIONS FORECAST	3-22
TABLE 3-12	BASED AIRCRAFT FLEET MIX FORECAST	3-23
TABLE 3-13	FORECAST TURBOJET FLEET MIX	3-23
TABLE 3-14	HISTORIC PEAK MONTH PERCENTAGE OF OPERATIONS	3-24
TABLE 3-15	PEAK HOUR OPERATIONS BREAKDOWN.....	3-25
TABLE 3-16	PEAK HOUR PASSENGERS.....	3-26
TABLE 3-17	AIRPORT PLANNING FORECASTS	3-27

TABLE 4-1	FAA AIRCRAFT CLASSIFICATION CRITERIA	4-3
TABLE 4-2	BASED TURBINE ENGINE AIRCRAFT	4-4
TABLE 4-3	TURBOJET TRANSIENT AIRCRAFT ONLY OPERATIONS.....	4-5
TABLE 4-4	2006 BASED AND TRANSIENT FLEET MIX.....	4-5
TABLE 4-5	FLEET MIX OPERATIONS FORECAST	4-9
TABLE 4-6	BASED AIRCRAFT FLEET MIX FORECAST	4-10
TABLE 4-7	TURBOJET FLEET MIX.....	4-13
TABLE 4-8	ANNUAL SERVICE VOLUME.....	4-16
TABLE 4-9	WINDROSE COVERAGE.....	4-18
TABLE 4-10	AIRPLANE WEIGHT CATEGORIZATION FOR RUNWAY LENGTH REQUIREMENTS.....	4-20
TABLE 4-11	CRITICAL DESIGN AIRCRAFT.....	4-21
TABLE 4-12	RUNWAY AND TAXIWAY DESIGN REQUIREMENTS	4-27
TABLE 4-13	BASED AIRCRAFT FLEET MIX FORECAST	4-34
TABLE 4-14	BASED AIRCRAFT STORAGE	4-35
TABLE 4-15	AIRCRAFT STORAGE DEMAND.....	4-36
TABLE 4-16	BUSINESS AIRCRAFT PARKING AREA REQUIREMENTS	4-38
TABLE 4-17	TRANSIENT AIRCRAFT PARKING DEMAND	4-39
TABLE 4-18	TOTAL AIRCRAFT APRON PARKING DEMAND.....	4-39
TABLE 4-19	PEAK HOUR GA/AT OPERATIONS BREAKDOWN.....	4-41
TABLE 4-20	PEAK HOUR OPERATIONS BY AIRCRAFT TYPE.....	4-41
TABLE 4-21	PEAK HOUR PASSENGER DEMAND	4-41
TABLE 4-22	AUTOMOBILE PARKING DEMAND.....	4-42
TABLE 4-23	PEAK HOUR DEMAND BY AIRCRAFT TYPE.....	4-43

TABLE 4-24	AVIATION FUEL STORAGE REQUIREMENTS BASED UPON AVERAGE PEAK MONTH	4-44
TABLE 4-25	SUMMARY OF FACILITY REQUIREMENTS	4-50
TABLE 5-1	CIVILIAN AIRPORT ENVIRON.....	5-7
TABLE 5-2	LAND USE CATEGORY	5-8
TABLE 5-3	CRITICAL DESIGN AIRPLANES	5-16
TABLE 5-4	TURBOJET AIRCRAFT ADJUSTED TAKEOFF LENGTH REQUIREMENTS	5-18
TABLE 5-5	FORECAST JET AIRCRAFT OPERATION COMPARISON	5-34
TABLE 5-6	2020 INM FLEET MIX FORECAST.....	5-35
TABLE 5-7	2020 NOISE EXPOSURE AREAS	5-36
TABLE 5-8	PROTOCOL 1: POPULATION IMPACT POTENTIAL	5-39
TABLE 5-9	PROTOCOL 2: POPULATION IMPACT POTENTIAL	5-39
TABLE 5-10	AIRFIELD ALTERNATIVE 1: DECLARED DISTANCE DIMENSIONS	5-44
TABLE 5-11	AIRFIELD ALTERNATIVE 1 – MODIFIED 2001 RUNWAY 14-32 MASTER PLAN CONFIGURATION.....	5-45
TABLE 5-12	AIRFIELD ALTERNATIVE 2: DECLARED DISTANCE INFORMATION.....	5-48
TABLE 5-13	AIRFIELD ALTERNATIVE 2 – PART 150 CONFIGURATION A.....	5-49
TABLE 5-14	EXIT TAXIWAY LOCATIONS ASSOCIATED WITH CRITICAL DESIGN AIRCRAFT	5-64
TABLE 5-15	PRELIMINARY IMPACT/MITIGATION SUMMARY	5-66
TABLE 5-16	ORDER OF MAGNITUDE COSTS - PRELIMINARY AIRFIELD DEVELOPMENT CONCEPT	5-70
TABLE 5-17	JAA WORK PROGRAM – PAVEMENT REHABILITATION PROJECTS	5-71
TABLE 5-18	FACILITY REQUIREMENTS SUMMARY.....	5-77



TABLE 5-19 EXISTING APRON/AIRCRAFT TIE-DOWN FACILITIES FOR SMALL AIRCRAFT5-78

TABLE 5-20 REHABILITATED APRON/AIRCRAFT TIE-DOWN FACILITIES5-79

TABLE 5-21 HIGH PRIORITY GA ORDER OF MAGNITUDE COSTS5-80

TABLE 5-22 GENERAL AVIATION HIGH PRIORITY DEVELOPMENT: PRELIMINARY ENVIRONMENTAL ORDER OF MAGNITUDE COSTS5-82

TABLE 5-23 GA ALTERNATIVE 1 – HIGH PRIORITY DEVELOPMENT: ORDER OF MAGNITUDE COSTS5-86

TABLE 5-24 GA ALTERNATIVE 1 – HIGH DEVELOPMENT: STRENGTHS AND WEAKNESSES5-87

TABLE 5-25 GA ALTERNATIVE 2 – HIGH PRIORITY DEVELOPMENT: ORDER OF MAGNITUDE COSTS5-89

TABLE 5-26 GA ALTERNATIVE 2 – HIGH DEVELOPMENT: STRENGTHS AND WEAKNESSES5-91

TABLE 5-27 MID-PRIORITY DEVELOPMENT: ORDER OF MAGNITUDE COSTS5-95

TABLE 5-28 GA ALTERNATIVE 1 – MID-PRIORITY DEVELOPMENT: ORDER OF MAGNITUDE COSTS5-99

TABLE 5-29 GA ALTERNATIVE 1- MID DEVELOPMENT: STRENGTHS AND WEAKNESSES5-99

TABLE 5-30 GA ALTERNATIVE 2 – MID DEVELOPMENT: ORDER OF MAGNITUDE COSTS5-103

TABLE 5-31 GA ALTERNATIVE 2 – MID DEVELOPMENT: STRENGTHS AND WEAKNESSES5-104

TABLE 5-32 AVIATION FUEL STORAGE DEMAND5-105

TABLE 5-33 RECOMMENDED AVIATION DEVELOPMENT: ORDER OF MAGNITUDE COST ESTIMATES5-108

TABLE 7-1 CRAIG AIRPORT FDOT WORK PROGRAM (2007-2013).....7-2

TABLE 7-2 CRAIG AIRPORT JOINT AUTOMATED CAPITAL IMPROVEMENT PROGRAM (2008-2020).....

TABLE 7-3	CONSTRUCTION ENGINEERING SOFT COST PERCENTAGES.....	7-5
TABLE 7-4	SHORT-TERM CIP (2008-11) MAXIMUM FUNDING	7-12
TABLE 7-5	MID-TERM CIP (2012-16) MAXIMUM FUNDING.....	7-13
TABLE 7-6	LONG-TERM CIP (2017-2026) MAXIMUM FUNDING	7-15
TABLE 7-7	20-YEAR CAPITAL IMPROVEMENT PROGRAM SUMMARY – MAXIMUM ELIGIBLE FUNDING.....	7-17
TABLE 7-8	CHANGES TO JAA WORK PROGRAM AND 2008 FDOT JACIP (2008-2026)	7-18
TABLE 7-9	FINANCIALLY FEASIBLE FUNDING PARTICIPATION	7-24
TABLE 7-10	SHORT-TERM CIP (2008-11) FINANCIALLY FEASIBLE FUNDING	7-25
TABLE 7-11	MID-TERM CIP (2012-2016) FINANCIALLY FEASIBLE FUNDING.....	7-26
TABLE 7-12	LONG-TERM CIP (2017-26) FINANCIALLY FEASIBLE FUNDING	7-28
TABLE 7-13	20-YEAR CIP SUMMARY FINANCIALLY FEASIBLE FUNDING	7-29
TABLE 7-14	HISTORIC FINANCIAL STATEMENTS.....	7-31
TABLE 7-15	FORECAST ASSUMPTIONS	7-33
TABLE 7-16	CASH FLOW ANALYSIS (FY 2006-2026).....	7-36
TABLE 7-17	LONG TERM PROJECTS (2017-2026) IF FUNDING IS AVAILABLE	7-38

LIST OF FIGURES

FIGURE 1-1	STEPS IN THE MASTER PLANNING PROCESS	1-6
FIGURE 2-1	AIRPORT LOCATION MAP	2-8
FIGURE 2-2	AIRSPACE CLASSES	2-10
FIGURE 2-3	AERONAUTICAL CHART-CRAIG AIRPORT	2-11
FIGURE 2-4	AIRPORTS IN THE AREA	2-13
FIGURE 2-5	JACKSONVILLE NAVAL AIR STATION SEASON WEATHER AVERAGES.....	2-15
FIGURE 2-6	JACKSONVILLE NAVAL AIR STATION SEASON WEATHER AVERAGES, AVERAGE HIGH/LOW RAINFALL.....	2-16
FIGURE 2-7	WIND ROSES	2-18
FIGURE 2-8	EXISTING AIRFIELD FACILITIES.....	2-19
FIGURE 2-9	VOR OR GPS APPROACH PROCEDURES RUNWAY 14	2-25
FIGURE 2-10	VOR OR GPS APPROACH PROCEDURES RUNWAY 32	2-26
FIGURE 2-11	ILS OR LOCALIZER APPROACH PROCEDURE RUNWAY 32.....	2-27
FIGURE 2-12	EXISTING LANDSIDE FACILITIES	2-29
FIGURE 2-13	SURFACE TRANSPORTATION NETWORK.....	2-33
FIGURE 2-14	NWI AND DELINEATED DITCHES	2-38
FIGURE 2-15	FLUCFCS MAP	2-39
FIGURE 2-16	FEMA FLOOD MAP	2-40
FIGURE 2-17	EAGLES NEXT	2-42
FIGURE 2-18	WADING BIRD COLONY.....	2-43
FIGURE 2-19	WOOD STORK COLONY LOCATION	2-44

FIGURE 2-20	SOIL MAP UNIT BOUNDARY	2-45
FIGURE 3-1	GREATER JACKSONVILLE METROPOLITAN STATISTICAL AREA	3-4
FIGURE 3-2	STRONG CORRELATION	3-10
FIGURE 3-3	WEAK CORRELATION	3-11
FIGURE 4-1	AIRCRAFT CLASSIFICATIONS	4-7
FIGURE 4-2	US COMPANIES OPERATING FIXED WING TURBINE-POWERED AIRCRAFT AND NUMBER OF AIRCRAFT 1991-2003.....	4-12
FIGURE 4-3	EXISTING CONDITIONS.....	4-13
FIGURE 4-4	AIRFIELD CAPACITY LEVEL.....	4-16
FIGURE 4-5	100 PERCENT OF FLEET AT 60 OR 90 PERCENT USEFUL LOAD	4-23
FIGURE 4-6	PAVEMENT CONDITION INDEX	4-26
FIGURE 4-7	PAVEMENT CONSTRUCTION HISTORY.....	4-28
FIGURE 4-8	CITY OF JACKSONVILLE LAND USE MAP	4-47
FIGURE 4-9	CITY OF JACKSONVILLE ZONING MAP.....	4-48
FIGURE 5-1	RESIDENTIAL COMMUNITIES	5-4
FIGURE 5-2	EXISTING LAND USE WITH NOISE CONTOURS	5-5
FIGURE 5-3	2006 NOISE NOTICE ZONES	5-6
FIGURE 5-4	2006 CIVILIAN HEIGHT AND HAZARD ZONES.....	5-12
FIGURE 5-5	EXISTING SCHOOL ZONES	5-14
FIGURE 5-6	STOPWAY	5-21
FIGURE 5-7	JACKSONVILLE AIRSPACE SECTIONAL	5-26
FIGURE 5-8	CENTERLINE OF HELICOPTER NOISE ABATEMENT FLIGHT CORRIDORS ..	5-28
FIGURE 5-9	CENTERLINE OF VFR NOISE ABATEMENT TRAINING TOUCH AND GO CORRIDORS	5-29

FIGURE 5-10	VFR NOISE ABATEMENT ARRIVAL FLIGHT TRACKS.....	5-30
FIGURE 5-11	VFR NOISE ABATEMENT DEPARTURE FLIGHT TRACKS	5-31
FIGURE 5-12	2006 EXISTING CONDITIONS & 2020 NO BUILD NOISE CONTOURS	5-37
FIGURE 5-13	2020 NOISE CONTOURS & 2020 NO BUILD COMPARED TO 1,600 FOOT EXTENSION	5-38
FIGURE 5-14	AIRFIELD ALTERNATIVE 1.....	5-42
FIGURE 5-15	DECLARED DISTANCES SAMPLE SCHEMATIC	5-43
FIGURE 5-16	AIRFIELD ALTERNATIVE 2.....	5-47
FIGURE 5-17	2020 NOISE NOTICE ZONE	5-53
FIGURE 5-18	EXISTING VS 2020 CIVILIAN HEIGHT AND HAZARD ZONE.....	5-55
FIGURE 5-19	FUTURE SCHOOL ZONES WITH 1,600 FOOT EXTENSION	5-56
FIGURE 5-20	LANDMARK MIDDLE SCHOOL FUTURE IMPACTS	5-57
FIGURE 5-21	KERNAN ELEMENTARY AND MIDDLE SCHOOL FUTURE IMPACTS.....	5-58
FIGURE 5-22	RUNWAY 32 EXTENSION WETLAND MITIGATION AREA.....	5-67
FIGURE 5-23	PREFERRED AIRFIELD ALTERNATIVE.....	5-68
FIGURE 5-24	EXISTING ON-AIRPORT LAND USE	5-73
FIGURE 5-25	DEVELOPMENT ZONES	5-74
FIGURE 5-26	GA ALTERNATIVE 1 – HIGH DEVELOPMENT.....	5-85
FIGURE 5-27	GA ALTERNATIVE 2 – HIGH DEVELOPMENT.....	5-90
FIGURE 5-28	GA ALTERNATIVE 1 – MID DEVELOPMENT.....	5-97
FIGURE 5-29	GA ALTERNATIVE 2 – MID DEVELOPMENT.....	5-101
FIGURE 5-30	PREFERRED AIRPORT DEVELOPMENT	5-107