

Mead &Hunt

SPECIAL THANKS TO:

Airport Staff

Jason Licon **Aaron Ehle Shawn Battmer**

Airport Commission

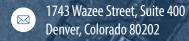
Wade Troxell, Chair Tom Fleming, Vice-Chair Don Overcash **Darin Atteberry Curt Burgener Steve Adams** Jerry Stooksbury

Planning & Development Subcommittee

Tom Fleming Diane Jones Josh Birks Troy Bliss James Hayes

Mead & Hunt

Ryan Hayes Lauren Rasmussen PRIMARY CONTACT: **Ryan Hayes**



303.888.1904

ryan.hayes@meadhunt.com

www.meadhunt.com

AMCG in association with: Centennial, Colorado **Gruen Gruen + Associates** Denver, Colorado

Leibowitz & Horton Greenwood Village, Colorado

Quantum Spatial Sheboygan Falls, Wisconsin

November 2020

FINAL REPORT



This paper contains 100% post consumer fiber, manufactured entirely Carbon Neutral Plus and Processed Chlorine Free. It is Green Seal™ and Forest Stewardship Council™ (FSC) certified ensuring responsible forest management.

Photo: Shahn Sederberg, CDOT Aeronautics



Northern Colorado Regional Airport







Exec	Executive Summary	
1.0		
1.0	Introduction	
	Master Plan Study Goals	
1.2	Airport Location and Vicinity	1.2
	Airport Role	
1.4	Airport Development History	1.5
1.5	Airport Management, Ownership Structure, and Airport Commission.	1.6
1.6	FNL Planning and Development Subcommittee (PDSC)	1.6
1.7	Economic Impact	1.7
2.0 I	Inventory of Existing Conditions	2.1
Int	roduction	2.1
2.1	Previous Planning Studies	2.3
2.2	Airside	2.5
2.3	Airspace System	2.8
2.4	Landside Facilities	2.13
2.5	Airport Support Facilities and Equipment	2.14
2.6	Airport Access and Circulation Network	2.15
2.7	Automobile Parking Lots and Transportation	2.16
2.8	Emergency Response	2.16
2.9	Utilities	2.17
2.1	0 Airport Environs	2.18
2.1	1 Environmental Baseline Conditions	2.26
3.0 /	Aviation Activity Forecasts	3.1
	roduction	
2.1	Current Statistics and Aviation Environment	

3.2	Historical Airport Activity	3.8
3.3	Forecast Documentation Review and Data Sources	3.14
3.4	Forecast Approach and Methodology	3.17
3.5	Aviation Activity Forecasts	3.18
3.6	Aviation Forecasts Summary	3.33
4.0	Capacity Analysis and Facility Requirements	4.1
Intr	oduction	4.1
4.1	Airfield Capacity Methodology	4.4
4.2	Airfield Capacity Analysis	4.12
4.3	Facility Requirements	4.13
5.0	Alternatives Analysis	5.1
Intr	oduction	5.1
5.1	Assumptions	5.1
5.2	Development Goals	5.3
5.3	Airfield Development Plan	5.4
5.4	Passenger Terminal Area Alternatives	5.24
5.5	Passenger Terminal Building Alternatives	5.28
5.6	Conceptual Development Plan (CDP)	5.35
6.0	Airport Influence Area Market Analysis and Recommenda	
	nary	
	oduction	
	Study Background	
	Existing Land Use and Development	
	Real Estate Market Conditions	
	AIA Future Land Use Demand and Planning Considerations	
6.5	AIA Recommendations	6.10



7.0	Airport Plans	.7.1
In	troduction	. 7.1
7.	1 Cover	.7.2
7	2 Airport Data	.7.2
7.	3 Existing and Future Airport Layout Plans	.7.3
7.	4 Airspace Plan	. 7.4
7.	5 Inner Approach Surfaces	.7.4
7.	6 Departure Surface Drawing	. 7.5
7.	7 Terminal Area Plan	. 7.5
7.	8 Land Use Plan	. 7.6
7.	9 Airport Property Map	.7.7
8.0	Development Program and Needs Assessment	.8.1
In	troduction	. 8.1
8.	1 Implementation Schedule and Project List	. 8.2
8	2 Cost Estimates	. 8.2
8.	3 Capital Improvement Program	. 8.6
8.	4 Phasing Plan	. 8.6
8.	5 Finanical Plan and Implementation Strategy	3.11
8.	6 Summary	3.11
9.0	Financial Implementation Analysis	9.1
9.	1 Financial Analysis Objectives	. 9.1
9.	2 Overall Approach	. 9.1
9.	3 Organization, Accounting and Budgeting	. 9.2
9.	4 Aviation Forecasts	. 9.3
9.	5 Capital Funding Sources	. 9.3
	6 Financial Analysis and Implementation Plan for the Master Plan Capital	. 9.9
		9.22

LIST OF TABLES

Table 2-1: Airport Pavement Inventory Summary	2.1
Table 2-2: Airport Facilities Inventory Summary	2.2
Table 2-3: FNL Taxiway System	2.2
Table 2-4: Airport Facilities Inventory Summary	2.7
Table 2-5: ARFF Response Vehicles	2.15
Table 2-6: Threatened and Endangered Species in Larimer County	2.28
Table 2-7: Sites Reporting Generation of Hazardous Waste to EPA	2.30
Table 3-1: Historical Population Data and Population Projections	
Table 3-2: Historical Aviation Activity	
Table 3-3: 2018 Based Aircraft by Type	
Table 3-4: FY 2018 TFMSC Operations Estimate by ARC	3.14
Table 3-5: Forecasted Enplanements Scenario Comparison	3.21
Table 3-6: Commercial Service Forecast	3.23
Table 3-7: General Aviation (GA) Operations Forecast Scenarios, 2013-2038	3.26
Table 3-8: Local and Itinerant Operations Forecast	3.28
Table 3-9: General Aviation (GA) Based Aircraft Forecast, 2018-2038	3.29
Table 3-10: General Aviation (GA) Based Aircraft Fleet Mix, 2018-2038	3.31
Table 3-11: Summary of Aviation Activity Forecasts, 2018-2038	3.34
Table 3-12: Master Plan Forecasts/TAF Forecast Comparison, 2018-2038	3.35
Table 4-1: Capacity Analysis and Facility Requirements Recommendations	
Summary	4.2
Table 4-2: Visibility and Ceiling Criteria	4.5
Table 4-3: National Climatic Data Center Approach Visibility Minimums	4.5
Table 4-4: All Weather Wind Coverage Summary	4.7
Table 4-5: IFR Wind Coverage Summary	4.9
Table 4-6: VFR Wind Coverage Summary	4.10
Table 4-7: Aircraft Weight Classifications	4.11
Table 4-8: RDC C/D-III Runway Design Standards – Runway 15/33 15/33	4.14
Table 4-9: Taxiway Design Group (TDG) 3 Standards	4.15
Table 4-10: RDC B-I Small Aircraft Runway Design Standards – Runway 6/24	4.16
Table 4-11: 2007/2018 Runway Length Requirements Comparison	4.22
Table 4-12: Runway Protection Zones	4.23
Table 4-13: ARFF Support Requirements	
Table 4-14: Future Terminal Program	4.37
Table 5-1: Airfield Recommendations Summary	5.6
Table 6-1: AIA Projected Land Use 20-Year Demand	6.6



Table 8-1: Phase A (0-5 years) Development Plan Project Costs
Table 9-1: Summary of 2020 Base Year and Total Escalated Costs for the Master Plan Capital Improvement Program

LIST OF SCHEDULES

Schedule 9-1. Estimated Project Costs and Development Schedule

Schedule 9-2. Projected Capital Funding Sources

Schedule 9-3. PFC Serviced Debt Issue

Schedule 9-4. Actual, Budgeted and Projected Operations & Maintenance Expenses

Schedule 9-5. Actual, Budgeted and Projected Operating Revenues

Schedule 9-6. Financial Plan Summary – Budgeted and Projected Net Revenues, Capital Funding and Capital Expenditures

LIST OF FIGURES

Figure 1-1: Airport Location Map	1.3
Figure 1-2: Airport Vicinity Map	1.4
Figure 1-3: Economic Impacts of FNL	1.7
Figure 2 de Friedric et Airfield Louise	2.0
Figure 2-1: Existing Airfield Layout	
Figure 2-2: FNL Airspace/NAVAIDS Summary	2.10
Figure 2-3: Airspace Classifications	2.11
Figure 2-4: Central Remote Tower Camera	2.12
Figure 2-5: Airport Environs	2.19
Figure 2-6: Generalized Existing Zoning	2.21
Figure 2-7: Generalized Future Land Use	2.23



Figure 2-8: Airport Influence Area	2.25
Figure 2-9: 2007 DNL Noise Contours	2.33
Figure 3-1: Historical TFMSC Operations	3.11
Figure 3-2: Historical Passenger Enplanements and Forecast Enplanement	
Scenarios	3.22
Figure 3-3: General Aviation (GA)/Air Taxi Operations Forecasts, 2018-2038	3.27
Figure 3-4: Based Aircraft Forecast Scenarios, 2018-2038	3.30
Figure 4-1: Representative Aircraft by RDC	
Figure 4-2: All Weather Windrose	
Figure 4-3: IFR Windrose	
Figure 4-4: Airfield Design Surfaces	
Figure 4-5: Airbus A320 Take-Off Weight Limitations	
Figure 4-6: Airbus A319 Take-Off Weight Limitations	4.20
Figure 5-1: Airfield Recommendations	
Figure 5-2: Northeast Alternative 1	5.12
Figure 5-3: Northeast Alternative 2	5.14
Figure 5-4: Southeast Alternative 1	5.17
Figure 5-5: Southeast Alternative 2	5.19
Figure 5-6: West Alternative 1	5.21
Figure 5-7: West Alternative 2	5.23
Figure 5-8: Terminal Area Alternative 1	5.25
Figure 5-9: Terminal Area Alternative 2	5.27
Figure 5-10: Terminal Layout, One Story Alternative	5.30
Figure 5-11: Terminal Layout, Two Story Alternative, Level 1	5.33
Figure 5-12: Terminal Layout, Two Story Alternative, Level 2	5.34
Figure 5-13: Conceptual Development Plan (CDP)	5.36
Figure 6-1: Off-Airport Undeveloped Land in the AIA	
Figure 6-2: Residential Development Activity in AIA Vicinity	
Figure 6-3: Future AIA Residential Compatibility	6.9
Figure 8-1: Project Phasing Plan – Phase A	Q 7
Figure 8-2: Project Phasing Plan – Phase B	
Figure 8-3: Project Phasing Plan – Phase C	
TIQUIE 0-3. FIDJECT FIIASITIY FIATI - FITASE C	0.9



LIST OF APPENDICIES

Appendix A – Acronyms & Glossary

Appendix B – Airport Influence Area Market Analysis & Recommendations

Appendix C – Passenger Demand Analysis

Appendix D – General Aviation Industry Analysis

Appendix E – Facility Needs Assessment

Appendix F – Waste Diversion Plan



PAGE INTENTIONALLY LEFT BLANK

