

2020 Annual Conference

2020 South Dakota State Aviation System Plan & Aviation Economic Impact Study

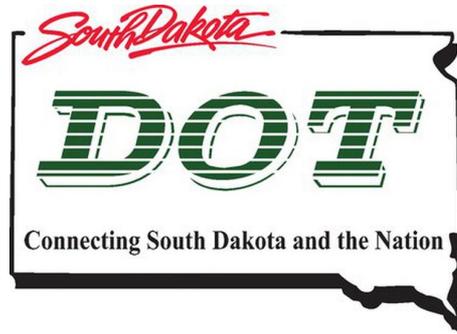
March 12, 2020

SOUTH DAKOTA  2020

**State Aviation
System Plan**



Project Team



Kimley»»Horn





What's Been Accomplished So Far?



Public Consultation







Summary of Airport Roles

- Reviewed FAA classifications
- Evaluated 2010 methodology and made revisions
- Assigned 2020 SDSASP roles
- Assigned facility and service targets based on airport roles

Airport Role	Number of Airports	Example Airport
Commercial Service	5	Watertown Regional
Large General Aviation	7	Brookings Regional
Medium General Aviation	16	Millbank Municipal
Small General Aviation	27	McLaughlin Municipal
Basic Service	1	Howard Municipal
Total System Airports	56	

Revised Methodology

Role	Runway (min)	Approach	Weather	Services	Fuel	ARC
Commercial Service	6,500ft	Precision	Yes	Major	JetA/100LL	C-II
Large General Aviation	5,000ft	Non-precision	Yes	Minor	JetA/100LL	C-I
Medium General Aviation	4,200ft	Non-precision	Yes	On-call	100LL	B-II
Small General Aviation	3,000ft	Visual	No	No	No	B-I
Basic Service	No Min	Visual	No	No	No	A-I

Airport Example:

Airport Name	FAA ID	Rwy Length	Primary Approach	Weather	Repair	Fuel	ARC
Onida Municipal	98D	3,800'	Non-precision	Yes	Minor	Jet A/100 LL	A/B-I

3 Airports

Medium GA

Small GA

4 Airports

Medium GA

Small GA

1 Airport*

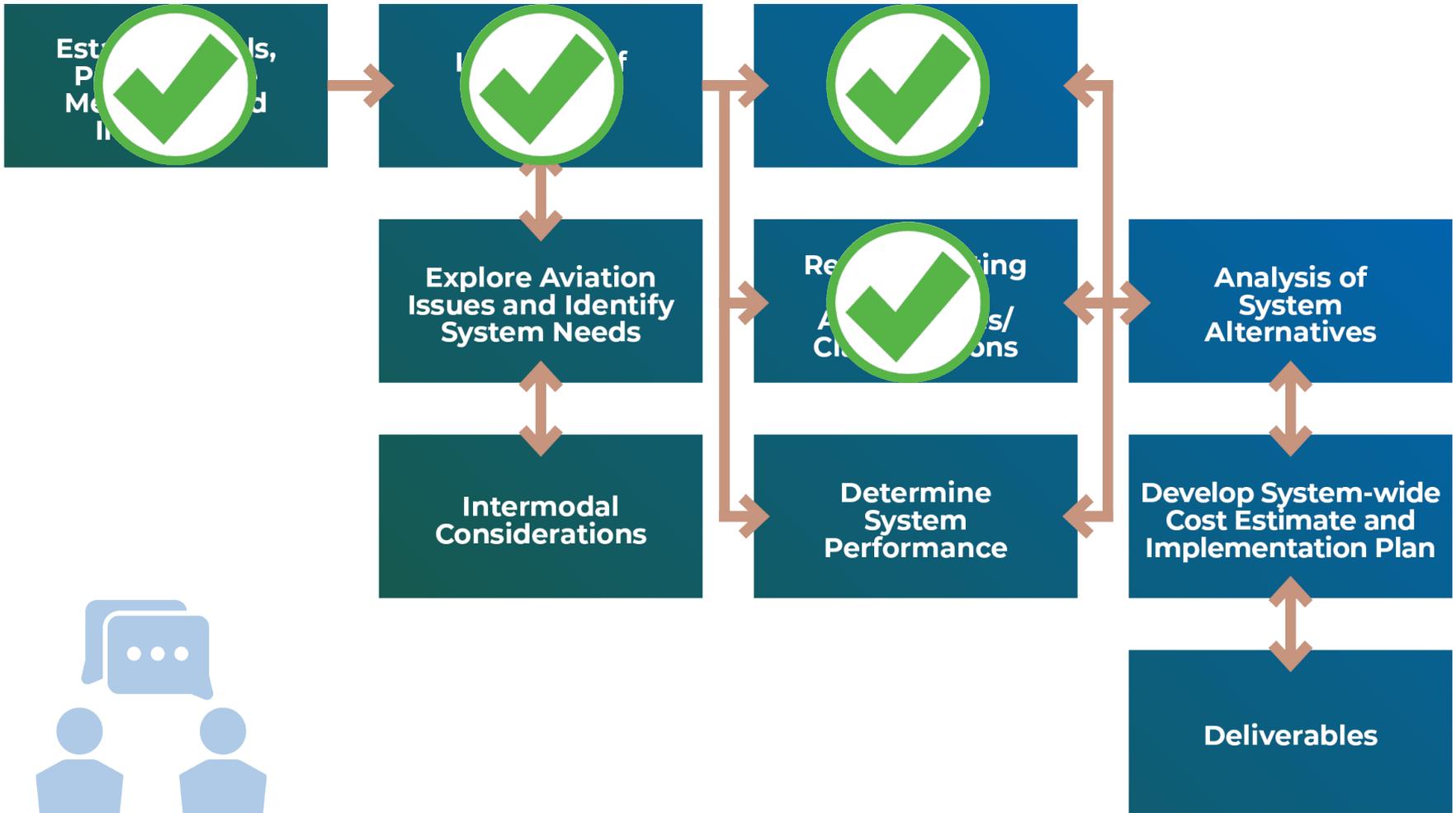
Commercial Service

Large GA

Facility and Service Targets

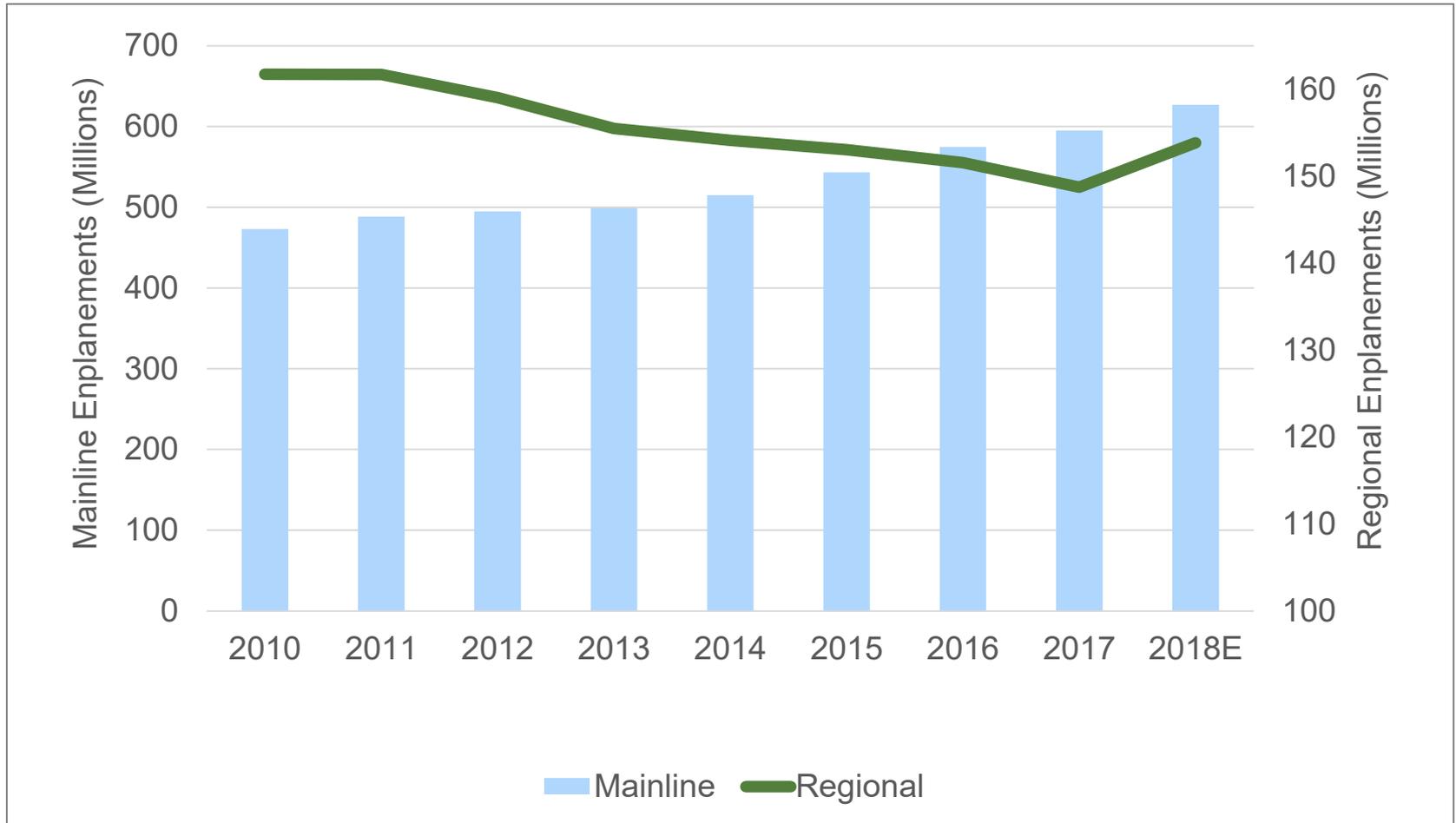
FACILITY AND SERVICE TARGETS					
Description	Commercial Service	Large GA	Medium GA	Small GA	Basic Service
AIRSIDE FACILITIES					
Airport Reference Code	C-II	C-I	B-II	B-I or below	A-I
Primary Runway Length	Minimum 6,500'	Minimum 5,000'	Minimum 4,200'	Minimum 3,000'	Not a Target
Primary Runway Width	Minimum 100'	Minimum 100'	Minimum 75'	Minimum 60'	Minimum 50'
Primary Runway Surface	Paved	Paved	Paved	Paved	Not a Target
Type of Parallel Taxiway	Full parallel	Full parallel	Turnarounds meet standards (both ends)	Exits as needed	Not a Target
Type of Runway Approach	Precision	Non-precision	Non-precision	Visual	Visual
Runway Lighting	MIRL	MIRL	MIRL	LIRL	Not a Target
Taxiway Lighting	MITL	MITL	MITL	Not a Target	Not a Target
SERVICES					
Fuel	100LL & Jet A	100 LL & Jet	100LL	Not a Target	Not a Target
Comp plan define land uses	Yes	Yes	Yes	Yes	Yes

SOUTH DAKOTA 2020



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Mainline and Regional Carrier Enplanements – Different Paths



Source: FAA Aerospace Forecasts 2019-2039

GA and Air Taxi Fleet Changes

U.S. Active Aircraft Categories	Average Annual Growth 2010-18
Single Engine	-0.9%
Multi-Engine	-2.4%
Turboprop	0.7%
Turbojet	3.0%
Piston Rotorcraft	-0.9%
Turbine Rotorcraft	1.6%
Experimental	1.2%
Light Sport Aircraft	-10.6%
Other	-2.3%
All Active GA and Air Taxi Aircraft	-0.6%

Source: FAA Aerospace Forecasts 2019-2039

Commercial Service Forecasts

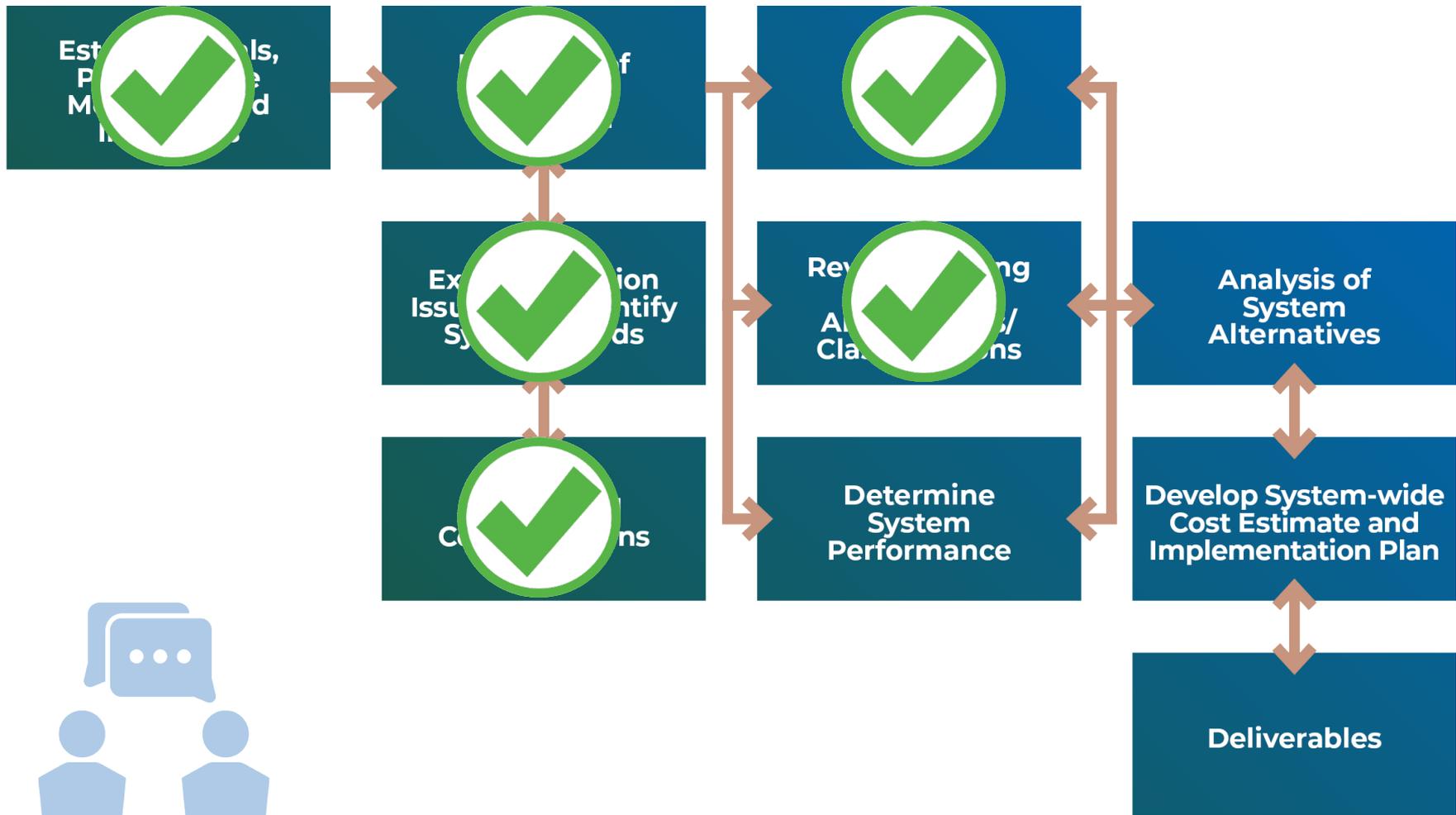
Forecast Element	2018 Baseline	2023	2028	2038	CAGR 2018-2038
Enplanements	903,098	986,553	1,077,729	1,286,165	1.78%
Based Aircraft	411	432	454	501	1.00%
Commercial Service Operations	75,004	79,881	85,245	97,617	1.33%
GA Operations	125,993	132,420	139,175	153,735	1.00%
Military Operations	4,799	4,799	4,799	4,799	Flatlined
Total Operations	205,796	217,100	229,219	256,152	1.10%

GA Forecasts

Forecast Element	2018 Baseline	2023	2028	2038	CAGR 2018-2038
Based Aircraft	863	892	921	985	0.66%
GA Operations	256,924	264,382	272,356	290,354	0.61%
Military Operations	974	974	974	974	Flatlined
Total Operations	257,898	265,356	273,510	291,328	0.61%

Comparison of Forecast Results

Forecast Element	2023 (5-Year Forecast)			2028 (10-year Forecast)		
	Preferred Methodologies	TAF	TAF Variance	Preferred Methodologies	TAF	TAF Variance
Commercial Service						
Enplanements	986,553	1,012,498	-2.63%	1,077,729	1,123,938	-4.29%
Based Aircraft	432	449	-3.94%	454	469	-3.30%
Commercial Service Ops	79,881	72,689	9.00%	85,245	76,779	9.93%
GA Operations	132,420	129,255	2.39%	139,175	133,373	4.17%
Military Operations	4,799	4,799	0.00%	4,799	4,799	0.00%
Total Ops at CS Airports	217,100	206,743	4.77%	229,219	214,951	6.22%
General Aviation						
Based Aircraft	892	941	-5.54%	921	956	-3.75%
GA Operations	264,382	264,264	0.04%	272,536	266,044	2.38%
Military Operations	974	974	0.00%	974	974	0.00%
Total Ops at GA Airports	265,356	265,238	0.12%	273,510	267,018	2.45%



Public Consultation

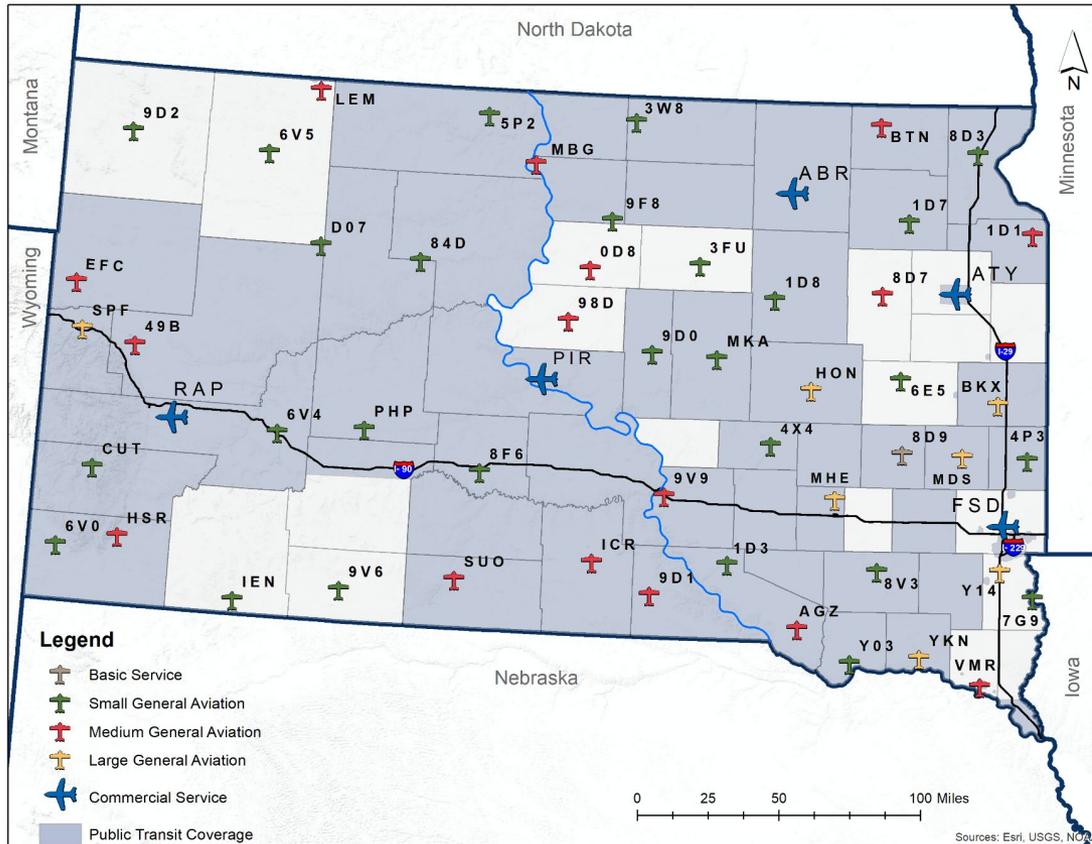
Top Aviation Issues We Heard

Issue Category	Goal 1: Safety and Security	Goal 2: Maintenance and Infrastructure Development	Goal 3: Accessibility to Users
Infrastructure Needs (Maintenance & Expansion)	✓	✓	✓
Aviation Workforce		✓	✓
Land Acquisition/Compatibility	✓	✓	
Compliance	✓	✓	
Revenue Generation		✓	✓
Technology	✓	✓	✓
Air Service			✓
Seasonal Capacity		✓	✓

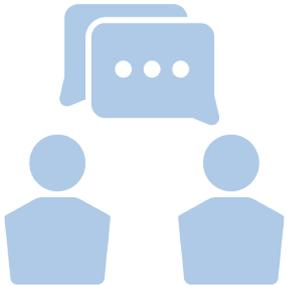
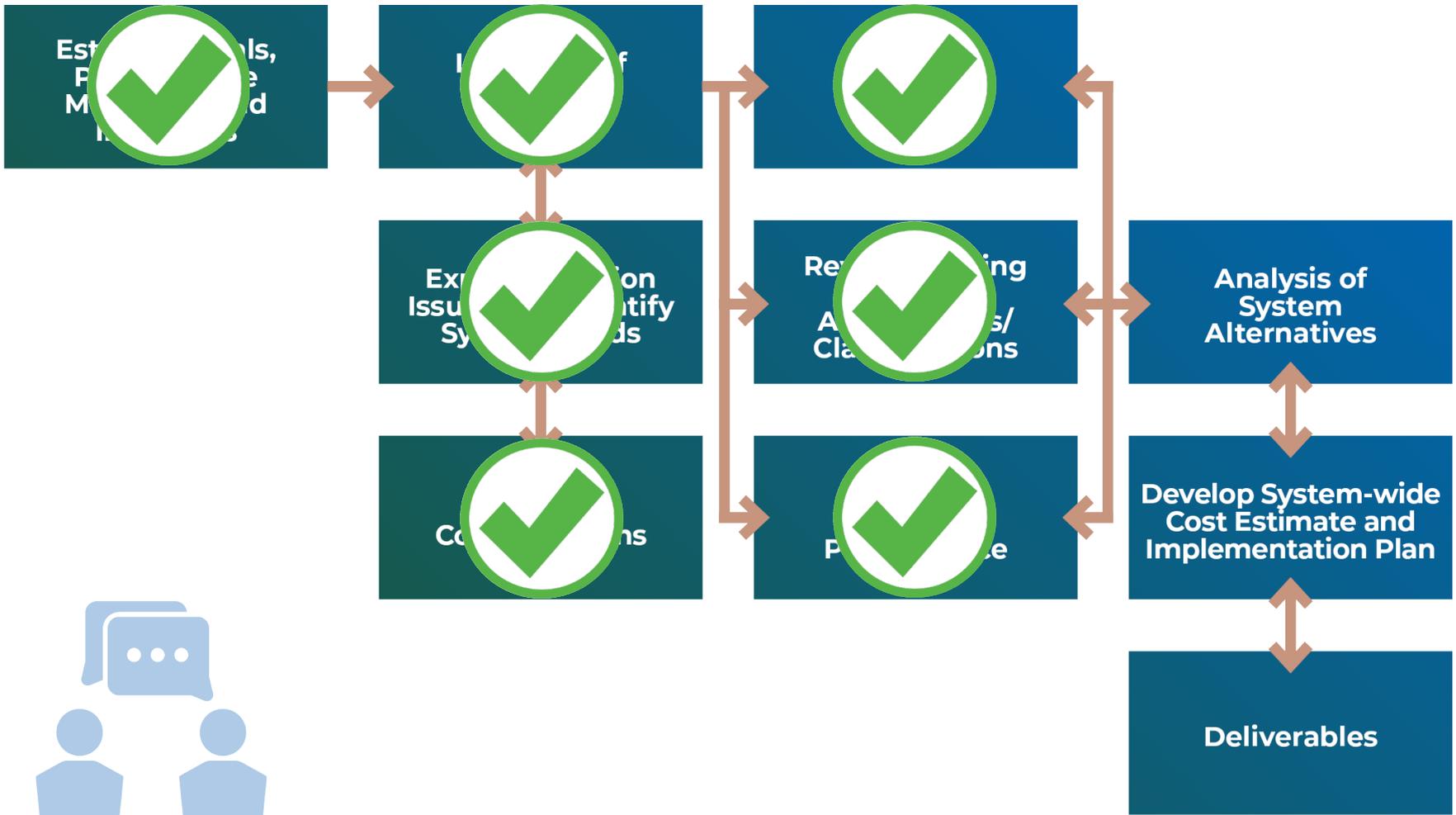
Who we heard from:

- SD Aeronautics Commission
- Airport Managers
- FAA
- Medical Transport Pilots
- Aerial Firefighter Pilots
- SDDOT
- Project Advisory Committee (PAC)
- Economic Development Specialists
- Agricultural Spraying Operators
- And more

Intermodal Connectivity and Airport Access



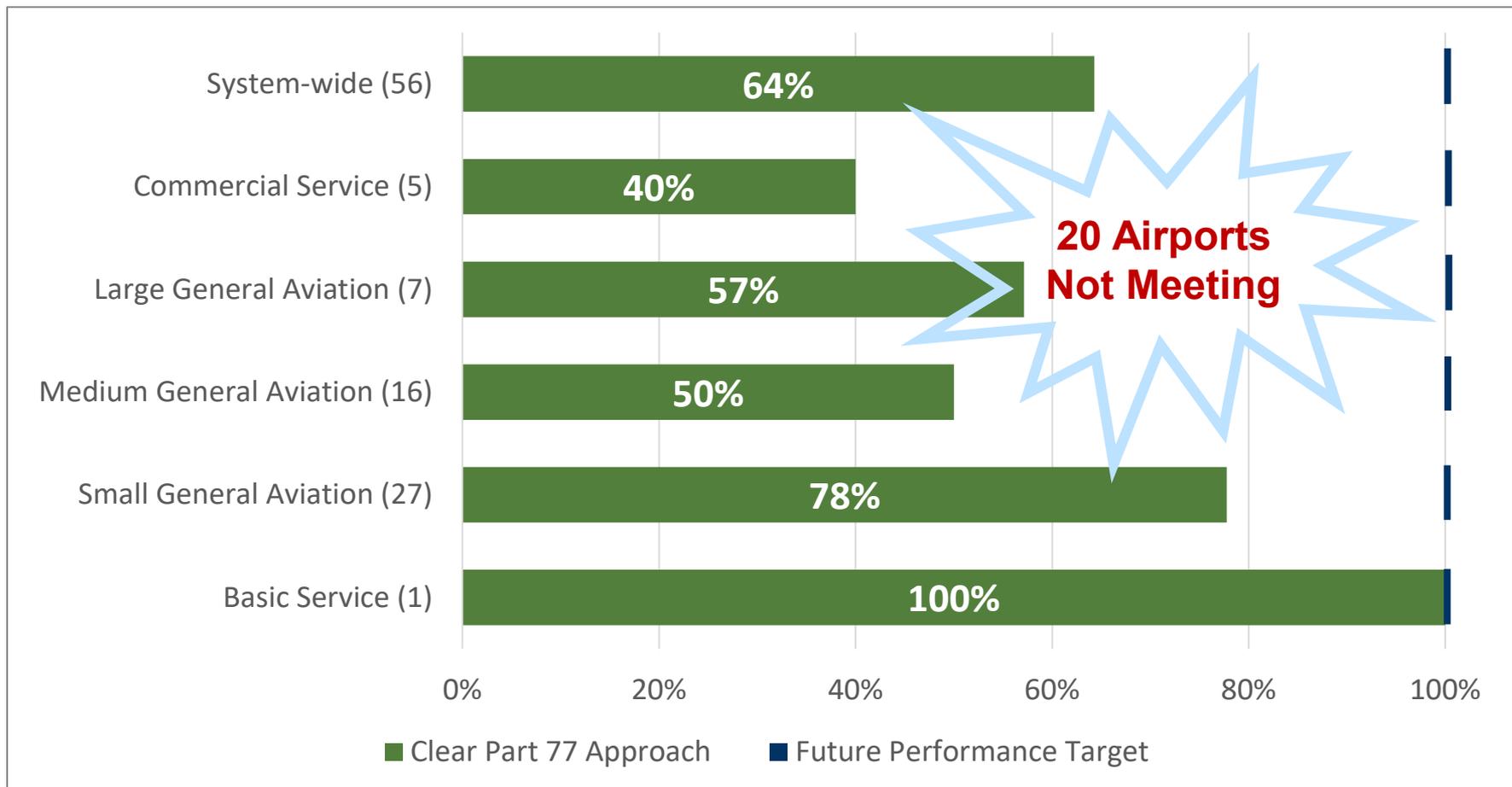
- Roadway Connectivity
- Intermodal Integration
 - Public Transit
 - Ground Transportation
 - Interregional Bus Service
- Heavy Rail
- Long-Range Transportation Improvements



Public Consultation

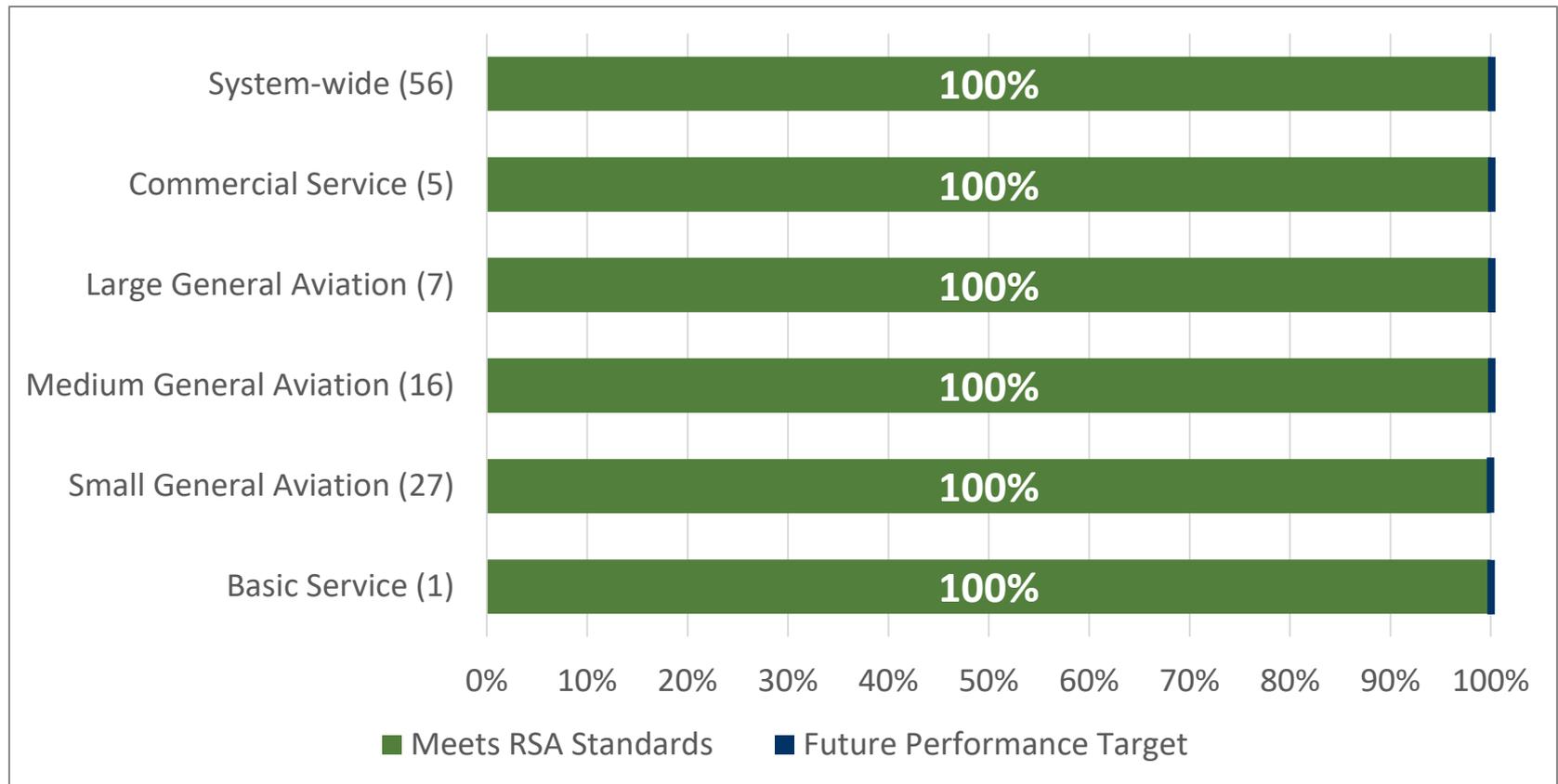
Goal: Safety and Security

% of Airports that have Clear Part 77 Approaches on their Primary Runway



Source: 2020 SDSASP Inventory Form, Kimley-Horn, 2019

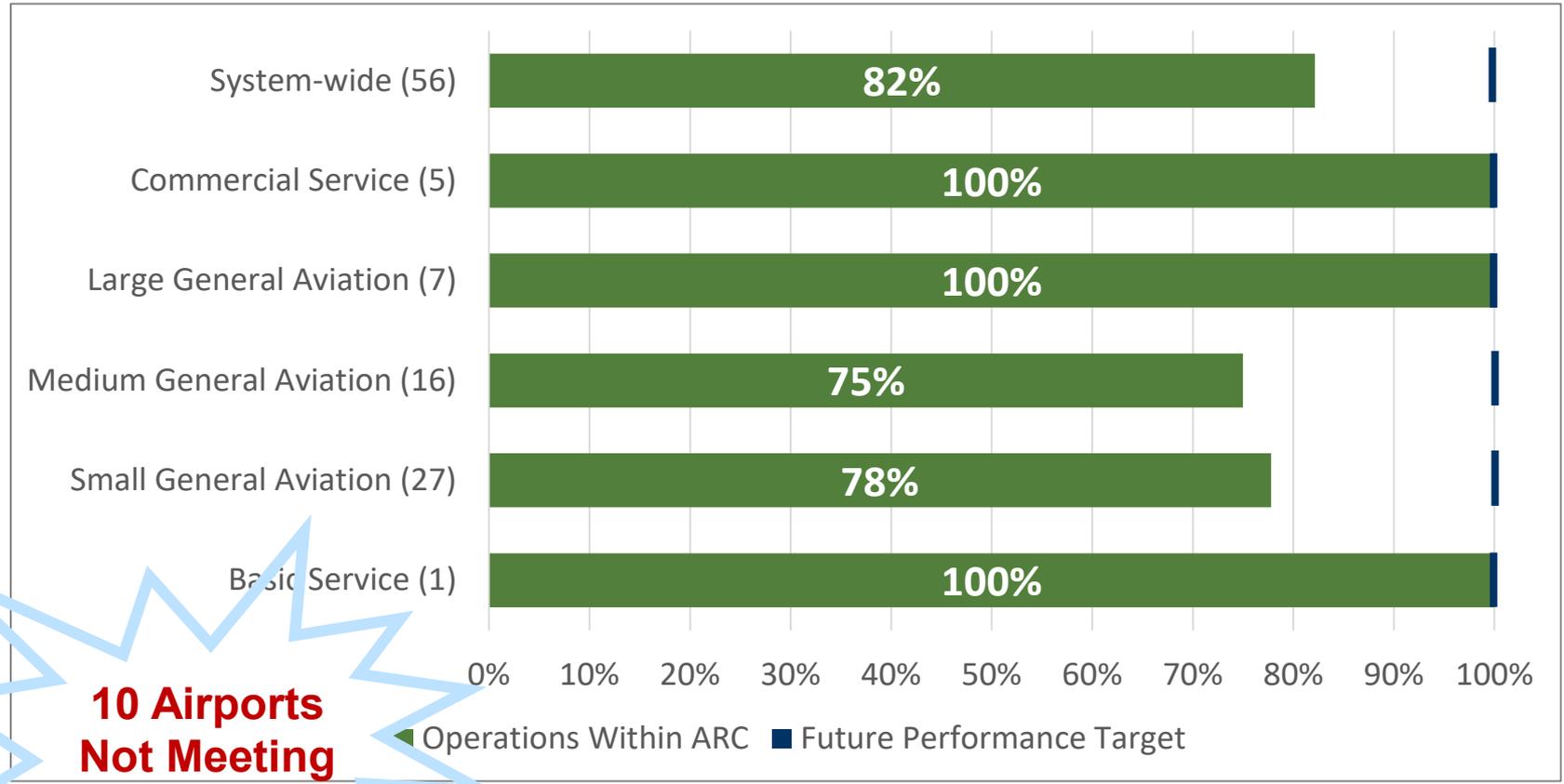
% of Airports Meeting SDDOT Annual Inspection Standards for RSAs



Source: Kimley-Horn, 2019, SDDOT

Goal: Maintenance and Development of Infrastructure

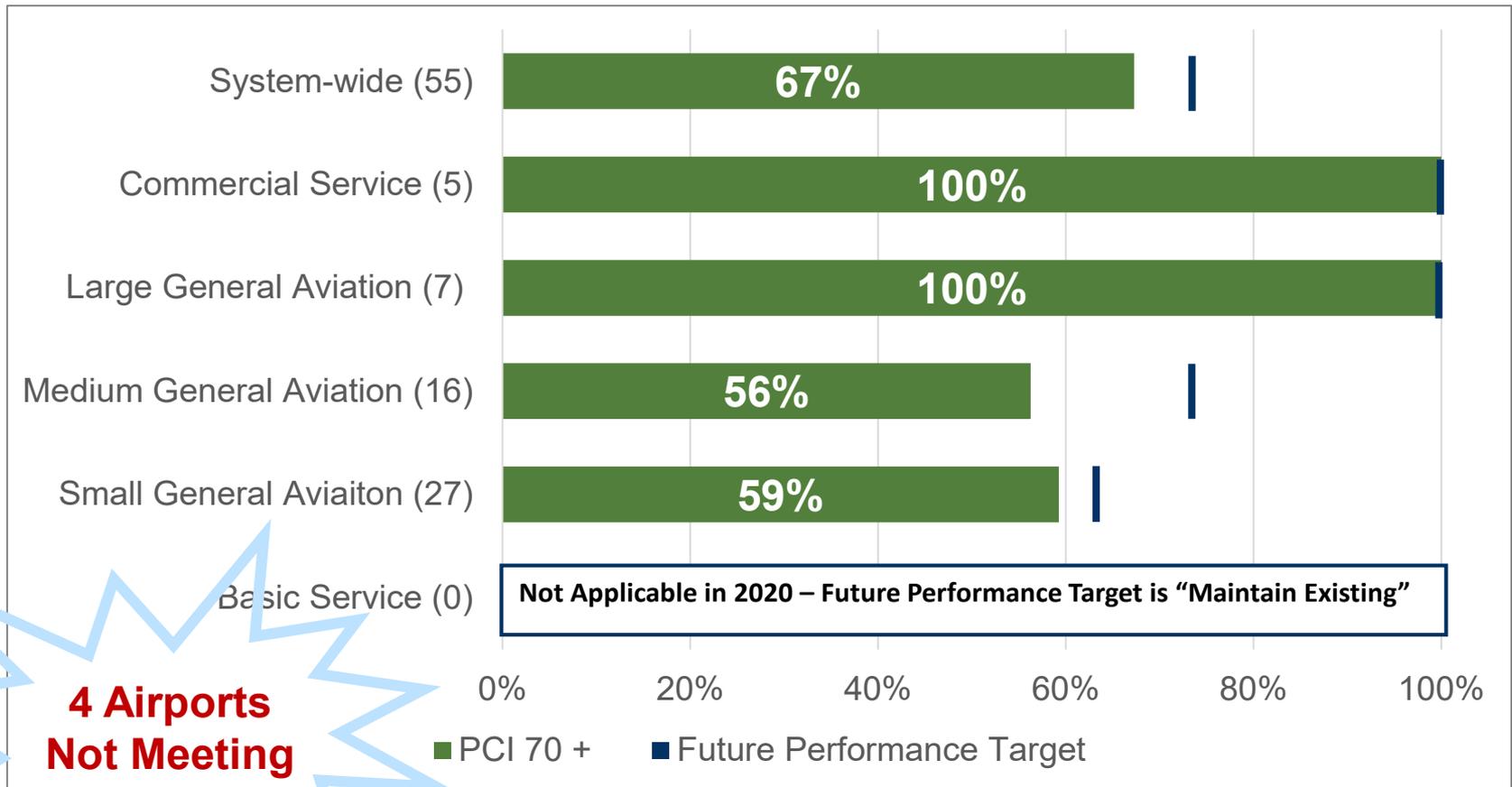
% of Airports that do not have Substantial Operations by Aircraft with an ARC Higher than the Critical Aircraft



**10 Airports
Not Meeting**

Source: 2020 SDSASP Inventory Form, Kimley-Horn, 2019

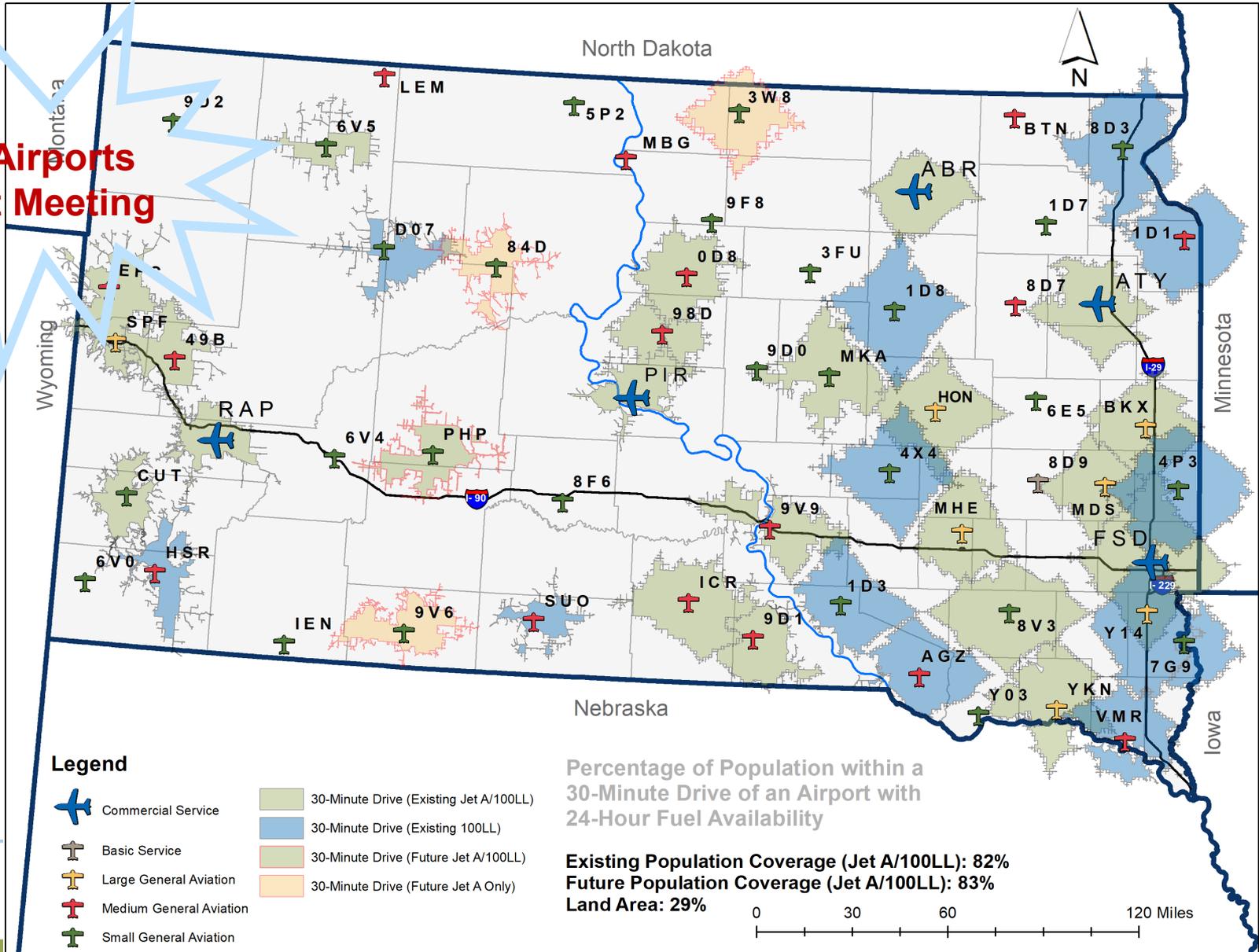
% of Airports that have a Primary Runway PCI of 70 or Greater



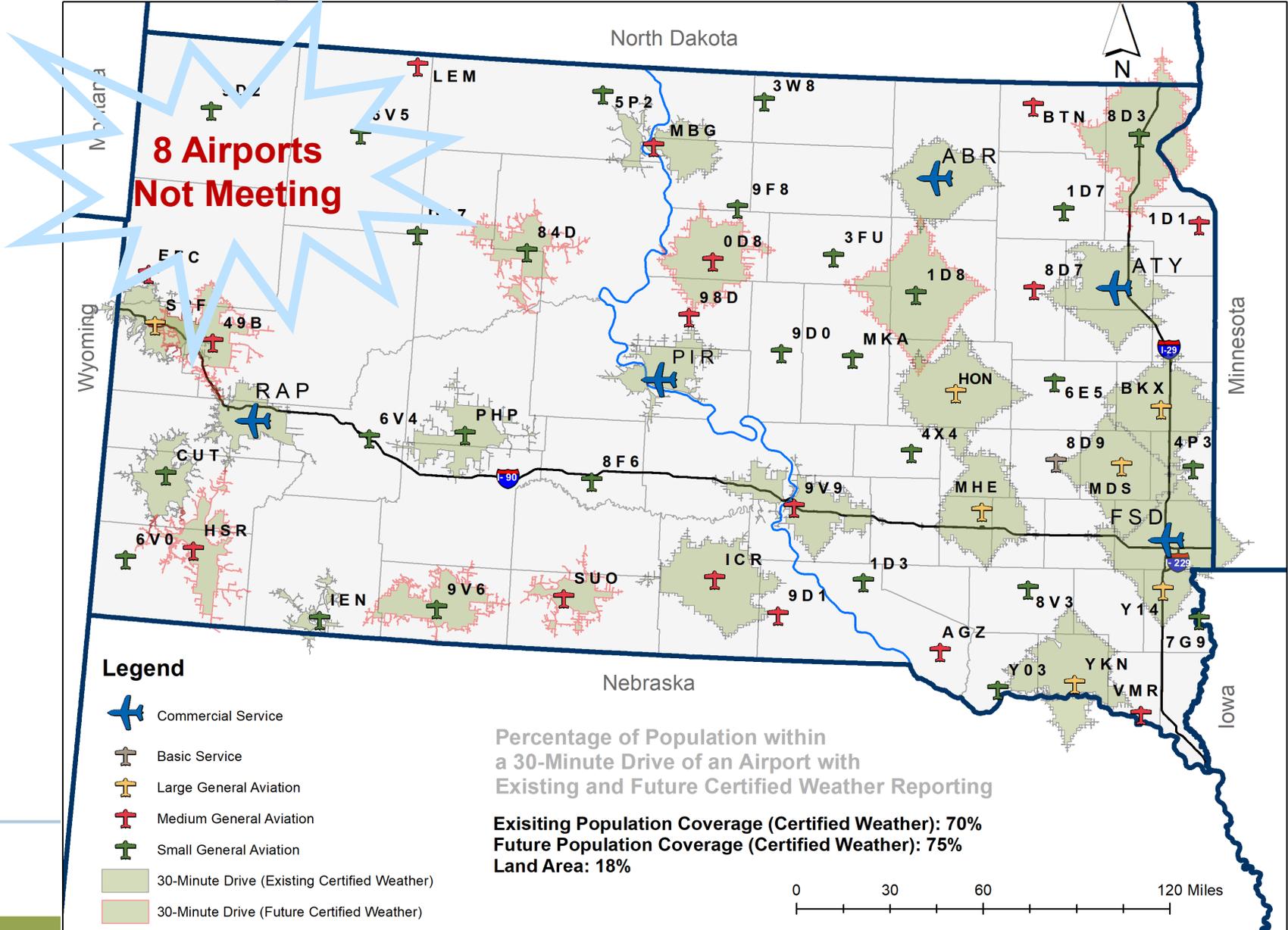
Accessibility to Users

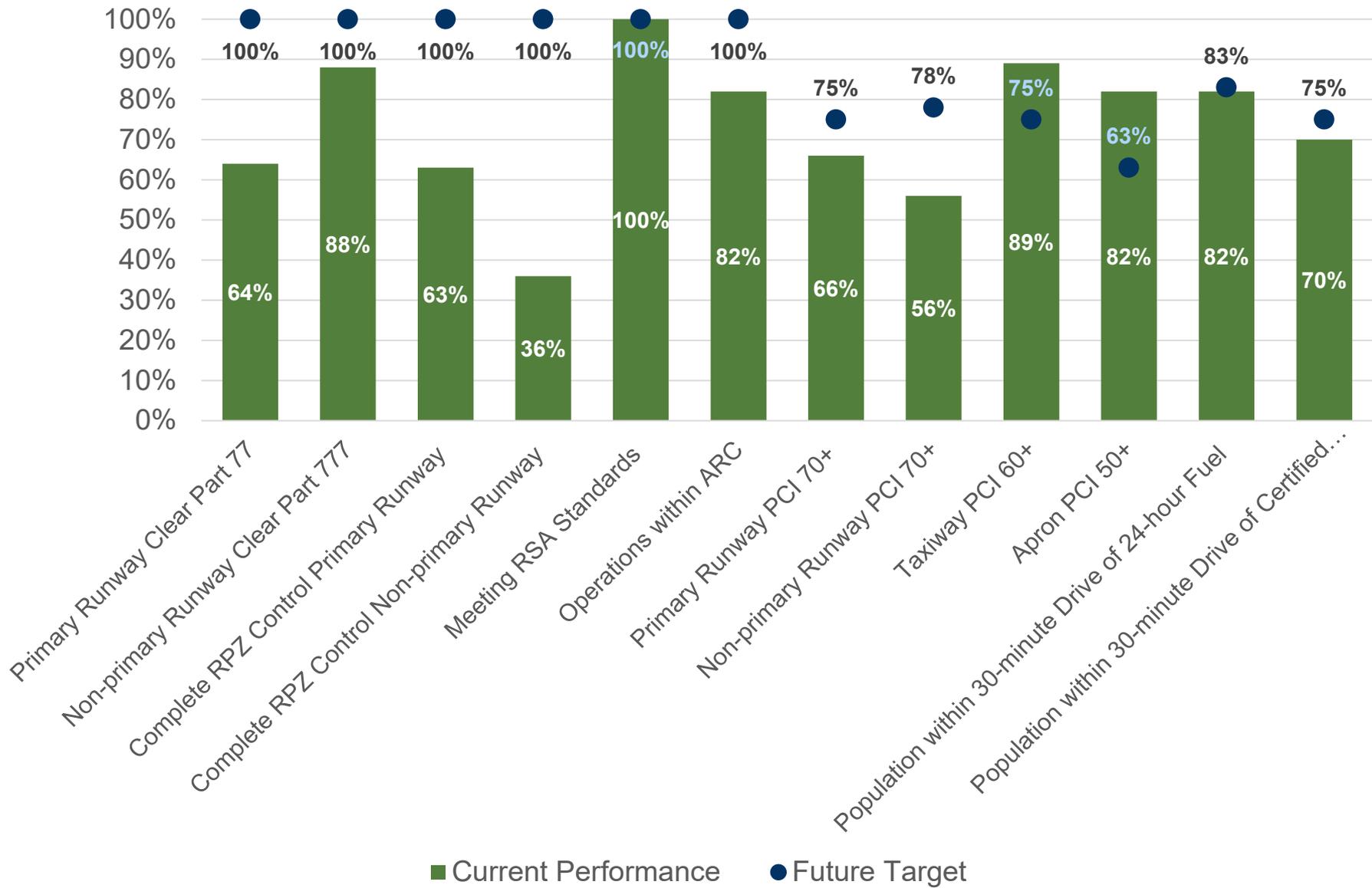
% of Population Within a 30-Minute Drive of an Airport with 24-Hour Fuel

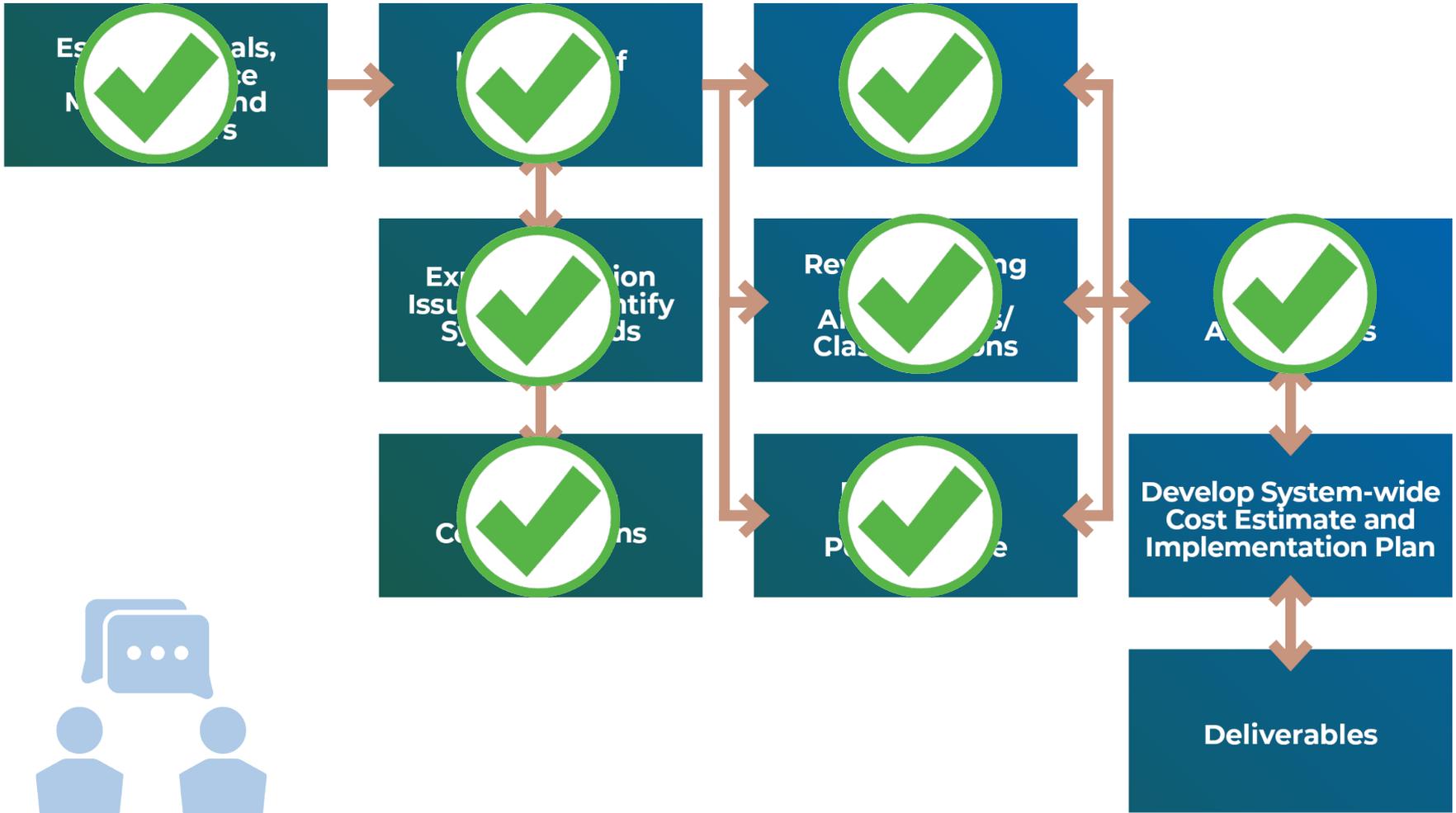
4 Airports Not Meeting



% Population Within a 30-minute Drive of an Airport with an AWOS/ASOS







Public Consultation

System Alternatives

- Operational Alternatives
 - Changes in the GA Fleet
 - Reduction in Regional Airline Service
 - Shortage of Local Pilots and Aviation Professionals

What if...

UAS activity continues to increase and there is more activity at or near South Dakota's airports?

Could we...

Assist airports in developing monitoring and enforcement programs?

What if...

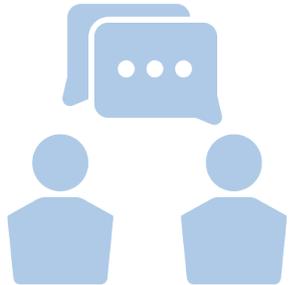
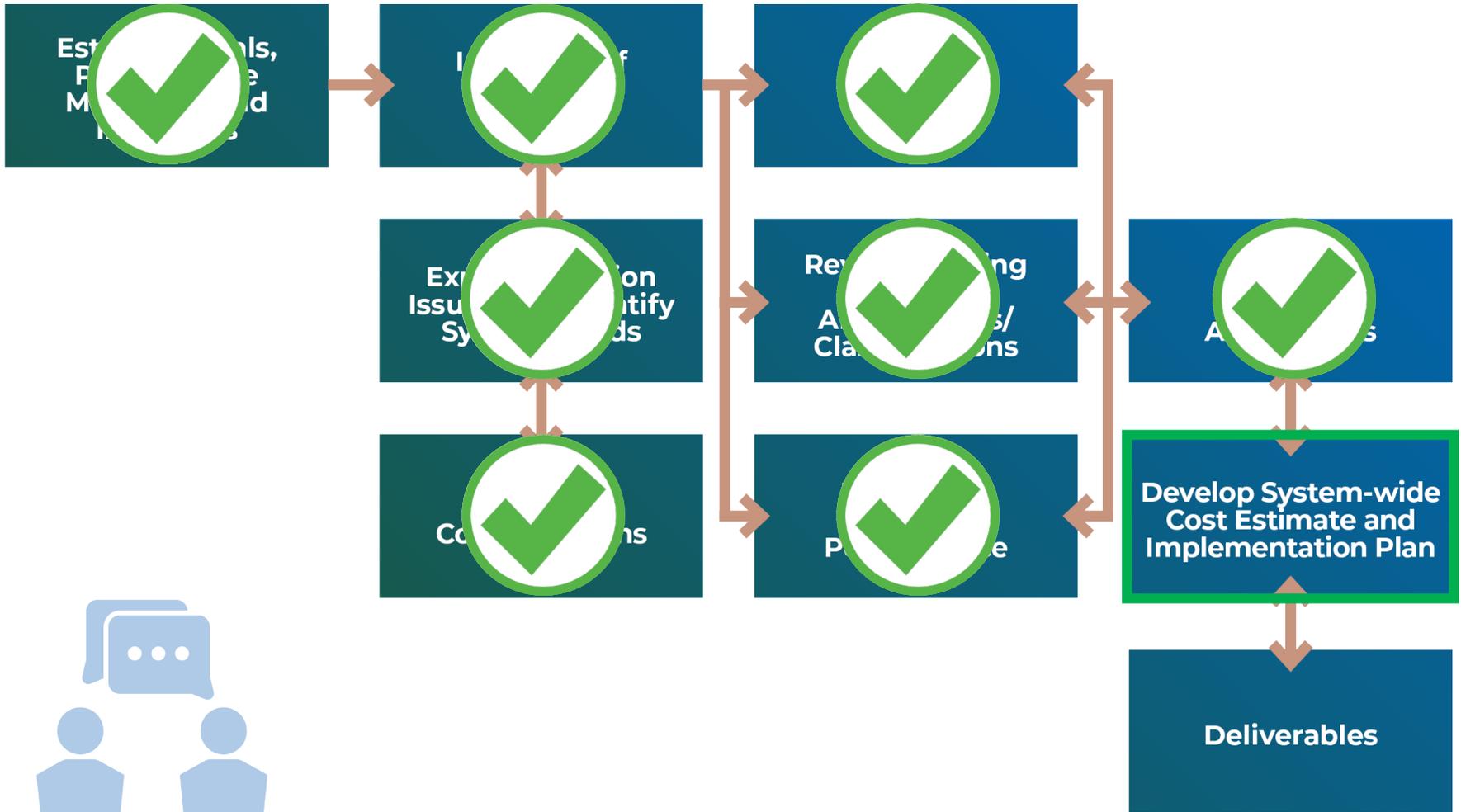
Th GA fleet mix shifts significantly from single-engine piston to jet aircraft?

Could we...

Facilitate improvements that allow more system airports to support jet aircraft operations?

- Innovative Alternatives
 - Availability of Unleaded Aviation Fuel
 - Advancement of Electric Aircraft Manufacturing
 - Proliferation of Unmanned Aircraft System (UAS) Activity

Where Are We Today?



Public Consultation

System CIP & Recommended Projects

- Projects needed to achieve PMs
- Projects needed to meet Facility and Service Targets
- All other requested projects on ACIPs

FAA ID	Safety and Security				Maintenance and Development of Infrastructure				User Accessibility			
	Clear Part 77 on Primary Runways				Primary Runway PCI 70+				30-minute Drive Population Coverage with 24/Fuel (Jet A/100LL)			
Existing (Negatively Impacted)	Objective	Obstruction	Recommended Project	Existing	Objective	PCI Deficiency	Recommended Project	Existing 24/hr Jet A	Existing 24/hr 100LL	Objective	Recommended Projects	
ABR	No Obstruction	Clear Part 77	None	None	83	70+	None	None	Yes	Yes	83% Population Coverage	None
PIR	No Obstruction	Clear Part 77	None	None	86	70+	None	None	Yes	Yes	83% Population Coverage	None
RAP	Has Obstruction	Clear Part 77	Fence	Remove Obstruction	76	70+	None	None	Yes	Yes	83% Population Coverage	None
FSD	Has Obstruction	Clear Part 77	Road/Railroad	Remove Obstruction	73	70+	None	None	Yes	Yes	83% Population Coverage	None
ATY	Has Obstruction	Clear Part 77	Building	Remove Obstruction	98	70+	None	None	Yes	Yes	83% Population Coverage	None
					3			0				0
BKX	No Obstruction	Clear Part 77	None	None	98	70+	None	None	Yes	Yes	83% Population Coverage	None
HON	Has Obstruction	Clear Part 77	Antenna	Remove Obstruction	91	70+	None	None	Yes	Yes	83% Population Coverage	None
MDS	Has Obstruction	Clear Part 77	Tree	Remove Obstruction	95	70+	None	None	Yes	Yes	83% Population Coverage	None
MHE	No Obstruction	Clear Part 77	None	None	79	70+	None	None	Yes	Yes	83% Population Coverage	None
SPF	Has Obstruction	Clear Part 77	Hill/Interstate	Remove Obstruction	83	70+	None	None	Yes	Yes	83% Population Coverage	None
Y14	No Obstruction	Clear Part 77	None	None	98	70+	None	None	No	Yes	83% Population Coverage	None
YKN	No Obstruction	Clear Part 77	None	None	94	70+	None	None	Yes	Yes	83% Population Coverage	None
					3			0				0

Project Cost Estimates

- Planning-level cost estimates by airport for recommended projects

South Dakota SASP Cost Estimates to meet Performance Measures					
Airport					
Airpor ID					
Airport Role	Medium GA				
City					
Performance Measure	Project	Description/Scope	Construction/ Acquisition	Engineering /Admin	Total
Acquire RPZ	Runway 18 RPZ	Acquire 12.52 acres for RPZ Protection			
Acquire RPZ	Runway 36 RPZ	Acquire 22.13 acres for RPZ Protection			
Facility Service Target	Project	Description/Scope	Construction/ Acquisition	Engineering /Admin	Total
Higher ARC	Runway 14-32 RDC Increase	Runway 14-32 Increase RDC from B-I to B-II. Increase Pavement width 15' for total increase of 37,500 SqYd, relocate edge lights, regrade RSA.			
Runway Width	Widen Runway 14-32	Widen current runway from 60' to 75'			
MITL	Taxiway Lighting	Replace reflectors on taxiway and install MITL			
REIL	Both runway ends	Install REIL on Runway ends 14-32			
Business Aircraft Storage	Hangar Area Expansion	Construct a storage hangar for a King Air 280			

The cost estimates provided are planning level estimates and are not to be used for individual project programming or grant application.

Next Steps

- Draft CIP Chapter
- Finalize AEIS
- Produce:
 - Technical report
 - Executive summary
 - GIS Tool
- www.2020SDSASP.com

What's
NEXT?



Task		2018		2019												2020				
		N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M
1	Scoping - Study Design																			
2	Project Management																			
3	Stakeholder Engagement																			
4	Study Design & Goals																			
5	Inventory of System Condition																			
6	Review/Update Airport Classifications																			
7	System Performance																			
8	Explore Aviation Issues & Identify System Needs																			
9	Forecast of Aviation Activity and System Demand																			
10	Review Multimodal Integration and Airport Access																			
11	Analysis of System Alternatives																			
12	System Recommendations																			
13	Develop System-wide CIP, Cost Estimate, and Prioritization Plan																			
14	Economic Impact - Data Collection																			
15	Economic Impact - Calculations																			
16	Deliverables																			
	<i>System Plan Report</i>																			
	<i>Develop Web-based System Plan Tool for SDDOT</i>																			
	<i>Executive Summary</i>																			

- Task
- Kickoff Meeting
- Stakeholder Meeting
- Project Meeting
- Aeronautics Commission Presentation
- Task White Paper

Questions?

Jon Becker *SDDOT Project Manager*

 605.773.4162

 jon.becker@state.sd.us

Regan Schnug, AICP *Kimley-Horn Project Manager*

 614.454.6701

 regan.schnug@kimley-horn.com