

Bend Municipal Airport Airport Master Plan Planning Advisory Committee Meeting #1

Existing Conditions
and
Aviation Activity Forecasts

Agenda

- Introductions: Project Team and PAC
- Why Plan?
- Known Issues and Opportunities
- Master Plan Schedule & Public Involvement Process
- Existing Conditions Analysis
 - Regional Setting
 - Landside Elements
 - Airside Elements
 - Airport Administration
- Aviation Activity Forecasts
- Next Steps

Project Planning Team

- City of Bend Staff
 - Carolyn Eagan
 - Gary Judd
- Century West Engineering
 - Matt Rogers
 - Mike Dane
- Mead and Hunt
 - Corbett Smith
- Misc. Subconsultants
 - AINW
 - ESA

PAC Roles and Responsibilities

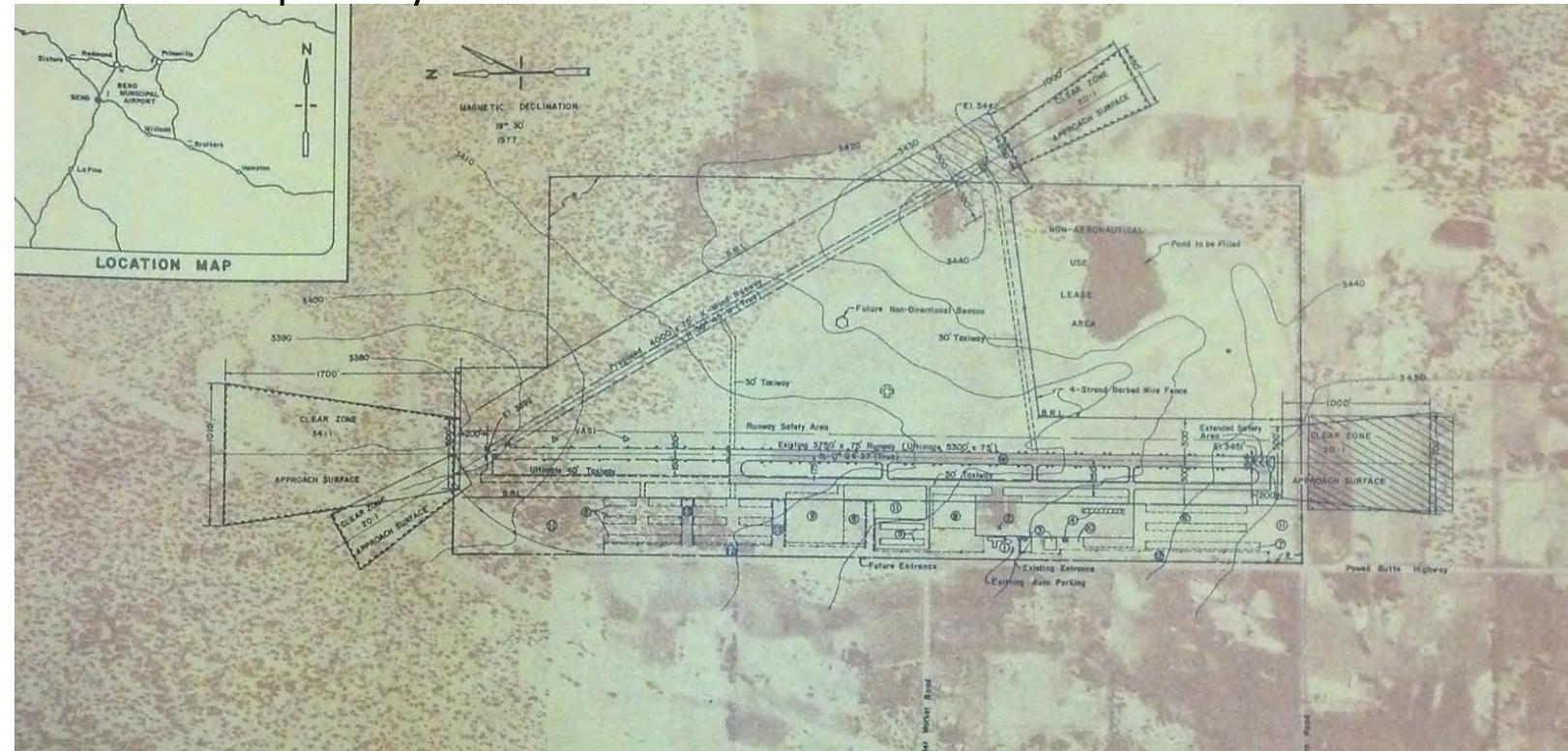
- Listen and respect all view points
- Seek input from peer groups
- Provide comment/feedback on:
 - Chapters
 - PAC meetings
- Advisory non-voting committee

Planning Advisory Committee (PAC)

- Peter Russell, Deschutes County
- Scott Aycok, COACT
- Steve Hansen, Bend Aircraft Mx
- Jamie Klopp, Epic Aircraft
- Travis Warthen, Leading Edge
- Carl Natter, Airlink
- Sarah Robertson, Airport Neighbor
- Scott Chehock, USFS
- Justin Livingston, Bend City Council
- Will Donaca, Pahlisch Homes
- Gwil Evans, Aerofacilities
- Mike Kloch, Pilot Safety Group
- Karl Baldassari, COCC
- Dale Anderson, EAA
- Alan Smith, Airport User
- David James, Little Fish Investments
- Henry Bochsma, Epic Aircraft
- Tom Maddux, Airport Neighbor
- Jennifer Kandel, FAA
- Jeff Caines, ODA
- Kip Barrett, BEDAB/EDCO

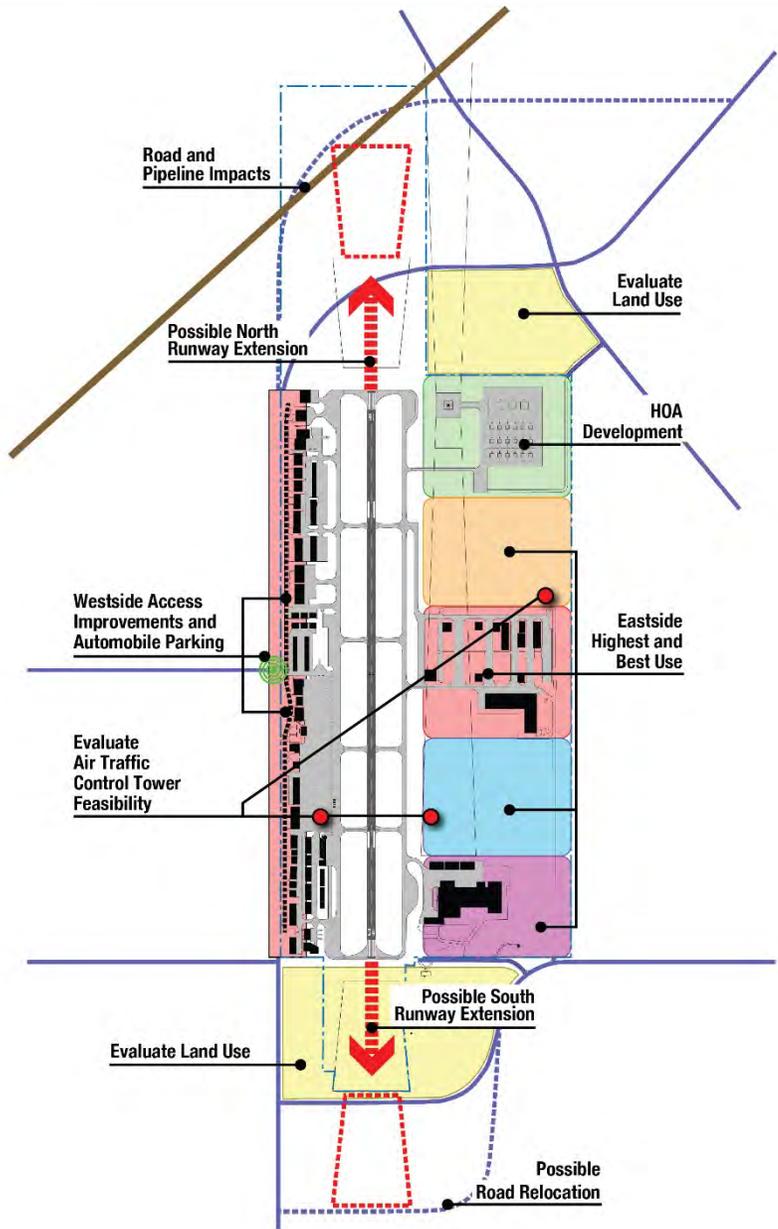
Why Plan?

1979 Bend Airport Layout Plan



- Purpose of the Plan
- Project Need
- Project Funding
- Goals of the Plan

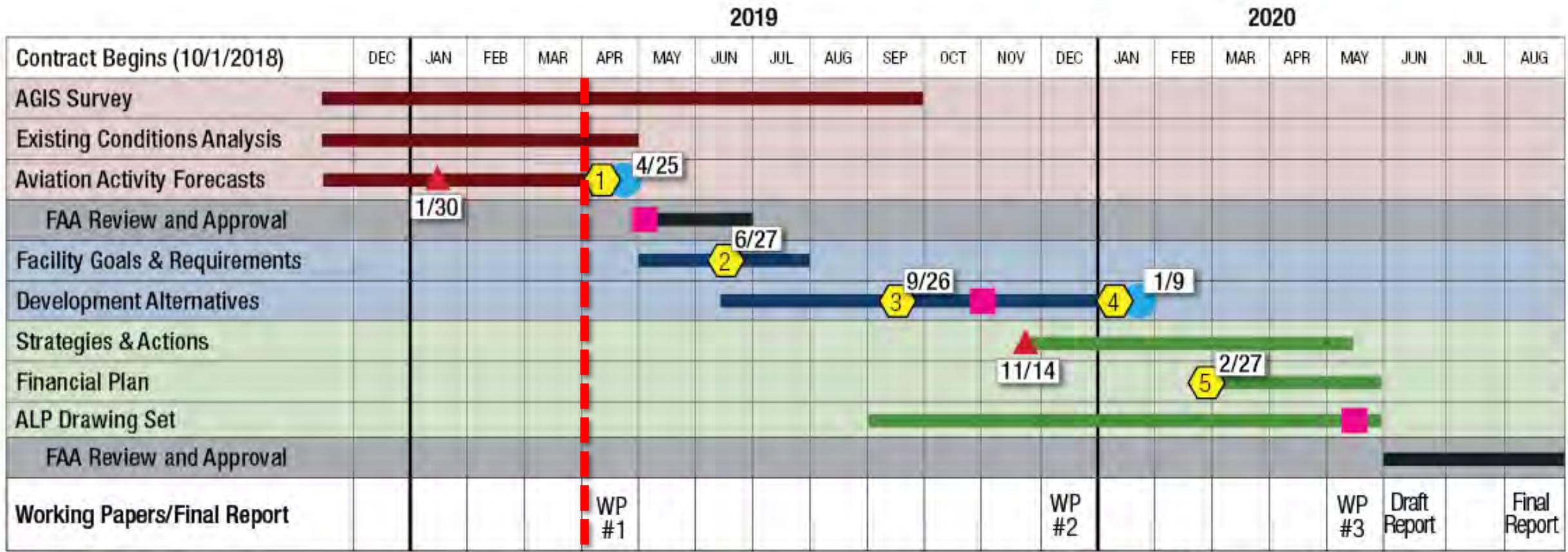
Known Issues and Opportunities



- Air Traffic Control Tower (ATCT)
- Eastside Highest and Best Use
- Helicopter Operations Area (HOA)
- Runway 16-34
- Road Relocation Alternatives
 - Powell Butte Highway
 - Nelson Road
- Automobile Parking
- Westside Access Improvements
- Airport Perimeter Fencing
- Land Use/Comprehensive Planning



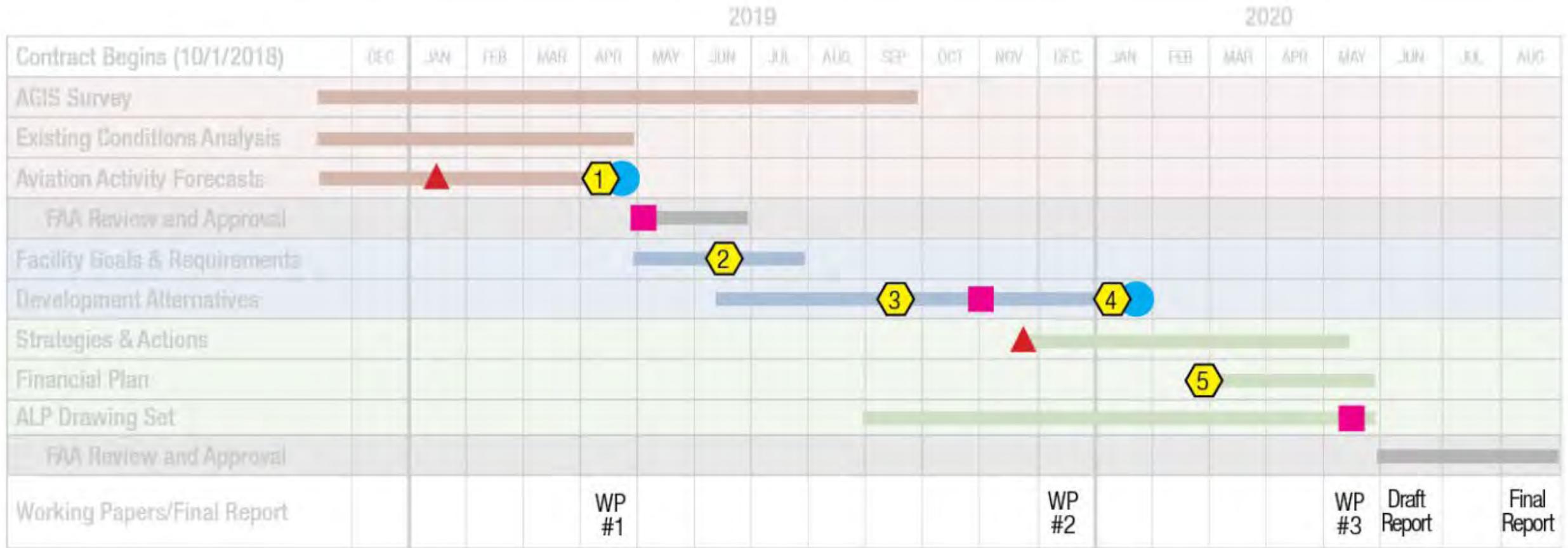
Master Plan Schedule



- Develop Understanding
- Explore Solutions
- Implementation
- FAA Review and Approval
- PAC Meetings
- Public Open House
- Regional Stakeholder Meetings
- FAA Coordination Meetings



Public Involvement



- Develop Understanding
- Explore Solutions
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- FAA Coordination Meetings

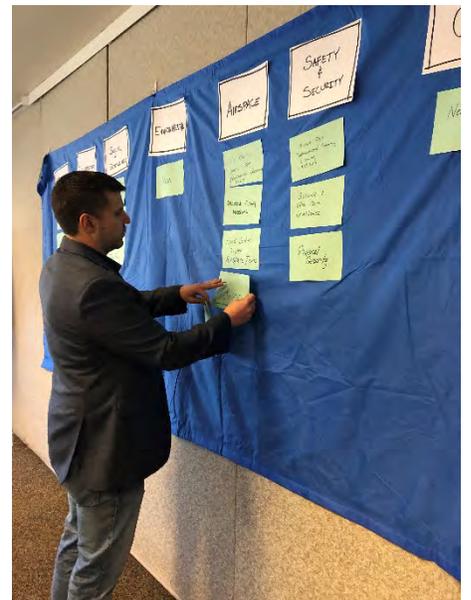
PAC Meeting #1 Summary
Project Introduction, Existing Conditions, and Aviation Forecasts discussion.

PAC Meeting #2 Summary
Facility Goals and Requirements discussion and Development Alternatives/Concepts brainstorming.

PAC Meeting #3 Summary
Development Alternatives are introduced to the PAC and discussed in detail to identify a top ranked alternative.

PAC Meeting #4 Summary
Refined alternatives are presented to the PAC and discussed in detail before the alternatives are presented in the following Public Open House.

PAC Meeting #5 Summary
Land Use, Transportation, and Environmental Strategies & Actions, Financial Plan, and ALP discussion.



- 1. What are the long-term goals you want to see achieved at the Airport?**
- 2. What does the Airport need to do to prepare for the future?**

Focus Areas:

- Economic Development
- Social/Governance
- Environmental
- Infrastructure
- Airspace
- Safety/Security

Regional Setting

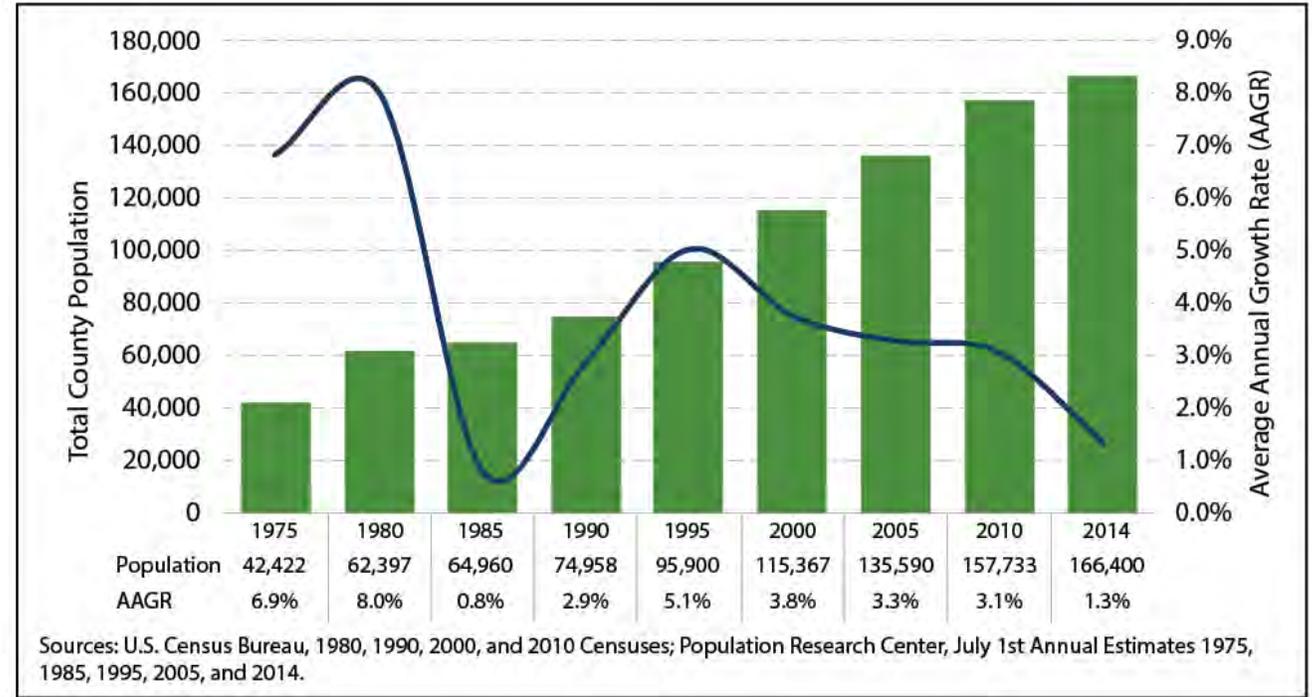
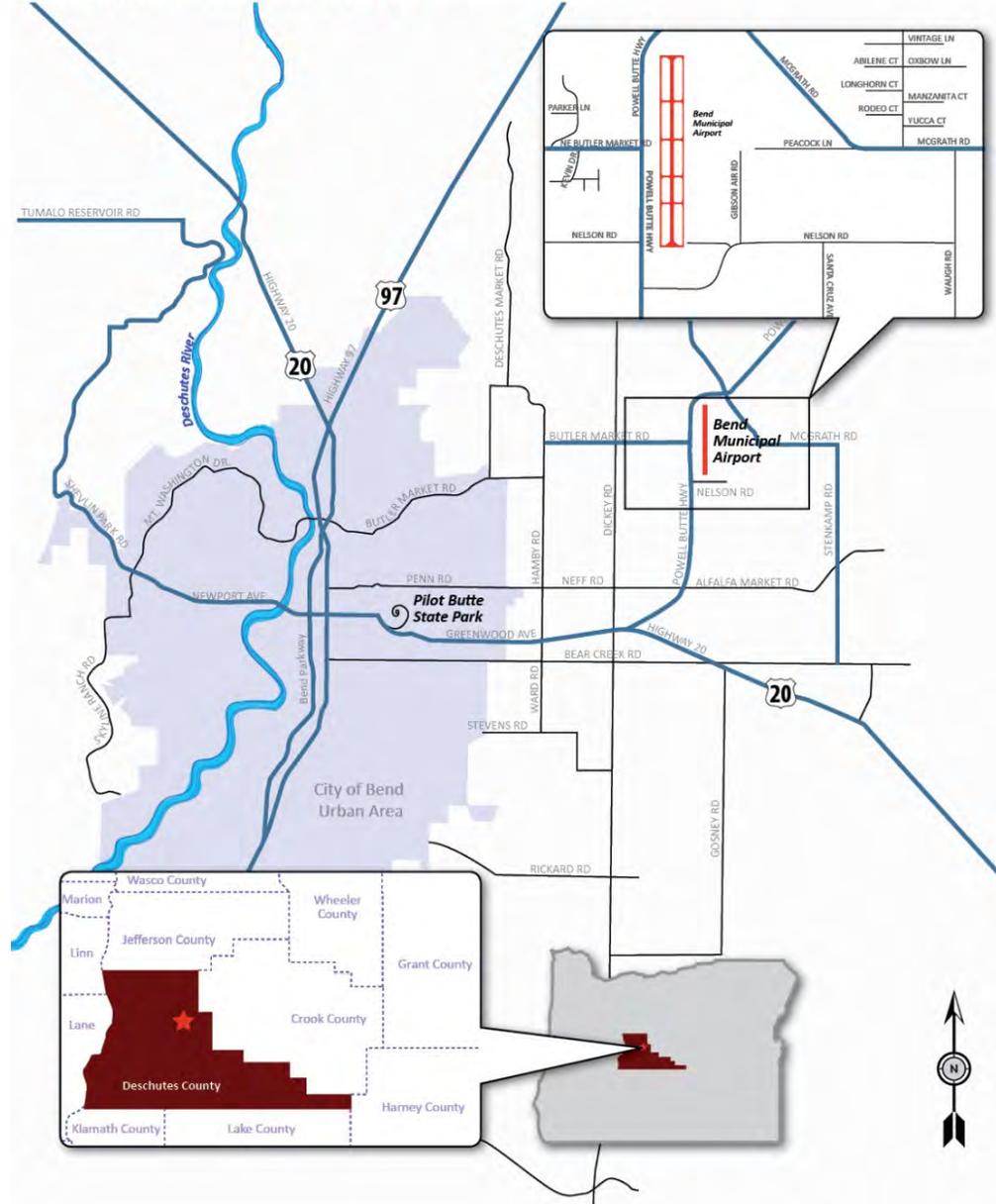
	Regional Setting	Landside Elements	Airside Elements	Airport Administration
Develop Understanding	<ul style="list-style-type: none"> Location & Vicinity Socio-Economic Data Airport Role Airport History 	<ul style="list-style-type: none"> Utilities Airport Fencing Airport Surface Roads Vehicle Parking 	<ul style="list-style-type: none"> Pavement Condition Aprons/Tiedowns Taxiways/Taxilanes Runway/Helipad 	<ul style="list-style-type: none"> Airport Ownership & Management Airport Financials Airport Rates and Charges
Explore Solutions	<ul style="list-style-type: none"> Area Airports Context Airport Operations Relevant Studies Environmental Data 	<ul style="list-style-type: none"> General Aviation (GA) Development Areas Hangars 	<ul style="list-style-type: none"> Support Facilities FAA Design Standards Area Airspace Air Traffic Control Tower 	<ul style="list-style-type: none"> City of Bend Rules & Regulations Oregon Aviation Laws FAA Compliance Overview
Implementation	<ul style="list-style-type: none"> Local Surface Transportation Land Use/Zoning 		<ul style="list-style-type: none"> Approach Procedures 	

Regional Setting

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Socio-Economic

LOCATION & VICINITY MAP



	Historical			Forecast				
	2000	2010	AAGR (2000-2010)	2015	2035	2065	AAGR (2015-2035)	AAGR (2035-2065)
Deschutes County	115,367	157,733	3.2%	170,606	249,037	357,345	1.9%	1.2%
Bend¹	52,041	76,858	4.0%	85,737	132,209	194,793	2.2%	1.3%
La Pine	899	1,653	6.3%	1,687	3,014	5,836	2.9%	2.2%
Redmond	15,524	26,508	5.5%	27,715	39,812	64,785	1.8%	1.6%
Sisters	961	2,038	7.8%	2,315	4,375	7,212	3.2%	1.7%
Outside UGBs	45,942	50,676	1.0%	53,151	69,627	84,719	1.4%	0.7%

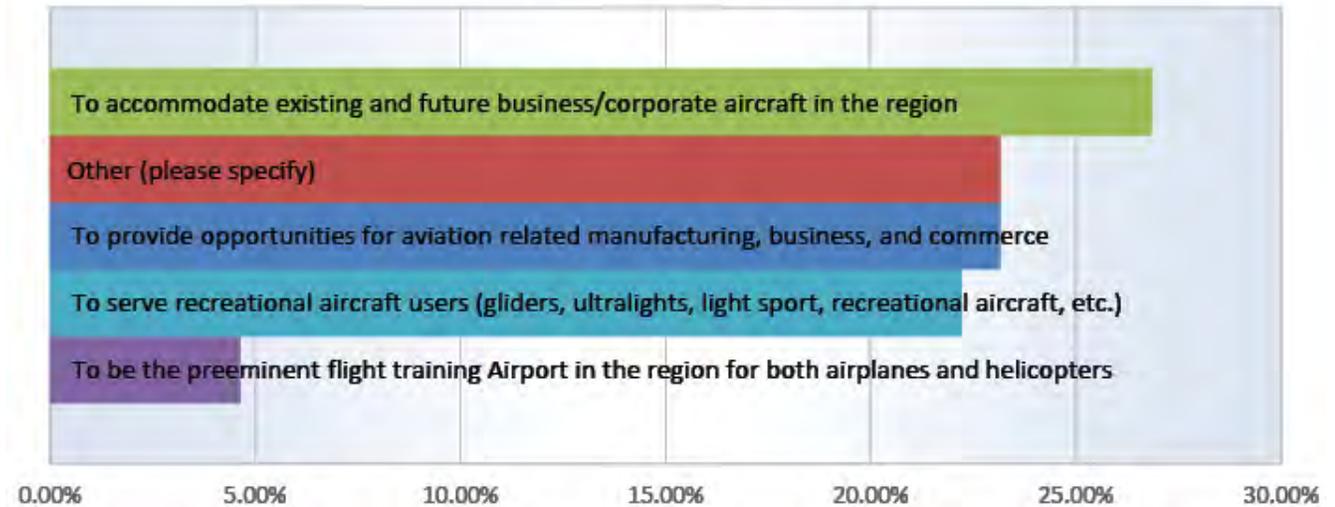
Source: Deschutes County Coordinated Population Forecast 2015-2065
PSU Population Research Center



Role of BDN

- National Role
 - NPIAS Airport
 - Regional GA – Supports regional economies by connecting communities to statewide and interstate markets
- State Role
 - Category II – Urban GA
 - Support all general aviation aircraft and accommodate corporate aviation activity, including piston and turbine engine aircraft, business jets, helicopters, gliders, and other general aviation operations.
- Local Role

What is the primary role of the Bend Municipal Airport within Central Oregon?



Tenant Survey Response:

“I’d say all of the above. Bend has a huge growth potential and BDN is much more convenient than RDM. Flight training and the various businesses on the field have to be contributing considerably to the local economy.”

Airport History

20-YEAR FAA GRANT HISTORY

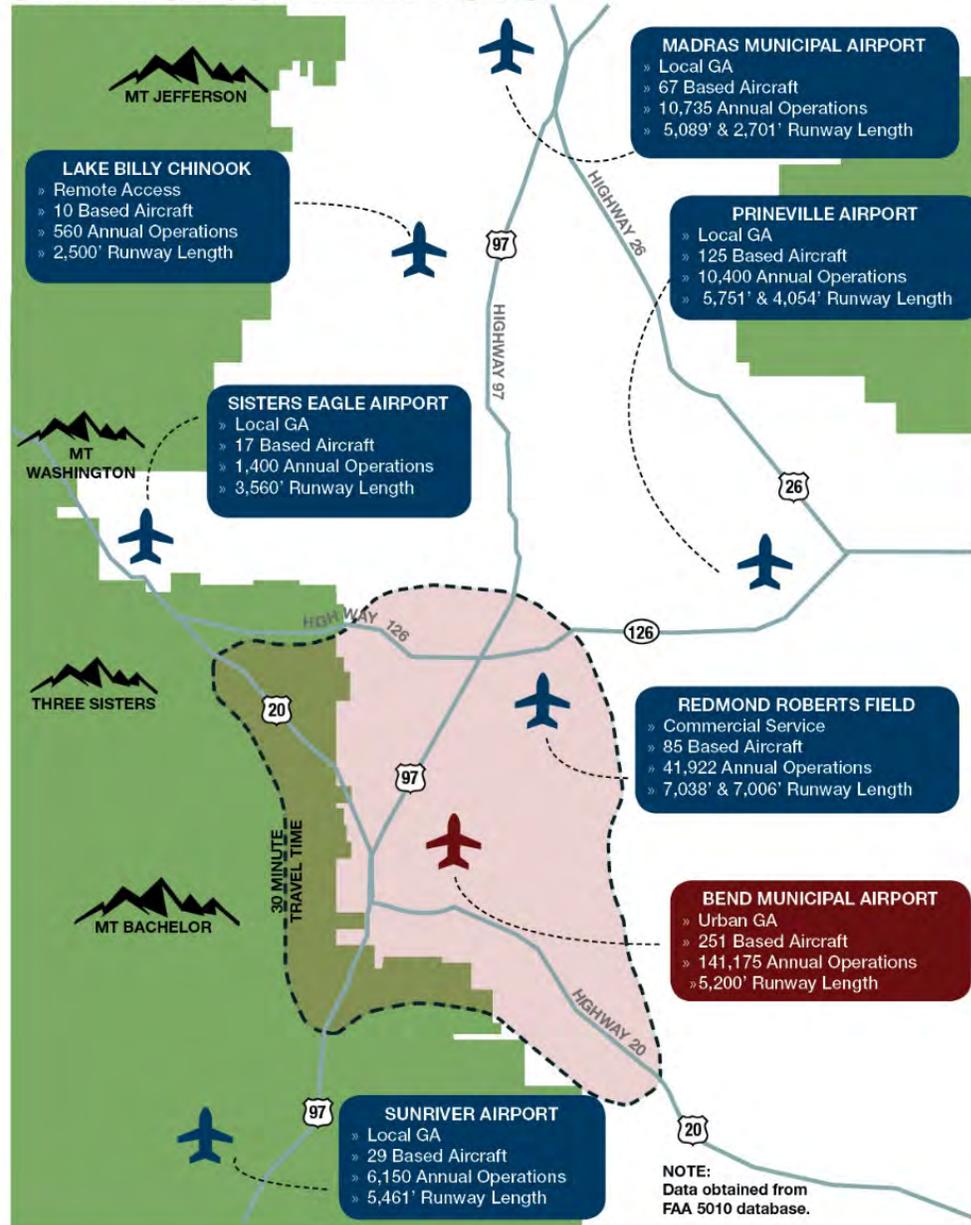
	FISCAL YEAR	NONPRIMARY	STATE APPORTIONMENT	ENTITLEMENT	DISCRETIONARY	TOTAL FEDERAL
Conduct Environmental Study	1999	\$0	\$63,000	\$63,000	\$0	\$63,000
Rehabilitate Apron	1999	\$61,956	\$413,044	\$475,000	\$0	\$475,000
Construct Taxiway	1999	\$13,044	\$86,956	\$100,000	\$0	\$100,000
Improve RSA	2002	\$72,000	\$0	\$72,000	\$0	\$72,000
Construct RSA	2003	\$134,340	\$0	\$134,340	\$0	\$134,340
Install Weather Reporting Equipment	2004	\$44,485	\$80,515	\$125,000	\$0	\$125,000
Improve Runway Safety Area	2004	\$265,845	\$481,155	\$747,000	\$0	\$747,000
Construct Runway	2005	\$150,000	\$0	\$150,000	\$0	\$150,000
Construct Runway	2006	\$150,000	\$3,384,605	\$3,534,605	\$0	\$3,534,605
Construct Runway	2007	\$150,000	\$4,019,965	\$4,169,965	\$0	\$4,169,965
Construct Taxiway	2008	\$100,000	\$0	\$100,000	\$0	\$100,000
Construct Runway	2008	\$11,240	\$1,220,857	\$1,232,097	\$0	\$1,232,097
Construct Runway	2008	\$38,760	\$293,396	\$332,156	\$0	\$332,156
Install Runway Vertical/Visual Guidance System	2008	\$0	\$233,512	\$233,512	\$0	\$233,512
Construct Taxiway	2009	\$48,693	\$0	\$48,693	\$0	\$48,693
Construct Taxiway	2009	\$101,307	\$0	\$101,307	\$0	\$101,307
Construct Taxiway	2009	\$24,600	\$105,922	\$130,522	\$2,800,000	\$2,930,522
Update Airport Master Plan	2010	\$275,400	\$0	\$275,400	\$0	\$275,400
Rehabilitate Taxiway	2011	\$150,000	\$405,321	\$555,321	\$2,873,221	\$3,428,542
Conduct Environmental Study	2013	\$150,000	\$47,625	\$197,625	\$0	\$197,625
Wildlife Hazard Assessments	2015	\$22,741	\$0	\$22,741	\$0	\$22,741
Expand Heliport/Helipad	2015	\$427,259	\$304,497	\$731,756	\$234,914	\$966,670
Expand Heliport/Helipad	2016	\$150,000	\$0	\$150,000	\$5,524,997	\$5,674,997
Reconstruct Apron	2017	\$150,000	\$260,000	\$410,000	\$1,209,937	\$1,619,937
Update Airport Master Plan	2018	\$399,249	\$0	\$399,249	\$0	\$399,249
Total		\$3,090,919	\$11,400,370	\$14,491,289	\$12,643,069	\$27,134,358

- Flight training in WWII
- Public since 1942
- Over \$27 million in federal grants since 1999
 - AWOS
 - Runway Relocation
 - Taxiway A Construction
 - Taxiway B Construction
 - HOA Construction
 - Apron Reconstruction



Area Airports Context

CENTRAL OREGON AREA AIRPORTS



FAA 5010 DATA ANALYSIS

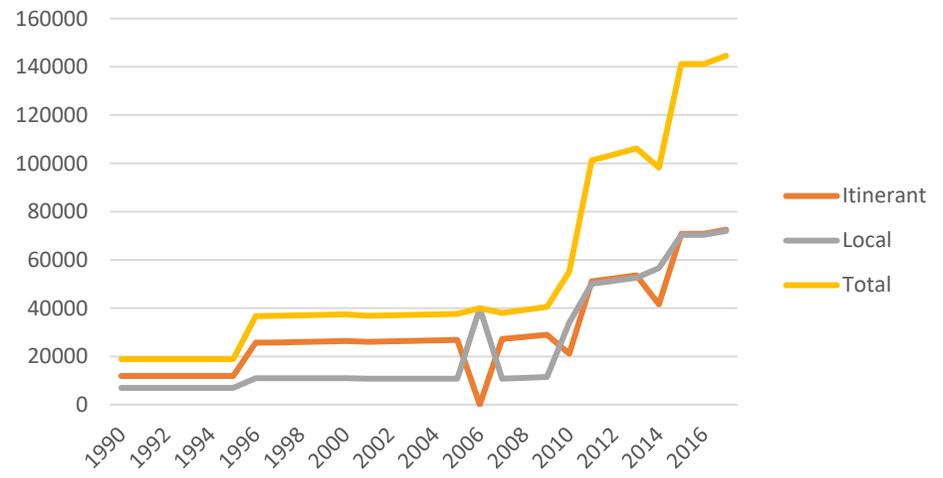
	BEND	LAKE BILLY CHINOOK	MADRAS	PRINEVILLE	REDMOND	SISTERS EAGLE	SUNRIVER	CENTRAL OREGON AIRPORTS TOTALS
Air Carrier					8,534			8,534
Air Taxi	1,000		600	300	7,149	100	600	9,749
GA Local	70,338	500	6,000	3,000	15,361	400	2,500	98,099
GA Itinerant	69,737	60	4,035	7,000	10,522	900	3,000	95,254
Military	100		100	100	356		50	706
TOTAL OPERATIONS	141,175	560	10,735	10,400	41,922	1,400	6,150	212,342
TOTAL BASED AIRCRAFT	251	10	67	125	85	17	29	584
Single Engine	190	9	49	107	55	15	15	440
Multi Engine	19	1	7	1	15	2	10	55
Jet	10		8	1	9		2	30
Helicopters	21		1	5	6			33
Glider	8						2	10
Military								
Ultra-Light	3		2	11				16
OPBA	562	56	160	83	493	82	212	364

Bend Municipal Airport accounts for 66% of the total aircraft operations and 43% of the based aircraft within Central Oregon.

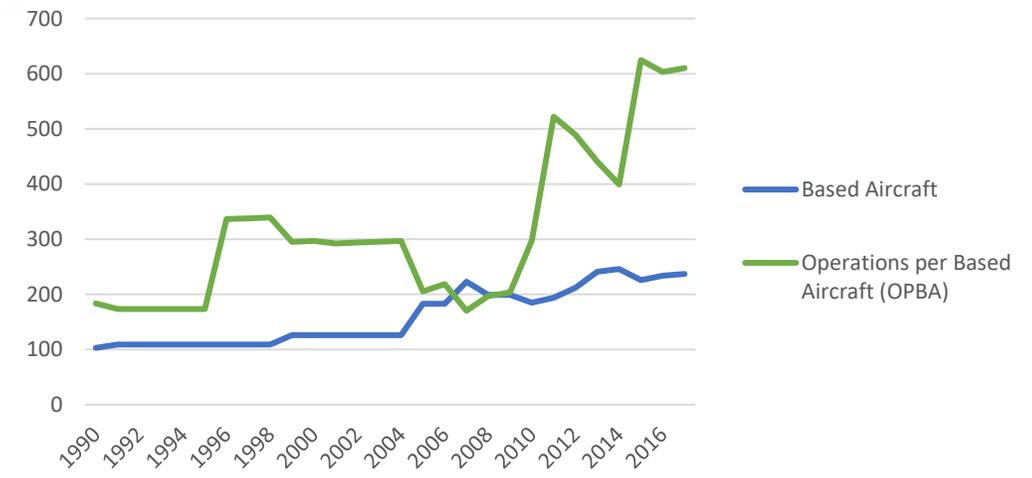


Aircraft Operations

FAA TAF Historic Operations



FAA TAF Historic Based Aircraft



ESTIMATED AIRCRAFT OPERATIONS

	2010	2014	2018
Single Engine Piston	52,038	59,584	116,236
Multi Engine Piston	3,100	3,565	3,080
Turboprop	2,150	2,400	5,560
Jet	500	1,560	2,084
Glider	300	300	300
Helicopter	39,840	70,104	41,653
TOTAL OPERATIONS	97,928	137,513	168,913

Source:
 2010 Estimates obtained from 2013 Airport Master Plan.
 2014 Estimates obtained from 2015 Helicopter Operations Area (HOA) Environmental Assessment.
 2018 Estimates derived from Airport users/tenant interviews and updated data.

BASED AIRCRAFT

	IN 5010 12/06/18	IN INVENTORY	CURRENTLY VALIDATED
Single Engine	190	207	191
Multi Engine	19	22	19
Jet	10	15	11
Helicopter	21	25	23
Glider	8	8	*
Ultra Light	3	3	*
TOTAL	251	280**	244

Source: Bend Airport Management, 12-18-2018
 * Glider and ultralight aircraft are not considered in the validated aircraft count.
 **The increased count in the inventory column includes aircraft that may have N-numbers reported at other airports or aircraft that are not in FAA registry.



Aircraft Operations

A-I
12,500 lbs. or less



Beech Baron 55
Beech Bonanza
Cessna 182
Piper Archer

B-I
12,500 lbs. or less



Beech Baron 58
Beech King Air 100
Cessna 402
Cessna 421

A-II, B-II
12,500 lbs. or less



Super King Air 200
Pilatus PC-12
DCH Twin Otter
Cessna Caravan

EXISTING ARC - B-II
Greater than 12,500 lbs.



Super King Air 300, 350
Beech 1900
Cessna Citation
Falcon 20, 50

A-III, B-III
Greater than 12,500 lbs.



DHC Dash 7, Dash 8
Q-200, Q-300
DC-3
Convair 580

C-I, D-I



Lear 25, 35, 55, 60
Israeli Westwind
HS 125-700

C-II, D-II



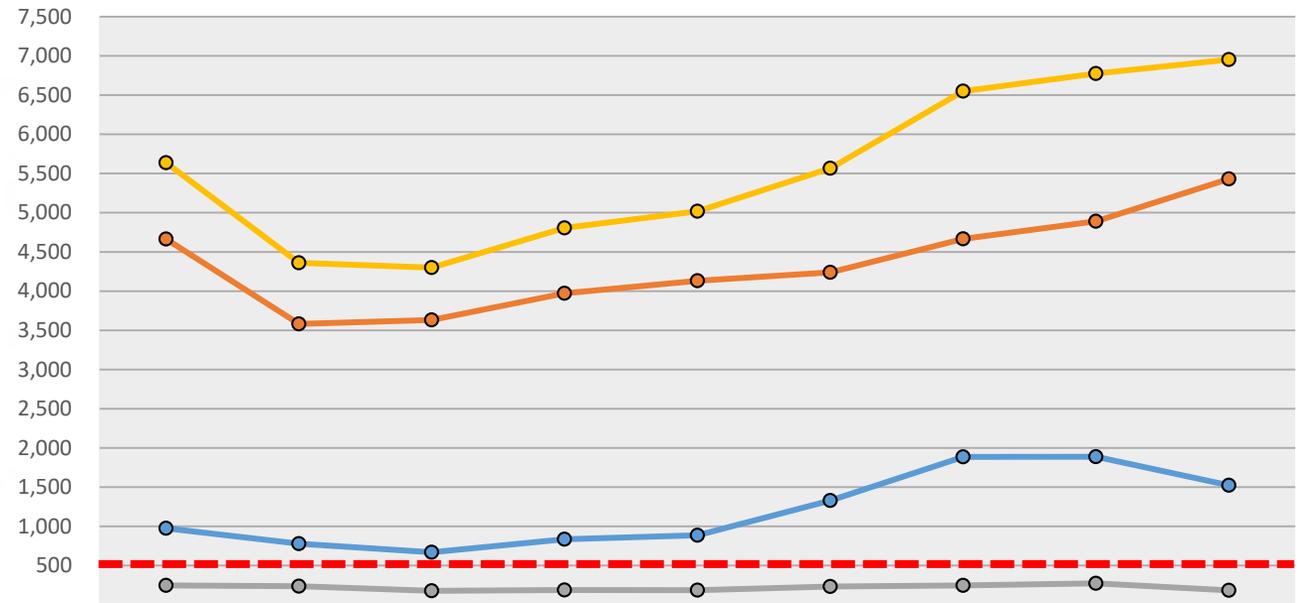
Gulfstream II, III, IV
Canadair 600
Canadair Regional Jet
Lockheed JetStar

C-III, D-III



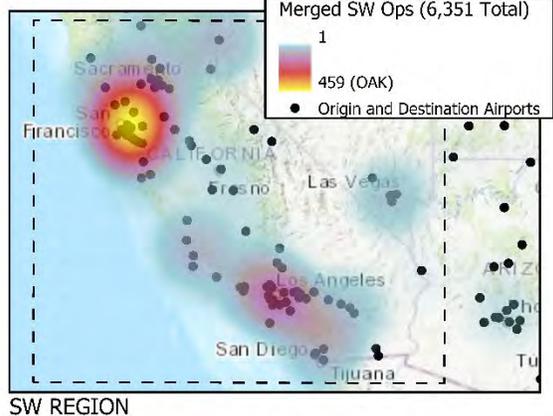
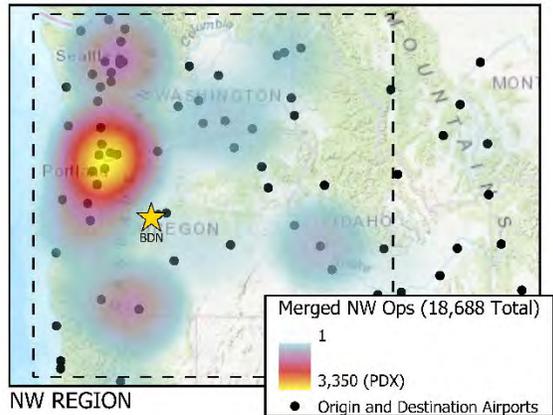
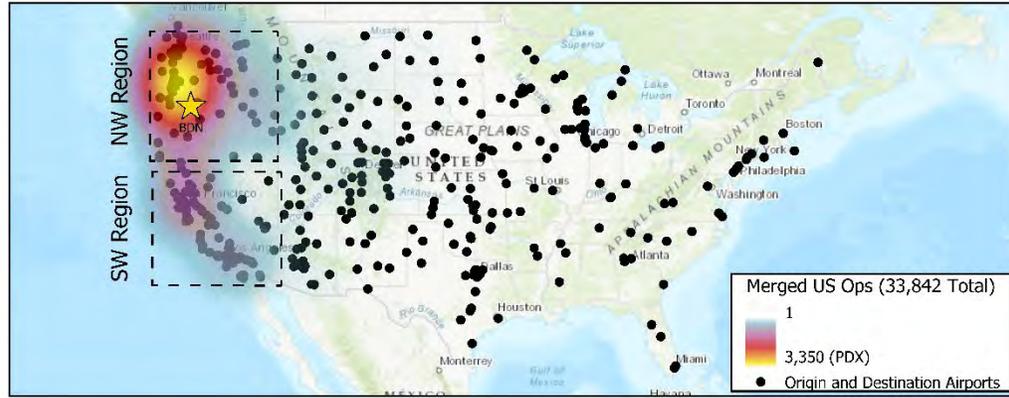
Boeing Business Jet
Gulfstream 650
B 737-300 Series
MD-80, DC-9

TFMSC IFR Operations Data

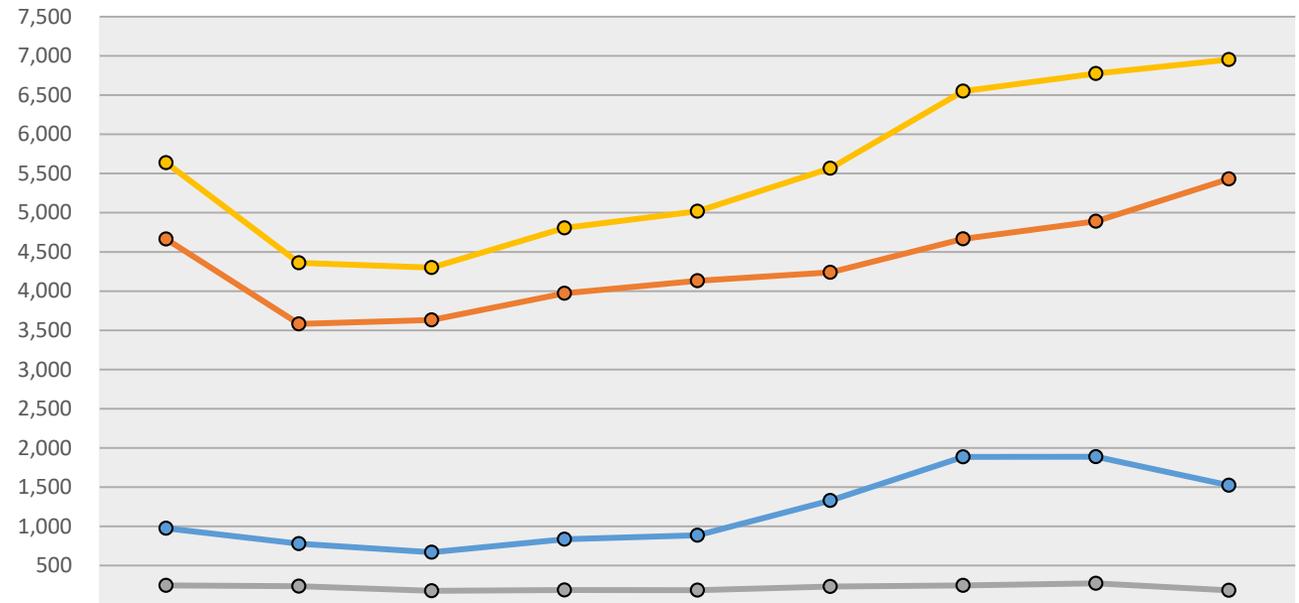


	2010	2011	2012	2013	2014	2015	2016	2017	2018
Total	5,638	4,360	4,300	4,806	5,018	5,566	6,550	6,776	6,954
B-I and Smaller Aircraft	4,664	3,582	3,632	3,972	4,132	4,238	4,666	4,890	5,432
B-II and Larger Aircraft	974	778	668	834	886	1,328	1,884	1,886	1,522
Total C and D Aircraft	246	236	176	186	184	232	246	272	182

Aircraft Operations



TFMSC IFR Operations Data



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- Rural Enterprise Zone Study
- Deschutes County Comprehensive Plan
- Deschutes County Transportation System Plan
- 2013 Bend AMP
- 2015 HOA EA
- 2018 OAP Update

2018 OAP Update Economic Impact:

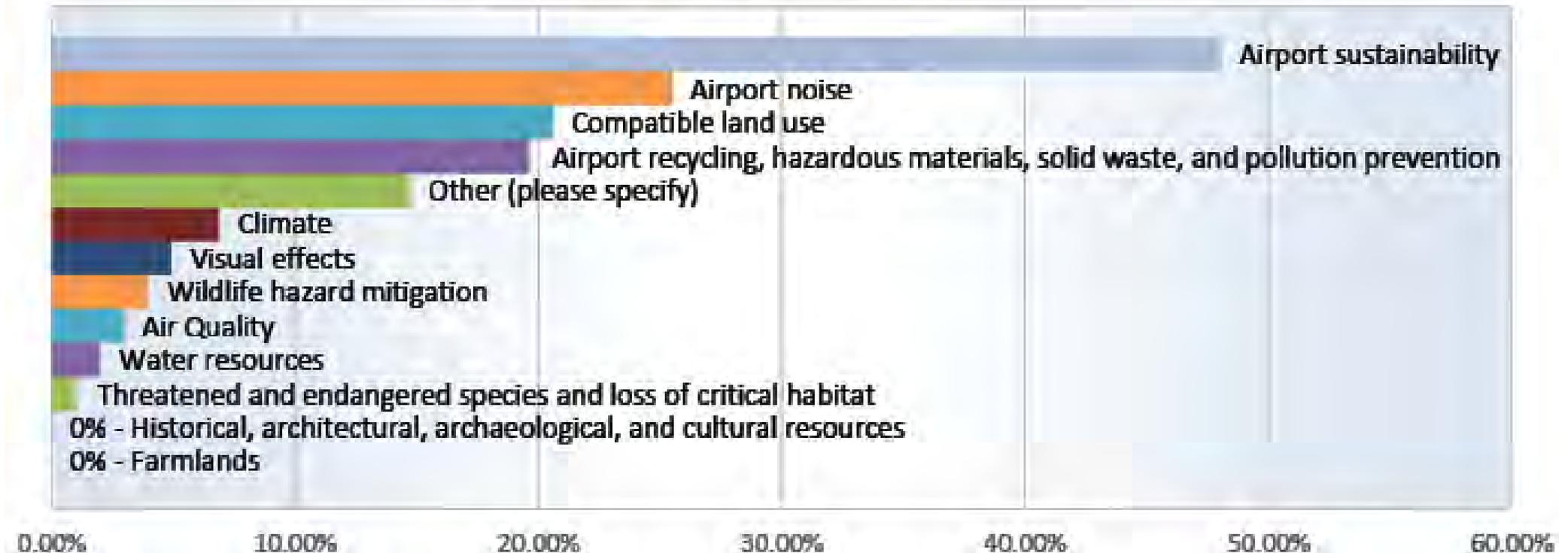
The total economic output of Bend Municipal Airport is approximately \$174.5 million.

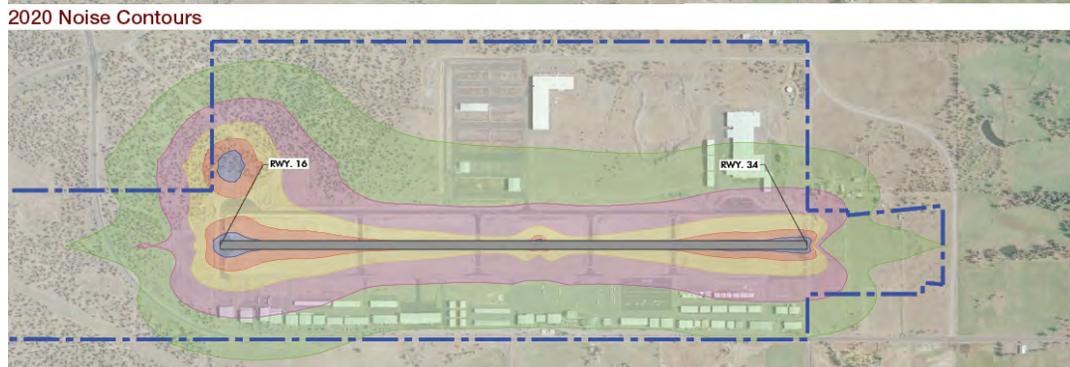
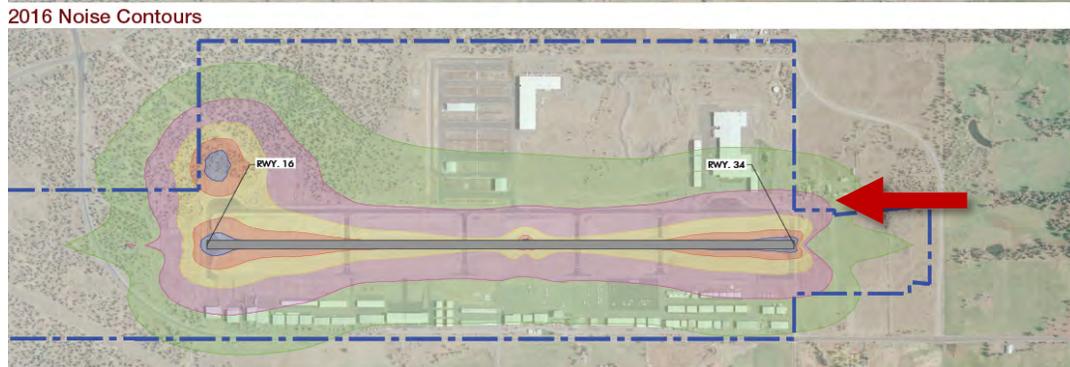
Total full-time employment related to all tenants and general aviation visitors, including all multiplier impacts is approximately 963 jobs.

Total annual payroll associated with these jobs is estimated at \$36.8 million.

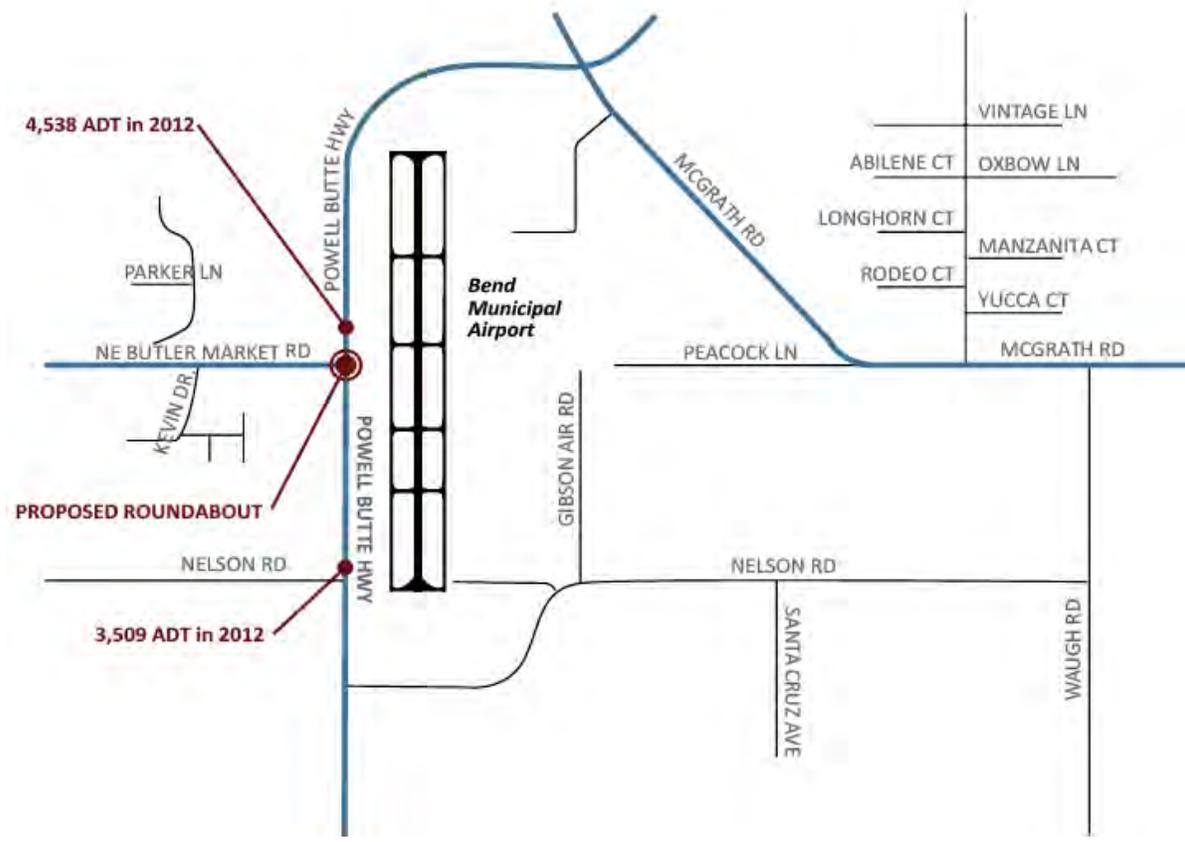
Environmental Data

What do you believe are the most important environmental issues affecting the Bend Municipal Airport?





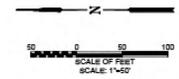
- Noise contours produced in 2014 HOA EA
- Per ODA Airport Land Use Compatibility Guidebook - residential is not a compatible land use in 65-70 DNL
- New contours to be developed in later tasks of this AMP

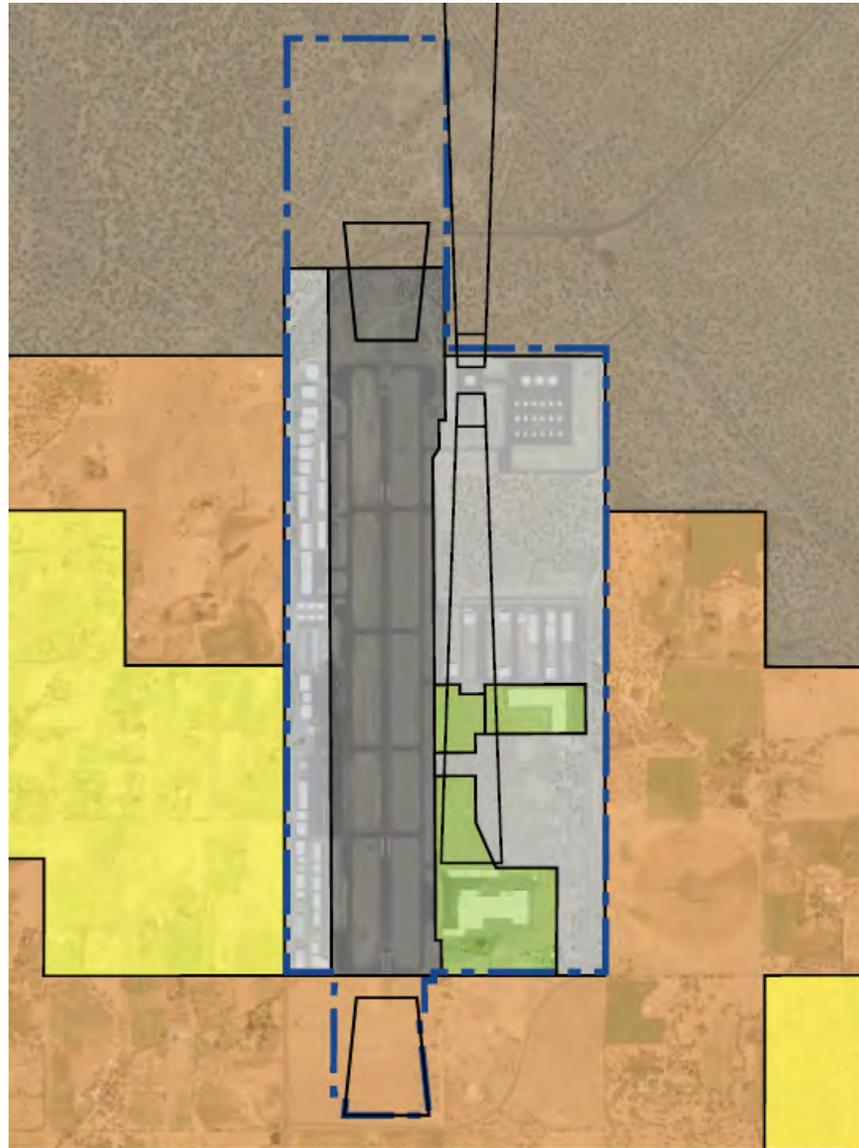


ROUNDABOUT/AIRPORT ACCESS CONCEPTUAL RENDERING



- LEGEND**
- PROPOSED ROUNDABOUT PAVEMENT
 - PROPOSED ENTRANCE RECONFIGURATION PAVEMENT
 - PROPOSED MEDIAN
 - EXISTING RIGHT OF WAY

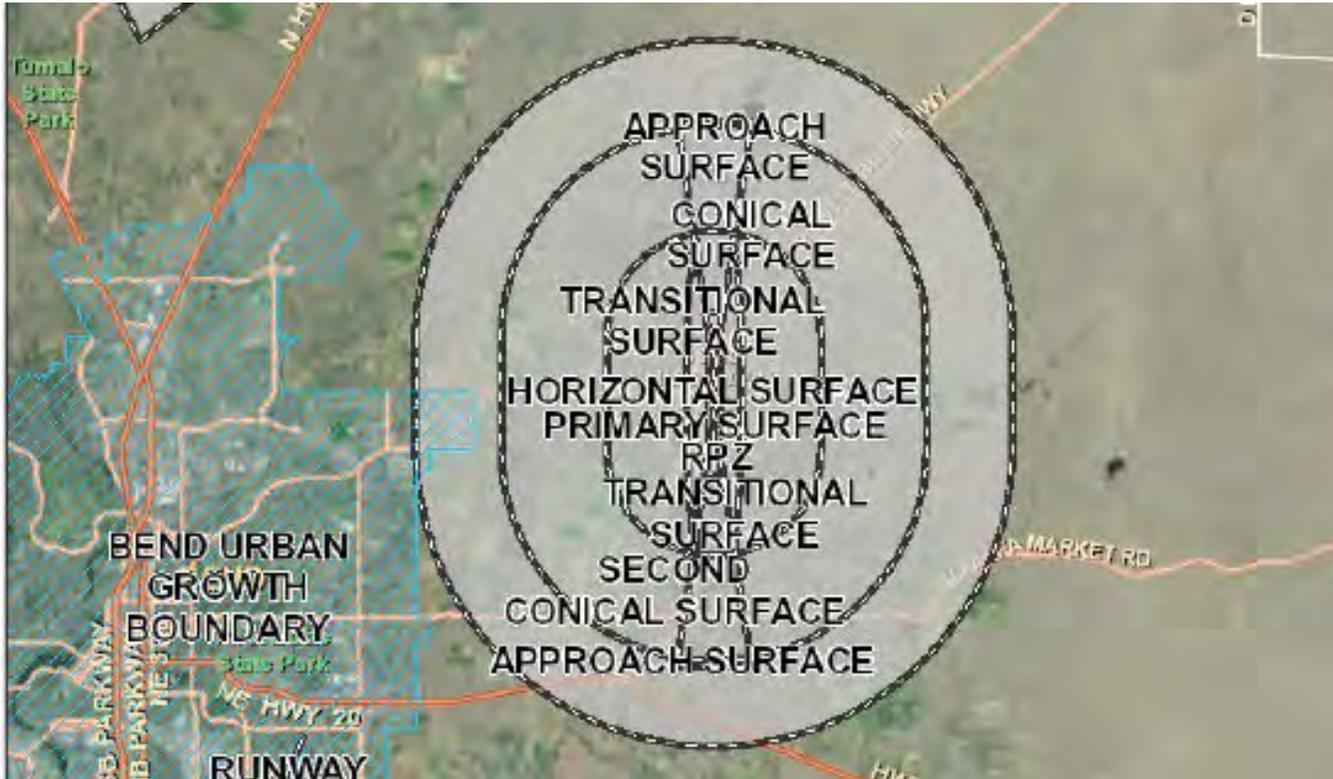




Existing Zones within the (AD) Airport Development District:

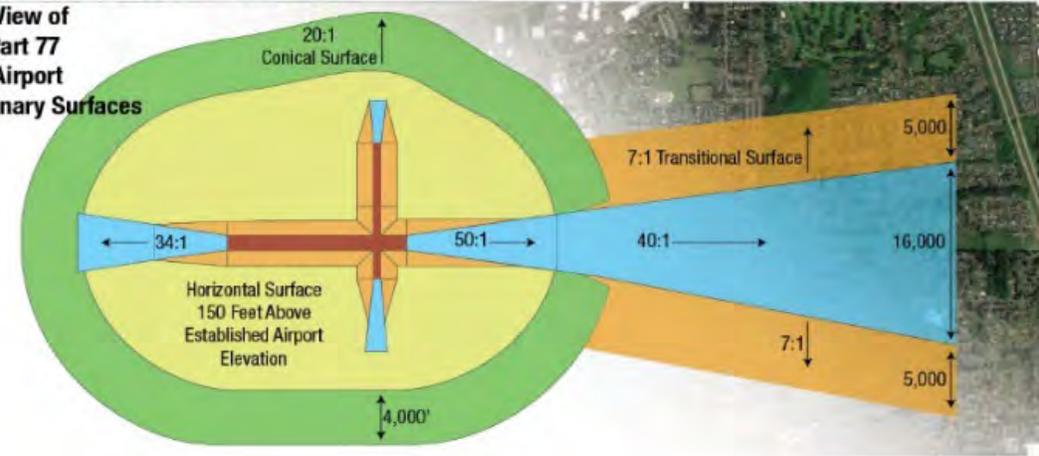
- ARID – Aviation Related Industrial Development
- ASD – Aviation Support District
- AOD – Airport Operations District
- EFU – Exclusive Farm Use Districts

Deschutes County Zoning



FAR PART 77 AIRSPACE

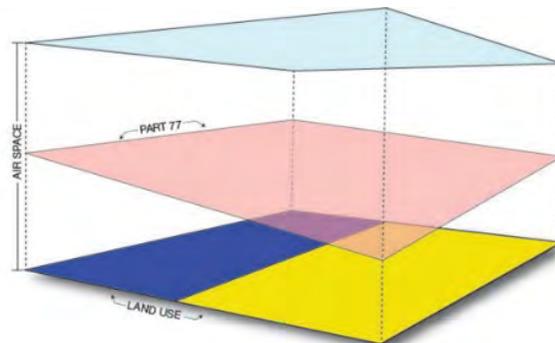
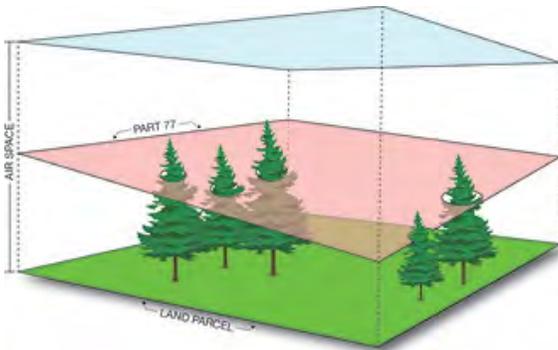
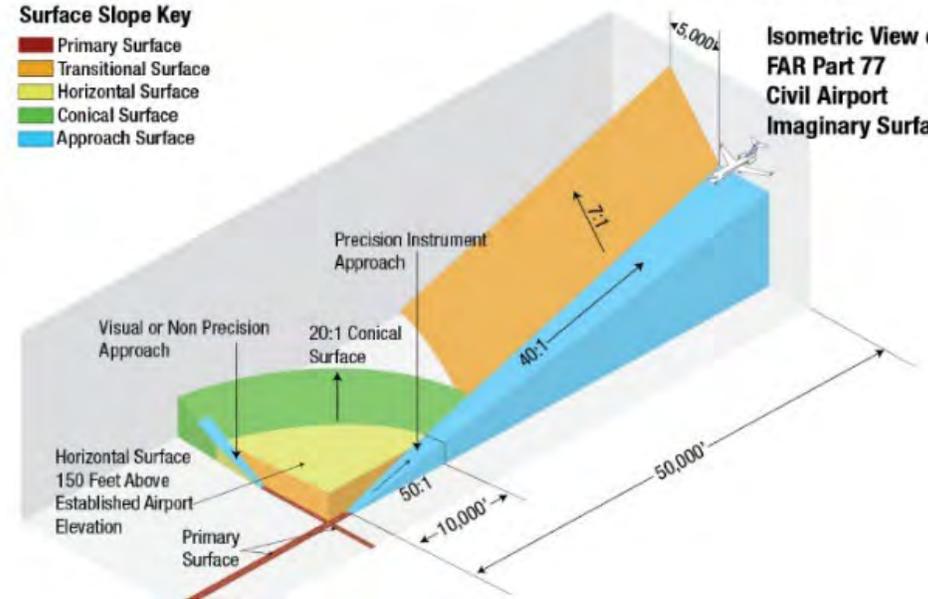
Plan View of FAR Part 77 Civil Airport Imaginary Surfaces



Surface Slope Key

- Primary Surface
- Transitional Surface
- Horizontal Surface
- Conical Surface
- Approach Surface

Isometric View of FAR Part 77 Civil Airport Imaginary Surfaces



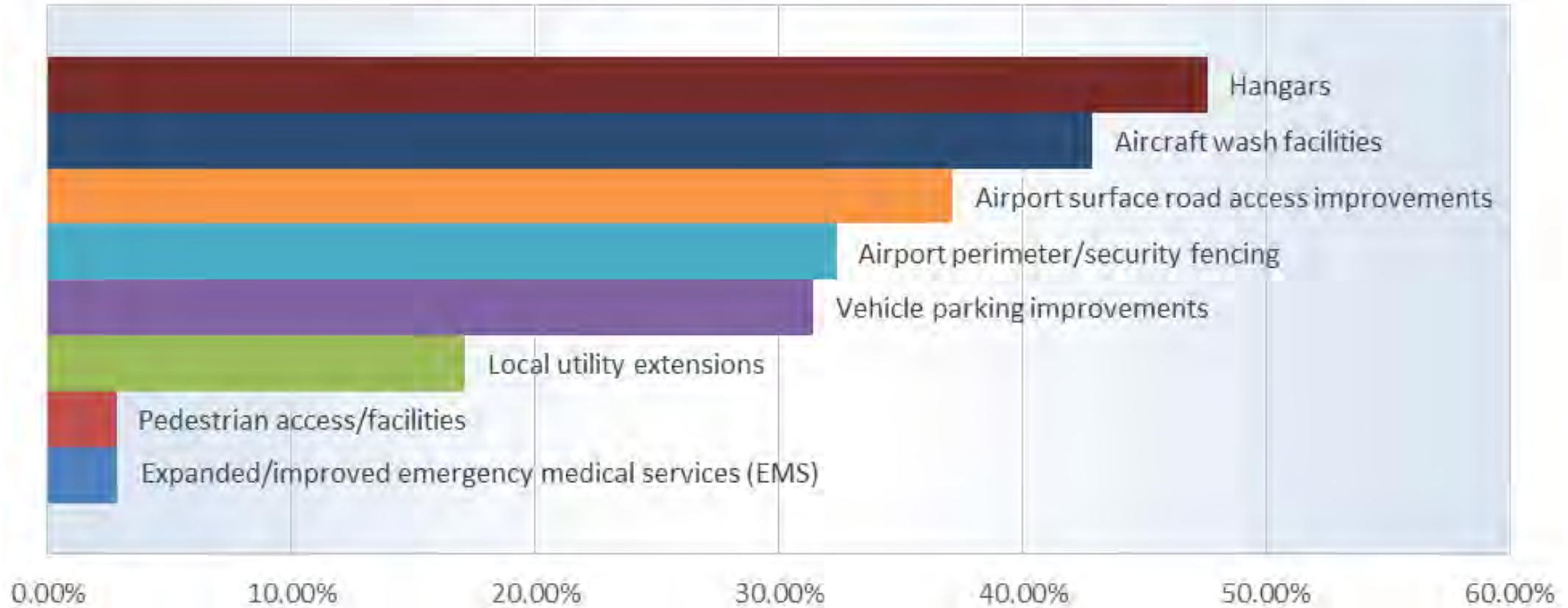
Landside Elements

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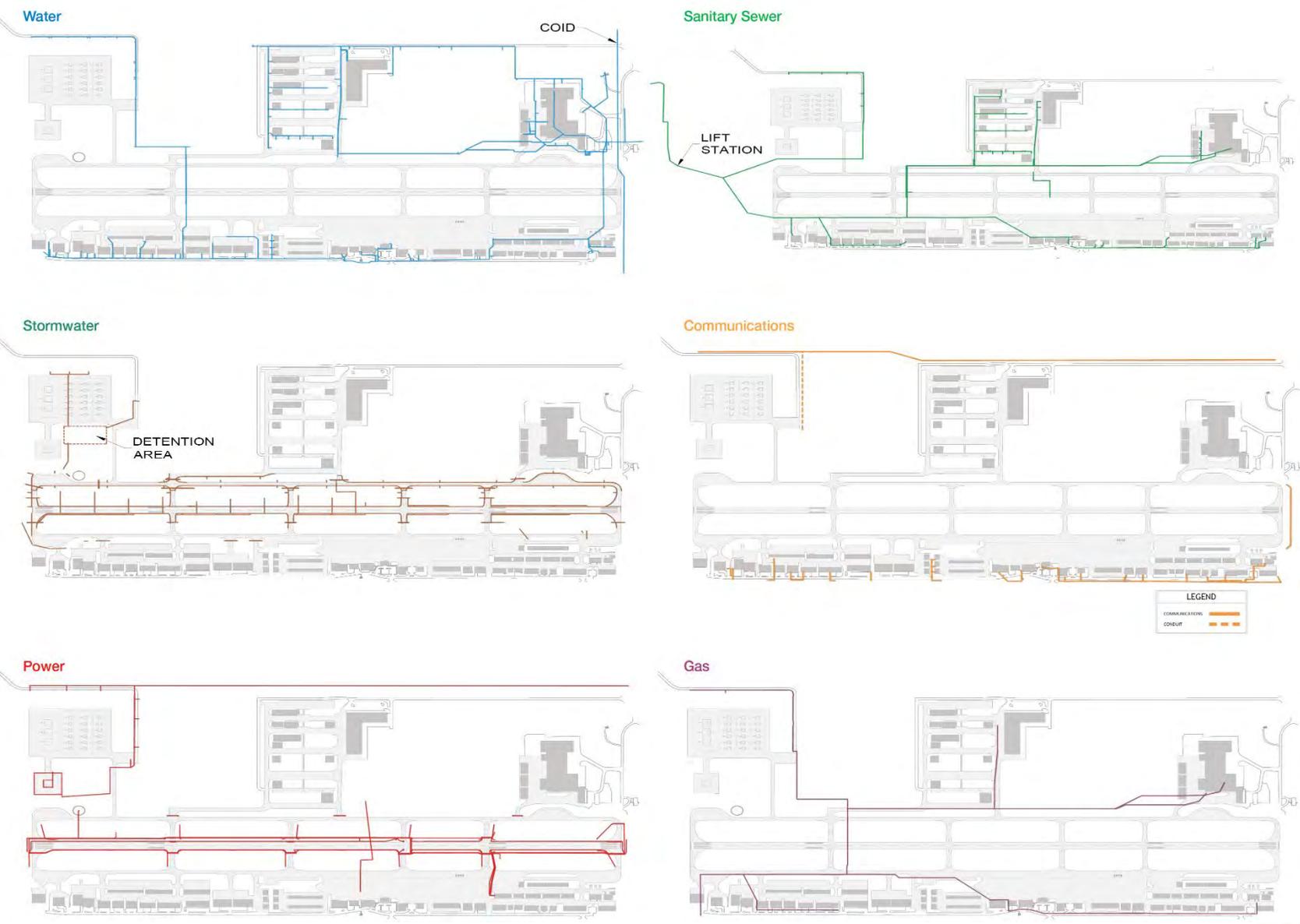


Landside Elements

What landside facility improvements would improve your overall experience at Bend Municipal Airport?



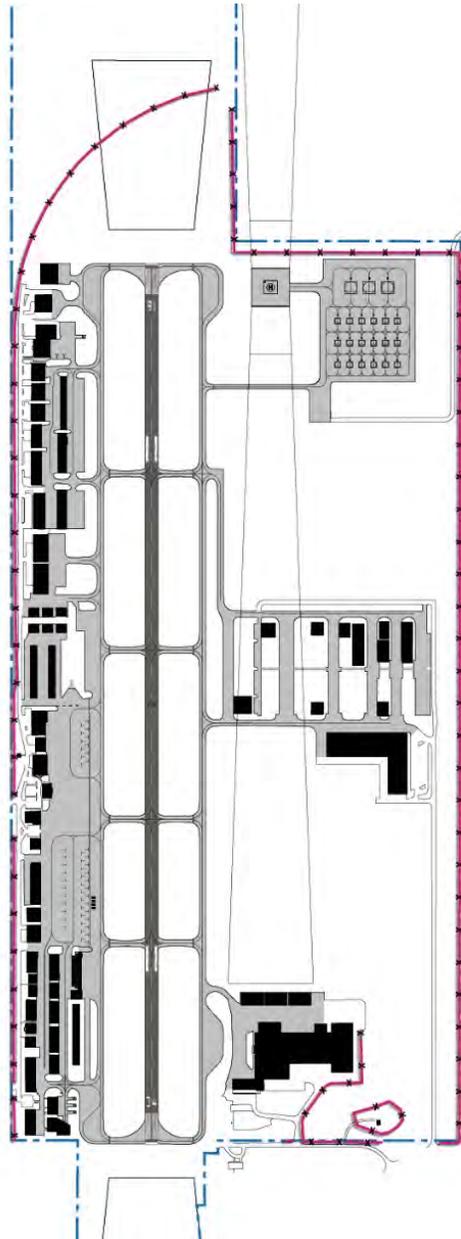
Utilities



- No major issues identified
- Expect system expansion and improvements as necessary
- Identify sites for aircraft wash facilities and public restrooms?



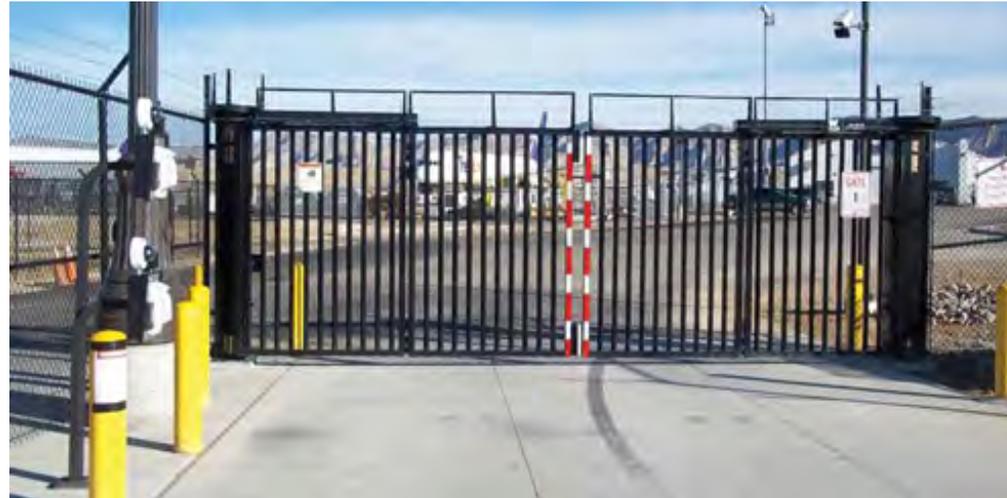
Airport Fencing



Existing 3-strand fencing



Potential Fencing/Gate Option



Tenant Survey Response:

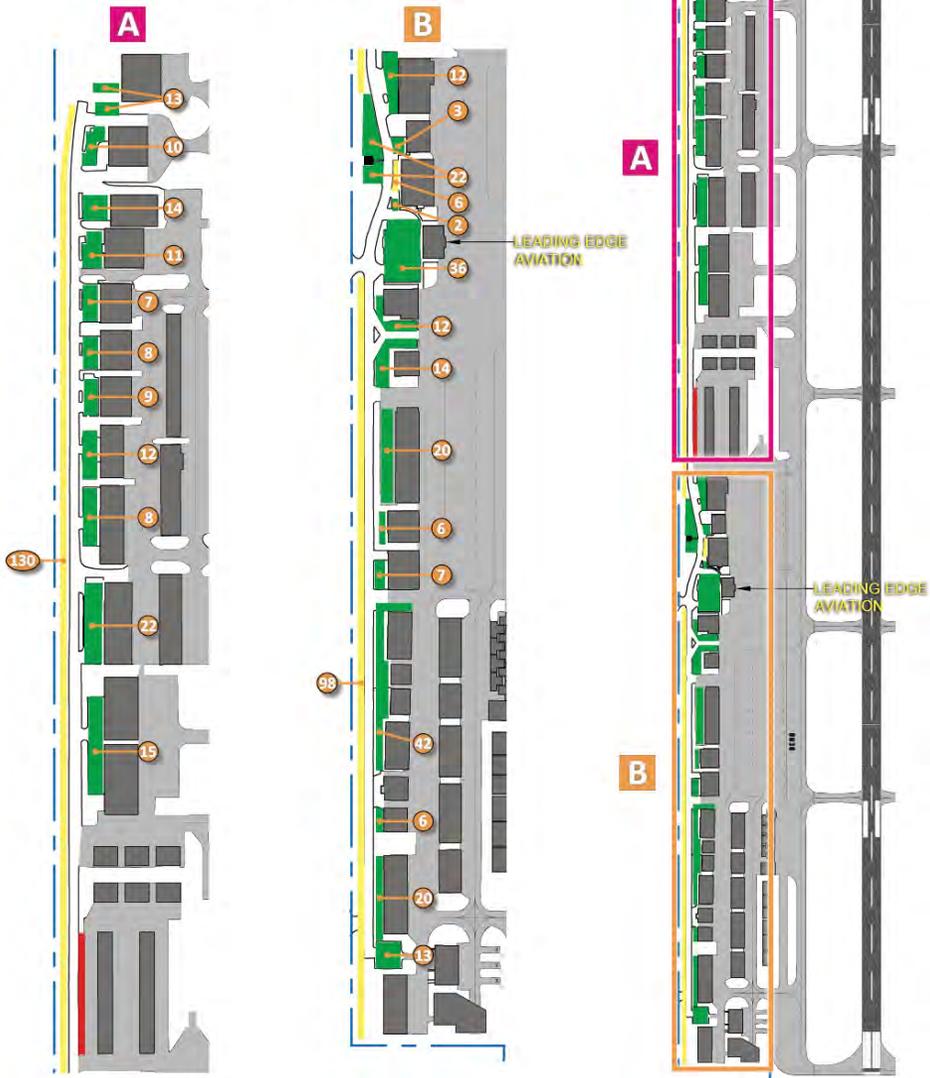
“Airport fencing is my #1 issue. There are a lot of vehicles with no association to the airport just driving around to look at airplanes at the north end of the airport. It’s pretty stunning to live in such a wealthy area and have an airport as busy as Bend and there is zero security.”

Airport Surface Roads



- DESIGNATED PARKING
- UNPLANNED PARALLEL PARKING
- POSTED NO PARKING
- 578 ESTIMATED AMOUNT OF PARKING SPOTS AVAILABLE

NOTE: FRONTAGE ROAD PARALLEL PARKING ESTIMATES EQUAL 20' LINEAR FEET PER PARKING SPOT.



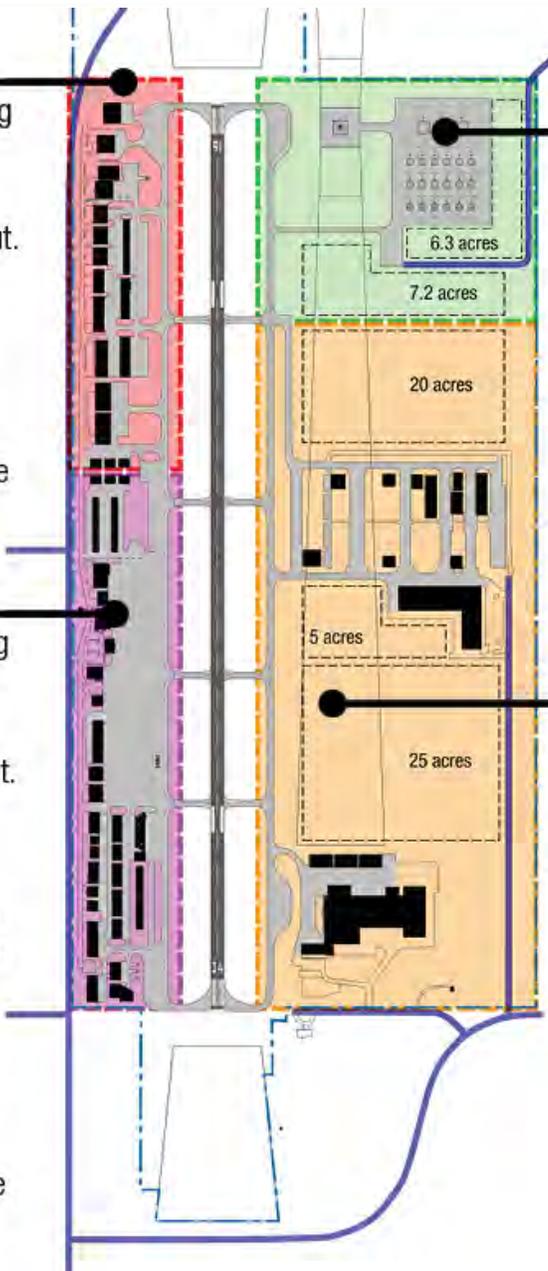
GA Development Areas

Northwest Area

- 176,000 SF of existing aviation related development.
- Area is mostly built out.
- Airport access road deadends.
- Faces Powell Butte Highway.
- Vehicle parking can be challenging.

Southwest Area

- 232,000 SF of existing aviation related development.
- Area is mostly built out.
- FBO - Leading Edge Aviation
- Face of the Airport as primary terminal area.
- Faces Powell Butte Highway.
- Airport access road deadends.
- Vehicle parking can be challenging.



Northeast Area (HOA)

- HOA constructed in 2016.
- Approx. 140,000 SF of future hangars and aviation related development currently in local planning review.
- Development limited to helicopter related businesses and operators.
- Several areas present grade challenges.

Southeast Area (Epic/Aero Facilities)

- Approx. 50 acres of land available for aviation related development.
- Aerofacilities has space for approx. 190,000 SF of additional hangar space.
- Several areas present grade challenges.



Hangars



LEGEND	
	AVIATION BUSINESS [249,288 SQFT]
	FIXED BASED OPERATION (FBO) [4,557 SQFT]
	AVIATION/BUSINESS HANGAR [161,334 SQFT]
	BOX HANGAR [308,780 SQFT]
	T-HANGAR [73,293 SQFT]
	CITY-OWNED STRUCTURE [102,253 SQFT]
	PRIVATELY OWNED STRUCTURE [694,999 SQFT]

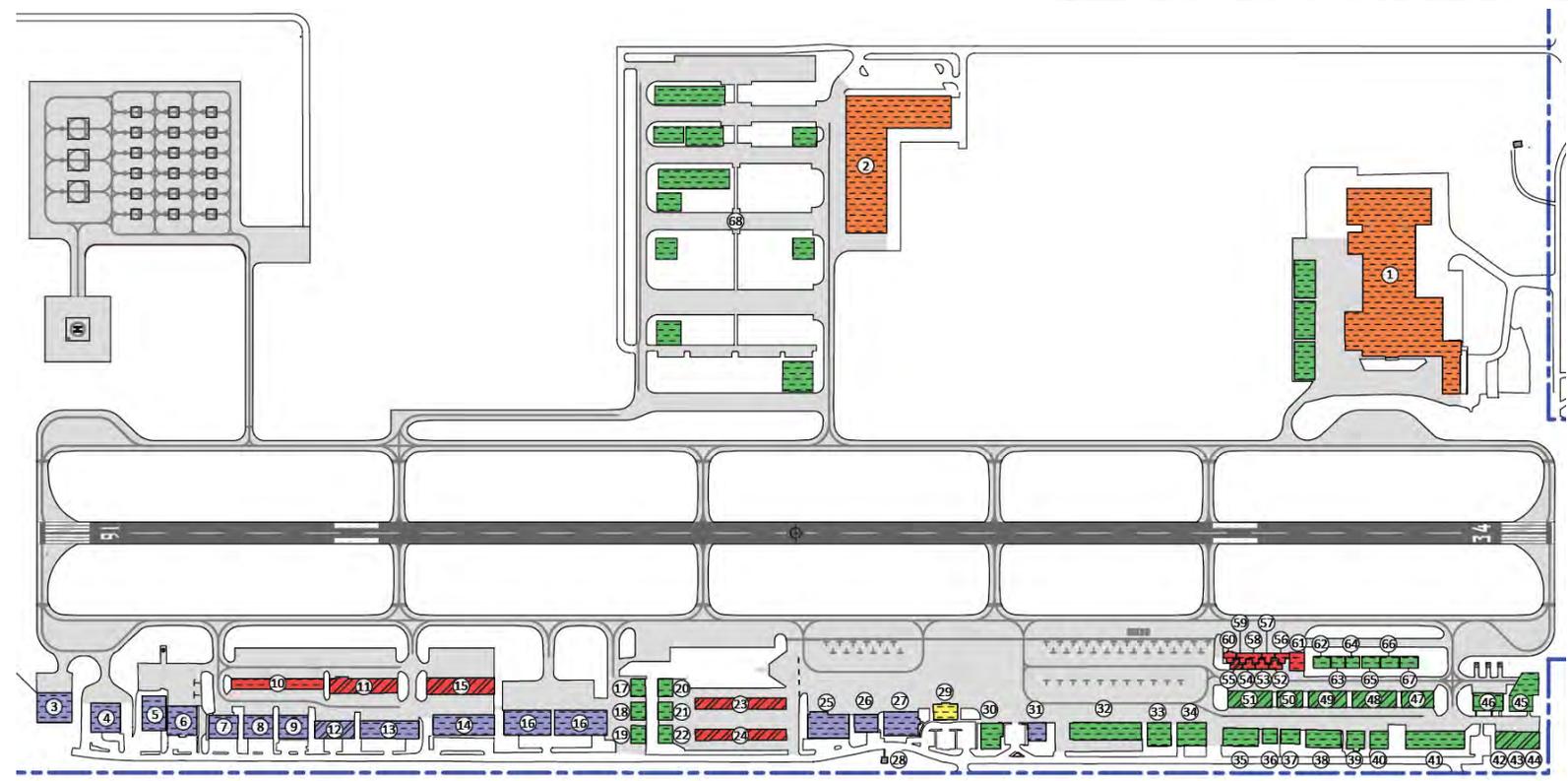
Tenant Survey Responses:

“Hangar access (quantity) and affordability is a negative when it comes to utilizing Bend Municipal as a non-commercial operator of the airport.”

“Considering the cost of hangar rental, the hangars are in sad shape.”

“There is a lack of modern hangars or quality hangars at a reasonable price.”

“The lack of available hangar space is a limiting factor for my purchasing an aircraft and basing it at BDN.”



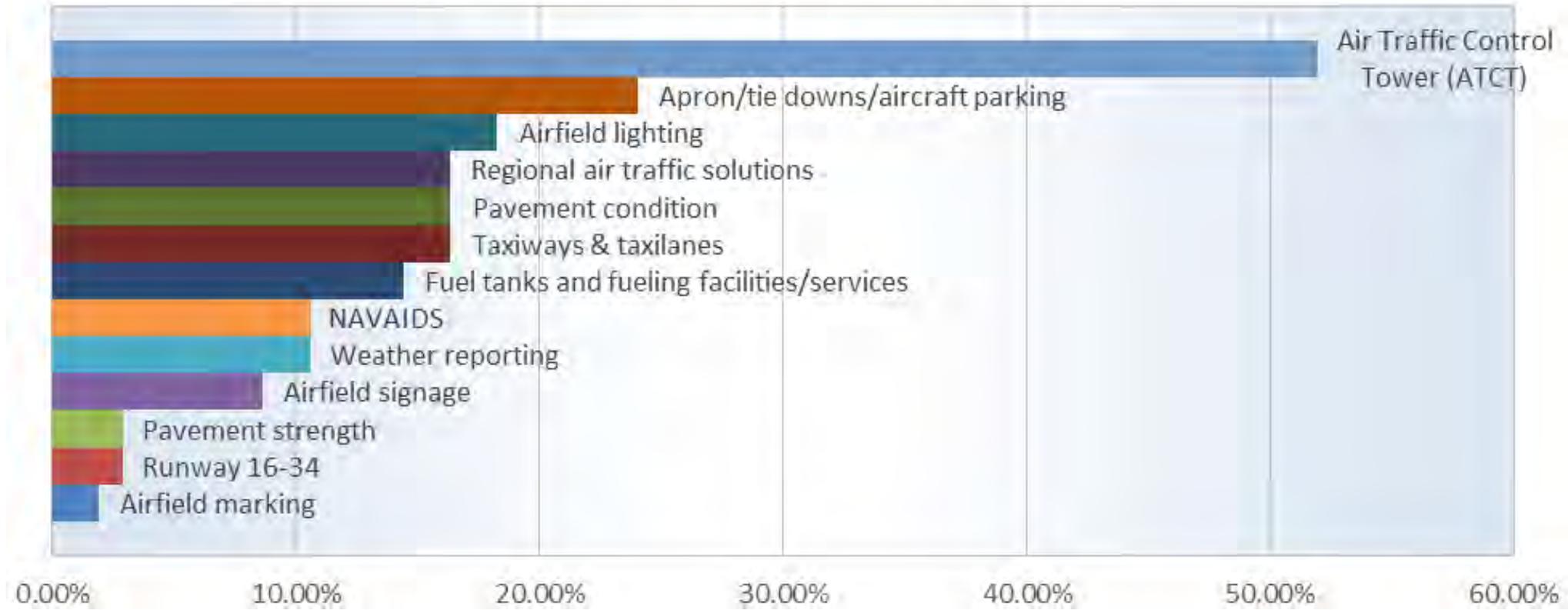
Airside Elements

	Regional Setting	Landside Elements	Airside Elements	Airport Administration
Develop Understanding	<ul style="list-style-type: none"> Location & Vicinity Socio-Economic Data Airport Role Airport History 	<ul style="list-style-type: none"> Utilities Airport Fencing Airport Surface Roads Vehicle Parking 	<ul style="list-style-type: none"> Pavement Condition Aprons/Tiedowns Taxiways/Taxilanes Runway/Helipad 	<ul style="list-style-type: none"> Airport Ownership & Management Airport Financials Airport Rates and Charges
Explore Solutions	<ul style="list-style-type: none"> Area Airports Context Airport Operations Relevant Studies Environmental Data 	<ul style="list-style-type: none"> General Aviation (GA) Development Areas Hangars 	<ul style="list-style-type: none"> Support Facilities FAA Design Standards Area Airspace Air Traffic Control Tower 	<ul style="list-style-type: none"> City of Bend Rules & Regulations Oregon Aviation Laws FAA Compliance Overview
Implementation	<ul style="list-style-type: none"> Local Surface Transportation Land Use/Zoning 			

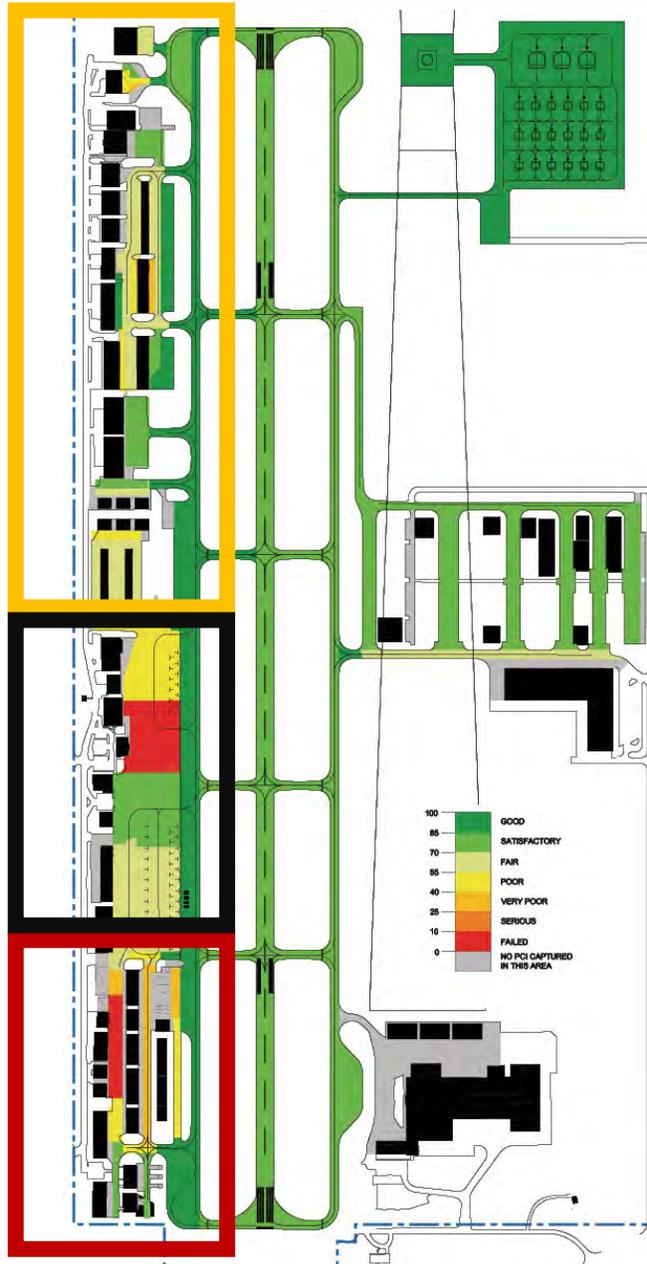


Airside Elements

What airside facility improvements would improve your overall experience at Bend Municipal Airport?

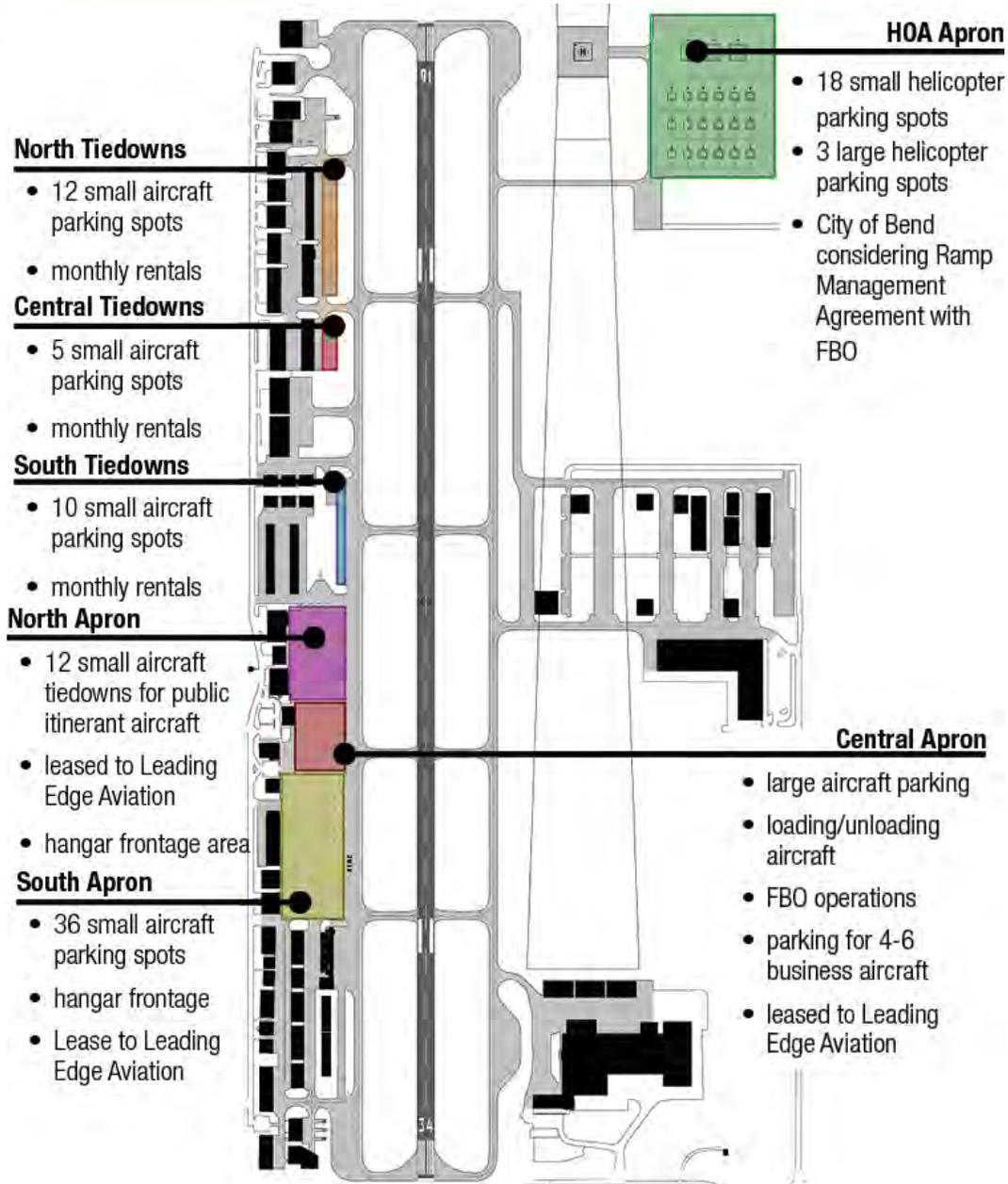


Pavement Conditions

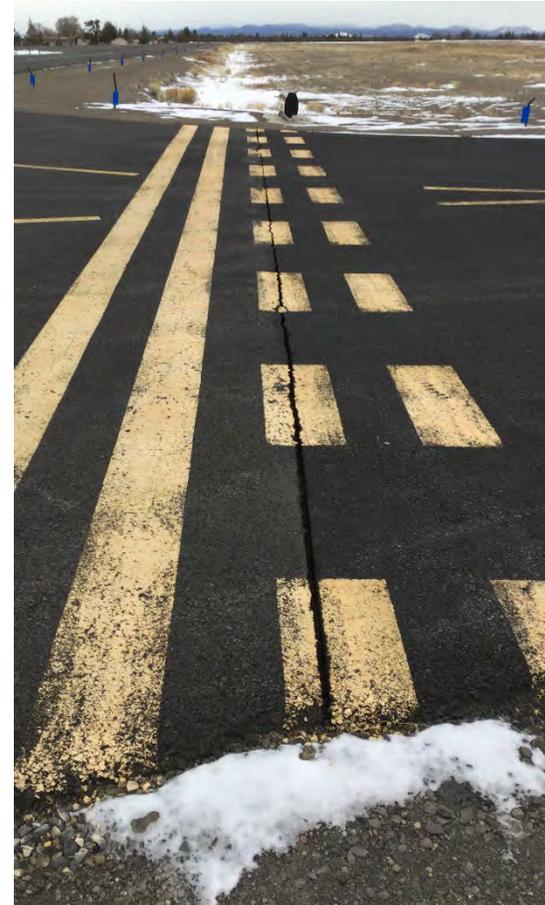
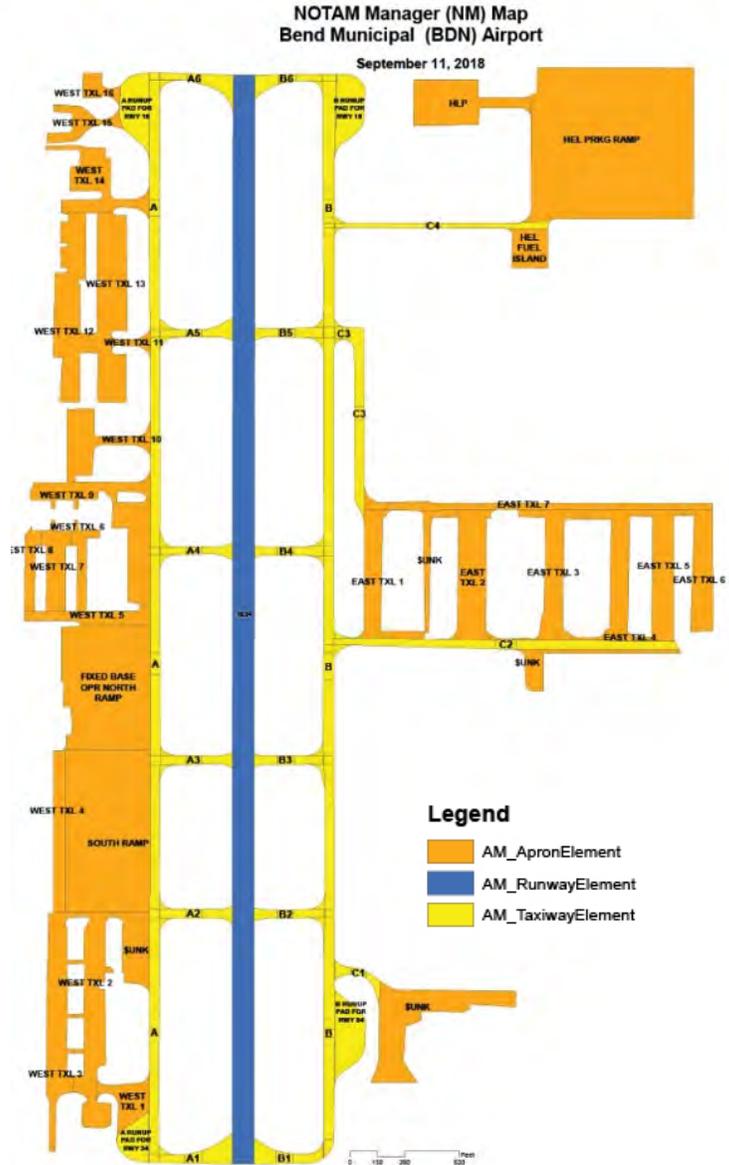


- 2017 Pavement Evaluation
- Apron areas reconstructed in 2017/2018
- Major focus on SW taxilanes
- Keep an eye on NW taxilanes
 - Taxilanes are low priority for FAA funding
- Runway 16-34 and Taxiways A & B are in Good to Satisfactory Condition

Aprons/Tiedowns



Taxiways/Taxilanes



Runway/Helipad

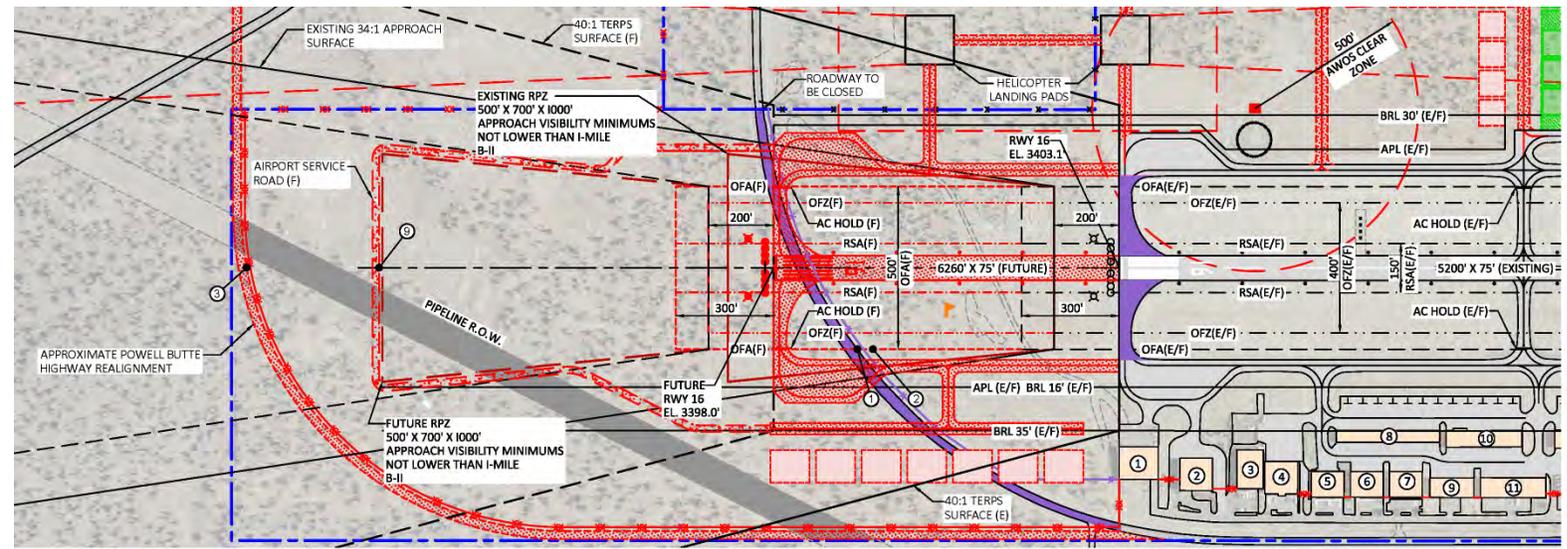


Runway 16-34

- 5,200' x 75'
- Relocated in 2007
- Non-precision markings
- Published 30,000 lb single-wheel gear (SWG) weight rating
- Designed to 50,000-60,000 lb dual-wheel gear (DWG) weight rating
- Planned 1,060' extension in 2013 AMP

Helipad

- Constructed in 2016
- Provide separation of fixed-wing and helicopter operations
- Improved airfield efficiency



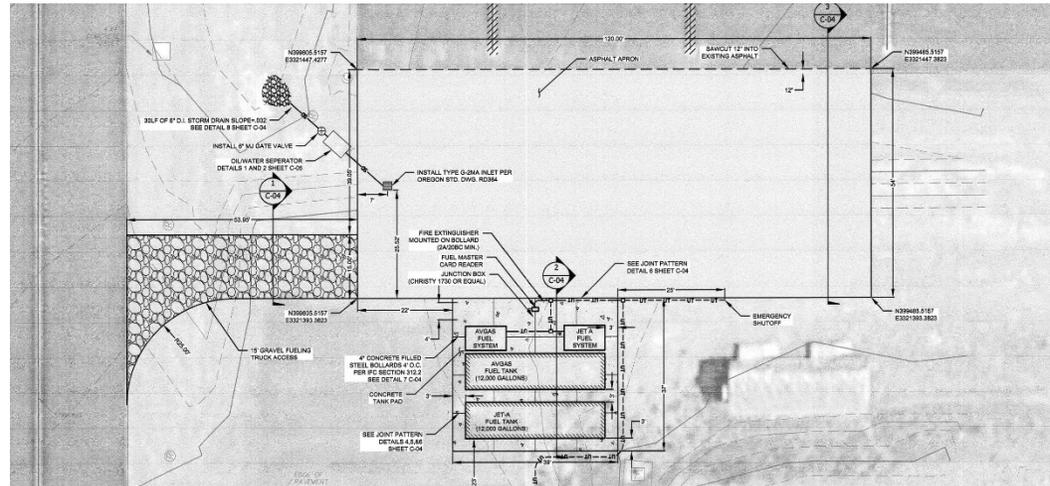
Support Facilities

- Airport Lighting and Signage
 - MIRL
 - REIL
 - PAPI
 - Taxiway Reflectors
 - Limited overhead lighting in hangar areas
 - Standard Runway/Taxiway Signage
 - Could use better signage for A/C parking – Public, Flight School, etc...

- Weather Reporting
 - AWOS

- NAVAIDS
 - Deschutes VORTAC

- Aircraft Fuel
 - All tanks owned/operated by LEA



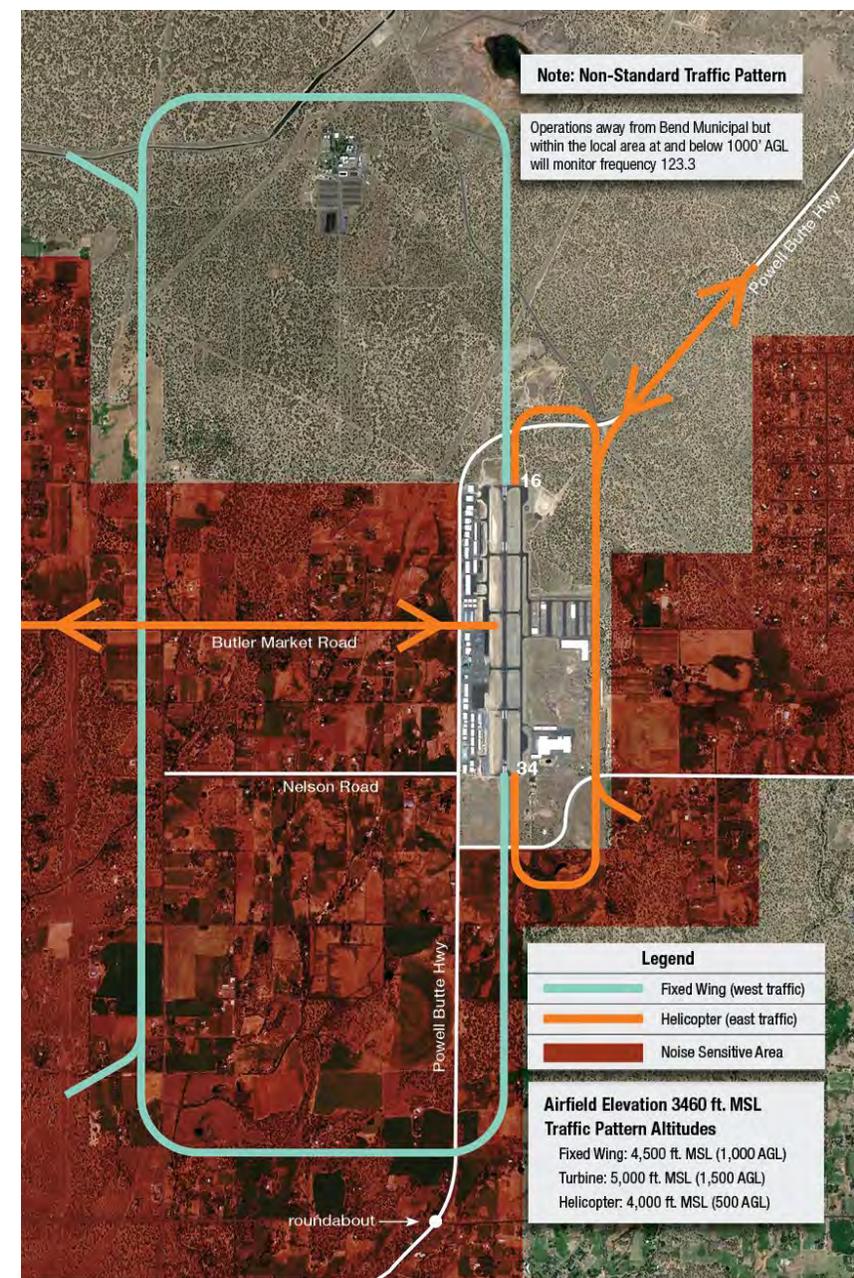
Area Airspace

- Airspace
 - BDN in Class G
 - Class E at 700' AGL
 - Class D at RDM
 - MOAs nearby
 - CTAF 123.0
- Traffic Patterns
 - Bend Fly Friendly
 - Heli ops on east
 - Fixed wing on west
- Users have expressed concerns about airspace congestion

AREA AIRSPACE - SEATTLE/KLAMATH FALLS SECTIONAL CHART



LEGEND			
	Airports with other than hard-surface runways		Class D Airspace
	Airports with hard-surfaced runways 1,500 ft. to 8,069 ft.		Class E Airspace with floor 700' above surface
	VOR/ VORTAC		Military Operations Area (MOA)
	Compass Rose (VOR/DME or VORTAC)		Prohibited, Restricted, Warning, and Alert Areas
	VOR or RNAV Airways		Airports with hard-surfaced runways greater than 8,069 ft. or some multiple runways less than 8,069 ft.
	Class E Airspace (surface)		



Note: Non-Standard Traffic Pattern
Operations away from Bend Municipal but within the local area at and below 1000' AGL will monitor frequency 123.3

Legend

- Fixed Wing (west traffic)
- Helicopter (east traffic)
- Noise Sensitive Area

Airfield Elevation 3460 ft. MSL
Traffic Pattern Altitudes
Fixed Wing: 4,500 ft. MSL (1,000 AGL)
Turbine: 5,000 ft. MSL (1,500 AGL)
Helicopter: 4,000 ft. MSL (500 AGL)



PREVIOUSLY STUDIED ATCT SITES

Site #1

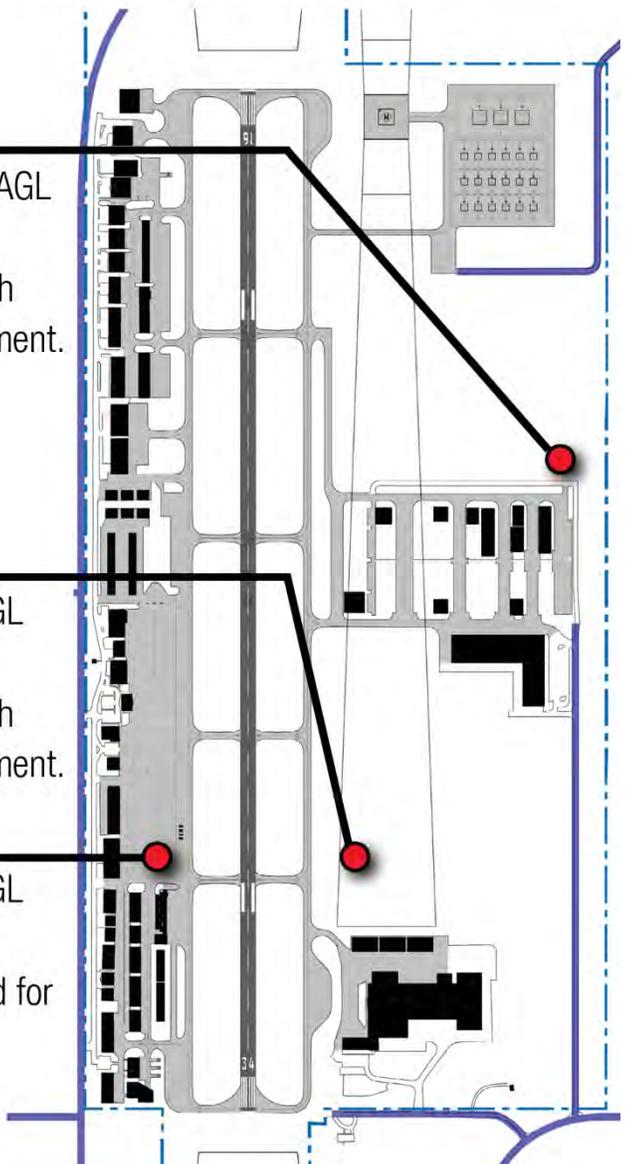
- Cab Eye 75.5' AGL
- Proposed in conjunction with future development.

Site #2

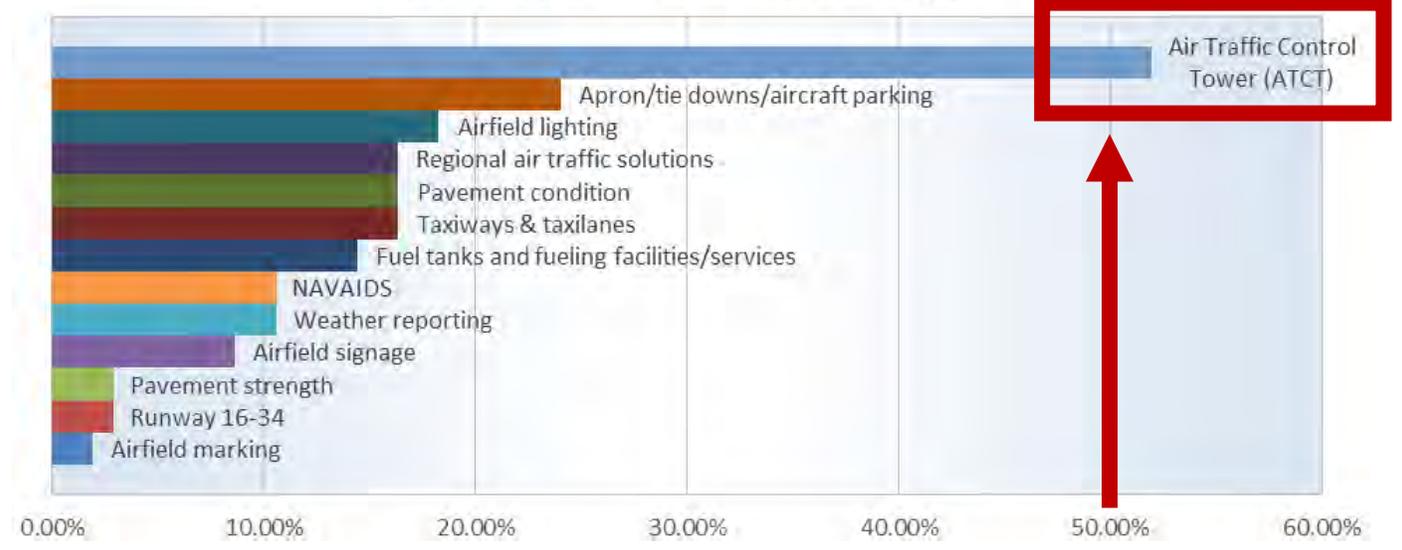
- Cab Eye 45' AGL
- Proposed in conjunction with future development.

Site #3

- Cab Eye 41' AGL
- Site has since been developed for tiedowns.



What airside facility improvements would improve your overall experience at Bend Municipal Airport?



Tenant Survey Response:

“There is only one must-have improvement and that is a control tower. I have personally witnessed and intervened to prevent multiple near misses on approach and in the traffic patterns that would not ever happen at a towered airport. It is just a matter of time before we have a mid air and multiple fatalities.”



Approach Procedures

- RNAV GPS RWY 34
- RNAV GPS Y RWY 16
- RNAV GPS Z RWY 16
 - LPV Minimums
 - 250' AGL Ceiling
 - 1 SM Visibility
- VOR/DME RWY 16
- Departure Procedures for 16 and 34
- Need for helicopter specific IAP has been discussed

APPROACH PROCEDURE MINIMUMS

	MINIMUM ALTITUDE (MSL)	MINIMUM VISIBILITY (SM)	AIRCRAFT CATEGORY
RNAV (GPS) RWY 3			
LNAV MDA	4100	1	A, B
	4100	1 3/4	C
	4100	2	D
Circling	4100	1	A, B
	4100	1 3/4	C
	4100	2	D
RNAV (GPS) Y RWY 16			
LP MDA	3760	1	A, B, C, D
LNAV MDA	3800	1	A, B
	3800	1 1/8	C, D
Circling	3940	1	A
	4000	1	B
	4120	1 3/4	C
	4640	3	D
RNAV (GPS) Z RWY 16			
LPV DA	3682	1	A, B, C, D
LNAV/VNAV DA	3809	1 1/2	A, B, C, D
LNAV MDA	3840	1	A, B
	3840	1 1/4	C, D
Circling	3940	1	A
	3980	1	B
	4000	1 1/2	C
	4040	2	D
VOR/DME RWY 16			
S-16	3840	1	A, B
	3840	1 1/4	C, D
Circling	3940	1	A
	4000	1	B
	4120	1 3/4	C
	4640	3	D



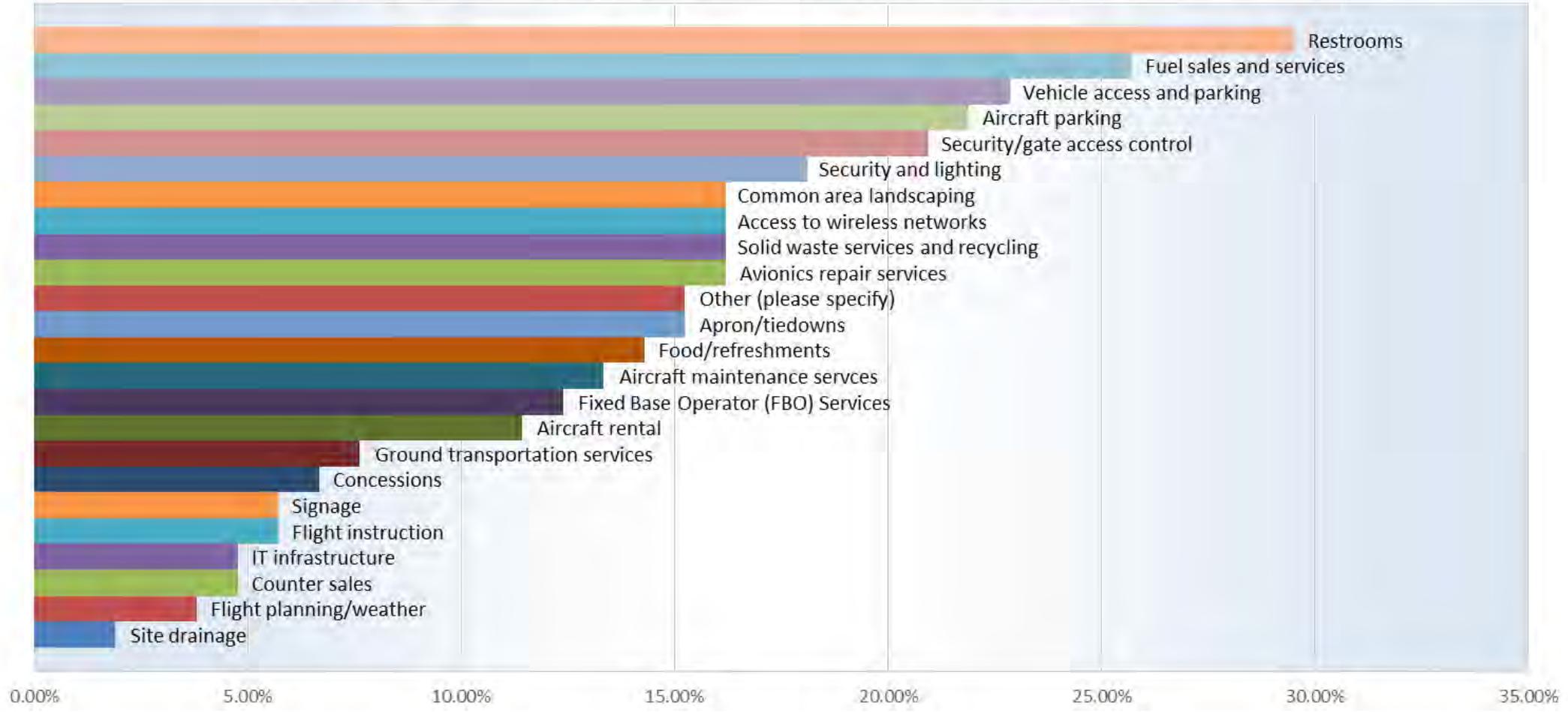
Airport Administration

	Regional Setting	Landside Elements	Airside Elements	Airport Administration
Develop Understanding	<ul style="list-style-type: none"> Location & Vicinity Socio-Economic Data Airport Role Airport History 	<ul style="list-style-type: none"> Utilities Airport Fencing Airport Surface Roads Vehicle Parking 	<ul style="list-style-type: none"> Pavement Condition Aprons/Tiedowns Taxiways/Taxilanes Runway/Helipad 	<ul style="list-style-type: none"> Airport Ownership & Management Airport Financials Airport Rates and Charges
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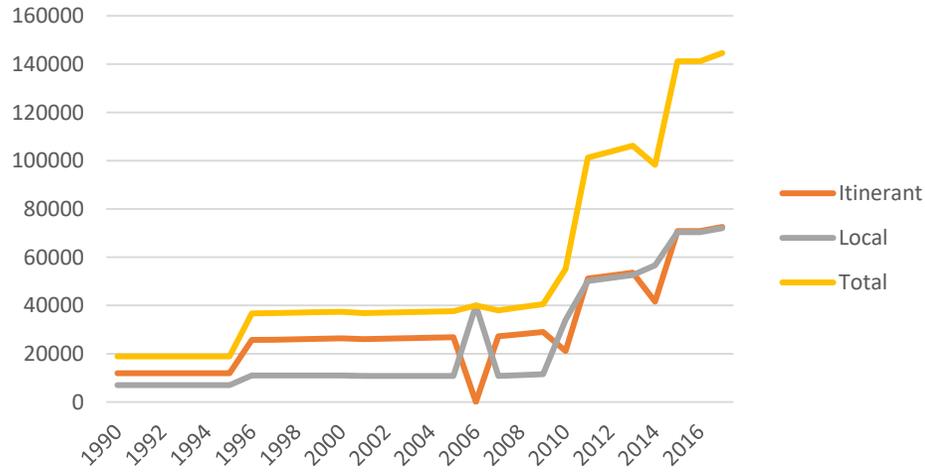
Airport Administration

Understanding that many general aviation services are provided by private service providers (FBOs), what general aviation services do you feel need improvement at the Bend Municipal Airport?

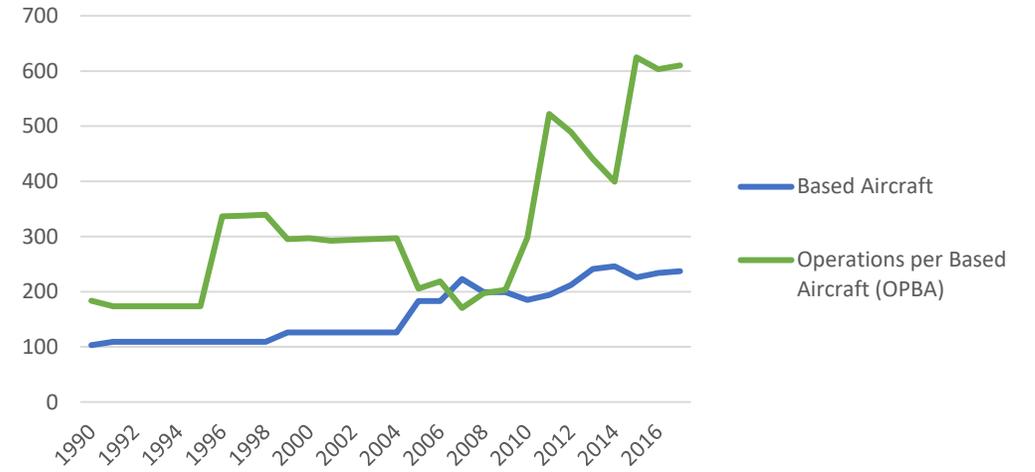


Aviation Activity Forecasts

FAA TAF Historic Operations



FAA TAF Historic Based Aircraft



What about the future?



Definitions:

Aircraft Operation

A count of a takeoff, landing, or touch-and-go. Each time an aircraft touches the runway to takeoff or land, it counts as an operation.

Itinerant Operation

An operation that originates at one airport and terminates at a different airport. For example, an aircraft flying from BDN to another airport.

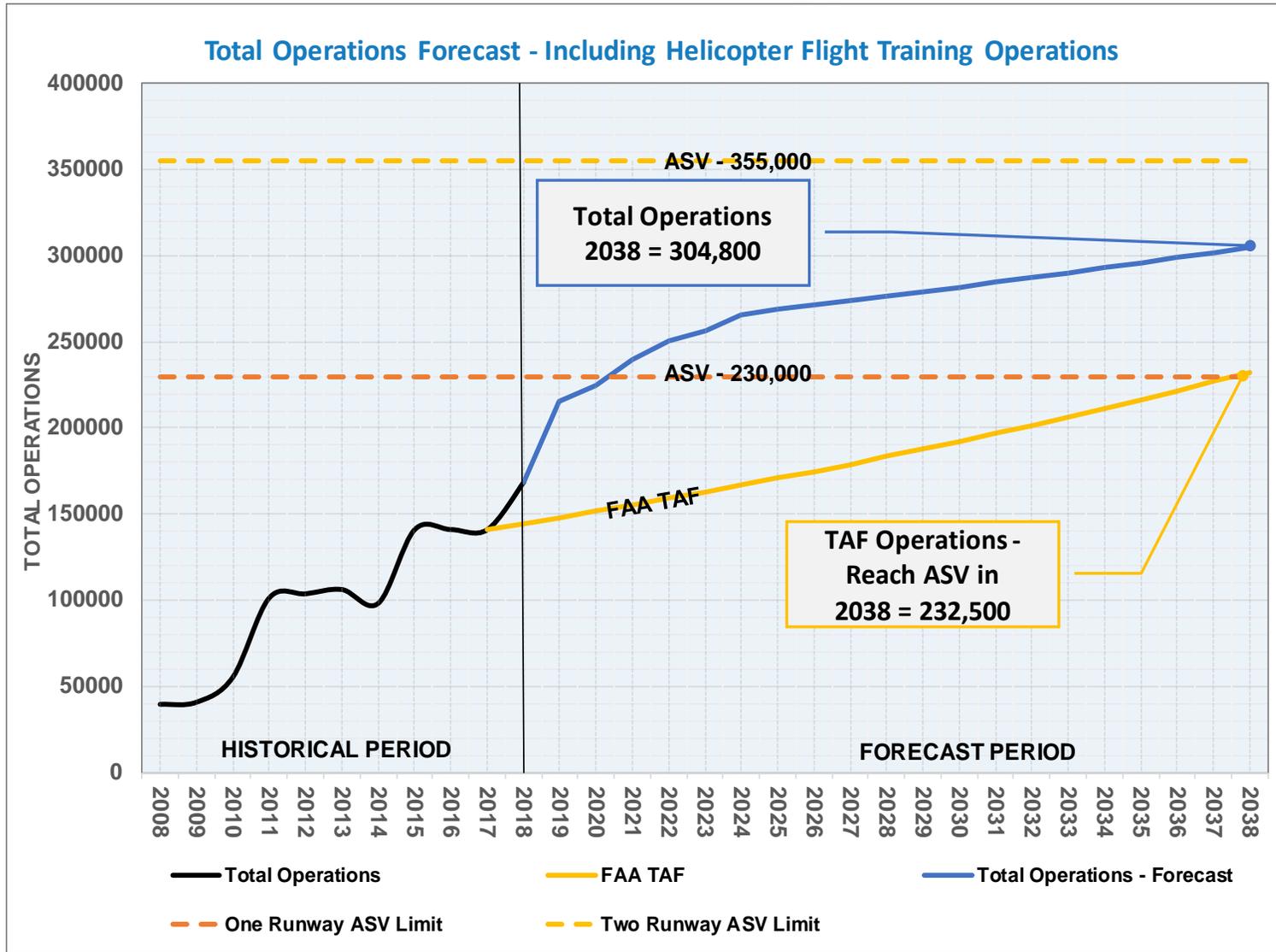
Local Operation

An operation that originates and terminates at the same airport. For example, an aircraft takes off from BDN, remains near the airport to practice flight maneuvers, and then lands at BDN.

FORECAST SUMMARY

Category	Historical	Current	Future
	2010	2018	2038
Aircraft Operations	97,928	168,913	304,800
Itinerant Operations	44,558	66,127	108,940
Local Operations	53,370	102,886	195,960
Based Aircraft	215	244	303

Aviation Activity Forecasts



Aviation Activity Forecasts

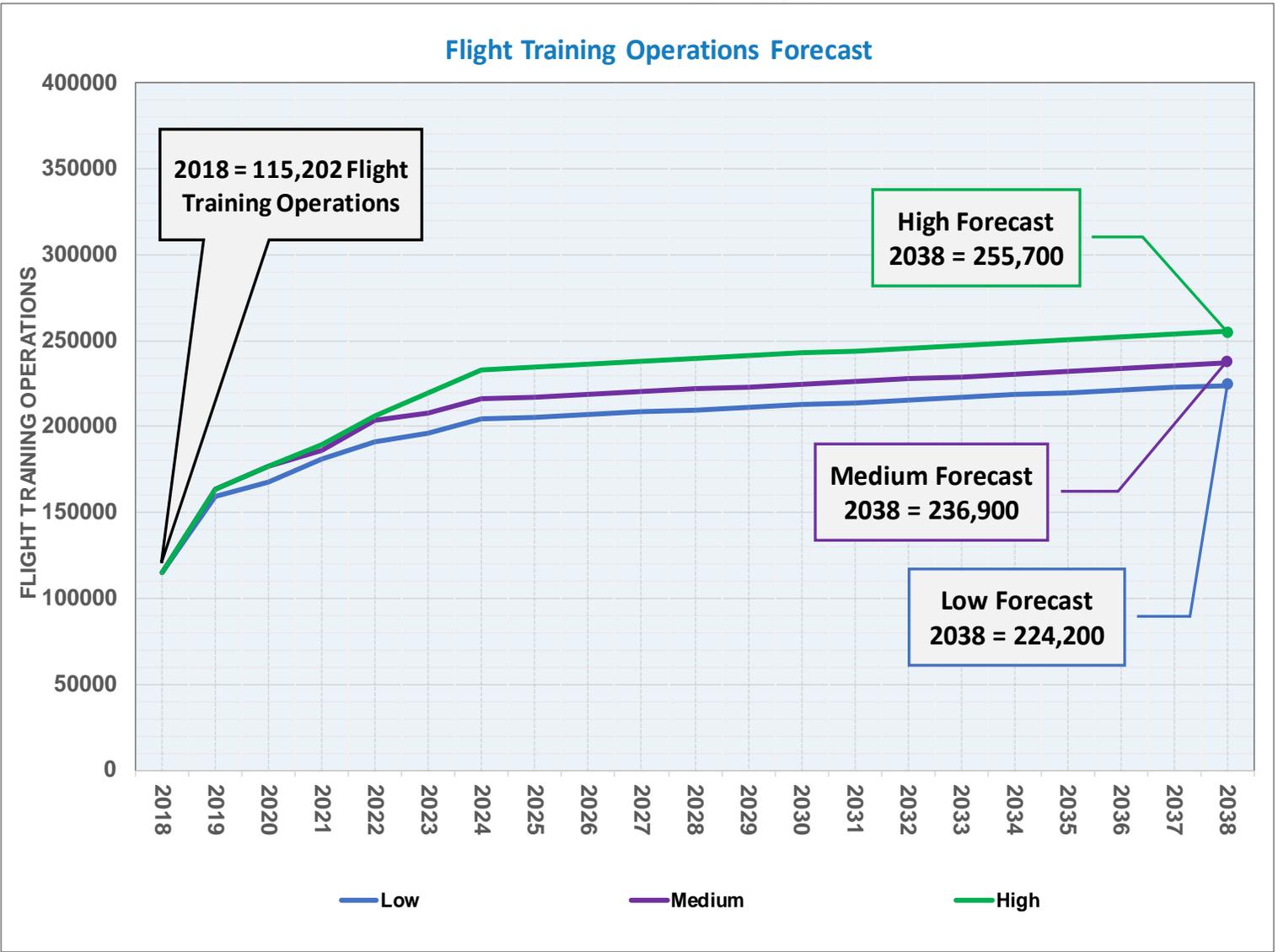


Table 2-15: Future Flight Training Based Aircraft

Year	Fixed Wing	Helicopter	Total
2018	20	10	30
2023	35	10	45
2028	39	10	49
2033	40	10	50
2038	42	10	52
CAGR	3.8%	0.0%	2.8%

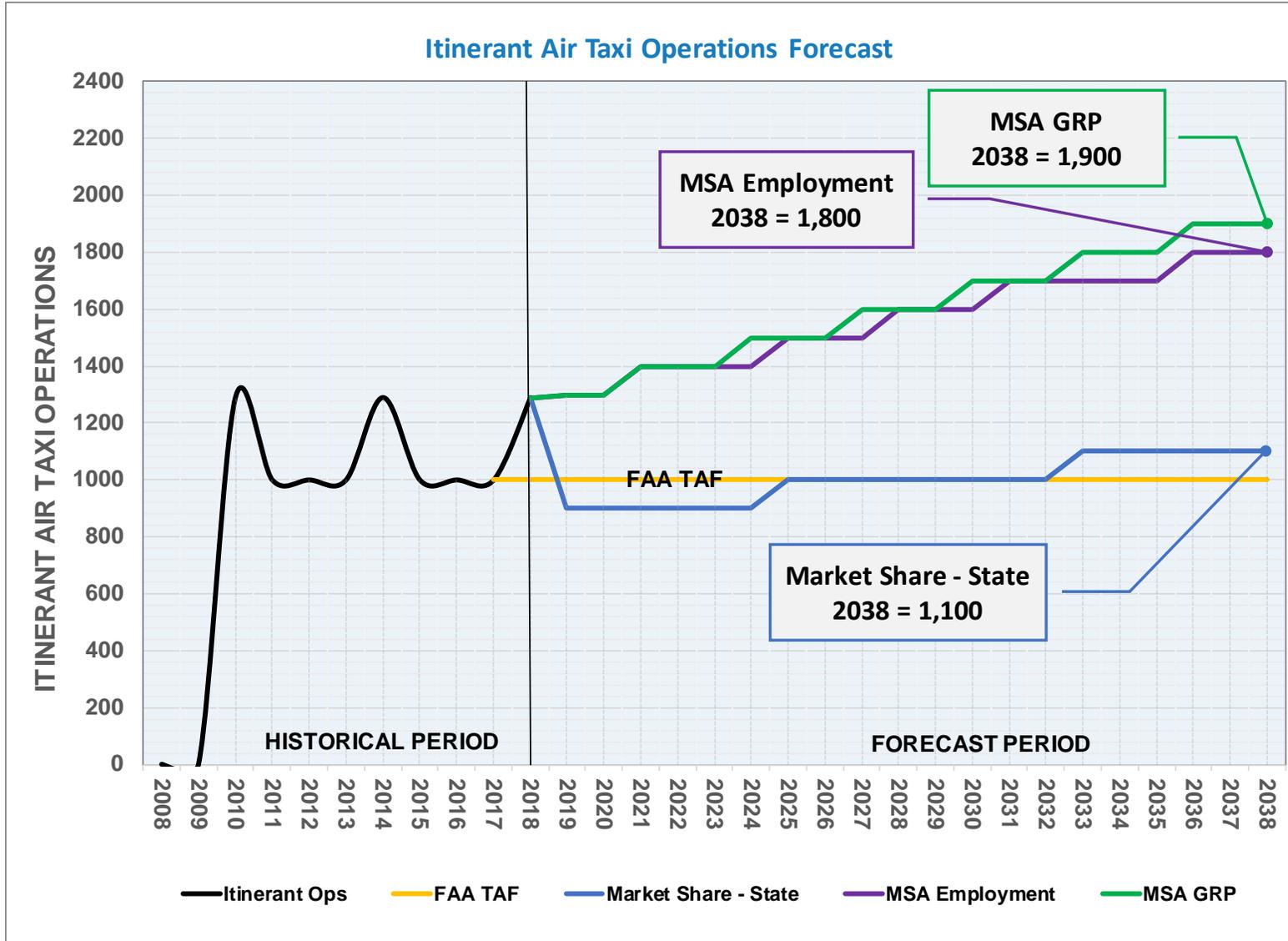
CAGR: Compound Annual Growth Rate

Table 2-16: Future Flight Training Operations Based on Aircraft Type

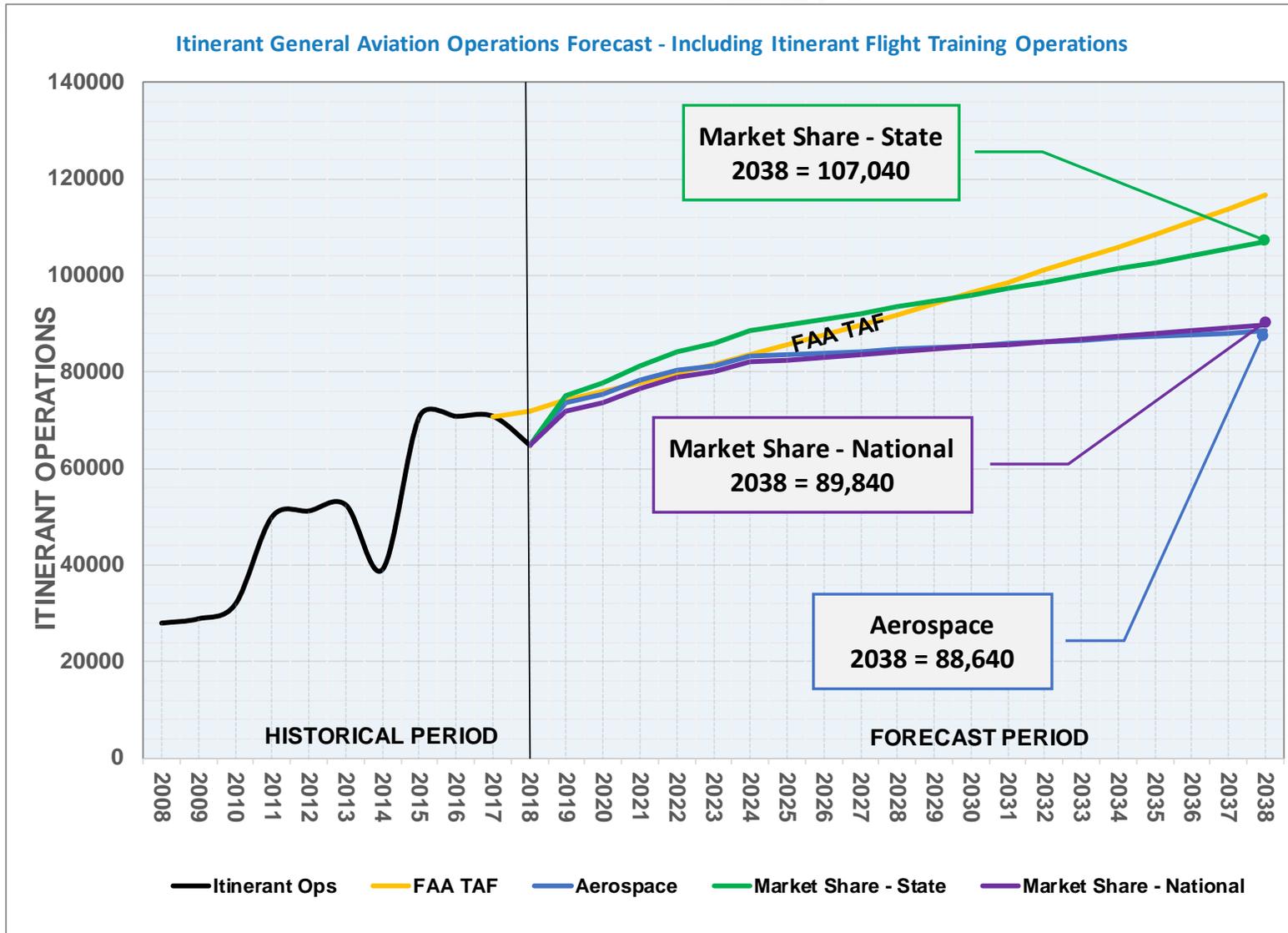
Year	Fixed Wing	Helicopter	Total
2018	76,629	38,573	115,202
2023	157,400	38,600	196,000
2028	174,760	35,140	209,900
2033	180,600	36,300	216,900
2038	186,680	37,520	224,200
CAGR	4.6%	-0.1%	3.4%

CAGR: Compound Annual Growth Rate

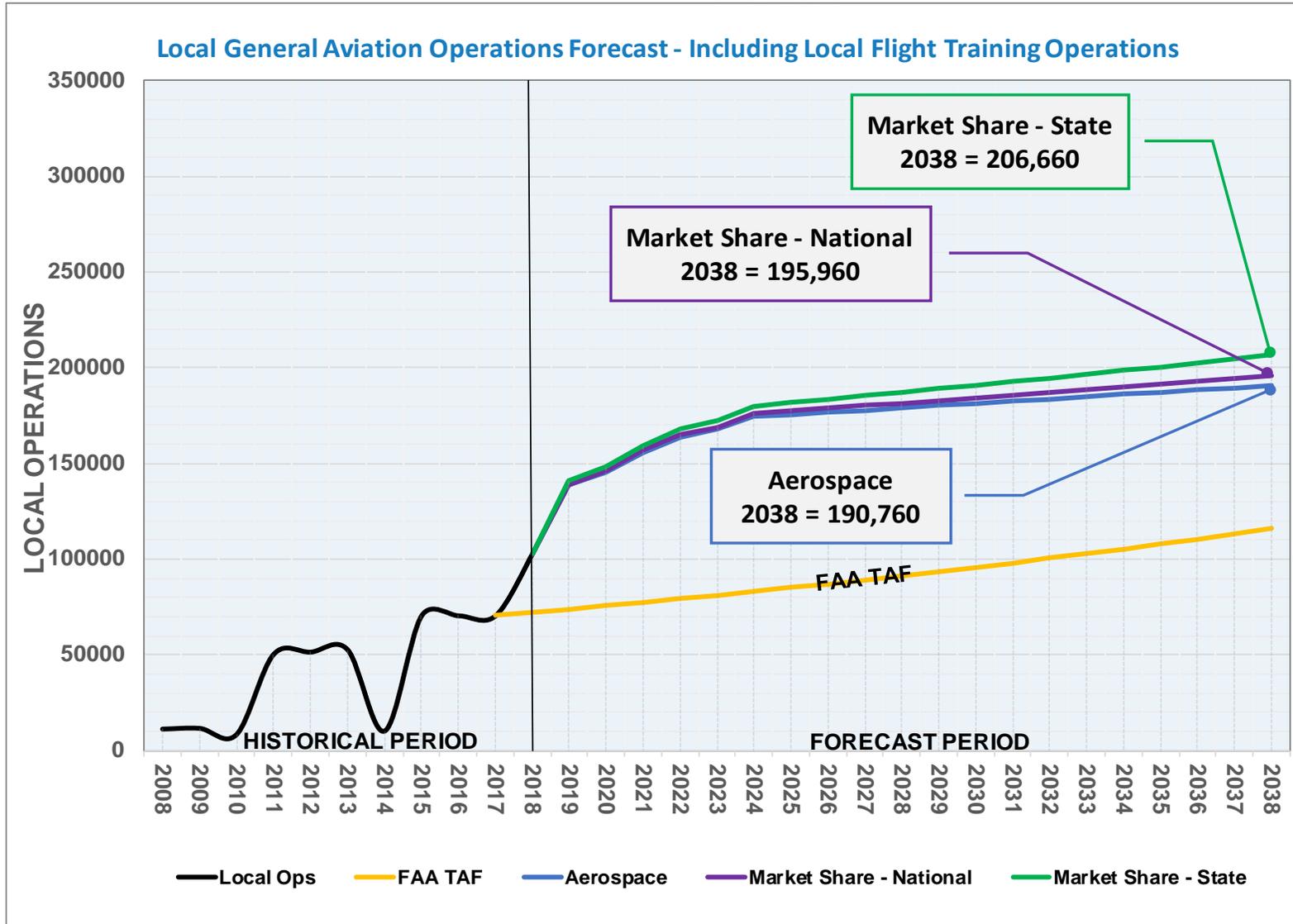
Aviation Activity Forecasts



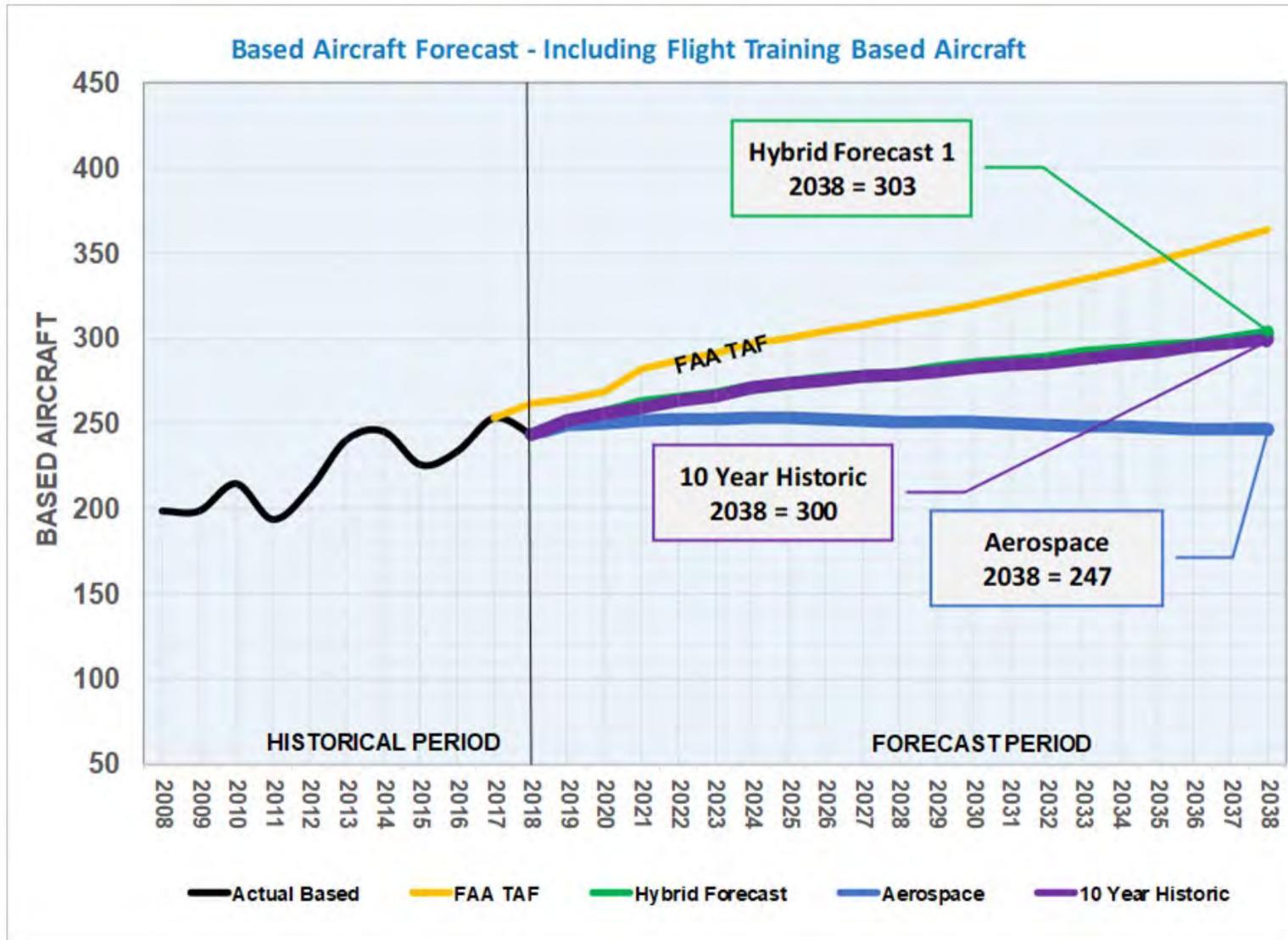
Aviation Activity Forecasts



Aviation Activity Forecasts



Aviation Activity Forecasts



Aviation Activity Forecasts

Table 2-19: Preferred Based Aircraft Forecast – Aircraft Types

Year	SEP	Jet	MEP	Helicopter	Other	Total
2018	191	11	19	23	0	214
2023	212	12	19	24	0	267
2028	223	13	18	25	0	279
2033	231	15	18	27	0	291
2038	240	16	18	29	0	303
CAGR	1.1%	1.9%	-0.3%	1.1%	0.0%	1.8%

CAGR: Compound Annual Growth

SEP: Single Engine Piston

MEP: Multi Engine Piston



Aviation Activity Forecasts

Table 2-27: Forecasted Annual ARC Operations

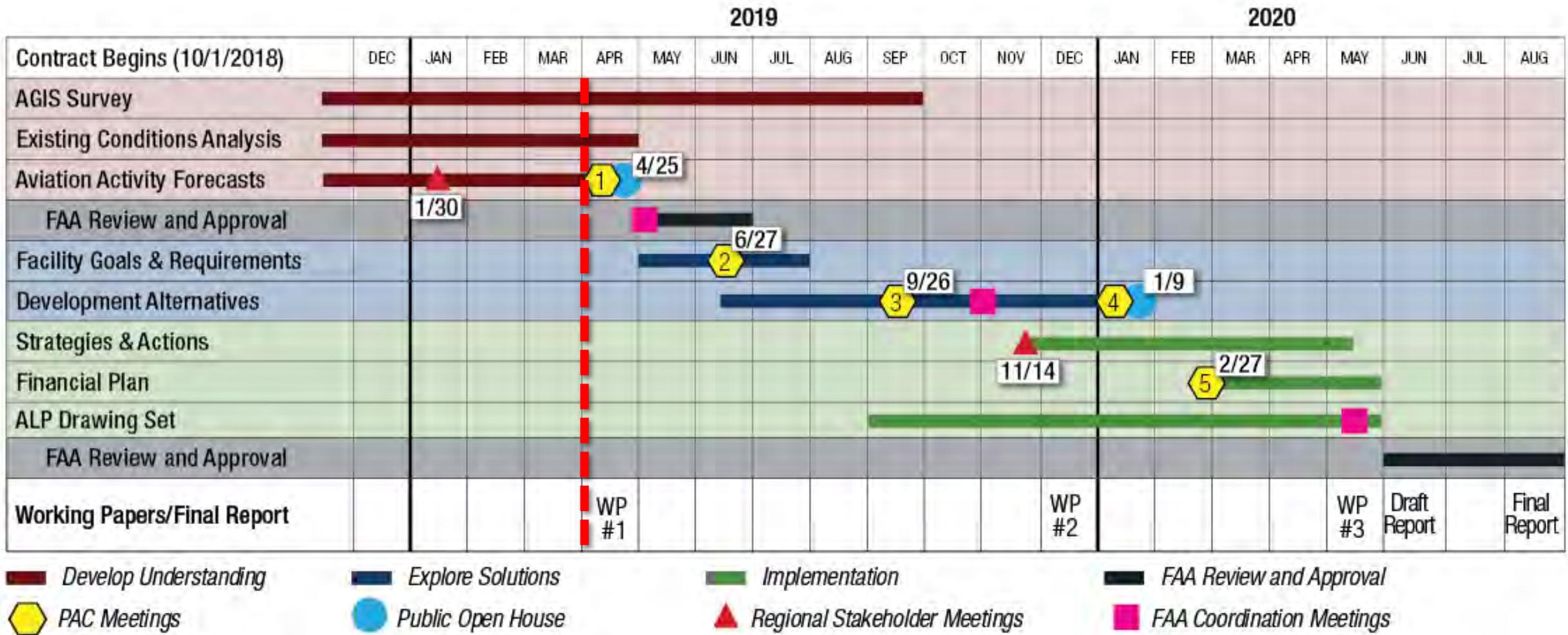
Year	A-I	A-II ²	B-I	B-II ¹	C-I	C-II	C-III	D-I	D-II	D-III	Total Operations
2018	30,603	1,550	19,999	1,340	73	100	4	21	16	4	53,711
2023	34,778	1,423	22,853	1,100	82	113	4	23	18	4	60,400
2028	38,349	1,570	25,199	1,212	91	125	4	26	20	5	66,600
2033	42,207	1,727	27,734	1,334	100	137	4	28	22	5	73,300
2038	46,410	1,899	30,497	1,467	110	151	4	31	25	6	80,600



Next Steps

- PAC Review Working Paper #1
 - Introduction
 - Existing Conditions Analysis
 - Aviation Activity Forecasts
- Submit for FAA Review
 - Coordinate FAA Approval of Forecasts
- Facility Goals and Requirements
- Development Alternatives

Master Plan Schedule



Thank you... Questions?

Gary Judd – Gjudd@bendoregon.gov

Matt Rogers – Wrogers@centurywest.com