MISSION STATEMENT: TO CREATE A HEALTHY, SAFE, DIVERSE, AND PROSPEROUS CITY BY ENGAGING COMMUNITY MEMBERS TO DEVELOP AN ENRICHED QUALITY OF LIFE.

AIRPORT COMMITTEE MEETING AGENDA

CITY OF ONTARIO OREGON

MONDAY, APRIL 6, 2026, 6:00 PM, MT

Zoom Link

Pursuant to the Public Meetings Laws and Rules within the Oregon Revised Statutes, the Airport Committee has the authority, ability, and standing to take action on any items on the Agenda, or add items to the Agenda, during a meeting, as long as all public meeting notice requirements have been met.

1) CALL TO ORDER

Roll Call: Bill Hager _____ John Freeburg _____ Pete Morgan _____ Charlotte Hatch _____
Michael Franks _____ Vice-Chair Rick Todd _____ Chairman Shawn Coleman ____
Alternate: Jim Beaumont _____

Council Liaison _____ City Manager ____ Airport Manager _____ FBO _____

2) PLEDGE OF ALLEGIANCE

This Agenda was posted on April 6, 2026. Copies of the Agenda are available from the City Hall Customer Service Counter and on the city's website at www.ontariooregon.org.

3) MOTION TO ADOPT THE AGENDA

4) MOTION TO ADOPT MINUTES

A) Airport Committee Meeting Minutes March 2, 2026

5) Public Comment Citizens may address the Airport Committee; however, the Committee may not be able to provide an immediate answer or response. Out of respect to the Committee and others in attendance, please limit your comment to three (3) minutes. Please state your name and city of residence for the record.

6) REPORTS

A) Helicopter Parking Pad Bid Results

7) HAND-OUTS/DISCUSSION ITEMS

A) January 2026 Airport Budget Status Report

B) Silverhawk FBO Services - Subcommittee meeting update

C) 20240801 - Airport Master Plan

8) CORRESPONDENCE, COMMENTS AND EX-OFFICIO REPORTS

9) ADJOURN

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"The Gateway to Adventure"

Airport Committee Meeting Minutes

March 2, 2026

The committee meeting was called to order by Chairman Shawn Coleman at 6:14 pm.

1) **Roll Call**: Bill Hager-present, John Freeburg-present after 6:20, Pete Morgan-present, Charlotte Hatch-present, Michael Franks-excused, Rick Todd-present, Chairman Shawn Coleman-present, Alternate Jim Beaumont-present.

Ex Officio members: Ken Hart (City Council)-absent, Dan Cummings (City Manager)-excused.

Airport Manager: Andy Wood-present

FBO: Silverhawk: Brandon Sweeney-present

2) **PLEDGE OF ALLEGIANCE:** Led by Chairman.

3) **MOTION TO ADOPT THE AGENDA**: *Pete Morgan moved to adopt the agenda. Jim Beaumont second.* Roll call vote: Bill-yes, John-out, Pete-yes, Charlotte-yes, Mike-out, Rick-yes, Shawn-yes, and Jim-yes. *Motion carried 6/0/2.*

4) **APPROVAL OF MINUTES**: *Rick Todd moved to approve the minutes from 2/2/2026. Charlotte Hatch second.* Roll call vote: Bill-yes, John-out, Pete-yes, Charlotte-yes, Mike-out, Rick-yes, Shawn-yes, and Jim-yes. *Motion carried 6/0/2.*

5) **OLD BUSINESS**

A) *Airport Budget Ranking:* Andy Wood put together a budget ranking for airport projects that have been previously discussed, and the committee members were asked to rank each item according to priority. Andy totaled the rankings and presented the conclusions. *Pete Morgan moved to approve the survey ranking for priorities 1-3 as listed. John Freeburg second.* Roll call vote: Bill-yes, John-yes, Pete-yes, Charlotte-yes, Mike-out, Rick-yes, Shawn-yes, and Jim-yes. *Motion carried 7/0/1.*

6) **HAND-OUTS/DISCUSSION ITEMS**

A) *Silverhawk Aviation Agreements Renewal:* During the previous committee meeting of March 3, 2025, after reviewing the lease, the committee requested that Andy Wood add in a failed services penalty clause under 1.5 on the Fixed Base Operator Services Agreement if the service standards outlined in 1.1 are not met. John Freeburg brought up that catering to jet traffic is a great opportunity to increase fuel sales and airport activity, but that this depends on having a good experience.

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At the current meeting for March 2, 2026, Brandon Sweeney came to represent Silverhawk Aviation as their Chief Operating Officer. Brandon explained that their current plan for the FBO is to fix it up, along with the pilot lounge, and determine the necessary usage for the modular unit.

The committee voiced several complaints they had personally or have heard from the local community over the past several years of Silverhawk owning the FBO. Jim Beaumont asked about the status of the pilot lounge and bathroom being repaired, as it is out of service at this time due to a water leak. Pete Morgan and Shawn Coleman suggested that Silverhawk bring in an outhouse if the bathroom is not fixed immediately (refer to the requirement of "restroom facilities" under the FBO Lease Schedule 1.1.5). Silverhawk COO, Brandon Sweeney, said the restroom would be fixed shortly and he would research the outhouse option.

Shawn Coleman and John Freeburg both expressed worry about lack of service at the FBO. They felt that there was a lack of interest in the community and providing exceptional service to airport patrons. Pete Morgan mentioned that there was no penalty clause in the current lease when adequate services are not provided. Charlotte Hatch stated that she was curious to learn what Silverhawk's goal is for the FBO over the next several years to which Brandon Sweeney replied that Silverhawk was not certain if they were interested in renewing their lease due to the perceived lack of customer interest in traveling to Ontario compared to their successful operations out of Caldwell Executive Airport. Charlotte Hatch, Flight Operations Manager at TVCC, mentioned that the trip to Ontario is accepted as a necessary part of training among TVCC staff and students. Charlotte also clarified to John Freeburg upon questioning that Silverhawk no longer provides flight training or maintenance services out of Ontario; TVCC currently leases office space and aircraft and are the sole operators out of the FBO.

Rick Todd urged Andy Wood to form a working group consisting of a Silverhawk representative, the City Manager, a city council member, the airport manager, and two members of the Airport Committee to address issues with the lease and FBO and create a contractual agreement prior to the deadline of June 1st. Rick suggested that the City consider giving Silverhawk financial incentives, such as tax cuts, to guarantee adequate services. *Rick Todd moves to table the current discussion pending the working group formed by the airport manager will review and make changes to the current FBO lease agreements. Pete Morgan second.* Roll call vote: Bill-yes, John-yes, Pete-yes, Charlotte-yes, Mike-out, Rick-yes, Shawn-yes, and Jim-yes. *Motion carried 7/0/1.*

B) *Airport December Budget Status Report:* Andy Wood presented the December 2025 budget to the committee. There were some purchases towards airport improvement

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and some office supplies to replace aging equipment. The tie down fee billing at this point are about three months behind. Otherwise, the budget is on track.

7) **CORRESPONDENCE, COMMENTS AND EX-OFFICIO REPORTS**

Lee Unterwegner from JUB Engineering updated the committee that the BLM has agreed to the plan revisions and the job should go out to bid late Fall 2026. The building has been reduced in size due to a smaller budget. The heliport portion was also removed from the plans, with room to build again in the future.

Lee also provided the update that the 90% plans for the helicopter parking pad will be sent out to the FAA and open bid begins April 1, 2026.

8) **ADJOURN** *Moved by Bill Hager. Second by John Freeburg.* Roll call vote: Bill-yes, John-yes, Pete-yes, Charlotte-yes, Mike-out, Rick-yes, Shawn-yes, and Jim-yes. *Motion carried 7/0/1.*

The meeting was adjourned at 8:29 pm.

Next meeting: Monday, April 6, 2026, at 6 pm at Ontario City Hall.

_____ _____

Shawn Coleman - Chairman Charlotte Hatch - Secretary

BID SUMMARY

PROJECT TITLE:	Helicopter Parking
PROJECT NUMBER:	3-41-0044-025-2026
OWNER:	City of Ontario
ENGINEER:	J-U-B Engineers, Inc.
PROPOSAL OPENING:	Wednesday, April 1, 2026, 2:00 PM
LOCATION:	444 SW 4th St, Ontario, Oregon 97914

BID INFORMATION:

CONTRACTOR:	ENGINEER'S ESTIMATE	Gyllenberg	Granite	Nelson	
Acknowledgement of Addenda (#1)	-				
Bid Proposal (Signed)	-				
Bid Schedule of Items & Prices	-				
Bid Bond	-				
Statement of Bidders Pre-Qualifications	-				
Trade Restriction Certification	-				
Certification of Offerer/Bidder Regarding Tax Delinquency and Felony Convictions	-				
Bidder's list	-				
Buy American Certificate	-				
Mobilization Price Cap	-				
Plan Holder	-	✓	✓	✓	
First-Tier Subcontractor Disclosure	-				
Debarment Check	-				
Base Bid	$165,995.00	195,687.10	216,785.25	253,832.00	
Bidder Rank		1	2	3	4

CONTRACTOR:					
Acknowledgement of Addenda (#1)					
Bid Proposal (Signed)					
Bid Schedule of Items & Prices					
Bid Bond					
Statement of Bidders Pre-Qualifications					
Trade Restriction Certification					
Certification of Offerer/Bidder Regarding Tax Delinquency and Felony Convictions					
Bidder's list					
Buy American Certificate					
Mobilization Price Cap					
Plan Holder					
First-Tier Subcontractor Disclosure					
Debarment Check					
Base Bid					
Bidder Rank	5	6	7	8	9

BID SUMMARY

PROJECT TITLE:	Helicopter Parking
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OWNER:	City of Ontario
ENGINEER:	J-U-B Engineers, Inc.
PROPOSAL OPENING:	Wednesday, April 1, 2026, 2:00 PM
LOCATION:	444 SW 4th St, Ontario, Oregon 97914

BID INFORMATION:

CONTRACTOR:	ENGINEER'S ESTIMATE	Gyllenberg Construction, Inc.	Granite Construction Company	Nelson Construction Corp.	
Acknowledgement of Addenda (#1)	-	**X**	**X**	**X**	
Bid Proposal (Signed)	-	**X**	**X**	**X**	
Bid Schedule of Items & Prices	-	**X**	**X**	**X**	
Bid Bond	-	**X**	**X**	**X**	
Statement of Bidders Pre-Qualifications	-	**X**	**X**	**X**	
Trade Restriction Certification	-	**X**	**X**	**X**	
Certification of Offerer/Bidder Regarding Tax Delinquency and Felony Convictions	-	**X**	**X**	**X**	
Bidder's list	-	**X**	**X**	**X**	
Buy American Certificate	-	**X**	**X**	**X**	
Mobilization Price Cap	-	**X**	**X**	**X**	
Plan Holder	-	**X**	**X**	**X**	
First-Tier Subcontractor Disclosure	-	**X**	**X**	**X**	
Debarment Check	-	**X**	**X**	**X**	
Base Bid	**$165,995.00**	**$195,687.09**	**$216,785.25**	**$253,832.00**	
Bidder Rank		**1**	**2**	**3**	**4**

CONTRACTOR:					
Acknowledgement of Addenda (#1)					
Bid Proposal (Signed)					
Bid Schedule of Items & Prices					
Bid Bond					
Statement of Bidders Pre-Qualifications					
Trade Restriction Certification					
Certification of Offerer/Bidder Regarding Tax Delinquency and Felony Convictions					
Bidder's list					
Buy American Certificate					
Mobilization Price Cap					
Plan Holder					
First-Tier Subcontractor Disclosure					
Debarment Check					
Base Bid					
Bidder Rank	**5**	**6**	**7**	**8**	**9**

BID ABSTRACT
City of Ontario
Helicopter Parking
Wednesday, April 1, 2026, 2:00 PM

					ENGINEER'S ESTIMATE		LOW BIDDER		2ND LOW		3RD LOW	
		Ontario Municipal Airport: Helicopter Parking Base Bid					Gyllenberg Construction, Inc.		Granite Construction Company		Nelson Construction Corp.	
No.	FAA Item	Item Description	Quantity	Unit	Unit Price	Total Price	Unit Price	Total Price	Unit Price	Total Price	Unit Price	Total Price
1.	C-102-5.1	Storm Water Pollution Prevention Plan and Control Measures	1	LS	$5,000.00	$5,000.00	$625.00	$625.00	$1,243.00	$1,243.00	$500.00	$500.00
2.	C-105-6.1	Mobilization	1	LS	$28,000.00	$28,000.00	$8,498.00	$8,498.00	$30,087.75	$30,087.75	$11,500.00	$11,500.00
3.	P-101-5.1	Pavement Removal	2	SY	$250.00	$500.00	$752.50	$1,505.00	$321.00	$642.00	$440.00	$880.00
4.	P-101-5.2	Removal of Underdrain Pipe	20	LF	$25.00	$500.00	$73.30	$1,466.00	$51.50	$1,030.00	$78.00	$1,560.00
5.	P-151-4.1	Clearing	0	AC	$15,000.00	$5,850.00	$32,120.50	$12,527.00	$50,400.00	$19,656.00	$20,780.00	$8,104.20
~~6.~~	~~P-152-4.1~~	~~Unclassified Excavation~~		~~CY~~		$0.00		$0.00		$0.00		$0.00
7.	P-152-4.2	Unsuitable Overdepth Excavation	50	CY	$100.00	$5,000.00	$53.82	$2,691.00	$73.50	$3,675.00	$97.00	$4,850.00
8.	P-154-5.1	Subbase Course	147	CY	$80.00	$11,760.00	$91.30	$13,421.10	$147.30	$21,653.10	$109.00	$16,023.00
9.	P-217-5.1	Stabilizer Aggregate	161	CY	$80.00	$12,880.00	$114.00	$18,354.00	$158.00	$25,438.00	$108.00	$17,388.00
10.	P-501-6.1	Plain Concrete Pavement, Undowelled, 6 Inches Thick	423	SY	$90.00	$38,070.00	$197.40	$83,500.20	$164.30	$69,498.90	$270.00	$114,210.00
11.	P-620-5.1	Yellow Marking without Glass Beads	279	SF	$25.00	$6,975.00	$11.62	$3,241.98	$9.00	$2,511.00	$6.20	$1,729.80
12.	D-701-5.1	4 Inch Plastic Drain Pipe	20	LF	$60.00	$1,200.00	$116.72	$2,334.40	$94.25	$1,885.00	$107.00	$2,140.00
13.	D-701-5.2	8 Inch Plastic Storm Pipe	97	LF	$80.00	$7,760.00	$61.53	$5,968.41	$55.00	$5,335.00	$51.00	$4,947.00
14.	L-125-5.1	Relocate Existing 4-Module Sign onto New Base with Junction Box	1	EA	$15,000.00	$15,000.00	$22,660.00	$22,660.00	$12,139.00	$12,139.00	$40,000.00	$40,000.00
15.	SP-1.1	Construction Survey	1	LS	$10,000.00	$10,000.00	$4,750.00	$4,750.00	$14,042.00	$14,042.00	$5,000.00	$5,000.00
16.	SP-2.1	Construction Safety	1	LS	$10,000.00	$10,000.00	$4,400.00	$4,400.00	$6,117.00	$6,117.00	$13,370.00	$13,370.00
17.	D-751-5.1	New Inlet Structure	1	EA	$7,500.00	$7,500.00	$9,745.00	$9,745.00	$1,832.50	$1,832.50	$11,630.00	$11,630.00
		BASE BID TOTAL				**$165,995.00**		**$195,687.09**		**$216,785.25**		**$253,832.00**

General Ledger

Budget Status

User: kari.ott
Printed: 3/22/2026 - 3:19 PM
Account: From 120-00-010050 To 120-335-999999
Period: 7, 2026
Include: Revenue and Expense
Include Uncommitted JE's: True

Account Number	Description	Budget Amount	Period Amount	YTD Amount	YTD Var	Encumbered Amount	Available	% Available
Fund 120	AIRPORT FUND							
Dept 120-000								
R04	AIRPORT							
120-000-406000	AVAILABLE CASH ON HAND	81,196.00	87,564.12	87,564.12	-6,368.12	0.00	-6,368.12	0.00
120-000-441000	INTEREST ON ACCOUNTS	100.00	-26.69	37.96	62.04	0.00	62.04	62.04
120-000-441410	BLM LEASE	18,862.00	0.00	38,420.00	-19,558.00	0.00	-19,558.00	0.00
120-000-441420	KITIMURA LEASE	0.00	0.00	0.00	0.00	0.00	0.00	0.00
120-000-441430	GC Lease	0.00	0.00	0.00	0.00	0.00	0.00	0.00
120-000-441445	MONTGOMERY LEASE	2,000.00	0.00	1,000.00	1,000.00	0.00	1,000.00	50.00
120-000-441450	GRANT	0.00	43,127.95	105,000.00	-105,000.00	0.00	-105,000.00	0.00
120-000-441451	CARES ACT FUNDING	0.00	0.00	0.00	0.00	0.00	0.00	0.00
120-000-441452	FAA GRANT	0.00	0.00	0.00	0.00	0.00	0.00	0.00
120-000-441453	BLM PROJECT REVENUE	0.00	0.00	-12,584.90	12,584.90	0.00	12,584.90	0.00
120-000-442000	FIBER REVENUES	0.00	0.00	0.00	0.00	0.00	0.00	0.00
120-000-443000	STOL SPONSORSHIP	0.00	0.00	0.00	0.00	0.00	0.00	0.00
120-000-444000	EVENT INCOME	0.00	0.00	150.00	-150.00	0.00	-150.00	0.00
120-000-458000	TRANSFERS IN	117,100.00	0.00	0.00	117,100.00	0.00	117,100.00	100.00
120-000-469200	MISC AIRPORT REVENUE	0.00	0.00	0.00	0.00	0.00	0.00	0.00
120-000-469201	REIMBURSEMENTS	0.00	0.00	0.00	0.00	0.00	0.00	0.00
120-000-469205	RESERVATION INCOME - ECLIPS	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	R04 Sub Totals:	219,258.00	130,665.38	219,587.18	-329.18	0.00	-329.18	0.00
R05	AQUATIC							
120-000-441440	GOLF STORAGE LEASE	1,200.00	100.00	700.00	500.00	0.00	500.00	41.67
	R05 Sub Totals:	1,200.00	100.00	700.00	500.00	0.00	500.00	41.67
R1	REVENUE							
120-000-441100	HANGAR SPACE RENTALS	29,333.00	-41.36	26,414.62	2,918.38	0.00	2,918.38	9.95
120-000-441200	TIE DOWN FEES (ANNUAL & TE	5,000.00	2,812.50	2,812.50	2,187.50	0.00	2,187.50	43.75
120-000-441300	OTHER RENT/USE FEES	1,500.00	0.00	0.00	1,500.00	0.00	1,500.00	100.00
120-000-441400	COMMERCIAL AIRPORT USE FE	5,000.00	1,250.00	1,250.00	3,750.00	0.00	3,750.00	75.00
120-000-469204	MISC INCOME AIRPORT	0.00	0.00	0.00	0.00	0.00	0.00	0.00
120-000-471500	FUEL GAS SALES	12,500.00	604.76	7,300.97	5,199.03	0.00	5,199.03	41.59

Account Number	Description	Budget Amount	Period Amount	YTD Amount	YTD Var	Encumbered Amount	Available	% Available
	R1 Sub Totals:	53,333.00	4,625.90	37,778.09	15,554.91	0.00	15,554.91	29.17
	Revenue Sub Totals:	273,791.00	135,391.28	258,065.27	15,725.73	0.00	15,725.73	5.74
	Dept 000 Sub Totals:	-273,791.00	-135,391.28	-258,065.27	-15,725.73	0.00		
Dept 120-006	AIRPORT							
01	PAYROLL RELATED EXPENSES							
120-006-511000	WAGES & SALARIES	60,545.00	5,248.43	36,739.01	23,805.99	0.00	23,805.99	39.32
120-006-513100	VACATION/SICK BUYOUT	1,165.00	0.00	0.00	1,165.00	0.00	1,165.00	100.00
120-006-514000	EMPLR-PAID EMPLE BENEFITS	247.00	20.99	146.93	100.07	0.00	100.07	40.51
120-006-514100	MEDICAL INSURANCE CO-PAY	29,070.00	2,510.31	16,699.57	12,370.43	0.00	12,370.43	42.55
120-006-514200	DEFERRED COMPENSATION	1,800.00	0.00	0.00	1,800.00	0.00	1,800.00	100.00
120-006-515000	WORKMANS COMP	1,226.00	1.42	642.70	583.30	0.00	583.30	47.58
120-006-516000	RETIREMENT	15,724.00	1,316.31	9,214.17	6,509.83	0.00	6,509.83	41.40
120-006-516005	RETIREMENT - EE SHARE	3,703.00	314.91	2,204.37	1,498.63	0.00	1,498.63	40.47
120-006-516500	SOCIAL SECURITY	4,859.00	378.55	2,649.85	2,209.15	0.00	2,209.15	45.47
	01 Sub Totals:	118,339.00	9,790.92	68,296.60	50,042.40	0.00	50,042.40	42.29
02	MATERIALS & SUPPLIES							
120-006-610660	MEDICAL EXAMS	0.00	0.00	0.00	0.00	0.00	0.00	0.00
120-006-610850	CELL PHONE	520.00	39.60	302.01	217.99	0.00	217.99	41.92
120-006-610900	CHEMICAL / FERT / SEED	5,000.00	0.00	0.00	5,000.00	0.00	5,000.00	100.00
120-006-611100	MEETING MEALS	250.00	0.00	0.00	250.00	0.00	250.00	100.00
120-006-612000	LICENSES / PERMITS / FEES	200.00	75.00	75.00	125.00	0.00	125.00	62.50
120-006-612400	ELECTRICITY	13,275.00	720.61	6,498.78	6,776.22	0.00	6,776.22	51.04
120-006-613300	FUEL HEAT	2,000.00	225.29	545.52	1,454.48	0.00	1,454.48	72.72
120-006-613400	GARBAGE SERVICE	0.00	0.00	0.00	0.00	0.00	0.00	0.00
120-006-613500	GENERAL SUPPLIES	3,500.00	0.00	78.48	3,421.52	0.00	3,421.52	97.76
120-006-613600	COURSE MAINTENANCE	0.00	0.00	0.00	0.00	0.00	0.00	0.00
120-006-613700	ECLIPSE EXPENSES	0.00	0.00	0.00	0.00	0.00	0.00	0.00
120-006-613800	EVENT EXPENSES	4,000.00	0.00	47.55	3,952.45	0.00	3,952.45	98.81
120-006-613900	LIABILITY INSURANCE	3,893.00	0.00	4,379.00	-486.00	0.00	-486.00	0.00
120-006-614900	OFFICE SUPPLIES	5,700.00	88.50	1,151.46	4,548.54	3,015.71	1,532.83	26.89
120-006-615100	PETROLEUM SUPPLIES	2,500.00	29.94	986.99	1,513.01	1,713.01	-200.00	0.00
120-006-615200	POSTAGE	150.00	0.00	22.36	127.64	0.00	127.64	85.09
120-006-615300	PRINT / AD / RECORD	275.00	0.00	0.00	275.00	0.00	275.00	100.00
120-006-615500	PROPERTY TAXES	0.00	0.00	0.00	0.00	0.00	0.00	0.00
120-006-615550	CONTRACT SERVICES	84,464.00	14,029.22	56,116.88	28,347.12	35,157.46	-6,810.34	0.00
120-006-615551	CONTRACT LABOR	0.00	0.00	0.00	0.00	0.00	0.00	0.00
120-006-615600	RADIO MAINT.	200.00	0.00	0.00	200.00	0.00	200.00	100.00
120-006-617100	UTILITIES	250.00	0.00	0.00	250.00	0.00	250.00	100.00
120-006-617300	TELEPHONE	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Account Number	Description	Budget Amount	Period Amount	YTD Amount	YTD Var	Encumbered Amount	Available	% Available
120-006-617330	INTERNET	4,300.00	349.72	1,727.60	2,572.40	0.00	2,572.40	59.82
120-006-617510	RECRUITMENT	0.00	0.00	0.00	0.00	0.00	0.00	0.00
120-006-617520	UNEMPLOYMENT CLAIMS	0.00	0.00	0.00	0.00	0.00	0.00	0.00
120-006-618000	PROFESSIONAL DEVELOPMENT	2,000.00	0.00	898.38	1,101.62	150.00	951.62	47.58
120-006-618300	VEHICLE REPAIR	500.00	0.00	34.40	465.60	0.00	465.60	93.12
120-006-618310	EQUIPMENT REPAIR	2,400.00	0.00	0.00	2,400.00	0.00	2,400.00	100.00
120-006-618950	OFFICE LEASES	7,200.00	1,236.00	4,872.00	2,328.00	2,472.00	-144.00	0.00
120-006-619000	MINOR AIRPORT IMPROVEMEN	11,000.00	258.24	797.14	10,202.86	592.26	9,610.60	87.37
	02 Sub Totals:	153,577.00	17,052.12	78,533.55	75,043.45	43,100.44	31,943.01	20.80
03	CAPITAL OUTLAY							
120-006-711000	AIRPORT IMPROVEMENTS	0.00	0.00	0.00	0.00	0.00	0.00	0.00
120-006-712100	CAPITAL OUTLAY	0.00	0.00	0.00	0.00	0.00	0.00	0.00
120-006-712102	EQUIPMENT	0.00	0.00	0.00	0.00	0.00	0.00	0.00
120-006-712103	IRRIGATION SYSTEM	0.00	0.00	0.00	0.00	0.00	0.00	0.00
120-006-712104	BLM CONSOLIDATION OF EFFO	0.00	0.00	0.00	0.00	0.00	0.00	0.00
120-006-712105	AIRPORT MASTER PLAN	0.00	0.00	0.00	0.00	0.00	0.00	0.00
120-006-712106	PHANTOM CONCRETE PAD	0.00	0.00	0.00	0.00	0.00	0.00	0.00
120-006-712107	AIRPORT FENCING	0.00	0.00	154,850.88	-154,850.88	0.00	-154,850.88	0.00
120-006-712108	SECURITY IMPROVEMENTS	0.00	0.00	0.00	0.00	0.00	0.00	0.00
120-006-712109	AIRPORT POWER LINES	0.00	0.00	0.00	0.00	0.00	0.00	0.00
120-006-712110	WELL WATER METERS	0.00	0.00	0.00	0.00	0.00	0.00	0.00
120-006-712111	AIRPORT LIGHTING IMPROVEM	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	03 Sub Totals:	0.00	0.00	154,850.88	-154,850.88	0.00	-154,850.88	0.00
05	TRANSFERS							
120-006-832000	TRANSFER TO GRANT FUND	1,875.00	0.00	0.00	1,875.00	0.00	1,875.00	100.00
120-006-899999	TRANSFER TO PERS RESERVE	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	05 Sub Totals:	1,875.00	0.00	0.00	1,875.00	0.00	1,875.00	100.00
	Expense Sub Totals:	273,791.00	26,843.04	301,681.03	-27,890.03	43,100.44	-70,990.47	0.00
	Dept 006 Sub Totals:	273,791.00	26,843.04	301,681.03	-27,890.03	43,100.44		
	Fund Revenue Sub Totals:	273,791.00	135,391.28	258,065.27	15,725.73	0.00	15,725.73	5.74
	Fund Expense Sub Totals:	273,791.00	26,843.04	301,681.03	-27,890.03	43,100.44	-70,990.47	0.00
	Fund 120 Sub Totals:	0.00	-108,548.24	43,615.76	-43,615.76	43,100.44		

Account Number	Description	Budget Amount	Period Amount	YTD Amount	YTD Var	Encumbered Amount	Available	% Available
	Revenue Totals:	273,791.00	135,391.28	258,065.27	15,725.73	0.00	15,725.73	5.74
	Expense Totals:	273,791.00	26,843.04	301,681.03	-27,890.03	43,100.44	-70,990.47	0.00
	Report Totals:	0.00	-108,548.24	43,615.76	-43,615.76	43,100.44		

ONTARIO MUNICIPAL AIRPORT MASTER PLAN UPDATE

FINAL PLAN

AUGUST 2024

Submitted by:

J-U-B ENGINEERS, INC.

THE LANGDON GROUP

GATEWAY MAPPING INC.

OTHER J-U-B COMPANIES

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ALP SHEETS

ACRONYMS

AAC	Airport Approach Category
AAGR	Average Annual Growth Rate
AC	Advisory Circular
ADG	Aircraft Design Group
ADO	Airports District Office
ADO	Associate Development Organization
ADS-B	Automatic Dependent Surveillance-Broadcast
AIP	Airport Improvement Program
AGL	Above Ground Level
AGIS	Airport Geographical Information System
ALP	Airport Layout Plan
AMSL	Above Mean Sea Level
ANM	Northwest Mountain Region
AOCS	Approach and Departure Clearance Surfaces
AOPA	Aircraft Owner's and Pilot Association
ASPM	Aviation System Performance Metrics
ATC	Air Traffic Control
ARC	Airport Reference Code
AWOS	Automated Weather Observation System
BEA	Bureau of Economic Analysis
BMP	Best Management Practices
CARES	Coronavirus Aid, Relief, and Economic Security Act
CAA	Clean Air Act
CAGR	Cumulative Average Growth Rate
CATEX	Categorical Exclusion
CCTV	Closed Camera Circuit Television
CEQ	Council on Environmental Quality
CFR	Code of Federal Regulations
CTAF	Common Traffic Advisory Frequency
CWA	Clean Water Act
CMG	Cockpit to Main Gear
COVID-19	Corona Virus Disease 2019
DAHP	Department of Archaeology and Historic Preservation
DHS	Department of Homeland Security
DME	Distance Measuring Equipment
DNL	Day-Night- Average Sound Level
DWG	Dual Wheel Gear
EA	Environmental Assessment
EASy	Enhanced Avionics System
EDA	Economic Development Administration
EIS	Environmental Impact Study

EJSCREEN	Environmental Justices Screening and Mapping
EPA	Environmental Protection Agency
ESA	Endangered Species Act
ESD	Employment Security Department
GA	General Aviation
GSI	Greater Spokane Incorporated
FAA	Federal Aviation Administration
FBO	Fixed Based Operator
FEMA	Federal Emergency Management Agency
FPPA	Farmland Protection Policy Act
FSS	Flight Service Station
GAMA	General Aviation Manufactures Association
GDP	Gross Domestic Product
GHG	Green House Gas
HELO	Helicopter
IAP	Instrument Approach Procedure
IATA	International Airline Transport Association
ILS	Instrument Landing System
IFR	Instrument Flight Rules
IMC	Instrument Meteorological Conditions
IPaC	Information for Planning and Consultation
LL	Low Lead
MEP	Multi-Engine Piston
MHz	Mega-Hertz
MIRL	Medium Intensity Runway Lighting
MGW	Main Gear Width
MPU	Master Plan Update
MSL	Mean Sea Level
NAAQS	National Ambient Air Quality Standards
NAS	National Airspace System
NGS	National Geodetic Survey
NDB	Non-Directional Beacon
NEPA	National Environmental Policy Act
NMFS	National Marine Fisheries Service
NPIAS	National Plan of Integrated Airport Systems
NPE	Non-Primary Entitlements
NRHP	National Register of Historic Places
NRSC	Natural Resources Conservation Science
NWIS	National Water Information System
OBPA	Operations Per Based Aircraft
OFZ	Obstacle Free Zone
PBN	Performance Based Navigation
PI	Personal Income

PAPI	Precision Approach Path Indicator
PCC	Per Capita Consumption
PCPI	Per Capita Personal Income
PHS	Priority Habitats and Species
P/QP	Public Quasi-Public
REIL	Runway End Identifier Lighting
RDC	Runway Design Code
ROFA	Runway Object Free Area
RPZ	Runway Protection Zone
RSA	Runway Safety Area
RVR	Runway Visual Reference
SAF	Sustainable Aviation Fuel
SEP	Single Engine Piston
SHPO	State Historic Preservation Officer
SOP	Standard Operating Procedures
SWG	Single Wheel Gear
SY	Square Yards
TAF	Terminal Area Forecast
TDG	Taxiway Design Group
TFMSC	Traffic Flow Management Control System Counts
THPO	Tribal Historic Preservation Officer
TAC	Technical Advisory Committee
TOFA	Taxiway Object Free Area
TSA	Taxiway Safety Area
UNICOM	Universal Communications
USDA	United States Department of Agriculture
USAF	United States Air Force
USFS	United States Forest Service
USFWS	United States Fish and Wildlife Service
USGS	United States Geological Society
USNWS	United States National Wetland Inventory
VCOA	Visual Climb Over Airport
VGSI	Visual Glide Slope Indicator
VHF	Very High Frequency
VSO	Safety Operating Speed
VREF	Reference Speed
VOR	VHF Omni-Directional Range
WBAN	Wireless Body Area Network
WPE	Woods and Poole Economics

EXECUTIVE SUMMARY

This Executive Summary provides a brief overview of Ontario Municipal Airport – ONO, Master Plan. It was completed by J-U-B Engineers in 2024 on behalf of the City of Ontario as the Airport Sponsor. It has the following sections.

1. **Airport History**
2. **Airport System Planning Role**
3. **Public Involvement**
4. **Preferred Alternative**
5. **Aviation Activity Forecasts**
6. **Short, Intermediate, and Long-Term Projects with Funding Plan**

AIRPORT HISTORY

The Federal Aviation Administration (FAA) activated Ontario Municipal Airport in May 1947. Over the last 77 years, the Airport has expanded to its current 480 acres. The Ontario Municipal Airport is located along the western edge of Ontario, Oregon. The airport is approximately four miles west of the Oregon-Idaho Border.

AIRPORT SYSTEM PLANNING ROLE

The Ontario Municipal Airport is a general aviation (GA) airport that supports the commuter, agricultural, flight training, emergency medical, and firefighting operation in the wider Ontario area. As of November 2021, *basedaircraft.com* reports 89 based aircraft, as validated in the FAA's National Based Aircraft Inventory Program.

Ontario Municipal Airport is categorized by the FAA's National Plan of Integrated Airport Systems (NPIAS) as a publicly owned **Local Airport**. Ontario Municipal Airport is one of 3,304 existing airports identified by the NPIAS system for fiscal years 2021 to 2025.

Ontario Municipal Airport is owned, operated, and managed by the City of Ontario. The Airport Manager is responsible for airport management and operations. The City Council uses information provided by key agencies, airport users, tenants, and the wider Ontario community to make the final decisions about the future of the Ontario Municipal Airport.

PUBLIC INVOLVEMENT

Public involvement (PI) is an essential component of the master plan update, key stakeholders and user perspectives help capture the full picture of the Airports needs in the future. This strategy included: Stakeholder interviews, public input and feedback, ongoing availability of PI representatives for public queries. The project team developed the Ontario Municipal Airport Master Plan in collaboration with federal and state agencies, airport users, tenants, and the Ontario area community. This coordinated effort helped the team to better understand and plan for the needs of Ontario Municipal Airport stakeholders.

The Ontario Municipal Airport and airport master plan consultant identified stakeholders with interest in participating in the plan update. These stakeholders were engaged in this process through the TAC Involvement, the project website, community survey, press releases and an open house. These were instrumental in involving stakeholders at various stages of the process, ensuring their voices were heard and considered in the planning effort.

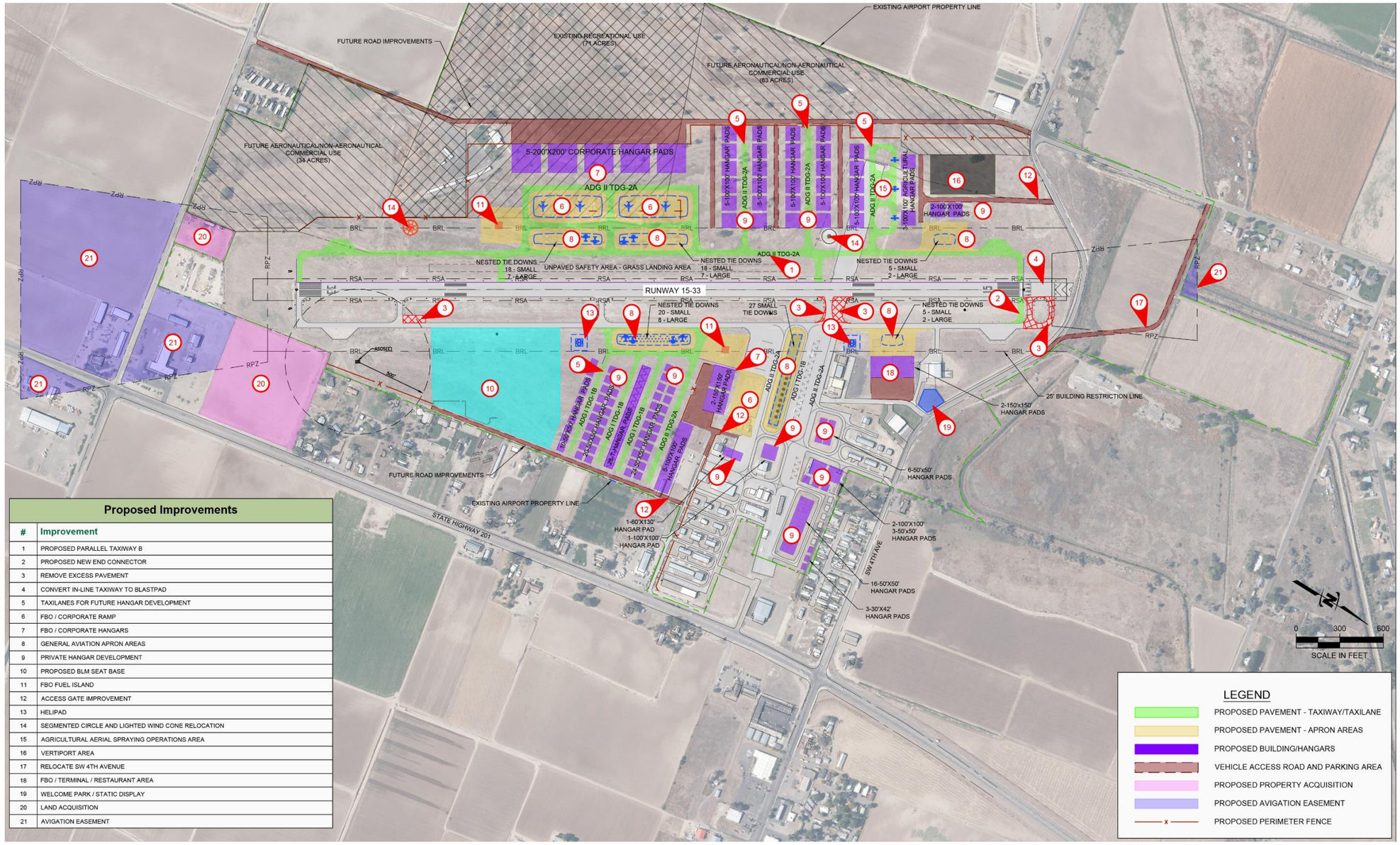
PREFERRED ALTERNATIVE

The ultimate preferred alternative includes:

- Taxiway pavement removal
- Secondary full-parallel taxiway
- Land acquisition/easement purchases
- Commercial Hangars on west landside
- Aprons on west landside
- Direct access to SW 4th Avenue
- Areas designated for aeronautical and non-aeronautical use
- Hangar lots east of Runway 15/33
- Tie-down aprons east of Runway 15/33
- Helipads east of Runway 15/33
- Vertiports east of Runway 15/33
- Vehicle entry points
- Access roads
- Parking areas
- Relocation of fuel facility
- Shift of SW 4th Avenue to the east

FIGURE ***5.8***

AIRSIDE AND LANDSIDE PREFERRED ALTERNATIVE



Proposed Improvements

#	Improvement
1	PROPOSED PARALLEL TAXIWAY B
2	PROPOSED NEW END CONNECTOR
3	REMOVE EXCESS PAVEMENT
4	CONVERT IN-LINE TAXIWAY TO BLASTPAD
5	TAXILANES FOR FUTURE HANGAR DEVELOPMENT
6	FBO / CORPORATE RAMP
7	FBO / CORPORATE HANGARS
8	GENERAL AVIATION APRON AREAS
9	PRIVATE HANGAR DEVELOPMENT
10	PROPOSED BLM SEAT BASE
11	FBO FUEL ISLAND
12	ACCESS GATE IMPROVEMENT
13	HELIPAD
14	SEGMENTED CIRCLE AND LIGHTED WIND CONE RELOCATION
15	AGRICULTURAL AERIAL SPRAYING OPERATIONS AREA
16	VERTIPORT AREA
17	RELOCATE SW 4TH AVENUE
18	FBO / TERMINAL / RESTAURANT AREA
19	WELCOME PARK / STATIC DISPLAY
20	LAND ACQUISITION
21	AVIGATION EASEMENT

Source: J-U-B

AVIATION ACTIVITY FORECASTS

Based Aircraft Forecast

The current based aircraft at Ontario Municipal Airport is 89 as validated by the FAA, this number consists of 84 Single Engine Piston (SEP), 0 Multi-Engine Piston (MEP), 1 Jet, and 4 Helicopters as of 2021. Ultralight aircraft are not part of the count for master plan purposes. By 2041, it is estimated that there will be 97 Single-Engine Piston aircraft, 1 Multi-Engine Aircraft, 2 Jets and 5 Helicopters with a total of 105 aircraft based at Ontario Municipal Airport.

Based Aircraft Forecast				
Aircraft Type	**2021**	**2026**	**2031**	**2041**
Single-Engine Piston	84	87	90	97
Multi-Engine Piston	0	0	0	1
Jet	1	1	1	2
Helicopter	4	4	5	5
Total Based Aircraft	89	92	96	105

Aircraft Operations Forecast

The Ontario Municipal Airport is an uncontrolled facility and exact counts of aircraft operational activity are not available. There were an estimated 18,062 total operations in the year 2020. The overall growth for 20 years is calculated to be 22.2 percent. In the year 2041, there will be a projected 22,300 operations at Ontario Municipal Airport.

Critical Aircraft Forecast

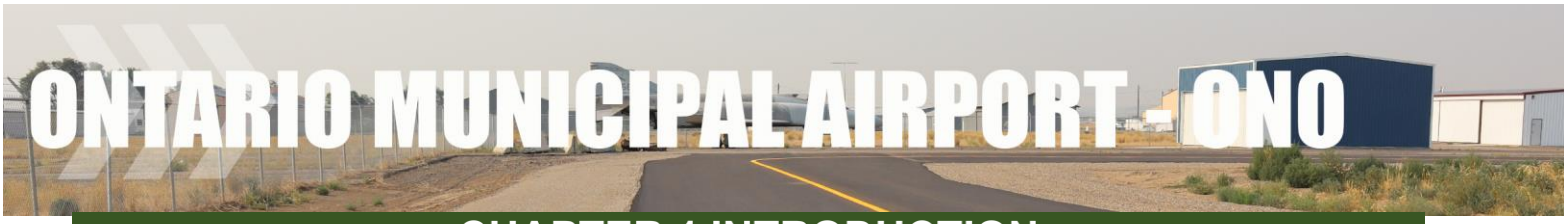
Chapter 3 specifies that the current Airport Reference Code (ARC) stands at B-II (small), accompanied by a taxiway design group (TDG) of 2, featuring the Beechcraft King Air 200 as the existing Critical Design Aircraft. Anticipated developments point to a transition to the Air Tractor AT-802 Fire Boss as the future Critical Design Aircraft, altering the ARC to B-II and the TDG to 1B. These aircraft collectively form the ultimate design/critical aircraft configuration of B-II, TDG-1B.

SHORT, INTERMEDIATE, AND LONG-TERM PROJECTS WITH FUNDING PLAN

Short-Term Improvements (Years 0-5)							
Description	Expand Jet Parking Apron	Hangar Taxilanes	Hangar Ground Lease Lots	Pavement Rehabilitation Crack fill/Seat Coat (Rwy,Twy A, Taxilanes, and Tiedown Aprons)	Airport Access Gate Improvements	BLM Seat Base	**Years 0-5 Total Cost**
Cost	**$889,624**	**$1,382,726**	**$ -**	**$541,864**	**$294,624**	**$ -**	**$3,108,838**

Intermediate-Term Improvements (6-10)											
Description	Tiedown Apron North of GA Terminal Building	Hangar Taxilanes	Hangar Ground Lease Lots	Pavement Rehabilitation Crack Fill/Seat Coat (Rwy, Twy A, Taxilanes, and Tiedown Aprons)	Tiedown Apron to Southwest	Fuel island and Apron	Helipads	Tiedown Apron Adjacent to Main GA Apron	Welcome Park Static Display	Realign SW 4th Avenue	**Years 6-10 Total Cost**
Cost	**$1,086,255**	**$1,185,842**	**$ -**	**$588,696**	**$1,316,463**	**$2,246,345**	**$225,045**	**$1,493,872**	**$120,000**	**$2,947,701**	**$11,210,219**

Long-Term Improvements (Years 11-20)																	
Description	Airport Master Plan Update	Pavement Rehabilitation Crack Fill/Seal Coat (Rwy, Twy A, and East Side Taxilanes/Aprons)	Property Land Acquisition to the South and East	Perimeter Fencing on West Side	Parallel Taxiway B, Connectors, and Hold Aprons	Hangar Taxilanes for Agricultural Operations	Agricultural Operations Ground Lease Lots	Avigation Easements to the North and South	Tiedown Apron on West Side	Relocate Segmented Circle and Lighted Windcone	Hangar Taxilanes	Hangar Ground Lease Lots	Corporate Tiedown Aprons and Taxilanes	Fuel Island and Apron on West Side	Vertiport	Rehabilitate Taxilanes and tiedown Aprons on East Side	Rehabilitate Runway and Parallel Taxiway A	**Years 11-20 Total Cost**
Cost	**$407,500**	**$628,729**	**$929,600**	**$397,605**	**$4,352,897**	**$1,399,955**	**$ -**	**$203,950**	**$1,136,786**	**$146,125**	**$1,190,071**	**$ -**	**$6,863,995**	**$2,412,321**	**$196,667**	**$346,680**	**$661,311**	**$21,274,192**



CHAPTER 1 INTRODUCTION

The Ontario Municipal Airport Master Plan (Plan) is a document that provides a framework for future development at the airport for the next 20 years and beyond. It defines a course of action and details a list of projects that will guide short- and long-term development and improve airport compliance with current Federal Aviation Administration (FAA) airport design standards.

The Plan is created to be both a forward-looking and flexible document. It proposes resolutions and solutions well in advance of the likely need and is flexible enough to change if additional needs arise. Federal and state agencies are then similarly able to program funding and respond to identified concerns.

The Ontario Municipal Airport initiated the planning process in early 2021 and engaged in full coordination with the FAA and the Oregon Department of Aviation (ODA).

The remainder of this chapter describes the Plan's purpose, objectives, and methods; identifies the four-phase planning process; and outlines the public involvement steps for this planning effort.

1.1 PURPOSE

The purpose of this Airport Master Plan is to identify and prioritize improvements and guide future development at the Ontario Municipal Airport. During the planning process, methods were used to guide and inform City Council members as they sorted through questions and navigated decisions related to airport infrastructure investments.

The continuous increase in aviation demand at the Ontario Municipal Airport makes it important to plan for land use designations and land side development. Given this rise in activity and economic conditions, the FAA and ODA determined an airport plan update would be beneficial to the Ontario Municipal Airport. After considering current issues, the City Council, FAA, ODA, and airport master plan consultant developed a custom work plan to address compliance and resolution.

The Plan provides the City Council with a development program that meets aviation needs in the short, intermediate, and long-term planning periods. Benefits derived from the plan will positively affect the Airport, its users, and the surrounding area.

1.2 OBJECTIVES AND METHODS

Assessing airport needs and filing a new plan is often a complex and difficult, but beneficial task. Some basic questions are:

- Which airport services or capabilities are the most attractive to new business and existing users and why?
- What will it cost to get additional airport infrastructure in place? What is the opportunity cost if not done?
- What kinds of visitors, users, or companies may be interested in the airport?
- What will the basic needs for the airport be now and in the future?

Answers to these questions will help guide the community establish an airport plan and program that contributes to achieving community goals.

1.2.1 OBJECTIVES

This Plan provides the framework needed to guide future development at the Ontario Municipal Airport by meeting the following objectives:

1. Identifies the issues the plan will address.
2. Provides development solutions that maximize opportunity; meet local, state, and Federal regulations; and are justified from a technical, economic, and environmental standpoint.
3. Develops a plan for project implementation based on an analysis of physical site assets, economic benefits, job creation and related salaries, fiscal impacts, and contributions to overall FAA objectives.
4. Establishes a flexible approach that accommodates both potential aviation and non-aviation users.

1.2.2 METHODS

The project team used developed methods to objectively evaluate and assess the needs of the Ontario Municipal Airport from an aviation use, development, and implementation perspective.

1 Inventory Airport Facilities

An inventory of existing facilities included: airfield, airspace, fuel facilities, maintenance equipment, access roads, public utilities, and parking. Based on an in-depth evaluation of the inventoried data, the landside development plan has been updated to include needed infrastructure and existing facility improvements.

2 Aviation Forecast

Collected data, user information, and industry trends to verify the Airport Reference Code (ARC) and anticipated operational values. Using the ARC and 2021 as the base year, near-term (5 year), mid-term (10 year), and long-term (20 year) activity forecasts were confirmed.

3 Assess Facility Requirements

The project team determined the need for facility additions or improvements based on forecasted demand and compliance with governmental regulations.

4 Develop and Evaluate Alternatives

Alternative layouts for runway length, instrument approach capability, and landside development were developed and evaluated for airfield improvements. Once Airport staff and City Council members selected a preferred alternative, projects and funding strategies were developed by the project team and approved by the FAA.

5 Phase Development

The identified improvements and their associated costs were used to create a phased development program. The Airport's historic and projected expenses and revenues were evaluated to determine the financial feasibility of the program and to develop a plan that will cost-effectively satisfy aviation demand.

6 Airport Layout Plan

The long-term development plan for the Airport is graphically represented in the Airport Layout Plan (ALP). The series of drawings reflect existing and future land uses and facilities necessary for operation and development of the Airport.

7 Funding

Funding is critical for project implementation; traditional and non-traditional funding sources were explored during phase development.

1.2.3 PLANNING PROCESS

This study of the Ontario Municipal Airport began with a pre-planning process to develop and approve a detailed scope of work, budget, and schedule.

The airport master plan consultant worked closely with representatives from the City Council, FAA, ODA, and other federal and state agencies during the planning process. The representatives of these agencies were consulted throughout the development of this plan study and invited to attend progress, public, and other related meetings.

The project workflow for this plan study is broken down into four phases:

- Phase 1: Existing Conditions and Aviation Forecasts
- Phase 2: Facility Requirements and Alternatives Development and Evaluation
- Phase 3: Facilities Implementation Plan and Airport Layout Plan
- Phase 4: FAA Coordination and Plan Adoption

The first three phases involve the initial drafting, review, and revision of the plan document, and all phases conclude with a project milestone. The final Ontario Municipal Airport Master Plan establishes a clear recommendation for a responsive course of action and a scheduled plan, complete with current cost estimates and facility improvements, that set the stage for a continuing planning process. The activities associated with each project phase are further detailed in this sub-section and graphically depicted in **Figure 1.1**

The Ontario Municipal Airport Master Plan and Airport Layout Plan (ALP) were prepared in accordance with FAA guidelines, policies, and procedures and meet all state and federal regulations.

1.3 PROJECT PARTICIPANTS

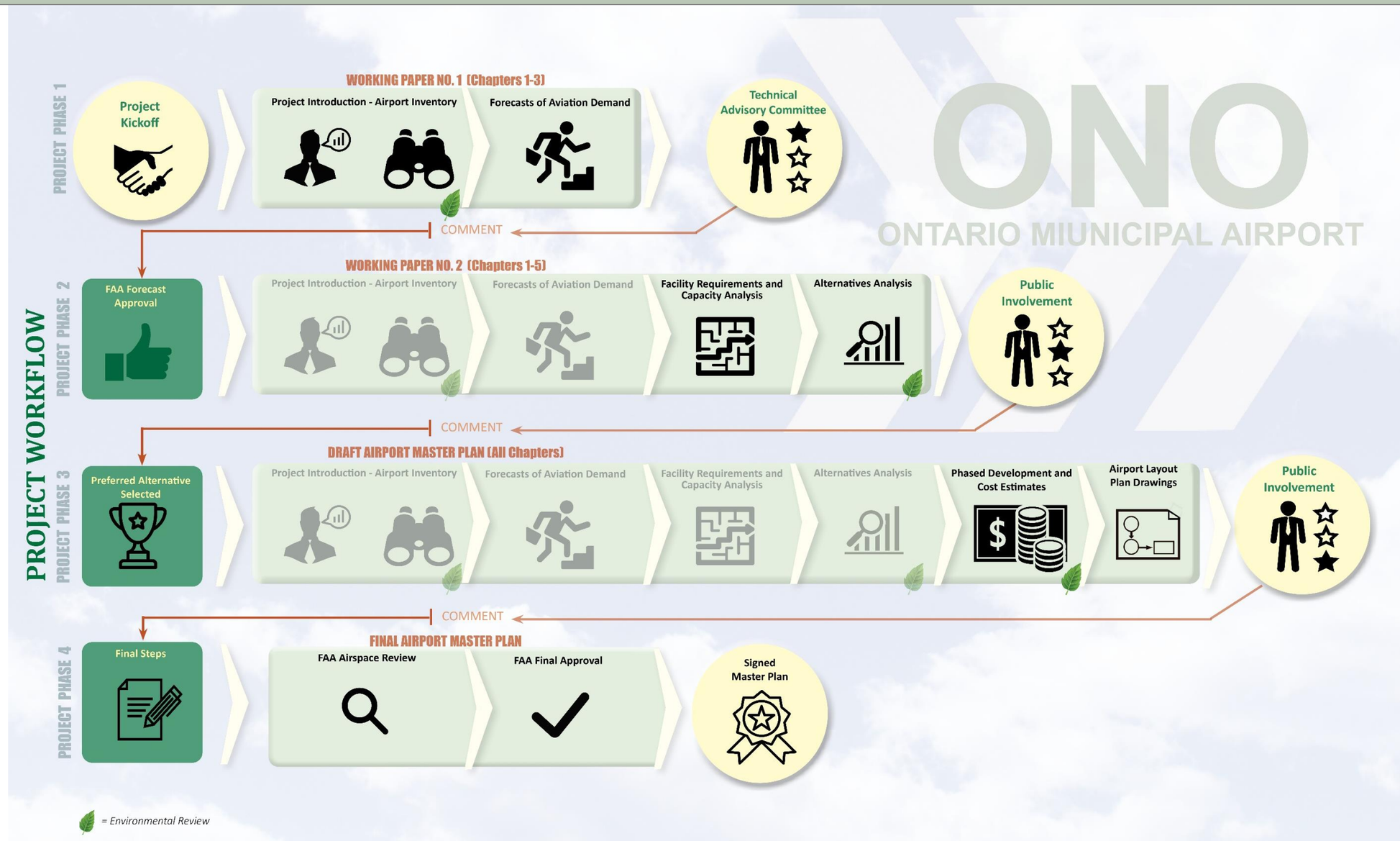
The planning process included successful coordination, communication, and collaboration among key agencies, airport users, tenants, and the wider Ontario community. Input gathered during this process guided City Council members as they made final decisions about the future of the Ontario Municipal Airport.

The FAA and ODA reviewed project progress and evaluated plan elements during each phase of the project. In the final phase, the FAA approved the master plan forecasts and internally circulated the plan for integration into the national airspace system.

The airport master plan consultant prepared project documentation, guided project progress, solicited guidance, and worked to build consensus from plan participants at key project points.

The airport master plan consultant worked closely with the Ontario Municipal Airport to develop a public involvement program to guide outreach efforts throughout plan development. The program and its participants are further detailed in Subsection 1.4.

FIGURE 1.1
PROJECT FLOW CHART



SOURCE: J-U-B

1.3.1 PROJECT PHASE 1

This plan study kicked-off with a project initiation meeting as the first public involvement event. Project activities completed during phase one included:

- A review of previous reports and associated work
- An inventory of data on airport facilities and improvements, surveys, land uses, airspace and navigational aids, in addition to pertinent socioeconomic, environmental, and financial data
- Verifying the airport aviation forecast based on analysis of economic and operation projections

Using information gathered during these activities, the project team drafted Chapters 2 and 3. The phase concluded with the development of the first working paper.

1.3.2 PROJECT PHASE 2

The project continued into the second phase after the FAA approved the forecasts outlined in Chapter 3. Project activities completed during this phase included:

- Determining role, service capabilities, and airside and landslide requirements
- An appraisal of grant assurance compliance and airport security
- An analysis of alternatives

Similar to Phase 1, the next two chapters were drafted and compiled into the second working paper. Findings from the first and second working papers were presented to City Council.

1.3.3 PROJECT PHASE 3

After City Council selects, or modifies, the preferred alternative(s), the project progresses to Phase 3. Project activities completed during this phase included:

- Sequencing of recommended improvements
- Calculation of costs associated with the recommended improvements
- Development of the ALP and associated drawings

Chapters 6 and 7 were drafted and, after undergoing a process of review and revision, joined with the previous five chapters to create the draft airport master plan.

1.3.4 PROJECT PHASE 4

After City Council approved the draft airport master plan, the FAA took the plan, ALP, and additional drawings for internal coordination. Once the FAA completed its airspacing process, City Council members concurred on the final Ontario Municipal Airport Master Plan. The final documents were printed and signed by City Council and the FAA.

Figure 1.2 depicts the initial project schedule.

FIGURE 1.2
INITIAL PROJECT SCHEDULE

ONO	05/2021	06/2021	07/2021	08/2021	09/2021	10/2021	11/2021	12/2021	01/2022	02/2022	03/2022	04/2022	05/2022	06/2022	07/2022	08/2022	09/2022	10/2022	11/2022
Project Creation	★																		
Chapter 1 Introduction		🕮																	
Chapter 2 Inventory			🕮																
Chapter 3 Forecasts				🕮															
Chapter 4 Facility Requirements						🕮													
Chapter 5 Alternatives							🕮												
Chapter 6 Phased Development										🕮									
Chapter 7 ALP Drawings													🕮						
FAA Reviews	➡				➡			➡		➡	➡		➡	➡		➡	➡		
Consultations/Public Involvement	👥			👥				👥						👥				👥	
Deliverables	▭				▭							▭			▭			▭	

SOURCE: J-U-B

1.4 INITIAL PUBLIC INVOLVEMENT

Public involvement provided the project team an opportunity to understand the needs and perspectives of airport users and those affected by airport activities and facilities. The Ontario Municipal Airport and airport master plan consultant worked together to identify a comprehensive list of stakeholders with potential interest in participating in the plan update.

The project team developed the Ontario Municipal Airport Master Plan in collaboration with federal and state agencies, airport users, tenants, and the Ontario area community. This coordinated effort helped the team to better understand and plan for the needs of Ontario Municipal Airport stakeholders.

The Ontario Municipal Airport and airport master plan consultant worked together to identify a list of stakeholders with potential interest in participating in the plan update. These stakeholders were involved through the following public involvement efforts:

- **TAC Involvement |** Members identified by the airport master plan consultant and the Ontario Municipal Airport to provide input throughout the planning process
- **Project Website (www.) |** Featured reporting, schedules, visuals, additional resources, and the community survey
- **Community Survey |** Distributed by web, mail, email, and in-person
- **Press Releases |** Project information distributed in city newsletter, social media, email, or other means
- **Open House |** Held once during the planning process

1.4.1 INTERVIEWEES

Stakeholder information is pending further input from the Airport Sponsor and representatives from the City of Ontario.

1.4.2 INTERVIEW GUIDING QUESTIONS

1. What is the role of the Ontario Municipal Airport in the community? Is it important? How does it support the local economy? Could it support the community better?
2. How do you use or interface with the airport now? If you use it, how often and for what purpose?
3. Are there any factors, such as airspace considerations, approach minimums, runway dimensions, or hangar availability, that limit your use of the airport?
4. If your property is near the airport, do you have future plans to expand? Could the airport be beneficial to you?
5. Would an expanded airport help support your business or other businesses in the area? How?
6. Who else should we bring into the conversation? Are there other stakeholders that we need to seek input from?
7. What added features would enhance the airport? What is needed that is missing?
8. How do you feel overall about airport expansion? Is there benefit to the community?
9. Additional comments/suggestions for the project team regarding the future of the airport.

1.4.3 OVERALL INTERVIEW THEMES

Analysis of survey results, including interview themes, feedback positives, feedback opportunities, and survey overview, is pending further input from the Airport Sponsor and representatives from the City of Ontario.

1.5 CONSULTANT AGREEMENT AND STUDY DOCUMENTATION

J-U-B ENGINEERS, Inc. entered into an agreement with the Ontario Municipal Airport in February 2021 to conduct this master planning effort and to prepare this document.

1.5.1 REFERENCE DOCUMENTS

This study is prepared in accordance with these FAA advisory documents:

Previous Airport Documents (Various Years)	
150/5060-5	Airport Capacity and Delay
150/5190-4	A Model Zoning Ordinance to Limit Height of Objects Around Airports
150/5070-6B	Airport Master Plans
150/5190-6	Exclusive Rights at Federally Obligated Airports
150/5190-7	Minimum Standards for Commercial Aeronautical Activities
150/5300-13A	Airport Design
150/5340-1M	Standards for Airport Markings
150/5340-18G	Standards for Airport Sign Systems
150/5300-16B	General Guidance and Specifications for Aeronautical Surveys: Establishment of Geodetic Control and Submission to the National Geodetic Survey
150/5300-17C	Standards for Using Remote Sensing Technologies in Airport Surveys
150/5300-18B	General Guidance and Specifications for Submission of Aeronautical Surveys to NGS: Field Data Collection and Geographic Information System (GIS) Standards
150/5360-13A	Airport Terminal Planning
150/5020-1	Noise Control and Compatibility Planning for Airports
150/5320-5D	Airport Drainage Design
150/5325-4B	Runway Length Requirements for Airport Design
150/5050-4A	Community Involvement in Airport Planning
150/5230-4B	Aircraft Fuel Storage, Handling, Training, and Dispensing on Airports
5100.38D	Airport Improvement Program Handbook
5050.4B	NEPA Implementing Instructions for Airport Actions
1050.1F	Environmental Impacts: Policies and Procedures
Environmental Desk Reference for Airport Actions	

1.5.2 NARRATIVE REPORT CONTENT

Chapter 1	Introduction
Chapter 2	Existing Conditions
Chapter 3	Aviation and Landside Forecasts
Chapter 4	Facility Requirements
Chapter 5	Alternatives Development and Evaluation
Chapter 6	Facilities Implementation Plan
Chapter 7	Airport Layout Plan

CHAPTER 2 INVENTORY OF EXISTING CONDITIONS

2.1 INTRODUCTION

This report replaces the 2007 Ontario Municipal Airport Master Plan and includes current and comprehensive inventory data. Data from on-site inspections, research, and Airport staff has been included in this chapter to illustrate current conditions where available.

2.2 REGIONAL SETTING

Regional features provide a better understanding of the social, economic, and environmental impacts the Ontario Municipal Airport (ONO) has in its region, county, and city.

2.2.1 LOCATION AND VICINITY

The Ontario Municipal Airport is located near 44° 01' 09.7" N 117° 00' 46.9" W, along the western edge of Ontario, Oregon. The Airport is approximately four miles west of the Oregon-Idaho Border and is owned and operated by the City of Ontario.

Airport elevation is 2,192 feet above mean sea level (MSL), with nearby terrain rising to more than 6,482 feet MSL within 30 nautical miles. The Airport property approximates 480 acres with undeveloped land bordering the western edge and aviation and industrial development bordering the eastern side of the property.

The City of Ontario is in Malheur County in eastern Oregon. The county seat is in Vale, which is approximately 14 miles west of Ontario. **Figure 2.1** depicts the Airport's location in relation to Ontario, Malheur County, and Oregon.

2.2.2 COMMUNITY SOCIO-ECONOMIC DATA

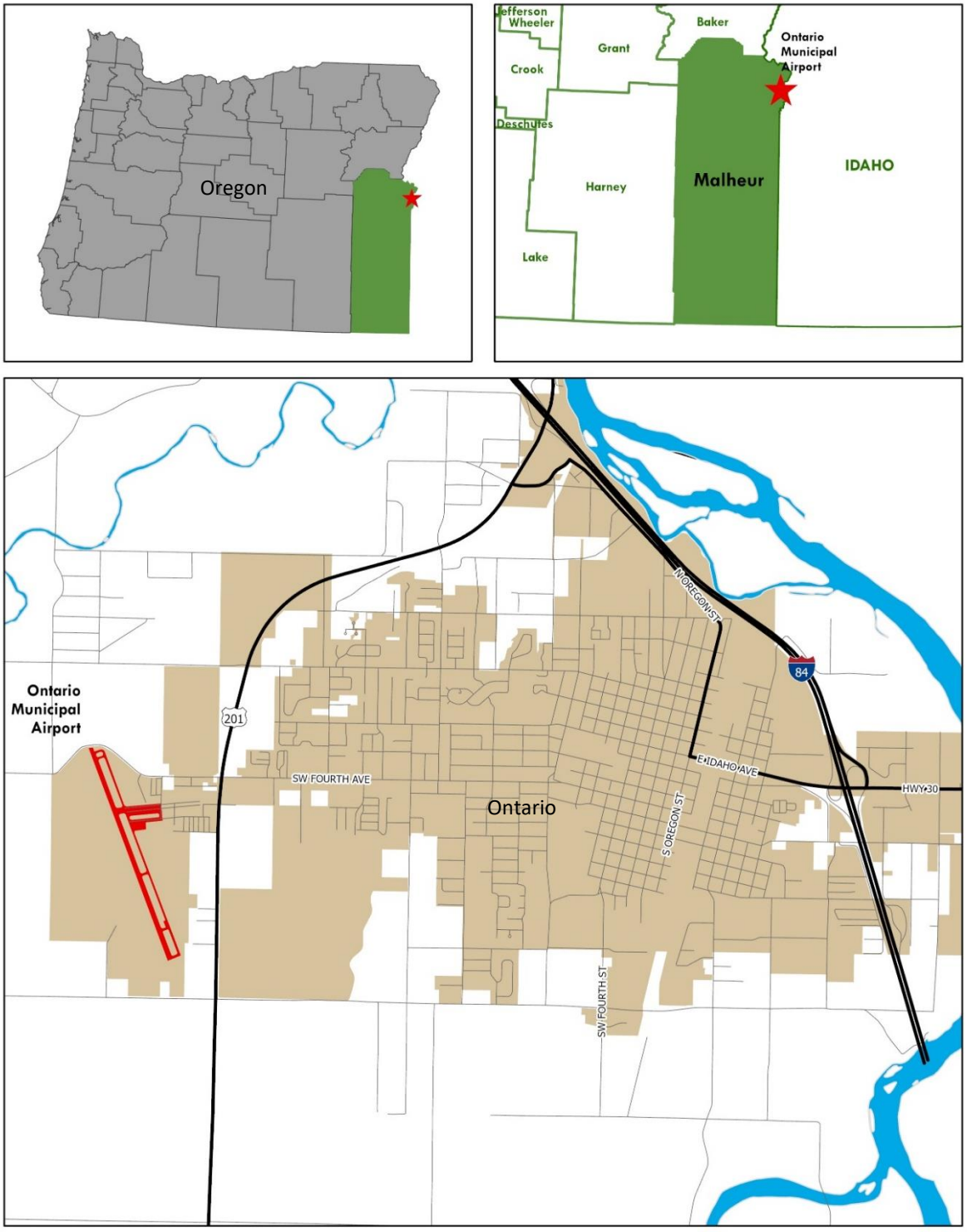
The U.S. Census Bureau and Population Research Center at Portland State University (PRC-PSU) provided population data for the state, county, and city; additional demographic information for the Ontario, OR-ID Micropolitan Statistical Area (MSA) came from Woods and Poole Economics, Inc. (WPE).

The U.S. Office of Management and Budget (OMB) delineates metropolitan and micropolitan statistical areas based on data provided by the U.S. Census Bureau. MSAs include a substantial population center and their adjacent communities; the City of Ontario, and a majority of Malheur County, fall within the Ontario, OR-ID Micropolitan Statistical Area. For purposes of this planning effort, demographic information has been provided for the Ontario, OR-ID MSA to represent the airport service area.

2.2.2.1 Population

The state of Oregon, Ontario OR-ID MSA, and City of Ontario have all undergone consistent population growth in each census year since 1990. Over the three decades, the population of Oregon has grown at a compound annual growth rate (CAGR) of 1.3 percent and the Ontario, OR-ID MSA at a rate of 1 percent. Historic population trends for Malheur County, however, have not been as consistent. The County had a minor downward shift between 2000 and 2010, but overall, from 1990 to 2020, grew at a CAGR of 0.6 percent. The City of Ontario has experienced a steadier increase in population, but at a lower CAGR (0.7 percent) than the state and the Ontario, OR-ID MSA. Since 1990, the City accounts for approximately 36 percent of county population, second in size only to unincorporated Malheur County at 47 percent. **Table 2.1** compares historical population data for Oregon, Ontario OR-ID MSA, Malheur County, Ontario, Vale, and Unincorporated Malheur County.

FIGURE 2.1
LOCATION AND VICINITY MAP



Source: J-U-B

TABLE 2.1
HISTORIC POPULATION

	1990	2000	2010	2020	CAGR (1990-2020)
Oregon	2,842,321	3,421,399	3,831,074	4,237,256	1.3%
Ontario, OR-ID MSA	42,595	52,193	53,936	56,957	1.0%
Malheur County	26,038	31,615	31,313	31,571	0.6%
Unincorporated Malheur County	12,029	15,105	14,448	15,010	0.7%
Ontario	9,392	10,985	11,366	11,645	0.7%
Vale	1,491	1,976	1,874	1,894	0.8%

Source: U.S. Census Bureau, PRC-PSU (April 2021) / WPE / J-U-B
**CAGR: Compound Annual Growth Rate*

2.2.2.2 Area Demographics

Historical socioeconomic data can show the growth dynamics, economic strength, and ability of a region to sustain a strong economic base over time. The characteristics included in this analysis for the Ontario Municipal Airport service area include population, employment, earnings, per capita personal income, households, and retail sales.

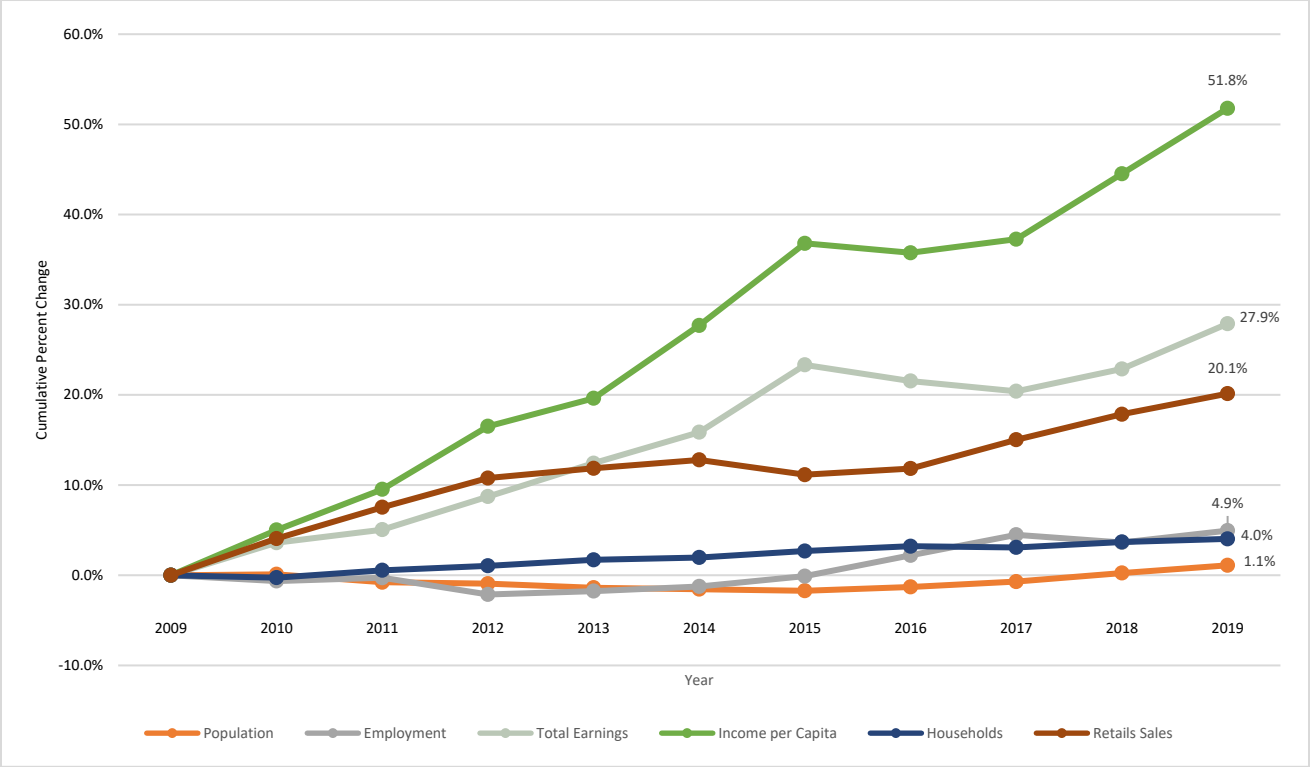
In the Ontario, OR-ID MSA, 80 percent of the jobs are in the private sector and 20 percent are in government. The per capita personal income for the MSA, in 2012 dollars, has increased at a CAGR of three percent between 2010 and 2020; and, for the same ten-year period, it has seen the greatest cumulative percent change (51.8 percent) out of the included characteristics. Additional cumulative percent change data is depicted in the graph in **Figure 2.2**, while additional historical data and CAGR trends are listed in **Table 2.2**.

TABLE 2.2
ONTARIO, OR-ID MSA HISTORIC SOCIOECONOMICS DATA

Characteristic	Unit	2010	2015	CAGR (2010-2015)	2020	CAGR (2010-2020)
Population	Persons	53,936	53,001	-0.3%	56,957	0.5%
Employment	Jobs	26,580	26,724	0.1%	28,398	0.7%
Earnings	2012 Dollars	$974M	$1,160M	3.5%	$1,199M	2.1%
Per Capita Personal Income	2012 Dollars	$27,322	$33,055	3.9%	$36,727	3.0%
Households	Single House	18,682	19,235	0.6%	19,661	0.5%
Retail Sales	2012 Dollars	$692M	$739M	1.3%	$779M	1.2%

Source: WPE / J-U-B
**CAGR: Compound Annual Growth Rate*

FIGURE 2.2
ONTARIO, OR-ID MSA HISTORIC SOCIOECONOMICS PERCENT CHANGE



Source: WPE / J-U-B
**Cumulative percent change calculated using 2010 as the base year*

2.3 AIRPORT ROLE

The Ontario Municipal Airport is a general aviation (GA) airport that supports the commuter, agricultural, flight training, emergency medical, and firefighting operations in the wider Ontario area. As of November 2021, *basedaircraft.com* reports 89 validated based aircraft at the Airport.

2.3.1 NATIONAL ROLE

The Ontario Municipal Airport is included in the national airport system and is one of 3,304 existing airports identified in the FAA's National Plan of Integrated Airport Systems (NPIAS) for fiscal years 2021 to 2025. In the plan, the FAA uses current activity measures to classify GA airports into one of five categories: national, regional, local, basic, and unclassified. The 2021-2025 NPIAS lists the Ontario Municipal Airport as a publicly owned local airport.

As sponsor of a NPIAS participating airport, the City is eligible and has received Federal grant-in-aid for airport improvements under the Airport Improvement Program (AIP). Funds to pay for NPIAS improvements originate with the AIP program and are distributed through non-primary entitlements, state appropriations, and national discretionary funds. The AIP is a user-fee based program established by the Airport and Airways Trust Fund in 1971 and amended by the Airport and Airway Improvement Act of 1982. This grant-in-aid program provides a large portion of funding for much of the federal, state, and local airport planning and improvements.

Through the AIP, the FAA provides a maximum of $150,000 in annual aid to each airport sponsor. Airport sponsors can bank roll annual entitlements up to a maximum of $600,000 before the FAA requires expenditure of funds. Grants through the AIP typically cover up to 90 percent of total project cost, with the airport sponsor contributing the remainder as match. The state may choose to contribute toward the project and split costs with the airport sponsor, depending on available funds.

This planning effort, along with planning done by the Oregon Department of Aviation (ODA), may be used to consider the extent of funding available to the City of Ontario.

2.3.2 STATE ROLE

The Ontario Municipal Airport is also eligible to receive funding through ODA and other state agencies. The latest *Oregon Aviation Plan v6.0* (OAP v6.0) classifies airports in the Oregon system as commercial, urban, regional, local, and remote depending on function. The Ontario Municipal Airport is identified as a Category III Regional General Aviation Airport. **Table 2.3** lists the OAP v6.0 basic and target performance metrics for a regional classified airport. The Airport meets and/or exceeds each performance metric.

The OAP v6.0 economic impact analysis estimates the Ontario Municipal Airport contributes 7 on-airport jobs and $222,591 worth of annual labor earnings, $177,112 of which is attributed to visitor spending.

In accordance with the Oregon Revised Statutes (ORS), the ODA has developed model code, template documents, formal consultation for land use protection, an online mapping application for visualization, and comprehensive planning guidance for sponsors to follow through a master plan process or for stand-alone needs.

TABLE 2.3 ***OREGON AVIATION PLAN V6.0; REGIONAL PERFORMANCE CRITERIA***		
Facilities	**Basic Criteria**	**Current Performance**
Airside Facilities		
FAA-ARC	B-II	B-II
NPIAS	Yes	Yes
Based Aircraft	≥10 (NPIAS Standard)	89
Runway Orientation	≥95% wind coverage (combined primary/secondary runway)	≥97% wind coverage
Runway Length	4,000 feet	5,006 feet
Runway Width	75 feet	100 feet
Runway Pavement Type	Bituminous, Concrete	Bituminous
Runway Pavement Strength	Varies by Airport* (≥12,500 lbs.)	Single-wheel gear (30,000 lbs.) Dual-wheel gear (60,000 lbs.)
Runway Pavement PCI	60	70-85
Taxiways	Partial or Turnarounds	Full Parallel
Approach Type	Non-Precision	Approach Procedure with Vertical Guidance (APV)
Visual Approach Aids	One Runway End	Rotating Beacon, Lighted Wind Cone, Wind Cone, PAPI, REIL
Instrument Approach Aids	Not an Objective	PAPI
Runway Lighting	MIRL	MIRL
Taxiway Lighting	MITL	MITL
General Facilities		
Rotating Beacon	Yes	Yes
Lighted Wind Indicator	Yes	Yes
Weather Reporting	AWOS/ASOS	ASOS
Hangared Aircraft Storage	75% of Based Aircraft	80 (90% of Based Aircraft)
Apron Parking/Storage	30% of Daily Transient	37 (7 Daily Transient)
Terminal Building	Small Meeting Area	Conference Room
Auto Parking	Minimal (tenant/public)	Yes
Fencing	Terminal Area; controlled access	Perimeter fencing; controlled access at all 3 entry points
Cargo	Space on Existing Apron	Space on Existing Apron
Deicing Facility	Not an Objective	No
Services		
Fuel	100 LL (24-hour self-service) & Jet A	100 LL & Jet A 24-hour self-service
FBO	Full Service (normal business hours)	Full Service
Ground Transportation	Courtesy Car/ Offsite Rental Car	Courtesy Car
Food Service	Vending	Yes
Restrooms	Yes	Yes
Pilot Lounge	Yes w/ Weather Reporting Station	Yes w/ Weather
Snow Removal	Yes (Coastal airports exempt)	Yes
Telephone	Yes	Yes
Source: Oregon Aviation Plan v6.0, Table 4-4, pp.4-6 to 4-7		
**Varies by Airport: Indicates airport-specific requirements defined by airport master plan/ALP and design aircraft*		

2.3.3 PREVIOUS AIRPORT PLANNING

The most recent planning document on file for the Ontario Municipal Airport is the 2007 Airport Master Plan. The ALP has since been updated as development has occurred at the Airport. **Table 2.4** identifies the FAA and ODA grant history at the Ontario Municipal Airport, starting from 2003.

TABLE 2.4
FAA AND ODA GRANTS FOR THE ONTARIO AIRPORT

AIP Number	Year	Project Description	ODA Funds	AIP Federal Funds	Coronavirus Act Funds
3-41-0044-004	2003	Rehabilitate Taxilanes, Rehabilitate Apron Taxiway, Rehabilitate Runway 14/32*, Install Perimeter Fencing	$0	$941,400	$0
3-41-0044-005	2005	Construct Apron, Construct Runway 14/32*, Construct Taxiway, Install Miscellaneous NAVAIDS	$0	$350,000	$0
3-41-0044-006	2006	Update Airport Master Plan Study	$0	$111,765	$0
3-41-0044-007	2007	Install Perimeter Fencing	$0	$200,000	$0
N/A	2007	Extend Runway 32* End and Parallel Taxiway	$1,040,000	$0	$0
3-41-0044-008	2009	Install Runway 14/32* Lighting, Rehabilitate Runway 14/32*, Expand Apron, Rehabilitate Apron, Rehabilitate Taxiway	$0	$124,168	$0
3-41-0044-009	2010	Install Runway 14/32* Lighting, Rehabilitate Runway 14/32*, Expand Apron, Rehabilitate Apron, Rehabilitate Taxiway	$0	$168,913	$0
3-41-0044-010	2011	Install Runway 14/32* Lighting, Rehabilitate Runway 14/32*, Expand Apron, Rehabilitate Apron, Rehabilitate Taxiway	$3,566,377	$553,168	$0
3-41-0044-011	2013	Rehabilitate Taxiway, Install Miscellaneous NAVAIDS	$0	$617,655	$0
3-41-0044-012	2015	Install Runway 14/32* Vertical/Visual Guidance System, Install Taxiway Lighting	$19,547	$196,371	$0
3-41-0044-013	2017	Install Runway 14/32* Vertical/Visual Guidance System, Install Taxiway Lighting	$74,712	$747,900	$0
3-41-0044-014	2018	Install Perimeter Fencing (not Required by 49 CFR 1542)	$21,325	$347,423	$0
3-41-0044-015	2019	Construct Apron, Construct Taxiway	$9,000	$83,800	$0
3-41-0044-016	2020	Coronavirus Aid, Relief, and Economic Security Act (CARE) Funds	$0	$0	$30,000
3-41-0044-017	2020	Construct Apron, Construct Taxiway	$58,500**	$623,725	$69,302
3-41-0044-018	2021	Update Airport Master Plan Study	$0	$150,000	$0
3-41-0044-019	2021	American Rescue Plan Act Funds	$0	$0	$13,000
		Grant Total	**$4,789,461**	**$5,216,288**	**$112,302**

Source: FAA Grant History; ODA COAR Approved Project Lists
**Due to magnetic drift, Runway 14/32 changed to 15/33 in 2018*
***Funds not required*

2.4 AREA AIRSPACE

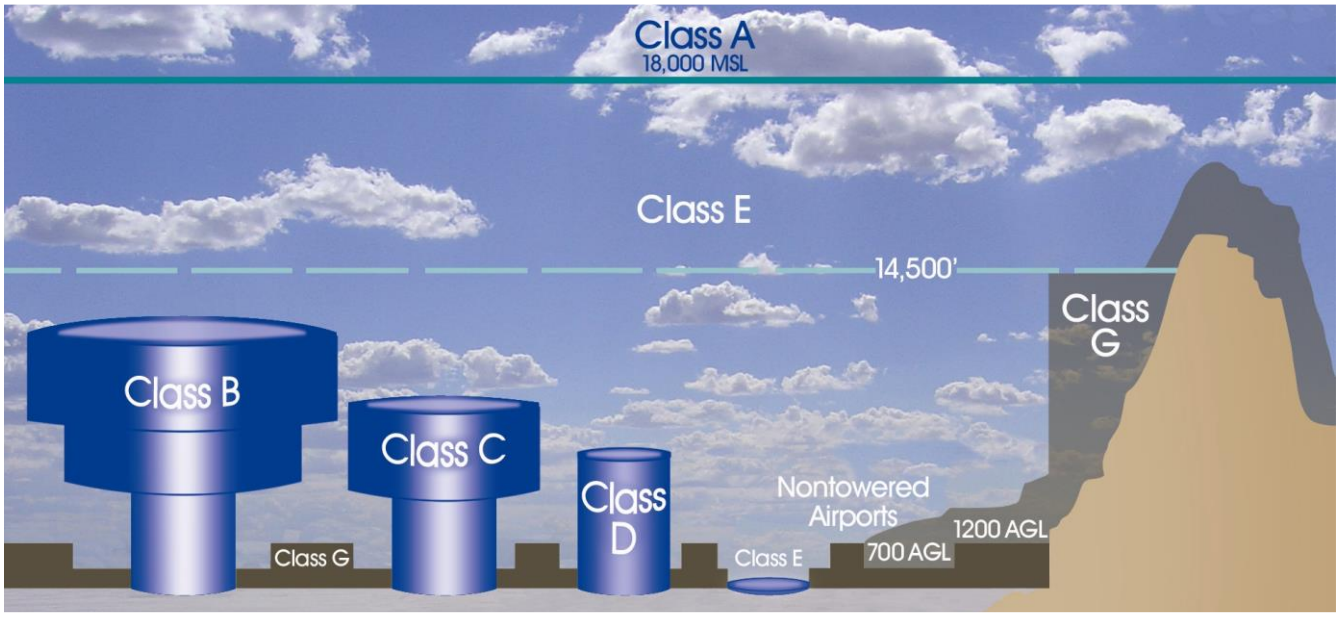
The operating airspace environment surrounding the Ontario Municipal Airport is important as it is part of the national and state system of airports. A description of the surrounding local airspace, nearby public-use airports, and navigational aids is as follows.

2.4.1 AIRSPACE CLASSIFICATIONS

The U.S. airspace consists of classes A, B, C, D, E, and G as shown in **Figure 2.3**. The National Airspace System (NAS) includes both controlled and uncontrolled airspace.

A flight through the NAS typically begins and ends at an airport which may be uncontrolled or controlled by a tower. On departure, the aircraft is in one of five of the six classes of airspace administered by the FAA and different flight rules apply to each class. Depending on the class of airspace and flight conditions, communication with controllers may or may not be required.

FIGURE 2.3
U.S. NATIONAL AIRSPACE CLASSIFICATIONS



Source: J-U-B

Class A begins and includes 18,000 feet MSL and continues up to 60,000 feet MSL. It is the most controlled airspace and requires a pilot to carry an Instrument Flight Rating and proper clearance no matter what type of aircraft is being flown.

Class B airspace extends from the surface up to 10,000 feet above ground level (AGL) and is the area above and around the busiest airports (e.g., LAX, MIA, CVG) and is also heavily controlled. Class B's layers are designed individually to meet the needs of the airport they overlay.

Class C airspace reaches from the surface to 4,000 feet AGL above the airport it surrounds. Class C airspace only exists over airports with an operational control tower, are serviced by a radar approach control, and have a certain number of instrument flight operations. Class C

is also individually designed for airports but usually covers a surface area of about five nautical miles around the airport and up to 1,200 feet AGL. At 1,200 feet, the airspace extends to 10 nautical miles in diameter, which continues to 4,000 feet. Pilots are required to establish two-way radio communications with the Air Traffic Control (ATC) facility providing air traffic control service to the area before entering the airspace. Within Class C, Visual and Instrument pilots are separated.

Class D airspace exists from the surface to 2,400 feet AGL above an airport. Class D airspace only surrounds airports with an operational control tower. Class D airspace is also tailored to meet the needs of the airport. Pilots are required to establish and maintain two-way radio communications with the ATC facility providing air traffic control services prior to entering the airspace. Pilots flying under Visual Flight Rules (VFR) must be vigilant for traffic as there is no positive separation service in the airspace.

Class E airspace is the airspace that lies between Classes A, B, C, and D. Class E extends from either the surface or the roof of the underlying airspace and ends at the floor of the controlled airspace. Class E exists for those planes transitioning from the terminal to en route state. It also exists as an area for instrument pilots to remain under ATC control without flying in a controlled airspace. Under visual flight conditions, Class E can be considered uncontrolled airspace.

Airports without operational control towers are uncontrolled airfields. Pilots in these areas are responsible for position and separation and may use a specified Common Traffic Advisory Frequency (CTAF) or UNICOM for that airport, although no-radio flight is also permitted.

Class G airspace is uncontrolled airspace which extends from the surface to either 700 or 1,200 feet AGL depending on the floor of the overlying Class E, or to the floor of the Class A where there is no overlying Class E. In the vicinity of an uncontrolled airport, the CTAF for that airport is used for radio communication among pilots. No towered or in-flight control services are provided.

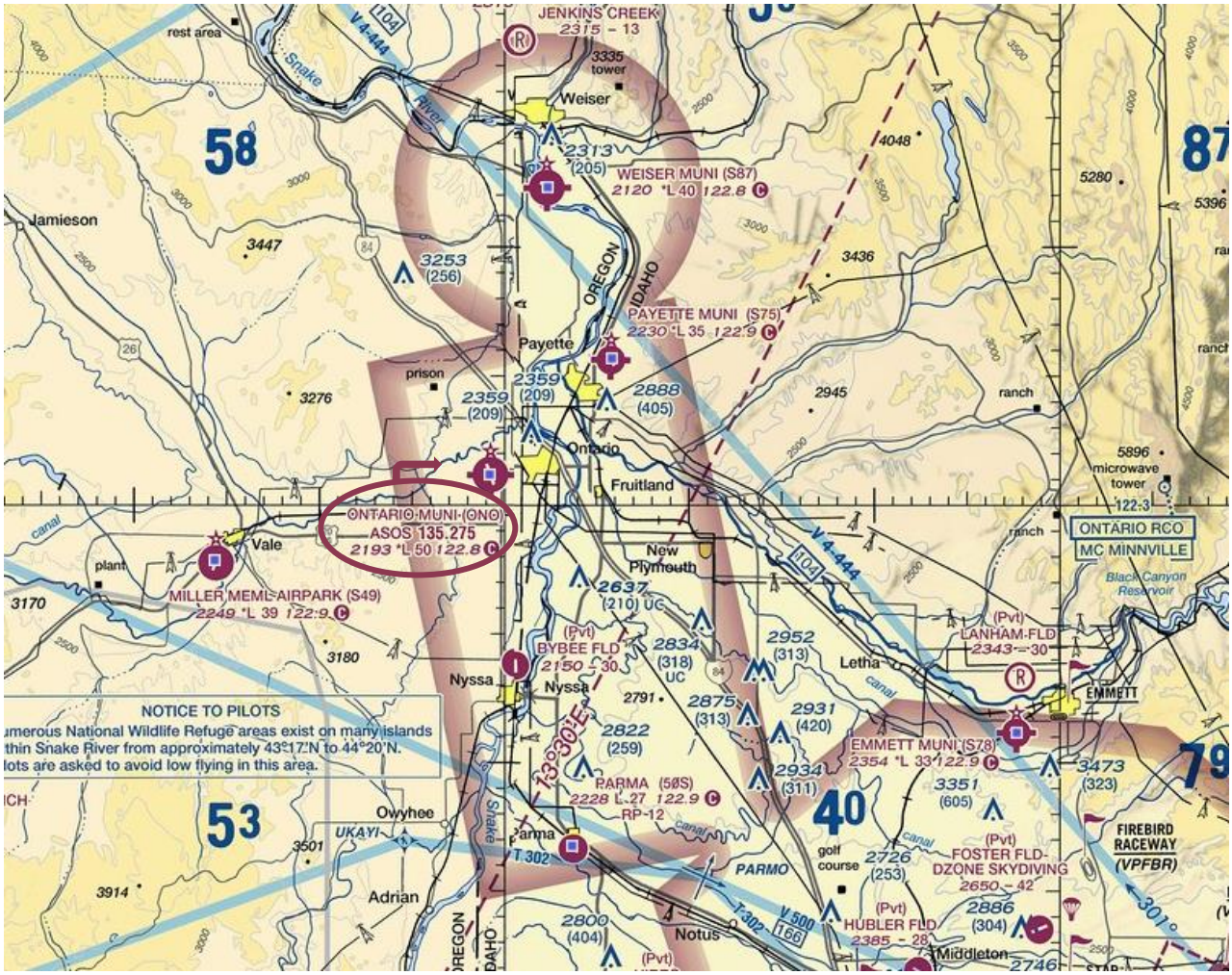
2.4.2 LOCAL AIRSPACE

The FAA is charged with oversight of the nation's civil navigable airspace and has established various regulatory and non-regulatory airspace classifications and areas to create a safe operating environment for all types of aviation users.

The Ontario Municipal Airport is an uncontrolled facility; that is, no local air traffic control tower is available. Airspace surrounding the Airport is depicted on the sectional chart in **Figure 2.4**. A sectional chart, often called sectional for short, is a type of aeronautical chart designed for navigation under VFR.

Ontario Municipal Airport is found near the center of **Figure 2.4** as indicated by the white arrow. The area around the Airport is Class E Airspace and is located within the thick maroon line. **Figure 2.3** identifies Class E airspace, above the airfield, between 700 feet AGL and 17,999 feet above MSL. Due to the airport's elevation of 2,192.3 feet, this Class E airspace starts at 2,892.3 feet. This airspace provides a buffer and transitional airspace from en route to local airspace for aircraft. Two Class E Airspace low altitude Federal Victor Airways are depicted (blue line) in **Figure 2.4**. One is located to the north of the Ontario Municipal Airport (V 4-444) and another to the south (V 500). Both Victor Airways are associated with the Boise VHF omnidirectional range and tactical air navigation system (VORTAC) beacons.

FIGURE 2.4
SECTIONAL AERONAUTICAL CHART



Source: U.S. National Charting Office (Oct 2021)

2.4.3 INSTRUMENT APPROACH

Instrument Approach Procedures (IAPs) have been published to accommodate aircraft operations to Runway 15 and 33 Ends. IAPs are three-dimensional paths in the sky designed and prescribed by the FAA for safe aircraft landing during Instrument Meteorological Conditions (IMC). These paths are designed to avoid terrain, tall towers and other obstructions and allow safe aircraft operation to the airport or to a given runway end. Area Navigation (RNAV) GPS IAPs are published for both the Runway 15 End and Runway 33 End. Inclement weather takeoff instructions only exist for the Runway 33 End. **Table 2.5** identifies instrument approach and departure procedures and their lowest ceiling and visibilities.

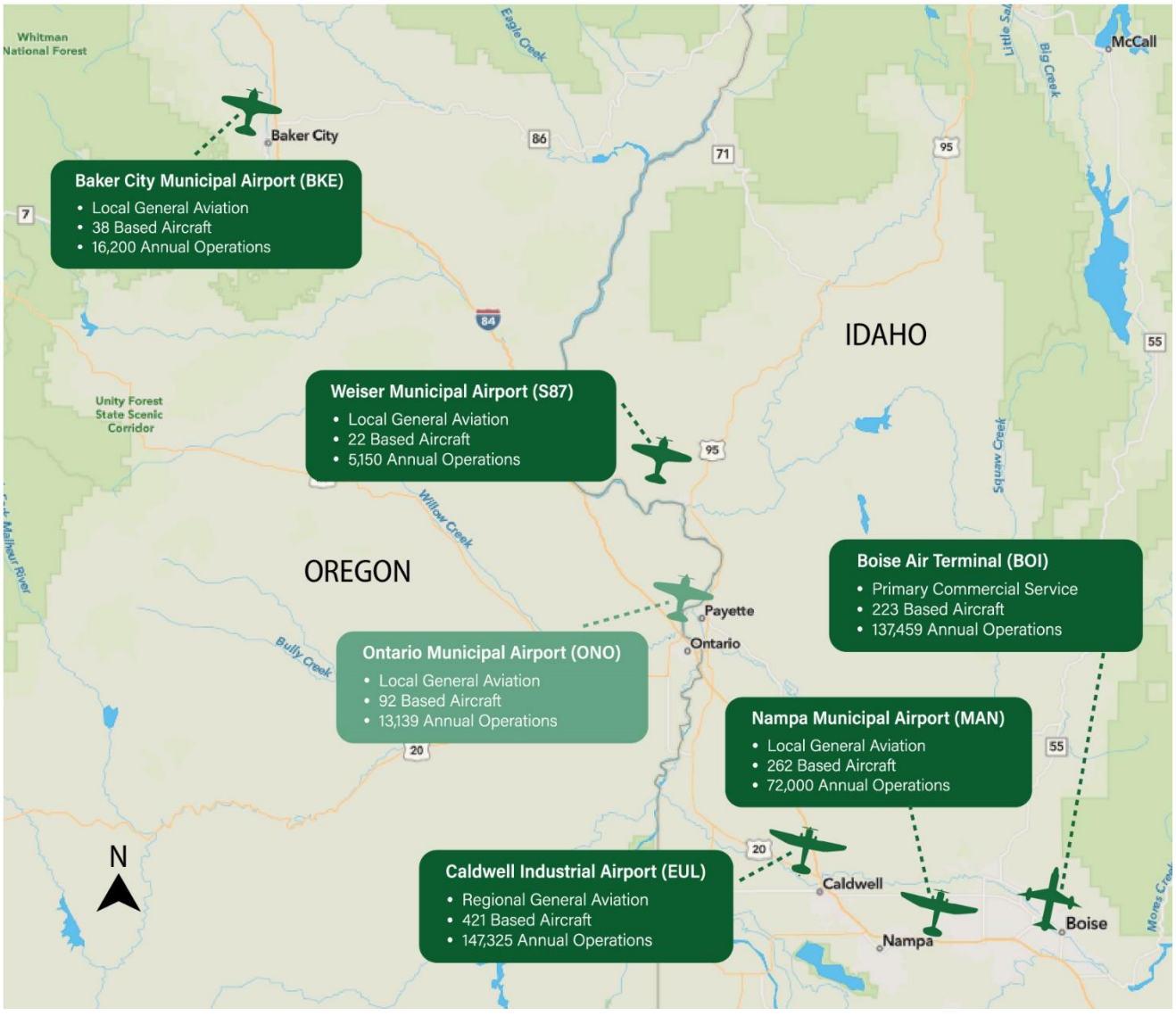
TABLE 2.5 ***ONTARIO INSTRUMENT APPROACH AND DEPARTURE REQUIREMENTS***				
Category	**Lowest Minima (Cloud Ceiling AGL/Lowest Statue Mile Visibility)**			
	A	**B**	**C**	**D**
	RNAV (GPS) Runway 15			
LPV DA	2769-2			
LNAV/VNAV DA	2,814-2½			
LNAV MDA	2780-1		2,780-1¾	
Circling	2760-1	2800-1	3,120-2¾	3240-3
Missed Approach	Climbing right turn to 9,000 direct HOVEL and hold, continue climb-in-hold to 9,000			
	RNAV (GPS) Runway 33			
LPV DA	2443-⅞			
LNAV/VNAV DA	2443-⅞			
LNAV MDA	2560-1			
Circling	2760-1	2800-1	3120-2¾	3240-3
Missed Approach	Climb to 9,000 direct ZEMTI and on track 327 to HOVEL and hold, continue climb-in-hold to 9,000			
Runway 33 Takeoff Minimums	Climb at 240’ ROC to 3,800 or 1300-3 in Visual Conditions			
Runway 33 Departure Procedure	Climb on a heading between 033° CW 145° from DER, or minimum climb of 270’ per NM to 3,600 for all other courses			

Source: FAA
AGL: Feet Above Ground Level, ROC: Minimum Required Foot Per Minute Rate of Climb

2.5 AREA AIRPORTS AND NAVAIDS

Ontario Municipal Airport is near several public general aviation (GA) and commercial service airports along with en route and local navigational facilities. **Figure 2.5** illustrates the nearby airports, and this section describes them in further detail.

FIGURE 2.5
ONTARIO NEARBY AIRPORTS



Source: J-U-B

Weiser Municipal Airport (S87) near Weiser, Idaho is a publicly owned GA airport for the City of Weiser. S87 is approximately 11 nautical miles (NM) north of the Ontario Municipal Airport. The current FAA Form 5010 record for Weiser Municipal Airport indicates 5,150 general aviation operations for 2020. S87 has 22 based aircraft with 21 single-engine (SE) aircraft and 1 multi-engine (ME) aircraft. S87 is uncontrolled and accommodates visual and instrument aircraft operations.

Caldwell Industrial Airport (EUL) near Caldwell, Idaho is a publicly owned airport approximately 28 NM southeast of the Ontario Municipal Airport. The current FAA Form 5010 record for Caldwell Industrial Airport indicates 147,325 general aviation operations for 2017. EUL has 421 based aircraft with 374 SE, 23 ME, 4 jets, and 20 helicopters. EUL is uncontrolled and accommodates both visual and instrument aircraft operations.

Nampa Municipal Airport (MAN) near Nampa, Idaho is a publicly owned and operated GA airport approximately 34 NM southeast of Ontario Municipal Airport. The current FAA Form 5010 record for the Nampa Municipal Airport indicates 72,000 general aviation operations for 2018. MAN has 262 based aircraft with 251 SE, 7 ME and 4 helicopters. MAN is uncontrolled and accommodates both visual and instrument aircraft operations.

Boise Air Terminal (BOI) near Boise, Idaho is a joint-civil military, commercial service, and GA airport owned and operated by the City of Boise. The Boise Air Terminal is approximately 44 NM southeast of the Ontario Municipal Airport. The current FAA Form 5010 record for BOI indicates 137,459 general aviation operations for 2018. BOI has 223 based aircraft with 147 SE, 22 ME, 37 jets, and 17 helicopters. BOI is controlled and accommodates both visual and instrument aircraft operations.

Baker City Municipal Airport (BKE) near Baker City, Oregon is a GA airport publicly owned and operated by the City of Baker. The Baker City Municipal Airport is approximately 60 NM northwest of Ontario Municipal Airport. The current FAA Form 5010 record for BKE indicates 16,200 general aviation operations for the 12 months ending September 2019. BKE has 38 based aircraft with 32 SE, 3 ME, and 3 helicopters. BKE is uncontrolled and accommodates both visual and instrument aircraft operations.

Boise Very High-Powered H-VORTAC (BOI) navigational facility, located in Boise, ID, is owned, and operated by the FAA and approximately 45.3 NM southeast of the Ontario Municipal Airport. This navigational facility provides 360-degree VOR azimuth radio interrogation capability for aircraft en route and terminal navigation up to 130 nautical miles. It also provides TACAN azimuth.

Ontario NDB (ONO) is a navigational facility that has been decommissioned. The structure is still located at the Ontario Municipal Airport.

Table 2.6 summarizes additional details for each nearby facility.

TABLE 2.6
AREA AIRPORTS AND NAVIGATIONAL AIDS

Airport	Runways	Approach Capability	Airspace Restrictions	Services	Distance/ Direction
Weiser Municipal Airport (S87)	Runway 12/30; 4,000'x60'	RNAV Non-Precision Instrument Airfield	Uncontrolled	Fuel, Minor Maintenance	11 NM North
Caldwell Industrial Airport (EUL)	Runway 12/30 5,500'x100'	RNAV Non-Precision Instrument Airfield	Uncontrolled	Fuel, Major Maintenance	28 NM Southeast
Nampa Municipal Airport (MAN)	Runway 11/29; 5,000'x75'	RNAV Non-Precision Instrument Airfield	Uncontrolled	Fuel, Major Maintenance	34 NM Southeast
Boise Air Terminal (BOI)	Runway 10L/28R; 10,000'x150' Runway 10R/28L; 9,763'x150'	RNAV Non-Precision Instrument Airfield, ILS and VOR Precision Instrument Airfield	Controlled	Fuel, Major Maintenance, Commercial	44 NM Southeast
Baker City Municipal Airport (BKE)	Runway 08/26; 3,670'x140' Runway 13/31; 5,085'x100' Runway 17/35; 4,359'x75'	RNAV Non-Precision and VOR Precision Instrument Airfield	Uncontrolled	Fuel, Minor Maintenance	60 NM Northwest

Navigational Aid	Facility Frequency	Distance/Direction
Boise VORTAC (BOI)	113.3 MHz	45.3 NM Southeast
Ontario NDB (ONO)	Decommissioned	At Ontario Municipal Airport

Source: FAA 5010/Airport Guide/Airnav

2.6 AIRPORT INVENTORY

This section describes the existing facilities, as depicted in **Figure 2.6** and **Figure 2.7**, and the conditions at the Ontario Municipal Airport.

A detailed inventory of the buildings and facilities on the airport is listed in **Table 2.7** and runway signage in **Table 2.8**. These tables identify existing facility use, occupant, and approximate size in addition to adjacent ground and top of facility elevations.

FIGURE 2.6
INVENTORY OF EXISTING CONDITIONS – AIRPORT SITE

Source: J-U-B

FIGURE 2.7
INVENTORY OF EXISTING CONDITIONS – TERMINAL AREA

Source: J-U-B

TABLE 2.7
INVENTORY OF EXISTING CONDITIONS

Bldg No.	Use	Top (Feet, MSL)	(7:1, V)	Ground (Feet, MSL)	Approx. Size (Square Feet)
1	Airport Terminal	2,204	17	2,193	3,010
2	FBO Box Hangar	2,214	25	2,193	4,073
3	FBO Corporate Hangar	2,220	30	2,193	4,871
4	Box Hangar	2,216	20	2,193	1,992
5	Box Hangar	2,206	20	2,193	1,436
6	Box Hangar	2,210	20	2,193	1,362
7	T-Hangar	2,213	20	2,193	4,685
8	Box Hangar	2,205	20	2,193	1,400
9	T-Hangar	2,212	20	2,193	3,415
10	T-Hangar	2,212	20	2,193	2,746
11	T-Hangar	2,211	20	2,193	4,146
12	Box Hangar	2,218	25	2,193	3,931
13	Box Hangar	2,211	15	2,193	1,532
14	T-Hangar	2,209	15	2,193	6,873
15	Lighted Beacon	2,223	40	2,193	90
16	Electrical Vault	2,204	10	2,193	83
17	Small Wooden Building Structure	2,209	15	2,193	595
18	Box Hangar	2,219	15	2,193	2,768
19	Corporate Hangar	2,223	30	2,193	13,103
20	Corporate Hangar	2,212	15	2,193	4,932
21	Box Hangar	2,212	15	2,193	2,442
22	Box Hangar	2,208	15	2,193	2,081
23	Box Hangar	2,207	15	2,193	1,244
24	Box Hangar	2,204	10	2,193	2,179
25	T-Hangar	2,207	15	2,193	1,579
26	Box Hangar	2,211	15	2,193	1,722
27	Box Hangar	2,213	15	2,193	2,606
28	Box Hangar	2,193	0	2,193	2,613
29	Box Hangar	2,206	15	2,193	1,631
30	T-Hangar	2,209	25	2,193	2,885
31	T-Hangar	2,216	25	2,193	4,450
32	T-Hangar	2,205	25	2,193	6,295
33	Box Hangar	2,212	25	2,193	3,011
34	Box Hangar	2,210	25	2,193	11,678
35	Box Hangar	2,210	25	2,193	2,485
36	Box Hangar	2,210	25	2,193	2,347
37	Box Hangar	2,210	25	2,193	2,398
38	Life Flight Corporate Hangar	2,218	25	2,193	9,113
39	Fire Station	2,218	25	2,193	10,000

Bldg No.	Use	Top (Feet, MSL)	(7:1, V)	Ground (Feet, MSL)	Approx. Size (Square Feet)
40	BLM SEAT Base	2,220	30	2,193	2,202
41	Maintenance Building	2,210	21	2,193	4,689
42	Golf Cart Storage Building	2,201	12	2,189	10,833
43	Wooden Structure	2,195	6	2,189	2,279
44	Wooden Structure	2,195	6	2,189	885
45	Wooden Structure	2,198	9	2,189	395
46	Wooden Structure	2,204	15	2,189	7,870
47	Advertising Sign	2,218	25	2,193	N/A
48a	Wind Cone	2,200	7	2,193	N/A
48b	Lighted Wind Cone	2,196	7	2,189	N/A
49	ASOS	N/A	N/A	2,193	N/A
50	REIL x 4	N/A	N/A	2,193	N/A
51	PAPI Light x 2	N/A	N/A	2,193	N/A
59	Fuel Tank Farm	N/A	N/A	N/A	N/A
60	Surface Electrical Posts and Wires	N/A	N/A	N/A	N/A
61	Fire Hydrants x 5	N/A	N/A	N/A	N/A
62	Ontario Decommissioned NDB Facility	N/A	N/A	2,189	100
63	Taxiway A	N/A	N/A	2,193	N/A
64	Blast Pad	N/A	N/A	2,193	11,620
ii	Newly Constructed Box Hangars x 6	2,216	25	2,193	7,560

Source: J-U-B

TABLE 2.8
RUNWAY SIGNAGE

Feature. No.	Feature Use	Type/Category	Style	Size	Class
52	Taxiway/Runway Hold Position Signs x 6	L858-M3	2	1	2
53	Direction Sign Array x 3	L858-M2	2	1	2
54	Taxiway Location Signs x 5	AL-858L	2	1	2
55	Taxiway Location/ Runway Exit Sign x 3	L-858-M2/M3	2	1	2
56	Runway Exit Sign x 3	L858-M2	2	1	2
57	Inbound Destination/ Taxiway Location Sign	L858-M4	2	1	2
58	Outbound Destination Sign	L858-M4	2	1	2

Source: J-U-B

2.6.1 VISUAL AIDS

The airport rotating beacon (No. 15) is located on the eastern side of the mid-field. The beacon alternates green and white to indicate nighttime availability at a public-use, civilian airport.

Ontario rotating beacon

The Automated Surface Observing System (ASOS) (No. 49) is positioned southeast of the mid-field. Hourly ASOS atmospheric observations are available via 135.275 MHz and (541) 889-7388.

Ontario Automated Surface Observing System (ASOS)

2.6.2 RUNWAY 15/33

Ontario Municipal Airport has one primary runway. Runway 15/33 is 5,006 feet long and 100 feet wide.

2.6.2.1 Flight Rule Capabilities

Runway 15/33 is predominantly used during the day under Visual Flight Rules (VFR) weather conditions by pilots and aircraft operating under FAA VFR guidance and regulations. The runway is also designed and equipped to support flight operations during Instrument Flight Rules (IFR) weather conditions. The IFR capabilities of Runway 15/33 allow appropriately equipped aircraft and pilots to conduct takeoff, approach, and landing operations in low visibility weather conditions prohibited by VFR flight regulations.

The runway is appropriately configured, lighted, and marked for an aircraft's safe approach, landing, or execution of a missed approach procedure. FAA line-of-site criteria requires that, for runways with a full parallel taxiway, any two points above the runway centerline by five feet shall be mutually visible within a distance that is half the length of the runway. Runway 15/33 meets the runway longitudinal line-of-site standard.

The authorized procedures for Ontario Municipal Airport are the FAA's ONO RNAV (GPS) RWY 15 and RNAV (GPS) RWY 33.

2.6.2.2 Runway Orientation

The runway orientation is sufficient to meet the FAA's recommended 95 percent coverage of wind in all-weather conditions. The FAA objective for wind coverage states that a runway, or runways, should have a crosswind component more than a given threshold 95 percent of the time. The crosswind thresholds are 10.5 knots for small aircraft; 13 knots for larger general aviation aircraft; 16 knots for larger turboprop and many commercial airline aircraft; and 20 knots for the largest turbine commercial, cargo, and general aviation turbine aircraft.

Runway 15/33 has 97.37 percent all-weather crosswind coverage in 10.5-knot crosswinds, 98.65 percent wind coverage in 13-knot crosswinds, and 99.85 percent in 20-knot crosswinds. This wind study considered data from the Ontario Municipal Airport, ASOS station. Wind observations were made from 2011 to 2020 to meet the FAA's 10-year historical data requirement guidance.

2.6.2.3 Pavement Design

The airport pavements are constructed of asphalt with an estimated design pavement strength of 30,000 pounds for single-wheel gear (SWG) and 60,000 pounds for dual-wheel gear (DWG).

Whether the wheel gear is single, double, or dual tandem is determined by a pavement design methodology that cross references pavement strength with the number of wheels on a given aircraft strut. Other criteria used to determine pavement design include soil type, soil characteristics, subgrade/base soil improvements, pavement type, pavement composition, planned pavement life, loading, frequency of use, mix of airport users, and more.

Pavements are designed to accommodate a limited number of aircraft operations over time without substantial surface rehabilitation. It is worth noting that the design does allow for a limited number of aircraft operations with weights greater than identified.

The effective longitudinal runway gradient is 0.09 percent, which is less than the maximum longitudinal runway gradient of 2 percent. The Runway 15 End is 2,193.04 feet above mean sea level (MSL) and the Runway 33 End elevation is 2188.64 MSL. FAA design standards require that the effective and maximum runway longitudinal gradients do not exceed certain percentages to ensure a runway is not too steep.

2.6.2.4 Lighting Aids

Runway 15/33 is equipped with a Medium Intensity Runway Lighting (MIRL) system. This lighting consists of a series of incandescent edge lights, generally located 10 feet from the edge of pavements for the length of the runway. The lights are sequentially spaced at regular 200-foot intervals. Lights are frangible mounted at the base and can easily break to avoid substantial damage to the aircraft in the event of a deviation from the runway. Runway threshold lights are part of the MIRL system and, up until the last 2,000 feet, are directionally lighted red and green to indicate runway limits. The final 2,000 feet of lights are amber lit to indicate an approaching runway end.

Both the Runway 15 End and Runway 33 End have a sited-to-standard, two-light Precision Approach Path Indicator (PAPI) Visual Glide Slope Indicator (VGSI) lighting system (No. 51) on the left side of the runway and a 3-degree glide path. The PAPI is a type of VGSI used to provide lighted visual information to the pilot as a descent toward a runway end is made. The PAPI indicates a color when an aircraft is on the correct glideslope to either runway end. Both runway ends are equipped with a Runway End Identifier Lighting (REIL) System (No. 50). REILs are frangible-mounted, strobe-type lights situated near each runway end. These lighting systems facilitate day or night runway end identification in clear or semi-obscured weather conditions.

Aircraft operators may remotely control airfield lighting systems via the Common Traffic Advisory Frequency (CTAF) at 122.8 MHz. This frequency has been assigned to the Ontario Municipal Airport by the FAA.

A lighted wind cone (No. 48b) can be found in the standard configuration for the Runway 15 End, in a segmented circle marker. There is also an unlighted wind cone (No. 48a) at the Runway 33 End.

Ontario Runway 33 End Unlighted Windcone

2.6.2.5 Runway Markings Aids and Signs

Each runway end is marked with elements appropriate for straight-in, non-precision aircraft operations on instrument runways longer than 4,200 feet. A blast pad marked with yellow chevrons complements the Runway 15 End (No. 64).

Runway markings include designations, threshold bars, aiming points, edge stripes, and the runway centerline. Runway markings are white.

Signs at the Airport mark taxiway/runway hold positions (No. 52), taxiway locations (No. 54), taxiway location/runway exits (No. 55), runway exits (No. 56), inbound destination/taxiway locations (No. 57), outbound destinations (No. 58), in addition to direction sign arrays (No. 53).

Foxtrot Taxiway / Runway 33/15 location sign

2.6.3 TAXIWAYS AND LANDSIDE AREAS

2.6.3.1 Taxiway Facilities

Runway 15/33 is equipped with a full-parallel Taxiway A (No. 63) and six connecting taxiways, designated B through G from south to north. Taxiway centerlines are marked for Taxilane Object Free Area (OFA) clearances. Taxiway A centerline is separated 245 feet from Runway 15/33's centerline. Taxiway E is 130 feet wide, and all other taxiways are 35 feet wide, at the narrowest point. Holdlines and lighted airfield signage are located no closer than 125 feet from runway centerline in compliance with Obstacle Free Zone Standards. Taxiway C holdlines are the farthest apart at 200 feet with holdlines at all other taxiways no more than 160 feet apart. Parallel Taxiway A features a standard 575-square-foot run-up area; a run-up area is also located at Taxiway C.

2.6.3.2 GA Facilities and Support Services

The Main Terminal Building (No. 1) is 1,984 square feet and located to the east of Parallel Taxiway A. The Airport has tenants that provide essential GA services. One of those is the EMS Life Flight service which has a 9,369 square-foot hangar north of the Main Terminal Building (No. 38). Aircraft operating out of this hangar have direct access to an 8,000 square-foot apron with

2 tiedowns and a 3,600 square-foot helipad. The BLM also operates a Single-Engine Air Tanker (SEAT) Base at the Airport, which includes a 2,383 square-foot office building (No. 40) and vehicle parking area. SEAT operators have direct access to an adjacent 13,250 square-foot apron with 7 tiedowns south of the Base.

Silverhawk Aviation Academy is a tenant with a 4,062-square-foot hangar (No. 2) and a 5,026-square-foot hangar (No. 3).

Ontario Main Terminal

2.6.3.3 Other General Aviation Facilities

The Ontario Municipal Airport has two formal apron areas. The Main Apron is adjacent to and east of Runway 15/33 and can be accessed from Parallel Taxiway A (No. 63). This apron area is approximately 35,100 square feet and provides 27 aircraft tiedowns.

A series of taxiways connect Parallel Taxiway A to a second, smaller apron southeast of the Main Apron. The southeast apron is 45,600 square feet and can accommodate three large aircraft tiedowns. Apron pavement strengths are approximately 30,000 pounds single-wheel gear (SWG) and 60,000 pounds dual-wheel gear (DWG).

2.6.3.4 Support Facilities

GA operations are not charged landing fees, and airport fuel prices are comparable to other airports in the region. Both Jet-A and 100 low lead (LL) fuel are available with full service or self-service pricing. The fuel is supplied by an airport owned fuel farm with three above-ground tanks (No. 59).

Fuel sales have been managed by Frazier Aviation, the previous Fixed Based Operator (FBO), now Silverhawk Aviation Academy, but the infrastructure is owned by the City of Ontario. Fuel purchases are facilitated by a Syntech Card Reader.

Ontario Aviation Fueling Equipment

There are also two fuel trucks, one has a 4,000-gallon capacity and is used for Jet-A fuel and the other has a 2,000-gallon capacity and is used for 100LL fuel.

Table 2.9 lists City equipment assigned to the Ontario Municipal Airport.

TABLE 2.9 INVENTORY OF EQUIPMENT/ ASSETS		
Year	**Make**	**Model**
2019	JRB	12’ Hydraulic Angle Broom
2001	Ford	Ranger Truck
2000	John Deere	Loader
1985	Ford	Dump Truck
1984	Chevrolet	K30 Utility Truck
N/A	John Deere	Gator Utility
N/A	Case	Backhoe
Source: City of Ontario		

2.6.3.5 Access, Circulation, and Parking

The Main Terminal Building (No. 1) and hangar areas can be directly accessed from Highway 201 (Cairo Blvd.) via Airport Way and SW 6th Avenue. A third entry point exists off SW 33rd Street, which connects to Highway 201 via SW 4th Avenue. The three entrances have vehicle access gates that require keypad entry. A 4,262-square-foot airport maintenance building (No. 41) is located south of the developed hangar areas. There are 12 designated vehicle parking spots adjacent to the Main Terminal Building that are accessible from SW 33rd Street.

Ontario entry point access keypads

2.6.3.6 Utilities

Airport utilities, including water, sewer, and broadband are provided by the City of Ontario. Power is provided by Idaho Power and natural gas by Cascade Natural Gas.

2.6.3.7 Lighting and Fencing

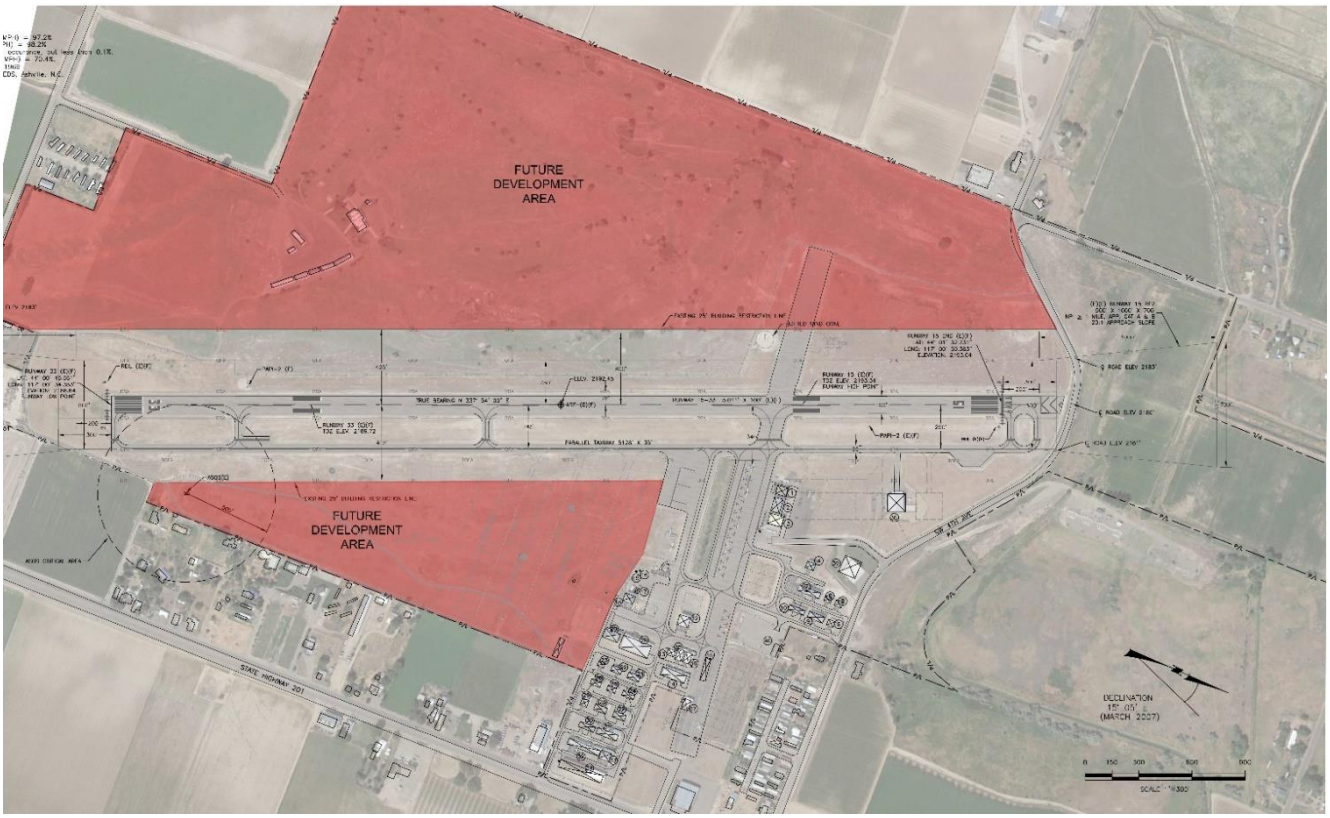
Perimeter fencing is built to FAA specifications and consists of a 6-foot chain-linked security fence, topped by an additional 3 feet of barbed wire, along the north and east side of the Airport property. There is a 3-foot wired field fence along the southwest and southern sides of the property; however, some areas are not fenced along this area. Security cameras with live streaming capabilities provide 24-hour surveillance of the west, east, and south areas of the Airport parking lot. Several overhead lights are located midfield of the two formal apron areas to illuminate aircraft tiedown positions.

Ontario perimeter fencing

2.6.3.8 Areas for Potential Development

There is a significant amount of undeveloped land on the west of the Airport. A large 164-acre parcel contains derelict wooden structures and a vacant golf course. There is a smaller 47.1-acre parcel to the east. Both have great development potential. The two parcels are depicted in red in **Figure 2.8**.

FIGURE 2.8
FUTURE DEVELOPMENT AREAS



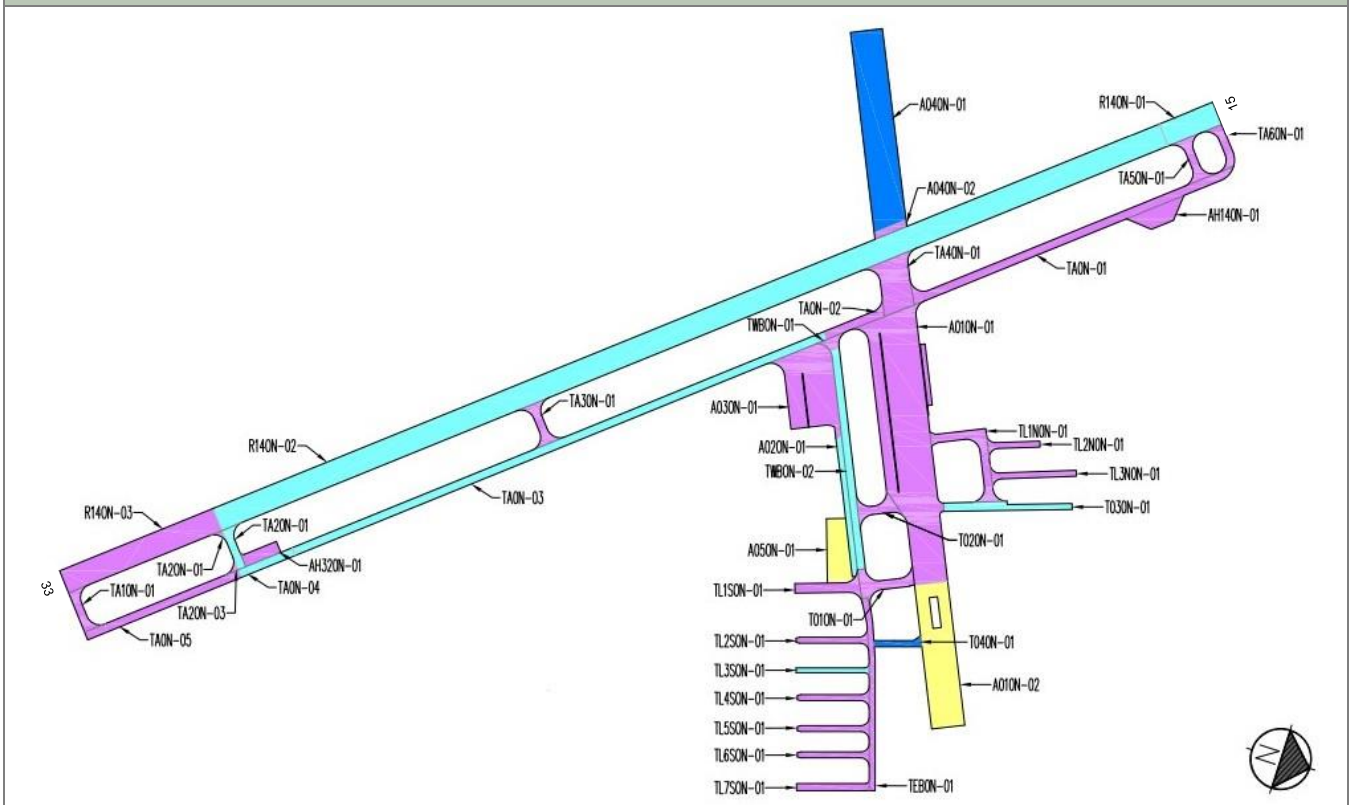
Source: Ontario Municipal Airport Layout Plan

There are residential, industrial, commercial, and agriculture designated lands to the north and east sides of the Airport. Residential zoned parcels can be found to the north and east, industrial to the north, and commercial and agriculture to the northeast.

2.7 AIRFIELD PAVEMENT CONDITIONS

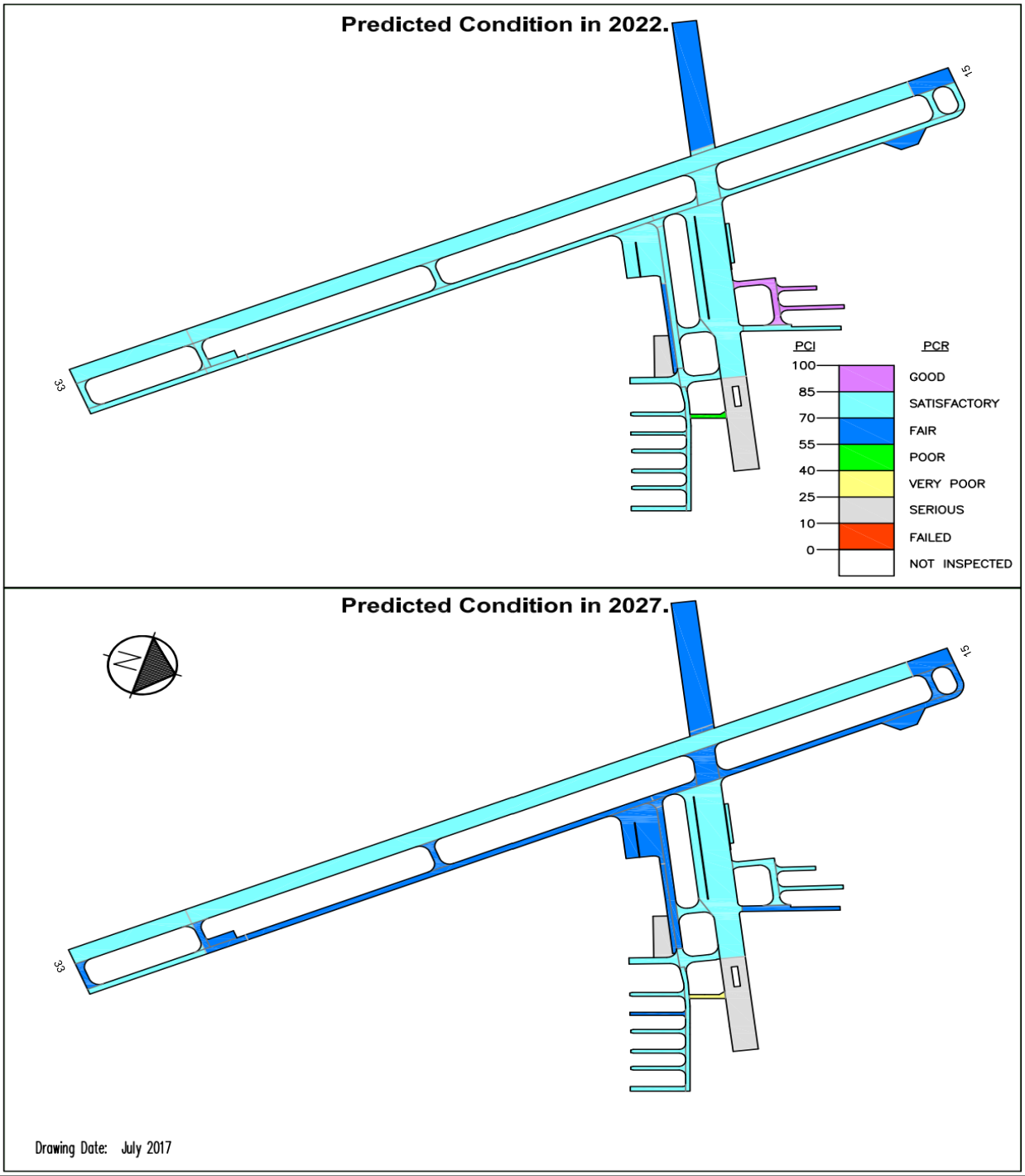
Ontario Department of Aviation (ODA) performed an evaluation of the airfield pavement conditions in July 2017. **Figure 2.9** indicates the baseline values of the evaluation and **Figure 2.10** gives a 2022-2027 forecast. Forecast predictions were based on deterioration models from the Pavement Maintenance Management System (PAVER) generated from pavement inspection data collected at airports of a similar category, climate region, and surface. Pavement conditions are given a Pavement Condition Index (PCI) rating and classification. Most pavement conditions fell within the good to fair range; however, pavement near the eastern hangered areas were classified as very poor and in need of reconstruction.

FIGURE 2.9
ODA EXISTING PAVEMENT CONDITIONS (2017)



Source: ODA

FIGURE 2.10
ODA FUTURE PAVEMENT CONDITION PREDICITIONS (2022-2027)



Source: ODA

2.8 ENVIRONMENTAL OVERVIEW

2.8.1 INTRODUCTION

The purpose of this section is to document known critical resources and environmentally sensitive features at the Ontario Municipal Airport. This environmental overview provides the public, federal, state, and local officials with an understanding of the baseline environmental conditions. This environmental baseline inventory evaluates the area within the existing Airport property, which encompasses approximately 480 acres.

This environmental overview section has been developed in accordance with the President's Council on Environmental Quality (CEQ), Title 40 CFR §1500-1508; FAA Order 5050.4B, National Environmental Policy Act (NEPA) Implementing Instructions for Airport Actions; FAA Order 1050.1F, Policies and Procedures for Considering Environmental Impacts; and the FAA's *Environmental Desk Reference for Airport Actions*.

As identified in FAA Order 1050.1F and 5050.4B, this section addresses the following environmental resource categories:

- Air Quality
- Biological Resources (including fish, wildlife, and plants)
- Climate
- Coastal Resources
- Department of Transportation Act, Section 4(f)
- Farmlands
- Hazardous Materials, Solid Waste, and Pollution Prevention
- Historical, Architectural, Archeological, and Cultural Resources
- Land Use
- Natural Resources and Energy Supply
- Noise and Compatible Land Use
- Socioeconomics, Environmental Justice, and Children's Environmental Health and Safety Risks
- Visual Effects (including light emissions)
- Water Resources (including wetlands, floodplains, surface waters, groundwater, and wild and scenic rivers)

2.8.2 NEPA AND THE ENVIRONMENTAL PLANNING PROCESS

NEPA was signed into law on January 1, 1970 and, as a procedural statute, requires federal agencies to consider the environmental impacts of projects prior to implementation. Airport projects are required to go through the NEPA process to comply with federal policy.

Under FAA Order 1050. 1F, proposed airport actions are evaluated based on type of action and its potential impacts on the environment. To determine the significance of a proposed action's environmental impacts and how compliance with NEPA analysis is documented, CEQ regulations establish the following three classes of action:

Categorically Excluded (CATEX):
Categorically excluded projects include actions that are found to have no potential for significant environmental impacts under normal conditions. The individual actions considered as categorical exclusions are listed in FAA Orders 1050.1F and 5050.4B.

Requiring an Environmental Assessment (EA): EAs are prepared to determine the significant impacts of the proposed action. The analysis and documentation of an EA is similar to an Environmental Impact Statement (EIS). If an EA determines that the proposed action will not cause significant environmental impacts, then a Finding of No Significant Impact (FONSI) will be prepared. If the EA identifies significant

impacts that will result from the proposed action, an EIS will be initiated.

Requiring an Environmental Impact Statement (EIS): Actions typically requiring an EIS are those projects that are found to have significant impacts. For example, actions that normally require an EIS include, but are not limited to, site selection for a new airport location and approval for the location.

Information presented in this document is not intended to meet NEPA requirements. The information contained in this overview identifies resource categories that may potentially be impacted by future developments at the Ontario Municipal Airport. Environmental considerations will be used by the project team during the analysis and development of airport project alternatives in the Ontario Municipal Airport Master Plan.

2.8.3 METHODOLOGY

Airport policies, procedures, facilities, operations, and improvements have been evaluated in addition to existing and expected plans and permits. Baseline environmental conditions for the environmental impact categories were determined by reviewing existing data, conducting literature searches, reviewing databases, field visits, and consulting aerial photography and maps.

2.8.4 EXAMINATION OF ENVIRONMENTAL RESOURCE CATEGORIES

The following sections provide environmental context for the Ontario Municipal Airport and briefly discuss the potential environmental impacts related to baseline conditions.

2.8.4.1 Air Quality

The Clean Air Act (CAA) sets the general policy for regulating air quality throughout the United States. Under the CAA, the Environmental Protection Agency (EPA) established National Ambient Air Quality Standards (NAAQS) in the interest of protecting human health and the environment against the detrimental effects of outdoor air pollution. NAAQS exist for the following criteria pollutants: carbon monoxide (CO), nitrogen dioxide (NO_2), ozone (O_3), sulfur dioxide (SO_2), particulate matter (PM 2.5 ad PM 10), and lead (Pb).

Under the CAA, air quality conditions are assessed within all areas of a state with respect to NAAQS. Areas that do not exceed NAAQS are designated “attainment” areas, while areas exceeding standards are considered “nonattainment” areas. Areas that were once considered nonattainment areas, but currently meet the NAAQS and CAA requirements, are designated “maintenance” areas.

As of August 2021, the EPA’s Green Book lists Malheur County, Oregon in attainment for all criteria pollutants.

2.8.4.2 Biological Resources (Including Fish, Wildlife, And Plants)

The Endangered Species Act (ESA) provides protection of plants, animals, and habitats listed as either endangered, threatened, or of special concern by the federal and state governments. An animal or plant species in danger of extinction throughout all or a significant portion of its range is considered endangered and is protected from harm pursuant to federal and state law. A threatened species is one that is likely to become endangered. Species of special concern are not formally afforded regulatory protection, but any reduction in their numbers and habitat is of concern. In compliance with the ESA, agencies overseeing Federally-funded projects coordinate with the U.S. Fish and Wildlife Service (USFWS) and/or the National Marine Fisheries Service

(NMFS) concerning listed, or proposed to be listed, species with the potential to occur within the area of any future development projects.

According to the USFWS Information for Planning and Consultation (IPaC) database, no ESA-listed species have the potential to exist at the Ontario Municipal Airport.

Additionally, the Oregon Explorer Natural Resources Digital Library Database Biodiversity Map Viewer Report identified occurrences of a variety of species within and adjacent to the Airport property (see **Table 2.10**).

Habitat considerations influence the observed occurrence of ESA and PHS-listed species identified in the table below. According to recent aerial imagery, the area surrounding the airport is highly disturbed by previous agricultural, residential, and industrial development. The Airport is surrounded by several agricultural fields and some small residences to the east. The Airport property does not contain any aquatic features and there is no documented essential fish habitat (EFH) in the vicinity of the Airport.

TABLE 2.10
DOCUMENTED SPECIES WITH RECORDS OF OCCURRENCE AT ONTARIO MUNICIPAL AIRPORT

Cooper's Hawk (Accipiter cooperii)	Prairie falcon (Falco mexicanus	Lazuli bunting (Passerina amoena)
Sharp-shinned hawk (Accipiter striatus)	Macgillivray's warbler (Geothlypis tolmiei)	Short-horned lizard (Phrynosoma douglasii)
Golden eagle (Aquila chrysaetos)	Northern pygmy-owl (Glaucidium gnoma)	Downy woodpecker (Picoides pubescens)
Black-chinned hummingbird (Archilochus alexandri)	Bullock's oriole (Icterus bullockii)	Green-tailed towhee (Pipilo chlorurus)
Sagebrush sparrow (Artemisiospiza nevadensis)	Loggerhead shrike (Lanius ludovicians)	Vesper sparrow (Pooecetes gramineus)
Long-eared owl (Asio otus)	Bobcat (Lynx rufus)	Mountain bluebird (Sialia currucoides)
Swainson's hawk (Buteo swainsoni)	Yellow-bellied marmot (Marmota flaviventris)	Preble's shrew (Sorex preblei)
Racer (Coluber constrictor)	Striped whipsnake (Masticophis taeniatus)	Western spotted skunk (Spilogale gracilis)
Western wood-pewee (Contopus sordidulus)	Western screech-owl (Megascops kennicottii)	Brewer's sparrow (Spizella breweri)
Western rattlesnake (Crotalus oreganus)	Lewis' woodpecker (Melanerpes lewis)	Chipping sparrow (Spizella passerine)
White-headed woodpecker (*Dryobates albolarvatus*)	Ash-throated flycatcher (Myiarchus cinerascens)	Western meadowlark (Sturnella neglecta)
Dusky flycatcher (Empidonax oberholseri)	Western small-footed myotis (Myotis ciliolabrum)	American badger (Taxidea taxus)
Gray flycatcher (Empidonax wrightii)	Least chipmunk (Neotamias minimus)	Red Fox (Vulpes vulpes)

Source: Oregon Department of Forestry; Oregon Biodiversity Information Center

The general habitat conditions observed at the Airport are fragmented and disturbed upland grass habitat with rabbit brush, bitter brush, Indian ryegrass, and cheatgrass spread throughout Airport property. The Airport is immediately surrounded on all sides by agricultural fields and a few residences to the east along Highway 201 (Cairo Blvd). While a number of species have been shown to occur on or adjacent to Airport property, there is an absence of nesting and roosting opportunities, lack of surface water features, and no trees or riparian areas within the study area. Ample amounts of riparian and aquatic habitat are readily available along the nearby Snake River.

Given the number of documented species occurrences within and adjacent to the Airport property, a biological evaluation would be required before the implementation of any projects.

2.8.4.3 Climate

As described in FAA Order 1050.1F, the CEQ has indicated that climate and greenhouse gases (GHGs) should be considered in NEPA analysis due to the established effects of GHG emissions on climate. However, the CEQ also states that there is currently no useful way to analyze the effects of GHGs on climate.

Given the relatively small size of the Ontario Municipal Airport, GHG emissions from the Airport would be negligible and are not likely to cause adverse effects to the climate.

The latest available data indicates that the Airport currently supports 18,062 annual aviation operations. Forecasted 20-year airport operations will be discussed further in Chapter 3. The airport improvements identified in this MPU are not anticipated to significantly increase annual airport operations but will help meet future airport demands.

2.8.4.4 Coastal Resources

Malheur County is inland; therefore, this category is not applicable to the Ontario Municipal Airport.

2.8.4.5 Department of Transportation Act: Section 4(f)

Section 4(f) resources protected by the Department of Transportation Act include publicly owned lands from public parks, recreation areas, or wildlife and waterfowl refuges of national, state, or local significance. Also protected are publicly or privately owned land from any historic sites of national, state, or local significance. The USDOT Act, Section 4(f) provides that no project that requires the use of any land from a public park or recreational area, wildlife and waterfowl refuge, or historic site be approved by the Secretary of the Interior unless there is no viable alternative and provisions to minimize any possible harm are included in the planning.

The nearest park or public recreational area to the Airport is the Ontario Optimist Park, which is located approximately 0.95 miles to the northeast. Other resources include Ontario High School (1.3 miles northeast) Lions Park (1.52 miles east), Ontario Middle School (1.62 miles east), Treasure Valley Ball Park (1.65 miles east), and Laxson Park (1.92 miles northeast).

Additional information pending further cultural resource survey. No use or conversion of any Section 4(f) resources is anticipated as a requirement of any future development projects at the Airport.

2.8.4.6 Farmlands

Farmlands are protected under the Farmland Protection Policy Act (FPPA), which requires

federal agencies to minimize the conversion of farmland to nonagricultural uses so that federal programs do not unnecessarily contribute to the loss of valuable farmlands. The FPPA categorizes farmland as prime, unique, and of statewide or local importance. Farmland subject to the FPPA requirements does not have to currently be used in agricultural production; it can be forestland, pastureland, cropland, or other land, but not water or urban built-up land.

The FPPA defines prime farmland as land that has the best combination of physical and chemical characteristics for producing food, feed, forage, fiber, oilseed, and other agricultural crops with minimum inputs of fuel, fertilizer, pesticides, and labor. Unique farmland is land other than prime farmland that is used for production of specific, high-value food and fiber crops. Unique farmland has soil and climatic conditions that can adequately supply economical yields of high-quality crops when managed appropriately. Farmland of statewide or local importance is land other than prime or unique farmland that is determined and designated as such by state or local governments.

As depicted by the U.S. Department of Agriculture (USDA) Natural Resources Conservation Service (NRCS) Web Soil Survey, soils at the Ontario Municipal Airport consist of a variety of silt loams, described in more detail in **Table 2.11** and in **Figure 2.11**

The FPPA does not apply to land that has already been developed for urban or built-up uses. Currently, all the land on the Airport property has already been developed for either Airport, industrial, or recreational uses. While the land in the northernmost segment off the Airport contains active agricultural land, it is already owned by the Airport and should be considered developed land due to it being existing Airport property. Therefore, no lands on Airport property should be considered prime farmland or farmland of statewide importance.

If, in the future, the Airport was to expand to the surrounding area, existing farmlands would be impacted, requiring the Airport sponsor to initiate formal coordination with the USDA/NRCS and complete Form AD-1006.

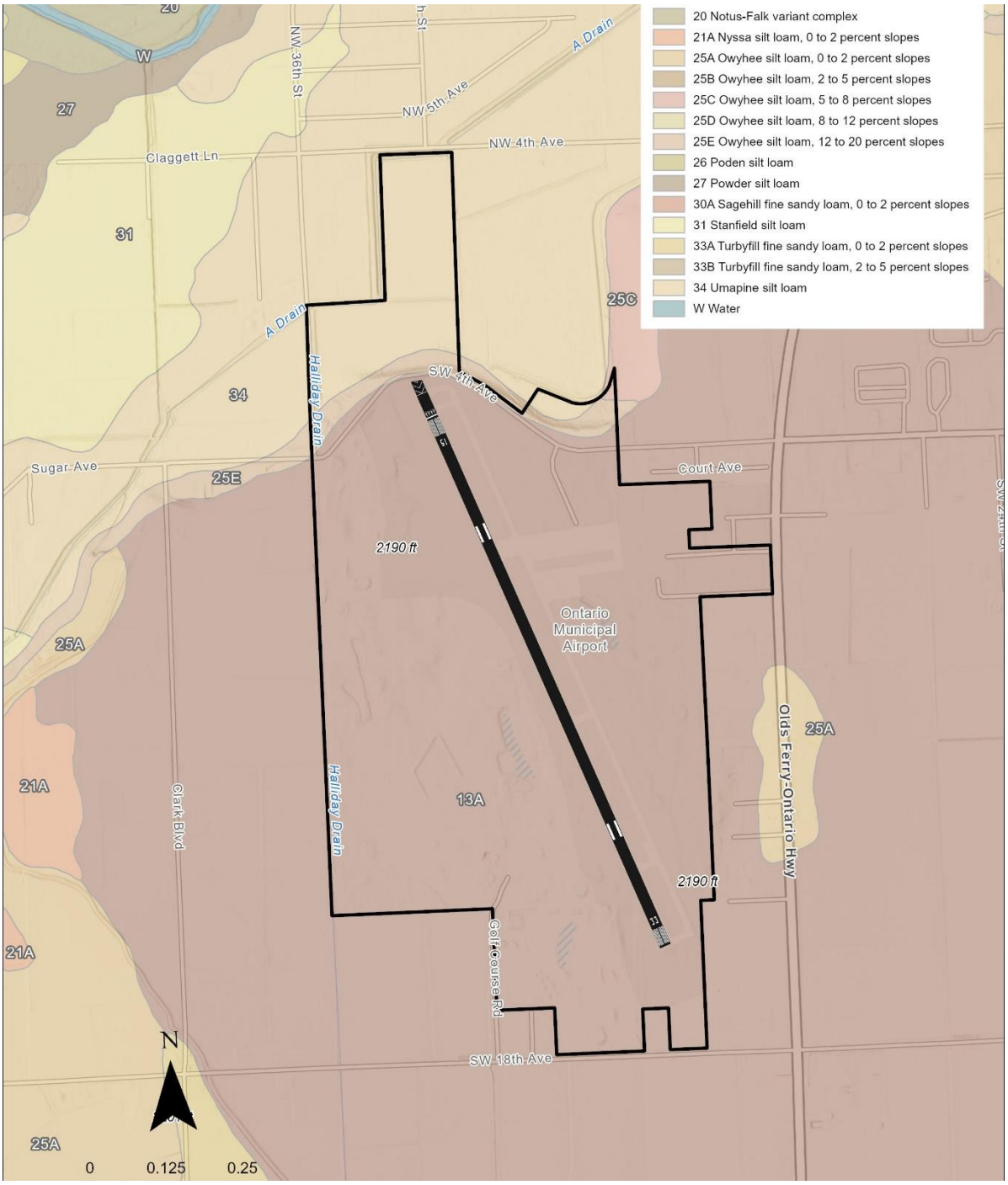
After receiving NRCS's input, the sponsor would perform additional analysis and calculate a site assessment score to determine the site's fitness for protection under the FPPA.

TABLE 2.11
FARMLAND RATINGS OF MAPPED SOILS AT ONTARIO MUNICIPAL AIRPORT

Soil Name	Map Symbol	Farmland Rating	% of Airport Property
Greenleaf Silt Loam, 0 to 2 Percent Slopes	13A	Prime farmland if irrigated	88.3%
Owyhee Silt Loam, 5 to 8 Percent Slopes	25C	Farmland of Statewide importance	0.001%
Owyhee Silt Loam, 12 to 20 Percent Slopes	25E	Farmland of Statewide Importance	2.2%
Umapine Silt Loam	34	Farmland of Statewide Importance	9.5%

Source: USDA, National Resources Conservation Service

FIGURE 2.11
MAPPED FARMLANDS AT ONTARIO MUNICIPAL AIRPORT



Source: USDA, National Resources Conservation Service (NRCS)
**See Table 2.12 for legend*

TABLE 2.12 HAZARDOUS WASTE SITE LOCATIONS NEAR ONTARIO MUNICIPAL AIRPORT			
Facility/Site Name	**DEQ/EPA Site ID**	**Description**	**Distance from Airport**
Ontario Municipal Airport	90	Site Screening Recommended (Enviro. Eval)	0.0 miles
Ontario Flight Service	511	Site Screening Recommended (Enviro. Eval)	0.0 miles
Farmers Supply Co-op	532	No further State action required – no risk to human health or environment	0.0 miles
Beck's Spray Service – Ontario	961	No further State action required – no risk to human health or environment	0.0 miles
Ralston Aviation	4112	Site Screening Recommended (Enviro. Eval)	0.0 miles
Bureau of Land Management	ORQ000039237	RCRA – Fire Protection	0.0 miles
Hollingsworths Inc.	ORD027697697	RCRA – Farm Machinery and Equipment Manufacturing	0.01 miles
Gentry Ford Sales Inc.	ORD027697556	RCRA – New Car Dealers	1.0 miles
Ontario Ford New Holland Incorporated	ORQ000008383	RCRA – Farm and Gard Machinery and Equipment Wholesalers	1.08 miles
Precision Auto Machine Shop	ORD981766264	RCRA – General Automotive Repair	1.11 miles
Source: Oregon Department of Environmental Quality (DEQ); EPA			

2.8.4.7 Hazardous Materials, Solid Waste, and Pollution Prevention

The Airport is required to follow applicable laws and regulations regarding hazardous materials and/or solid waste management, including those covered by the Resource Conservation and Recovery Act (RCRA), Toxic Substances Control Act (TSCA), Brownfields Program (Brownfields), and National Priority List (NPS) Superfund sites. Review of the Oregon Department of Environmental Quality (DEQ) database and the EPA's NEPAssist database has indicated that there are several listed sites on and in the vicinity of the Ontario Municipal Airport property, see **Table 2.12**.

Any planned projects that would impact the sites listed would likely require additional coordination with DEQ. Baseline conditions at the Ontario Municipal Airport, however, are not anticipated to adversely affect human health or the environment, as pertinent best management practices (BMPs) have been and would be followed during any construction projects.

2.8.4.8 Historical, Architectural, Archaeological, and Cultural Resources

NEPA requires agencies to consider the effects of any planned federal undertaking upon the cultural environment, including historical, archaeological, and paleontological resources. In additional to NEPA, planned federal actions must also comply with the National Historic

Preservation Act (NHPA) (16.U.S.C. 470, as amended). Section 106 of the NHPA and its implementing regulations (36 CFR 800) require federal agencies to analyze the effects of their undertakings on historic properties. According to these regulations, a historic property is “any prehistoric or historic district, site, building, structure, or object included in, or eligible for inclusion in, the National Register of Historic Places (NRHP)…” (36 CFR 800.16).

Additional information pending Cultural Resources Survey.

2.8.4.9 Land Use

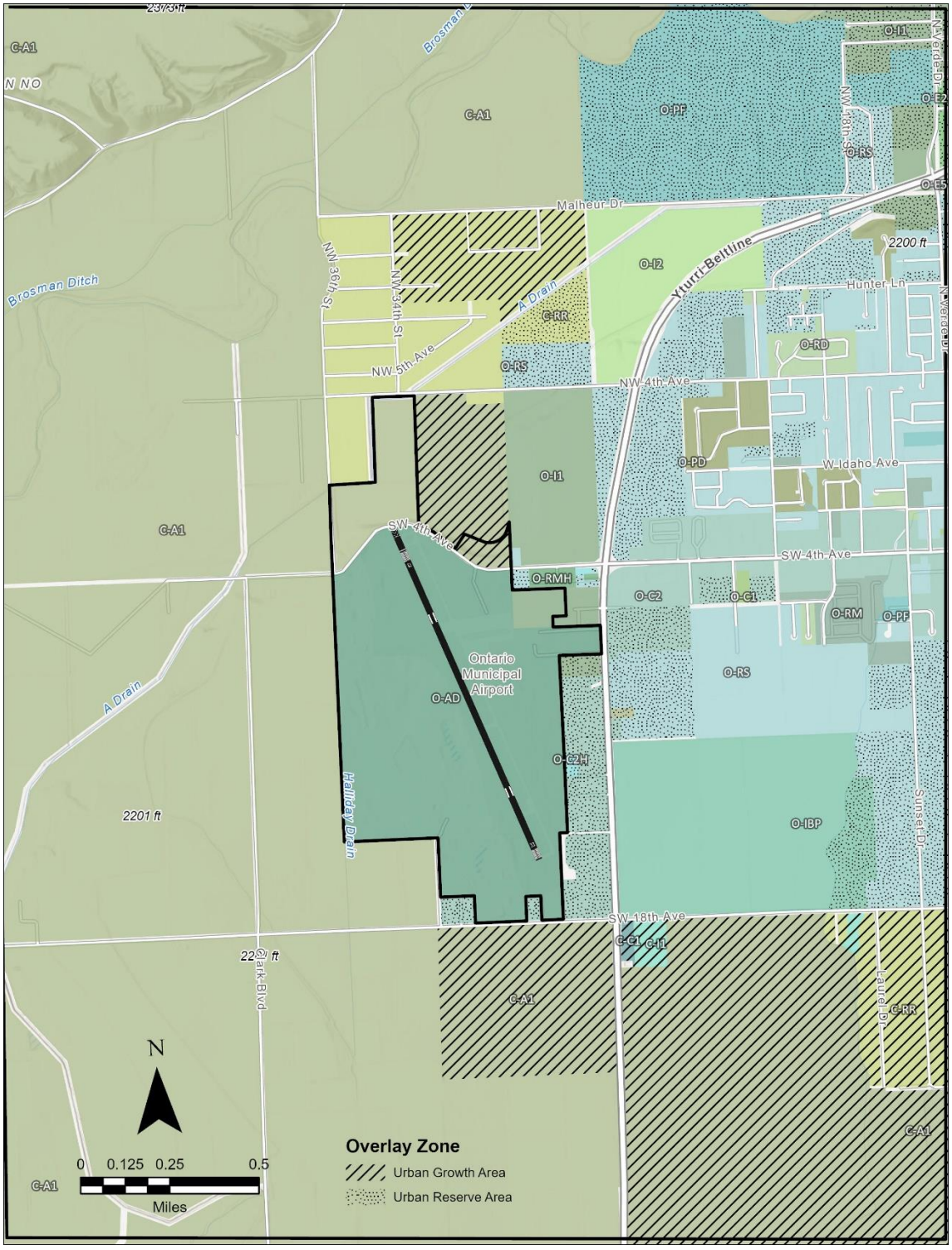
Ontario Municipal Airport is located within the City of Ontario limits, southwest of the city core. The Airport is bordered by agricultural fields to the north, south, and west, with some residential and industrial development along the east side. According to the Ontario Comprehensive Plan (1992), the Ontario Municipal Airport is located within the Airport Development (AD) Zone. The AD Zone maintains noise decibel sensitivity, protects airport facilities from incompatible uses, and prevents non-compatible development in the vicinity of the airport and electrical interference to operating aircraft. Ontario Planning and Zoning Development Standards Chapter 10A-45 – AD further describes the land use policies pertaining to this zone. The Airport is also bordered by two distinct zoning districts, the Urban Growth Area Zone (UGA) and the Urban Reserve Area Zone (URA). Conceptually, the City will develop the UGA first before moving on to the URA.

Under the UGA, the future land uses along the eastern border of the Airport along Highway 201 will be Commercial (C-UGA). The URA-zoned land, located to the north and south of the Airport, is planned for Industrial (I-URA) uses.

Figure 2.12 illustrates generalized land use and zoning designated in the Ontario Official Planning and Zoning Map and the Malheur County Land Use Map.

The 1050.1F Environmental Desk Reference for Land Uses explains the compatibility of land uses and aviation are typically related to noise impacts. Section 2.4.4.10 of the 1050.1F discusses noise and noise sensitive areas in the vicinity of the Airport.

FIGURE 2.12
CITY OF ONTARIO FUTURE LAND USE MAP



Source: City of Ontario/J-U-B

2.8.4.10 Noise and Compatible Land Use

Noise is defined as unwanted sound that can disturb routine activities and cause annoyance. A variety of factors influence an individual's perception of noise, such as volume, frequency, atmospheric conditions, ambient sound, and the type of activity generating noise. Generally, aircraft noise is one of the more intrusive environmental impacts for a given project in an airport environment.

Existing and future noise impacts at an airport should be assessed based on current industry standards as they relate to the human environment and, potentially, to sensitive species and historic properties. Airport noise is measured in Day Night Average Sound Level (DNL). DNL represents the average total accumulation of all noise, measured in decibels (dB), over a 24-hour period. The average total noise accumulation arises from noise associated with all aircraft operations over the course of the 24-hour period, which represents the airport's average annual operations per day.

The established FAA noise significance threshold for most general aviation airports is 65 dB DNL. When considering noise at airports, noise sensitive areas are those found within the 65 dB DNL contour. In these areas, the DNL threshold does not sufficiently encompass the impact noise would have on quiet areas such as national parks, wildlife refuges, schools, or hospitals. A review of aerial imagery illustrates that agricultural land surrounds the majority of the Airport. There are a few residential areas and Highway 201 to the east of the Airport.

Background noise is already relatively high in the vicinity of the Airport due to the proximity to Highway 201. Any future construction noise at the Airport is unlikely to surpass airport noise or background noise in the Airport's vicinity.

Additionally, FAA guidance in the 1050.1F Desk Reference for Airport Actions states that no quantitative noise analysis is required for projects involving Design Group I and II in Approach Categories A through D operating at airports whose forecast operations do not exceed 90,000 annual propeller operations or 700 jet operations; below these operations numbers the 65 DNL generally does not extend beyond Airport property limits. Current operations at the Ontario Municipal Airport do not exceed, and are not expected to exceed, 90,000 average operations or 700 annual jet-powered operations within the 20-year time frame of this planning process (see Chapter 3). *A quantitative noise analysis is not an anticipated requirement for future developments at the Ontario Municipal Airport. Therefore, a qualitative noise analysis was not performed for the development of this MPU.*

2.8.4.11 Natural Resources and Energy Supply

Malheur County covers approximately 9,930 square miles, with 94 percent of that area occupied by rangeland and 72 percent controlled by the Bureau of Land Management (BLM). Irrigated fields in the county's northeastern corner form what is known as the Western Treasure Valley.

Agriculture and rural communities make up much of the land within the county. Ontario is the largest city in Malheur County and is located along the Snake River at the nearby Idaho state border. There are no mineral resource lands and no forest resources within the City or near the Airport.

Water and wastewater services at the Airport are provided by the City of Ontario, and electricity is provided by Idaho Power. *Future operations or development projects at the Ontario Municipal*

Airport are not anticipated to cause demand to exceed available or future supplies of any of the described resources.

2.8.4.12 Socioeconomics, Environmental Justice, and Children's Environmental Health and Safety Risks

Due to the amount of available farmland and rangeland, agriculture makes up the primary economic sector in Malheur County. Currently, the county's two largest employers are Ore-Ida, a frozen potato-based food producer based in Ontario, and the Snake River Correctional Institution, located five miles north of Ontario.

The U.S. Census Bureau states the median household income in Ontario was approximately $36,922 in 2019. According to the Oregon Employment Department, the average unemployment rate in the Malheur County area was approximately 4.2 percent as of August 2021, slightly lower than the Oregon State average of 4.9 percent and the U.S. average of 5.2 percent. Development at the Ontario Municipal Airport has the potential to result in short-term increased economic activity in the Ontario community because construction projects generally increase local business demand.

Between 1990 and 2020, the Decennial Census conducted by the U.S. Census Bureau has documented a 24 percent change increase in the overall population of the City of Ontario. The 2020 Decennial Census indicates Ontario has a population of 11,645 people.

The EPA's Environmental Justice Screening and Mapping tool (EJSCREEN) was referenced to determine the population within a 1-mile radius of Ontario Municipal Airport. This report states that approximately 2,864 individuals live in the area surrounding the Airport. Of those individuals, approximately 46 percent identify as Hispanic, 49 percent identify as white alone, 0.01 percent identify as black alone, 1 percent identify as Asian alone, 0.01 percent identify as American Indian alone, 0.01 percent identify as Pacific Islander alone, and 3 percent identify as two or more races alone. Overall, approximately 51 percent of the population identify as Persons of Color.

It is unlikely that future development projects at Ontario Municipal Airport would result in any residential relocations as the Airport is unable to expand east because of Highway 201 or north, west, and south due to developed agricultural and industrial land.

Children's environmental health and safety risks are usually impacted by the introduction of new physical hazards into the existing environment. Future development projects at the Ontario Municipal Airport are not likely to exceed significant thresholds for air quality, noise, and water quality, and there are no other environmental impacts that would negatively impact the health and safety of children. *Food, drinking water, recreational water, soil, and other products children might encounter would not be influenced by future development projects at the Airport.*

2.8.4.13 Visual Effects (Including Light Emissions)

Visual effects, visual resources, and visual characteristics can be subjective because each category includes personal aesthetic preferences. Visual impacts can include contrasts between a specific area, the existing environment, and the general perception of the community concerning any change in lighting or visual characteristics.

At the Ontario Municipal Airport, the primary light sources consist of existing buildings, facilities, and runway lighting. Any lighting associated with future development at the Airport would be comparable to what currently exists; therefore, no special lighting studies have been performed as part of this planning.

2.8.4.14 Water Resources (Including Wetlands, Floodplains, Surface Waters, Groundwater, and Wild and Scenic Rivers)

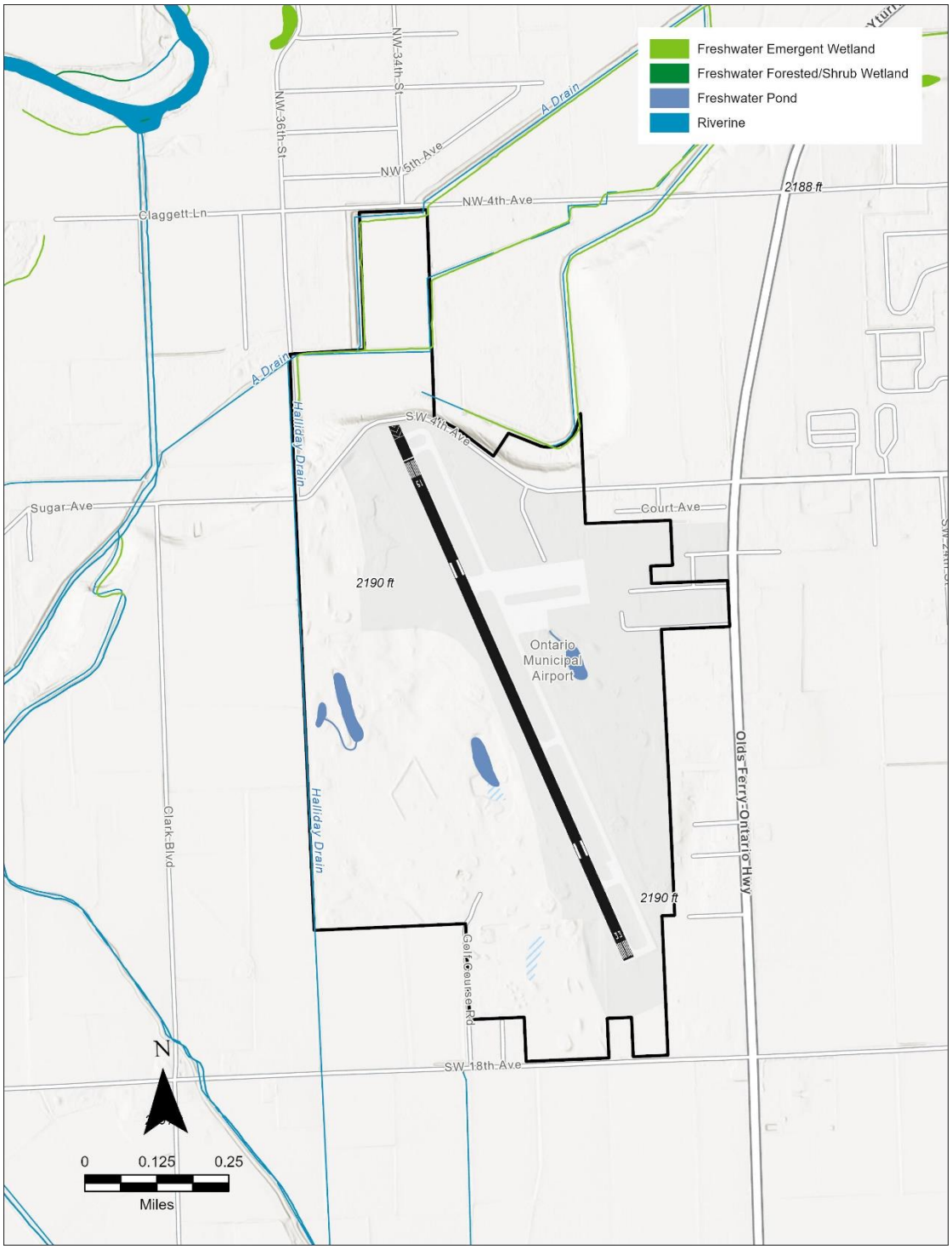
Wetlands

Wetlands are defined in the Clean Water Act (CWA) as “areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions.” Wetlands generally include swamps, marshes, bogs, and similar areas.

The Airport is dominated almost entirely by disturbed upland habitat interspersed with ornamental grasses and trees in the southwestern quarter associated with the old golf course. The mapped soils on the Airport property have a hydric rating of zero out of 100.

Due to the presence of irrigated agricultural fields in the vicinity of the Airport, a number of irrigation canals and ditches exist in the surrounding area and are illustrated on the USFWS National Wetland Inventory (NWI) map (see **Figure 2.13**). On the Airport property, three freshwater pond features are also illustrated near the center of the Airport; the two west of the runway are likely associated with the golf course previously present in the area, while the one east of the runway is likely associated with runoff. *A wetland delineation should be completed to verify the presence of these mapped features prior to any construction activities.*

FIGURE 2.13
ONTARIO MUNICIPAL AIRPORT NATIONAL WETLANDS INVENTORY MAP

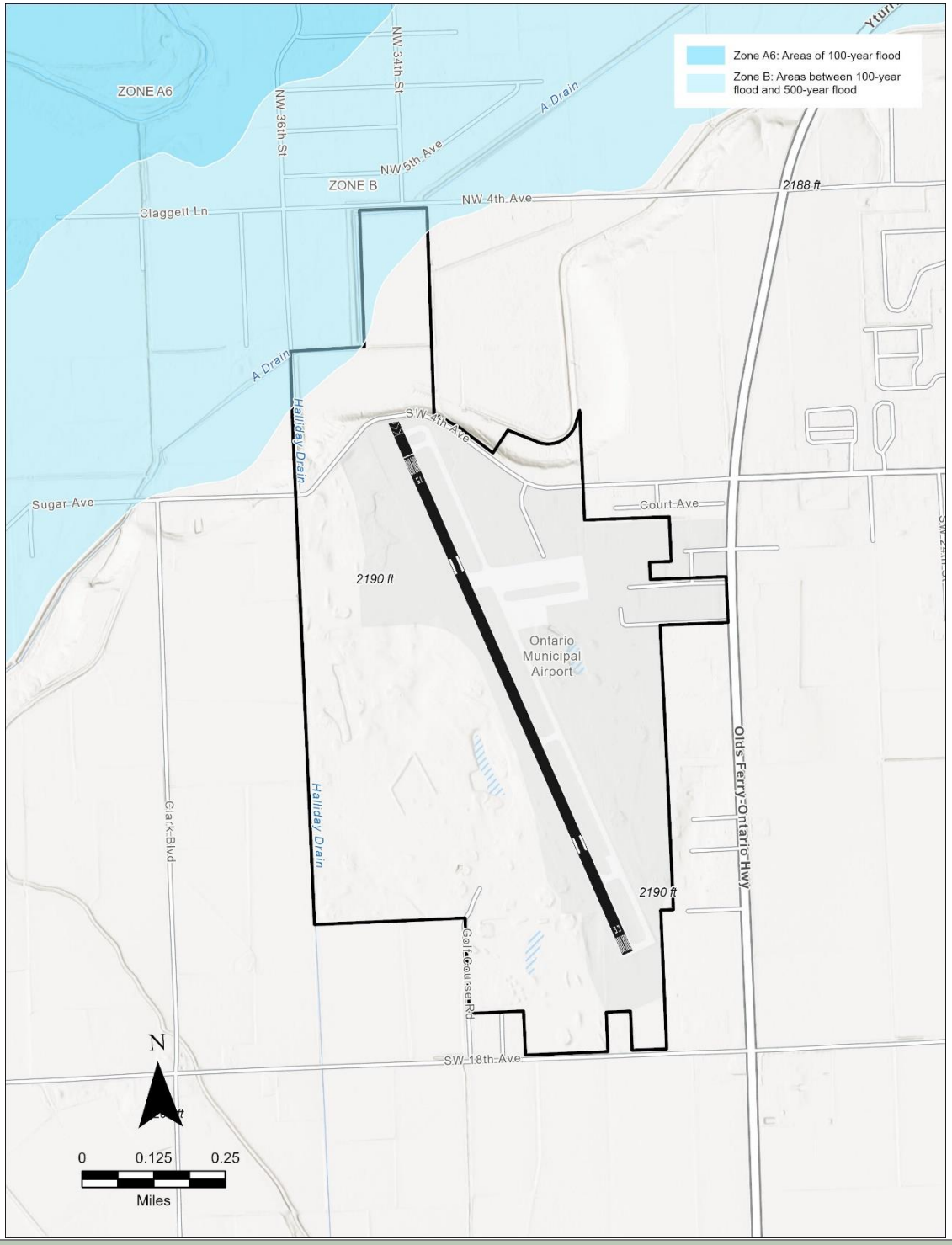


Source: US Fish and Wildlife

Floodplains

The FAA Order 1050.1F Environmental Desk Reference for Water Resources describes floodplains as “lowland areas adjoining inland and coastal waters which are periodically inundated by flood water, including flood-prone areas of offshore islands.” Generally, floodplains are discussed in terms of the 100-year flood, or a flood having a one percent chance of occurring in any given year. After review of the Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map (FIRM) Panel #410149050B, the majority of the Airport property is within Flood Zone C, “areas of minimal flooding.” However, a small portion of land in the northern portion of the Airport property falls within Flood Zone B, “areas between 100-year flood and 500-year flood” (see **Figure 2.14**). These areas have not been developed for Airport use. *If future airport development were needed in these areas, floodway impacts would need to be evaluated and will require coordination with the Malheur County Planning Department.*

FIGURE 2.14
FEMA FLOOD ZONES



Source: FEMA

Surface Waters

Rivers, streams, lakes, oceans, ponds, and estuaries are examples of surface waters. The USFWS NWI Map identified a series of canals and small water features in the vicinity of the Airport, including the A Drain, the Halliday Drain, and a number of associated irrigation canals. Additionally, the NWI map documents three small ponded areas in the middle of the Airport, likely associated with the previous golf course and aircraft parking apron drainage.

Development in or adjacent to any of the aforementioned canals would require coordination with the local irrigation district. A field delineation to document the presence of the mapped pond features would also be required prior to any construction activities (see **Figure 2.13**).

Groundwater

Groundwater is the subsurface water that occupies the space between sand, clay, and rock formations. Often, aquifers are discussed in relation to groundwater, which are defined as geologic layers that store or transmit groundwater to wells, springs, or other sources. The EPA's Sole Source Aquifer mapping tool was used to determine the presence or absence of sole source acquifers in the vicinity of the Ontario Municipal Airport; however no sole source aquifers were shown to exist in the surrounding area. Instead, the Airport's water supply is provided by the City of Ontario. No other wells or other water sources are on or adjacent to the existing Airport property. *Development that would impact the existing water conveyance lines would require coordination with the City of Ontario Water Department*

Wild and Scenic Rivers

The purpose of the Wild and Scenic Rivers Act is to preserve certain rivers that *"possess outstandingly remarkable scenic, recreational, geologic, fish and wildlife, historic, cultural, or other similar values"* in a free-flowing condition. While Oregon has a number of Wild and Scenic River segments, none are in the vicinity of the Airport. Therefore, *there are no designated Wild and Scenic Rivers that would be impacted by future airport development projects at Ontario Municipal Airport.*

2.8.5 ENVIRONMENTAL SUMMARY

Airport improvements typically require environmental processes and documentation prior to implementation. Communication with agencies prior to improvement projects would

allow Ontario Municipal Airport to support and maintain its local community and the environment while completing necessary actions to meet existing and future needs.

Overall, the current baseline environmental conditions at the Ontario Municipal Airport suggest that future development would not likely result in significant environmental impacts.

2.9 AIRFIELD DESIGN STANDARDS

The City of Ontario accepted federal grant-in-aid funding from the FAA as Airport Sponsor; therefore, Ontario Municipal Airport is maintained to FAA design standards. These standards are largely determined by the design critical aircraft. The most demanding aircraft, or group of aircraft, with similar physical and operational characteristics that use the airport regularly, that is, to FAA's guideline of 500 annual takeoffs or landings, is termed the design or critical aircraft.

The FAA specifies a coding scheme for airport design that relates airfield design criteria to the operational and physical characteristics of aircraft and approach visibility minimums. Standards compliance relates to individual runway ends and other movement areas at certificated and/or obligated airports.

2.9.1 DESIGN STANDARDS CRITERIA

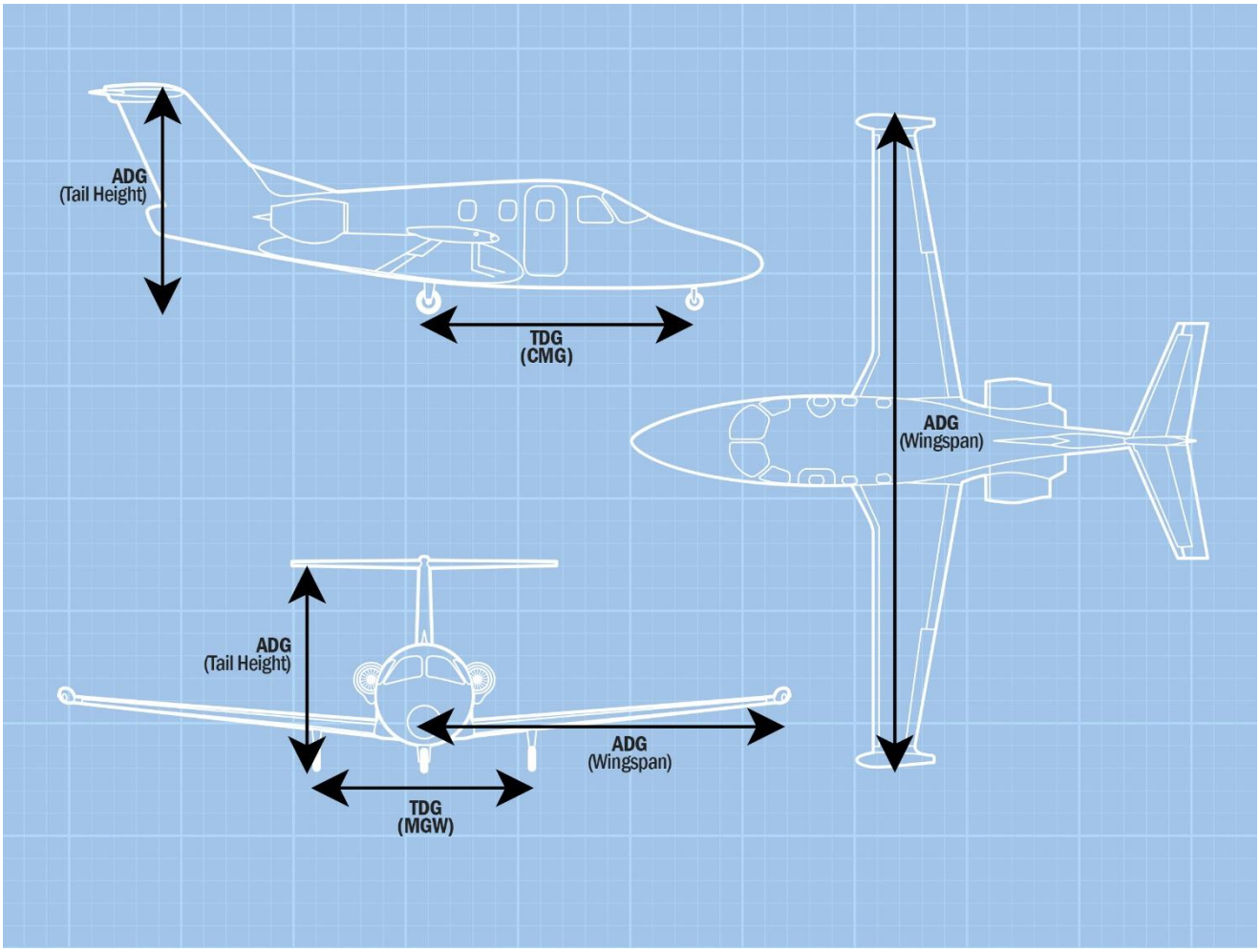
The first portion of the overall evaluation of design critical aircraft has three criteria related to a given runway and runway end referred to as the Runway Design Code (RDC).

The first, represented by a letter, is the Aircraft Approach Category (AAC). It relates to aircraft approach speed, which is an aircraft operational characteristic. The second designator, Airplane Design Group (ADG), is represented by a Roman numeral. This is related to aircraft wingspan and aircraft tail height, which are physical characteristics. Thirdly, a given runway end may accommodate an IAP with various FAA-approved visibilities. These visibilities are expressed in terms of Runway Visual Range (RVR). RVR is a real-time meteorological measurement noted in feet and related to ¼-mile visibility increments. The FAA has further classified A/B-II aircraft by maximum takeoff weight (MTOW), providing separate design criteria for those not exceeding 12,500 pounds. Aircraft in this category are classified as A/B-II Small, while those with a MTOW exceeding 12,500 pounds are simply A/B-II.

These criteria — the AAC speed, ADG wingspan and tail height, and IAP capability — combine to identify each runway's RDC and classify design standards primarily related to runway safety and protection. An RDC is associated with a particular runway end. One runway may have a different RDC for each end, and an airport with multiple runways may have multiple RDCs. At Ontario Municipal Airport, Runway 15 has a B-II-5000 RDC and Runway 33 a B-II-4000 RDC. The Airport Reference Code (ARC) signifies an airport's highest RDC, but its designation excludes the visibility component. The Airport's existing ALP lists the current ARC as B-II and the design aircraft as a Raytheon King Air B-200.

In addition to the RDC, the Taxiway Design Group (TDG) is another element of the FAA coding scheme. It is based upon the dimensions of aircraft undercarriage, specifically the distance between the outer edges of the main gear, termed Main Gear Width (MGW), and the distance between the cockpit and main gear, termed Cockpit to Main Gear (CMG). Note that if the nose wheel fronts the cockpit, the CMG distance increases. MGW and CMG ranges combine to make TDG's 1A through 7, with 7 accommodating the largest ranges and aircraft. The visualization on **Figure 2.15** shows the physical aircraft characteristics associated with ADG and TDG. In many instances ADG and TDG for individual airplanes will be within the same grouping; for example, ADG-I with TDG-1A, ADG-II with TDG-2, and ADG-III with TDG-3. Notable exceptions generally include aircraft with a relatively long fuselage.

FIGURE 2.15
RUNWAY AND TAXIWAY DESIGN CRITERIA VISUALIZED ON AN AIRCRAFT



Source: FAA/J-U-B

2.9.2 FAA DESIGN STANDARDS

FAA design standards dictate the dimensions of various areas, zones, surface gradients, and separations standards at an airport. Select standards are described below and listed in **Table 2.13** based on the Ontario Municipal Airport's current design aircraft for a B-II ARC, the Raytheon King Air B-200.

1. A Runway Protection Zone (RPZ) is a trapezoidal area off each runway end, established to enhance protection of people and property by clearing incompatible land uses. Ontario Municipal Airport RPZ's are currently partially owned in fee or easement.
2. The Runway Safety Area (RSA) and Taxiway Safety Area (TSA) are established to ensure that the ground surface adjacent to runways and taxiways is suitably prepared to reduce the risk of damage in the event of an aircraft deviation from paved surfaces. Safety area specifications are dimensional, grade-specific and material-specific.

3. The Runway Object Free Area (ROFA) and Taxiway Object Free Area (TOFA) are established to ensure the safety of aircraft operations by having an area free of objects, except those frangible-mounted objects, necessary for air navigation or ground maneuvering purposes.
4. The Obstacle Free Zone (OFZ) is a volume of airspace up to 150 feet above airport elevation, centered on runway centerline, primarily established to preclude taxiing and parked aircraft in the area where aircraft are landing and taking off. The runway hold line is sometimes located to coincide with limits of the OFZ. Inner-Approach OFZs protect approach lighting systems with a 50:1 sloped surface.
5. The purpose of the Approach and Departure Clearance Surfaces (AOCS/DOCS) is to provide obstacle clearance for visual approaches and instrument approach procedures. These are generally three-dimensional trapezoids with 20:1 or 34:1 surface extending upward and outward away from each end of runway.

Note that the design standard values shown in **Table 2.13** are the minimum specifications. Exceeding the specifications for an individual project is generally acceptable but may not be eligible for federal or state funds.

TABLE 2.13 *SELECT ONTARIO MUNICIPAL AIRPORT DESIGN STANDARDS*		
Design Characteristics		
Runway Design Code: Rwy 15 End **Runway Design Code: Rwy 33 End**	B-II-5000 B-II-4000	
Runway 15/33 Approach Type	Approach Procedure with Vertical Guidance (APV)	
Taxiway Design Group	TDG-2	
Standards Performance		
	Standard	**Existing**
Runway Width	75 Feet	100 Feet
Effective Runway Longitudinal Grade	Within ±2% max	0.09%
Runway Pavement Strength (SWG/DWG)	30,000/60,000 lbs.	30,000/60,000 lbs.
Runway Protection Zones: Rwy 15 End **Runway Protection Zones: Rwy 33 End**	500'x700'x1,000' 1,000'x1,510'x1,700'	500'x700'x1,000' 1,000'x1,510'x1,700'
Runway Safety Area Width/Beyond End	150'/300'	150'/300'
Runway Object Free Area Width/Beyond End	500'/300'	500'/300'
Taxiway Width/Safety Area Width	35'/79'	35'/79'
Taxiway/Taxilane Object Free Area Width	131'/115'	131'/115'
Runway to Parallel Taxiway	240'	245'
Runway to Aircraft Hold line on Taxiway	200'	200'
Runway to Aircraft Parking	250'	>250'
Obstacle Free Zone Width/Beyond End	400'/200'	400'/200'
Approach Surfaces Dimensions/Slope (20:1)	200'x400'x3,400'x10,000'	200'x400'x3,400'x10,000'
Part 77 Primary Surface Width/Beyond End	500'/3,500'	500'/3,500'
Part 77 Approach Surface Dimensions/Slope	500'x3,500'x10,000'; 34:1	500'x3,500'x10,000'; 34:1
Departure Surfaces Dimensions/Slope (40:1)	100'x450'x7,512'x12,152' x6,160'	100'x450'x7,512'x12,152' x6,160'
Source: J-U-B		

2.10 FAR PART 77

Title 14 of the Code of Federal Regulations, Part 77, Safe, Efficient Use, and Preservation of the Navigable Airspace specifies various imaginary surfaces considered to protect the airspace around the Ontario Municipal Airport from objects of natural growth or man-made features, termed obstructions. These surfaces are identified as primary, approach, transitional, horizontal, and conical in the Code of Federal Regulations Section 77.25 and described as follows:

1. The primary surface is longitudinally centered on the runway. The elevation of any point on the primary surface is the same as the elevation of the nearest point on the centerline. The width of the primary surface is based on the type of approach available or planned for each runway.
2. The approach surface is a surface longitudinally centered on the extended runway centerline and extending outward and upward from each end of the primary surface. An approach surface is applied to each end of each runway based on the type

of approach available or planned for that runway end.

3. The transitional surfaces extend outward and upward at right angles to the runway centerline and runway centerline extended at a slope of 7:1 (±8.13 degrees) from the sides of the primary surface and from the sides of the approach surfaces.
4. The horizontal surface is a level horizontal plane 150 feet above the established airport elevation, the perimeter of which is constructed by swinging arcs of 10,000 feet from the center of each end of the primary surface of each runway and connecting the adjacent arcs with lines of tangency.
5. The conical surface extends outward and upward from the periphery of the horizontal surface at a slope of 20:1 (±2.86 degrees) for a horizontal distance of 4,000 feet.

Upcoming chapters contain a depiction of these surfaces and **Table 2.13** lists dimensional information for Part 77 primary and approach surfaces. In addition to these surfaces, parts of CFR14. Section 77.23 of the Code of Federal Regulations provides for additional obstruction identification guidance. An object is considered an obstruction if it is over 200 feet from the ground within three nautical miles of the geometrical center of the airfield, or over 500 feet tall within the terminal instrument airspace. The FAA makes the determination and records it in *FAA Form 7460: Notice of Proposed Construction or Alteration.*

2.11 BASED AIRCRAFT AND AIRCRAFT OPERATIONS

The number of based aircraft and operations at an airport are an integral component of forecasting aviation demand. This section includes the historical aviation activity at Ontario Municipal Airport determined by data from various sources.

2.11.1 BASED AIRCRAFT

Aircraft must be "operational and airworthy" and based at an airport for more than six months of the year to be considered a based aircraft. The FAA maintains the following records of based aircraft at NPIAS airports:

FAA Form 5010: Airport Master Record **(5010)** is an assessment of airport facilities and activity completed by the FAA during periodic inspections. The current 5010 for Ontario Municipal Airport was completed on September 18, 2019 and reports 58 based aircraft.

The **Terminal Area Forecast (TAF)**, an official FAA forecast of aviation activity, maintains a database of based aircraft and aircraft operations. As of May 2021, the TAF indicates little growth in based aircraft at the Ontario Municipal Airport from 2011 to 2021. TAF data from the same ten-year period is listed in **Table 2.14**.

TABLE 2.14
TAF BASED AIRCRAFT COUNT

Year	Number
2011	69
2012	68
2013-2014	69
2015-2016	66
2017	38
2018	32
2019-2020	57
2021	59

Source: TAF

Basedaircraft.com is a self-reported database updated by airport staff and maintained by the FAA. Reliability of this database is much higher than the TAF's based aircraft data. As of November 2021, *basedaircraft.com* shows 89

validated based aircraft (see **Table 2.15**). Note that Ultralight aircraft are not part of the official counts.

TABLE 2.15
ACTUAL BASED AIRCRAFT

Aircraft	Reported	Validated
Single Engine Piston	100	84
Multi-Engine Piston	3	0
Jet	1	1
Helicopters	4	4
Ultralight	0	0
Numbers Not Found	6	0
Total Validated	**114**	**89**

Source: Based Aircraft.com Report dated 12/6/2021

The **89 validated based aircraft** reported on *basedaircraft.com* will be the baseline value used to prepare aviation activity forecasts in the following chapter.

2.11.2 AIRCRAFT OPERATIONS

An operation at an airport is considered the landing or takeoff of an aircraft. The exact number of operations can be difficult to determine at an uncontrolled airport because aircraft takeoffs and landings are not routinely recorded. Information from different sources, therefore, must be used to estimate the number of annual operations at the Ontario Municipal Airport.

The same records the FAA maintains for based aircraft include an estimated number of operations at the Airport. The current 5010 for Ontario Municipal Airport reports a total of 12,930 annual aircraft operations. Of those total reported operations, 8,080 (62 percent) are itinerant GA operations, 4,850 (38 percent) local GA operations, and no military or air taxi operations.

Similar to the based aircraft records, the TAF shows little growth in aircraft operations from 2011 to 2021. The data for this ten-year period is listed in **Table 2.16**.

TABLE 2.16
TAF AIRCRAFT OPERATIONS

Year	Number
2011-2019	12,930
2020	13,034
2021	13,138

Source: TAF

The airport master planning consultant took additional measures to capture the most accurate operation numbers at Ontario Municipal Airport using motion activated cameras. The cameras were strategically placed to capture images of aircraft taxiing for takeoff from October 2019 to September 2020. The photos were then analyzed to generate the type and number of aircraft taking off from the Airport. Including estimations of touch and goes from on-site observations and of possible uncaptured operations, an estimated 18,062 annual operations take place at the Airport annually.

The number of itinerant and local operations can be derived from the 18,062 operations using the percentages recorded on the 5010. **Table 2.17** lists the estimates for each type of operation.

TABLE 2.17
ITINERANT AND LOCAL OPERATIONS

Type	Historical %± of Total Operations	Total Operations
Local	38%	6,864
Itinerant	62%	11,198
Total	100%	18,062

Source: TAF

The estimated **18,062 annual operations** will be used as the aircraft operations baseline for the purpose of this planning effort.

2.12 DESIGN/CRITICAL AIRCRAFT

The design/critical aircraft is an aircraft, or group of aircraft with similar design or performance characteristics, that completes a minimum of 500 annual operations. Design standards for airport facilities are based on the characteristics of the design/critical aircraft. The FAA uses aircraft approach speeds, wingspan, tail height, and maximum takeoff weight (MTOW) to establish design groups. The Aircraft Approach Category (AAC) is designated with a letter from A to E, with Category E having the greatest approach speeds. The Airplane Design Group (ADG) is depicted by a Roman numeral and relates to the aircraft wingspan and tail height. The FAA has further classified A/B-II aircraft by MTOW, providing separate design criteria for those weighing less than 12,500 pounds. See Section 2.9.1 for further explanation. **Figure 2.16** identifies and visualizes representative aircraft grouped by AAC and ADG.

A/B-I Small aircraft have MTOWs below 12,500 pounds, tails under 20 feet in height, wingspans no greater than 49 feet, and approach speeds less than 121 knots. Example aircraft include:

- Cessna 152,182, 210, 340, 414, 425
- Beech Baron 55
- Beech Bonanza 33, 35, 36
- Raytheon Premier 1
- Raytheon/Beech Beechjet 400/T-1
- All Helicopters

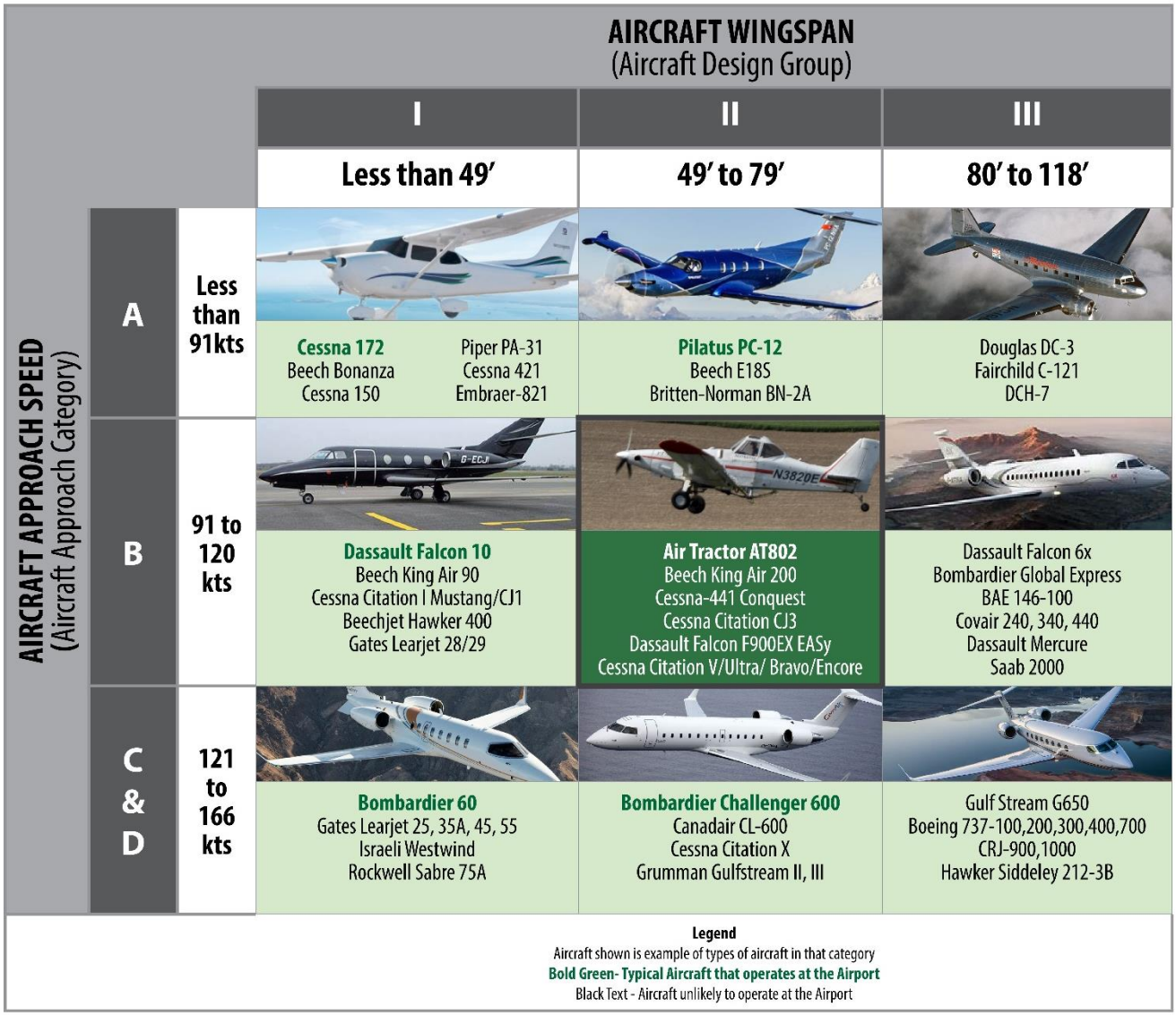
A/B-II Small aircraft have MTOWs below 12,500 pounds, tails between 20 and 30 feet in height, wingspans ranging from 49 to 79 feet, and approach speeds less than 121 knots. Example aircraft include:

- Pilatus PC-12
- BE9L Beech King Air 90
- Cessna Citation 525A

A/B-II aircraft are distinguished from A/B-II Small aircraft by MTOW. These aircraft have MTOWs exceeding12,500 pounds. Example aircraft include:

- Raytheon King Air B-200
- BE-20 Beech 200 Super King
- BE-40 Raytheon Beechjet 400
- E50P – Embraer Phenom 100
- Cessna Citation 550, 56X, 650, Sovereign
- SR20 – Cirrus SR-20
- Dassault Falcon 20,50,200

FIGURE 2.16
RUNWAY AND TAXIWAY DESIGN CRITERIA REPRESENTATIVE AIRCRAFT



Source: FAA/J-U-B

The based aircraft at the Ontario Municipal Airport are primarily in Design Group A/B-I and A/B-II and will make up the majority of operations. BLM firefighting efforts have accounted for a significant number of these operations and the BLM has begun facility improvements to continue to support its increasing flight activity at the Airport.

The FAA Traffic Flow Management System Counts (TFMSC) provide additional operational data; however, operations are only recorded when pilots file flight plans and/or when flights are detected by the National Airspace System (NAS), usually via RADAR. Additional data from Flight Aware and motion activated cameras provides a more complete picture of the types of aircraft using the Airport.

The TFMSC, Flight Aware report, and analysis of camera images recorded significant operations by Design Group A/B-I and A/B-II aircraft, including the Beechcraft King Air 200, the Air Tractor AT-602 and AT-802F Fire Boss, and other aircraft in the B aircraft approach category. The King Air 200 is also a Taxiway Design Group (TDG)-2 airplane.

These Group II operations along with the existing critical design aircraft, Beechcraft King Air 200, substantiate the existing Runway Design Code (RDC) of B-II and TDG-2.

Available records and the history of development at the Ontario Municipal Airport provide evidence in support of:

- An existing RDC of B-II
- An update to the Critical Aircraft Design Group to include the Air Tractor AT-802F Fire Boss along with a Beechcraft King Air 200
- Pavement design standards for taxiways and aprons of TDG-2

Historic and future operations data will be examined further in Chapter 3.

2.13 INVENTORY SUMMARY

The Ontario Municipal Airport plays an important role as a Category III Regional General Aviation Airport in the State of Oregon and as a national local airport. The existing conditions and findings reported in the Inventory chapter will be used to support subsequent studies and recommendations throughout the development of the airport master plan. These findings include:

- Population and socioeconomic growth trends that strengthen the role of the Airport, both regionally and nationally.
- Facilities and equipment that support the operations of a publicly owned general aviation airport.
- Available land and zoning ordinances that support future development and growth.
- Environmental conditions that are unlikely to be significantly impacted by future development.
- Records of based aircraft and aircraft operations that show evidence to support:
  - 89 validated based aircraft and an estimated 18,062 total annual operations
  - A B-II Runway Design Code with an Air Tractor AT-802F Fire Boss and Beechcraft King Air 200 as the critical design aircraft group
  - A TDG-2 for pavement design standards

CHAPTER 3 AVIATION ACTIVITY FORECASTS

3.1 INTRODUCTION

This chapter updates the aviation activity forecasts for the 20-year master plan period (2021-2041) at the Ontario Municipal Airport (ONO). The most recent activity forecasts for the Airport were developed and approved by the Federal Aviation Administration (FAA) in the 2007 Airport Master Plan.

The Ontario Municipal Airport is designated as a Category III Regional General Aviation airport in the *Oregon Aviation Plan v6.0* (OAP v6.0). As stated in the OAP v6.0, Category III airports "support most twin and single-engine aircraft and may accommodate occasional business jet operations. These airports support regional transportation needs with a large and often sparsely populated service area."

The Ontario Municipal Airport is further classified in the federal airport system National Plan of Integrated Airport Systems (NPIAS) as a Local Nonprimary General Aviation airport. According to the FAA, a local general aviation (GA) airport "supplements local communities by providing access to markets within a State or immediate region. They are most often located near larger population centers, but not necessarily in metropolitan or micropolitan areas. Most of the flying at local airports is done by piston aircraft in support of business and personal needs. These airports typically accommodate flight training, emergency services, and charter passenger service."

3.2 PURPOSE AND GOAL

The Forecasts of Aviation Demand are the basis for determining airport facility requirements. These requirements are then used to plan airport development, such as runways and taxiways, apron areas, and hangar locations, following specific airfield design standards.

Forecasts estimate the nature and magnitude of aeronautical activity and the associated need for airport development over the 20-year planning period. Aviation activity forecasts provide data to estimate future local and itinerant aircraft traffic. Aircraft activity also forms the justification and need for demand-driven improvements. The forecasts are often incorporated by reference into other studies and policy decisions. Forecast formulation is a subjective process concerning the extent to which one projection, or combination of several projections, or prevailing or anticipated conditions, represents a reasonable estimate of future aviation activity.

3.2.1 FORECASTING PROCESS

Guidance for preparing aviation activity projections is contained in FAA Advisory Circular 150-5070-6B, Airport Master Plans. The steps include:

1. Identify aviation activity measures
2. Review previous airport forecasts
3. Gather data
4. Identify and apply aviation and non-aviation forecasts metrics
5. Select forecast results
6. Compare forecast results to FAA Terminal Area Forecasts (TAF)
7. Acquire written approval from the FAA

There are generally no comprehensive historical accounts of aviation activity for airports operating without airport traffic control towers. A review of national, regional, and local factors that might influence activity constitutes baseline values in determining the forecast estimates.

The Forecasts of Aviation Demand are provided in increments of 5, 10, and 20 years over the 20-year planning period. These periods are also classified into phases. Phase I (short term) is the first five years, Phase II (intermediate term) is the second five years, and Phase III (long term) is the last 10 years. The year 2021 is the base forecast year and 2041 is the final forecast year. Efforts are made to report data and projections as percent change for easy reference.

Aeronautical forecasts are prepared to determine airport facility requirements for the Ontario Municipal Airport, which include the following:

- Based Aircraft
- Based Aircraft by Type
- General Aviation Operations
- General Aviation Operations by Type
- Aircraft Operations Mix
- Peak Period Aircraft Operations
- Instrument Aircraft Operations
- Summary and Design/Critical Aircraft

3.2.2 FAA APPROVAL PROCESS

The FAA TAF is an annual report of historical aviation data and forecasts for airports included in the NPIAS. The TAF is compiled to assist the FAA in meeting its planning, budgeting, and staffing requirements, and to provide information for use by state and local authorities, the aviation industry, and the public. The FAA's Seattle Airports District Office (ADO) reviews and approves the forecasts prepared as part of this Master Plan. Specifically, FAA considers a forecast consistent with the TAF if it differs by less than 10 percent in the 5-year forecast period, and 15 percent in the 10-year forecast period. If the forecasts are inconsistent with the TAF, differences are resolved before the forecast is approved by the FAA.

3.3 ECONOMIC CONDITIONS

Historically, general aviation activity correlates with the state of the economy. In times of weak economic conditions, such as the 2008 Great Recession, the financial ramifications trickle through local communities and into the general aviation sector. Then, as the economy improves, so do conditions within general aviation. For instance, the decade of sustained growth leading into 2020 resulted in an overall increased demand for air travel.

Beginning in 2020, airport activity throughout the national airport system was disrupted by the coronavirus pandemic at unprecedented levels. However, the underlying elements of demand used to update aviation activity forecasts at the Ontario Municipal Airport are anticipated to remain relevant and intact.

3.3.1 SOCIOECONOMIC INDICATORS

A review of projected socioeconomic activity can provide insights into the future use of the Ontario Municipal Airport. Demographics can be influenced by economic incentives, policy, and institutional reform as well as changes in technology, cultural norms, and behavior. They are, therefore, an important indicator of the pace and progress of economic development in a region.

The primary service area of the Ontario Municipal Airport, for the purpose of forecasting aviation activity, is the Ontario, OR-ID Micropolitan Statistical Area (MSA). Demographic trends from the Ontario, OR-ID MSA, which includes the City of Ontario and a majority of Malheur County, were used to provide a clear indication of activity.

Economic projections included in this forecast were sourced from Woods and Poole Economics, Inc. (WPE), a nationally recognized

firm specializing in long-term economic and demographic projections. WPE makes MSA-based projections using personal income, population, inflation, industry-specific earnings and employment, and other variables.

Select WPE socioeconomic indicators are inventoried for future years of consequence for this planning, as described further below. The referenced data is also listed in **Table 3.1** and depicted in **Figure 3.1**.

3.3.1.1 Population

The population of the State of Oregon has grown from 2,842,321 in 1990 to 4,237,256 in 2020 at a compound annual growth rate (CAGR) of 1.3 percent. In the most recent Oregon Office of Economic Analysis demographic forecast report, the state population is projected to increase by 3.9 percent from 4,256,700 in 2021 to 4,426,000 in 2026.

WPE's historical population data indicated the Ontario, OR-ID MSA has undergone steady growth and the population is projected to increase by 1.1 percent from 54,749 in 2021 to 55,330 in 2026 and by 4.4 percent over the next 20 years to 57,169 in 2041.

3.3.1.2 Employment

The Ontario, OR-ID MSA's employment projections show an expected increase of 2.9 percent from 28,427 people employed in 2021 to 29,244 in 2026, and of 10.8 percent over the 20-year planning period to 31,504 in 2041.

3.3.1.3 Earnings

The Ontario, OR-ID MSA's population earnings projections show an expected increase of 7.8 percent from $1.2 billion in 2021 to $1.3 billion in 2026 and of 33.7 percent over the 20-year planning period to $1.6 billion in 2041.

3.3.1.4 Personal Income

The Ontario, OR-ID MSA's personal income projections show an expected increase of 11.5 percent from $1.9 billion in 2021 to $2.13 billion in 2026 and of 52.9 percent over the 20-year planning period to $2.9 billion in 2041.

3.3.1.5 Per Capita Personal Income

The Ontario, OR-ID MSA's per capita personal income projections show an expected increase of 10.4 percent from $34,909 in 2021 to $38,529 in 2026 and of 46.4 percent over the 20-year planning period to $51,110 in 2041.

3.3.1.6 Households

The Ontario, OR-ID MSA's total number of households is projected to increase by 1.9 percent from 19,784 in 2021 to 20,159 in 2026 and by 4 percent over the 20-year planning period to 20,581 in 2041.

3.3.1.7 Retail Sales

The Ontario, OR-ID MSA's retail sales projections show an expected increase of 6.6 percent from $8.3 million in 2021 to $8.9 million in 2026 and of 23.8 percent over the 20-year planning period to $1.03 billion in 2041.

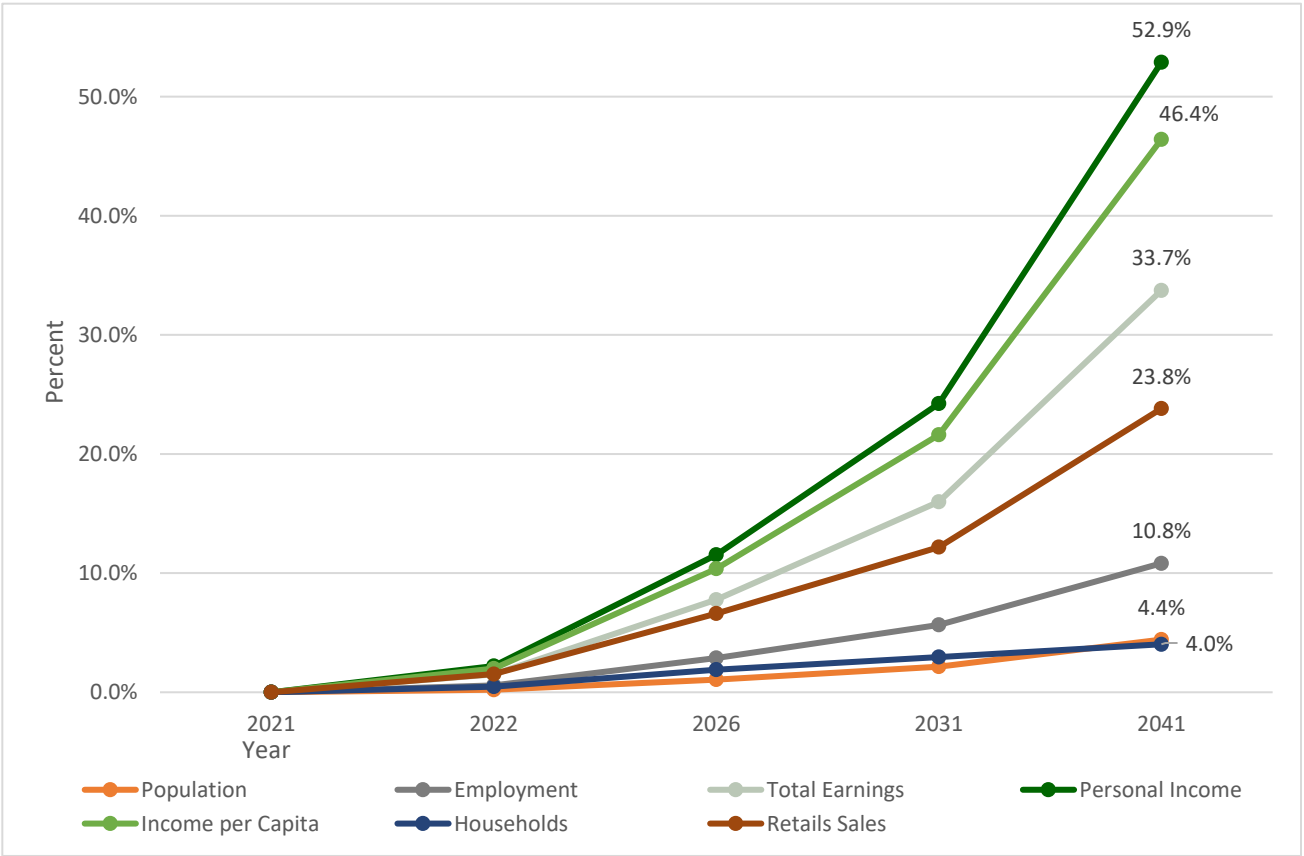
Sectors with the largest forecasted growth are personal income and per capita personal income and retail sales. Fundamentally, these are leading indicators for taxation, credit, and consumer confidence, which in turn drive the Marginal Propensity to Consume (MPC). MPC is defined by Investopedia as "the proportion of an aggregate raise in pay that a consumer spends on the consumption of goods and services, as opposed to saving it." Looking at the economic data the area is expected to see significant growth over the next 20 years.

TABLE 3.1
ONTARIO, OR-ID MSA PROJECTED SOCIOECONOMICS DATA

Characteristic	2021	2026	*5-Year % Change**	5-Year CAGR	2041	*20-Year % Change**	*20-Year CAGR*
Population	54,749	55,330	1.1%	0.2%	57,169	4.4%	0.2%
Employment	28,427	29,244	2.9%	0.6%	31,504	10.8%	0.5%
Earnings**	$1.2 Billion	$1.3 Billion	7.8%	1.5%	$1.6 Billion	33.7%	1.5%
Personal Income**	$1.9 Billion	$2.13 Billion	11.5%	2.2%	$2.9 Billion	52.9%	2.1%
Per Capita Personal Income	$34,909	$38,529	10.4%	2%	$51,110	46.4%	1.9%
Households	19,784	20,159	1.9%	0.4%	20,581	4%	0.2%
Retail Sales**	$8.3 Million	$8.9 Million	6.6%	1.3%	$1.03 Billion	23.8%	1.1%

Source: WPE / J-U-B
**5 and 20-year percent change and CAGR from 2021 baseline*
*** 2012 dollars*

FIGURE 3.1
ONTARIO, OR-ID MSA SOCIOECONOMICS PROJECTED PERCENT CHANGE



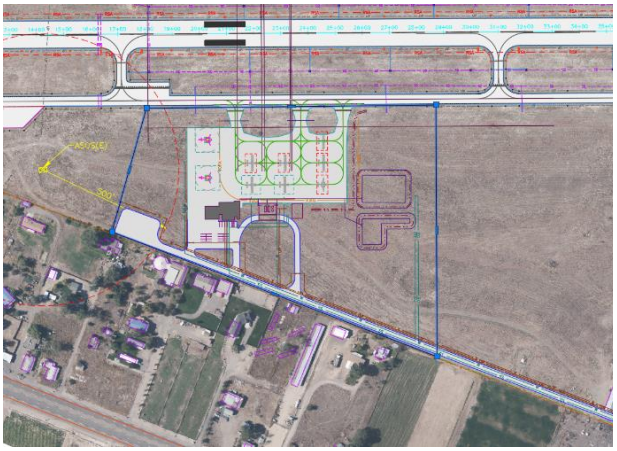
Source: WPE / J-U-B

3.4 NON-AERONAUTICAL AND AERONAUTICAL REVENUES

3.4.1 HANGAR DEVELOPMENT

Ontario Municipal Airport has three types of hangars—box, corporate, and T-hangar—that provide storage for aircraft of varying size. There are 9 T-hangar buildings (35 units), 43 box hangars, and 4 corporate hangars. Sewer and water utility connections are not yet available for all hangars; however, future extensions are planned near the east side of the property that will improve hangar access to these utilities. Fuel sales, local based aircraft growth, local operations, and tenant requests for additional space are expected to translate directly to demand for additional hangars, apron space, and aircraft tie-downs, and the City should plan to address this growth. At the time of this report, there was an expressed interest in 13 additional hangar permits.

The Bureau of Land Management (BLM) is also developing additional space for their Single-Engine Air Tanker (SEAT) Base. This fire support unit has an 18-acre requirement, including a new building, taxilanes and apron space, and an aircraft wash/ run-off area.



Proposed BLM SEAT Base site

The Oregon Aviation Plan (OAP v6.0) based aircraft forecast projects an average annual growth rate (AAGR) of 0.71 percent at the Ontario Municipal Airport. The number of based aircraft at an airport will determine how many hangars are needed to store them.

3.4.2 FBO DEVELOPMENT

According to a census of U.S. airports and FBOs conducted by Aviation Resource Group International, both the total number of public-use airports with hard surfaced runways greater than 3,000 feet and FBO service offerings increased by 1 percent between 2000 and 2015. Of the 3,462 airports in 2015 that met the runway criteria, 85 percent had at least one FBO. According to the same census, there were 32 airports in Oregon with runways longer than 5,000 feet that were served by 26 FBOs.

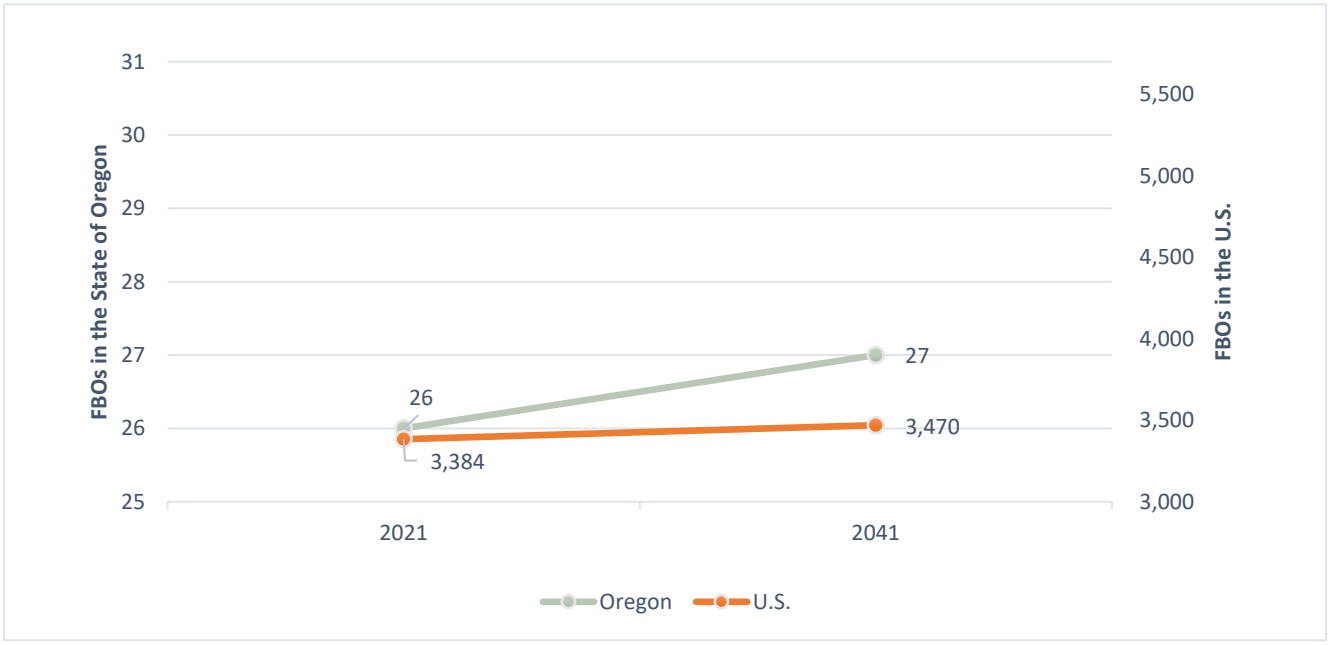
In 2021, Silverhawk Aviation Academy (Silverhawk) replaced Frazier Aviation as the Ontario Municipal Airport's FBO. Silverhawk is a fixed-wing and helicopter flight training operator headquartered at the Caldwell Industrial Airport in Caldwell, Idaho. Typically, an FBO or Air Training Organization (ATO) will provide GA services like flight training, refueling, light maintenance, flight/weather planning facilities, pilot's lounge, and restroom facilities. As the sole provider of GA support services, the previous FBO's presence enabled an 11.2 percent growth in operations between 2013 and 2021. It is expected that Silverhawk will create its own opportunities for flight training, in addition to GA services.

The forecast for FBO growth assumes that the City would continue to be open to additional FBOs operating at the Ontario Municipal Airport; however, for the purpose of this planning effort, the number of FBOs is expected to remain at 1 during the forecast period.

According to the *State of the FBO Industry* published by the National Air Transportation Association, the national and state facilities are projected to grow at an annual rate of 0.125 percent over the forecasted period (2021-2041). At that rate, the 26 FBOs in Oregon will increase to 27 and the 3,384 in the U.S. to 3,470. **Figure 3.2** illustrates these general growth trends.

A typical distribution of FBOs per airport is 1 for non-hub/GA airports according to the *Characteristics of the FBO Industry 2018-2019* published by the Airport Cooperative Research Program (ACRP).

FIGURE 3.2
FORECASTED FBO GROWTH IN THE STATE OF OREGON AND THE U.S.



Source: J-U-B

Table 3.2 divides the FBO market profile into three tiers with correlating annual revenue and specific services. An FBO located at the Ontario Municipal Airport would likely be classified as a Tier 3 FBO and could expect to generate most of its income through fuel sales, and the majority from based aircraft. Fuel sales will typically be under 1 million gallons annually. Facility and hangar services, aircraft charters, and itinerant jet use have the potential to become a more significant revenue source along with fuel sales.

TABLE 3.2
TYPES OF FBO CLASSIFIED BY ANNUAL REVENUE AND SERVICES

Type	Annual Revenue	Services
Tier 1	More than $25 mil	▪ Full Line-services (Fuel) ▪ Facility & Hangar ▪ Turbine Aircraft Technical Services/Maintenance & Parts ▪ Turbine Aircraft Charter & Management ▪ Fully Developed OEM Certified Aircraft Service Centers
Tier 2	$10-25 mil	▪ Full Line-service (Fuel) ▪ Facility & Hangar ▪ Turbine Aircraft Maintenance & Parts ▪ Turbine Aircraft Charter & Management ▪ Specialized Missions/Geophysical/Medevac
Tier 3	Less than $10 mil	▪ Full Line-services (Fuel) - 40% of Revenue ▪ Facility & Hangar ▪ Piston/Turboprop/Maintenance & Parts ▪ Piston/Turboprop/Maintenance & Parts ▪ Piston/Turboprop/Aircraft Charter ▪ Flight School (Aircraft Rental and Flight Training)

Source: Aviation Resource Group International (ARGI): FBO Operating Survey / North America (Dec 2013)

Airport-operated FBOs have begun to increase as private investment value propositions at airports have declined, especially due to their dependence upon piston powered operations. While the FBO community is changing, FBOs continue to show increasing profitability and growth at airports with runways shorter than 5,000 feet.

Out of the top 100 GA airports with the most airport activity, a majority (45) have two FBOs selling jet fuel. Airports not ranked in the top 100 for operations are more likely to have one FBO selling jet fuel.

Ontario Municipal Airport is lower than the 300th ranked airport and is unlikely to experience enough GA traffic to support more than one FBO business entity. **Table 3.3** lists the groups of ranked airports and identifies how many airports in each group have 1 to 6 FBOs that sell fuel.

Local governments have started to see the investment potential at GA airports. An airport can function as a gateway for economic investment in a community and as a link to nearby businesses. As leases come up for renewal, more and more airports are expecting, or requiring, FBOs to invest in high-end facilities.

A collaborative ownership effort between a sponsor and airport stakeholders could qualify for a U.S. Economic Development Administration (EDA) grant, which would mitigate business risks and provide a unique opportunity to encourage an FBO's success.

TABLE 3.3
NUMBER OF AIRPORTS WITH FBOS SELLING JET FUEL

Airport Rankings by Number of GA Operations	Number of Airports Based on Number of FBOs					
	1 FBO	2 FBOs	3 FBOs	4 FBOs	5 FBOs	6 FBOs
Top 100	27	45	12	8	4	4
101-200	52	37	8	2	1	0
201-300	70	22	8	0	0	0

Source: FBO Partners, LLC / J-U-B

3.4.3 ADVANCED AIR MOBILITY NETWORK

As populations in cities grow, the increased urbanization and traffic congestion continues to push ground transport systems to their limits. Urban mobility offers the potential to create a faster, cleaner, safer, and more integrated transportation system. As Advanced Air Mobility (AAM) networks grow, they will unlock new mobility options and economic opportunities for urban and regional communities.

An analysis of recent global trends suggests:

- The value of the wider aerial mobility market, including passenger and cargo transportation, will hit $9 trillion and 11-12 percent of global GDP by 2050 (Morgan Stanley).
- The top three market segments to attract customers in focus group studies were: (1) airport transfers, (2) end-to-end city transfers, and (3) daily commuters.

To enable on-demand Electronic Vertical Takeoff and Landing (eVTOL) operations within a city, it will be essential to tailor the infrastructure and operations needs based on patterns of local demand (e.g. an airport, mall, sports arena, city center) and focus primarily on a carpool-enabled eVTOL network consisting of multimodal trips. The extent of infrastructure that will need to be developed within a community could be considerable. Infrastructure to support eVTOL operations includes:

- Hangars
- Maintenance shops
- Certification centers
- Charging facilities
- Long-term car parking
- Skyports/vertiports
- AAM corridors
- Air/ground cargo businesses
- Supporting food and entertainment businesses

3.4.4 LOCAL VERTIPORT LOCATION AT THE ONTARIO MUNICIPAL AIRPORT

Short-term opportunities presented by a local vertiport exist where an airport's facilities can already sustain vertical operations. The City should monitor any future emergence within the local vicinity.

The similarity of operations could integrate vertiport operations easily at the airport. The initial certification process for commercial passengers requires automation oversight by an on-board pilot and allowing use of the Common

Traffic Advisory Frequency (CTAF) which is in use at the Ontario Municipal Airport.

A vertiport is an area specifically designated for eVTOL operations. A vertiport located at an airport might be characterized with a terminal area for passengers, a raised or ground level landing and takeoff surface, and available power for charging of electric aerial vehicles.

An eVTOL flight between a vertiport at the Ontario Municipal Airport and Boise Air Terminal or the Capital Terrace Parkade/Garage in downtown Boise, Idaho would take approximately 29 minutes. Both locations in Boise are viable spots for vertiports and potential destinations along an existing transportation route between the cities of Ontario and Boise.

The forecast effort for this emerging technology considered socioeconomic and aviation related factors, as well as on-demand air mobility surveys. The eVTOL Passenger Acceptance Final Report states:

"One of the studies found that 25 percent of more than 2,500 consumers surveyed report that they are comfortable with unmanned aerial technology, whereas approximately 25 percent report they will not use UAS or eVTOLs when services become widely available, citing concerns about safety, privacy, job security, environmental threats, noise, and visual disruption. Although the study concluded that "nearly half of all consumers surveyed are potentially comfortable with package delivery and UAM use cases." It is equally true that 75 percent of potential passengers are likely to have some concerns about the new technologies, beyond the customary attributes of safety, monetary cost, and value of time."

3.4.5 ONTARIO CITY'S COMMERCIAL BUSINESS INDUSTRY

The City has identified potential areas to be re-zoned for business activity, including some that will be used for off-airport businesses. Incentives for commercial business growth in this area include the availability of flat, undeveloped, subdivided, and zoned land within the Airport Industrial Business Park. Highlights of this location include existing and planned utilities like sewer, water, power, and Internet. The Airport's proximity to Interstate 84 can provide seamless access to quick transportation arteries— another critical component to business activity. Services for business planning and growth, such as financial lending assistance, social media/website development services, business training, and government contracting opportunities, are available through the City of Ontario's Community Development Center to entice and promote new and existing business activity.

Dan Cummings, the Community Development Director at the City of Ontario, shared some of the City's vision and identified several emerging opportunities. Highlights of some of these efforts include:

- Hemp farming in the old clubhouse (2 acres). Oregon has over 600 registered growers with the Department of Agriculture Hemp Program and a dozen registered hemp growers in Malheur County with business potential for additional growers, handlers, and testing laboratories.
- Scheduled extensions of Golfcourse Rd. connecting at 36th Street and 4th Ave.

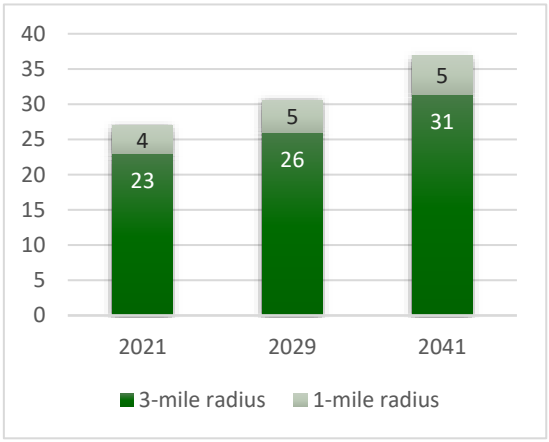
- A western parallel taxiway to increase aircraft taxiing flow and runway capacity. This will be pivotal to accommodate increased air cargo, GA activity, flight training and charter operations.
- The annexation of additional industrial and commercial development land near the Airport.
- Preliminary Design Phase for interconnection of Airport and City sewer and water lines.
- Expansion opportunities leveraged by Kraft Heinz food company for the creation of new employment opportunities.
- A commercial area for additional economic growth, east of the Airport.

3.4.6 ONTARIO CITY'S RESTAURANT INDUSTRY

Currently, there are 10,456 food and beverage businesses serving the residents of Oregon. There are 23 restaurants within a 3-mile radius of the Ontario Municipal Airport, four of which are in a 1-mile radius.

Growth factors within the fast food and meals segment of the market are forecasted to grow at 1.56 percent over the 20-year planning period. This average growth per year considered a weighted average of three national industry indices — the Restaurant Growth Index (RGI), Restaurant Performance Index (RPI) and the Consumer Price Index (CPI). Currently, with four restaurants within a 1-mile radius of the airport, market growth could allow for an additional restaurant over the 20-year period (See **Figure 3.3).** An airport user would not need to drive beyond three miles of the Ontario Municipal Airport to get increased food and beverage service. The airport's non-aeronautical revenue potential could experience increased seasonal growth from tourism, festivals, and creative activities engineered to attract additional visitors to the area.

FIGURE 3.3
DEMAND GROWTH FOR RESTAURANTS NEAR THE AIRPORT



Source: J-U-B

3.5 AVIATION-RELATED INDICATORS

Although area socioeconomic data often closely correlates to aviation activity, more direct measures of aviation industry activity are also important.

3.5.1 AVIATION MARKET OVERVIEW

According to AvBuyer's February 2021 *Business Aviation Market Overview,* the November 2020 *Dealer Activity Report* published by International Aircraft Dealers Association (IADA) indicated strong global commitments to 2020 pre-owned business jets (see **Table 3.4**).

TABLE 3.4
AVBUYERS GLOBAL PRE-OWNED JET GROWTH

Year	2019	2020	% Change
North America	1,609	1,774	+10.3%
Western Europe	146	143	-2.1%
Asia	23	19	-17.4%
Oceania	12	17	+41.7%
Eastern Europe	13	40	+207.7%
Middle East/ Africa	43	31	-27.9%
South America	92	116	+26.1%
TBD	47	49	-
Worldwide	1,985	2,189	+10.3%

Source: AVBUYERS

Pre-owned jet sales saw an overall growth from 2019 to 2020. Small business jets were the highest in demand at 13.6 percent. Of the total global GA jet aircraft sales in December 2020, 66 percent originated in the U.S. During the same month, business jet flights in the U.S were down 10 percent year-on-year, an improvement from the 16 percent year-on-year decline the previous month. Additional highlights of the IADA activity report include:

- Charter activity continued to be robust, with sectors down by 7 percent year-on-year, while branded charter flight hours were up by 2 percent year-on-year.
- Aircraft operations were also robust, increasing 6 percent and inflated by third-party charters.
- Private operations lagged at 17 percent below normal, largely due to still-idle corporate flight departments.

Final interpretation of the IADA Report shows that Eastern Europe, Oceania, North and South America were the strongest markets with growth indications. However, the North American business jet market remained strong, making up 81 percent of the total jet market.

3.5.2 OREGON'S AVIATION SYSTEM PLAN

The Oregon Department of Aviation (ODA) uses three methodologies in the Oregon Aviation System Plan v6.0 (OAP v6.0) to derive the statewide based aircraft and operations forecasts. Forecasts were also produced for airports involved in the analysis, which includes Ontario Municipal Airport.

The forecasting methodologies used per capita real GDP, the FAA TAF, and population growth to determine the based aircraft forecasts. The following average annual growth rates (AAGR) from 2015 to 2035 were projected for based aircraft at Ontario Municipal Airport:

- A Top-down forecast using per capita real GDP – 1.6 percent
- A Bottom-up forecast using TAF projections – 1.1 percent
- A Bottom-up forecast using total based aircraft – 1 percent

The forecasting methodologies used to produce the aircraft operations forecasts considered population growth, GA hours flown, and per

capita real GDP. The ODA forecasted AAGRs from 2015 to 2035 for aviation operations at the Airport are as follows:

- A Bottom-up forecast of 0.71 percent using regional population growth
- A Top-down forecast of 0.9 percent using GA hours flown
- A Top-down forecast of 1.6 percent, using Per Capita Real GDP

Statewide GA based aircraft fleet mix forecasts from 2015 to 2035 presented an AAGR for the Ontario Municipal Airport using **Per Capita GDP growth** as follows:

- 1.6 percent for Single-Engine
- 1.6 percent for Multi-Engine
- 1.8 percent for Helicopters (calculated)
- 1.6 percent for Jet

Statewide GA based aircraft fleet mix forecasts from 2015 to 2035 presented an AAGR for the Ontario Municipal Airport using **population growth** as follows:

- 0.97 percent for Single-Engine
- 0.97 percent for Multi-Engine
- 0.97 percent for Helicopters
- 0.97 percent for Jet

Statewide GA based aircraft fleet mix forecasts from 2015 to 2035 presented an AAGR using the **FAA Aerospace Forecast (2020-2040) growth** as follows:

- 0.2 percent for Single-Engine
- 0.2 percent for Multi-Engine
- 0.21 percent for Helicopters
- 0.25 percent for Jet

From the results yielded by the forecasting methodologies, the OAP v6.0 selected the following preferred AAGRs for the Ontario Municipal Airport:

- **Operations** – A Bottom-up forecast of 0.71 percent using regional population growth
- **Based Aircraft** – A Bottom-up forecast using TAF growth - 1.1 percent
- **Based Aircraft Fleet Mix** – Based upon the FAA Aerospace Forecast (2020-2040):
  - 0.2 percent for Single-Engine
  - 0.2 percent for Multi-Engine
  - 0.21 percent for Helicopters
  - 0.25 percent for Jet

These preferred AAGRs for operations, based aircraft, and based aircraft fleet mix will be used for the purpose of this planning effort to produce the Ontario Municipal Airport's forecast of aviation demand.

3.5.3 FAA FORECASTING

The FAA Aerospace Forecasts Fiscal Years 2021-2041 is a recent edition of this annually updated forecasting document. This document notes: "Global economic growth accelerated in 2021 after slowing in 2019-2020." The long-term outlook for general aviation is relatively stable, as growth at the high-end offsets continuing retirements at the traditional low end of the segment.

The slowing of global economic growth during 2019 and 2020 is evidenced by the 2.8 percent decline in manufactured aircraft deliveries in the U.S. reported by the FAA in a review of 2019-2020. While the current deliveries remain flat, the report forecasts a growth of 0.05 percent annually during the 2021-2041 forecast period.

Steady growth in both GDP and corporate profits resulted in continued growth of the turbine and rotorcraft fleets. The growth in U.S. GDP and corporate profits are catalysts for the growth in the turbine fleet. The turboprop fleet is expected to grow by 0.6 percent between 2021 and 2041, while the turbojet fleet is expected to grow by 2.3

percent during the same period. **Table 3.5** lists the 10 and 20-year AAGRs for active GA aircraft produced by the FAA Aerospace Forecast 2021-2041.

TABLE 3.5
ACTIVE GA AIRCRAFT TYPE FORECAST

Aircraft type	10-Year	20-Year
Single-Engine Piston	-1.0%	-0.9%
Multi-Engine Piston	-0.5%	-0.4%
Turboprop	0.2%	0.6%
Turbojet	2.5%	2.3%
Rotorcraft	1.3%	1.4%
Light Sport Aircraft	5.3%	4.0%
Experimental	1.7%	1.4%
Average	**1%**	**1.6%**

Source: FAA Aerospace Forecast 2021-2041, Table 28

Though the single-engine piston aircraft is shown to shrink in **Table 3.5** by 0.9 percent during the 20-year forecast period, it remained the largest segment of the fleet. It should also be noted, most of the national fleet consists of light sport aircraft, but this type is unrepresented in the validated based aircraft numbers at the Airport.

Rotorcraft hours flown are expected to grow by 2 percent overall, as indicated in **Table 3.6**. This is favorable to cities like Ontario that have several based helicopters (4 aircraft) and considerable activity for medical evacuation (Life Flight). The 10 and 20-year AAGRs for active GA aircraft hours flown, reported by the FAA Aerospace Forecast 2021-2024, are listed in **Table 3.6**.

TABLE 3.6
ACTIVE GA HOURS FORECAST

Aircraft type	10-Year	20-Year
Single-Engine Piston	-1.0%	-0.7%
Multi-Engine Piston	-0.8%	-0.3%
Turboprop	1.0%	1.0%
Turbojet	5.0%	3.5%
Rotorcraft	2.3%	2.0%
Light Sport Aircraft	6.2%	4.5%
Experimental	3.8%	2.7%
Average	**2.6%**	**2.1%**

Source: FAA Aerospace Forecast 2021-2041, Table 29

The increase in rotorcraft hours flown is also very promising for Jet-A fuel sale forecasts at the Ontario Municipal Airport. Growth in fuel consumption by piston rotorcraft is forecasted at 1.9 percent and by turbine rotorcraft at 1.4 percent. The turbojets, with a forecasted 3.5 percent increase in hours flown, also have a high forecasted fuel consumption of 2.8 percent. **Table 3.7** lists the 10 and 20-year AAGRs for GA aircraft fuel consumption produced by the FAA Aerospace Forecast 2021-2041.

TABLE 3.7
GA AIRCRAFT FUEL CONSUMPTION FORECAST

Aircraft type	10-Year	20-Year
Single-Engine Piston	1.1%	-0.8%
Multi-Engine Piston	-1.0%	-0.5%
Turboprop	0.7%	0.6%
Turbojet	4.2%	2.8%
Piston Rotorcraft	2.2%	1.9%
Turbine Rotorcraft	1.7%	1.4%
Light Sport Aircraft	5.8%	4.2%
Experimental	3.9%	2.6%
Average	**3%**	**1.9%**

Source: FAA Aerospace Forecast 2021-2041, Table 31

The FAA Aerospace Forecast 2021-2041 produced 10 and 20-year AAGRs for GA instrument operations with air traffic control, which are listed in **Table 3.8**:

TABLE 3.8
FAA AIRCRAFT INSTRUMENT OPERATIONS FORECAST

Operation Type	10-Year	20-Year
GA Itinerant	1.5%	0.9%
GA Local	0.9%	0.6%
Average	**1%**	**0.8%**

Source: FAA Aerospace Forecast 2021-2041, Table 32

The FAA Aerospace Forecasts growth rates are especially important and will be used as a consideration in the consultant's preferred growth rates.

3.5.4 FUEL SALES

Frazier Aviation arrived at Ontario Municipal Airport in 2013 and was able to provide competitive fuel pricing until 2021. The FBO ownership was recently transferred to Silverhawk, which will now be the provider of GA services at the airport. No baseline for previous fuel sales or quantities were available during this study; however, the 2021-2041 FAA Aerospace Forecasts indicates an outlook of 3.1 percent average annual growth over the ten-year forecast period and 2.2 percent average annual growth over the 20-year forecast period.

3.6 BASED AIRCRAFT FORECASTING

The FAA-validated number of current based aircraft at the Ontario Municipal Airport, for purposes of this planning, includes 84 Single-Engine Piston (SEP), 0 Multi-Engine Piston (MEP), 1 Jet, and 4 Helicopters for a total of **89 based aircraft**. Ultralight aircraft are not part of the count for master plan purposes. Historic socioeconomic data and fuel sales projections form the FAA Aerospace Forecasts are used to develop the Based Aircraft Forecasting.

3.6.1 BASED AIRCRAFT PROJECTIONS

The projections reviewed and analyzed earlier in this chapter are used in this section to develop based aircraft forecasts at the Ontario Municipal Airport. The socioeconomic projections from Section 3.3. and the ODA and FAA projections from Section 3.5 have been compiled into **Table 3.9**.

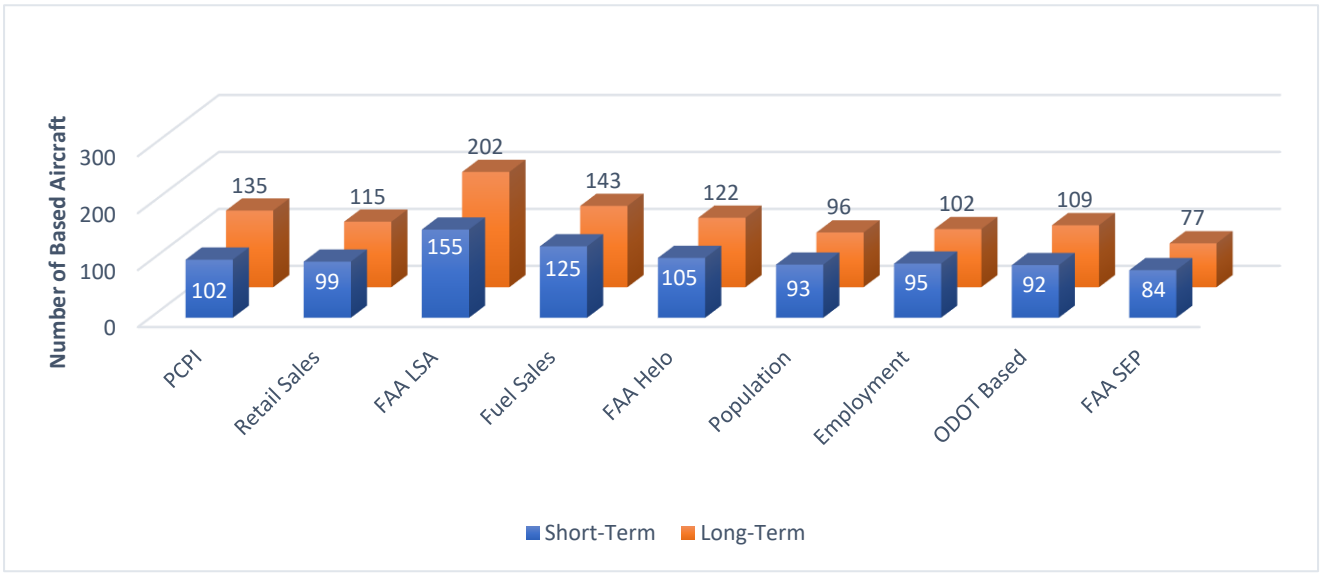
TABLE 3.9
BASED AIRCRAFT PROJECTIONS

Projection	Short-Term Overall Increase	Long-Term Overall Increase
Per Capita Personal Income	2%	1.9%
Retail Sales	1.3%	1.1%
Active Light Sport Aircraft	5.3%	4.0%
Fuel Sales / Consumption	3.1%	2.2%
Employment	0.6%	0.5%
Active Helicopters	1.3%	1.4%
Population	0.2%	0.2%
ODA Based Aircraft	N/A	1.1%
Active Single-Engine Piston Aircraft	-1.0%	-0.9%

Source: WPE / FAA / ODA / J-U-B

Figure 3.4 shows the number of based aircraft obtained from the projections in **Table 3.9**.

FIGURE 3.4
BASED AIRCRAFT SHORT AND LONG-TERM PROJECTIONS



Source: J-U-B

These projections suggest:

- Local economic indicators, while somewhat mitigated by weaker national expectations, show strong growth complementary to business activity at or near the Airport.
- As personal income increases, more local aviators will be able to acquire aircraft to store at the Airport.
- An increase in light sport aircraft ownership will also put an increased demand on airport storage capacity.
- Helicopter activity is expected to increase.
- Aircraft based at Ontario Municipal Airport will increase faster than the national average.

3.6.2 PREFERRED BASED AIRCRAFT FORECAST

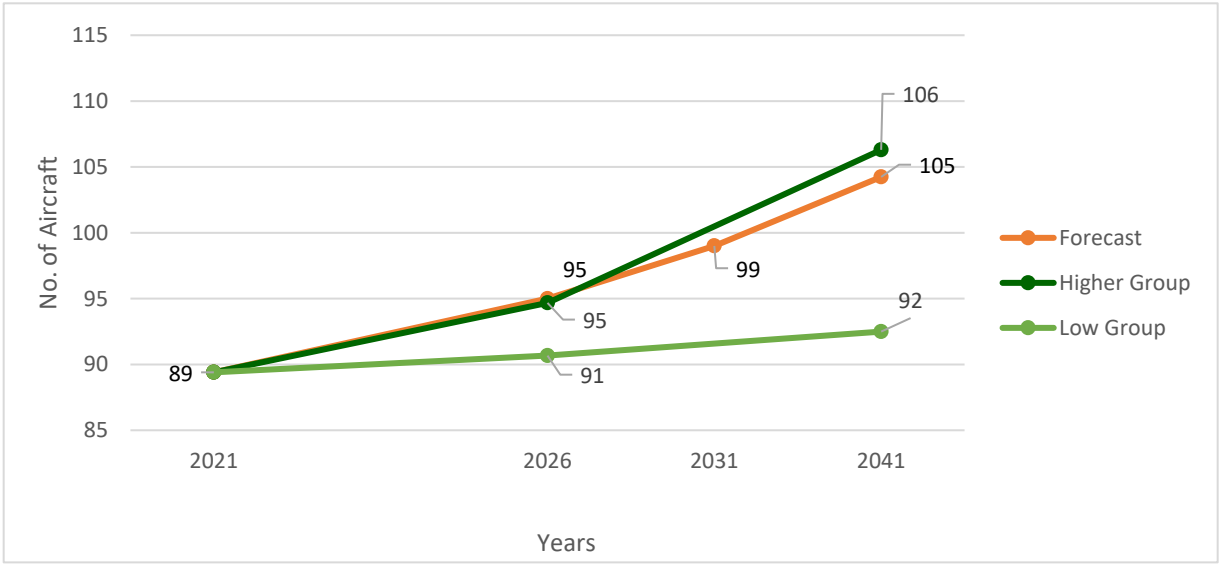
A forecast of based aircraft can be taken from one of the above or a combination of projections. There is no need for extravagant statistical efforts given the nature and scope of the Ontario Municipal Airport aviation activity.

The factors mentioned previously suggest some optimism, and better quantified within the larger group projections. However, a bit of trepidation is also in order in that economic uncertainties persist at the national level and will likely remain a concern for the aviation industry. The impacts of the coronavirus pandemic are likely to have some effect on operations and based aircraft over the next few years. What those effects will be are somewhat unknown at this point. Other possible issues could include potential terrorism and seemingly unforeseeable financial and monetary events. These factors are considered within the lower group projections.

The Preferred Forecast of Based Aircraft is shown by the orange line in **Figure 3.5**. Because of recent events this forecast predicts a 0.77 percent CAGR for the forecast period.

This begins with the 2021 baseline count of 89 aircraft, until the final forecast year of 2041 with 105 aircraft. New based aircraft would likely come to the Ontario Municipal Airport when new hangar capacity is increased. If new hangars are built, by the City or a tenant, then demand could fill this space at the market price. The result is that the based aircraft count could possibly increase by 10 percent overall when a new set of hangars becomes occupied.

FIGURE 3.5
PREFERRED FORECAST OF BASED AIRCRAFT



Source: J-U-B

3.6.3 PREFERRED BASED AIRCRAFT FORECAST BY TYPE

Aircraft grouped by type typically have similar characteristics, therefore, knowing the aircraft fleet mix expected to utilize Ontario Municipal Airport is necessary to properly plan for facilities that will best serve the level and type of activities occurring at the Airport. Development of the based aircraft fleet mix forecast relied on both state (OAP v6.0) and national (2021-2041 FAA Aerospace Forecasts) planning efforts. **Table 3.10** lists the forecasted CAGR for helicopters and single-engine piston, multi-engine piston, and turboprop/turbojet aircraft.

TABLE 3.10
PREFERRED GROWTH IN TYPES AND SOURCE

Type	CAGR	Source
Single-Engine Piston	0.7%	FAA Aerospace Forecast 2021-2041 and, Projected 2015-2035 Per Capita GDP AAGR
Multi-Engine Piston	1.6%	AAGR from Per Capita GDP – ODA Oregon Aviation Plan v6.0
Turboprop/ Turbojet	2.5%	CAGR – FAA Aerospace Forecast 2021-2041
Helicopter	1.4%	CAGR – FAA Aerospace Forecast 2021-2041

Source: FAA / ODA / J-U-B

FAA and ODA guidance expect that a more sophisticated, fuel efficient aircraft with greater passenger capacity will outnumber inefficient fuel aircraft in the future. Based upon this data, use of the Airport by larger, more expensive fixed-wing aircraft and greater utility helicopters are expected to increase over the next 20 years. These factors are considered in the formulation of the based aircraft forecast by type outlined in **Table 3.11**.

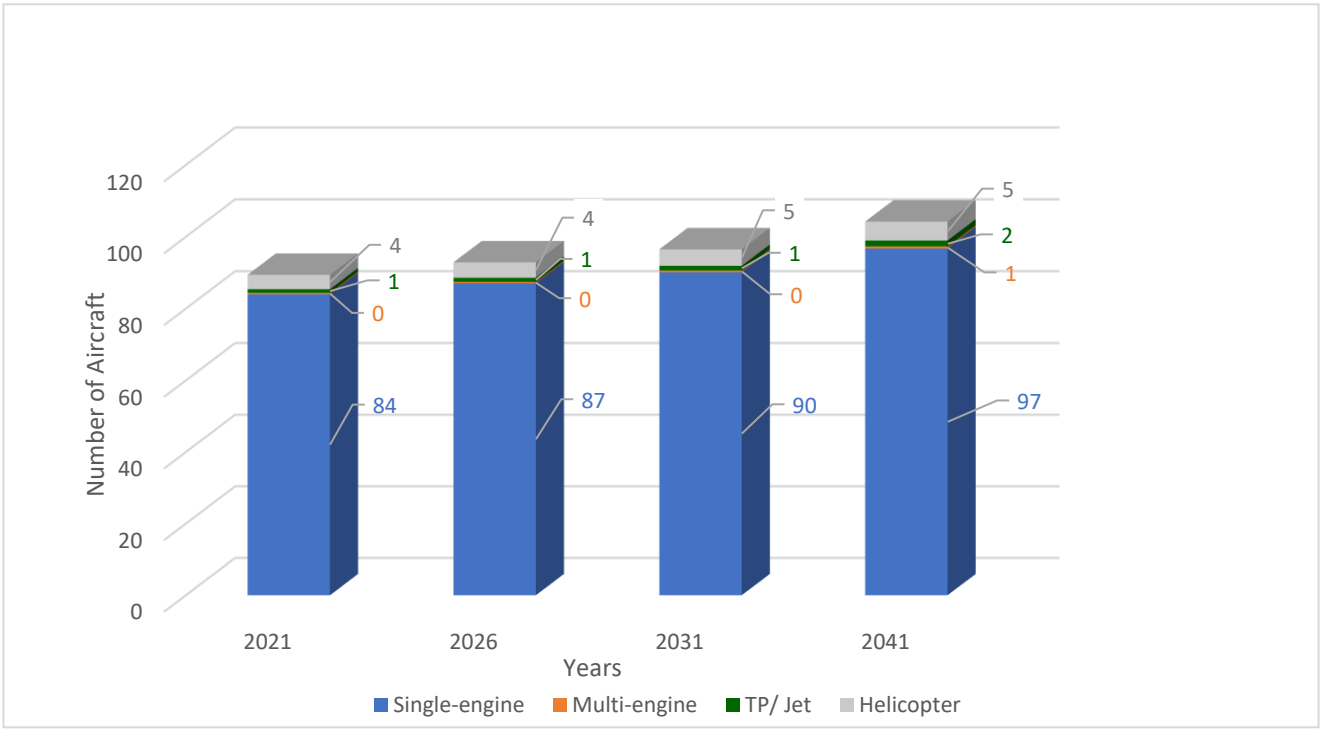
Figure 3.6 depicts the future number of based aircraft at the Ontario Municipal Airport based on the previously established average growth factors.

TABLE 3.11
PREFERRED FORECAST OF BASED AIRCRAFT BY TYPE

Aircraft Type	2021	2026	2031	2041
Single-Engine Piston	84	87	90	97
Multi-Engine Piston/Turboprop	0	0	0	1
Jet	1	1	1	2
Helicopter	4	4	5	5
Total Based Aircraft	**89**	**92**	**96**	**105**

Source: J-U-B

FIGURE 3.6
PREFERRED FORECAST OF BASED AIRCRAFT BY TYPE



Source: J-U-B

3.7 AIRCRAFT OPERATIONS FORECASTING

The Ontario Municipal Airport is an uncontrolled facility and exact counts of aircraft operational activity are not available. Estimates using various resources, however, indicate the number of aircraft operations has been stable. The Airport is consistently used by Life Flight, the BLM, the Experimental Aviation Association (EAA), Treasure Valley Community College (TVCC) Flight School, Silverhawk flight school, and the general flying public.

As previously discussed, GA as an industry has seen aircraft production and sales show slow growth in most categories of aircraft manufacturing, including executive aircraft. Larger business and charter GA aircraft are expected to fly only a few more hours on a national basis. However, it is anticipated that itinerant GA operations will continue to increase.

The OAP v6.0 indicates a preferred AAGR of 0.71 percent for GA operations at the Ontario Municipal Airport per regional population growth.

3.7.1 AIRCRAFT OPERATIONS PROJECTIONS

Indicators with statistical correlations to aviation activity are used to project the number of based aircraft. Many of the same indicators used to predict the number of based aircraft are also relevant to project aircraft operations, as statistical correlations continue to exist. The socioeconomic projections from Section 3.3. and the ODA and FAA projections from Section 3.5 have been compiled into **Table 3.12**.

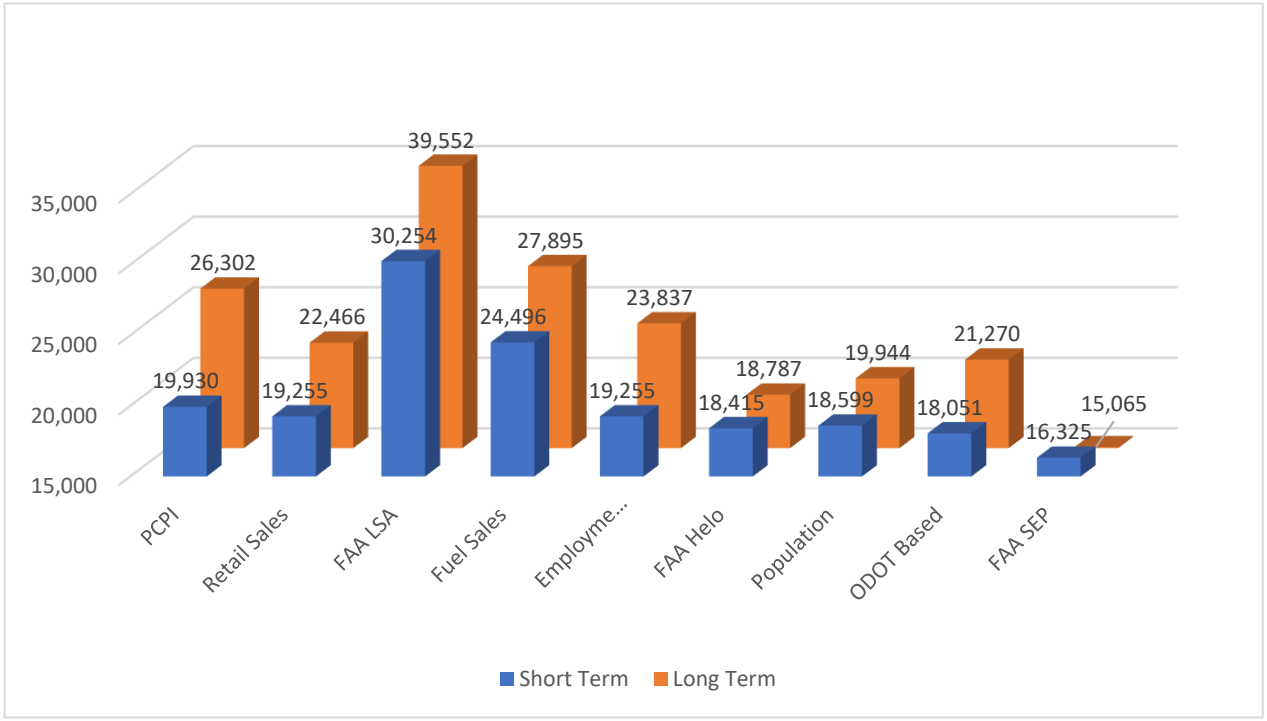
TABLE 3.12
AIRCRAFT OPERATIONS PROJECTIONS

Projection	Short-Term Annual Increase	Long-Term Annual Increase
Per Capita Personal Income	2%	1.9%
Retail Sales	1.3%	1.1%
Active Light Sport Aircraft	5.3%	4.0%
Fuel Sales/ Consumption	3.1%	2.2%
Employment	0.6%	0.5%
Active Helicopters	1.3%	1.4%
Population	0.2%	0.2%
ODA Operations	N/A	0.71%
Active Single-Engine Piston Aircraft	-1.0%	-0.9%

Source: WPE / FAA / ODA / J-U-B

Figure 3.7 shows how the resulting number of aircraft operations would be derived as a statistical consequence of the projections based on each individual variable. This is provided for context and comparison in selecting the overall operations forecast.

FIGURE 3.7
AIRCRAFT OPERATIONS SHORT AND LONG-TERM PROJECTIONS



Source: J-U-B

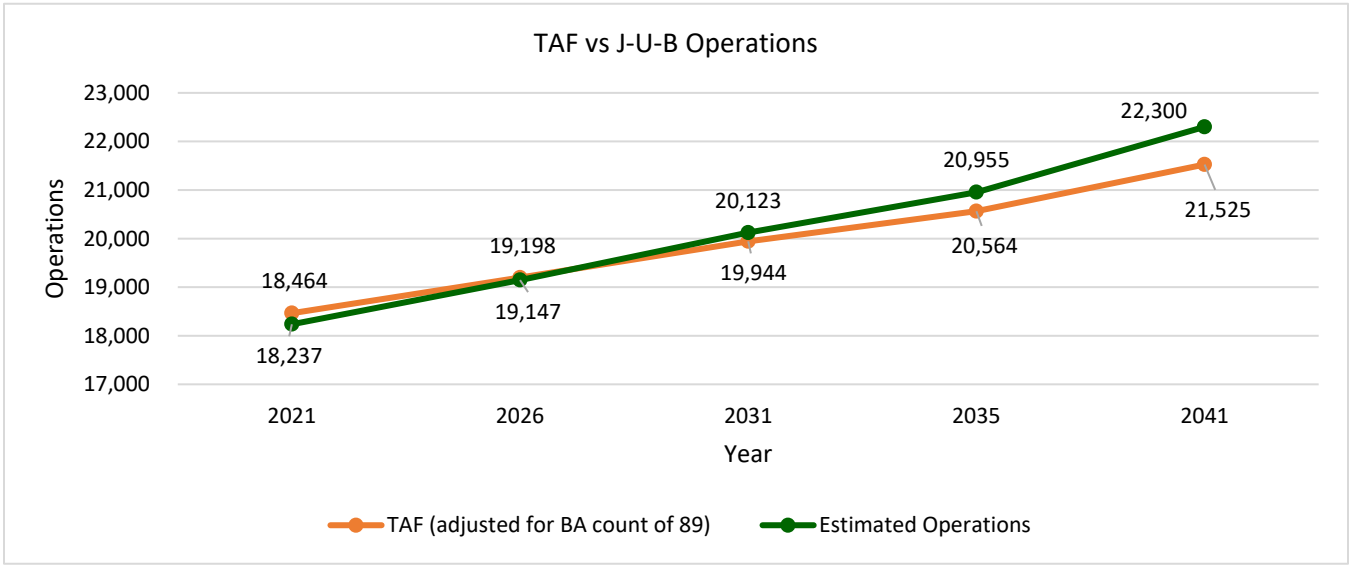
3.7.2 AIRCRAFT OPERATIONS BASELINE

The estimated number of 2020 aircraft operations at the Ontario Municipal Airport, for the purposes of this planning study, is 18,062 operations. The estimation is produced primarily from documented photos of aircraft taxiing for takeoff and on-site observations to estimate touch and goes, as well as possible uncaptured operations from October 2019 thru September of 2020. This period coincides with the height of the covid pandemic and a busy season for firefighting. Other methods to estimate total operations might consider operation records from FAA sources such as the TAF, TFMSC, or calculating by number of based aircraft. For the purposes of this planning, these methods may also be sufficient, however, the photographic evidence provides the most reliable records to fulfil this forecast effort.

3.7.3 AIRCRAFT OPERATIONS FORECAST

The preferred 20-year operations forecast is shown in **Figure 3.8** along with the forecasted operations from the FAA's Terminal Area Forecast (TAF), for comparison. Using a combination of average annual growth rates for various aircraft types shown in **Table 3.13**, the selected average annual growth rate is 1.01 percent. As a comparison the TAF average annual percent change for the same period is 0.77 percent. The 59 aircraft reported by the TAF does not reflect the total 89 verified aircraft currently based at the Airport. If its operation estimates are adjusted by the same percentage of difference as that with based aircraft, the operations values are comparable with the preferred forecast values. The overall growth for 20 years is calculated to be 22.2 percent.

FIGURE 3.8
VALIDATION OF THE CONSULTANT'S OPBA VS FAA'S TAF



Source: FAA / J-U-B

3.7.4 PREFERRED FORECAST OF AIRCRAFT OPERATIONS BY TYPE

Operational fleet mix projections identify the type of aircraft that currently operate and are anticipated to operate at Ontario Municipal Airport. The aircraft by type forecast relied on both state (OAP v6.0) and national (2021-2041 FAA Aerospace Forecasts) planning efforts. **Table 3.13** lists the forecasted CAGR for helicopters and single-engine piston, multi-engine piston, and turboprop/turbojet aircraft.

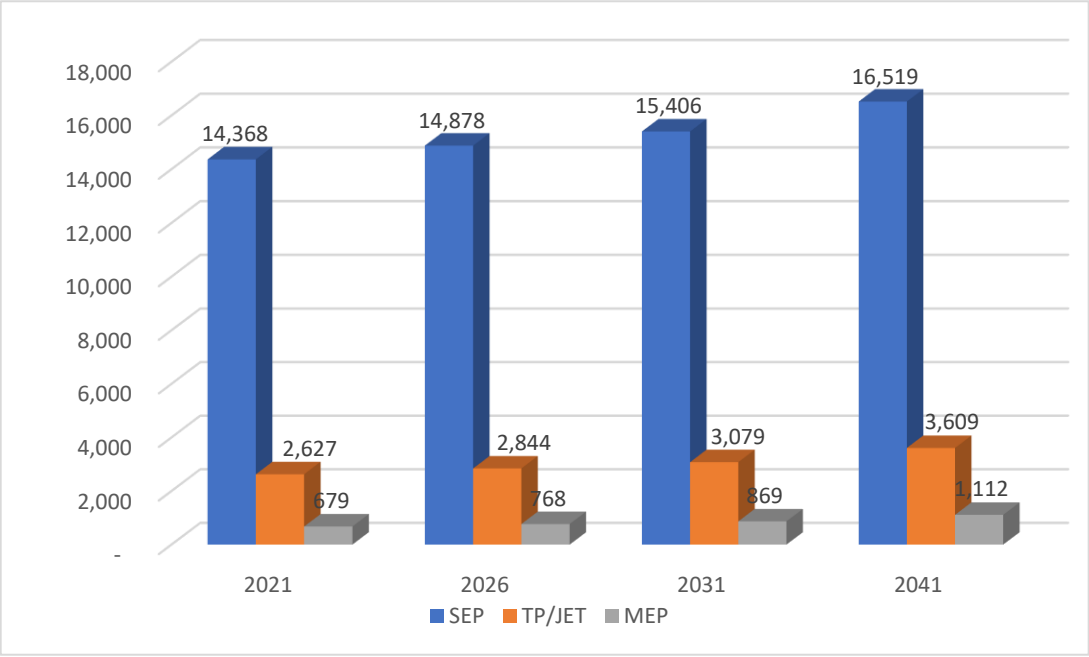
TABLE 3.13
PREFERRED GROWTH IN TYPES AND SOURCE

Type	CAGR	Source
Single-Engine Piston	0.7%	FAA Aerospace Forecast 2021-2041 and, Projected 2015-2035 Per Capita GDP AAGR
Multi-Engine Piston	1.6%	AAGR from Per Capita GDP – ODA Oregon Aviation Plan v6.0
Turboprop/ Turbojet	2.5%	CAGR – FAA Aerospace Forecast 2021-2041
Helicopter	1.4%	CAGR – FAA Aerospace Forecast 2021-2041

Source: FAA / ODA / J-U-B

The OAP v6.0 preferred based aircraft fleet mix forecast can be used as an indicator for estimating aircraft operation trends. The report indicates a decrease in single-engine aircraft but an increase in multi-engine, jet, helicopters, and ultralights. A breakdown of operations by aircraft type is shown in **Figure 3.9**.

FIGURE 3.9
PREFERRED FORECAST OF AIRCRAFT OPERATIONS BY TYPE



Source: J-U-B

3.7.5 PREFERRED AIRCRAFT MIX FORECAST

An itinerant operation is defined as any aircraft operation other than a local operation. A local operation includes operations within the traffic pattern in sight of the field, low approach and or simulated instrument approaches and transitions to a practice area. The most recent FAA 5010 (2019) Airport Master Record identifies an approximate 62/38 percent itinerant to local operations activity split at the Airport. Based on this split, the forecast mix of operations between local and itinerant is presented in **Table 3.14**.

TABLE 3.14
PREFERRED AIRCRAFT MIX FORECAST OF OPERATIONS

Year	Itinerant Operations	% Itinerant Operations	Local Operations	% Local Operations	Total Operations
2021	11,307	62%	6,930	38%	18,237
2026	11,871	62%	7,276	38%	19,147
2031	12,476	62%	7,647	38%	20,123
2041	13,826	62%	8,474	38%	22,300

Source: FAA 5010/ J-U-B

3.7.6 PEAK PERIOD OPERATIONS FORECAST

Existing and future airport facilities should be designed and constructed not for an average day's aircraft activity and not for the busiest day, but for activity somewhere in between.

FAA guidance for estimating peaking activity is reflected in **Table 3.15**. Peak day is defined as the average number of operations per day during the most active month. In the FAA's Northwest Mountain Region and at the Ontario Municipal Airport, the most active month normally accounts for approximately 10 percent of total annual operations. For the Ontario Municipal Airport that would be 1,806 divided by 30 to calculate a peak day estimate of 60 operations. Approximately 15 percent of the peak day operations occur during the peak hour. Baseline peak day operations are forecasted to grow from 60 to 74 operations in 2040.

TABLE 3.15
PEAK PERIOD OPERATIONS FORECAST

	Total Operations	Peak Month Operations	Peak Day Operations	Peak Hour Operations
2021	18,237	1,824	61	9
2026	19,147	1,915	64	10
2031	20,123	2,012	67	10
2041	22,300	2,230	74	11

Source: J-U-B

3.7.7 INSTRUMENT OPERATIONS FORECAST

The Ontario Municipal Airport's Instrument Flight Rules (IFR) operations are consistent with typical observations within the region. An estimated 830 IFR operations were completed in 2021, representing 4.6 percent of total annual operations. Using the 2021-2041 Aerospace Forecast projections, **Table 3.16** projects instrument operations over a 20-year period, which grow from 839 in 2021 to 1,026 in 2041.

TABLE 3.16
INSTRUMENT OPERATIONS FORECAST BY YEAR

Year	Instrument Operations
2021	839
2026	881
2031	926
2041	1026

Source: FAA Aerospace Forecast 2021-2041

3.7.8 DESIGN/CRITICAL AIRCRAFT

The design/critical aircraft is an aircraft or more typically a group of aircraft with similar design or performance characteristics which completes at least 500 annual operations at an airport. With respect to design/critical aircraft, note that:

The A/B-I forecast encompasses all aircraft types weighing less than 12,500 pounds, having approach speeds less than 121 knots, and wingspans measuring less than 49 feet. Example aircraft include:

- Cessna 152,172, 210, 340, 414, 425
- Beech Baron 55
- Beech Bonanza 33, 35, 36
- Raytheon Premier 1
- Raytheon/Beech Beechjet 400/T-1
- All Helicopters

The A/B-II Small forecast includes all aircraft types weighing less than 12,500 pounds, having approach speeds less than 121 knots, and wingspans measuring between 49 and 79 feet. Example aircraft include:

- Pilatus PC-12
- BE9L Beech King Air 90
- Cessna Citation 525A

The A/B-II forecast includes aircraft with similar dimensions and approach speeds to A/B-II Small aircraft, but that weigh more than 12,500 pounds. Example aircraft include:

- Air Tractor AT-802F Fire Boss
- Raytheon BE-20 Beech 200 Super King Air
- BE-40 Raytheon Beechjet 400
- E50P – Embraer Phenom 100
- Cessna Citation 550, 56X, 650, Sovereign
- SR20 – Cirrus SR-20

The FAA maintains a record of flight operations that identifies most of the larger and faster aircraft operations at the Ontario Municipal Airport that file a flight plan or are detected by the National Airspace System (NAS). As previously discussed, the baseline for operations came from in-field observations from cameras placed at the Airport. The data captured by the FAA is provided for comparison, however, it was found to be lacking some of the most demanding operations at the Airport.

Investigating the Airport's recorded operations shows that Aircraft Approach Category (AAC) B and Airplane Design Group (ADG) II are the most demanding aircraft designations in the 2020 baseline data. Most of these operations come from agricultural operators, the BLM firefighting SEATs, Life Flight, and commuter jet traffic. It should also be noted that while the number of helicopter operations is low, a much more considerable count was recorded by the TFMSC and Flight Aware. Cameras were located at the runway ends and therefore unable to reliably capture helicopter operations.

The design/critical aircraft forecast used the aircraft operations observed at the Ontario Municipal Airport in 2020. **Table 3.17** lists the first year of forecasted operations by type with the anticipated AAGR for each category.

TABLE 3.17
PREFERRED DESIGN/CRITICAL AIRCRAFT FORECAST

	Baselines	Growth
A-I	15,208	0.7%
A-II	288	2.5%
B-I	354	1.6%
B-II	2,190	2.5%

Source: FAA Aerospace Forecast 2021-2041

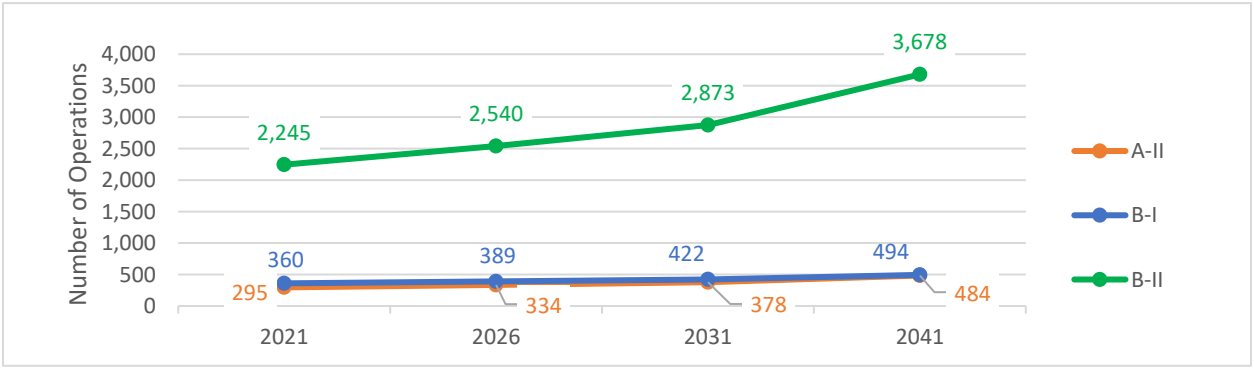
These growth rates reflect those provided in **Table 3.13** where most Group II aircraft are turboprop or jet powered.

The BLM's firefighting operations also suggest strong growth. Firefighting agencies have begun to strategize their missions by combining several AT-802F Fire Boss aircraft into coordinated flight groups, which offers a cost-effective strategy to quickly and efficiently contain a fire. A flight of four land-based 802F air tankers can deliver 3,200 gallons of water and one round of retardant to 2.5 – 3.5 acres of land. This enables contracted agencies to tailor their response with a high degree of success according to a fire's size and behavior. In 2021 and 2022, the BLM is relocating south of the jet apron, installing new base facilities, and constructing an expanded apron to better deploy firefighting operations from the Ontario Municipal Airport.

Figure 3.10 shows the applied average annual growth rates by AAC/ADG designations. This forecast indicates that the Airport should continue to support design standards, facilities, and airspace for the current **ARC B-II** in the near and long-term planning period.

The next largest potential aircraft type is an AAC "C" or ADG "III," which did not achieve sufficient annual operations within the 2021-2041 forecast period to change the Airport's Design Code (data not displayed).

FIGURE 3.10
PREFERRED DESIGN/CRITICAL AIRCRAFT FORECAST



Source: Flight Aware/ TFMSC/ J-U-B

Based on the growth forecasted for ADG II aircraft, the representative design aircraft for the near-term design group is the **Air Tractor AT-802 Fire Boss** with an ARC of **B-II** and Taxiway Design Group (TDG) of **1B.** The current ALP design aircraft is a **Beechcraft King Air 200**, which will also be included in the near-term representative aircraft grouping as a **B-II** ARC and **TDG-2** aircraft.

Together these aircraft constitute an ultimate design/critical aircraft of **B-II**, **TDG-1B**.

The information contained in **Table 3.18** for each planning period is provided according to the 500 annual aircraft operations minimum design threshold of the FAA for planning purposes. Anticipated helicopter operations were not included.

TABLE 3.18
CRITICAL/DESIGN AIRCRAFT DETERMINATION BY YEAR

	2021	2026	2031	2041
Aircraft Approach Category (AAC)	Category B	Category B	Category B	Category B
Airplane Design Group (ADG)	Group II	Group II	Group II	Group II
Aircraft Weight (<, >12,500 SWG)	Large	Large	Large	Large
Taxiway Design Group (TDG)	Group 1B	Group 1B	Group 1B	Group 1B

Source: TFMSC / AirNav / J-U-B

3.8 20-YEAR FORECAST DISPARITY

The disparity between the FAA Terminal Area Forecast's (TAF) current and future based aircraft and operations is largely attributed to a significant difference in the number of reported based aircraft. The TAF shows 59 aircraft at the Ontario Municipal Airport, when in reality there were 89 aircraft listed in 2021.

The 20-year forecast for based aircraft has a significant difference in number of based aircraft and projected growth rate. This is expected when understanding the inaccurate number of aircraft with no growth shown in the TAF. Forecasted operations versus the TAF values also show some disparity; however, when normalized by percentage of difference between the TAF number of based aircraft and the actual number of based aircraft, the difference in forecasted operations is 0.48 percent at 5 years and 3.25 percent at 20 years. This percent difference should be considered reasonable (see **Table 3.19**).

Noted differences attributed to:

- The undocumented growth in based aircraft within FAA records.
- The uncaptured operations such as seasonal firefighting.

TABLE 3.19
FORECASTED OPERATIONS VS TAF VALUES

	Based Aircraft Growth			Operations Growth		
	2021 Based	**5-Year Forecast**	**20-Year Forecast**	**2021 Operations**	**5-Year Forecast**	**20-Year Forecast**
TAF	59	59	59	13,138	13,660	15,316
Forecast	89	93	105	18,237	19,147	22,300
Percent Difference	40.5	44.7	55.3	32.5	33.5	37.1
Adjusted TAF	N/A	N/A	N/A	18,464	19,198	21,525
Adjusted Percent Difference	N/A	N/A	N/A	1.24	0.27	3.54
Growth Percent Difference	N/A	N/A	17.4	N/A	N/A	N/A

Source: FAA / J-U-B

3.9 SUMMARY

Aviation factors such as the number of based aircraft and operations are strong at the Ontario Municipal Airport. The area is also characterized by economic growth that surpasses that of the State of Oregon and the Pacific Northwest Region. Growth is expected to continue in the City of Ontario area and at the Airport. The City would like to see growth and advancement of the airfield over the next few years. The current situation with the 2020 coronavirus pandemic is something to pay attention to, but long-term growth looks strong. Here are highlights from the forecasting effort:

- Based Aircraft
  - Current count: 89 aircraft
  - 20-year projection: 105 aircraft
- Operations
  - 2020 estimate: 18,062 operations
  - 20-year projected estimate: 22,300 operations
  - Peak Day operations current estimate: 60 operations
  - Peak Day operations 20-year projected estimate: 74 operations
- Short-term Design Aircraft Group
  - ADG B-II / TDG-2
  - Air Tractor AT-802F Fire Boss
  - Beechcraft King Air 200
- Ultimate Design Aircraft Group
  - ADG B-II Large/ TDG-2
  - Air Tractor AT-802F Fire Boss
  - Beechcraft King Air 200
- Hangar Development
  - Current estimate: 86 units
- Fixed Based Operator (FBO) Development
  - Current national count: 3,384
  - National 20-year projection: 3,470
  - Current Oregon State count >5,000 ft: 26
  - Oregon State 20-year projection: 27
  - Current Ontario Municipal Airport count: 1
  - Ontario Municipal Airport 20-year projection: 1
- UAM/ UAV/ eVTOL Development
  - Current estimate: None
  - 20-year projected estimate: Potential growth in air transit operations
- Commercial Business Industry
  - Current count in Oregon State: 10,456
  - Oregon State 20-year projected estimate: 14,273
  - Current restaurants within 3-mile radius: 23
  - 20-year 3-mile radius projected estimate: 31
  - Current restaurants within 1-mile radius: 4
  - 20-year 1-mile radius projected estimate: 5
- Forecast differences between the FAA TAF and the Consultant
  - Operations 20-year difference of 3.54 percent
  - Operations 20-year growth forecast: 1.01 percent

CHAPTER 4 FACILITY REQUIREMENTS

4.1 INTRODUCTION

The analysis of facility requirements compares existing airport conditions with those needed to serve current and forecasted activity at Ontario Municipal Airport over the 20-year planning period. Landside components of the Airport were examined following FAA guidelines to determine the adequacy of facility design and capacity. Airside components were not a focus of this analysis, and their evaluation was limited to the useful life of facilities. Identified deficiencies will be further examined in the next chapter during the development of alternatives.

4.2 AIRPORT DESIGN CONSIDERATIONS

The design components of an airport are determined largely by the characteristics of the critical aircraft, the type of runway approach available, and the instrument approach visibility minimums. While these items are typically used to determine design standards, other features at or surrounding an airport may require additional consideration during the planning and design process.

4.2.1 CRITICAL AIRCRAFT

The most demanding aircraft type to regularly use an airport determines the applicable design standards for many facilities on the airfield. Regular use, whether it is current or forecasted, means a minimum of 500 annual operations. The aircraft type meeting these criteria is the critical aircraft of an airport and can be represented by a single aircraft or grouping of aircraft with similar physical and operational characteristics. The existing and future critical aircraft at Ontario Municipal Airport is designated a **B-II** and is represented by the **Beechcraft King Air 200** and **Air Tractor AT-802F Fire Boss**. **Table 4.1** summarizes the design characteristics associated with these aircraft.

TABLE 4.1
CRITICAL AIRCRAFT DESIGN CHARACTERISTICS

	Approach Speed (Knots)	Wingspan (Feet)	Tail Height (Feet)	Max Takeoff Weight (MTOW) (Pounds)	Main Gear Width (MGW) (Feet)	Cockpit to Main Gear (CMG) (Feet)
Beechcraft King Air 200	98	54.5	15	12,500	17.17	15
Air Tractor AT-802F Fire Boss	103	59.25	11.20	16,000	11	23.83
FAA Design Code	**AAC**	**ADG**		**AAC/ADG**	**TDG**	
Critical Aircraft Classification	**B**	**II**		**B-II**	**2A**	

Source: FAA Advisory Circular 150/5300-13B
AAC: Aircraft Approach Category
ADG: Aircraft Design Group
TDG: Taxiway Design Group

Mirroring the critical aircraft, the Airport Reference Code (ARC) is B-II for both the current and future planning periods. In meeting these standards, the Airport would be able to accommodate aircraft with approach speeds up to 121 knots, wingspans up to 79 feet, and tail heights up to 30 feet.

The critical aircraft at Ontario Municipal Airport is in Taxiway Design Group (TDG) 2 according to the design groups outlined in FAA AC 150/5300-13A, *Airport Design*; however, the AC was updated to AC 150/5300-13B during the development of this chapter. In the newer version, TDG 2 is separated into TDG 2A and TDG 2B. An aircraft with an MGW between 15 and 20 feet and CMG up to and equal to 40 feet classifies as TDG 2A. A TDG 2B aircraft has an MGW up to and equal to 20 feet and a CMG spanning 41 to 65 feet. Of the two aircraft representing the future critical aircraft at Ontario Municipal Airport, the Beechcraft King Air 200 has the largest TDG classification with an MGW of 17.17 feet and a CMG distance of 15 feet (see **Table 4.1**). The existing and future TDG at the Airport is, therefore, further classified as TDG 2A. As such, taxiways, taxilanes, and apron areas will be designed for aircraft with a main gear width spanning 15 to 20 feet and measuring up to 40 feet from cockpit to main gear. While this design code is applied to the Airport, taxiways and taxilanes can be built to different TDGs based on expected use.

4.2.2 INSTRUMENT APPROACH

In AC 150/5300-13B, the FAA has designated four categories of visibility for the purpose of airport design: visual (V), non-precision (NPA), approach procedure with vertical guidance (APV), and precision (PA) approaches. Runway 15/33 is designed to APV standards, meaning it has instrument approaches published to each runway end that provide both lateral and vertical course deviation information. There are Area Navigation (RNAV) Global Positioning System (GPS) instrument approach procedures (IAPs) published for both the Runway 15 End and Runway 33 End. The IAP approach types, which help keep pilots with instrument capabilities on the right course and glidepath into the Airport, include localizer performance with vertical guidance (LPV) and lateral navigation (LNAV) with vertical navigation (VNAV). **Table 4.2** summarizes the design standards of an APV approach and the Airport's current performance.

The straight-in approach to the Runway 15 End is listed as "not applicable" at night on the IAP due to the proximity of SW 4th Avenue. The Airport has installed a PAPI to mitigate the obstruction and is working with FAA Flight Procedures to remove the exception from the published IAP.

TABLE 4.2
APPROACH PROCEDURE WITH VERTICAL GUIDANCE (APV) DESIGN STANDARDS

	APV Standard	Runway 15 Performance	Runway 33 Performance
Minimum Visibility IFR Approach	>½ Statute Mile	≥1 Statute Mile	≥⅞ Statute Mile
Height Above Touchdown (HAT)	≥200 Feet	≥576	≥250
Approach Surface 5*	≥ ¾ Statute Mile	≥1 Statute Mile	≥⅞ Statute Mile
Starting Point	200 Feet After Runway End	200 Feet After Runway End	
Length	10,000 Feet	10,000 Feet	
Inner Width/Outer Width	400 Feet / 3,400 Feet	400 Feet / 3,400 Feet	
Slope	Slope 20:1	Slope 20:1	
Approach Surface 6*			
Starting Point	0 Feet After Runway End	0 Feet After Runway End	
Length	10,200 Feet	10,200 Feet	
Inner Width/Outer Width	Runway Width + 200 Feet / 1,520 Feet	300 Feet / 1,520 Feet	
Slope	30:1	30:1	
Approach Types (Vertica/Lateral)	Localizer Performance with Vertical Guidance (LPV), Lateral Navigation (LNAV)/Vertical Navigation (VNAV), Required Navigation Performance (RNP), or GBAS Landing System (GLS)	LPV, LNAV/VNAV	
Minimum Runway Length	3,200 Feet	5,006 Feet	
Runway Edge Lights	MIRL	MIRL	
Runway Markings	Non-Precision	Non-Precision	

Source: FAA AC 150/5300-13B and J-U-B
**Threshold Siting Surface (TSS), not CFR Part 77 Approach Surface*

4.2.3 VISIBILITY MINIMUMS

The existing 1 statute mile or greater visibility minimum on the Runway 15 End and ⅞ statute mile or greater minimum on the Runway 33 End meets the Airport's current and future demand.

4.3 NAVIGABLE AIRSPACE REQUIREMENTS

Title 14 Code of Federal Regulations (CFR) Part 77, *Safe, Efficient Use, and Preservation of the Navigable Airspace* (CFR Part 77) applies to existing and manmade objects. These guidelines define the critical areas in the vicinity of airports that should be kept free of obstructions. The approach category and visibility minimum of each runway determines the size of the imaginary surfaces. CFR Part 77 does not include an APV approach category, therefore, non-precision standards apply to Runway 15/33. At Ontario Municipal Airport, where the Runway 15 End has a 1 statute mile or greater visibility minimum and the Runway 33 End a ⅞ statute mile or greater visibility minimum, the airspace is protected to the CFR Part 77 surface dimensions for a non-precision instrument runway with visibility minimums greater than ¾ statute miles.

The standards regulating the imaginary airspace surfaces for non-precision approach runways

having visibility minimums greater than ¾ statute mile are described in Chapter 2. **Table 4.3** summarizes the size, slope, and dimension of each CFR Part 77 imaginary surface for non-precision approach runways with visibility minimums greater than ¾ statute mile.

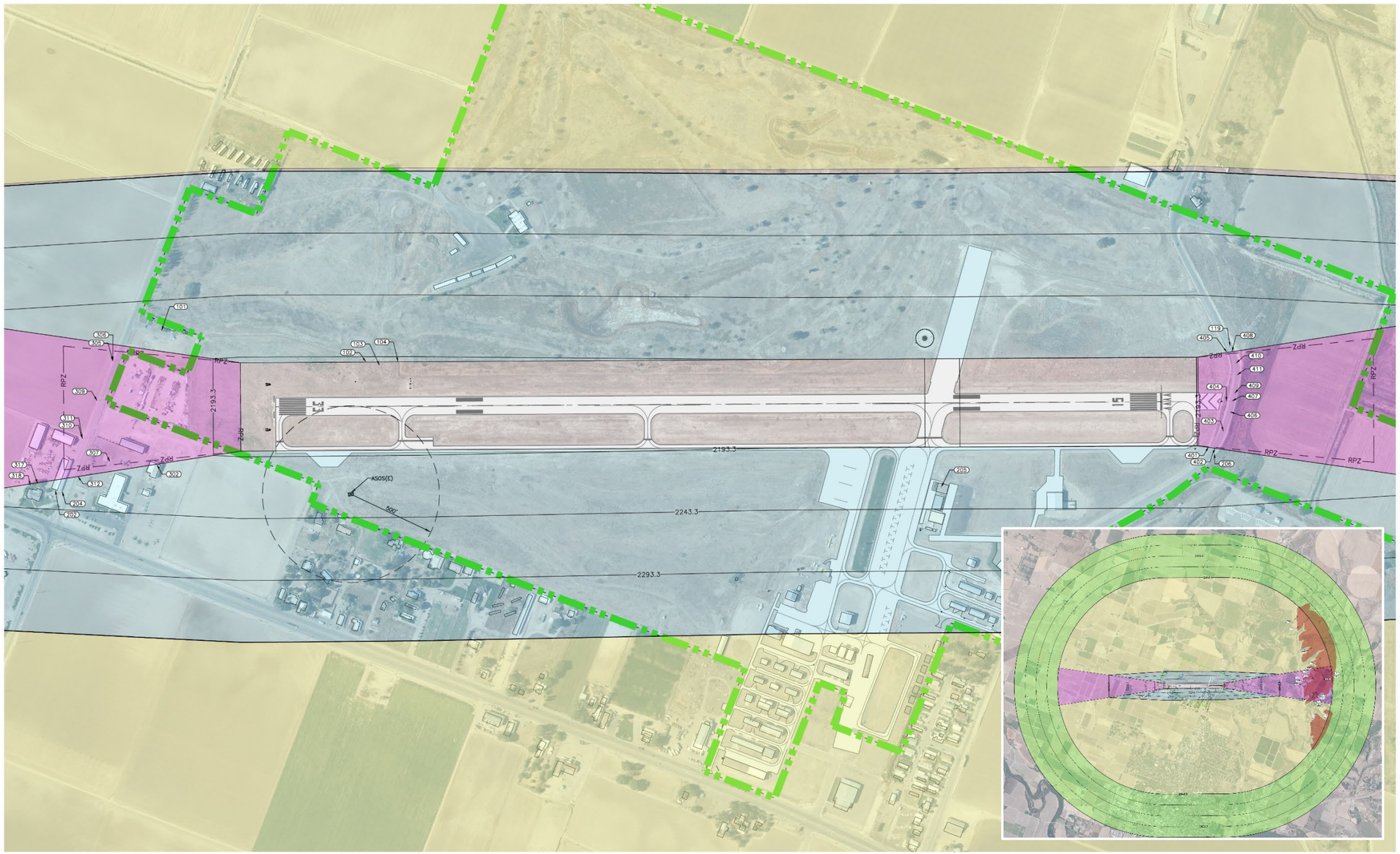
TABLE 4.3
CFR PART 77 NON-PRECISION IMAGINARY SURFACES

Imaginary Surface	>3/4 Statute Mile
Horizontal Surface	10,000 Foot Radius
Conical Surface	
Horizontal Distance	4,000 Feet
Slope	20:1
Primary Surface	500 Feet Wide
Approach Surface	
Inner Width	500 Feet
Outer Width	3,500 Feet
Horizontal Distance	10,000 Feet
Slope	34:1
Transitional Surface	7:1 Slope

Source: CFR Part 77, Safe, Efficient Use, and Preservation of the Navigable Airspace

Any penetration to the CFR Part 77 imaginary surfaces, whether manmade or natural growth, is classified as an "obstruction," presumed to be a hazard to navigation, and is subject to an FAA aeronautical study which will determine whether the obstruction is in fact considered a hazard. The airport operator is not required to prevent or clear penetrations to the CFR Part 77 imaginary surfaces when the FAA determines these penetrations are not hazards. The imaginary surface obstructions at Ontario Municipal Airport are depicted in **Figure 4.1** and listed in **Table 4.4**.

FIGURE 4.1
ONTARIO MUNICIPAL AIRPORT CFR PART 77 AIRSPACE OBSTRUCTIONS



Source: J-U-B

TABLE 4.4
ONTARIO MUNICIPAL AIRPORT CFR PART 77 AIRSPACE OBSTRUCTIONS

POINT ID	OBJECT DESCRIPTION W/ FAA OBSTRUCTION ID NUMBER	HAT*	OBJECT TOP ELEVATION	PART 77 SURFACE ELEVATION	PENETRATION VALUE	13B APPROACH SURFACE ELEVATION	PENETRATION VALUE
101	Tree: 41-027456	43	2225	2219	6	N/A	N/A
102	Fence: 41-027553	4	2190	2189	1	N/A	N/A
103	Terrain 41-025178	3	2190	2189	1	N/A	N/A
104	Fence: 41-027514	5	2192	2189	3	N/A	N/A
105	Traverse Way: 41-041878	14	2204	2203	1	N/A	N/A
106	Building: 41-022065	9	2399	2343	56	N/A	N/A
107	Pole: 41-022066	21	2406	2343	63	N/A	N/A
108	Tree: 41-023773	109	2402	2343	59	2574	-172
109	Pole: 41-022060	25	2382	2343	39	2582	-200
110	Tree: 41-027625	61	2435	2343	92	N/A	N/A
111	Tree: 41-023772	63	2424	2343	81	2605	-181
112	Tree: 41-024503	84	2430	2343	87	2608	-178
113	Tree: 41-027627	79	2447	2343	104	2615	-168
114	Pole: 41-027583	46	2426	2343	83	N/A	N/A
115	Tree: 41-027545	64	2441	2343	98	2645	-204
116	Pole: 41-027626	39	2415	2343	72	2669	-254
117	Pole: 41-041899	43	2413	2343	70	2684	-271
201	Antenna: 41-027535	82	2266	2264	2	N/A	N/A
202	Tower: 41-022073	57	2240	2228	12	N/A	N/A
203	Transmission Line: 41-022094	47	2230	2228	2	N/A	N/A
204	Pole: 41-023793	47	2230	2228	2	N/A	N/A
205	Building: 41-022063	35	2227	2226	1	N/A	N/A
206	Traverse Way: 41-027507	20	2204	2200	4	N/A	N/A
207	Tower: 41-022075	47	2413	2343	70	2563	-150
208	Pole: 41-027547	44	2388	2343	45	2591	-203
209	Tree: 41-027548	72	2429	2343	86	2597	-168
210	Tree: 41-041864	71	2431	2343	88	2600	-169
211	Tree: 41-027549	58	2421	2343	78	2604	-183
212	Pole: 41-027501	41	2367	2343	24	N/A	N/A
213	Pole: 41-027546	30	2395	2343	52	2610	-215
214	Tree: 41-027550	67	2418	2343	75	N/A	N/A
301	Fence: 41-027458	7	2190	2190	0	N/A	N/A
302	Building: 41-022069	27	2210	2203	7	N/A	N/A
305	Transmission Line: 41-022101	30	2213	2210	3	2225	-12
306	Pole: 41-024212	30	2213	2210	3	2225	-12
307	Pole: 41-022104	29	2212	2211	2	2226	-14
309	Transmission Line: 41-022091	33	2216	2213	3	2229	-13

POINT ID	OBJECT DESCRIPTION W/ FAA OBSTRUCTION ID NUMBER	HAT*	OBJECT TOP ELEVATION	PART 77 SURFACE ELEVATION	PENETRATION VALUE	13B APPROACH SURFACE ELEVATION	PENETRATION VALUE
310	Transmission Line: 41-022095	38	2221	2215	6	2234	-13
311	Pole: 41-023794	38	2221	2215	6	2234	-13
312	Transmission Line: 41-022090	44	2227	2216	11	N/A	N/A
317	Tree: 41-027533	40	2224	2223	1	N/A	N/A
318	Tree: 41-024258	42	2226	2225	1	N/A	N/A
402	Traverse Way: 41-023778	15	2203	2196	7	N/A	N/A
403	Traverse Way: 41-023776	15	2201	2197	4	2201	0
406	Traverse Way: 41-023777	15	2200	2199	1	2202	-2
407	Traverse Way	15	2200	2199	1	2203	-3
408	Traverse Way	15	2204	2199	5	N/A	N/A
409	Traverse Way: 41-023779	15	2201	2199	2	2204	-3
410	Traverse Way: 41-023780	15	2203	2200	3	2204	-1
411	Traverse Way: 41-025184	14	2201	2200	1	2205	-4
412	Tree: 41-023775	31	2204	2203	1	2210	-6

Source: J-U-B Analysis
**HAT: Height Above Touchdown*

4.4 RUNWAY PROTECTION AREA REQUIREMENTS

In FAA AC 150/5300-13B, the FAA establishes dimensional and clearance standards for several surfaces on and around a runway to mitigate obstructions and improve the safe operation of aircraft. These include the Runway Safety Area (RSA), Runway Object Free Area (ROFA), Runway Obstacle Free Zone (ROFZ), and Runway Protection Zone (RPZ). The dimensional standards of the runway protection areas are determined from a Runway Design Code (RDC). A different visibility minimum applies to each end of Runway 15/33 at Ontario Municipal Airport, as such, certain protection area dimensions will vary from the Runway 15 End to the Runway 33 End.

The current RDC for the Runway 15 End is B-II-5000, with the visibility component representing a minimum not lower than 1 mile. The visibility minimum is not lower than ¾ miles on the Runway 33 End, therefore, the RDC is B-II-4000. The future RDCs are not forecasted to change over the 20-year planning horizon.

Table 4.5 summarizes the runway protection standards outlined in FAA AC 150/5300-13B, *Airport Design*, for A/B-II runways.

The following section describes the clearance, grading, and size criteria of the runway protection areas and identifies any non-standard concerns at the Ontario Municipal Airport.

TABLE 4.5 *A/B-II RUNWAY PROTECTION DESIGN STANDARDS*		
	Runway 15	**Runway 33**
Visibility Minimums	> 1 Mile	> ¾ Mile
Runway Protection Areas		
Runway Safety Area (RSA)		
Length Beyond Departure End	300’	300’
Length Prior to Threshold	300’	300’
Width	150’	150’
Runway Object Free Area (ROFA)		
Length Beyond Runway End	300’	300’
Length Prior to Threshold	300’	300’
Width	500’	500’
Runway Obstacle Free Zone (ROFZ)		
Length Beyond End	200’	200’
Width	400’	400’
Approach Runway Protection Zone (RPZ)		
Length	1,000’	1,700’
Inner Width	500’	1,000’
Outer Width	700’	1,510’
Departure Runway Protection Zone (RPZ)		
Length	1,000’	1,000’
Inner Width	500’	500’
Outer Width	700’	700’
Source: FAA Advisory Circular 150/5300-13B		

Runway Safety Areas (RSA) are designated by the FAA to improve the safety of aircraft that undershoot, overrun, or veer of the runway. The RSA is required to be:

- Clear and graded
- Drained by grading or storm sewers
- Capable of supporting snow removal, fire, and rescue equipment under dry conditions
- Graded to longitudinal and transverse surface gradient design standards

The RSA is centered on the runway centerline and its dimension based on the RDC of that runway. The design standards for a B-II-5000 and B-II-4000 runway both require the RSA to be 150 feet wide, extend 300 feet beyond the departure end, and begin 300 feet prior to the runway threshold. This area has no existing penetrations and meets the current and future RSA design standards.

Runway Object Free Areas (ROFA) are centered about the runway centerline and must be clear of all above-ground objects penetrating the lateral elevation of the RSA. Exceptions include objects that need to be in the ROFA for air navigation or aircraft ground maneuvering purposes and aircraft that are taxiing or in a hold position. The ROFA for Runway 15/33 is 500 feet wide, extends 300 feet beyond the departure end, and begins 300 feet prior to the runway threshold. This area has no existing penetrations and meets the current and future ROFA design standards.

Runway Obstacle Free Zones (ROFZ) function as both design and operational surfaces and must be kept clear of any object penetrations, including taxiing and parked aircraft, during operations. Frangible navigational aids are permitted in this area if their location is necessitated by function. The ROFZ at Ontario Municipal Airport is centered above the runway centerline and extends 200 feet beyond the end of the runway. The standard ROFZ width for a runway with large aircraft operations is 400 feet. This area has no existing penetrations and meets current and future design standards.

Runway Protection Zones (RPZ) function as a protection for people and property on the ground. The RPZ at Ontario Municipal Airport is centered about the extended runway centerline and is trapezoidal in shape. The approach RPZ on the Runway 33 End begins 200 feet from the runway threshold, is 1,700 feet long, and expands from a width of 1,000 feet to 1,510 feet. The Runway 15 End approach RPZ similarly begins 200 feet from the runway threshold but is 1,000 feet long and expands in width from 500 feet to 700 feet. The departure RPZs mirror the dimensions of the Runway 15 End approach RPZ but begin 200 feet beyond each runway end. Land uses in the RPZ permissible without further FAA evaluation are listed in **Table 4.6**.

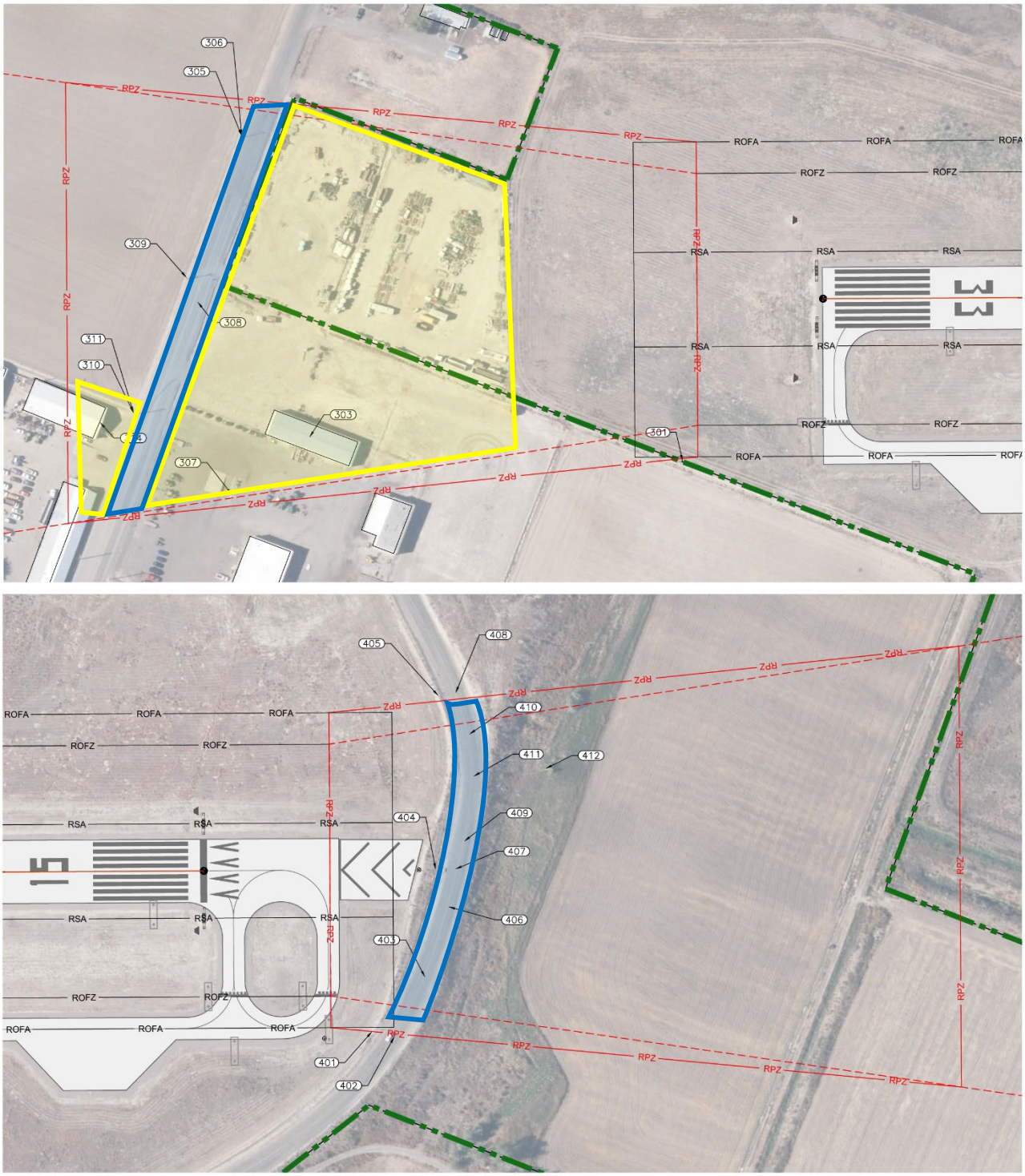
TABLE 4.6
RPZ PERMISSABLE LAND USES

Land Use	Minimum Requirements
Farming	Airport Design Clearance Standards
Irrigation Channels	AC 150/5200-33 and FAA/USDA *Wildlife Hazard Management at Airports* Manual
Airport Service Roads	Not public roads and controlled by airport operator
Underground Facilities	RSA Design Standards
NAVAIDS and facilities	Fixed-by-function
Above-Ground Fuel Tanks	For back-up generators to unstaffed NAVAIDS

Source: FAA AC 150/5300-13B

Objects within the Runway 33 End RPZ that do not fall under the permissible land uses listed in FAA AC 150/5300-13B include a public road (SW 18th Avenue), commercial business structures, and above ground utilities. On the Runway 15 End, SW 4th Avenue runs through the RPZ. Zoning ordinances are currently in place to protect the area from future incompatible objects and activities. Where practical, the City should consider opportunities that meet the FAA's preferred method of airport owner control and compatible land use enforcement.

FIGURE 4.2
ONTARIO MUNICIPAL AIRPORT RPZ OBJECTS



Source: J-U-B

4.5 AIRSIDE REQUIREMENTS

The Ontario Municipal Airport is included in the National Plan for Integrated Airport Systems (NPIAS) and is eligible to receive grants through the Airport Improvement Program (AIP). Airport improvements funded through this program must meet certain eligibility requirements outlined by the FAA in the AIP Handbook. The useful life of a facility is one such requirement that is used to determine project justification. Useful life refers to the length of time an asset or property is expected to be usable for the purpose it was acquired.

While this airport master plan effort did not encompass an extensive evaluation of existing airside facilities, it is recommended that the Airport budget and plan for the rehabilitation, reconstruction, or replacement of these facilities according to the useful life recommendations outlined in the AIP Handbook. **Table 4.7** lists the useful life of the airside facilities at Ontario Municipal Airport and the years when they were last updated. While the useful life of some of these facilities has been met, it does not automatically mean that rehabilitation, reconstruction, or replacement is needed.

TABLE 4.7
ONTARIO MUNICIPAL AIRPORT AIRSIDE FACILITIES USEFUL LIFE

	Useful Life	Last Completed
Runway Pavement		
Reconstruction	20 Years	2005
Rehabilitation	10 Years	2011
Seal Coat	3 Years	2022
Parallel Taxiway Pavement		
Reconstruction	20 Years	2005
Rehabilitation	10 Years	2011
Seal Coat	3 Years	2022
Airfield Lighting		
Runway	10 Years	2011
Taxiway		2017
NAVAIDS		
Rotating Beacon	15 Years	2013
Wind Cone		2011
REIL		2007/2017
PAPIs		2007/2017
Fencing		
Perimeter Fencing	20 Years	2018

Source: J-U-B

4.6 LANDSIDE REQUIREMENTS

Landside facilities provide the essential interface between the airside facilities and ground access to and from the Airport. The following section includes an analysis of existing landside facilities at the Ontario Municipal Airport to determine the adequacy of their design and capacity.

4.6.1 AIRCRAFT STORAGE FACILITIES

Hangars are typically a preferred aircraft storage solution at general aviation (GA) airports. These facilities provide a wide range of benefits, including aircraft protection from weather damage, secure aircraft storage, shelter for aircraft maintenance, and shared hangar/office space potential.

4.6.1.1 Hangar Design Considerations

Ontario Municipal Airport has three types of hangars: box, corporate, and T-hangar. Box hangars are typically stand-alone structures that store multiple aircraft types ranging in size and type. Corporate hangars are conventional hangars with integrated office spaces, and T-hangars have standard or nested configurations to store small aircraft.

The recommended hangar storage is based on the estimated number of units needed to meet existing and future demand. The corresponding square footage was determined using the average square footage of each hangar type at Ontario Municipal Airport (see **Table 4.8**). While T-Hangars are typically designed to store multiple aircraft, the estimated hangar size used in the analysis accounts for a single aircraft storage unit.

TABLE 4.8
HANGAR SIZE ESTIMATES

Type	Typical Size (Square Feet)	ADG
T-Hangar	1,039	I
Box Hangar	1,632	I & II (Small)
Corporate Hangar	7,865	I & II

Source: Ontario Municipal Airport Existing Hangars

4.6.1.2 Hangar Storage Area Recommendations

The hangar storage area analysis used the based aircraft fleet mix forecast from the previous chapter to determine the minimum number of hangared parking positions needed at the Airport over the 20-year planning period. It is estimated that 90 percent of based aircraft will require hangar storage. It can, however, be difficult to infer aircraft parking positions from hangar size alone. A small aircraft, for instance, could be stored in a hangar that might be sized to accommodate multiple or larger aircraft. For this reason, the recommended number of aircraft hangar units, and corresponding square footage, summarized in **Table 4.9** should be considered a minimum estimate of what the Airport will need to meet aircraft storage demand over the next 20 years.

TABLE 4.9 HANGAR STORAGE AREA RECOMMENDATIONS					
	Existing	Current Need	Forecasted		
	2021		2026	2031	2041
Aircraft Requiring Hangar Storage					
Based Aircraft	89		92	96	105
Hangared Aircraft (90%)	80		83	86	95
Hangar Area Recommendations					
T-Hangar Units					
% Of Hangared Aircraft	43%	43%	35%	34%	33%
Number of Units	35	34	29	29	31
Area (1,039 SF per Aircraft)	36,365	35,522	30,110	30,522	32,401
Box Hangar Area					
% Of Hangared Aircraft	52%	52%	59%	59%	60%
Number of Units	43	42	49	51	57
Area (1,632 SF per Aircraft)	63,693	68,544	79,719	83,185	92,526
Corporate Hangar Area					
% Of Hangared Aircraft	5%	5%	6%	7%	7%
Number of Units	4	4	5	6	7
Area (7,865 SF per Aircraft)	32,019	30,731	39,073	47,568	52,027
Total Hangar Area (SF)	**132,911**	**134,797**	**148,903**	**161,274**	**176,954**
Source: J-U-B Analysis					

4.6.2 AIRCRAFT PARKING AREAS

Parking aprons should provide a location for based aircraft or itinerant aircraft to park without impeding on other parked, refueling, or taxiing aircraft. Aircraft parking at Ontario Municipal Airport is spread across the main, jet, BLM, and Life Flight aprons and includes 36 small aircraft tie downs, 3 jet positions, and 1 helipad. **Table 4.10** summarizes the number and type of aircraft parking positions at the Airport and the corresponding apron dimensions.

TABLE 4.10 EXISTING AIRCRAFT PARKING AREAS			
Apron	**Parking Positions**	**Aircraft Type**	**Total Area (Square Feet)**
Main	27	Small	35,100
Jet	3	Jet	45,600
BLM	7	Small	13,250
Life Flight			
Aircraft Apron	2	Small	8,000
Helipad	1	Rotor	3,600
Total	**40**		**105,550**
Source: J-U-B			

4.6.2.1 Apron Design Considerations

The minimum parking position sizing guidance provided by the FAA in AC 150/5300-13B is based on the wingspan and length of the aircraft requiring accommodation. The sizing guidance for ADG I and ADG II parking positions is listed in **Table 4.11**. The helicopter apron recommended dimensions were based on AC 150/5390-2C, *Heliport Design*. According to this guidance, the rotor diameter and overall length of the design helicopter determine the minimum recommended heliport area. There are two Enstrom F28F and two Enstrom 480B helicopters based at the Airport. The rotor diameters of both aircraft are identical; however, the overall length of the 480B helicopter is longer by two feet. As such, the helicopter parking area analysis referenced the size recommendations for the Enstrom 480B (see **Table 4.11**). All sizes listed in **Table 4.11** are a minimum recommendation and do not account for adjacent apron taxilanes nor ancillary service areas, such as a fuel station.

TABLE 4.11
MINIMUM AIRCRAFT PARKING POSITION DIMENSIONS

Aircraft Parking Positions			
ADG	**Wingspan**	**Length**	**Area**
I	49 Feet	<30 Feet 30-45 Feet	2,065 Square Feet 2,950 Square Feet
II	79 Feet	45-60 Feet	5,785 Square Feet
Helicopter Parking Positions			
Helicopter	**Rotor Diameter / TLOF**	**Length / FATO**	**Area (Including Safety Area)**
Enstrom 480B	32 Feet	30 Feet	7,225 Feet

Source: FAA AC 150/5300-13B Table E-1 and AC 150/5390-2C, Heliport Design
TLOF: Touchdown and Liftoff Area
FATO: Final Approach and Takeoff

To best optimize space, each designated parking area should be designed to a particular group of aircraft anticipated to use the Airport.

4.6.2.2 Based Aircraft Apron Parking

The based aircraft forecast from Chapter 3 helped to determine the demand for local aircraft apron area. Of the aircraft expected to be based at Ontario Municipal Airport over the 20-year planning period, it is anticipated that 90 percent will require hangar storage and 10 percent apron parking accommodations. In accordance with FAA guidance in AC 150/5300-13B, an additional 10 percent was added for supplemental parking positions. The total number of based aircraft expected to need apron parking is summarized in **Table 4.12**.

TABLE 4.12 ONTARIO MUNICIPAL AIRPORT LOCAL PARKING NEEDS ASSESSMENT				
	Existing	Forecasted		
	2021	2026	2031	2041
Number of Based Aircraft	89	92	96	105
Based Aircraft Requiring Apron Parking (20% of Based Aircraft)	18	18	19	21
Source: J-U-B Analysis				

4.6.2.3 Itinerant Aircraft Apron Parking

The itinerant parking apron analysis used the itinerant and local aircraft operations split and peak period forecasts from the previous chapter to determine the minimum number of aircraft parking positions needed at the Airport over the 20-year planning period.

The itinerant and local operations split at the Airport is 62 percent itinerant and 38 percent local. While these percentages correspond to total annual operations, it can be assumed that a similar split would occur on the peak design day. Of the 62 percent itinerant operations occurring on the peak design day, half will require apron parking at some point. The Airport should have, at a minimum, enough parking positions to simultaneously accommodate approximately 75 percent of those itinerant aircraft requiring apron parking. **Table 4.13** presents the results of this analysis, and the minimum parking positions needed at the Airport over the short, medium, and long-term planning periods.

TABLE 4.13 ONTARIO MUNICIPAL AIRPORT ITINERANT PARKING NEEDS ASSESSMENT				
	Existing	Forecasted		
	2021	2026	2031	2041
Peak Day Operations	61	64	67	74
Peak Day Itinerant Operations (62% of Peak Day Operations)	38	40	42	46
Itinerant Aircraft Requiring Apron Parking (50% of Peak Day Itinerant Operations)	19	20	21	23
Recommended Itinerant Parking Positions (75% of Itinerant Aircraft Requiring Parking)	14	15	16	17
Source: J-U-B Analysis				

4.6.2.4 Aircraft Parking Apron Recommendations

The based aircraft and aircraft operations fleet mix forecasts were used in the final step of the analysis to determine the number and parking dimensions of each aircraft type needing apron accommodations. Most single-engine and ultralight aircraft fall into ADG I and multi-engine, turboprop, and jet aircraft into ADG II. The area recommendation for ADG I is divided into an

additional group based on aircraft length; however, an average of the ADG I areas was used to complete this analysis.

The number of based aircraft requiring apron parking (see **Table 4.12**) was broken down by aircraft type using the based aircraft fleet mix forecast from the previous chapter. The same steps were taken to determine the number of itinerant aircraft requiring parking (see **Table 4.13**) but using the operations fleet mix forecast. The results were combined to find the total number of apron positions and apron area needed to accommodate helicopters and ADG I and ADG II aircraft at Ontario Municipal Airport. This analysis and the resulting aircraft parking area recommendations for the 20-year planning period are summarized in **Table 4.14**.

TABLE 4.14
AIRCRAFT PARKING APRON AREA RECOMMENDATIONS

	Existing	Current Need	Forecasted Need		
	2021		2026	2031	2041
ADG I					
% Total Based Aircraft		94%	95%	94%	92%
Based Aircraft Apron Positions		17	17	18	19
% Total Annual Operations		79%	78%	77%	74%
Itinerant Apron Positions		11	12	12	13
Total ADG I Apron Positions	**36**	**28**	**29**	**30**	**32**
Area (2,508 SF per Position)	**56,350**	**70,144**	**72,718**	**75,225**	**80,240**
ADG II					
% Total Based Aircraft		1%	1%	1%	3%
Based Aircraft Apron Positions		0	0	0	1
% Total Annual Operations		18%	19%	19%	21%
Itinerant Apron Positions		3	3	3	3
Total ADG II Apron Positions	**3**	**3**	**3**	**3**	**4**
Area (5,785 SF per Position)	**45,600**	**16,030**	**17,355**	**17,355**	**23,140**
Helicopter					
% Total Based Aircraft		5%	4%	5%	5%
Based Aircraft Apron Positions		1	1	1	1
% Total Annual Operations		3%	3%	4%	5%
Itinerant Apron Positions		0	0	1	1
Total Helicopter Apron Positions	**1**	**1**	**1**	**2**	**2**
Area (7,225 SF per Position)	**3,600**	**7,225**	**7,225**	**14,450**	**14,450**
Total Recommended Apron Area	**105,550**	**93,399**	**97,298**	**107,030**	**117,830**

Source: J-U-B Analysis
**Average of the two ADG I minimum parking areas listed in Table 4.11.*

4.6.3 GA TERMINAL FACILITIES

GA terminal buildings provide facilities to pilots, passengers, and airport staff and are commonly hubs of activity at an airport. At Ontario Municipal Airport, the GA terminal is owned and maintained by the FBO. The facility includes space for flight planning, airport management, and storage. Additional facilities include a meeting room and two restrooms.

The FAA does not have dimensional standards for GA terminal facilities or a method to determine adequate facility sizing based on peak day traffic. However, FAA AC 150/5360-13B does recommend the facility planning guidance published by the National Academy of Sciences in the *Airport Cooperative Research Program Report 113: Guidebook on General Facility Planning* (Guidebook). According to these guidelines, a factor of 2.5 people per peak-hour operation is assumed. The Airport should have approximately 125 square feet of GA terminal facility per person to accommodate peak-hour traffic. **Table 4.15** outlines the GA terminal facility space recommendations at Ontario Municipal Airport.

TABLE 4.15
GA TERMINAL FACILITY AREA RECOMMENDATIONS

	Existing	Current Need	Forecasted Need		
	2021		2026	2031	2041
Peak-Hour Operations	9		10	10	11
People per Operation		2.5	2.5	2.5	2.5
Recommended GA Terminal Facility Area (125 SF per Person)	**1,984**	**2,813**	**3,125**	**3,125**	**3,438**

Source: National Academies of Sciences, Engineering, and Medicine Guidebook on General Aviation Facility Planning (2014) and J-U-B

4.6.4 FUEL STORAGE

The fuel storage and delivery system are owned by the FBO at Ontario Municipal Airport. The fuel facilities are located east of Silverhawk Aviation Academy hangars. Storage tanks adjacent to the hangar feed into a single fuel island, approximately 30 feet to the south, with a self-serve fuel control system and credit card reader. Silverhawk Aviation Academy, the FBO, manages fuel sales at Ontario Municipal Airport and owns a 2,000-gallon AvGas fuel truck and a 4,000-gallon Jet A fuel truck to service Airport users.

The current location of the fueling system limits the number and size of aircraft that can access the pump. It is recommended that the fuel island and storage tanks be relocated to provide more convenient access to aircraft and fuel delivery trucks. If the fueling facility is moved, the Airport should take into consideration fuel capacity, above or below grade storage options, tank locations, and alternative piping and pumping systems.

4.6.5 PERIMETER FENCING

The Air Operations Area (AOA) encompasses the parts of a GA airport that are intended to facilitate aeronautical operations. This typically includes the area within the perimeter fence. While there are no Transportation Security Administration standards or requirements for GA security, fencing the AOA can deter unauthorized airport access and limit or impede

individuals or vehicles from inadvertently entering the airfield.

Ontario Municipal Airport should have a minimum 4-foot-high chain link fence around the perimeter of the AOA boundary to meet the basic fencing guidelines for a local GA airport in an urban cluster. The perimeter fencing at the Airport is comprised of a 6-foot wire mesh fence and 6-foot security fencing topped by 3 strands of barbed wire. While the Airport exceeds the FAA's recommended 4-foot fence minimum, the residential properties adjacent to the east side of the Airport property, proximity of SW 4th Avenue to the Runway 15 End, and access along State Highway 201 could pose a unique risk to airport safety and may warrant additional security measures.

Existing barbed wire perimeter fencing should be maintained north of the Runway 15 End and around the east side hangars. The perimeter fence along the east edge of the property should be updated to a 6-foot fence topped by barbed wire to provide a safety barrier between Runway 15/33 and neighboring residential properties.

4.6.6 AIRPORT UTILITIES AND INFRASTRUCTURE

Ontario Municipal Airport has access to basic utilities, although not all are developed for use on the airfield. Power to the Airport is provided by Idaho Power and can be expanded as needed. A domestic well on the Airport property supplies potable water to those facilities not connected to the City water main line running along the western edge of the existing hangar area. Additional water lines are planned along the northern and southern edges of the developed hangar area.

Individual, on-site septic systems are currently used for some wastewater disposal on the Airport. Municipal sewer system connections are currently limited to the FBO, Life Flight, and BLM facilities. A sewer line extension is planned along the northern edge of the existing hangar area.

Ontario Municipal Airport should look for opportunities to improve utility availability whenever possible. Enhanced utilities are an important factor to businesses and large hangar developers when deciding on relocating to an airport, making these extensions especially important to the development of the west side of the Airport.

4.6.7 AIRPORT ACCESS AND CIRCULATION

Ontario Municipal Airport is located approximately 2 miles west of the City of Ontario's central business district. The Airport has a single access point from State Highway 201, which borders the eastern edge of the existing hangar area. SW 4th Avenue cuts through the northern portion of the property and provides an additional two access points. The main entry to the Airport is one of these two access points and is located between the fire station and Life Flight hangar. The main entrance provides access to the FBO facilities, GA terminal building, Life Flight hangar, and fire station. The remaining two gated entry points provide direct access to the east side hangar area.

Any reconfiguration of vehicle access at the Airport should maintain or improve connectivity while reducing the risk of vehicle/aircraft and vehicle accidents. The Airport should plan for additional entry points that will improve access for existing users and serve to attract and accommodate future economic development on the west side of the property.

Enhancements to the main entrance are recommended to improve the Airport's public

interface, economic appeal, and business potential. Considering different areas to relocate the GA terminal building is one such improvement that, if combined with a restaurant and observation deck, could cultivate new interest in the Airport from members of the non-flying public, itinerant traffic, and local airport users.

4.6.8 VEHICLE PARKING

The GA terminal building parking lot is approximately 7,536 square feet with 18 designated vehicle parking spaces. Life Flight and BLM also have designated vehicle parking positions located near their respective facilities.

The vehicle parking need analysis referenced the facility planning guidance published by the National Academy of Sciences in the *Airport Cooperative Research Program Report 113: Guidebook on General Facility Planning* (Guidebook). According to these guidelines, a single parking space measures 200 square feet. A safety buffer of five feet on the outer edges of a parking lot and 25 feet between rows of parking spaces for a driving lane are also assumed. From these assumptions, a reasonable 350 square feet per parking space was applied to the vehicle parking forecast.

The GA terminal building vehicle parking demand forecast assumed the following:

- 2.5 parking spaces per peak hour operation
- 1 parking space per 200 square feet of GA terminal building office space
- 1 parking space for 50% of based aircraft tiedown positions

The current designated office space in the GA terminal building is approximately 1,190 square feet, which compares to 60 percent of the building's total 1,984 square feet. To show a growth in office space need and related vehicle parking, the 60 percent was applied to the GA terminal facility area recommendations provided in **Table 4.15**.

A summary of the minimum vehicle parking accommodations recommended at Ontario Municipal Airport are summarized in **Table 4.16**.

TABLE 4.16
GA TERMINAL VEHICLE PARKING AREA RECOMMENDATIONS

	Existing	Current Need	Forecasted Need		
	2021		2026	2031	2041
Peak-Hour Operations	9		10	10	11
Parking Spaces (2.5 per Operation)		23	25	25	28
GA Terminal Building Office Space (SF)	1,190	1,688	1,875	1,875	2,063
Parking Spaces (1 per 200 SF)		8	9	9	10
Based Aircraft Tiedown Positions	40	32	33	35	38
Parking Spaces (50% Tiedown Positions)		16	17	18	19
Recommended GA Terminal Facility Vehicle Parking Spaces	18	47	51	52	57
Recommended GA Terminal Facility Vehicle Parking Area (350 SF per Space)	**7,536**	**16,450**	**17,850**	**18,200**	**19,950**

Source: National Academies of Sciences, Engineering, and Medicine Guidebook on General Aviation Facility Planning (2014) and J-U-B

4.7 ADDITIONAL RECOMMENDATIONS

It is important for an airport master plan to consider additional infrastructure needs based on unique airport circumstances and potentially impactful trends emerging in aviation. This section considers the advantageous location of Ontario Municipal Airport and the potential impact of electric vehicle innovations on airport facilities.

4.7.1 BUSINESS DEVELOPMENT POTENTIAL

As discussed in prior chapters, the Airport Sponsor is committed to growing the aviation and non-aviation commercial opportunities on and near the Ontario Municipal Airport. The western portion of the Airport is one such area identified by the City to accommodate this future growth. While current operations may not justify immediate development, it is advantageous of the Airport to put in place a plan for airside and landside facilities that supports future commercial development west of Runway 15/33.

The Airport's location also provides an opportunity to draw business from the City of Ontario. A restaurant with an observation deck is one such opportunity suggested by the Technical Advisory Committee (TAC) that would attract both non-airport user and pilot traffic.

4.7.2 ELECTRIC VERTICAL TAKE-OFF AND LANDING (EVTOL) FACILITIES

The aviation industry is always evolving and new aviation trends emerging that may influence airport capacity and facility needs. One that is likely to impact airport planning in the years to come is the introduction of Advanced Air Mobility (AAM) into the nation's airspace.

The electric vertical take-off and landing (eVTOL) aircraft are expected to play an important role in AAM as a new type of lightweight electrical aircraft. Chapter 3 contains a more in-depth analysis of emerging eVTOL trends and the associated infrastructure needed to support the operation of these aircraft.

The FAA is in the process of adapting existing aviation regulations to prepare aircraft, airspace, operations, infrastructure, and communities to accommodate this new technology. A vertiport standard did not exist at the time of this planning effort; however, the FAA has issued draft interim guidance in Engineering Brief No. 105, *Vertiport Design* to support the design and operation of facilities planned for initial eVTOL operations.

The AAM industry is making rapid strides and the Airport is recommended to stay abreast of related developments. Facility configurations should consider the potential for infrastructure development that could accommodate eVTOL aircraft.

4.7.3 ELECTRICAL INFRASTRUCTURE AND CHARGING PORT FACILITIES

The recent rise in electric transportation trends is expected to significantly impact electric utility planning and grid operations. It is likely during the 20-year planning period that Ontario Municipal Airport will see an increased demand for electric car ports and aircraft charging options.

Appropriate charging infrastructure will be crucial to support the emerging electrification of aircraft and arrival of eVTOLs onto the aviation market. These are young industries and details on how aircraft will be electrified, charging standard requirements, and grid infrastructure needs are still emerging. Any opportunity to improve or expand utilities at Ontario Municipal Airport should also consider facilities that support electric aircraft recharging capabilities.

The demand for electric car ports will likely develop sooner than those for aircraft and should be considered during any improvement or expansion of Airport parking areas. Various charging options exist for cars, but the most common ports are capable of power outputs ranging between 6 and 350 kilowatts.

4.8 SUMMARY

This chapter has outlined both the airside and landside facility requirements for Ontario Municipal Airport over the 20-year planning period. The resulting recommendations are listed in **Table 4.17**.

TABLE 4.17
AIRSIDE AND LANDSIDE FACILITY REQUIREMENT RECOMMENDATIONS

	Existing	Current Need	Forecast		
	2021		2026	2031	2041
Hangar Aircraft Storage					
Based Aircraft	89		92	96	105
Hangar Units					
T-Hangars	35	34	29	29	31
Box Hangars	43	42	49	51	57
Corporate Hangars	4	4	5	6	7
Hangar Area (SF)					
T-Hangars	36,365	35,522	30,110	30,522	32,401
Box Hangars	63,693	68,544	79,919	83,185	92,526
Corporate Hangars	32,019	30,731	39,073	47,568	52,027
Total Hangar Area	132,911	134,797	148,903	161,274	176,954
Aircraft Parking Positions					
ADG I Parking Positions					
Based Aircraft	36	17	17	18	19
Itinerant Aircraft		11	12	12	13
ADG II Parking Positions					
Based Aircraft	3	0	0	0	1
Itinerant Aircraft		3	3	3	3
Helicopter Parking Positions					
Based Aircraft	1	1	1	1	1
Itinerant Aircraft		1	1	2	2
Aircraft Parking Apron (SF)					
ADG I Aircraft Apron Area	56,350	70,144	72,718	75,225	80,240
ADG II Aircraft Apron Area	45,600	16,030	17,355	17,335	23,140
Helicopter Apron Area	3,600	7,225	7,225	14,450	14,450
Total Apron Area	105,550	93,399	97,298	107,030	117,830
Support Facilities					
GA Terminal Building					
Area (SF)	1,984	2,813	3,125	3,125	3,438
Auto Parking					
Vehicle Parking Spaces	18	47	51	52	57
Vehicle Parking Area (SF)	7,536	16,450	17,850	18,200	19,950

Source: J-U-B Analysis

CHAPTER 5 ALTERNATIVES ANALYSIS

5.1 INTRODUCTION

The previous chapter identified the landside facilities needed to satisfy aviation demand through the long-range planning period. The next step in the planning process is to evaluate reasonable ways these facilities can be provided. The overall goal of the Alternatives Analysis is to provide an airside and landside complex that meets the needs generated by forecasted demand. Corresponding with the limited airside facility analysis in Chapter 4, a singular airside alternative was developed and considered during this process. The recommendations resulting from the analysis will be the basis for Ontario Municipal Airport's long-term development plan.

5.2 AIRPORT DEVELOPMENT OBJECTIVES

It is of primary concern that Ontario Municipal Airport is marketed, developed, and operated for the betterment of the community and its users. To address this concern, the following facility planning objectives have been established to guide the alternatives development process:

- Develop a facility that is responsive to the current and long-term needs of general aviation users.
- Consider the self-sufficiency of a facility in both operational and developmental cost recovery.
- Maintain a safe, attractive, and efficient aviation facility in accordance with applicable federal, state, and local regulations.
- Ensure that future development is environmentally compatible.
- Preserve and protect public and private investments in existing airport facilities.
- Promote economic development for the City of Ontario and the region.

The alternatives developed through this planning effort conform to FAA design standards to ensure grant assurance compliance. Grant assurances, or obligations, require the recipients of Federal Aviation Administration (FAA) administered financial assistance to maintain and operate their facilities safely and efficiently in accordance with specified conditions.

5.3 ALTERNATIVES DEVELOPMENT PROCESS

The FAA provides guidance in Advisory Circular (AC) 150/5070-6B, *Airport Master Plans*, to identify and evaluate alternative development options. The key elements of this process include:

1. **Alternatives Identification:** Find feasible ways to address facility requirements previously identified in Chapter 4.
2. **Alternatives Analysis**: Apply best planning tenants to determine the operational performance, environmental impact, and fiscal restraints of the identified alternatives.
3. **Alternative Selection:** Determine a preferred alternative based on the alternatives analysis, stakeholder input, and sponsor preferences.

The alternatives analysis presents viable solutions to specific problems or challenges identified through this airport planning process. The single airside alternative and various landside alternatives presented in this chapter were developed from the primary planning considerations listed in **Table 5.1**.

TABLE 5.1 ***AIRSIDE AND LANDSIDE PRIMARY PLANNING CONSIDERATIONS***
Airside Planning Considerations
Plan for additional full-parallel taxiway to accommodate west side development.
Identify potential land acquisition needed to protect runway approaches.
Plan for a taxiway connector reconfiguration on the Runway 15 End.
Identify non-standard pavement areas for future removal.
Landside Planning Considerations
Consider potential east-side locations for additional aircraft aprons and fuel storage relocation.
Provide for a mix of ADG I and ADG II tie downs.
Plan future hangar taxilanes to applicable TDG standards.
Provide for a mix of hangar types in suitable locations.
Consider new additional access locations and entrance improvements.
Identify location for future larger GA terminal building.
Consider potential locations for vertiports.
Plan for additional vehicle parking spaces and expanded lots.
Provide for a mix of aeronautical and non-aeronautical commercial use on the west side.
Source: J-U-B Analysis

5.4 AIRSIDE ALTERNATIVE

The airside alternatives considered in this section address facilities that contribute to the safe and efficient transition of aircraft and passengers from air transportation to the landside facilities at the Airport. Primary airside facility improvements are limited to taxiway pavement removal, a secondary full parallel taxiway, and areas for potential land acquisition and avigation easements. These airport elements are examined in this section and depicted in a single airside alternative (see **Figure 5.1**).

5.4.1 PAVEMENT REMOVAL

The taxiways at Ontario Municipal Airport are designed to Taxiway Design Group (TDG) 2 standards. As stated previously in Chapter 4, the FAA AC 150/5300-13A, *Airport Design*, was updated to version 13B during this planning effort. To reflect this change, the existing and future TDG at Ontario Municipal Airport has been further classified as TDG 2A.

In the airside alternative depicted in **Figure 5.1**, areas of excess pavement have been highlighted for removal to meet FAA AC 250/5300-13B standards. The proposed pavement removal and reconfiguration of the Runway 15 End taxiway entrance is needed to reduce the hazard caused by aligned Taxiway G. The proposed mitigation of the aligned taxiway involves converting the aligned taxiway pavement into a blast pad, removing Taxiways F and G, and constructing a new entrance taxiway at the standard location.

Taxiway and taxilane protection, separation, wingtip clearance, and sizing standards for TDG

2A are the same, or smaller, than those for TDG 2. At Ontario Municipal Airport, Taxiway E has a non-standard width between Taxiway A and Runway 15/33. The proposed pavement removal would narrow Taxiway E, previously created from the closed crosswind runway, to TDG 2A standards.

TDG 2A taxiway fillet dimensions for intersection angles are different from TDG 2 standards. As such, the Airport should plan any new or rehabilitated taxiway projects to meet the TDG 2A standards.

The project elements associated with paving and reconstructing the taxiway entrance on the Runway 15 End would likely require a National Environmental Policy Act (NEPA) Categorical Exclusion (CATEX) document prior to project initiation.

5.4.2 ADDITIONAL FULL-PARALLEL TAXIWAY

The landside alternatives include a series of configurations compatible with future airport commercial development on the west side of the Airport. To both attract and support this growth, the airside alternative features a second, full parallel taxiway along the west side of Runway 15/33. This taxiway would be designed to TDG 2A standards to accommodate larger aircraft, which future airport commercial businesses might need to operate in and around the Airport.

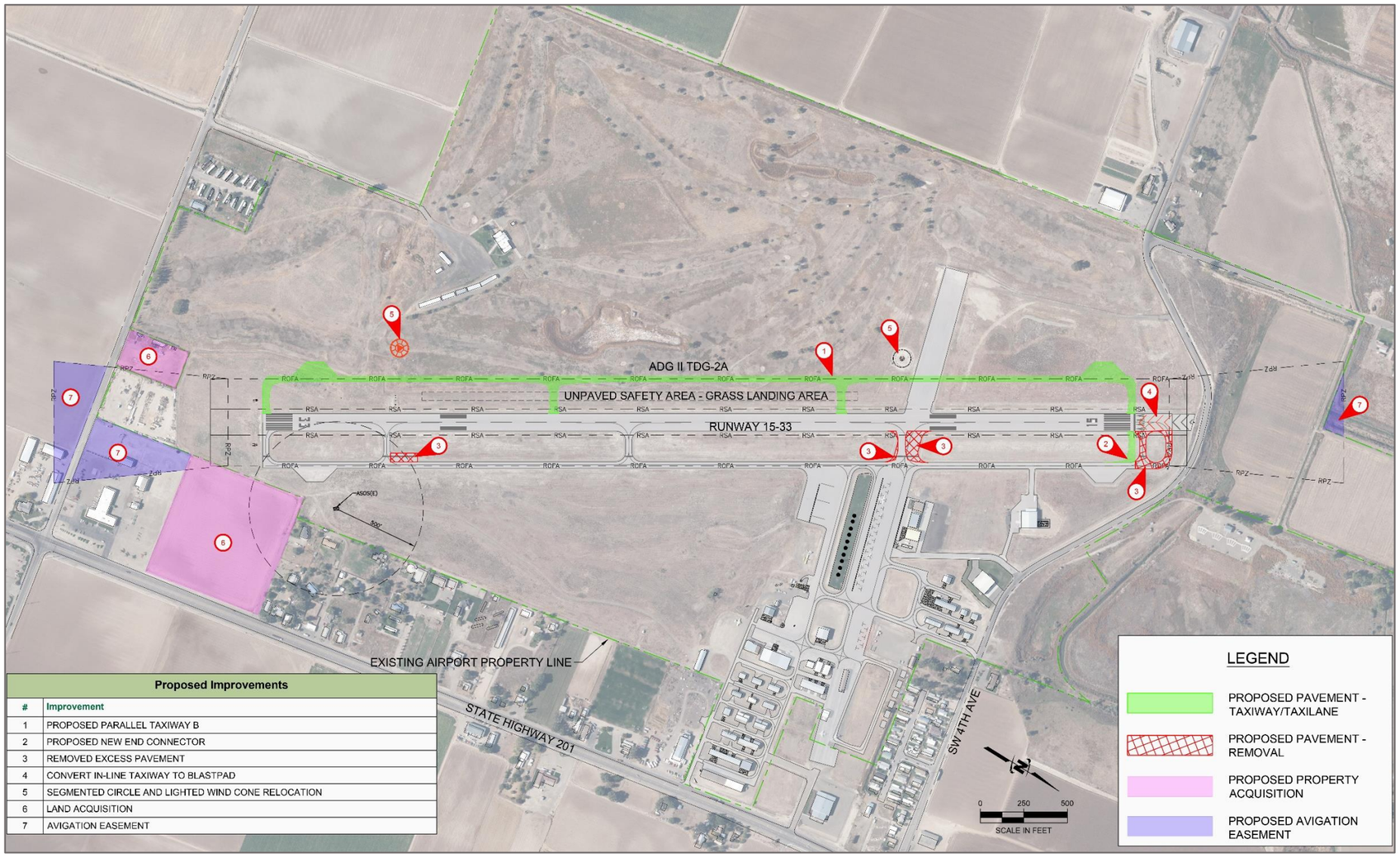
An environmental assessment (EA) would likely be required for the construction of a full-length parallel taxiway due to the changes in airfield layout and runway access.

5.4.3 LAND ACQUISITION AND EASEMENTS

The airside alternative identifies different opportunities to acquire appropriate property interests to the south and north of Runway 15/33. The properties proposed for either acquisition or avigation easement are within the Runway Protection Zones (RPZs) and airport owner control in these areas is recommended by the FAA.

A NEPA CATEX document would likely be required for the proposed land acquisition. If farmland would be converted away from agricultural uses, additional coordination with the U.S. Department of Agriculture (USDA) Natural Resources Conservation Service (NRCS) would be required.

FIGURE 5.1
AIRSIDE CONFIGURATION



Proposed Improvements	
#	Improvement
1	PROPOSED PARALLEL TAXIWAY B
2	PROPOSED NEW END CONNECTOR
3	REMOVED EXCESS PAVEMENT
4	CONVERT IN-LINE TAXIWAY TO BLASTPAD
5	SEGMENTED CIRCLE AND LIGHTED WIND CONE RELOCATION
6	LAND ACQUISITION
7	AVIGATION EASEMENT

Advantages

- The addition of a second full parallel taxiway would support corporate business demand resulting from aeronautical and non-aeronautical commercial development on the west side of the Airport.
- Minor pavement removal to bring the Airport up to FAA AC 150/5300-13B standards.
- Options for both land acquisition and avigation easements.

Total Estimated Project Cost: $4,232,930

Source: J-U-B

5.5 LANDSIDE ALTERNATIVES

Landside facilities are those elements that provide support to the aviation function of an airport. The landside alternatives presented in this section considered development options for aircraft storage facilities and parking areas, helipads, vertiports, and fuel service as well as vehicle entry points, access roads, and parking areas. Areas identified for landside growth opportunities are located north and south of existing terminal and hangar development, west of Runway 15/33, and near the Airport's main entrance. The landside improvement configurations, which have been created for each of these development areas, are summarized in this section and depicted in **Figures 5.2 – 5.7**.

5.5.1 ENTRANCE IMPROVEMENTS

A rendering of main airport entrance improvements in **Figure 5.2** shows a welcome park area and multipurpose hangar for a future FBO. The entrance improvements are identified on the east landside configurations between the existing FBO facilities and Life Flight hangar (see **Figures 5.3-5.5**). Parking options for airport users and the public are depicted on the south and east sides of the proposed FBO structure. While shown as one large hangar, this structure or area could be planned for a single or combination of uses, including but not limited to:

- FBO
- Aviation businesses
- GA terminal building
- Restaurant
- Observation area

The McDonnell Douglas F-4 Phantom II aircraft is on loan from the U.S. Air Force and is displayed in an area easily accessed by the public. Improvements to the main entrance of the Airport could provide an opportunity to draw interest and business from the City of Ontario's non-flying public.

A NEPA CATEX document would likely be required for the proposed airport entrance improvements.

FIGURE 5.2
FUTURE FBO/WELCOME PARK

Source: J-U-B

5.5.2 EAST LANDSIDE DEVELOPMENT

There are three alternatives depicting proposed improvements to the area east of Runway 15/33 (see **Figure 5.3-5.5**). The landside facility configurations in each alternative are designed to be compatible with existing development and the proposed BLM SEAT Base. As such, most options require little to no removal of existing facilities to accommodate the proposed improvements. The east landside alternatives largely focused on the size, number, and location of future aircraft parking and storage options and possible places to relocate the fuel island.

The design of the relocated BLM SEAT Base is in the predesign phase; therefore, the proposed base location remains unaltered in each alternative. Additional facilities that do not change include the corporate hangars, helipads, and entrance improvements.

The proposed buildout of the three East Landside Alternatives would likely require an EA given the amount of proposed development and potential aircraft capacity increase.

Alternative 1A

East Landside Alternative 1A, as shown in **Figure 5.3**, depicts the construction of a new apron area between the existing jet apron and proposed BLM SEAT Base. The apron is designed to accommodate 20 small A/B-I aircraft or 8 large A/B-II aircraft. Two additional taxilanes extend east from this apron to provide box hangar access. The taxilanes are designed to ADG II/TDG 2A standards to accommodate larger A/B-II aircraft. The box hangars would be similarly intended for larger aircraft storage. The fuel island in this configuration has been moved to the eastern edge of the existing grass strip, between the jet apron and main aircraft apron. The section of grass strip would need to be paved to accommodate a fuel island. Two additional taxilane fingers would extend east from the proposed apron.

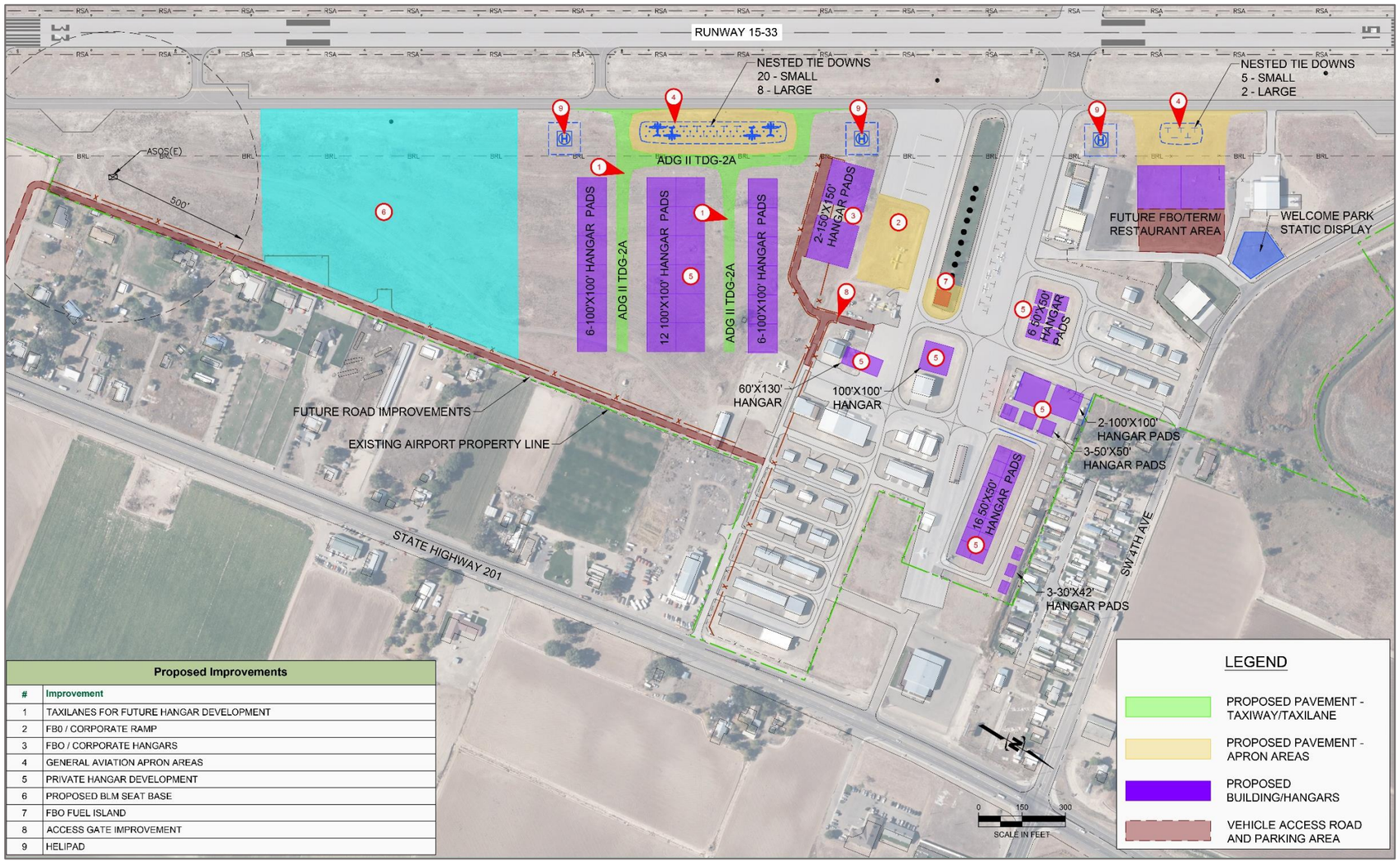
Alternative 1B

East Landside Alternative 1B is depicted in **Figure 5.4** and includes direct taxilane access between the parallel taxiway and proposed box hangar pads. Two of the taxilanes are designed to ADG I/TDG 1B standards and provide hangar access to smaller A/B-I aircraft. The remaining taxilane, which is shown to ADG II/TDG 2A standards, provides A/B-II aircraft access to larger hangar pads. The grass strip between the jet apron and main aircraft apron is paved in this option to accommodate 27 small aircraft tiedowns. The fuel island is shown relocated to the existing BLM SEAT Base vehicle parking area. The parking lot would need to be paved for taxiing aircraft and fuel island access.

Alternative 1C

East Landside Alternative 1C is depicted in **Figure 5.5** and includes a combination of some of the previously discussed improvements. A similarly sized apron to that in Alternative 1A is located west of the proposed box hangar pads; however, there are four additional taxilanes that extend east from the apron taxilane. These taxilanes vary in size based on the size of hangar pads they access. This is the only alternative that includes the option for a row of T-hangar pads. The previously mentioned grass strip, adjacent to the existing jet apron, is paved to accommodate 27 small aircraft tiedowns. The fuel island is relocated to the east side of the corporate ramp area depicted in each alternative. This ramp, which provides access to two adjoining corporate hangars, would extend from the jet apron to the east.

FIGURE 5.3
EAST LANDSIDE CONFIGURATION NO. 1A



Proposed Improvements	
#	Improvement
1	TAXILANES FOR FUTURE HANGAR DEVELOPMENT
2	FBO / CORPORATE RAMP
3	FBO / CORPORATE HANGARS
4	GENERAL AVIATION APRON AREAS
5	PRIVATE HANGAR DEVELOPMENT
6	PROPOSED BLM SEAT BASE
7	FBO FUEL ISLAND
8	ACCESS GATE IMPROVEMENT
9	HELIPAD

Advantages

- A/B-I aircraft potential apron positions: 25
- A/B-II aircraft potential apron positions: 10
- Box hangar pads: 56
- Corporate hangar pads: 4
- Helipads: 3
- Obstacle separations were configured to accommodate both large and small aircraft tiedowns.
- The relocated fuel island is more centrally located to existing landside development.
- Helipads could be available to accommodate corporate business demand.

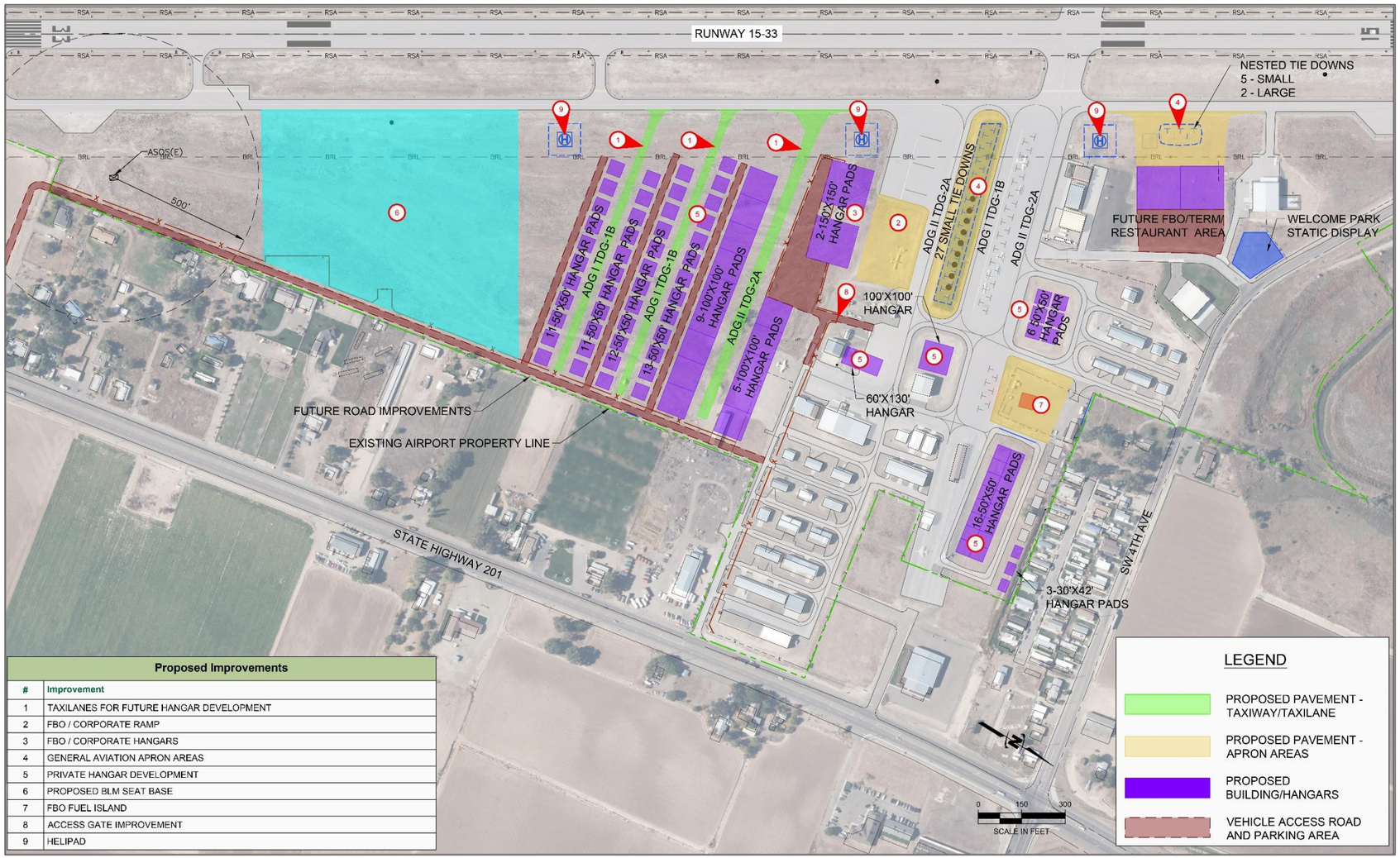
Disadvantages

- With the least number of small aircraft parking positions and storage options, this configuration is the least accommodating to smaller GA aircraft.
- The position of the relocated fuel island is in an area constrained by existing facilities, which could limit aircraft accessibility.
- There are no additional vehicle parking options to accommodate future growth.

Total Estimated Project Cost: $6,193,345

Source: J-U-B

FIGURE 5.4
EAST LANDSIDE CONFIGURATION NO. 1B



Proposed Improvements	
#	Improvement
1	TAXILANES FOR FUTURE HANGAR DEVELOPMENT
2	FBO / CORPORATE RAMP
3	FBO / CORPORATE HANGARS
4	GENERAL AVIATION APRON AREAS
5	PRIVATE HANGAR DEVELOPMENT
6	PROPOSED BLM SEAT BASE
7	FBO FUEL ISLAND
8	ACCESS GATE IMPROVEMENT
9	HELIPAD

Advantages

- A/B-I aircraft potential apron positions: 32
- A/B-II aircraft potential apron positions: 2
- Box hangar pads: 88
- Corporate hangar pads: 4
- Helipads: 3
- The relocated fuel island is easily accessible by larger aircraft.
- Helipads could be available to accommodate corporate business demand.

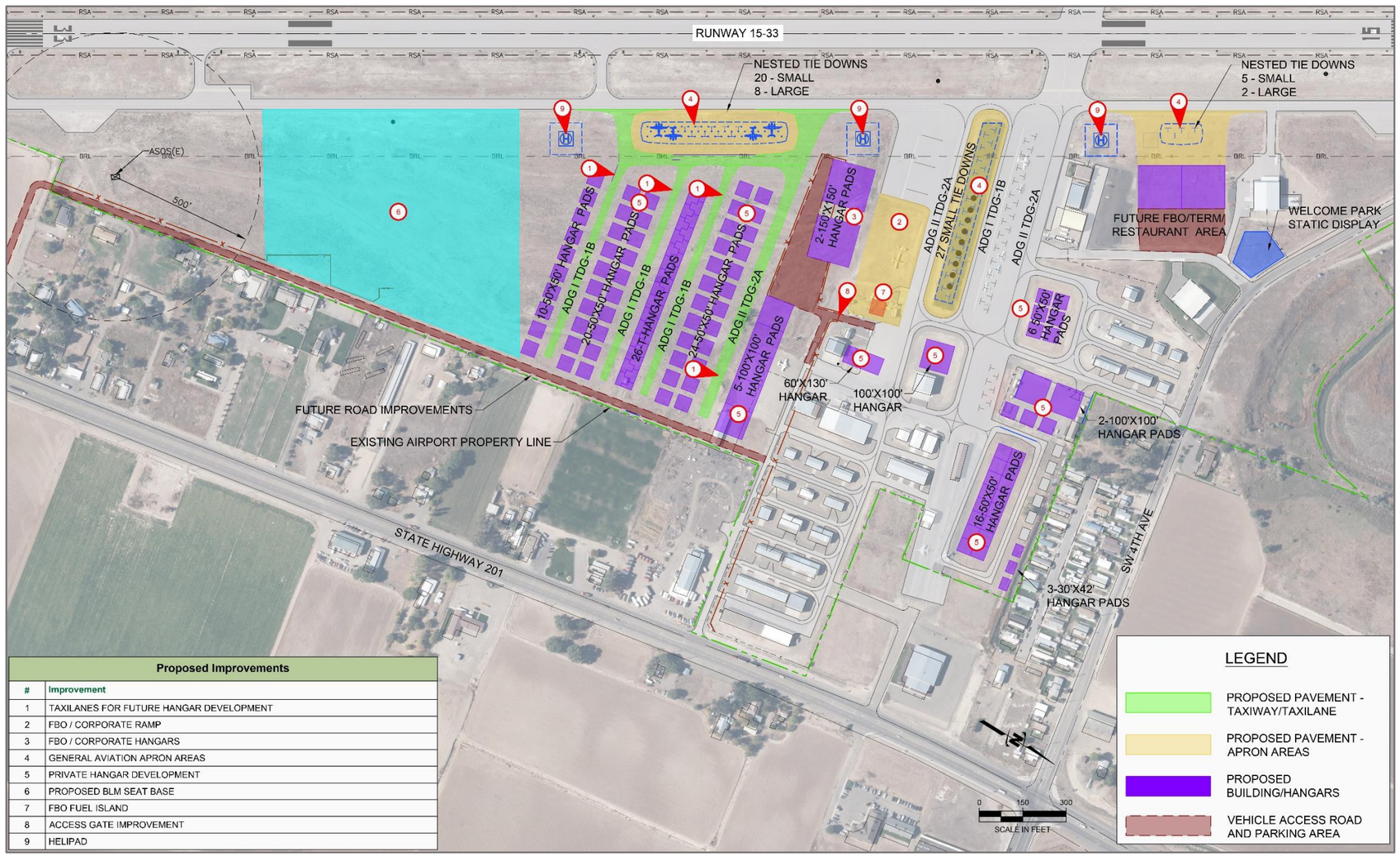
Disadvantages

- Not all obstacle separations could be configured to accommodate both large and small aircraft tiedowns on every apron.
- The site of the proposed fuel island is not centrally located and the farthest from future development.

Total Estimated Project Cost: $6,727,050

Source: J-U-B

FIGURE 5.5
EAST LANDSIDE CONFIGURATION NO. 1C



Proposed Improvements	
#	Improvement
1	TAXILANES FOR FUTURE HANGAR DEVELOPMENT
2	FBO / CORPORATE RAMP
3	FBO / CORPORATE HANGARS
4	GENERAL AVIATION APRON AREAS
5	PRIVATE HANGAR DEVELOPMENT
6	PROPOSED BLM SEAT BASE
7	FBO FUEL ISLAND
8	ACCESS GATE IMPROVEMENT
9	HELIPAD

Advantages

- A/B-I aircraft potential apron positions: 52
- A/B-II aircraft potential apron positions: 10
- T-hangar pads: 26
- Box hangar pads: 91
- Corporate hangar pads: 4
- Helipads: 3
- Improvements designed to maximize the number of aircraft parking positions and storage options available for future east side development.
- The only landside configuration to feature T-hangar pads.
- The relocated fuel island is centrally located and easily accessible by larger aircraft.
- Helipads could be available to accommodate corporate business demand.

Disadvantages

- Not all obstacle separations could be configured to accommodate both large and small aircraft tiedowns on every apron.

Total Estimated Project Cost: $7,952,460

Source: J-U-B

5.5.3 WEST LANDSIDE DEVELOPMENT

Two alternatives have been developed to depict potential improvements to the area west of Runway 15/33 (see **Figure 5.6** and **Figure 5.7**). These design concepts were created as a proactive planning measure to guide Ontario Municipal Airport through logical and orderly development decisions over the planning period and beyond.

The landside facility configurations in each alternative are designed to be compatible with future airport commercial development west of the full parallel taxiway depicted in the airside alternative in **Figure 5.1**. As such, proposed taxilane access to future corporate and large box hangars is shown to ADG II/TDG-2A standards. The alternatives designate land for future aeronautical or non-aeronautical commercial use; however, the Airport would need a release of obligation from the FAA before any airport property could be designated for non-aeronautical use.

As previously recommended in Chapter 4, potential vertiport locations have been presented in consideration of an evolving eVTOL market. Design standards do not yet exist for the infrastructure or airspace needed to safely land or launch these aircraft. As such, the vertiport concepts depicted in these alternatives are suggestions based largely on passenger accessibility.

An EA would likely be required for the build out described for the two West Landside Alternatives given the amount of proposed development and potential aircraft capacity increase.

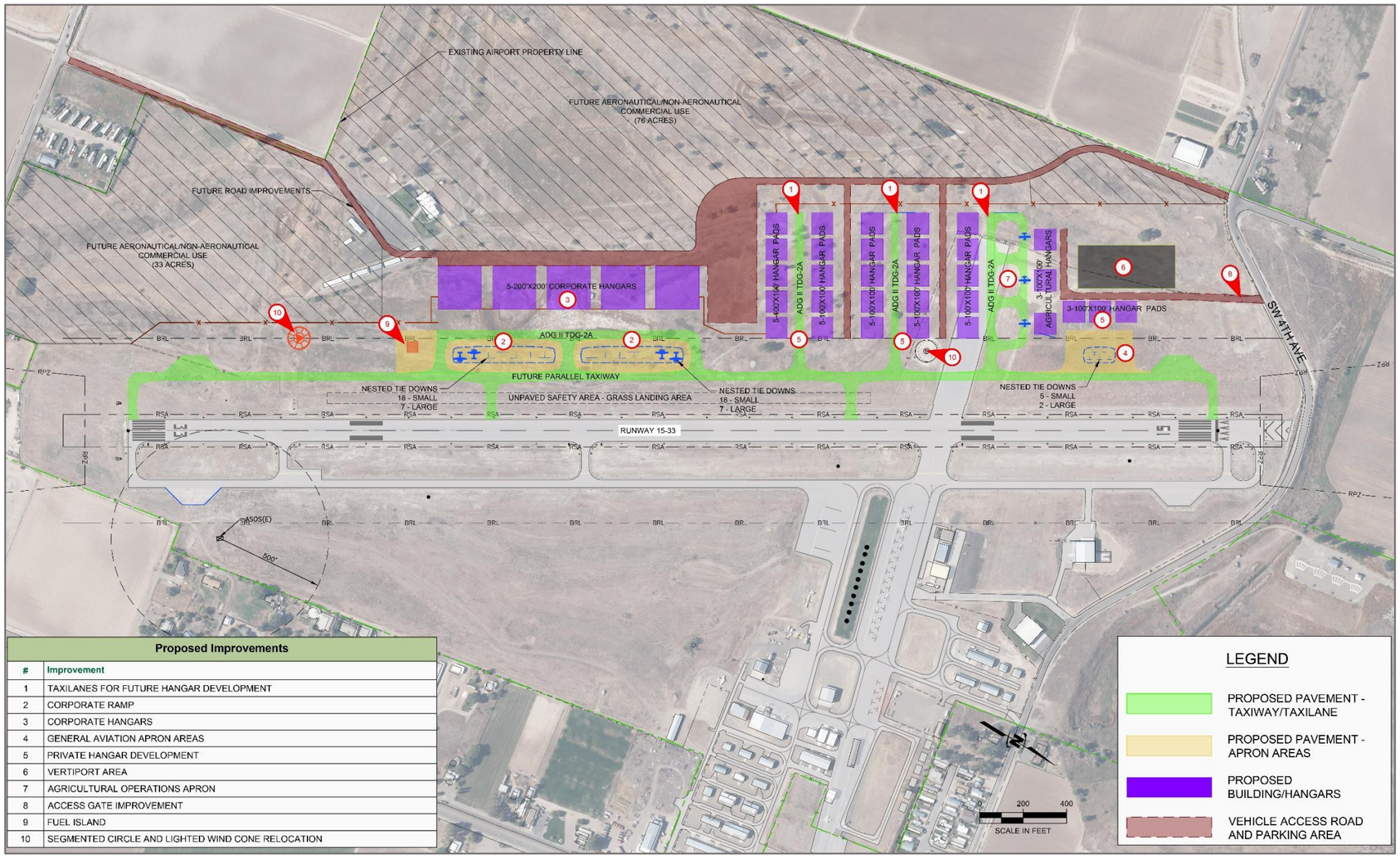
Alternative 2A

West Landside Alternative 2A, as shown in **Figure 5.6**, depicts two tiedown aprons adjacent to five corporate hangars on the southwest side of the proposed development. The aprons could each accommodate 18 small, nested aircraft or 7 A/B-II large aircraft. A fuel island is situated on the southern end of this apron area. A series of box hangars, taxilanes, and access roads separate the two aprons from a third apron on the northwest side. This area is much smaller and could include up to 5 small nested tiedowns or 2 large tiedowns. The box hangar and taxilane configuration is similar in both options; however, this alternative has more box hangars with better vehicle access. The agricultural aircraft taxilanes and hangars are adjacent to the northern most row of box hangars. A road runs parallel to the western edge of the landside facilities, providing access to both the proposed development and the 109 acres of future aeronautical or non-aeronautical commercial use land.

Alternative 2B

West Landside Alternative 2B is depicted in **Figure 5.7** and includes a different layout of the access roads, aprons, hangar pads, and agricultural use area. A larger apron area is depicted between the corporate hangars and parallel taxiway that would accommodate greater quantities and sizes of aircraft. In total, the aprons in this area could park up to 54 small aircraft, 36 A/B-II aircraft, or 15 large jets. An expanded apron design and more corporate hangars does impact the number of box hangar pads. The northwest section has been slightly reconfigured to accommodate a larger apron area between the box hangars and agricultural operators. The apron is perpendicular to the parallel taxiway and could park 15 small aircraft or 6 A/B-II large aircraft. The primary access road along the western boundary of the landside development is located further west in this alternative. As such, fewer acres have been designated for future aeronautical or non-aeronautical commercial use.

FIGURE 5.6
WEST LANDSIDE CONFIGURATION 2A



Proposed Improvements	
#	Improvement
1	TAXILANES FOR FUTURE HANGAR DEVELOPMENT
2	CORPORATE RAMP
3	CORPORATE HANGARS
4	GENERAL AVIATION APRON AREAS
5	PRIVATE HANGAR DEVELOPMENT
6	VERTIPORT AREA
7	AGRICULTURAL OPERATIONS APRON
8	ACCESS GATE IMPROVEMENT
9	FUEL ISLAND
10	SEGMENTED CIRCLE AND LIGHTED WIND CONE RELOCATION

Advantages

- A/B-I aircraft potential apron positions: 41
- A/B-II aircraft potential apron positions: 16
- Box hangar pads: 31
- Corporate hangar pads: 5
- Future Commercial Use Acres: 109
- Obstacle separations were configured to accommodate both large and small aircraft tiedowns.
- The agricultural taxilane configuration near the old crosswind runway would be easier and more cost effective in the short-term for users to begin operating from.
- Airport vehicle road configuration provides easy access to all proposed hangars.
- Vertiport location could be easily accessed from SW 4th Avenue.

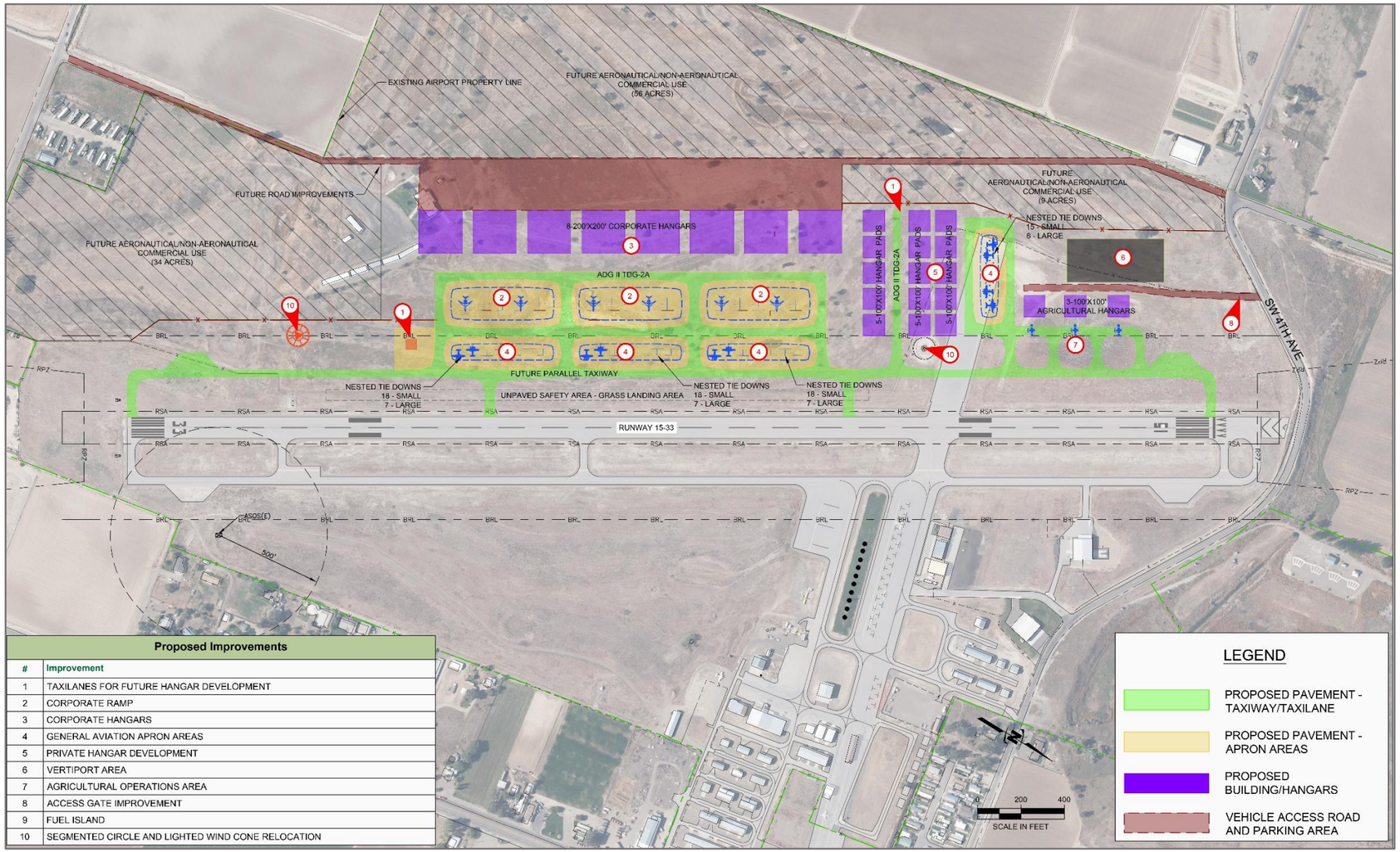
Disadvantages

- No apron tiedown positions for large jet aircraft that might be associated with future commercial development.
- Limited and less convenient vehicle parking for corporate hangars could be a concern for future business operations.

Total Estimated Project Cost: $7,633,965

Source: J-U-B

FIGURE 5.7
WEST LANDSIDE CONFIGURATION 2B



Proposed Improvements	
#	Improvement
1	TAXILANES FOR FUTURE HANGAR DEVELOPMENT
2	CORPORATE RAMP
3	CORPORATE HANGARS
4	GENERAL AVIATION APRON AREAS
5	PRIVATE HANGAR DEVELOPMENT
6	VERTIPORT AREA
7	AGRICULTURAL OPERATIONS AREA
8	ACCESS GATE IMPROVEMENT
9	FUEL ISLAND
10	SEGMENTED CIRCLE AND LIGHTED WIND CONE RELOCATION

Advantages

- A/B-I aircraft potential apron positions: 69
- A/B-II aircraft potential apron positions: 42
- Large jet aircraft potential apron positions: 15
- Box hangar pads: 18
- Corporate hangar pads: 8
- Future Commercial Use Acres: 99
- Obstacle separations were configured to accommodate both large and small aircraft tiedowns.
- Large jet aircraft tiedown positions strategically located to service future commercial development.
- The road layout and vehicle parking area location are the most accommodating to future commercial development.
- Vertiport location could be easily accessed from SW 4th Avenue.

Disadvantages

- Less land dedicated to future aeronautical or non-aeronautical land use.
- Limited vehicle access to box hangars.

Total Estimated Project Cost: $13,101,640

Source: J-U-B

5.6 ALTERNATIVES ANALYSIS SUMMARY

The development objectives outlined in the introduction of this chapter were used to guide the identification, evaluation, and selection of alternatives at Ontario Municipal Airport. To ensure the objectives were met and adequate consideration given each development option, all alternatives were evaluated using the following criteria:

Safety: All alternatives were crafted to be compliant with FAA design standards.

Cost: Planning-level cost estimates were created for the evaluation of alternatives; a more detailed cost analysis will be completed in the upcoming chapter for the selected improvements.

Operational Effectiveness: The alternatives were evaluated for their ability to meet forecasted growth throughout the planning period and beyond.

Environmental Issues: Each alternative was analyzed based on the extent of its potential environmental impact. Coordination with the FAA environmental specialist will be required to determine the ultimate environmental level of effort for any future development.

Revenue Generation: Opportunities considered in this evaluation include revenue generated by fuel sales, hangar pad and tiedown leasing availability, and vehicle parking.

The evaluation of each alternative using these criteria is summarized in **Table 5.2**.

TABLE 5.2
ALTERNATIVES ANALYSIS SUMMARY

	Airside Alternative	Landside Alternatives				
		East			West	
		1A	1B	1C	2A	2B
Alternative with the Lowest Estimated Cost per Each Development Area	✓	✓			✓	
Alternatives Exceeding $7 Million in Estimated Costs				✓	✓	✓
Potential for NEPA Reporting						
EA Potential	✓	✓	✓	✓	✓	✓
Categorical Exclusion Potential	✓					
Private Investment Opportunities		✓	✓	✓	✓	✓
Alternative with the Most Proposed Hangar Pads per Development Area				✓	✓	
Alternatives with Corporate Hangars		✓	✓	✓	✓	✓
Alternatives with Additional FBO Facilities		✓	✓	✓		
Alternatives with Commercial Use Land					✓	✓
Revenue Generating Potential		✓	✓	✓	✓	✓

Source: J-U-B Analysis

5.7 PREFERRED ALTERNATIVE SELECTION

The configurations presented in this chapter provided the City of Ontario different development options to accommodate forecasted growth at the Airport, create opportunities for business development, and address any deficiencies identified in the facility requirement analysis. With guidance from the Technical Advisory Committee (TAC) and public input from an open house event, the East Landside 1C and West Landside 2A Configurations were selected, revised, and consolidated into a 20-year development plan for Ontario Municipal Airport.

The airside development depicted in the preferred alternative (see **Figure 5.8**) was not altered from the initial configuration and is largely focused on standards compliance. Airside improvements include taxiway pavement removal, secondary full-parallel taxiway construction, and potential land acquisition or easement purchases. The City expressed an early interest in expanding aviation and non-aviation commercial development on the west side of the Airport. As such, the second full-parallel taxiway and adjacent landside facility improvements were designed to be compatible with this future airport commercial development. The proposed west landside facilities include large commercial hangar lots and aprons, direct access to SW 4th Avenue, and designated areas for aeronautical and non-aeronautical use. Most projects planned for westside development likely exceed the 20-year planning scope; however, this area was proactively designed to guide the City of Ontario through logical and orderly development decisions over the planning period and beyond.

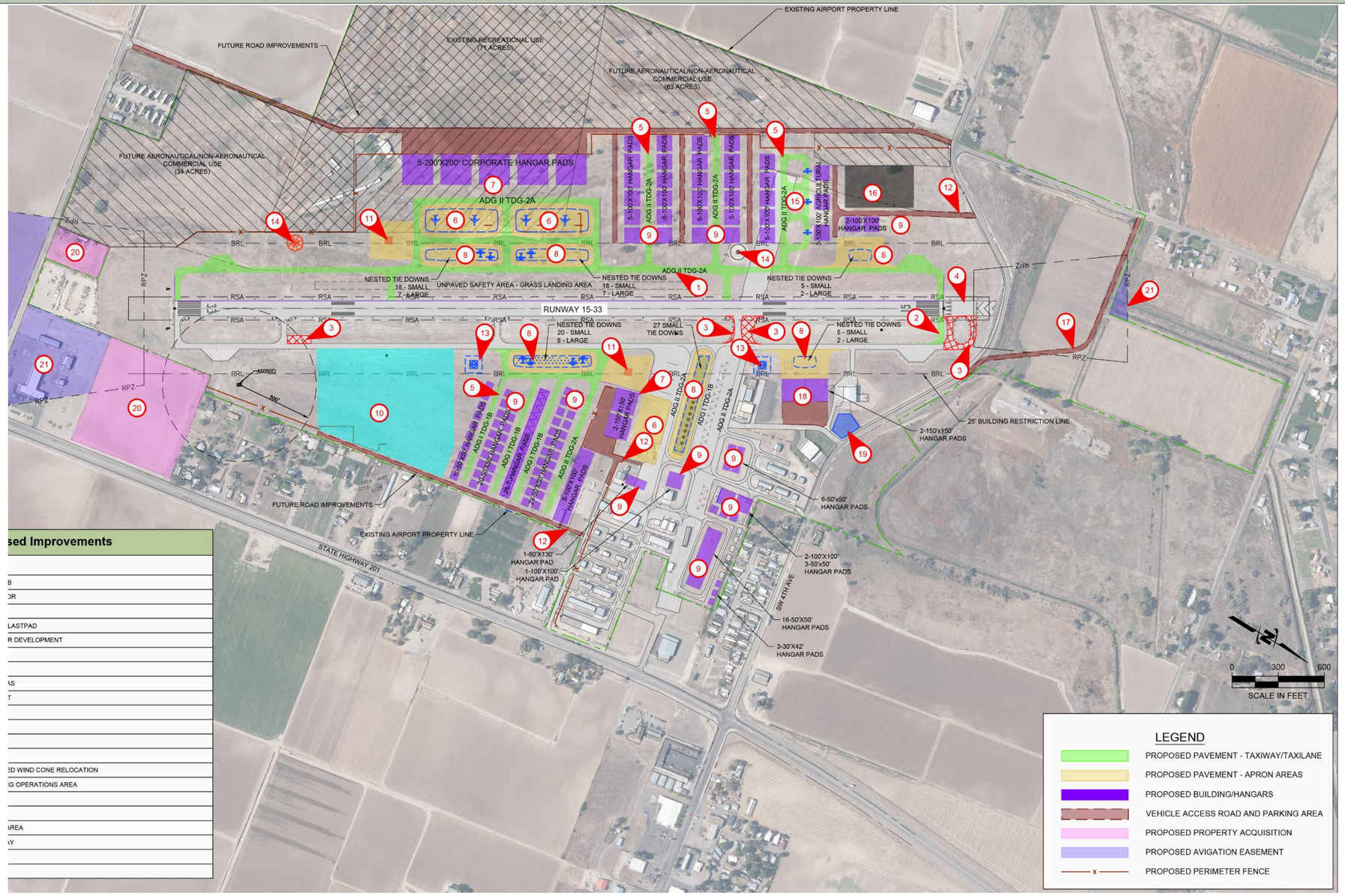
Additional landside facility improvements east of Runway 15/33 were configured to maximize the space available for development and provide increasing levels of demand accommodation. This is achieved with additional hangar lots, tie-down aprons, helipads, vertiports, vehicle entry points, access roads, and parking areas as well as a relocated fuel facility. An additional improvement not included in the previous configurations proposes a partial shift of SW 4th Avenue to the east. This project moves the public road further from the Runway End 15 approach, enhancing the visibility and safety of pilots flying into Ontario Municipal Airport.

Coordination with the FAA would occur prior to any development activities associated with the Preferred Alternative to determine NEPA documentation requirements. Based on the amount of proposed land acquisition, potential for increased aircraft use, construction of a vertiport, and potential for increased nonaeronautical uses, certain elements of the Preferred Alternative would likely require completion of an Environmental Assessment (EA).

Following a recommendation from the TAC, the City Council approved the preferred alternative depicted in **Figure 5.8** as the basis for the phased development plan and ALP drawings.

The inclusion of identified improvements in the preferred alternative does not indicate a commitment on the part of the FAA or the State of Oregon to provide funding for any or all projects. Justification for any future improvements will be based on activity levels at the time the project is requested for development. Documentation of actual activity levels will need to meet planning levels to justify AIP funding for eligible projects.

FIGURE 5.8
AIRSIDE AND LANDSIDE PREFERRED ALTERNATIVE



Source: J-U-B

CHAPTER 6 PHASED DEVELOPMENT

The overall goal of the phased development plan is to establish a realistic schedule for implementing the findings and recommendations of this planning effort. This schedule will guide the City of Ontario through annual project prioritization updates to the Airport's Capital Improvement Program (ACIP) for consideration under the FAA's ACIP. The proposed improvements that were outlined in the preferred landside alternative, were integrated into the phasing schedule based on the following potential project constraints:

- Funding availability
- Project sequencing limitations
- Environmental processing requirements
- Agency and tenant approvals and coordination processes
- Leases and land acquisition needs
- Sponsor priorities

The phasing schedule is divided into three successive planning periods: short term (years 0-5), intermediate term (years 6-10), and long term (years 11-20). The following sections describe and depict the various improvements planned for each phase and their estimated costs. The recommended phasing is not unchangeable. The timing or composition of improvements may be altered depending on aviation demand, grant funding, area economics, or Sponsor perspective.

6.1 CAPITAL IMPROVEMENT FUNDING SOURCES

Most airports included in the National Plan of Integrated Airport Systems (NPIAS) depend on federal and state cost-share arrangements to help fund many capital improvement projects. Those costs, not provided through federal or state mechanisms, must be funded through local resources. This section describes the potential funding options available for facility improvements at Ontario Municipal Airport.

6.1.1 FEDERAL FUNDING

The Airport and Airway Improvement Act of 1982 established the Airport Improvement Program (AIP) as the FAA's funding mechanism for capital projects at public-use airports. AIP funds are distributed as entitlement and discretionary grants to those airports included in the NPIAS with eligible and justified projects. The FAA Reauthorization Act of 2018 approved an annual $3.35 billion for AIP investments from 2018 to 2023. Any potential AIP funds that could be apportioned to Ontario Municipal Airport after 2023 are contingent on congressional authorization and a minimum annual appropriation of $3.2 billion.

Under the AIP, general aviation (GA) airports with no large, certified air carrier service and less than 10,000 annual passenger enplanements are eligible for up to $150,000 of nonprimary entitlement (NPE) funds per year. Ontario Municipal Airport is expected to remain classified as a nonprimary, local GA airport over the planning period, and is projected to receive $150,000 in annual NPE funds.

The remaining AIP funds allocated for GA airports are distributed as state apportionment funds. This type of FAA grant is distributed among GA airports in each state, territory, and the District of Columbia according to an area/population formula. The highest priority projects in need of federal assistance within a state are then given preference to that state's apportioned AIP funds. The FAA allotted

$4,640,939 in state apportionment funds for airports in Oregon in 2022.

A national prioritization formula is similarly used to allocate any remaining AIP funds as discretionary grants. The highest priority projects that exceed entitlement allotments and require supplemental federal assistance are given preference in discretionary funding.

On November 15, 2021, President Biden signed into the law the Infrastructure Investment and Jobs Act, also known as the Bipartisan Infrastructure Law (BIL). The legislation provides the FAA with $25 billion in funding to invest in the nation's air transportation system over the next 5 years. As part of the airport infrastructure improvement initiative, $500 million will be annually allocated to nonprimary airports over 5 years as a fixed amount based on their role in the NPIAS. Local GA airports, which includes Ontario Municipal Airport, are eligible to receive $159,000 in annual BIL funds from 2022 to 2026.

The current federal share of AIP grants at nonprimary GA airports in Oregon is 90 percent, under FAA Order 5300-38D, *Change 1, Airport Improvement Program Handbook* (AIP Handbook). This federal share is reflected in the cost estimates for AIP-eligible projects proposed at Ontario Municipal Airport.

6.1.2 STATE FUNDING

The Aviation System Action Program (ASAP) fund supports the development of airports in Oregon. The Oregon Department of Aviation (ODA) and the State Aviation Board determine how ASAP funds are distributed to airports in Oregon through the Critical Oregon Airport Relief (COAR) and State-Owned Airports Reserve (SOAR) programs.

The COAR program assists airport sponsors in Oregon with federal grant match requirements and distributes funding for emergency preparedness, infrastructure projects, and aviation related economic development. ODA uses a priority ranking system to allocate airport development funds. From 2016 to 2022, an average of $2 million in COAR funding has been distributed annually.

ODA also funds pavement maintenance and associated improvements at Oregon airports through the Pavement Maintenance Program (PMP). The PMP is limited in scope and includes patching pavements, crack sealing, fog sealing, slurry sealing, and striping. As a regional GA airport in the *Oregon Aviation Plan v6.0* (OAP v6.0), Ontario Municipal Airport qualifies for PMP assistance up to 90 percent of the total pavement maintenance project cost.

Through the COAR program, ODA currently provides 9 percent match, up to $150,000, for AIP funded projects. While the state contribution can vary depending on funding availability, the project cost summaries in **Table 6.1** assumed a state cost share of 9 percent. On pavement maintenance projects that may be eligible for PMP funds, the state cost share assumption was increased to 90 percent, with a recommended 10 percent local match.

6.1.3 LOCAL FUNDING

Any remaining costs on projects subsidized by federal or state funding mechanisms, or those ineligible for assistance, must be locally funded. The local share of AIP or BIL funded projects is 10 percent; however, state funding can help offset this local match requirement. As such, the cost estimates developed for proposed AIP-eligible projects at Ontario Municipal Airport assumed a funding share of 90 percent federal, 9 percent state, and 1 percent local. It is assumed that implementation of the phased development plan may require additional local

funds to meet any shortfalls in federal funding or cover those projects not eligible for AIP grants.

Local funding sources may include Airport revenues, City of Ontario resources, bond proceeds, and private investments. At Ontario Municipal Airport, revenue generated from ground leases, fuel sales, and parking and ramp fees contribute to the local share of project costs.

6.2 PHASED DEVELOPMENT AND COST SUMMARIES

This section describes the short, intermediate, and long-term improvements planned at the Airport, which are depicted in **Figures 6.1-6.3**. These project depictions will be used to develop the ALP drawing set, while the descriptions will be refined into specific projects for the ACIP that better reflect how projects are approved, designed, and constructed.

Several factors were considered during the development of the proposed project timeline. Priority was given to projects that enhance safety, preserve infrastructure, improve standards compliance, and address capacity needs.

FAA grant assurances require that a pavement maintenance plan be established to maximize the airfield's life cycle. As such, pavement projects at Ontario Municipal Airport are scheduled at intervals that meet the useful life eligibility established by the FAA in the AIP Handbook. Minor rehabilitation is planned every 3 years to preserve the pavement with a crack fill and seal coat. More extensive rehabilitation, which will include asphalt replacement and an assessment of the base and subbase gravel conditions, is planned in the long-term and expected to obtain a minimum useful life of 10 years.

To determine if the facility improvements proposed at Ontario Municipal Airport are financially feasible for the Airport Sponsor to implement, project cost estimates and potential funding sources were considered during the preparation of the phased development plan.

Table 6.1 presents a summary of the plan with each project, estimated cost, and potential funding contribution grouped by planning period. The cost estimates include environmental documentation, design, engineering, construction administration, and contingencies that may arise during project implementation. Recent unit pricing from airport construction in the region was used to develop the estimates in 2022 dollars. These costs are a rough order of magnitude estimates, developed for planning purposes, and subject to further refinement during design.

The phased development plan summarized in **Table 6.1** includes three funding columns. These columns represent the federal, state, and local funding sources described in the previous section. The first column indicates the maximum potential funding, based on eligibility requirements, the FAA could provide the Airport Sponsor from three source categories: nonprimary entitlement (NPE), Bipartisan Infrastructure Law (BIL), and discretionary grants. The FAA's share, funded from the three categories, is shown as 90 percent of the total estimated cost for eligible projects.

The final two columns include the local AIP match requirement, which is the remaining 10 percent of the project cost; however, this is offset by the state's share from ASAP programs. On AIP-eligible projects, the Airport Sponsor's share of the total estimated cost is shown at an assumed 1 percent and the State's share at an assumed 9 percent. For all non-AIP eligible

projects, funding is distributed between these two columns based on state grants, local state match, or all local resources.

TABLE 6.1
PHASED DEVELOPMENT PLAN

No.	Description	Total Cost	Funding		
			FAA	State	Local
Short-Term Improvements (Years 0-5)					
1	Expand Jet Parking Apron	**$889,624**	$800,661	$80,066	$8,897
2	Hangar Taxilanes	**$1,382,726**	$1,244,453	$124,445	$13,828
3	Hangar Ground Lease Lots	**$0**	$0	$0	$0
4	Pavement Rehabilitation Crack Fill/Seal Coat (Rwy, Twy A, Taxilanes, and Tiedown Aprons)	**$541,864**	$487,677	$48,767	$5,420
5	Airport Access Gate Improvements	**$294,624**	$265,161	$26,516	$2,947
6	BLM SEAT Base	**$0**	$0	$0	$0
	Years 1-5 Total Cost	**$3,108,838**	**$2,797,952**	**$279,794**	**$31,092**
Intermediate-Term Improvements (Years 6-10)					
7	Tiedown Apron North of GA Terminal Building	**$1,086,255**	$977,629	$97,762	$10,864
8	Hangar Taxilanes	**$1,185,842**	$1,067,257	$106,725	$11,860
9	Hangar Ground Lease Lots	**$0**	$0	$0	$0
10	Pavement Rehabilitation Crack Fill/Seal Coat (Rwy, Twy A, Taxilanes, and Tiedown Aprons)	**$588,696**	$529,826	$52,982	$5,888
11	Tiedown Apron to Southwest	**$1,316,463**	$1,184,816	$118,481	$13,166
12	Fuel Island and Apron	**$2,246,345**	$2,021,710	$202,171	$22,464
13	Helipads	**$225,045**	$202,540	$20,254	$2,251
14	Tiedown Apron Adjacent to Main GA Apron	**$1,493,872**	$1,344,484	$134,448	$14,940
15	Welcome Park Static Display	**$120,000**	$108,000	$10,800	$1,200
16	Realign SW 4th Avenue	**$2,947,701**	$2,652,930	$265,293	$29,478
	Years 6-10 Total Cost	**$11,210,218**	**$10,089,192**	**$1,008,916**	**$112,110**
Long-Term Improvements (Years 11-20)					
17	Airport Master Plan Update	$407,500	$366,750	$36,675	$4,075
18	Pavement Rehabilitation Crack Fill/Seal Coat (Rwy, Twy A, and East Side Taxilanes/Aprons)	$628,729	$565,856	$56,585	$6,288
19	Property Land Acquisition to the South and East	$929,600	$836,640	$83,664	$9,296
20	Perimeter Fencing on West Side	$397,605	$357,844	$35,784	$3,977
21	Parallel Taxiway B, Connectors, and Hold Aprons	$4,352,897	$3,917,606	$391,760	$43,531
22	Hangar Taxilanes for Agricultural Operations	$1,399,955	$1,259,959	$125,995	$14,001
23	Agricultural Operations Ground Lease Lots	$0	$0	$0	$0
24	Avigation Easements to the North and South	$203,950	$183,555	$18,355	$2,040
25	Tiedown Apron on West Side	$1,136,786	$1,023,107	$102,310	$11,369

No.	Description	Total Cost	Funding		
			FAA	State	Local
23	Agricultural Operations Ground Lease Lots	$0	$0	$0	$0
23	Agricultural Operations Ground Lease Lots	$0	$0	$0	$0
24	Avigation Easements to the North and South	$203,950	$183,555	$18,355	$2,040
25	Tiedown Apron on West Side	$1,136,786	$1,023,107	$102,310	$11,369
26	Relocate Segmented Circle and Lighted Wind Cone	$146,125	$131,512	$13,151	$1,462
27	Hangar Taxilanes	$1,190,071	$1,071,063	$107,106	$11,902
28	Hangar Ground Lease Lots	$0	$0	$0	$0
29	Corporate Tiedown Aprons and Taxilanes	$6,863,995	$6,177,595	$617,759	$68,641
30	Fuel Island and Apron on West Side	$2,412,321	$2,171,088	$217,108	$24,125
31	Vertiport	$196,667	$177,000	$17,700	$1,967
32	East Side Taxilanes and Tiedown Aprons Rehabilitation	$346,680	$312,012	$31,201	$3,467
33	Runway and Parallel Taxiway A Rehabilitation and Taxiway Modifications	$661,311	$595,180	$59,518	$6,613
	Years 11-20 Total Cost	**$21,274,191**	**$19,146,767**	**$1,914,671**	**$212,753**
	20 Year Project Totals	**$35,593,247**	**$32,033,911**	**$3,203,381**	**$355,955**

Source: J-U-B

6.2.1 SHORT-TERM IMPROVEMENTS (YEARS 0-5)

The short-term improvements represent the first five years of planned development at Ontario Municipal Airport and approximate $3.1 million in capital needs. Since these projects are expected for early implementation, the short-term sequencing and funding plan aligns most closely with the current ACIP. The improvements planned for this period are described below and depicted in **Figure 6.1**; project numbers correspond with those in the depiction.

Project No. 1: Expand Jet Apron Parking
An expansion of the Airport's existing jet apron is planned to provide additional parking positions for aircraft requiring larger clearance areas than the main GA tie-down apron can safely accommodate. In addition to large aircraft parking, the expanded apron will provide access to future hangar lots planned for FBO or corporate development.
Cost Estimate: $889,624

Project No. 2: Hangar Taxilanes
This project is planned to accommodate future development between the proposed BLM SEAT Base and existing east side development. The improvements would establish a taxilane connection between Parallel Taxiway A and future hangar lease lots, which are situated around a looped taxilane to best maximize the space available in this area for landside development.
Cost Estimate: $1,382,726

Project No. 3: Hangar Ground Lease Lots
Additional ground leasing opportunities on the east side are designated in areas accessible by existing and future taxilanes. There is a mix of box and corporate hangar lots planned northeast

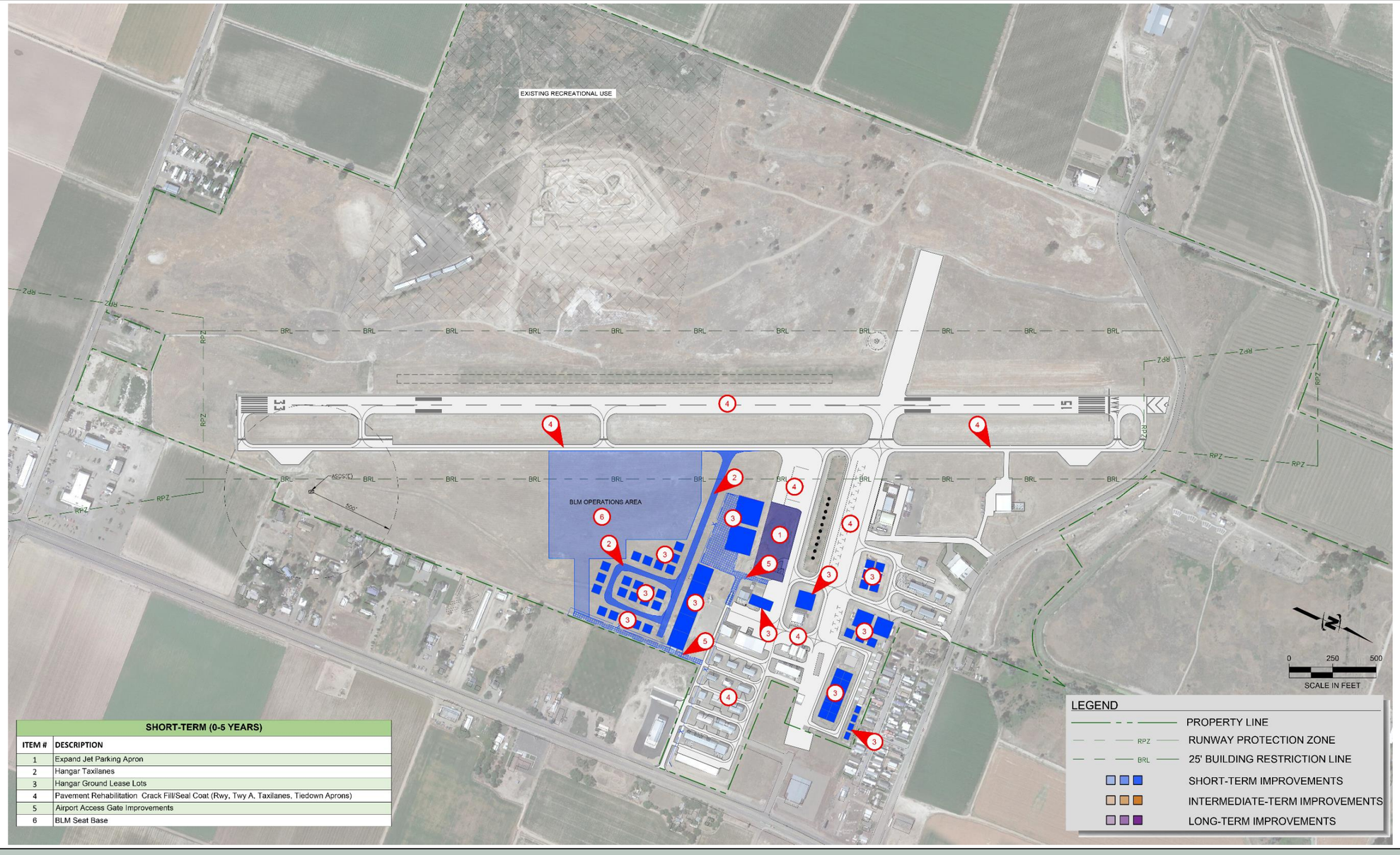
of the main tiedown apron, and in an area currently leased by the BLM, for SEAT operations. Future development in this area will be contingent on the relocation of the SEAT Base, which is currently in the predesign phase. Additional box, corporate, and FBO hangar lots are planned to accompany future east side taxilane development (Project No. 2). While the proposed aircraft hangar ground lease lots in the short-term planning period exceed forecasted demand, these aircraft storage opportunities were included in the proposed east landside development layout as a proactive planning measure to guide future growth and development at the Airport. These are leases only and do not have any associated capital costs.
Cost Estimate: $0

Project No. 4: Pavement Rehabilitation Crack Fill/Seal Coat (Rwy, Twy A, Taxilanes, and Tiedown Aprons)
This project is part of a pavement maintenance plan established by Ontario Municipal Airport to maximize the airfield's life cycle. Runway 15/33, Taxiway A, plus existing taxilanes and tiedown aprons, would benefit from a crack fill and seal coat at this point in the planning process to obtain at least 3 years of useful life. This recurring project extends the useful life of airfield pavements by preventing subsurface water infiltration and surface oxidation.
Cost Estimate: $541,864

Project No. 5: Airport Access Gate Improvements
Airport Way access improvements are planned to accommodate future FBO development south of existing east landside facilities. The reconfiguration of the existing access point would maintain secure entry to east side hangars, limit the risk of vehicle/aircraft accidents, and enable direct access to proposed FBO facilities and vehicle parking.
Cost Estimate: $294,624

Project No. 6: BLM SEAT Base
East landside facility improvements were configured to accommodate a relocation and expansion of the BLM SEAT base. The proposed location of the new facility, which is currently in the predesign phase, is shown in **Figure 6.1**. While there are no associated capital costs, this improvement has been included to preserve the area for BLM lease and guide surrounding future development.
Cost Estimate: $0

FIGURE 6.1
SHORT-TERM IMPROVEMENTS (YEARS 0-5)



SHORT-TERM (0-5 YEARS)	
ITEM #	DESCRIPTION
1	Expand Jet Parking Apron
2	Hangar Taxilanes
3	Hangar Ground Lease Lots
4	Pavement Rehabilitation Crack Fill/Seal Coat (Rwy, Twy A, Taxilanes, Tiedown Aprons)
5	Airport Access Gate Improvements
6	BLM Seat Base

Source: J-U-B

6.2.2 INTERMEDIATE-TERM IMPROVEMENTS (YEARS 6-10)

The intermediate-term improvements represent the next five years of planned development at Ontario Municipal Airport and approximate $11.2 million in capital needs. The improvements planned for implementation during the intermediate term are described below and depicted in **Figure 6.2**; project numbers correspond with those in the depiction.

Project No. 7: Tiedown Apron North of GA Terminal

A new apron area will be constructed to provide space for additional aircraft tiedowns and to serve as access to future large corporate or FBO hangar space. This apron will accommodate up to five individual tiedown locations.

Cost Estimate: $1,086,255

Project No. 8: Hangar Taxilanes

This project plans to accommodate future development on the southeast side of the Airport. The proposed taxilanes will be public-use facilities that extend from the taxilane improvement project planned in the short-term phase. The taxilanes will support future hangar development on the southeast side of the Airport, providing access between hangar lease lots and Parallel Taxiway A.

Cost Estimate: $1,185,842

Project No. 9: Hangar Ground Lease Lots

Additional ground leasing opportunities are planned to accompany future taxilane development in Project No. 8. The layout of aircraft storage is compatible with current and future airport facilities and should be used as a guideline for ground lease lot placement. The proposed mix of box, corporate, and T-hangar lots is anticipated to meet the Airport's future forecasted demand; however, the lot sizing can be adapted to accommodate varying hangar needs that may arise during the intermediate-term planning period. While these are leases only and do not have any associated capital costs, the city may consider constructing and renting out hangars to generate additional revenue.

Cost Estimate: $0

Project No. 10: Pavement Rehabilitation Crack Fill/Seal Coat (Runway, Taxiway A, Taxilanes, and Tiedown and Aprons)

This project is part of a pavement maintenance plan, established by Ontario Municipal Airport, to maximize the airfield's life cycle. Runway 15/33, Taxiway A, along with existing taxilanes and tiedown aprons, would benefit from a crack fill and seal coat, at this point in the planning process, to obtain at least 3 years of useful life. This recurring project extends the useful life of airfield pavements by preventing subsurface water infiltration and surface oxidation.

Cost Estimate: $588,696

Project No. 11: Tiedown Apron to Southwest

A new apron area will be constructed to provide space for additional aircraft tiedowns. This apron will accommodate up to 20 individual tiedown locations.

Cost Estimate: $1,316,463

Project No. 12: Fuel Island and Apron

The relocation of fuel facilities to the south side of the existing jet apron is planned to improve the number and size of aircraft that can access the fuel pump. The proposed fuel apron will be designed to B-II, TDG 2A standards and include a centrally located fuel island. The proximity of these facilities to planned airport road and FBO improvements also creates an ideal location for fuel storage and delivery truck access.

Cost Estimate: $2,246,345

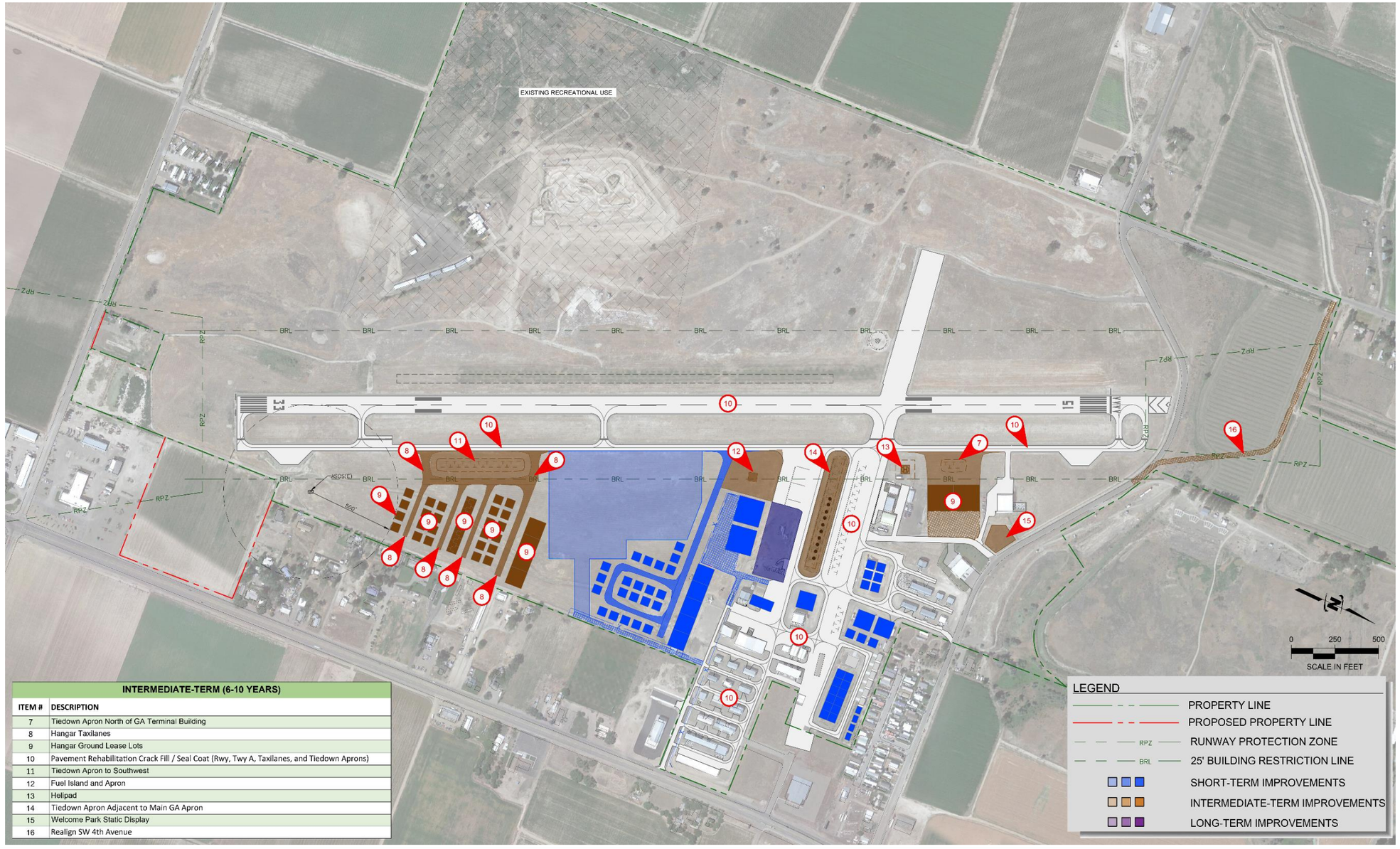
Project No. 13: Helipad
This project proposes to construct a new helipad to the east of the existing terminal building. This helipad will be a designated parking pad without special helicopter approach procedures.
Cost Estimate: $225,045

Project No. 14: Tiedown Apron Adjacent to Main GA Apron
A new apron area will be constructed to provide space for additional aircraft tiedowns. This apron will accommodate up to 27 individual tiedown locations.
Cost Estimate: $1,493,872

Project No. 15: Welcome Park Static Display
The Airport currently has a McDonnell Douglas F-4 Phantom II aircraft on loan from the U.S. Air Force for public viewing. This project is planned to improve the main entrance of the Airport and mount the aircraft in an area easily accessed by the public.
Cost Estimate: $120,000

Project No. 16: Realign SW 4th Avenue
Currently, SW 4th Avenue runs through the Runway Protection Zone (RPZ) at Runway End 15. To increase safety and capability to Runway End 15, the road will be relocated further to the North where the land elevation is significantly lower.
Cost Estimate: $2,947,701

FIGURE 6.2
INTERMEDIATE-TERM IMPROVEMENTS (YEARS 6-10)



Source: J-U-B

6.2.3 LONG-TERM IMPROVEMENTS (YEARS 11-20)

The long-term improvements represent the last ten years of planned development at Ontario Municipal Airport and approximate $21.3 million in capital needs. During this phase, the focus is on west landside development, preventative maintenance, and RPZ protection. The improvements planned for this period are described below and depicted in **Figure 6.3**. Project numbers correspond with those in the depiction.

Project No. 17: Airport Master Plan Update
The FAA recommends Airport Sponsors update their airport master plans every 7 to 10 years or as conditions change. A master plan update is planned at the beginning of the long-term improvements to account for changes at the Airport and in the aviation industry.
Cost Estimate: $407,500

Project No. 18: Pavement Rehabilitation Crack Fill / Seal Coat (Runway, Taxiway A, and East Side Taxilanes/Aprons)
This project is part of a pavement maintenance plan established by Ontario Municipal Airport to maximize the airfield's life cycle. Runway 15/33, Taxiway A, along with existing taxilanes and tiedown aprons, would benefit from a crack fill and seal coat, at this point in the planning process, to obtain at least 3 years of useful life. This recurring project extends the useful life of airfield pavements by preventing subsurface water infiltration and surface oxidation.
Cost Estimate: $628,729

Project No. 19: Property Land Acquisition to the South and East
Land to the south and east of the existing airport property line have been identified for acquisition to protect the approaches into the Airport and prevent incompatible land use in the Runway Protection Zones (RPZs).
Cost Estimate: $929,600

Project No. 20: Perimeter Fencing on West Side
A perimeter fence around the entirety of the Airport boundary exists to control access to the airfield and enhance security around hangar development areas. This project is planned to separate future non-aeronautical use land on the west side of the Airport from proposed landside development with a 6-foot chain link fence.
Cost Estimate: $397,605

Project No. 21: Parallel Taxiway B, Connectors, and Hold Aprons
A second parallel taxiway is proposed to support and attract future landside development on the west side of the Airport. Parallel Taxiway B should be designed to B-II, TDG 2A standards to accommodate larger jet traffic with more maneuvering space.
Cost Estimate: $4,352,897

Project No. 22: Hangar Taxilanes for Agricultural Operations
Taxilanes, specific to agricultural applications, will be constructed with three individual spaces for aircraft to load and unload chemicals and supplies. These taxilanes are intended for easy in and out access of repeat operations.
Cost Estimate: $1,399,955

Project No. 23: Agricultural Operations Ground Lease Lots
Leasing opportunities for agricultural operators are planned to accompany future taxilane development (Project No. 22) on the north side of the Airport. The three lots are planned near the decommissioned crosswind runway, which could support taxiing aircraft, should agricultural

demand out pace other east side development. The three proposed agricultural hangar ground lease lots are anticipated to meet the Airport's future forecasted demands. These are leases only and do not have any associated capital costs.
Cost Estimate: $0

Project No. 24: Avigation Easements to the North and South
Avigation easements should be purchased for any remaining property in the RPZs not protected by acquisition in Project No. 19. Control of the RPZ will help the Airport keep these areas obstacle free and accessible to maintenance and emergency personnel.
Cost Estimate: $203,950

Project No. 25: Tiedown Apron on West Side
A new apron area will be constructed on the West Side of the runway, adjacent to the new parallel taxiway. This apron will provide space for additional aircraft tiedowns and serve as access to future large hangar spaces. This apron will accommodate up to five individual tiedown locations.
Cost Estimate: $1,136,786

Project No. 26: Relocate Segmented Circle and Lighted Windcone
The existing segmented circle and lighted windcone on the west side of the Airport will need to be relocated to accommodate the construction of Parallel Taxiway B and its adjoining taxilanes. This project will relocate the segmented circle and lighted windcone to an area where it will continue to provide wind speed and direction indication to airport users.
Cost Estimate: $146,125

Project No. 27: Hangar Taxilanes
This project plans to accommodate the continued development of the west landside area. The proposed taxilanes will be public-use facilities that provide access from Parallel Taxiway B to future hangar lease lots on the west side of the Airport.
Cost Estimate: $1,190,071

Project No. 28: Hangar Ground Lease Lots
Additional ground leasing opportunities are planned to accompany future taxilane development in Project No. 27. The layout of aircraft storage is compatible with current and future airport facilities and should be used as a guideline for ground lease lot placement. The proposed mix of box and corporate hangar lots is anticipated to meet the Airport's future forecasted demand; however, the lot sizing can be adapted to accommodate varying hangar trends that may occur during the long-term planning period. While these are leases only and do not have any associated capital costs, the city may consider constructing and renting out hangars to generate additional revenue.
Cost Estimate: $0

Project No. 29: Corporate Tiedown Aprons and Taxilanes
The west side of the Airport has been identified for future corporate development. The corporate tiedowns, taxilanes, and hangar spaces will provide space for business operations and large aircraft. The west side of these hangars will have public access with automobile parking space and storefront capabilities.
Cost Estimate: $6,863,995

Project No. 30: Fuel Island and Apron on West Side
The installation of an additional fuel apron and self-serve fueling system is planned to complement corporate hangar development on

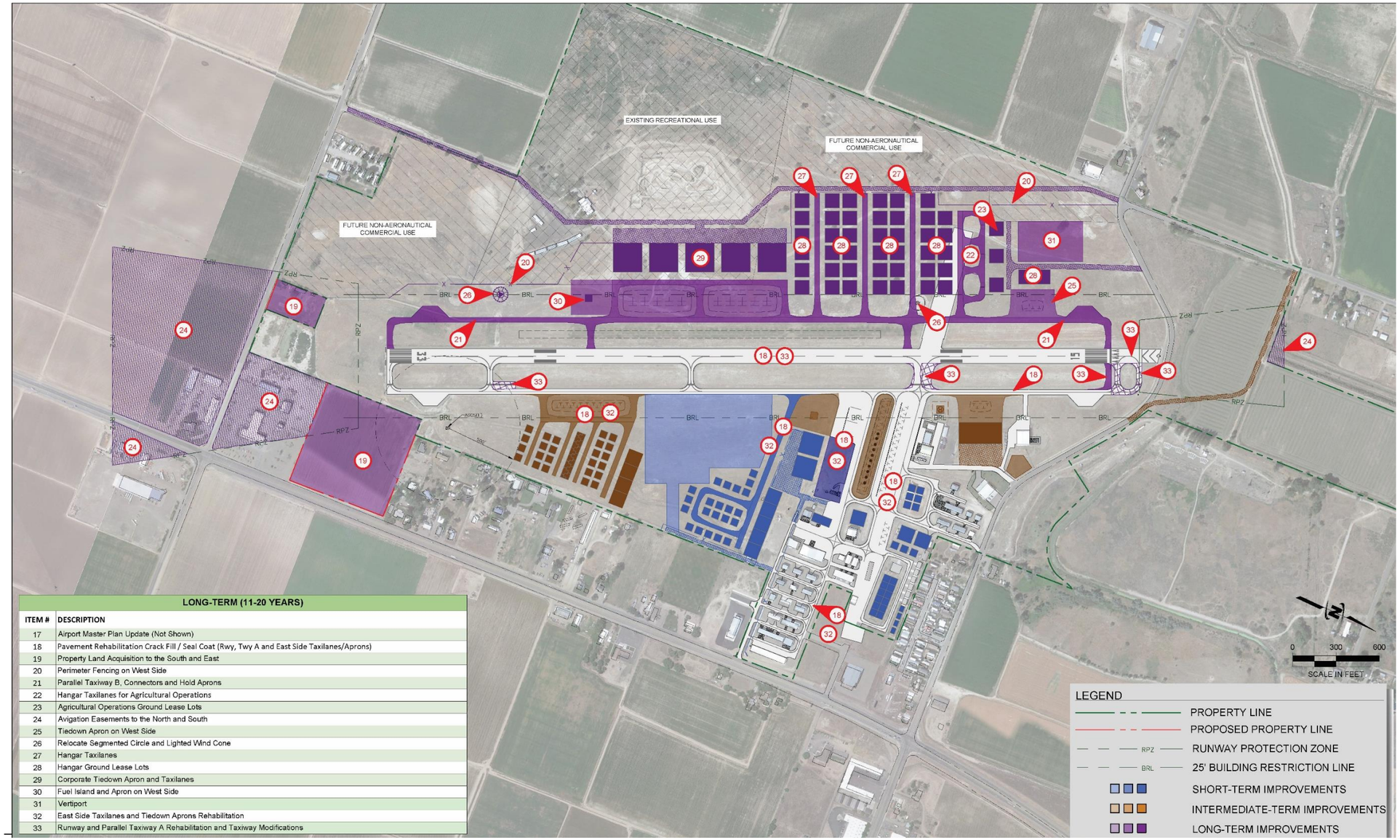
the west side of the Airport. As such, this proposed facility improvement is designed and positioned to accommodate large aircraft use.
Cost Estimate: $2,412,321

Project No. 31: Vertiport
A vertiport is proposed near a future primary access point on the west side of the Airport. Design standards do not yet exist for the infrastructure or airspace needed to safely land or launch electric vertical take-off and landing (eVTOL) aircraft. As such, the proposed vertiport location is subject to change over the 20-year planning period.
Cost Estimate: $196,667

Project No. 32: Rehabilitate Taxilanes and Tiedown Aprons on East Side
This project is part of a pavement maintenance plan established by Ontario Municipal Airport to maximize the airfield's life cycle. The pavement of taxilanes and tiedown aprons on the east side will likely need to be replaced, at this point in the planning process, to obtain at least 10 years of useful life.
Cost Estimate: $346,680

Project No. 33: Rehabilitate Runway and Parallel Taxiway A
Similar to Project No. 32, this planned improvement is part of the pavement maintenance plan at the Airport. Runway 15/33 and Parallel Taxiway A pavement is expected to reach its useful life at this point in the planning period and will likely need to be replaced. This project should also include the removal of non-standard pavement sections and the reconfiguration of Runway 15 End taxiways.
Cost Estimate: $661,311

FIGURE 6.3
LONG-TERM IMPROVEMENTS (YEARS 11-20)



LONG-TERM (11-20 YEARS)

ITEM #	DESCRIPTION
17	Airport Master Plan Update (Not Shown)
18	Pavement Rehabilitation Crack Fill / Seal Coat (Rwy, Twy A and East Side Taxilanes/Aprons)
19	Property Land Acquisition to the South and East
20	Perimeter Fencing on West Side
21	Parallel Taxiway B, Connectors and Hold Aprons
22	Hangar Taxilanes for Agricultural Operations
23	Agricultural Operations Ground Lease Lots
24	Avigation Easements to the North and South
25	Tiedown Apron on West Side
26	Relocate Segmented Circle and Lighted Wind Cone
27	Hangar Taxilanes
28	Hangar Ground Lease Lots
29	Corporate Tiedown Apron and Taxilanes
30	Fuel Island and Apron on West Side
31	Vertiport
32	East Side Taxilanes and Tiedown Aprons Rehabilitation
33	Runway and Parallel Taxiway A Rehabilitation and Taxiway Modifications

Source: J-U-B

6.3 ENVIRONMENTAL REVIEW

The proposed capital improvements and preventative maintenance projects included in Ontario Municipal Airport's phased development plan are the culmination of the master planning and public involvement processes. The short-term improvements include several development projects to address immediate needs, including increased aircraft storage availability, pavement rehabilitation, and preparations for planned future development. The intermediate and long-term projects focus on expansion of aircraft storage facilities and expansion of infrastructure to address the expected increase in operations.

Short-Term Improvements: The FAA will make the final determination regarding the level of NEPA documentation and resource evaluations required for the projects listed in the phased development plan. Based on the scope, scale, and location of the proposed airport improvements, the following environmental resource studies are anticipated to be required, prior to the implementation of the listed short-term projects:

- **Environmental Evaluation –** It is anticipated that the short-term improvements would meet the FAA's requirements for categorically excluded actions as detailed in FAA Order 1050.1F. Different resource studies may be required if a documented categorical exclusion/ environmental evaluation is necessary for any of the short-term improvement projects.
- **Biological Evaluation –** A preliminary biological evaluation and site visit indicates that there is no habitat on the Airport for ESA-listed species. A biological evaluation is recommended prior to the implementation of the phased development plan to verify that there is no suitable habitat for sensitive species at the Airport, and that there are no changes to the ESA species list.
- **Water Resources –** The USFWS National Wetland Inventory (NWI) map illustrates three ponded features and a number of linear wetland features, on and adjacent to, Ontario Municipal Airport. A field review of the documented features occurring in the vicinity of the proposed short-term improvements should be conducted to evaluate any potential impacts to waterbodies prior to implementation of planned capital projects. Impacts to jurisdictional waters would require the preparation of a Joint Permit Application with the USACE, a Removal/Fill Permit from the Department of State Lands and associated permitting with Oregon DEQ.
- **Construction Impact Analysis –** Construction activities have the potential to result in temporary impacts to air, noise, and water quality in the proposed project area. Therefore, construction impacts and mitigation measures, such as Best Management Practices, should be considered prior to the implementation of the phased development plan.

The following resource surveys are not anticipated to be required for the completion of the NEPA requirements associated with the Preferred Alternative:

- **Air Quality Analysis –** Malheur County is currently in attainment for all criteria pollutants and GA operations at the Airport are forecasted to remain under the operation threshold for air quality analysis. Therefore, the proposed improvements are anticipated to remain under the operation

threshold for air quality. An air quality analysis may be required if Malheur County's air quality designation changes.

- **Cultural Resource Survey –** A cultural survey was completed by SWCA Environmental Consultants in October 2022 and is pending approval with the FAA. The survey did not identify any National Register of Historic Places (NRHP) -eligible sites at the Airport. If any potential resources are discovered during construction, all activities would stop and additional consultation with SHPO and THPO would occur.
- **Visual Resources –** The proposed short-term improvements are anticipated to be consistent with the existing built environment at the Airport and are not likely to cause any visual resource impacts.
- **Noise Analysis –** The phased development is not likely to impact the surrounding land uses based on the current 65 DNL contour. As such, a noise analysis is not an anticipated requirement.
- **Farmland Analysis –** There are no agricultural activities on the Airport property, nor are the proposed short-term improvements expected to convert any agricultural land to non-agricultural activities. A farmland analysis is not an anticipated requirement.
- **Land Use Analysis –** A land use analysis of the phased development plan is included in the next chapter. Pertinent information from this Master Plan Update will be included in the environmental documentation.
- **Environmental Justice Analysis –** The planned short-term development would take place on the existing Airport property. No acquisitions or relocations are required. The construction and development actions are not predicted to impact health and safety conditions off the Airport. Therefore, an environmental justice analysis is not likely to be required.
- **Floodplain Analysis –** According to FEMA, the proposed short-term project areas are located outside of any mapped floodplain. Therefore, no impacts to floodplains are expected from the proposed short-term improvements. Small segments of the northern portion of the airport property are located between the 100-year and 500-year floodplain. Any future development in those areas would likely require the development of a floodplain analysis.

Intermediate-Term Improvements: The proposed projects in the intermediate-term period would not be pursued until completion of the appropriate environmental analysis as dictated by the FAA. In general, these projects focus on apron and hangar expansion, helipad construction, and entrance improvements. It is anticipated that these improvements would meet the FAA's requirements for categorically excluded actions as detailed in FAA Order 1050.1F.

Long-Term Improvements: The long-term projects focus on planning, land acquisition, and expansion of the parallel taxiway, connectors, and aprons at the Airport. NEPA requirements for each of the long-term projects would be assessed by the FAA at a later date.

6.4 FINANCIAL REVIEW

The financial feasibility of the implementation plan is largely based on estimated costs, potential funding sources, proposed timing, and a projection of operating revenues and expenses. This section considers the historical operating budgets of Ontario Municipal Airport to project future revenue and expenditures.

6.4.1 HISTORICAL OPERATING BUDGET

Ontario Municipal Airport generates revenue from ground leases, fuel sales, tie down fees, and user fees. **Table 6.2** presents the historical net operating budget for the Airport from 2019 to 2021 and the adopted budgets for 2022 and 2023.

TABLE 6.2
ONTARIO MUNICIPAL AIRPORT HISTORICAL REVENUES AND EXPENSES, 2019-2021

	Actual			Adopted	
	2019	**2020**	**2021**	**2022**	**2023**
Beginning Fund Balance	$38,913	$42,254	$37,031	$0	$69,829
Revenues	$175,634	$94,714	$437,838	$438,632	$867,300
Total Operating Revenues	**$214,547**	**$136,968**	**$474,869**	**$438,632**	**$937,129**
Transfers Out	$4,164	$1,685	$1,333	$5,000	$6,250
Capital Outlay	$48,835	$0	$45,750	$232,000	$712,120
Personnel Services	$52,438	$53,453	$72,658	$110,207	$91,038
Materials and Services	$66,857	$44,798	$84,365	$91,425	$127,721
Total Operating Expenses	**$172,294**	**$99,936**	**$204,106**	**$438,632**	**$937,129**
Total Net Revenue	**$42,253**	**$37,032**	**$270,736**	**$0**	**$0**

Source: J-U-B Analysis

6.4.2 FINANCIAL FORECAST

Historical revenues at Ontario Municipal Airport were generated by ground leases and fuel sales from 2019 to 2021. While the City has historically relied on these revenue sources to help meet the local match requirements for AIP capital improvement projects at the Airport, significant variations in aviation activity have the potential to influence ongoing cashflow. The arrival of an additional FBO or an increase in ground leases, for example, could produce revenues that contribute significantly to this growth. Other outside influences could have a more harmful impact on airport finances. Some of these include the effects of inflation, legislation, and changes in oil and natural gas prices. As the forecasting horizon moves further out, these events have a greater likelihood of compounding, which can often have a more profound effect on the Airport's financial performance. As such, forecasts beyond a five-year horizon should be viewed as an indication rather than an estimate.

The financial forecast for Ontario Municipal Airport was adjusted to account for a reasonable amount of volatility by finding and adding together the mean and standard deviation of the total revenues, and the total expenses between 2019 and 2021. To improve the accuracy of this forecasting method, revenue and expense estimates, adopted by the city for years 2022 and 2023, were also included in the analysis.

The resulting forecast is summarized in **Table 6.3**.

TABLE 6.3
ONTARIO MUNICIPAL AIRPORT FINANCIAL FORECAST, 2022-2027

	2023	2024	2025	2026	2027
Total Operating Revenues	$937,129	$720,076	$762,772	$799,335	$831,308
Total Operating Expenses	$937,129	$675,669	$722,275	$762,185	$797,085
Total Available for AIP Match	**$0**	**$44,406**	**$40,497**	**$37,150**	**$34,222**
ACIP Local Project Match	$8,897	$13,828	$5,420	$2,947	

Source: Idaho County and J-U-B

The phased development plan identifies four AIP projects for implementation during the short-term period (years 0-5). It is anticipated that the current revenues will cover yearly expenses and five percent of the match for proposed AIP projects. While the remaining net revenue for Fiscal Year 2023 in Table 6.3 suggests there is not enough local funds available to meet the match requirement, this is an estimated value developed for a zero-based budget and is not reflective of forecasted trends.

There is always the potential for unforeseen factors to impact the outcome of the financial forecast. For planning purposes, assumptions were made regarding FAA and ODA funding contributions. However, the federal and state dollars depend on authorization by Congress and Oregon legislatures each year and are not guaranteed. Should federal grant monies diminish, certain capital improvements may have to be funded from other sources or postponed.

CHAPTER 7 – AIRPORT LAYOUT PLAN DRAWINGS

7.0 INTRODUCTION

The Airport Layout Plan (ALP) drawing set depicts existing airport facilities and proposed development at Ontario Municipal Airport. The ALP is a culmination of this planning effort and enables the Airport Sponsor and FAA to plan for airport facility improvements, anticipate budgetary and procedural needs, and protect relevant airspace. The set of technical drawings was developed according to FAA standard operating procedures and includes the following sheets:

AF-1	Cover Sheet and Index
AF-2	Airport Layout Plan
AF-3	Airport Data Sheet
AF-4	Airport Airspace Plan
AF-5	Runway 15 Inner Approach Surface
AF-6	Runway 33 Inner Approach Surface
AF-7	Runway 15 End Departure Surface
AF-8	Runway 15 End Departure Surface
AF-9	Runway Centerline Plan and Profile
AF-10	Terminal Area Plan
AF-11	Terminal Area Plan
AF-12	Land Use Plan
AF-13	Exhibit A – Airport Property Inventory Map

FAA grant assurances require that an Airport Sponsor maintain a current ALP, which can be for a period of 5 years or longer if no major improvements to the airfield are made. The ALP is a set of planning drawings and is not intended to provide information with design engineering accuracy.

7.1 COVER SHEET AND INDEX

The Cover Sheet includes approval signature blocks for the Airport Sponsor and FAA ADO, airport location and vicinity maps, and content information.

7.2 AIRPORT LAYOUT PLAN

The ALP drawing is a scaled graphic representation of existing and future airport facilities that contains pertinent clearance and dimensional information required to show design standard conformance. The proposed facility improvements integrated into the phasing schedule are depicted in the ALP as either future short-term or ultimate long-term development. In addition to airport buildings and facilities, the ALP identifies Runway 15/33 safety areas, Part 77 approach surface obstructions, and the existing and future airport property boundary based on areas of proposed land acquisition.

Ontario Municipal Airport will be able to apply the FAA-approved ALP as a blueprint for airport development to ensure future improvements remain consistent with FAA design standards and safety requirements, as well as airport and community land use plans. The information included in the ALP will also be used by the FAA as the basis and justification for future funding assistance at Ontario Municipal Airport.

7.3 AIRPORT DATA SHEET

The Airport Data Sheet is a continuation of basic airport and runway data tables associated with the ALP drawing. The information included in this sheet has been provided in accordance with FAA Standard Operating Procedures 2.00 —

Standard Procedure for FAA Review and Approval of Airport Layout Plans. As such, tables were developed that summarize airport, runway, taxiway and taxilane, airport facilities, declared distances, and wind coverage data. IFR, VFR, and All-Weather wind roses for 10.5, 13, 16, and 20 knots are also included on the Airport Data Sheet.

7.4 AIRPORT AIRSPACE PLAN (PART 77)

The Airport Airspace Plan is a graphic depiction of the imaginary surfaces established by the FAA in FAR Part 77 to protect the airspace near airports from existing natural and manmade objects.

The Airport Airspace Plan is both a land use planning tool for local authorities and a review mechanism for the Airport Sponsor to determine if proposed development near Ontario Municipal Airport presents a hazard to aircraft. The FAR Part 77 imaginary surfaces depicted in the Airport Airspace Plan include the primary, approach, transitional, horizontal, and conical surfaces.

These imaginary surfaces emanate from the runway centerline and are sized according to runway category and type of approach available or planned to a runway end. The existing and future dimensions of each imaginary surface are based on a Non-Precision instrument runway with visibility minimums greater than ¾-miles.

- The **Primary Surface** is longitudinally centered on the runway and extends 200 feet beyond each runway end. The elevation of any point on the primary surface is the same as the elevation of the nearest point on the runway centerline. The width of this surface is determined by the runway type and approach; therefore, the primary surface is 500 feet at Ontario Municipal Airport.
- The **Approach Surface** is longitudinally centered on the extended runway centerline and extends outward and upward from each end of the primary surface. The dimensions of the approach surface are based on runway type and approach. The inner edges of the approach surfaces on Runway 15/33 match the 500-foot width of the primary surface. This surface extends outward and upward for 10,000 feet at a slope of 34 to 1 and to a width of 3,500 feet.
- The **Transitional Surface** begins at the same elevation as the runway and rises 150 feet from that point at a slope of 7 to 1. At that height, the transitional surface is replaced by the horizontal surface.
- The **Horizontal Surface** is a level horizontal plane 150 feet above the established airport elevation. The perimeter of this surface is determined by swinging arcs with a 10,000-foot radius from the center of the primary surface of each runway end and connecting the adjacent arcs with lines of tangency.
- The **Conical Surface** extends outward and upward from the horizontal surface's periphery at a slope of 20 to 1 for a total horizontal distance of 4,000 feet.

Malheur County should do all in its power as Airport Sponsor to ensure development stays below the FAR Part 77 surfaces to protect the role of the Airport. Any penetration to the CFR Part 77 imaginary surfaces, whether manmade or natural growth, is classified as an "obstruction," presumed to be a hazard to navigation, and is subject to an FAA aeronautical study which will determine whether the obstruction is in fact considered a hazard. If the FAA determines an obstruction is not a hazard,

the Airport Sponsor is not required to prevent or clear the penetration.

7.5 RUNWAY PLAN AND PROFILES

The Inner-Approach Surface Plan and Profile drawings show the existing, future, and ultimate approach surface configuration and their interaction with the airport and off-airport environs. The extended runway centerline ground profile and the critical point profiles are shown for terrain clearance purposes. Notable objects in this regard are shown in each plan and profile and then tabulated with heights and disposition, as appropriate. These drawings are supplemental to the Airport Airspace Plan. Obstructions of concern are trees and terrain; these are planned for lowering or lighting over the near-term of this planning.

The Runway Centerline Profile drawing depicts surface longitudinal grades on centerline, edge of runway pavement, and edge of Runway Safety Area. The Line-of-Sight standard is also depicted.

7.6 TERMINAL AREA PLAN

The Terminal Area Plan has been divided into two sheets to provide large-scale plan views of east and west landside development. These drawings are an enlargement of existing and planned facilities depicted on the ALP drawing, which include aprons, taxilanes, hangars, and other landside improvements.

The Terminal Area Plan, as a larger replication of specific landside areas within the ALP drawing, similarly enables the Airport Sponsor and FAA to plan for future facility improvements at Ontario Municipal Airport. Implementation of the proposed development will be based on funding availability and justified by increasing activity levels.

7.7 LAND USE PLAN

The Land Use Plan AF-12 identifies areas within and adjacent to airport property by zone and/or land use. Although not anticipated close by, review for any residential development near the airport should consider the airport's proximity and noise sensitivity. The Ontario Land Use compatibility zones, as they apply to the airport are depicted for inclusion into area comprehensive planning. Land uses within these zones should be protected by jurisdictional ordinance or code in pursuit of compatible land use. Areas off the end of each runway are generally the most noise sensitive. The City of Ontario has considered a formal overlay district in place to serve this purpose. The City of Ontario and Malheur County should also be encouraged to formally adopt an airport overlay district to protect airport operations and growth.

Federal Land Use Polices

FAA usually gives technical and advisory assistance to protect its funding to encourage compatible land development around airports, but it has no regulatory authority for controlling land uses to protect airport capacity. It plays a part in regulating on-airport land, through the approval of the Airport Layout Plan (ALP), inclusion into the NPIAS, and associated apportionments from the AIP grant funding supported by the Airport and Airway Improvement Act (AAIA). Eligibility to access these opportunities, require airport sponsors to remain in compliance with the 39 Grant Assurances and in this case; measures to maintain, to the extent reasonable, off-airport land use compatibility and to protect that

aeronautical function of an airport by restricting the location of non-aviation land uses. The FAA recognizes that state and local governments are responsible for land use planning, zoning, and regulation including that necessary to provide land use compatibility with airport operations.

Oregon State Land Use Policies

The State of Oregon has a lead role in promoting land use compatibility around the airports in the state. This role derives from the state's broad interest in all modes of transportation in recognition of the benefits that transportation brings the state and its citizens. The specific responsibility as the primary steward and advocate of the state's aviation interests is assigned to the Oregon Department of Aviation (ODA). ODA's role extends to advocating for promotion of safe air transportation, preservation of aviation facilities, provision of airport capacity to meet demand, and technical assistance.

Local Government Land Use Policies

The ultimate responsibility for airport land use compatibility rests with local government bodies such as the City of Ontario and, and the county of Malheur. Although local comprehensive plans, plan policies, and regulations must be consistent with state law and countywide planning policies, local government has discretion to determine how development occurs within the community. Also, the federal preemption doctrine does not affect the local government's ability to use its police powers, particularly land use controls, to anticipate, abate, mitigate, and otherwise respond to other land use concerns provided they are reasonable and do not restrict airport operations.

The Malheur County Airport Zoning Ordinance establishes airspace obstruction zones and land use safety zones that regulate housing density, structure heights, nonconforming obstructions, and land uses. The airspace protection zones regulate the airspace within the FAR Part 77 imaginary surfaces, while the land use safety zones protect the land underlying these airspace protection zones.

All land in unincorporated areas of Malheur County is classified as multi-use and unrestricted by the County's Planning and Zoning Ordinance. While this does include all land surrounding the Airport, the protections outlined in the County's Airport Zoning Ordinance take precedence.

7.8 EXHIBIT A – AIRPORT PROPERTY MAP

The Exhibit A – Airport Property Map is an inventory of land parcels within the dedicated airport property boundary federally obligated for compliance under the terms and covenants of a grant agreement. This map identifies existing easements and encumbrances, previously acquired parcels, areas released for non-aviation use under Section 163, and property proposed for future acquisition. The parcel and property specific information identified in the drawing has been provided in accordance with FAA Standard Operating Procedures 3.00 — *Standard Procedures for FAA Review of Exhibit 'A'*.

7.9 RECYCLING PLAN

A Recycling Plan for the Ontario Municipal Airport was developed as a part of this study, as specified by the FAA AIP Handbook.

7.10 SUMMARY

This study provided a comprehensive long-term assessment of the facilities at the Ontario Municipal Airport. It described the infrastructure plans to meet the projected future demands and

provided the framework needed to guide Airport development. The study also considered the potential environmental, financial, and socioeconomic impacts meeting all Federal Aviation Administration (FAA) facility requirements.

The goal was to optimize the operational efficiency, effectiveness, capability and safety of the airport, enhance the economic and social value of the airport and meet the long-term aviation and multi-modal transportation needs of the community. Additional goals were to optimize the airport's income to continue towards financial self-sufficiency, ensuring that the current and future airport plans are environmentally compatible in the region.

APPENDICES

APPENDIX 1
PUBLIC INVOLVEMENT

Ontario Municipal Public Involvement Summary

The Ontario Municipal Airport Master Plan Update process plan included timely coordination with the Sponsor and the Airport Advisory Committee. Additional Public Involvement efforts focused on the following key activities:

1. City outreach to the airport advisory board, stakeholders, and airport users
2. An airport users survey
3. Formation of a Technical Advisory Committee (TAC) with Four (4) TAC Meetings
4. One (1) Public Open House Meeting
5. A presentation to the Ontario City Council
6. A Project webpage with meeting information and documentation - https://onomasterplan.jub.com/

Meeting notes and survey results are included here.

ONTARIO MUNICIPAL AIRPORT
Master Plan Update
Future Use Survey

The ONTARIO MUNICIPAL AIRPORT, through a grant from the Oregon Department of Transportation and the Federal Aviation Administration (FAA), is conducting a Master Plan Update (MPU). A critical component of this effort is to identify the existing and future needs and demands for the airport. As a current or potential airport user, you can provide helpful information concerning the current use and needs of the airport, as well as to help identify what future improvements may be warranted. Your participation will be important in shaping the future of the airport.

J-U-B ENGINEERS, Inc.
Point of Contact: Erik Hartley, 541-212-1676, Erik.Hartley@ontariooregon.org

RESPONDENT INFORMATION

1. The combined results of this survey will be reported in the study without identifying individual respondents. However, entering the information below will allow us to contact you individually if questions arise about any of the above responses or if additional information is needed.

   Company Name: _____

   Respondent's Name: Stephen Meyer

   Address: 1447 NW 6th Ave.

   City: Ontario Phone: 208 739 8471 Email: stephenm@4sterrealestate.com

AIRCRAFT ACTIVITY

2. Do you or your company fly general aviation aircraft? [✓] Yes [ ] No
   If "Yes," what type aircraft?
   Single engine land,

3. If you answered yes to the previous question, what are the reasons/benefits? List in order of importance.
   Recreation, Travel, Business

4. Do you or your company use the ONTARIO MUNICIPAL AIRPORT? [✓] Yes [ ] No

5. If you answered Question 2 or 4 as "No," are there size or approach procedure limitations or other reasons that prevent you or your company from using or basing aircraft at the ONTARIO MUNICIPAL AIRPORT? [ ] Yes [ ] No [ ] N/A

   If "Yes", explain limitations/reasons. _____

6. Do you or your company base an aircraft at the ONTARIO MUNICIPAL AIRPORT? [ ] Yes [✓] No

   If so, what type? For how many months/years? _____

7. What is your average number of flights per month? 2

8. What is your average number of passengers (including pilot) carried per month? 2

9. What is your anticipated activity level at the ONTARIO MUNICIPAL AIRPORT within the next year?

   [ ] None [ ] Increase to ____ Flights per Month [X] Remain Same [ ] Decrease to _____ Flights per Month

10. What is your anticipated activity level at the ONTARIO MUNICIPAL AIRPORT within the next five years?

[ ] None [✓] Increase to 6 Flights per Month [ ] Remain Same [ ] Decrease to _____ Flights per Month

11. What is your anticipated aircraft disposition within the next 5 years?

[ ] Keep Existing Aircraft [✓] Purchase/Lease Different Aircraft [ ] Get rid of aircraft.

If "Purchase/Lease Different Aircraft", what type? Single engine land

AIRPORT FACILITIES

12. Do the existing approach minimums limit your use of the ONTARIO MUNICIPAL AIRPORT?

[ ] Yes [✓] No If "Yes", please list the desired procedure(s):_____

13. What features are, or would be, important in your decision to use or base an aircraft at the ONTARIO MUNICIPAL AIRPORT? Rank **EACH** item below as follows: **4** being of utmost importance, **3** being somewhat important, **2** being neutral in importance, **1** being somewhat unimportant, and **0** being of no importance.

4	Runway Length/Width/Strength*	4	Terminal Building
4	Instrument Approach Procedures	4	Restaurant
4	Less Crowded, Less Frenzied Pace	3	Pilot's Lounge
0	Air Traffic Control Tower	4	24-Hour Restroom Facilities
4	ASOS	3	Driving Time from Residence/Business
2	Emergency Services	3	Hangar/T-Hangar Availability
4	24-Hour Fuel Availability	4	Tie Down Facilities
4	Airframe/Power Plant/Avionics Repair	4	Courtesy Car
3	Security	1	Ground Lease Rates
4	Visual Aids (VASI, PAPI, REILs)	1	Minimum Standards for Tenants and Service Providers
4	Snow Removal Equipment	3	Enforcement of Airport Rules and Regulations
0	Deicing facilities/services	4	Airport Manager on Site

14. If your company's aircraft requires a runway greater than 5,606' x 100', or stronger than a 30,000-lb single wheel or 60,000- lb. dual wheel pavement strength, what are the minimum length, width, and strength necessary for your use?

Length: _____ ft. Width: _____ ft. Strength: _____ lbs. (the maximum gross weight of your aircraft)

15. If sufficient changes were made and you began to or increased your use of the ONTARIO MUNICIPAL AIRPORT, how many flights per month would you anticipate making? 6

16. For local companies: did the ONTARIO MUNICIPAL AIRPORT have an influence on your company's decision to operate in the area? [ ] Yes [✓] No

Explain. _____

_____

COMMUNITY

17. What is the role of the ONTARIO MUNICIPAL AIRPORT in the community? Is it important? [X] Yes [ ] No

Explain. _____

_____

18. Does the ONTARIO MUNICIPAL AIRPORT support the local economy? [X] Yes [ ] No

How could it support the community better?

Explain. _____

_____

19. If you own property near the ONTARIO MUNICIPAL AIRPORT, do you have future plans to develop it? [ ] Yes [X] No [ ] N/A

Explain. _____

_____

20. Would an expanded ONTARIO MUNICIPAL AIRPORT help support your business or other businesses in the area? [X] Yes [ ] No

What added features or expansions would enhance the ONTARIO MUNICIPAL AIRPORT and benefit the community? Explain. _____

COMMENTS/SUGGESTIONS

21. Please offer any comments or suggestions which may be important to you or your company concerning the ONTARIO MUNICIPAL AIRPORT but have not been addressed above.

Airport Expansion and Development show we are a city willing and capable to invest in itself and future growth for business and quality of life for its Residents.

ONTARIO MUNICIPAL AIRPORT
Master Plan Update
Future Use Survey

The ONTARIO MUNICIPAL AIRPORT, through a grant from the Oregon Department of Transportation and the Federal Aviation Administration (FAA), is conducting a Master Plan Update (MPU). A critical component of this effort is to identify the existing and future needs and demands for the airport. As a current or potential airport user, you can provide helpful information concerning the current use and needs of the airport, as well as to help identify what future improvements may be warranted. Your participation will be important in shaping the future of the airport.

J-U-B ENGINEERS, Inc.

Point of Contact: Airport Manager, Justin Zysk, 541-709-7651, justin.zysk@ontariooregon.org

RESPONDENT INFORMATION

1. The combined results of this survey will be reported in the study without identifying individual respondents. However, entering the information below will allow us to contact you individually if questions arise about any of the above responses or if additional information is needed.

   Company Name: N/A

   Respondent's Name: John Orlovich

   Address: 4469 N Waterfront Way

   City: Boise Phone: 208-869-9229 Email: johnorlovich@gmail.com

AIRCRAFT ACTIVITY

2. Do you or your company fly general aviation aircraft? [X] Yes [ ] No
   If "Yes," what type aircraft? Cessna 172, Skyhawk

3. If you answered yes to the previous question, what are the reasons/benefits? List in order of importance.
   1. Visit Friends in Ontario; 2. Training; 3. General Aviation Purposes.

4. Do you or your company use the ONTARIO MUNICIPAL AIRPORT? [X] Yes [ ] No

5. If you answered Question 2 or 4 as "No," are there size or approach procedure limitations or other reasons that prevent you or your company from using or basing aircraft at the ONTARIO MUNICIPAL AIRPORT? [ ] Yes [ ] No [X] N/A
   If "Yes", explain limitations/reasons. _____

6. Do you or your company base an aircraft at the ONTARIO MUNICIPAL AIRPORT? [ ] Yes [X] No
   If so, what type? For how many months/years? _____

7. What is your average number of flights per month? 4

8. What is your average number of passengers (including pilot) carried per month? 1

9. What is your anticipated activity level at the ONTARIO MUNICIPAL AIRPORT within the next year?

   [ ] None [ ] Increase to _____ Flights per Month [X] Remain Same [ ] Decrease to _____ Flights per Month

10. What is your anticipated activity level at the ONTARIO MUNICIPAL AIRPORT within the next five years?

[ ] None [ ] Increase to _____ Flights per Month [X] Remain Same [ ] Decrease to _____ Flights per Month

11. What is your anticipated aircraft disposition within the next 5 years?

[X] Keep Existing Aircraft [ ] Purchase/Lease Different Aircraft [ ] Get rid of aircraft.

If "Purchase/Lease Different Aircraft", what type? _____

AIRPORT FACILITIES

12. Do the existing approach minimums limit your use of the ONTARIO MUNICIPAL AIRPORT?

[ ] Yes [X] No If "Yes", please list the desired procedure(s):_____

13. What features are, or would be, important in your decision to use or base an aircraft at the ONTARIO MUNICIPAL AIRPORT? Rank **EACH** item below as follows: **4** being of utmost importance, **3** being somewhat important, **2** being neutral in importance, **1** being somewhat unimportant, and **0** being of no importance.

1	Runway Length/Width/Strength*	3	Terminal Building
1	Instrument Approach Procedures	3	Restaurant
4	Less Crowded, Less Frenzied Pace	3	Pilot's Lounge
1	Air Traffic Control Tower	4	24-Hour Restroom Facilities
4	ASOS	3	Driving Time from Residence/Business
3	Emergency Services	3	Hangar/T-Hangar Availability
3	24-Hour Fuel Availability	4	Tie Down Facilities
3	Airframe/Power Plant/Avionics Repair	3	Courtesy Car
2	Security	1	Ground Lease Rates
1	Visual Aids (VASI, PAPI, REILs)	2	Minimum Standards for Tenants and Service Providers
4	Snow Removal Equipment	3	Enforcement of Airport Rules and Regulations
1	Deicing facilities/services	3	Airport Manager on Site
4	Grass Runway		

14. If your company's aircraft requires a runway greater than 5,606' x 100', or stronger than a 30,000-lb single wheel or 60,000- lb. dual wheel pavement strength, what are the minimum length, width, and strength necessary for your use?

Length: _____ ft. Width: _____ ft. Strength: _____ lbs. (the maximum gross weight of your aircraft)

15. If sufficient changes were made and you began to or increased your use of the ONTARIO MUNICIPAL AIRPORT, how many flights per month would you anticipate making? Would be same as now.

16. For local companies: did the ONTARIO MUNICIPAL AIRPORT have an influence on your company's decision to operate in the area? [ ] Yes [ ] No

Explain. N/A

COMMUNITY

17. What is the role of the ONTARIO MUNICIPAL AIRPORT in the community? Is it important? [X] Yes [ ] No

Explain. I like to visit my Ontario Friends

18. Does the ONTARIO MUNICIPAL AIRPORT support the local economy? [X] Yes [ ] No

How could it support the community better?

Explain. We eat at the local restaurants when I visit.

19. If you own property near the ONTARIO MUNICIPAL AIRPORT, do you have future plans to develop it? [ ] Yes [X] No [ ] N/A

Explain. _____

20. Would an expanded ONTARIO MUNICIPAL AIRPORT help support your business or other businesses in the area?

[X] Yes [ ] No
What added features or expansions would enhance the ONTARIO MUNICIPAL AIRPORT and benefit the community? Explain. Keep the Grass Airstrip well maintained.

COMMENTS/SUGGESTIONS

21. Please offer any comments or suggestions which may be important to you or your company concerning the ONTARIO MUNICIPAL AIRPORT but have not been addressed above.

Ontario Municipal Airport TAC 1 Meeting

May 13 2021

Meeting Notes

1 | Attendance/Invitees

- Luke Keller, Committee
- Shawn Coleman, Committee Vice Chair
- John Freeburg, Committee
- David Bryant, TVCC
- John Kirby, City Council
- Brian Rindlisbacher, BLM
- Justin Zysk, Airport Manager
- Dan Cummings, Economic Development Director
- Shawna Peterson, Eastern Oregon Border Board
- Shay Myers, Committee
- Toby Epler, J-U-B
- Neal Fraser, J-U-B
- Chuck Larson, J-U-B
- Christine Roemeling, J-U-B
- Benjamin Mello, FAA (virtual)

2 | The TAC Meeting

- Why airport planning or master plan update
    - Required to have an updated Airport Layout Plan
    - It is a key to receiving funding for projects from FAA and DOT
    - Tells the story of your airport
    - Maintains compliance for design and standards
- Major components
    - Master Plan document/narrative
    - Updated ALP drawing set
    - Public Involvement campaign
- The elements of the Public Involvement effort for this project
    - The City will handle most of the individual outreach beyond the TAC and open house
    - How do we need to conduct the open house (Covid)?
- This is the group that has been invited to be a part of the TAC.
    - Are there others that should be included in our future meetings?
- The TAC responsibilities
- We need to reach out to stakeholders. We've provided a sample survey that the Airport/City can use if they would like. This could be sent to specific people or to the entire community.
    - We want to collect a list of contacts that we'll use in an email campaign as we make progress through the project and post information to the website.
- Website URL.
- Airports GIS was a part of the NAVAID construction project in 2016. We don't anticipate any additional need for survey as a part of this project.
- The project will result in an updated Master Plan Narrative document and updated Airport Layout Plan sheet set. – Usually about 12 sheets.
- The course the project will follow
- Typical schedule for this project.
- Key Issues

- The driving force for this plan is the redevelopment of the west side of the airport property and some of the surrounding developments.
    - What types of business and land use can be permitted?
    - What does the airport and community need?
- Advanced Air Mobility is something of interest here
    - Ontario could be the western Treasure Valley “bus stop” for service to Boise Airport and Downtown Boise
- Grant Assurances
- Section 163(d)
- Design criteria and standards for critical aircraft

3 | Initial Discussion and Topics of Concern

- West side development
- BLM SEAT base location
- eVTOL operations
- Hangar development
- Fueling station location
- FBO and Flight School operations

Ontario Municipal Airport TAC 2 Meeting

March 29, 2022

Meeting Notes

1 | Attendance

- Luke Keller, Committee
- Shawn Coleman, Committee Vice Chair
- John Freeburg, Committee
- David Bryant, TVCC
- John Kirby, City Council
- Brian Rindlisbacher, BLM
- Justin Zysk, Airport Manager
- Dan Cummings, Economic Development Director
- Shawna Peterson, Eastern Oregon Border Board
- Shay Myers, Committee
- Toby Epler, J-U-B
- Neal Fraser, J-U-B
- Jessica Krueger, J-U-B

2 | The TAC

- Jessica Sherwood needs to be removed from the TAC Member list.

3 | Initial Concerns

- Utilities
    - Need to see if sewer/utilities can be extended to existing structures and hangars. (Kirby)
    - The FBO does not have water or sewer to it; the building is serviced by a septic tank and has no potable water. Extending those utilities would make the FBO more viable. (Freeburg)
    - Utilities are available to the FBO, but the FBO is responsible for hooking up to them. The City is designing utilities to extend out to various portions of the Airport; it has been approved and funded by the Counsel for design but not yet for construction. (Cummings)
    - Hopefully, we can get down on paper where all those lines are. Over the past people have done things and not recorded what they have done. (Freeburg)
- Agricultural Operations
    - We need an area dedicated for our spray pilots to operate out of. (Cummings)
- Aviation Fuel
    - Seems like we could do a better job of where the fuel is right now; I'm concerned about where the fuel is and getting our planes filled up over the summer. (Rindlisbacher)
    - At certain times it can get congested in the tie down area, especially if an aircraft is fueling. It cuts off axis to taxiways. (Coleman)
    - We are up to six planes right now that we are parking in transient spaces. If there is a way for TVCC to integrate our operations in with everyone else, it would keep us from plugging everyone up during peak summer months. (Bryant)
    - In short, the fuel needs to be moved to a new spot with the least amount of potential for congestion. (Freeburg)
    - We are working on the legality of driving a fuel truck to fill our aircraft and prevent blocking taxiway access. (Bryant)

    - It would be best if it could be an island, so planes would be able to access fuel pumps from both sides. (Freeburg)
- Helicopter Accommodations
    - We had five helicopters in the traffic pattern last Friday. We are going to need a plan to accommodate that. Having helicopters hovering over the center of the runway is going to be an issue. (Coleman)
    - We do have our Type 2 helicopters come in and helipads would be great for our operations. (Rindlisbacher)
    - We go back to infrastructure with that; we are going to need an access road for west side development. (Freeburg)
    - A lot of the heavier helicopters deal with the BLM; if you do develop helipads, it would be cool to have them over on our side. (Rindlisbacher)
- Airport Aesthetic
    - If an opportunity to do some aesthetic improvements, typically encouraged for economic development along the Oregon border. The Airport now is a bit of an eyesore.
- EVTOL
    - EVOTL and feeder aircraft from Boise; is that something we should be considering? (Myers)
        - Neal: We are considering those things, but as of right now, there is not much in terms of guidance from the FAA. We are starting to dedicate space to that kind of thing.

4 | Inventory

- Do we need to plan for where our fire apparatus might be stationed on the Airport? Like a fire truck, equipment, etc. (Keller)
    - Toby: Typically, those services are at airports with passenger and commercial services. While the Airport might not have the equipment, they can conduct a cross training for City firefighters that might respond to an airport incident.
- We did have the fire department come last year to train them on our aircraft. (Rindlisbacher)
- I can get with the fire chief to see what that training might look like. (Zysk)

5 | Forecast

- What about the grass strip? (Freeburg)
    - Neal: Those do not really impact a larger design code. There is a lot of activity there, but my understanding is that you are accommodating it quite well with the grass strip.
- I don't think the Air Tractor is really indicative of a twenty-year plan. Ag is going to move off the Airport before then. (Keller)
    - Toby: You're probably right, but as long as we can get up to a 79-foot wingspan, that does allow us to plan for growth in the future. To Neal's point, we sent this forecast to the FAA, and they said no, you don't have those kinds of numbers. Luckily, we had those game camera photos that really came in handy here.

6 | Additional Facility Discussion

- When you're sitting down with a student, their first question is where can we get some food? A lot of Idaho airstrips have bicycles too. (Bryant)
- That's still a big thing in Nampa. A lot of weekend traffic is due strictly to food. (Coleman)
    - Toby: It also creates an opportunity for the lay community, who might not be pilots, to visit the Airport.
- An observation area would be very valuable to the esthetics. Salem has a really great design; they have a terminal building with the second floor dedicated to food and an observation deck. (Myers)

7 | Alternatives

- This map here, that we're looking at, is the best and most readable map I've had before me. This is a point where the City needs to take part. I can talk to two counselors without breaking any laws and I'm hoping we can have a partial presentation of this at a future council meeting. (Kirby)
- Land Acquisition
    - Additional land acquisition options toward the south side of the Airport, especially if we are talking about the next 20 years. (Keller)
    - Non-airport does not mean it is not owned by the Airport. It just means non-airport uses. (Cummings)
        - Neal: You can release the FAA obligation to use the land for non-aviation uses.
- Revenue Generation
    - Questions regarding rental hangar space and the potential to accommodate that at the airport. (Myers, Keller, Coleman)
    - As the consultants here, what are we missing as far as pulling that growth to our airport? (Myers)
        - Toby: The development out on the west side is really what is going to allow for that.
        - Neal: You've named some tonight, the utilities for one is a big deal.
    - Toby: It's a given that fuel development will include charging stations.
    - There is some space for a solar farm on the far west side where there is a triangle of approximately 46 acres of land. (Keller)
        - Toby: It's about how we generate the most money for the City and the Airport to make the airport as sustainable as possible.
    - We should be considering utilities to support these power stations and any sort of solar farms. (Kirby)
    - Freeburg: What would the residual revenue be on a solar farm? (Freeburg)
        - They are worthless as far as generating revenue. (Myers)
- Agriculture Operations
    - Mr. Bane was excited about being out on the Runway 15 End. He'd be out of the way and his noise wouldn't be such a nuisance for anyone nearer to the BLM side. (Freeburg)
    - Didn't the FAA say we couldn't put agriculture on the Runway 15 End. (Coleman)
        - My understanding is the FAA said we put all this money into the east side, build that up first before we talk about development on the west side. (Keller)

    - I think the days are absolutely numbered for Ag; I think here it's probably over. If you're thinking about that space for Ag, it makes more sense to consider that area for EVOTL. (Myers)
- EVTOL/Drones
    - I did hear from our aviation group out at Burns that there are large drones they're having to accommodate. It could come up at Ontario in the future where we are asked for a space to allow these guys to practice/operate. (Rindlisbacher)
    - It can be 10 to 15 years before courses are developed for drone operations. (Bryant)
- Additional Facilities
    - I work with Life Flight, and we do have two to three helicopters out there at any given time. (Bryant)
        - That area used by Life Flight is laid out as helipads, but I told them if they are going to be using that space, they do need to pay for it. As of now they are not paying for it. (Cummings)
    - Life Flight area is pretty good looking; that could be an attractive entrance to the Airport. (Keller)
        - Could be a great space to build a terminal building/restaurant/observation deck right there as well. (Zysk)
    - How far out is the BLM facility? (Keller)
        - Toby: Roughly 3 years.
    - What are the necessary operations for a tower? (Myers)
        - Toby: Caldwell is at 150,000 operations, and they are just now on the brink of a tower. You'd have to talk about a lot of growth. Probably not in our lifetime.

Ontario Municipal Airport TAC 3 Meeting

June 27, 2022

Meeting Notes

1 | Attendance

- Luke Keller, Committee
- Shawn Coleman, Committee Vice Chair
- John Freeburg, Committee
- John Kirby, City Council
- Michael Braden, City Council
- Brian Rindlisbacher, BLM
- Justin Zysk, Airport Manager
- Dan Cummings, City of Ontario
- Shawna Peterson, Eastern Oregon Border Board
- Shay Myers, Committee
- Cheryl Cruson, EAA
- Siera Watson, State Legislator
- Dale Cruson, EAA
- Bill Hager, Airport
- Tom Frazier, Hangar owner
- Jeffrey Pitts, Pilot
- Steve Long, EAA
- Toby Epler, J-U-B
- Neal Fraser, J-U-B
- Jessica Krueger, J-U-B

2 | The TAC

- J-U-B reviewed the planning process and initial findings for the planning study.
- J-U-B then presented alternative development scenarios and concept plans for a revised layout and Airport entrance amenities.
- Time was reserved for comments, questions, and discussion. Public attendance was welcome and follow up discussions were held around posterboards with layout depictions.

3 | Highlights

- Alternative discussion centered on location for future fuel facilities.
- Possibility of relocating the road north of the runway to clear Safety Areas.
- Additional hangar development options.
- Location of BLM facilities.
- Unpaved runway is important.
- Future entrance to the airport. Static display and welcoming facilities.
- Terminal or lounge and FBO.
- This airport supports a lot of Experimental aircraft and back country fliers.
- Need more apron space to accommodate corporate traffic and jets.
- Need for helipads.
- Avigation easements for areas under the approach or RPZs.

Ontario Municipal Airport TAC 4 Meeting

December 5, 2022

Meeting Notes

1 | Attendance/Invitees

- Luke Keller, Committee
- Shawn Coleman, Committee Vice Chair
- John Freeburg, Committee
- David Bryant, TVCC
- John Kirby, City Council
- Brian Rindlisbacher, BLM
- Justin Zysk, Airport Manager
- Dan Cummings, Economic Development Director
- Shawna Peterson, Eastern Oregon Border Board
- Shay Myers, Committee
- Toby Epler, J-U-B
- Jess Krueger J-U-B
- Shawn Dulin, J-U-B
-

2 | The TAC Meeting

- Information on the project website
- Presentation of the preferred alternative
- East side development details
    - Relocation fuel
    - Jet apron
    - FBO locations
    - Hangar development
    - BLM SEAT base
- West side development details
    - Corporate hangar development
    - Future eVTOL area
    - Agricultural operations area
    - Parallel taxiway
- Short-term development and estimated costs
- Intermediate-term development and estimated costs
    - “Front door” concepts
- Long-term development and estimated costs
- Draft ALP review

3 | Discussion and Topics of Concern

- Camping area for STOL pilots is desired
    - City can determine (not for ALP or AIP funding)
- Wash rack for aircraft is desired
    - Not AIP funded
- Fuel island location
    - Updated on the ALP
- Helipad for hospital
- Helipad is planned
- Utility concept plan (Not ALP item)

APPENDIX 2
PART 163

U.S. Department
of Transportation
Federal Aviation Administration

November 23, 2021

Mr. Dan Cummings
Community Development Director
City of Ontario
458 SW 3rd Street
Ontario, OR 97914

Dear Mr. Cummings:

Re: FAA Approval Authority Review – **Ontario Municipal Airport, (ONO), Ontario, OR – Land Release-Aeronautical to Non-aeronautical**

Thank you for your inquiry regarding whether or not the FAA has a federal action on the proposed land release at the Ontario Municipal Airport (ONO).

On October 5, 2018, HR 302, the "FAA Reauthorization Act of 2018" (the Act) was signed into law (P.L. 115-254). In general, Section 163(a) limits the FAA's authority to directly or indirectly regulate an airport operator's transfer or disposal of certain types of airport land. However, Section 163(b) identifies exceptions to this general rule. The FAA retains authority:

1. To ensure the safe and efficient operation of aircraft or safety of people and property on the ground related to aircraft operations;
2. To regulate land or a facility acquired or modified using federal funding;
3. To ensure an airport owner or operator receives not less than fair market value (FMV) in the context of a commercial transaction for the use, lease, encumbrance, transfer, or disposal of land, any facilities on such land, or any portion of such land or facilities;
4. To ensure that that airport owner or operator pays not more than fair market value in the context of a commercial transaction for the acquisition of land or facilities on such land;
5. To enforce any terms contained in a Surplus Property Act instrument of transfer; and
6. To exercise any authority contained in 49 U.S.C. § 40117, dealing with Passenger Facility Charges.

In addition, Section 163(c) preserves the statutory revenue use restrictions regarding the use of revenues generated by the use, lease, encumbrance, transfer, or disposal of the land, as set forth in 49 U.S.C. §§ 47107(b) and 47133.

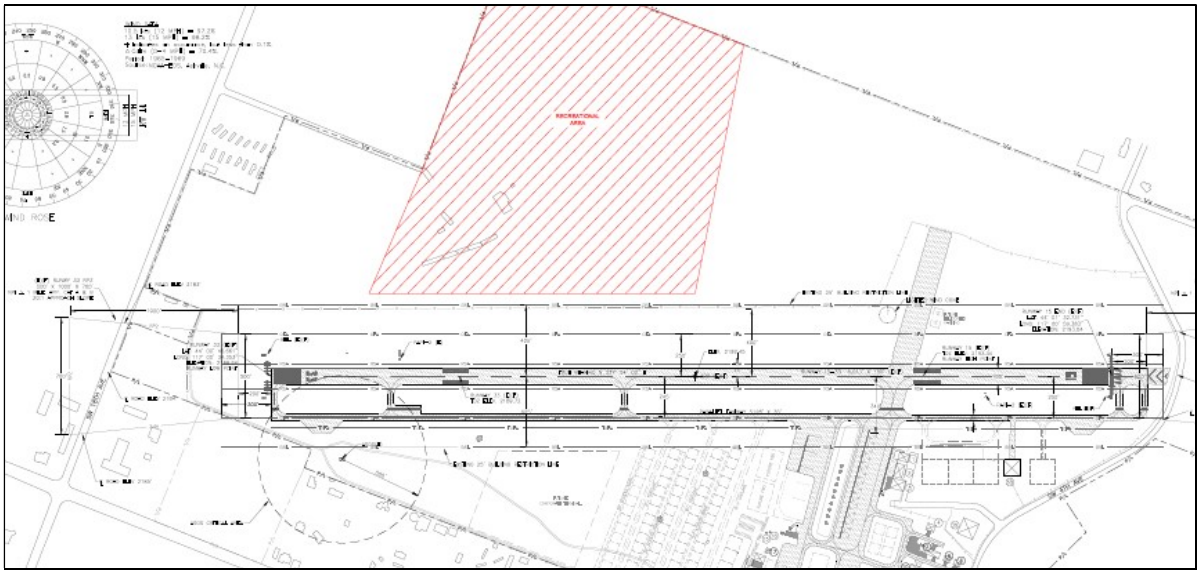
Section 163(d) of the Act limits the FAA's review and approval authority for Airport Layout Plans (ALPs) to those portions of ALPs or ALP revisions that:

1. Materially impact the safe and efficient operation of aircraft at, to, or from the airport;
2. Adversely affect the safety of people or property on the ground adjacent to the airport as a result of aircraft operations; or
3. Adversely affect the value of prior Federal investments to a significant extent.

Proposed Project

The City of Ontario as the sponsor of the Ontario Municipal Airport is requesting a 163 determination of the "old golf course" property listed on the existing Exhibit A and shown below is the red hatch/outline. The City has been approached by a company that would like a short term lease (5 year) of the old golf course property to conduct seasonal sprint boat races. Below are some facts regarding the project and property:

- The property that was acquired from the Malheur County in 1934 and used as golf course from the mid-1950's up until the mid-2000's. The Golf Course portion of the property has been vacant for the last 5 years.
- No federal funds were used to acquire the property nor develop any of it.
- The proposed project sits outside of any aeronautical surfaces including Part 77, building restriction line (BRL), runway object free area (ROFA), and runway safety area (RSA).
- The proposed project site has no immediate or long term need as aeronautical use.
- The projected entails using the existing golf course property for a sprint boat track. The area encompasses approximately 180 acres.
- The lease proceeds would go into the City Airport Fund and be used for Airport development and maintenance. The City will receive fair market value for the lease.
- At which such time the property is needed for aeronautical use, the lease would be terminated and the property could be returned to airport use.

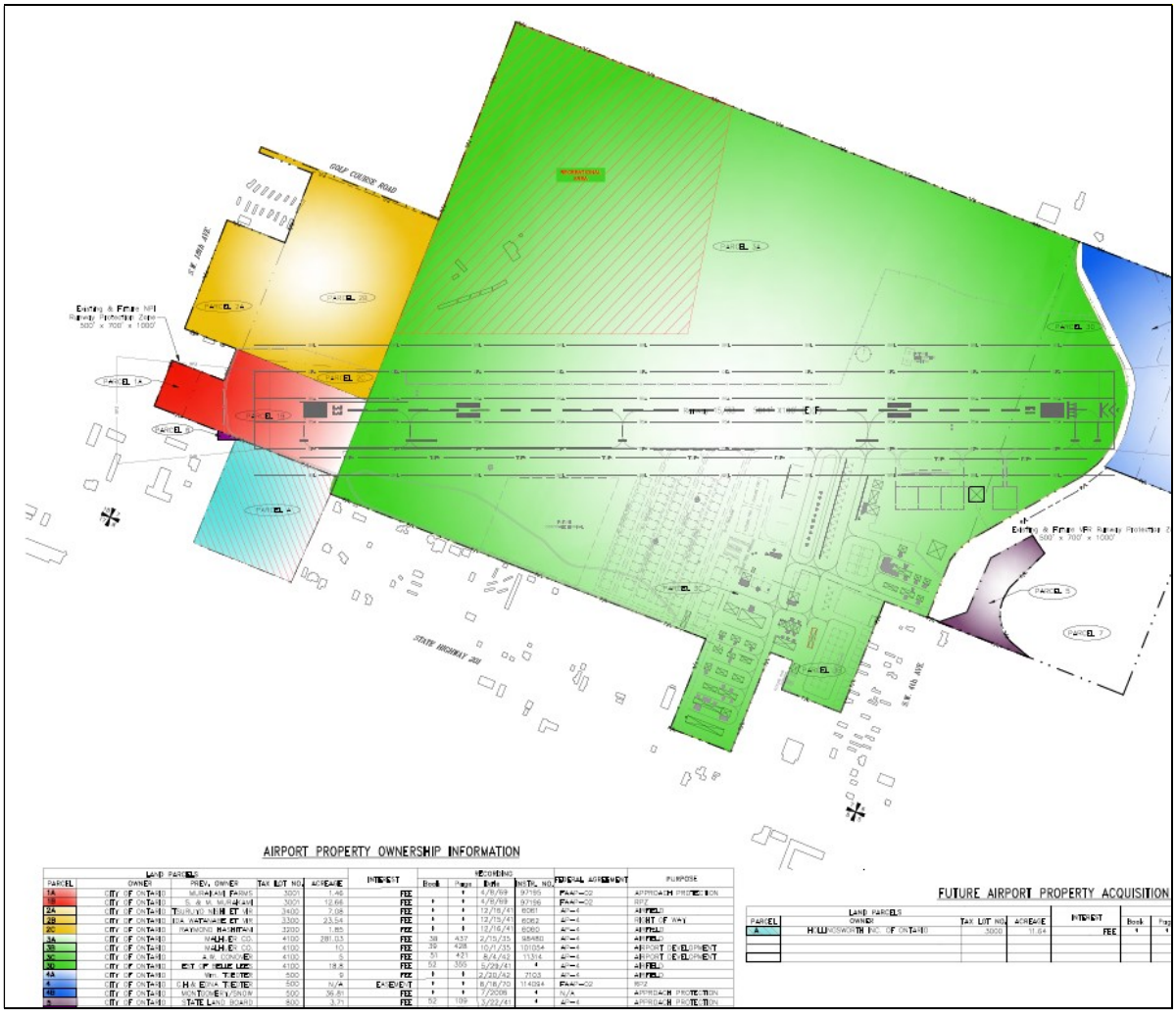


Determination Regarding the Airport Layout Plan

For the purpose of determining whether the proposed project requires FAA ALP approval, we have determined that the proposed project would have no material impact on aircraft operations, at, to, or from the airport; would not affect the safety of people and property on the ground; and would not have an adverse effect on the value of prior Federal investments to a significant extent. Therefore, the FAA lacks the legal authority to approve or disapprove changes to the ONO ALP for the proposed project.

FAA's Authority to Regulate Land Use

The site is approximately 182 acres in size acquired from Malheur County in 1934. The area, as shown below in red hatch, is part of Parcel 3A, which totals 281.03 acres. No federal grants were used when the property was acquired or developed. None of the property has been pledged as local match for a federal grant.



The parcel subject to the proposed project was acquired with local funding, without federal assistance, and the proposed project will not impact the safe and efficient operation of

aircraft or safety of people and property on the ground related to aircraft operations. Therefore, the FAA lacks the authority to regulate the use of the land associated with this project.

Applicability of the National Environmental Policy Act (NEPA)

Because the FAA lacks the legal authority to approve or disapprove changes to the ALP, and lacks the authority to regulate the use of the land associated with this project, the agency does not have an action subject to NEPA

Sponsor Obligations Still In Effect

This determination only addresses FAA's approval authority for this project. It is not a determination that the project complies with the sponsor's federal grant assurances. The sponsor must continue to comply with all of its Federal grant obligations, including but not limited to Grant Assurance #5, Preserving Rights and Powers; Grant Assurance #19, Operation and Maintenance; Grant Assurance #20, Hazard Removal and Mitigation; Grant Assurance #21, Compatible Land Use; and Grant Assurance #25 Airport Revenue.

Section 163 and Grant Assurance 25 require the airport sponsor to receive not less than fair market value for the use, lease, encumbrance, transfer, or disposal of land, any facilities on such land, or any portion of such land or facilities. The sponsor must ensure that all revenues generated as a result of this project may only be expended for the capital or operating costs of the airport; the local airport system; or other local facilities which are owned or operated by the owner or operator of the airport and which are directly and substantially related to the actual air transportation of passengers or property; or for noise mitigation purposes on or off the airport.

The sponsor also has the responsibility to comply with all federal, state, and local environmental laws and regulations.

Additionally, any development on this parcel is still subject to airspace review under the requirements of 14 CFR part 77, and, Grant Assurance 29 still requires the airport to update and maintain a current ALP. An updated ALP should be submitted to the SEA-ADO if the project is completed.

If you have further questions or need for clarification, please feel free to contact Benjamin Mello at (206) 231-4134.

Sincerely,

Warren D. Ferrell
Acting Manager, Seattle Airports District Office

cc: Valerie Thorsen, Airport Capacity Program Manager, ANM Airports Division

U.S. Department
of Transportation
**Federal Aviation
Administration**

Northwest Mountain Region
Seattle Airports District Office
2200 S. 216th Street
Des Moines, WA 98198

June 30, 2021

Mr. Erik Hartley
581 SW 33 Rd St.
Ontario, OR 97914

Dear Mr. Hartley:

Re: FAA Approval Authority Review – Ontario Municipal Airport, Ontario, OR – Road and Automobile Parking Lot Construction

Existing Airport Way is scheduled to be reconstructed as the pavement is failing. While Airport Way is predominately used to access the airport, it is considered a public street and has not been depicted on the ALP even though it is located on airport property.

On October 5, 2018, HR 302, the "FAA Reauthorization Act of 2018" (the Act) was signed into law (P.L. 115-254). In general, Section 163(a) limits the FAA's authority to directly or indirectly regulate an airport operator's transfer or disposal of certain types of airport land. However, Section 163(b) identifies exceptions to this general rule. The FAA retains authority:

1. To ensure the safe and efficient operation of aircraft or safety of people and property on the ground related to aircraft operations;
2. To regulate land or a facility acquired or modified using federal funding;
3. To ensure an airport owner or operator receives not less than fair market value (FMV) in the context of a commercial transaction for the use, lease, encumbrance, transfer, or disposal of land, any facilities on such land, or any portion of such land or facilities;
4. To ensure that that airport owner or operator pays not more than fair market value in the context of a commercial transaction for the acquisition of land or facilities on such land;
5. To enforce any terms contained in a Surplus Property Act instrument of transfer; and
6. To exercise any authority contained in 49 U.S.C. § 40117, dealing with Passenger Facility Charges.

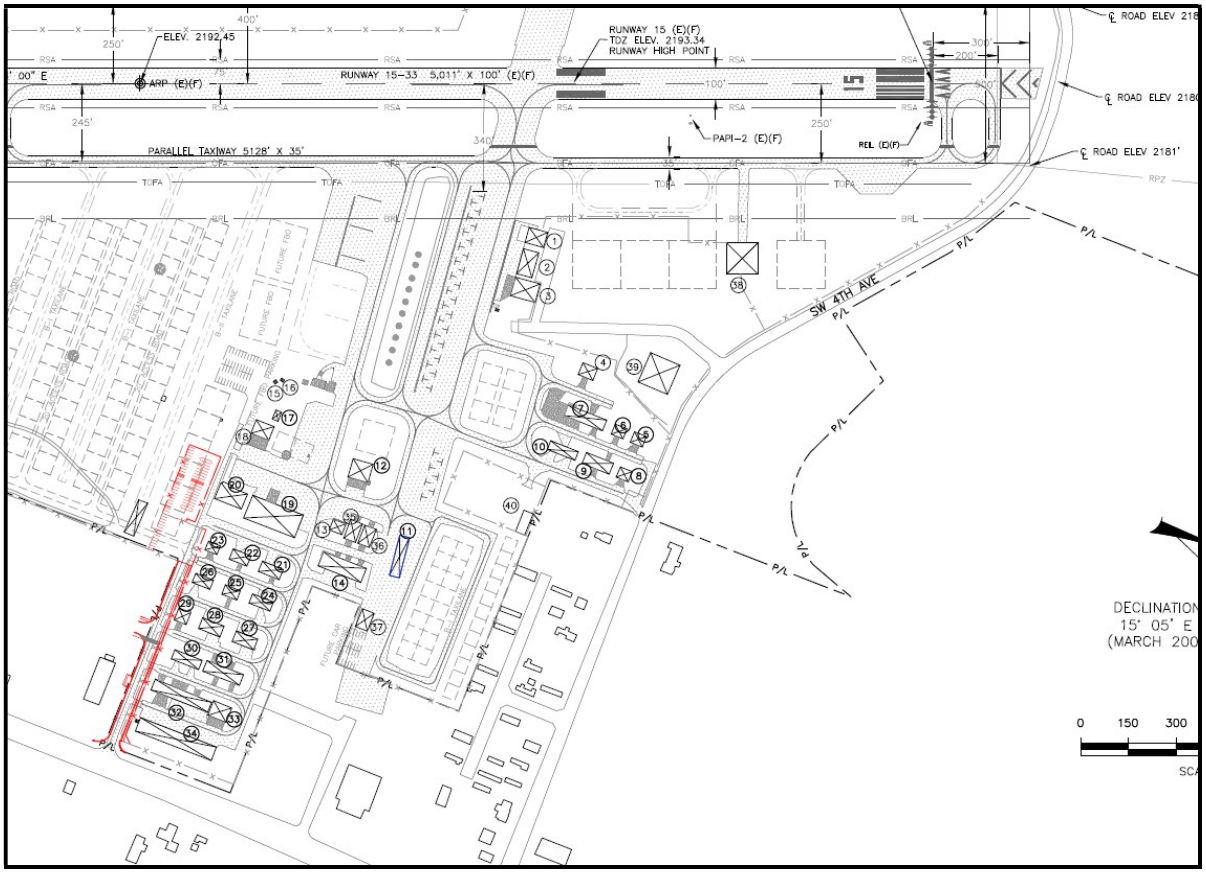
In addition, Section 163(c) preserves the statutory revenue use restrictions regarding the use of revenues generated by the use, lease, encumbrance, transfer, or disposal of the land, as set forth in 49 U.S.C. §§ 47107(b) and 47133.

Section 163(d) of the Act limits the FAA's review and approval authority for Airport Layout Plans (ALPs) to those portions of ALPs or ALP revisions that:

1. Materially impact the safe and efficient operation of aircraft at, to, or from the airport;
2. Adversely affect the safety of people or property on the ground adjacent to the airport as a result of aircraft operations; or
3. Adversely affect the value of prior Federal investments to a significant extent.

Proposed Project

As mentioned above, existing Airport Way is scheduled to be reconstructed as the pavement is failing. While Airport Way is predominately used to access the airport it is considered a public street because the road does not exclusively serve the purpose of getting airport traffic to the airport, and supports access to non-aviation related businesses. The project entails reconstructing Airport Way to current standards in its original location. The project will also construct an automobile parking area on the airport, by converting an area that is currently shown on the ALP as apron space. The automobile parking area will benefit aircraft hangar owners and fixed base operators (FBO). This project is will be funded with City funds. No airport improvement program (AIP) funds will be used. The project is shown below, in red, on the Pen & Ink ALP.



Determination Regarding the Airport Layout Plan

For the purpose of determining whether the proposed project requires FAA ALP approval, we have determined that the proposed project would not have a material impact on aircraft operations, at, to, or from the airport; would not affect the safety of people and property on the ground; would not have an adverse effect on the value of prior Federal investments to a significant extent. Therefore, the FAA does not the legal authority to approve or disapprove changes to the ALP for the proposed project.

FAA's Authority to Regulate Land Use

Parcel 3A was acquired by the Airport from the federal government in 1935 with an AP-4 Agreement. Because the FAA considers the proposed project to be an aeronautical support activity, a change in land use is not required. The FAA will not require a release of obligations.

Applicability of the National Environmental Policy Act (NEPA)

Because the FAA lacks the legal authority to approve or disapprove changes to the ALP, and lacks the authority to regulate the use of the land associated with this project, the agency does not have an action subject to NEPA.

Sponsor Obligations Still In Effect

This determination only addresses FAA's approval authority for this project. It is not a determination that the project complies with the sponsor's federal grant assurances. The sponsor must continue to comply with all of its Federal grant obligations, including but not limited to Grant Assurance #5, Preserving Rights and Powers; Grant Assurance #19, Operation and Maintenance; Grant Assurance #20, Hazard Removal and Mitigation; Grant Assurance #21, Compatible Land Use; and Grant Assurance #25 Airport Revenue.

Section 163 and Grant Assurance 25 require the airport sponsor to receive not less than fair market value for the use, lease, encumbrance, transfer, or disposal of land, any facilities on such land, or any portion of such land or facilities. The sponsor must ensure all revenues generated as a result of this project may only be expended for the capital or operating costs of the airport; the local airport system; or other facilities which are owned or operated by the owner or operator of the airport and which are directly and substantially related to the actual air transportation of passengers or property; or for noise mitigation purposes on or off the airport.

The sponsor also has the responsibility to comply with all federal, state, and local environmental laws and regulations.

Additionally, any development on this parcel is still subject to airspace review under the requirements of 14 CFR part 77, and, Grant Assurance 29 still requires the airport to update

and maintain a current ALP. An updated ALP should be submitted to the Seattle Airports District Office (SEA ADO) if the project is completed.

If you have further questions or need clarification, please feel free to contact Ben Mello, SEA ADO Community Planner, at Benjamin.j.mello@faa.gov or (206) 231-4134.

Sincerely,

Warren D. Ferrell
Acting Manager, Seattle Airports District Office

cc: Valerie Thorsen, Airport Capacity Program Manager, ANM Airports Division

APPENDIX 3
FORECAST APPROVAL

U.S. Department
of Transportation
**Federal Aviation
Administration**

Northwest Mountain Region
Colorado · Idaho · Montana · Oregon · Utah
Washington · Wyoming

Seattle Airports District Office
2200 S 216th St
Des Moines, WA 98198

December 22, 2021

Mr. Dan K. Cummings, PLS
Interim Assistant Airport Manager
444 SW 4th ST
Ontario, OR 97914

Ontario Municipal Airport
Ontario, OR
AIP: 3-41-0044-018-2021
Forecast Approval

Dear Mr. Cummings:

The Federal Aviation Administration (FAA) reviewed the forecast information for the Ontario Municipal Airport. FAA approves the forecast as presented in Chapter 3 of the Master Plan and as shown below:

TABLE 3.19
FORECASTED OPERATIONS VS TAF VALUES

	Based Aircraft Growth			Operations Growth		
	2021 Based	5-Year Forecast	20-Year Forecast	2021 Operations	5-Year Forecast	20-Year Forecast
TAF	59	59	59	13,138	13,660	15,316
Forecast	89	93	105	18,237	19,147	22,300
Percent Difference	40.5	44.7	55.3	32.5	33.5	37.1
Adjusted TAF	N/A	N/A	N/A	18,464	19,198	21,525
Adjusted Percent Difference	N/A	N/A	N/A	1.24	0.27	3.54
Growth Percent Difference	N/A	N/A	17.4	N/A	N/A	N/A

SOURCE: FAA / J-U-B

The FAA also approves the Air Tractor AT 802F and the Beechcraft King Air 200 (B-II) for the existing and future critical aircraft. We found the forecast to be supported by reasonable planning assumptions and current data. Your forecast appears to be developed using acceptable forecasting methodologies.

This forecast was prepared prior to full impacts of COVID-19. The forecast approval is based in reference to the data and methodologies used and the conclusions at the time the document was prepared. However, consideration must still be given to the significant impacts of COVID-19 on aviation activity; as a result, there is lower than normal confidence in future growth projections. FAA approval of the forecast does not provide justification to begin airport development.

U.S. Department
of Transportation
**Federal Aviation
Administration**

Northwest Mountain Region
Colorado · Idaho · Montana · Oregon · Utah
Washington · Wyoming

Seattle Airports District Office
2200 S 216th St
Des Moines, WA 98198

Justification for future projects will be made based on activity levels at the time the project is requested for development, rather than this forecast approval. Further documentation of actual activity levels reaching the planning activity levels will be needed prior to FAA participation in funding for eligible projects. Further, the approved forecasts may be subject to additional analysis or the FAA may request a sensitivity analysis if this data is to be used for environmental or Part 150 noise planning purposes.

If you have questions, please call me at 206-231-4134.

Sincerely,

Benjamin Mello
Airport Planner, FAA Seattle Airports District Office

APPENDIX 4
RECYCLING PLAN

Airport Recycling Plan

FACILITY DESCRIPTION AND BACKGROUND

The Ontario Municipal Airport (Airport) is a general aviation airport with a single runway owned and operated by the City of Ontario in the State of Oregon. The Airport occupies 480 acres of land and is located 4 miles west of the Oregon/Idaho border in Malheur County on the western edge of Ontario.

The Airport is under the jurisdiction of the City, Oregon Department of Aviation and the Federal Aviation Administration's (FAA) Northwest Mountain Airport Region Seattle Airports District Office.

The Ontario Municipal Airport is managed by its Airport Manager, Airport Advisory Board, and City Council.

FORECAST AND OPERATIONS

The operations baseline at Ontario Municipal Airport for this master plan is 18,237 operations which is summarized and detailed in Chapter 3 of this Master Plan. This forecast of operations for the next 20 years is shown in the table below.

FORECAST OF AIRCRAFT OPERATIONS BY TYPE				
Aircraft Type	**2021**	**2026**	**2031**	**2041**
Single-Engine Piston	14,368	14,878	15,406	16,519
Multi-Engine Piston	679	768	869	1,112
Jet/Turbo-Prop	2,627	2,844	3,079	3,609
Helicopter or Unclassified	563	657	769	1,060
Total Aircraft Operations	**18,237**	**19,147**	**20,123**	**22,300**
SOURCE: J-U-B/OPBA				

The following based aircraft numbers were used for this report, they were obtained using the FAA Form 5010 and compared to the information contained on basedaircraft.com. The based aircraft numbers are as follows: 84 Single-Engine Piston (SEP), 0 Multi-Engine Piston (MEP), 1 Jets, and 4 Helicopter for a total of 89 aircraft. Ultralight aircraft are not part of the count for master plan purposes.

ONTARIO AIRPORT'S CURRENT WASTE MANAGEMENT PROGRAM

Waste removal is the responsibility of the Airport's FBO Silverhawk Aviation. Waste is collected and removed twice a week (Tuesdays and Thursdays) by Ontario Sanitary Service, Inc., (OSS) which provides a 1 CY dumpster This dumpster is located in front of Silverhawk Aviation Academy and FBO building.

Dumpster located in front of Silverhawk Aviation Academy – for airport users use.

The solid waste is then transported to the OSS waste facility where it is consolidated and ultimately disposed of. Most of the solid waste at the Ontario Municipal Airport is generated by airport users, aviation students and pilots who generate deplaned waste, along with individuals/organizations who lease hangars or the airport grounds for activities.

EXISTING RECYCLING PROGRAM

(a) **Facilities over which the Airport has direct control of waste management** – Currently, there are no recycling collection facilities at the Airport. Materials for recycling can be dropped off at Ontario Sanitary Service's facility at 540 SE 9th Ave. in Ontario This facility accepts newspaper, aluminum and steel, mixed paper, and cardboard. Bottles can be recycled for a refund at various bottle drop locations (stores) around the City as well as at the Ontario Redemption Center (1383 NE 3rd St, Ontario, OR)

(b) **Areas over which the Airport has no direct control but may have influence** – There are no current regulations requiring hangar occupants to subscribe for individual disposal service. The City, FBO, and the Airport work to influence hangar occupants and airport users at the Airport to dispose of waste with an onsite dumpster and as well as encourage users to recycle as much as possible.

REVIEW OF RECYCLING FEASIBILITY

Ontario Municipal Airport works to maintain compliance with applicable federal, state, and local waste regulations. However, the most important policy that impacts recycling at the Ontario Airport is the FAA Modernization and Reform Act of 2012 (FMRA), which amended Title 49, United States Code (U.S.C.), it included several changes to the Airport Improvement Program. The changes contained in Section 132 (b) of the FMRA expanded the definition of airport planning to include "developing a plan for recycling and minimizing the generation of airport solid waste, consistent with applicable State and local recycling laws, including the cost of a waste audit". Recycling and reduction of waste became a consideration for the current Airport Master Plan update for the Airport. Additionally, Section 133 of the FMRA added a provision requiring airports that have or plan to prepare a master plan, and that receive AIP funding for an eligible project to address solid waste recycling including this Recycling Plan in the Master Plan Update, ensure that the Airport will address those issues.

PROMOTING A RECYCLING PROGRAM

Benefits for implementing a recycling, reuse, and waste reduction program at the Ontario Municipal Airport may include the following:

- The Airport implementing policies and guidelines that would encourage Airport users and tenants to take their recyclables to the local Recycling Drop facilities to minimize contributions to the landfill.
- Encouraging Airport users and tenants to reduce solid waste generation and reuse materials whenever possible.
- Designating a place at the airport or FBO for the collection of materials for recycling and planning for pick up by Ontario Sanitary Service or staff who would then transport recyclables to the local Recycling Drop Box facility.

RECYCLING PROGRAM CONSTRAINTS

Logistical constraints to an Airport recycling program include:

- The minimal volume of material that is generated for recycling.
- The lack of controlled common areas to place properly marked containers discourages Airport users and tenants to use recycling facilities.
- Any future facility or organization picking up recyclables would need to be trained for access on the airport. As drivers tend to change, staying on top of training could be considered a constraint.

OPERATION AND MAINTENANCE REQUIREMENTS

Silverhawk Aviation contracts solid waste collection services on behalf of the City from Ontario Sanitary Services, Inc. (OSS) which provides a 1 CY dumpster for disposal of all waste at the Airport. Solid waste is then transported to their waste facility where it is processed and ultimately disposed of at a permanent disposal site. The City of Ontario in conjunction with Silverhawk Aviation would be the responsible party for implementing any recycling program at the Airport.

REVIEW OF WASTE MANAGEMENT CONTRACTS

Currently, Silverhawk subscribes to twice weekly solid waste collection service from Ontario Sanitary Service, Inc. paid for by Silverhawk Aviation the Airports FBO.

POTENTIAL FOR COST SAVINGS OR REVENUE GENERATION

It is likely that no real cost savings or potential for revenue generation exists with the current volumes and types of solid waste and potential recyclables that exist today at the Airport. However, a recycling program could be put into place for the following considerations:

- While recyclable volumes are very small today, they have the potential to grow as the Airport and its tenant base grow in future years.
- Community recycling is a responsible approach to the waste management process and all contributions lessen the landfill burden.

Even though such recycling and waste management programs may not be especially financially viable today, being involved in these processes today will better prepare the Airport for the future.

PLAN TO MINIMIZE SOLID WASTE GENERATION

Individual recycling containers and services are not currently in use at the Ontario Municipal Airport property, and it would require extensive coordination with OSS regarding waste and/or recycling pickup. Hangars are inside the fence and training would need to be provided for OSS drivers doing the pickup or the subscribers would have to bring the cans to a central pickup location.

The State of Oregon has a robust bottle recycling program with a number of locations to return bottles for a refund. They also have recycling drop boxes at the OSS facility. Waste Management and other recycling facilities do accept recyclables (newspaper and magazines), plastics, and aluminum cans. The Airport encourages these recycling efforts whenever possible.

Ontario Municipal Airport's comprehensive approach to reduce the amount of waste being disposed of in landfills includes the following opportunities:

	Objective	Target Deadline
A.	Review the City and Airport's policies on reuse, recycling, and waste reduction and update as necessary.	8-months post MP submission
B	Consider contracting with OSS for a recycling container for collection, to see if it is cost-effective.	8-months post MP submission
C.	Include information on local recycling and waste programs in notices and invoices to hangar owners and airport users. (i.e., free clean-up and locations of drop facilities.)	8-months post MP submission
D.	Implement policies and educational programs that encourage Airport users and tenants to minimize the amount of waste that is being disposed of in the landfill and reuse materials whenever possible by participating in a reuse and recycling effort.	12-months post MP submission
E.	Review and update arrangements/contracts/leases between the Airport users and tenants to encourage purchasing products made from post-consumer recycled materials and incorporate necessary changes.	15-months post MP submission

F.	The Airport should also consider the level of recycling that can be included as part of the construction processes at the Airport. Review and revise procurement and contract documents to provide for recycling or reuse of materials in new development projects. As well as designating an area for construction spoils and debris for possible future reuse.	15-months post MP submission

APPENDIX 5
Cultural Resources Survey

Cultural Resources Inventory for the Ontario Municipal Airport Master Plan Project, Malheur County, Oregon

OCTOBER 2022

PREPARED FOR

J-U-B Engineers, Inc.

PREPARED BY

SWCA Environmental Consultants

CULTURAL RESOURCES INVENTORY FOR THE ONTARIO MUNICIPAL AIRPORT MASTER PLAN PROJECT, MALHEUR COUNTY, OREGON

Prepared for

J-U-B Engineers, Inc.

Prepared by

Colin Christiansen, B.A.; Dan Herrick, M.H.C.; Josh Bevan, M.S.; Caelie Butler, M.A.; and Amanda Carroll, M.A.

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SWCA Project No. 74304

SWCA Cultural Resources Report No. 22-631

October 17, 2022

MANAGEMENT SUMMARY

A master planning effort is underway for Ontario Municipal Airport (OMA) in Malheur County, Oregon. J-U-B Engineers (J-U-B) requested that SWCA Environmental Consultants (SWCA) conduct a cultural resources inventory in support of the OMA Master Plan Project located on OMA-owned land in Ontario, Oregon. The area of potential effects (APE) for the project is approximately 400 acres located in Sections 6 and 7, Township 18 South, Range 47 East, Willamette Meridian, west of Oregon State Highway 201.

The Federal Aviation Administration (FAA) is responsible for reviewing this project under the National Environmental Policy Act (NEPA) and the National Historic Preservation Act (NHPA). An archaeological resources and aboveground historic resources inventory is required in support of the FAA's compliance requirements under NEPA and under 54 United States Code 306108 (commonly known as Section 106 of the NHPA).

The inventory was conducted to Oregon State Historic Preservation Office (SHPO) standards and consisted of a literature review and an intensive-level (Class III) archaeological survey, as well as an intensive-level survey of the existing built environment to identify and evaluate aboveground historic resources. Mike Cannon, Ph.D., RPA, who meets the Secretary of the Interior's Professional Qualifications Standards for archaeology, served as principal investigator. Amanda Carroll, M.A., who meets the Secretary of the Interior's Professional Qualifications Standards for archaeology, served as project manager and field director. Colin Christiansen, B.A., served as assistant project manager and field team lead. Dan Herrick, M.H.C., served as the primary architectural historian for the project; Herrick meets the Secretary of the Interior's Professional Qualification Standards for architectural history and history. All photographs, field notes, and geographic information system (GIS) data are archived at the SWCA office in Portland, Oregon.

Under Section 106 of the NHPA, federal agencies are required to consider whether undertakings with a federal nexus (federally owned land, federal funding, or federal permits) will have an adverse effect on historic properties (buildings, structures, objects, or archaeological sites listed on or eligible for the National Register of Historic Places [NRHP]). To be eligible for the NRHP, properties generally must at least be 50 years old, meet at least one of four criteria of significance, and retain integrity sufficient to convey that significance.

To determine if cultural resources were present within the APE, SWCA archaeologists and architectural historians conducted background research and field investigations within the APE in July 2022. The field investigations consisted of archaeological pedestrian survey and an intensive survey of the built environment for aboveground historic resources.

SWCA identified no archaeological sites within the APE. The intensive-level survey of the built environment and evaluation of aboveground historic resources found that none of the buildings, structures, and landscape features that are 50 years old or older are eligible for the NRHP due to a lack of historical significance. This includes two potential historic districts related to the OMA property and the golf course, which were founded in 1928 and 1964, respectively, as well as individual buildings and structures.

SWCA's background research indicates that the OMA property was initially developed in 1928 as an American Legion Airport, which was part of a larger national campaign by the American Legion to develop airfields in the years following World War I. The OMA property was slow to develop but underwent some updates in the lead-up to World War II through Works Progress Administration–constructed improvements in the airfield and Civilian Pilot Training Program–related flight school improvements. The flight school was a central component of the airfield in the years before, during, and

after World War II, which was typical of smaller airfields during this period. While OMA did host some passenger traffic during the immediate post-war years, commercial airline traffic to the airport ceased in the 1970s. The airport underwent an expansive period of modernization in the 1970s, 1980s, and in the 2000s that saw the closure of the east-west runway, extension of the north-south runway, and construction of new administrative and hangar facilities throughout the property. Additionally, the airport property was the location of a municipal golf course from 1964 to 2014. This too underwent extensive alterations related to the changes to the airport.

SWCA identified no NRHP-eligible properties within the APE. SWCA therefore recommends a finding for the undertaking of **no historic properties affected**, per 36 CFR 800.4(d)(1). Because the risk of encountering cultural resources during ground disturbance can never be completely ruled out, SWCA recommends that a project-specific inadvertent discovery plan be developed and distributed to construction workers prior to the start of any project-related ground disturbance.

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INTRODUCTION

A master planning effort is underway for Ontario Municipal Airport (OMA) in Malheur County, Oregon. J-U-B Engineers (J-U-B) requested that SWCA Environmental Consultants (SWCA) conduct a cultural resources inventory in support of the OMA Master Plan Project located on OMA-owned land in Ontario, Oregon. The area of potential effects (APE) for the project is approximately 400 acres located west of Oregon State Highway 201.

The Federal Aviation Administration (FAA) is responsible for reviewing this project under the National Environmental Policy Act (NEPA) and the National Historic Preservation Act (NHPA). An archaeological resources and aboveground historic resources inventory is required in support of the FAA's compliance requirements under NEPA and under 54 United States Code 306108 (commonly known as Section 106 of the NHPA).

The inventory was conducted to Oregon State Historic Preservation Office (SHPO) standards and consisted of a literature review and an intensive-level (Class III) archaeological survey, as well as an intensive-level survey of the existing built environment to identify and evaluate aboveground historic resources. Mike Cannon, Ph.D., RPA, who meets the Secretary of the Interior's Professional Qualifications Standards for archaeology, served as principal investigator. Amanda Carroll, M.A., who meets the Secretary of the Interior's Professional Qualifications Standards for archaeology, served as project manager and field director. Colin Christiansen, B.A., served as assistant project manager and field team lead. Dan Herrick, M.H.C., served as the primary architectural historian for the project; Herrick meets the Secretary of the Interior's Professional Qualification Standards for architectural history and history. All photographs, field notes, and geographic information system (GIS) data are archived at the SWCA office in Portland, Oregon.

Area of Potential Effects

The APE is located in Malheur County, Oregon, within portions of Sections 6 and 7, Township 18 South, Range 47 East, Willamette Meridian. The APE is approximately 400 acres on OMA property (Figures 1 and 2).

ENVIRONMENT

Geologic Setting and Soils

The APE is in the northeast portion of the Owyhee Upland physiographic province. The Owyhee Upland is a north-facing basin drained by the Owyhee River with an elevation range of 1,200 to 2,930 m (4,000–9,613 feet) above mean sea level (amsl) (Franklin and Dyrness 1973). The Owyhee Upland is characterized by an expanse of Miocene and Pliocene beds of tuffaceous sedimentary rock, covered by rhyolite and basalt flows (Franklin and Dyrness 1973).

The APE sits on the boundary between two geologic deposits. To the north of SW 4th Avenue, Holocene and upper Pleistocene alluvial deposits run along the south bank of the Malheur River channel. These deposits are characterized by pale gray to tan, thin-bedded silt and fine- to medium-grained sands deposited on the alluvial plain. The deposits are typically 3 to 7 m (10 to 30 feet) thick and overlie Pleistocene fluvial gravel and sand deposits of the lower Snake River terrace (Madin and Ferns 1997). South of SW 4th Avenue, Bonneville Flood deposits of the Pleistocene are found 3 to 12 m (23 to 39 feet)

thick. These deposits are characterized by massive to thinly bedded tan silt and fine-grained sands deposited during the Bonneville Floods approximately 14,000 years ago (Madin and Ferns 1997).

Figure 1. Aerial photograph showing the project APE.

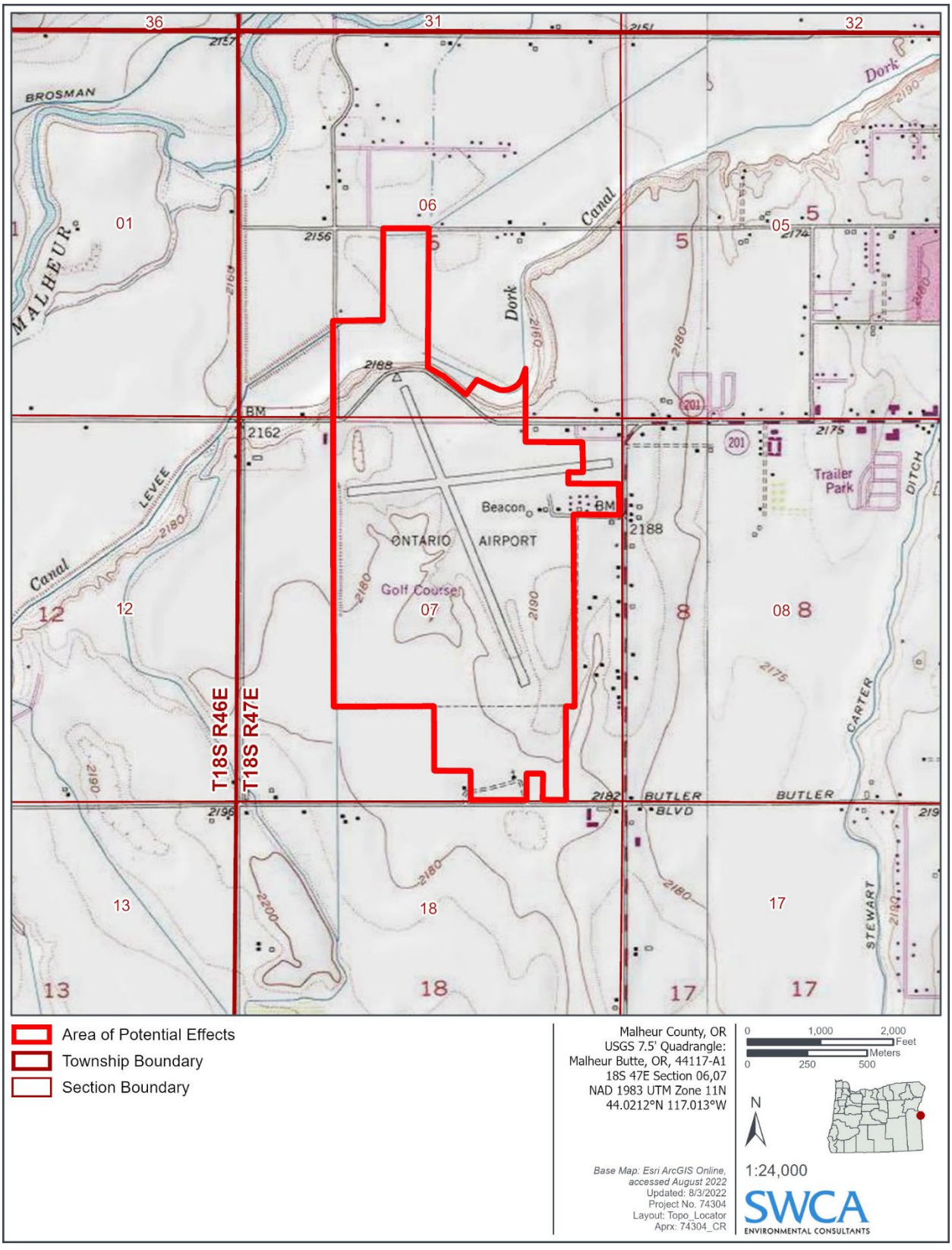

Figure 2. U.S. Geological Survey topographic map showing the project APE.

Sediments in the APE are mapped as three silt loam soil series (Natural Resources Conservation Service [NRCS] 2022). The Greenleaf series represents the majority of the APE and is the only series south of SW 4th Avenue in the APE. The Umapine and Owyhee series are mapped in the APE north of SW 4th Avenue with Owyhee representing a thin stretch of land between the Umapine series and SW 4th Avenue (NRCS 2022). The Greenleaf soil series is a deep and well drained fine-silty loam. These soils were formed in lacustrine deposits and are found in areas with slopes of 0 to 30 percent. The series is also characterized as cultivated with an Ap horizon up to 13 inches thick (NRCS 2022). The Umapine series is a very deep and poorly drained silt loam. These soils are found on floodplains with 0 to 5 percent slopes. The series is characterized as violently effervescent and has strong alkaline pH levels. The Owyhee series is a very deep and well-drained silt loam. These soils were formed in lacustrine materials or old alluvium on terraces with slopes between 0 and 30 percent. Owyhee soils are also cultivated with Ap horizons up to 11 inches deep (NRCS 2022).

Climate

The climate of the Basin and Range and Owyhee Uplands is marked by sparse precipitation and significant evaporative forces (Harper 1986). Evidence from the precontact period suggests a consistent warming trend starting from the last glacial maximum through modern times, as tree lines moved upwards in elevation, coinciding with the shrinking of Pleistocene lakes into isolated basins (Mehringer 1986), such as the one where the APE is located. Moisture has grown scarcer, particularly during the historic and modern periods, further limiting the sparse vegetation across the region (Harper 1986). Within the Ontario, Oregon, region, average maximum temperature between 1998 and 2022 is listed as 79.1 degrees Fahrenheit by the National Oceanic and Atmospheric Administration (NOAA), while average minimum temperature is listed as 26.8 degrees Fahrenheit (NOAA 2022). The average mean temperature during that period was 52.7 degrees Fahrenheit. Total annual precipitation fluctuates, but typically stays below 10 inches each year based on modern data.

Flora

The project APE lies within the Great Basin Desert floristic region (Grayson 2011). The modern native vegetation of this region is characterized at lower elevations by communities in which the dominant shrubs are shadscale (*Atriplex confortifolia*), saltbush (*Atriplex* spp.), and sagebrush (*Artemisia* spp.), and at higher elevations, along mountain flanks, by woodland consisting of pinyon pine (*Pinus edulis*) and/or western juniper (*Juniperus occidentalis*) (Grayson 2011:17; Taylor 1992). Given the relatively low elevation of the project APE (approximately 1,200 m [4,000 feet] amsl) compared to other parts of the Great Basin, only the lower elevation communities occur within it.

Franklin and Dyrness (1973) classify vegetation communities throughout the region into two types: shrub-steppe and desert shrub. The project APE falls within the desert shrub zone. Desert shrub communities in southeastern Oregon are also referred to as the shadscale zone and occur at elevations below about 1,300 m (4,250 feet) amsl, where soils are generally alkaline (Mansfield 2000:11). Big sagebrush (*Artemisia tridentata*) can still be present in these communities, particularly in areas with better-drained soils, but the dominant shrubs are shadscale, fourwing saltbush (*Atriplex canescens*), greasewood (*Sarcobatus vermiculatus*), and spiny hopsage (*Grayia spinosa*), while the most common native grass is saltgrass (*Distichlis spicata*) (Mansfield 2000:11).

Vegetation zones not represented in the project APE but present elsewhere in southeastern Oregon at higher elevations consist of a juniper zone between about 1,650 and 2,000 m (5,400 to 6,550 feet) amsl, an aspen/upper sagebrush/grass zone between about 2,000 and 2,400 m (6,550 to 7,850 feet) amsl, and an alpine bunchgrass/tundra zone above this (Mansfield 2000:12). The juniper and aspen/upper

sagebrush/grass zone are similar in taxonomic composition to the sagebrush zone but with the addition of juniper and aspen (*Populus* spp.), respectively, along with other shrubs, forbs, and grasses that are not present at lower elevations.

Fauna

Large mammals of economic importance that were common in eastern Oregon prior to Euro-American colonization include mule deer (*Odocoileus hemionus*), pronghorn (*Antilocapra americana*), and mountain sheep (*Ovis canadensis*); taxa that were likely less common but still present include elk (*Cervus canadensis*) and bison (*Bison bison*) (Fowler 1986; Grayson 2006; Verts and Carraway 1998). Economically important smaller mammals include black-tailed jackrabbit (*Lepus californicus*), white-tailed jackrabbit (*L. townsendii*), and mountain cottontail (*Sylvilagus nuttallii*); pygmy rabbits (*Brachylagus idahoensis*) are present in the region as well (Fowler 1986; Verts and Carraway 1998). Common rodents in the region, which may have been a food source prehistorically (Fowler 1986; Fowler and Liljeblad 1986), include yellow-bellied marmot (*Marmota flaviventris*), ground squirrels (*Spermophilus* spp.), porcupine (*Erethizon dorsatum*), and woodrats (*Neotoma* spp.). Native carnivores of the region include coyote (*Canis latrans*), American badger (*Taxidea taxus*), kit fox (*Vulpes macrotis*), red fox (*V. vulpes*), grizzly bear (*Ursus arctos*), raccoon (*Procyon lotor*), a variety of mustelids, mountain lion (*Puma concolor*), lynx (*Lynx canadensis*), and bobcat (*L. rufus*).

A wide variety of birds occur in eastern Oregon (e.g., Ryser 1985). Economically important ones include greater sage-grouse (*Centrocercus urophasianus*), ducks, and other waterfowl (Fowler 1986; Fowler and Liljeblad 1986). Archaeological evidence suggests that tui chub (*Gila bicolor*) were prehistorically the most important food fish within the Basin and Range and Owyhee Upland region of southeastern Oregon (e.g., Greenspan 1994). To the south of the project APE, anadromous fishes such as Chinook (*Oncorhynchus tshawytscha*) and coho salmon (*Oncorhynchus kisutch*) and steelhead (*Oncorhynchus mykiss)* were available in the Owyhee River and its tributaries prior to dam building (Meyer 1985), and these likely represented a food source that could have been obtained either through trade or direct acquisition (Fowler and Liljeblad 1986). Some shellfish are found in the broader Great Basin, including the western pearlshell (*Margaritifera falcata*) and the western ridged mussel (*Gonidea angulata*). Remains of both of these taxa have been found in prehistoric archaeological sites located along the Owyhee River (Nedeau et al. 2009), south of the APE, but evidence suggests that shellfish were not a major food source for Native peoples in the Great Basin (Fowler and Liljeblad 1986).

CULTURAL SETTING

SWCA staff conducted thorough background research on the APE and surrounding region in order to establish a precontact, ethnographic, and historic overview of the APE. Research was then conducted to identify historical land use of the APE specifically, using a variety of sources.

Precontact Background

The following section provides an overview of the precontact history relevant to the study area, based on generalizations of cultural change in the region, including shifts in the organization of subsistence patterns, land use, and technological developments. The project is at the northern extent of the Great Basin cultural region, which is bordered to the north by the Columbia Plateau cultural region and to west by the Cascade Range and extends into California, Nevada, and Utah. The four-part temporal synthesis of information presented here uses calibrated radiocarbon years before present (cal B.P.) (Jenkins et al.

2004; Moratto and Jackson 1990). Jenkins et al. (2004) provide additional detail on the cultural chronology of this region.

The Great Basin cultural area contains the Northern Great Basin province, where the APE is located. The northern Great Basin province has been defined by the works of Ellis et al. (2002), Jenkins et al. (2000), Lebow et al. (1990), and Lyman et al. (1983). For the northern Great Basin, regional chronologies have been developed primarily through limited survey and data recovery efforts; these are summarized here within the four periods commonly used throughout broader Oregon archaeology.

Research themes relating to settlement and subsistence in the Great Basin culture area focus primarily on mobility patterns and their associated resource exploitation during the precontact era. By comparing settlement and subsistence patterns to known site locations within the northern Great Basin region, researchers have attempted to understand landscape and resource use on a temporal and spatial level (Jenkins et al. 2000). The archaeological record suggests that populations living in the region had high levels of residential mobility during the Paleoindian and Early Archaic periods, which are characteristic of a foraging pattern. Permanent village sites appeared during the Middle Archaic period and nucleated village sites were common during the Late Archaic period, which lasted until Euro-American contact.

Paleoindian Period (15,500–12,000 cal B.P.)

The earliest inhabitants of North America are typically referred to as Paleoindian and were present following the end of the Pleistocene glaciations. Evidence of this period is largely from surface artifacts and typological and technological studies. Paleoindian people inhabited the Great Basin as early as 15,500 cal B.P., when the elevation of pluvial lakes was dropping, which facilitated group mobility (Beck and Jones 1997; Jenkins et al. 2004; Meltzer 2004). During this time, both fluted and unfluted projectile points were in use. Distinctive Clovis and Folsom point types characterize the Fluted Point Horizon in the Great Basin between 13,300 and 12,800 cal B.P. (Beck et al. 2004; Mack 1975; Minor et al. 1979). Unfluted projectile points dating to this period are typically assigned to the Western Stemmed tradition and are associated with a broad spectrum hunting and gathering subsistence adaptation, while fluted Clovis and Folsom projectile points are thought to be representative of a subsistence focus on hunting large mammals, where small groups of people followed herds over broad areas (Lebow et al. 1990).

Early Archaic Period (ca. 12,000–7600 cal B.P.)

There is very little evidence of Early Archaic period occupation in the region surrounding the APE. Many sites from this time are buried beneath a thick layer of pumice from the eruption of Mount Mazama (at around 7600 cal B.P.) (Cressman 1986). Based on climatic reconstructions, it is clear that the climate warmed during the Early Archaic period, which had an impact on the resources exploited and subsistence economies employed during this time. Evidence suggests a shift toward exploitation of smaller game, as well as plant resources from marshes and grasslands. This shift in resources away from large game is reflected in the expansion of the Early Archaic tool assemblage. The Early Archaic component of Fort Rock cave contains tools with a broad range of uses including antler artifacts, gravers, manos, scrapers, and stone mortars (Cressman 1986, 2005; Minor et al. 1979:50). New projectile point forms were developed and used, such as triangular, corner-notched, and eared projectile points such as Elko and Pinto types, which became increasingly common during this time (Aikens 1986:11).

Middle Archaic Period (7600–3000 cal B.P.)

Following the eruption of Mount Mazama, the distribution of subsistence resources became increasingly localized and more geographically constrained than during the previous Early Archaic period. As a result, populations became more mobile in order to have access to resources for subsistence and other uses.

Early Middle Archaic period sites reflect this trend and are characterized by smaller sites with less diverse assemblages that resulted from this increased mobility and resource specialization (Jenkins et al. 2004). The change in resource distribution was accompanied by a moister climate that expanded marshlands.

As the Middle Archaic period progressed, however, evidence from residential sites is indicative of increasing sedentism, resource intensification, and trade, likely due to rising Middle Archaic population numbers (Jenkins et al. 2004:16–19). Substantial semipermanent and intermittent occupations occurred between 6100 and 2980 cal B.P. in the Fort Rock Basin (Helzer 2004; Moessner 2004) and several clusters of houses at the Bergen Lunette Dune site (near Fort Rock and adjacent to paleo–Lake Beasley) have evidence of fall and winter occupations based on the presence of late season seeds, and faunal remains of mature migratory waterfowl (Helzer 2004). Denser and more diverse material culture assemblages appeared after 6000 cal B.P., including food processing and storage features, as well as evidence of the use of fish, seeds, waterfowl, shellfish, and small and large mammals. Numbers of stemmed and corner- and side-notched points, including Northern Side-Notched and Elko point types, increased during the Middle Archaic (Moratto and Jackson 1990:3-45).

Late Archaic Period (3000 cal B.P.–Historic Period)

Pit houses and stone ring house foundations along rivers and in transitional zones between marshes and uplands that date to the Late Archaic period provide evidence of population stability in the Northern Great Basin. Plant processing and small mammal hunting persisted in the Late Archaic, and small, triangular projectile points were common (Jenkins et al. 2004:19–20; Moratto and Jackson 1990:3–46). These small triangular projectile points are indicative of the emergence of bow and arrow technology, and became common around 3000 B.P. Rose Spring, Eastgate, and Desert Side-Notched are projectile point types frequently associated with the bow and arrow technology in this region, and Desert Side-Notched was the most common type towards the end of the Late Archaic Period (Aikens 1986:11).

West of the APE, the Fort Rock Basin has evidence of residential occupations at Table Rock dating to 3,000 years ago. The material culture assemblage from these sites includes scrapers, knives, manos, metates, and Elko Series projectile points (Minor et al. 1979:50). The absence of Desert Side-Notched and Cottonwood Triangular points around Glass Buttes itself suggests that this area may have been largely depopulated by about 900 cal B.P. (Mack 1975:47).

Traditional Lifeways

The OMA Master Plan Project APE is in the traditional territory of the Northern Paiute people, which extended from the western Sierra Nevada north to the Columbia and Snake Rivers, south to the Owens Valley of Nevada, and east to western Utah (Confederated Tribes of Warm Springs 2021; Knox 2005). Linguistically, the Northern Paiute are members of the Shoshonean language group (Confederated Tribes of Warm Springs 2021).

The core social group of the Paiute peoples was the immediate family, although the composition of even the immediate family could vary over time with births, deaths, marriages, divorces, and so on. Families typically lived together in one or more households and were self-sufficient. With bilateral kinship, immediate families had more extensive kin ties (the kindred) that could provide assistance and potential marriage partners, but the kindred were neither a residential nor economic unit. Two or three related families composed a camp group, the membership of which could change seasonally or over longer time frames. Camp group families might hunt or fish together, and women in camp groups (nogadɨ) might gather together and share childcare responsibilities, but individual families were expected to feed only themselves. Large camp groups might have formed for short periods of time during the winter but did not function as units except for communal pronghorn and rabbit drives. Camp groups in turn operated in

particular districts but groups could move from one district to another, as could individuals and families. Individuals, families, and camp groups in a district would identify with the district but their identity would change if they relocated to a different district (Fowler and Liljeblad 1986:446–448). It is important to emphasize that the Northern Paiute were not composed of permanent bands occupying permanent territories, but a more dynamic network of families, kindred, camp groups, and districts (Fowler and Liljeblad 1986; Murphy and Murphy 1986; Stewart 1939).

Leadership within camp groups was usually task-specific (e.g., communal rabbit drives, fishing parties); as families were politically and economically independent (at least in precontact times), senior family members made decisions. Spiritual leaders (puhagam·ɨ) might also be chosen to lead task groups, possibly due to their spiritual power (Fowler and Liljeblad 1986:450–451). Gaultieri (2006) has hypothesized that puhagam·ɨ may have had leadership roles in other collective actions, including warfare.

Paiute subsistence throughout the Great Basin was based on an impressive diversity of plant and animal resources (Fowler 1986; Fowler and Rhode 2011). However, the distribution of these plant and animal resources varied considerably, so families and camp groups focused on the resources most abundant and accessible in the districts in which they lived at any particular time. From plant remains identified at archaeological sites in southeastern Oregon, Fowler and Rhode (2011) found that the principal plant resources were a variety of small seeds (e.g., goosefoot, knotweed, sunflower, mustards, etc.), roots (e.g., biscuitroot, camas), and chokecherry and prickly pear. These plants represent only those that would leave some trace in archaeological deposits. Most small seeds were harvested in the summer and early fall, although some could be gathered into early winter. Manos and metates were important tools for grinding seeds into meal, which in turn was cooked in baskets—or more rarely, pottery vessels—by stone boiling into a mush. The meal could also be mixed with water to form dough that was then baked in a fire into bread (Fowler and Rhode 2011).

Roots were more typically harvested in the spring. Some of them (e.g., camas and balsamroot) were baked in pits or earth ovens to render them palatable or digestible. Hopper mortars were also used to break up fibrous roots prior to cooking. In the northern Great Basin, gathering and consumption of roots may have developed in the late Mid-Holocene known as the Bergen period, and may have been influenced, to some extent, by the growing importance of roots for Native peoples in the adjacent southern Columbia Plateau. Fresh greens were welcomed in the spring after a winter of dried foods and usually required little or no processing. Berries could be eaten fresh, sun-dried for later consumption, or ground to be made into cakes (Fowler 1986; Fowler and Liljeblad 1986; Fowler and Rhode 2011). These processed foods included chokecherry cakes, which were made by pounding dried berries into flour for winter storage. Stored foods included cached roots near gathering locales (Jenkins et al. 2004).

Major sources of animal protein included deer, antelope, and bighorn sheep. Deer and sheep were hunted by individual hunters or small hunting parties. Large communal drives were used for pronghorn and were infrequent to allow pronghorn populations to recover. Of equal—if not greater—importance were smaller animals, especially hares (jackrabbits) and cottontails. These were hunted individually, but large numbers were harvested in fall communal drives. Other small mammals contributing to people's diets included beaver, canids, badgers, porcupines, raccoons, muskrats, marmots, tree and ground squirrels, and a variety of mice and woodrats. Many of these smaller animals were taken with snares and traps (Fowler 1986).

Upland ground birds (grouse and quail species) were hunted or netted. Waterfowl were an important source of food for those Northern Paiute who had access to the lakes and marshes in the Harney Basin and farther west. These birds were also hunted and netted. Waterfowl were also a source of eggs (Fowler 1986).

For those Paiute with access to lakes and major streams, fish were an important, although variable, food source. Salmon were captured with weir technology and nets made from willow (Knox 2005), while fishing locations were not owned but were open to all. However, dams or weirs to trap fish were sometimes built by a camp group, who therefore earned the majority of the harvest (Steward 1938). Basket traps were also used, and there was an extensive trade in dried fish (Fowler 1986).

The locations of seasonal camps can only be generally guessed at; they were likely to have been near important resource locations. More established winter settlements would have been located in sheltered places and near sources of firewood. Processing of roots that required earth ovens also would have been done near sources of firewood. Seed- or root-processing sites might have been regularly reoccupied, because it would have been more convenient to leave metates at those locations than to transport them, given each one's weight and size. Seasonal camps tended to be small, as they were occupied by just one or two families. Brush windbreaks or shelters were built at these camps and were where families ate and slept. Fires were built a safe distance from these shelters. Winter settlements had more substantial dwellings, such as conical structures of poles covered with tule mats. These winter villages included several families, with as many as 50 residents. There was no formal arrangement of houses at these villages, and houses might have been some distance apart to minimize depletion of resources (Fowler and Liljeblad 1986).

Initial contact with Euro-Americans decimated Paiute populations beginning in 1830 and continuing through 1847 (Dunlap Couture 1978:23–24). Strained relationships between Natives and settlers over land eventually led to the creation of the Malheur Indian Reservation in 1872. Over 2,000 Native Americans were removed to the 2,285-square-mile piece of land in Harney and Malheur Counties by 1876 (Knox 2005:24). Following the 1878 Bannock War, hundreds of Paiute people were forcibly moved to reservations in Washington State (Burns Paiute Tribe 2022; Confederated Tribes of Warm Springs 2021). Northern Paiute people began leaving these reservations in 1879 and journeyed by foot to join the Warm Springs Reservation, which had been established by treaty in 1855 (Woody 2007). Others returned to Harney and Malheur Counties (Woody 2007). By Executive Order in 1882, the Malheur Indian Reservation was dissolved, and the land became public, leaving the Paiute people living in this area without a land base or home. Many stayed and instead tried to survive on 160-acre allotments provided under the 1887 Allotment Act. Although they lacked federal recognition or a formal land base, the Burns Paiute Tribe adopted a new governmental structure under the Indian Reorganization Act of 1934 (Ruby and Brown 1992:56; Soucie 2007; Woody 2007). The Burns Paiute colony was federally recognized in 1972, when a 770-acre reservation was established in eastern Oregon (Dunlap Couture 1978:13–17; Ruby and Brown 1992:9; Soucie 2007).

Historic Background

The earliest Euro-American presence in southeast Oregon was fur trappers assessing the beaver-trapping prospects of the northern Great Basin in the 1820s (Malouf and Findlay 1986), although the Lewis and Clark expedition had traveled along the northern edge of Oregon in 1805. In 1826 and 1828–1829, Ogden and Alexander McLeod of the Hudson's Bay Company (HBC) led the first Euro-American explorations across the northern Great Basin as the HBC attempted to identify new fur-trapping areas. Their expeditions extended through the Malheur River drainage, and in 1828–1829, Ogden explored the east side of Steens Mountain, south into the Trout Creek Mountains, and then northeast into the upper Owyhee River drainage (Davies 1961:Map 1; Williams 1971:Map 1). The region proved of little interest for trapping beaver, so the expeditions were abandoned by the early 1830s.

Migrants on the Oregon Trail were seeking good agricultural land and therefore bypassed the arid lands of the Great Basin, which did not provide either the water or forage to support even the transitory passage of people and livestock in the wagon trains. What interest remained was focused well to the east of the APE,

along the Snake River, but primarily as a transportation corridor. Passage along the Snake River at the northeastern edge of the future Malheur County became more important beginning in the 1840s as an alternate part of the Oregon Trail, although very few migrants deviated from the established route. The Meek Cutoff was taken by a large wagon train that attempted a route east from the Snake River through the Malheur River drainage and then traveled southerly into the Harney Basin before moving into the Crooked River basin and eventually reaching the Deschutes River (Bassett et al. 1998:199).

The discovery of gold and silver in the Malheur and Owyhee River basins in the late 1850s and early 1860s radically changed the Euro-American interest in southeastern Oregon (the most important Owyhee mining district was in southwestern Idaho). Thousands of prospectors and miners flooded the region, which led to growing conflicts with Native peoples and introduced a military presence.

These conflicts led to military campaigns in the 1860s against Northern Paiute in the northern Great Basin. Several temporary U.S. Army outposts were established to monitor Native activity and respond to perceived threats or attacks. Two of these camps were in the general project region: Camp McDermit (later Fort McDermitt), at the present location of McDermitt, and Camp C.F. Smith on Whitehorse Creek (Michno 2007:Map C). Michno (2007:Map C, 152, 156, 225) references three accounts of Native American attacks during this period in the general project region: a July 1865 encounter between U.S. Army troops and Native Americans on Jackson Creek southwest of Battle Mountain; an attack on a group of Chinese miners traveling on the Humboldt–Winnemucca Road (also known as the Fort McDermitt to Silver City Wagon Road) just north of Camp McDermit in May 1866 and a second encounter at Three Forks on the Owyhee River with a small group of U.S. Army cavalry later in May 1866; and attacks on the Summit Springs Station on the Humboldt–Winnemucca Road in June 1866 and May 1867.

These military campaigns coincided with treaty negotiations with Northern Paiute groups and removal to reservations. Treaties were signed at Klamath Lake in 1864 and Sprague River in 1865 that included some Northern Paiute. A third treaty was signed with Northern Paiute groups in 1868, but that treaty was never ratified. These treaties and negotiations led to creation of the Klamath Reservation (1864) and the Malheur Reservation (an executive order reservation created it in 1873 but dissolved it in 1882). Other Northern Paiute in southeastern Oregon were relocated to the Duck Valley Reservation (an executive order reservation created it in 1877) on the Oregon-Nevada border and at Fort McDermitt. Fort McDermitt was closed as a military post in 1886, and in 1887 the former military reserve lands were allotted to Natives who had settled around the fort. The Fort McDermitt Indians received some assistance from the Bureau of Indian Affairs but were not a formally recognized Tribe. Following passage of the Indian Reorganization Act in 1934, the Fort McDermitt Paiute and Shoshone Tribe was officially organized; the Fort McDermitt Reservation was formally recognized by the U.S. Congress as a reservation in 1936 (Clemmer and Stewart 1986; Fowler and Liljeblad 1986:458–459).

City of Ontario, Oregon

The city of Ontario, in Malheur County, is located in southeastern Oregon, near the state's eastern border with Idaho. Prior to the establishment of Malheur County in 1887, Ontario was located in Baker County. Ontario developed along the west bank of the Snake River following the extension of the Union Pacific Railroad's subsidiary Oregon Short Line Railroad and the construction of a railroad station between 1883 and 1885 (Creek 2001; Pederson 2022; Western Historical Publishing Company 1902:524). The town site was formed from several tracts of land owned by William Morfitt, Daniel Smith, James W. Virtue, and Mary Richardson, all of whom were residents of Baker City, Oregon (located 90 miles to the northwest). It was from these adjoining sections of land that Ontario was originally platted (Pedersen 2022). Virtue deeded part of his claim to the Idaho-Oregon Land Improvement Company (OLIC). OLIC's head, Abraham Caldwell, authorized the establishment of a train station for the Oregon Short Line Railway. The town was named by Virtue in honor of his home province, Ontario, Canada.

The extension of the railroad and construction of the station catalyzed Ontario's development as a transportation center in eastern Oregon. By the mid-1880s, Ontario was known as a hub for transporting livestock and other agricultural products. At the time, Ontario was part of Baker County. However, Ontario's role in transporting goods influenced the growth of commerce in the southern portion of then–Baker County, creating a pronounced division between commercial centers within the county. In 1887, Malheur County was established out of the southern portion of Baker County, which included Ontario as the new county's largest city and commercial hub (Western Historical Publishing Company 1902:524). In 1900, the Oregon Short Line Railroad purchased additional land adjoining Ontario and created expansive stockyards to support the shipment of livestock and incoming drives of cattle, horse, and sheep from nearby counties (Western Historical Publishing Company 1902:524). Ontario's ties to agriculture influenced early settlement. Many Basque sheepherders migrated into the area from the Iberian Peninsula (Prado 2018).

Despite Ontario's emergence as hub for agricultural commerce, it was not named the seat of Malheur County. Instead, the community of Vale, located further to the west, was designated the seat, a matter that remained contested through petitioning until the early twentieth century. In 1899, Ontario was incorporated (Figure 3). A salmon hatchery was established in 1903, but was unable to operate effectively due to subsequent dam projects that were completed to establish a means of agricultural water supply (Pederson 2022).

Figure 3. Panoramic photograph of Ontario, Oregon, ca. 1907. C.E. Harvey, photographer. Library of Congress Prints and Photographs Division Washington, D.C.

During World War II, Ontario gained national attention for encouraging the settlement of Japanese and Japanese Americans, during a time when Japanese and Japanese Americans living within 200 miles of the West Coast were forced to relocate to internment camps under President Franklin Roosevelt's Executive Order 9066 issued in 1942 (Collison 2022). Ontario's Mayor, Elmo Smith, supported the resettlement of Japanese descendants inland to Ontario, where there was high demand for agricultural workers. Ontario's Japanese population grew from over 130 people to nearly 1,000. In 1962, Treasure Valley Community College opened. In 1991, the Snake River Correctional Institution opened and is the largest correctional facility in Oregon. Today, agriculture remains Ontario's prime industry.

Ontario Municipal Airport

FOUNDING AND EARLY DEVELOPMENT (1928–1937)

The origins of OMA date to the late 1920s, when a group of private citizens acquired land and sought to construct a single dirt landing strip on the property (Meyer 2008). This coincided with a period of airport development, particularly along the West Coast, that was largely spearheaded by the American Legion. Founded in the aftermath of World War I by American service members returning from France, the American Legion was an early advocate for developing airfields and the promotion of aviation for both commercial and defense applications. With Congress hesitant to fund the construction of airfields on a national scale, the American Legion created the National Aviation Committee to spearhead the development of airfield infrastructure. Focused largely on the Pacific states of Washington, California,

and Oregon, the American Legion began purchasing properties and constructing simple airfields. Often referred to simply as American Legion Airports, these airfields were often initially developed by the American Legion then handed off to county or municipal governments for further improvements and operations (Burns 2020).

In addition to the larger municipally owned and operated airports in Oregon, namely Portland and Medford, many communities in Oregon came to have smaller American Legion Airports, including Ashland, Astoria, Corvallis, Roseburg, Albany, Bend, Elgin, and Salem. Among them was Ontario, which was officially designated as an airport in 1928 (*Aviation* 1928). The American Legion purchased the property to develop the landing field with the airfield officially listed on a government airport list. By 1931, the American Legion Airport in Ontario, occasionally referred to as McGregor Field, featured two diagonal runways extending northeast and southeast. At the time, the conditions of the runways and overall airfield were noted for poor surface quality with ongoing updates occurring during this period. Over the following years, little changed; the airfield was noted as having no services available, although a hangar and telephone service were identified as future upgrades (Standard Oil Company of California 1931; U.S. Department of Commerce 1932). By 1933, the American Legion donated the land to Malheur County, which in turn transferred the airfield to the City of Ontario (City). The airport was ultimately renamed the Ontario Municipal Airport.

Initial development of the airport under City ownership was slow. The first priority for the City was to improve the existing runways, which it did in partnership with the local pilot's association. The first supporting facility to be constructed at the airport was an office building. Constructed ca. 1935, the airport office building is a simple single-story wood-framed structure that is located to the southeast of the intersecting runways (Burns 2008). Its construction likely coincided with the construction of power and telephone lines, providing electricity and communications to the airfield. These lines were later reduced in height and relocated within the airfield to reduce potential hazards to aircraft (*Idaho Daily Statesman* 1938).

INITIAL EXPANSION AND WORLD WAR II (1938–1945)

The first major updates and improvements at the airfield occurred in the late 1930s, driven in part by a combination of local and federal investment through New Deal–era improvement programs and early efforts to build up U.S. aviation capabilities in the years leading up to World War II.

In 1939, the Ontario Chamber of Commerce partnered with the City to construct the first hangar at the airport, which was located directly to the east of the airport office building (*Idaho Daily Statesman* 1939a, 1939b). During that same period, the City applied to the Works Progress Administration (WPA) and the Bureau of Air Commerce for assistance to improve the airfield. The proposed work included improvements to the runways and the installation of new airfield lighting (*Idaho Daily Statesman* 1938). In 1941, the WPA began a general survey of the airfield to develop an initial master plan that would outline various improvements to the airport to raise it to a Class II categorization, meaning that it was able to accommodate small air carrier and unscheduled passenger operations. The runways were expanded and improved further in 1943 by the WPA to allow the airport to serve as an emergency alternate for B-17 bomber aircraft (Meyer 2008).

In 1938, a flight school was established at the airfield. Owned and operated by Casey Jones, who also served as the manager for OMA, the Casey Jones Flying Service flight school was one of the most prominent operations at the airfield during this period. In 1941, Jones sought to construct a new aircraft and engine repair shop at the airfield. The repair shop building was constructed east of the original hangar and had a footprint of 44 × 32 feet, which housed a full equipment and repair shop, as well as office space

(Whitemore 1941). Based on historical aerial photographs, this appears to have been the precursor to the current Experimental Aircraft Club Building (Building No. 20), which was expanded and altered over the following decades. The repair shop was a requirement for flight schools participating in the federal Civilian Pilot Training Program (CPTP) (*Idaho Daily Statesman* 1941). The CPTP was a vocational college-level training program established by the U.S. government in 1938 to train pilots and other aviation personnel in the build up to the United States entering World War II. Between 1939 and 1944, the CPTP operated at over 1,460 flight schools and 1,132 universities and colleges throughout the country, training over 435,000 pilots during that same period (National Museum of the United States Air Force ca. 2020). The CPTP was also notable for extending training opportunities to underrepresented minorities and women. Specific to women, the CPTP had successfully trained over 2,500 pilots by mid-1941. At OMA, the majority of trainees appear to have been white men, although some women were noted as attending the program.

By 1942, Casey Jones left Ontario to serve as a test pilot for Douglas Aircraft, and well-known aviator, Bessie G. Halladay, established her own flight school. Prior to 1942, Halladay operated a flight school at Swan Island in Portland. However, in the aftermath of coastal airports being largely repurposed in support of the war effort, Halladay relocated to Ontario and established the Halladay Flight School, which was contracted to train Naval cadets from Lewis & Clark College. The Halladay Flight School began constructing two new hangars at the airfield in 1944, which was intended to increase the storage capacity for the growing number of training planes used by the flight schools. Reports from the time indicate that these hangars, combined with the original 1939 airport hangar, could house all 35 of the on-site aircraft (*Idaho Daily Statesman* 1944). Based on 1946 aerial photographs of the airfield, these hangars were no longer extant by the end of the war. Due to material shortages, which slowed the initial construction of the hangars, these buildings were likely temporary in nature and removed following the conclusion of the war.

POST-WAR PERIOD AND COMMERCIAL AVIATION (1946–1973)

By 1946, Casey Jones had returned to the Ontario airport and continued managing the airport and the flight school. On September 18, 1946, the airfield was officially rededicated as OMA with Casey Jones serving as the airport manager and proprietor of the airfield's flight school (Figure 4) (*Idaho Daily Statesman* 1946). The dedication event included noteworthy Oregonian aviators and politicians, including the Mayor of Portland who travelled by air caravan to the newly dedicated airport as part of a new "See Oregon by Air" promotion and to celebrate the addition of flight service to Ontario by Empire Airlines (Johnson 1946). Empire Airlines was the first passenger airline to operate at Ontario in the post-war period. The Pacific Northwest–focused airline operated small passenger aircraft that stopped at OMA on their Portland to Salt Lake City route, as well as their 11-stop route between Idaho Falls, Idaho, and Spokane, Washington (*Idaho Daily Statesman* 1949; Johnson 1946).

Figure 4. Photograph of the September 1946 OMA dedication ceremony with the Flight School Repair Building, now the Experiment Aircraft Building (Building No. 20) in the background. Source: *Idaho Daily Statesman*, September 18, 1946.

In 1947, Casey Jones sold the flight school to a former student Ralph Crane, who renamed it Ontario Aviation and retained a 9-year lease at the airfield (*Idaho Daily Statesman* 1947). Jones departed from his role as airport manager for a brief period at this time, but resumed the position in 1950 and continued well into the 1960s (*Idaho Daily Statesman* 1947). Changes to the airfield during the 1950s were modest. By 1950, a small new hangar (Building No. 26) had been constructed, bringing the total number of hangars at OMA to three. However, between 1950 and 1963, four more small hangars were built to form a cluster of small hangars located to the east of the original airport complex: Building Nos. 22, 23, 24, and 25. Historical aerial photographs also indicate that the original repair shop for the flight school, Building No. 26, was expanded during this period and is reflective of the current footprint for the building. Improvements to the airfield also occurred at this time, with new paving of the runways and two established taxiways extending from the two runways (now integrated into the aircraft parking aprons). Changes continued through the mid-1960s with the construction of two additional hangars—Building Nos. 21 and 27—and the construction of a golf course across the southern portion of the airfield. Constructed in 1964, the golf course utilized the open lands flanking the main runway to the east and west. The golf course clubhouse was also constructed at this time.

Passenger aircraft continued to serve OMA through the 1960s. Empire Airlines was ultimately purchased and integrated into the Seattle-based West Coast Airlines, which continued to serve Ontario as part of a series of local routes that connected smaller communities in Idaho, Oregon, and Washington with Boise, Portland, and Seattle. However, by the mid-1960s, concerns about Ontario's viability for continued passenger service were being publicized (*Idaho Daily Statesman* 1965). Changes to the airport prior to the mid-1960s involved the construction of small hangars that catered to small personal aircraft. Overall, OMA lacked infrastructure to accommodate the rapidly changing aircraft and new operating requirements. Efforts to improve the airfield were undertaken, first with the construction of a new parallel taxiway (Taxiway A) in 1968 (*Idaho Daily Statesman* 1968). However, due to low passenger volume and decreasing federal subsidies to maintain these services to small communities, commercial flights to OMA were cancelled in 1973 (*The World* 1973).

MODERN ONTARIO MUNICIPAL AIRPORT (1974–PRESENT)

While passenger aircraft operations ceased, the airport continued to serve as an important flight school location. At its peak in the mid-1970s, the flight school had about 100 students enrolled in the program at any given time. This period coincided with some major changes at the airport. First and foremost, the original east-west runway was closed to air traffic and was converted into the north parking apron (Meyers 2008). The reconfiguration of the airport's circulation pattern allowed for the construction of new hangars and support facilities. Most notably, the new administrative center for the airport—composed of the airport terminal (Building No. 1), flight school hangar (Building No. 2), and the Fixed

Base Operator hangar (Building No. 3)—was constructed ca. 1975 on the north side of the new aircraft parking apron. Additional hangars were constructed at the existing hangar cluster east of the original airport, consisting of Building Nos. 28, 29, 30, 31, 32, 33, and 34. A north cluster of small hangars was also constructed in the late-1970s following the closure of the east-west runway. This consists of Building Nos. 4, 5, 6, 7, 8, 9, and 10.

By the late 1970s and early 1980s, enrollment in the flight school was declining. In 1977, Ontario Municipal Airport began exploring ways to improve the airport by applying for a grant from the Federal Aviation Administration (FAA) to complete a new master plan. Planning efforts were undertaken in the years prior through the work of Stevens, Thompson & Runyan Consulting of Boise (*The World* 1977). Despite the master planning efforts, improvements to the airport were slow during the 1980s. By the early 1990s, the most significant change to the airport was the continuation of the Taxiway to the north end of the runway and the construction of new connecting taxiways. No other noteworthy changes or developments appear to have occurred during the remainder of the 1990s, although additional hangars were constructed in the early 2000s, including Building Nos. 11 and 12 (2001), and Building Nos. 13 and 14 (2003).

In 2007, after receiving state funding through the Connect Oregon program, OMA underwent a major improvement project for the airfield and its infrastructure. The City utilized parcels adjacent to the south of the airport to extend the north-south runway an additional 700 feet, bringing the total runway length to 5,000 feet, allowing it to accommodate new corporate jets and similar aircraft. Additionally, the runway and taxiways were repaved, new lighting systems were installed along the runways, and new security fencing around the airfield was constructed (*Albany Democrat-Herald* 2007). In anticipation of the runway expansion, the golf course was reconfigured in the early 2000s. The holes located on the eastern side of the north-south runway were abandoned and the southern holes were largely demolished to allow for the runway extension. The existing course was reconfigured with new holes located at the northwest corner of the airfield, a process that included demolishing the western portion of the former east-west runway.

Since 2008, the airport has seen periodic development of new buildings and hangars. In 2010, the new flight school building and hangar (Building No. 28) located at the north end of the airport was constructed, as was another hangar at the east end of the parking apron, Building No. 37. In 2011, the fire station (Building No. 39) was constructed, and in 2012, the original south connecting taxiway was reconfigured as the south aircraft parking apron. Currently, several new hangar buildings are being constructed at the northwest corner of the airport, and the City and OMA management are actively preparing a new master plan for the property.

BIOGRAPHIES OF NOTEWORTHY INDIVIDUALS

Casey Jones, Aviator/Flight Instructor

Casey Jones (1910–1993) was born in Midvale, Idaho, and settled with his wife, Helen, in Payette, Idaho by the 1930s. By 1938, Jones had established his own aviation business, Casey Jones Flying Service, at Ontario's airfield, the future municipal airport site (Ancestry 1940; *Idaho Statesman* 1947). Jones constructed the first hangar on the property and leased the airport between the late 1930s and 1947. In 1941, Jones also commissioned an aircraft and engine repair shop to support the airfield's use in association with the CPTP during World War II (*Idaho Statesman* 1941). Additionally, Jones served as a test pilot for Douglass Aircraft during the war. In 1947, Jones sold his business and related equipment to Ralph Crane, a former operator of the Fruitland Lumber Company who aspired to become an aviator (*Idaho Statesman* 1947). Although Jones sold his business in 1947, he remained involved with OMA between the 1950s and 1960s, by which time he was airport manager (*Idaho Daily Statesman* 1962).

Bessie Butterfield nee Halladay (Bessie Halladay), Aviator/Flight Instructor

Aviator and flight instructor Bessie Halladay (1902–1979) was born in Atlanta, Georgia in 1902. In 1937, Halladay obtained her pilot instructor's license in 1937, one of the first women in the Oregon to do so. In 1938, Halladay opened a flight school at Swan Island Airport in Portland, Oregon (non-extant). In 1942, Halladay shifted her program's training operations to Ontario due to federal restrictions that banned civilian flight along coastal waters during wartime (Stickroth 2020). At Ontario's airport, Halladay trained some 500 Naval aviation cadets under the CPTP, until August 1944. In May 1945, Halladay opened the Halladay School of Flying and Air Transport in Joseph, Wallowa County, Oregon. Halladay was highly influential in the establishment of that airfield, which has since become Joseph State Airport. Halladay's school at Joseph trained returning veterans through the G.I. Bill program. Beyond instructional programming, Halladay's flight services include passenger transportation to larger cities, cattle spotting, and aerial forest fire assessments (Stickroth 2020).

Ontario Golf Course

The golf course at OMA was initially constructed in 1964. Ontario had a preexisting golf course that was in use in the decades prior. However, the former golf course was determined to be an ideal location for the construction of the Treasure Valley Community College campus, and the property was redeveloped. The airport and the abundance of open City-owned land was seen as the ideal location for the new, replacement gold course, which was approved by voters in 1963 with construction beginning immediately after (*Herald and News* 1963). The City commissioned notable golf course designer Bob E. Baldock to design the 18-hole golf course, which opened in 1964. This included the Mid-Century Modern style clubhouse and the comfort stations, in addition to the original hole configuration, which flanked the north-south runway of the airport to the east and west.

The golf course appears to have undergone few alterations in the following decades, except for the construction of prefabricated golf course sheds, which were likely constructed in the late 1970s and early 1980s. The most notable alteration occurred in 2001 when the golf course holes were reconfigured in anticipation of the runway extension. The holes that were formerly on the east side of the airport were ultimately abandoned and new holes were constructed at the northwest corner of the property. This configuration remained until the golf course closed in 2014. Since then, the golf course lands have largely been unused and unmaintained, reverting the lands to an almost natural grassland aesthetic.

In 2021, a jet boat racecourse was constructed at the golf course. Located at the former location of the pre-existing driving range, the course is defined by a series of excavated channels and an earthen berm that surrounds the racetrack. While the golf cart sheds are no longer in use, the clubhouse has been leased for commercial purposes.

ARCHITECTURE AND ARCHITECTS

Development of Golf Courses in the United States

Sports historian George B. Kirsch describes that the modern sport of golf likely evolved from Dutch and Scottish precedents between the sixteenth and nineteenth centuries, while "the modern era of the game in the United States dates from the 1880s" (Kirsch 2009:3). Very early courses in the United States were constructed in New England and as far west as Iowa and Nebraska, many by estate owners who built small courses (also referred to as links) on their property; many were either Scottish immigrants, or had traveled to Scotland or Britain and returned with the inspiration to create their own links. The first modern golf course in the United States is believed to have been St. Andrew's in Yonkers, New York, established in 1888 (Kirsch 2009:4). Many early courses were located in New England and the Mid-Atlantic region;

however, Kirsch notes that golf associations were also established in American South, Midwest, and in West Coast states, including California, Washington, and Oregon. Gearhart Links, a course set near the Pacific coast, is believed to be the oldest golf course in Oregon, established ca. 1888–1892 as a three-hole course serving guests of a nearby hotel. The course was expanded during the twentieth century, and reached its current 18-hole layout in 1969 (Gearhart Golf Links 2022).

Kirsch notes, "Beginning in the mid-1890s, crusaders for golf for the people struggled to convince public officials and skeptical citizens and taxpayers that the new Scottish game was not simply a pastime for the idle rich, and that towns and cities should provide courses for 'the masses.' Prior to World War I, golf course architects, daily newspapers, and golfing specialists actively supported their construction" (Gearhart Golf Links 2022). Golf's popularity grew as attitudes toward work and leisure shifted during the late nineteenth century and sports became desirable activities for the middle and upper classes. During the stable economic times of the late 1890s, people gained more leisure time. Additionally, as cities grew and suburbs sprouted around them, space was gained for new courses (Kirsch 2007:372). Public municipal courses provided less costly entry into the game for those of more moderate means. Although many golf courses in Scotland and Britain were built along coasts, many of the early courses in the United States were built inland in park-like settings on farmland or in formerly forested areas. Golf course design progressed rapidly in the United States, as designers used natural-style designed landscape and water features to create interesting courses that challenged players (Kirsch 2009:3).

By 1916 there were over 700 courses across the United States. By 1923, a post–World War I boom in golf course construction increased the number to just over 1,900. In 1930, around 5,700 courses existed nationwide (Kirsch 2005:36; Peper et al. 1988:213). Only approximately 300 of the courses present in 1930 were municipal courses, up from some 60 municipal golf courses in the United States in 1921 (Kirsch 2005:36). Semi-public and daily fee courses were also established in the 1920s to meet the demand of golfers who could not afford to join private clubs. Regarding the operation of municipal courses Kirsch writes:

> Most communities used public bond sales to pay for the initial purchase of land and construction expenses, while some relied upon special assessment charges against property owners adjacent to the course. Other towns benefited from private gifts of land or fundraising projects. Generally public links were expected to be self-supporting through greens fees that would generate adequate revenue to pay for maintenance and perhaps even part of the outstanding debt. By 1924 virtually all municipal courses charged a greens fee that ranged from ten cents to one dollar per day, and between one and ten dollars for a season's pass for residents. (Kirsch 2005:37)

The Great Depression and World War II led to the closure of many golf courses and clubs. However, following World War II and the Korean War, course construction increased during the 1950s, with around 100 courses constructed annually; the game's popularity surged during the 1950s on the heels of televised matches (Adams and Rooney 1985:424; Peper et al. 1988:216). The 1960s were a decade of increasing golf course construction, as low costs for land and construction and good financing spurred development. Rising inflation in the 1970s caused the rapid construction of the 1960s to ebb. New courses built during this period between World War II and the more recent past were often constructed within larger real estate developments or resorts. Courses supported nearby hotels and were also positioned as amenities to new condominium communities (Peper et al. 1988:225).

Robert Trent Jones, Jr., and Dick Wilson were prominent course designers during the mid-twentieth century, representing an emergent roster of designers/architects who succeeded the designers of the nation's earliest courses built between the 1890s and 1940s, many of who died in the 1940s or 1950s. Jones gained renown as a designer of courses that hosted major tournaments, and were often televised,

providing his work publicity. Jones was also the first architect who entered the field of golf course design without having had prior experience in a golf-related profession (Cornish and Witten 1982:101). Wilson brought an engineering background to his designs, and was known for directly supervising construction on-site. Between the late 1960s and late 1980s, amateur golfer turned course designer, Pete Dye, and noted professional golfer, Jack Nicklaus, led a movement toward "modern" golf course design (Peper et al. 1988:225). From the late 1960s onward an increasing number of professional golf course designers entered practice as hundreds of new courses were completed (Peper et al. 1988:216–219). By 1983, there were over 12,000 golf courses across the United States; Oregon was home to 139 golf courses (Adams and Rooney 1985:427). By 2008, roughly 16,000 courses were located in the United States (Napton and Laingen 2008:24).

Golf Clubhouses

Golf clubhouses are common facilities at golf courses and country clubs throughout the United States. The clubhouse at Shinnecock Country Club in New York, built in 1892, is reported to be the oldest and first purpose-built clubhouse building in the United States. Prior that clubhouse's construction, and even into the early twentieth century, clubhouses were created by adapting preexisting structures such as houses, barns, sheds, and other building types not originally designed to serve golf-related functions. This occurred as the game was often played on available fields on large private properties or on farmland, rather than professionally designed golf courses. Portland Golf Club in Portland, Oregon, provides an example of this transition; the country club's first clubhouse was a converted two-story farmhouse, while the club's first purpose-built clubhouse was built in 1928, and has since been listed on the National Register of Historic Places (NRHP) (Tess 2021). Clubhouses evolved from ones similar to those built in Europe, which housed golf equipment and space for making and repairing equipment, to facilities containing locker rooms, equipment storage, repair, and sales shops, and sometimes dining facilities (Wendehack 1929:iii–v). By the late 1920s, over 4,000 buildings in the United States had been adapted for reuse as clubhouses (Wendehack 1929:xx).

During the remainder of the twentieth century, clubhouses continued to be constructed at golf courses and country clubs, some serving as prominent backdrops beyond the greens of certain holes along the courses. Many clubhouses were architect designed and executed in popular styles of their periods of construction. Tudor Revival, Colonial Revival, and Shingle Style designs are predominant in the United States.

Bob E. Baldock, Golf Course Landscape Architect

The former municipal golf course within the OMA master plan area was designed by Robert E. "Bob" Baldock (1908–2000). Baldock was born in Nebraska and settled in California, with his practice based in Fresno. Baldock planned over 300 courses in his career, with the prime of his career occurring between the 1950s and early 1960s. Before establishing his own practice in the 1950s, Baldock worked for the firm of golf course designer William P. "Billy" Bell, who worked as a superintendent of construction for designer Willie Watson during the 1920s (Cornish and Whitten 1982:79). Most of Baldock's projects were in California, also he also completed multiple projects in Arizona, Hawaii, Idaho, Nevada, and Oregon. Baldock's projects ranged from municipal golf courses to country clubs and courses at Air Force bases (AFBs), including Davis-Monahan AFB in Arizona (1961), Vandenburg AFB in California (1965), Hickman AFB in Hawaii (1966), and McCord AFB in Washington (1961). During the later years of his career, from around 1970 onward, Baldock practiced with his son, ultimately retiring in 1983.

Beyond Ontario's municipal golf course, some of Baldock's projects in Oregon include Emerald Valley Country Club, Creswell (1966); Reames Golf and Country Club, Klamath Falls (1966); Bend Country Club (1972) (Cornish and Whitten 1982:164).

Mid-Century Modernism

The former clubhouse at the former Ontario municipal golf course was built ca. 1964 in a Mid-Century Modern style. Mid-Century Modern styling was frequently applied to residential, commercial, religious, office, institutional, and recreational property types during post–World War II years, ca. 1945 to ca. 1970. Common design elements include cantilevered roofs and overhangs or eave projections with flat, butterfly, or folded-plate profiles; canted or angled windows, large expanses of glazing, typically framed and divided with narrow wood or metal; and stucco, wood, or metal exterior cladding. Concrete, concrete block, or brick masonry construction and cladding were also frequently used, and often arranged in a stack bond pattern. Spandrel glass or enameled panels, anodized metal, and stone veneer were also frequently incorporated into designs (Brown 2011:121–122).

Ontario has a few local examples of Midcentury Modernism, including the restaurant building at 1281 Olds Ferry-Ontario Highway (Figure 5), which appears to have been built ca. the 1950s to 1960s, and 1094 SW 4th Avenue (Figure 6), which appears to have been built ca. the 1960s to early 1970s. Other examples of Mid-Century Modern architecture have been observed throughout the community. These buildings are typically commercial, but can include educational, ecclesiastical, and similar civic uses as well.

The golf course clubhouse is a Mid-Century Modern building featuring an overhanging folded plate roof, aluminum-frame windows, and brick perimeter walls akin to the Googie style, which was often used for roadside and recreational buildings between the 1950s and 1960s.

Figure 5. 1281 Olds Ferry-Ontario Highway. Source: Google Street View, September 2019.

Figure 6. 1094 SW 4th Avenue. Source: Google Street View, September 2019.

Land Development of the Area of Potential Effects

To better understand history of land use up to the present in the APE, SWCA archaeologists reviewed historical documents, U.S. Geological Survey (USGS) maps, General Land Office (GLO) maps, Metsker Maps, and historical aerial photographs.

The first mapping of the area around the APE was conducted under GLO surveys in the late nineteenth century. The first map of the area, produced in 1875, is minimal in detail, but shows no development in the APE. A north-south-running road is shown approximately 2.5 miles east of the APE. The Malheur River is shown approximately 0.4 mile northwest of the APE. The river as shown in the 1875 GLO survey map was composed of two channels: a west-east main channel to the north and a south bend (Figure 7). Today the north channel does not exist and is agricultural land.

In summary, a historic overview of land use within and in the immediate vicinity of the APE suggests a long-term, consistent use of the area, as a drainage district for the harnessing of seasonal inundation for agricultural purposes and as an area suitable for livestock grazing and management. Iterations of these historical activities have likely occurred in the area since the initial use of Malheur River and the surrounding area by Euro-Americans, as early as the late nineteenth century, and continue into the present day.

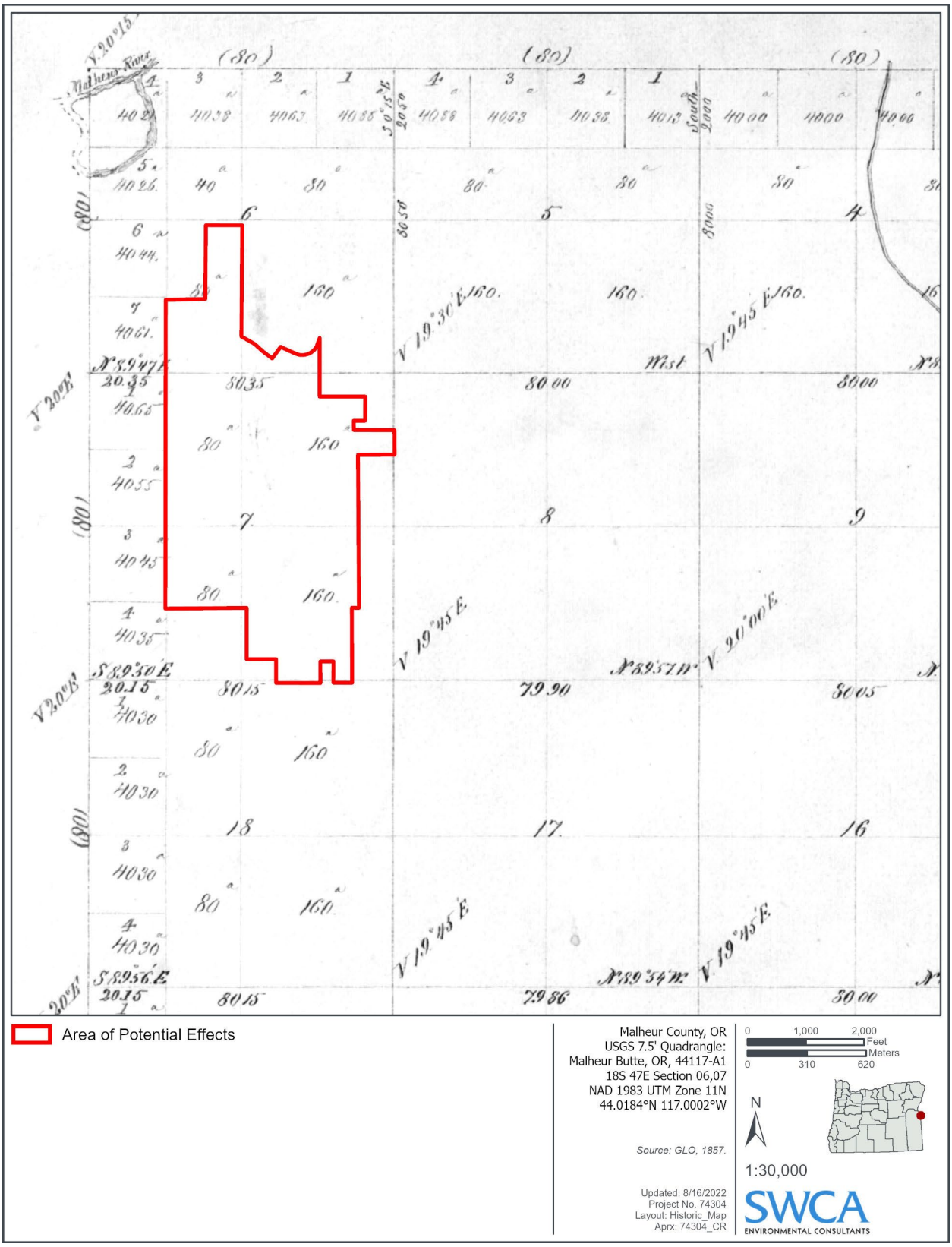

Figure 7. An 1875 GLO map of the APE and surrounding area.

PREVIOUS STUDIES AND INVESTIGATIONS

To help establish an understanding of archaeological conditions and the potential for identification of cultural resources in and around the APE, SWCA archaeologists reviewed records in the SHPO online database (OARRA). OARRA was queried for both cultural resource investigations and previously recorded archaeological resources in the APE and within 1 mile of it, with additional consideration of ethnohistorical reports and other relevant regional literature.

Previously Conducted Cultural Resource Investigations

The OARRA database indicates that there are eight previously conducted cultural resource investigations in and within a 1-mile radius of the APE (Table 1). Most cultural resource surveys in the area were conducted for Oregon State Department of Transportation (ODOT) improvement projects (Connolly 1999; Endzweig 2007; Jenkins 1999; Leary 2011; Pettigrew 1985). Three of the surveys for ODOT projects encountered cultural resources, consisting of two precontact sites and one historic-era site. Most investigations consisted of pedestrian survey, with two instances of subsurface testing (Connolly 1999, Jenkins 1999), one monitoring project (Holschuh and Gall 2012), and one literature review only (Womack and Tonsfeldt 2011).

Table 1. Previous Cultural Resource Investigations in and within Approximately 1 Mile of the Area of Potential Effects

SHPO No.	Methods	Survey Project *Citation*	Distance from APE	Resources Within 1 Mile of APE
24825	Literature review, pedestrian survey	Cultural Resources Survey of 36th Street Bridge Replacement Project, Malheur County, Oregon *Leary 2011*	0.6 mile	None
16825	Pedestrian survey	Archaeological Survey of the Proposed SW 4th Avenue-North Oregon Street (Ontario) Section, and Two Potential Material Sources, Malheur County (ODOT Key #08739) *Connolly 1999*	0.8 mile	35ML00984
17000	Subsurface testing	Archaeological Testing of Two Sites on the SW 4th Avenue-North Oregon Street Section (Ontario Bypass), Malheur County (ODOT Key #08739) *Jenkins 1999*	0.5 miles	35ML01026
21124	Pedestrian survey	Archaeological Survey of the OR201: Airport Corner-Cairo Junction (Access Management) Project, Ontario, Malheur County (ODOT key #12627, Museum report #2007-020). *Endzweig 2007*	Adjacent	35ML01508
6945	Pedestrian survey	Archaeological Survey of the Ontario-Cairo Junction Section, Olds Ferry-Ontario Highway, Malheur County *Pettigrew 1985*	Adjacent	None
24127	Literature review	Determination of Effect for Proposed Wireless Site BK46, Ontario NW, Malheur County, Oregon *Womack and Tonsfeldt 2011*	0.8 mile	None

SHPO No.	Methods	Survey Project *Citation*	Distance from APE	Resources Within 1 Mile of APE
25055	Monitoring	Archaeological Monitoring at the Ontario NW Project Area, 527 Sunset Dr., Ontario, Malheur County, Oregon *Holschuh and Gall 2012*	0.8 mile	None
21392	Literature review, pedestrian survey	Ontario Municipal Airport Runway Extension, Ontario, Oregon *Roberts 2007*	Overlaps	Historic-era irrigation ditch

Previously Recorded Cultural Resources

The OARRA database indicates that there are three previously recorded cultural resources within a 1-mile radius of the APE, all of them archaeological sites (Table 2).

Two sites, 35ML984 and 35ML1026, are precontact lithic scatters with associated fire-modified rock (FMR), cobble tools, and ground stone (Connolly 1999; Jenkins 1999). Both sites were identified in 1999 as part of a cultural resources survey in advance of ODOT bypass construction conducted by archaeologists from the State Museum of Anthropology. The sites were tested extensively to determine site boundaries and depth of subsurface deposits. Site 35ML984 is a campsite consisting of lithic debitage, mostly tertiary flakes and micro-debitage; several biface fragments; one Gatecliff Split Stem projectile point; FMR; charcoal; several cobble tools with traces of ochre on their surfaces; a ground stone slab; and a pit feature (Jenkins 1999). The site is not eligible for the NRHP (Jenkins 1999). Site 35ML1026 is a campsite very similar in composition to 35ML984, consisting of 120 pieces of lithic debitage, FMR, and several unshaped cobble tools. Historic-era refuse was also observed at the site. The site is located on a terrace edge overlooking the Malheur River to the north. The site is not eligible for the NRHP (Jenkins 1999).

Site 35ML1508 is a historic-era site identified during a cultural resources survey for an ODOT project for road and access point expansion. It consists of a diffuse scatter of historic-era debris, dating to the 1920s or 1930s, composed mostly of glass, ceramics, metal, and two pieces of bone probably from a large mammal. The site has not been tested for subsurface deposits. Site 35ML1508 is adjacent to the APE. The site is not eligible for the NRHP (Endzweig 2007).

Table 2. Archaeological Sites Within Approximately 1 Mile of the Area of Potential Effects

Resource No.	Type	Description	NRHP Eligibility	Distance from APE
35ML984	Precontact	Lithic scatter with FMR and ground stone	Not eligible	0.8 mile NE
35ML1026	Precontact	Lithic scatter with FMR and ground stone	Not eligible	0.5 mile E
35ML1508	Historic-era	Historic-era refuse scatter	Not eligible	0.1 mile E

PREVIOUSLY RECORDED HISTORICAL PROPERTIES

A review of the Oregon Historic Sites database shows no recorded historical properties within the APE. One built environment was recorded during the pedestrian survey by Roberts (2007). The environment consisted of a 500-foot-long concrete irrigation ditch south of the runway running east to west. The resource was recommended not eligible and is not listed within the OARRA database.

CULTURAL RESOURCE EXPECTATIONS

Site 35ML1508 is the closest recorded site to the APE. The site is a historic-era refuse scatter consisting of glass, metal, and ceramic debris as well as two bone fragments likely to be large mammal according to the site form. Diagnostic material observed at the time of recording indicates the material dates to the 1920s to the 1930s. Site 35ML1026 is the closest recorded precontact site to the APE, approximately 0.5 mile east of the northern boundary of the APE. The site was described as a food procurement and processing camp and consists of lithic debris and FMR.

METHODS

Archaeological Pedestrian Survey

SWCA archaeologists Colin Christiansen and Emily Dillon, under the supervision of Amanda Carroll, conducted the pedestrian survey on July 12 to 14, 2022. Carroll meets the Secretary of the Interior's Professional Qualifications Standards for archaeology and is a qualified archaeologist in the state of Oregon. Weather during survey was hot with temperatures averaging 100 degrees Fahrenheit by midday. The sky was clear each day and favorable for pedestrian survey. To complete the pedestrian archaeological survey of the APE, the SWCA archaeologists walked north-south parallel transects spaced no more than 20 m (66 feet) apart across all unpaved areas within the APE to identify any archaeological resources present. Ground visibility in the APE was generally high with the exception of an active agricultural field on the north end of the APE where ground visibility was less than 1 percent.

An Android mobile device running Esri ArcGIS field applications (Field Maps) and connected to a Juniper Systems Geode external multi-GNSS receiver was used to navigate the area and collect data. No artifacts or samples were collected during this inventory. All field notes and photographs are on file at the SWCA Portland office, under internal Project Number 74304.

Aboveground Historic Resources Inventory

SWCA architectural historian Dan Herrick, who meets the Secretary of the Interior's Professional Qualification Standards in architectural history and history, conducted a pedestrian survey of the APE on July 20, 2022. The entirety of the OMA property and its built environment was documented using digital photographs and field notes. The survey focused primarily on documenting buildings, structures, and site features identified as being 50 years or older, determined prior to mobilizing in the field using a combination of preliminary research and comparative analysis using historical aerial photographs. However, all built environment elements, including recently constructed buildings, structures, objects, and site features, were documented to develop a thorough understanding of the APE and, specifically, the patterns of development and evolution of the OMA property from 1928 to the present day. All photographs and collected source material are also on file at the SWCA Portland office, under internal Project Number 74304.

In addition to fieldwork, architectural historians Dan Herrick and Josh Bevan conducted original research for developing a property history and all relevant historic contexts. This included communication with OMA staff and coordination with the City regarding available primary sources. Supplemental research used a variety of online repositories, including Newspapers.com, Ancestry.com, the USGS Historical Topographic Map Viewer, the Internet Archive, HistoricAerials.com, the Oregon Historical Society digital library, and similar databases, to develop all historical background information.

Resource Evaluation

All cultural resources identified during the survey were evaluated for NRHP eligibility using the following guidelines established by the National Park Service (NPS 1997). To be individually eligible for the NRHP, a property must be significant within a historic context. To evaluate significance, the following five things must be determined:

1. the facet of prehistory or history of the local area, state, or nation that the property represents;
2. whether the facet of history is significant;
3. whether it is a type of property that has relevance and importance in illustrating the historic context;
4. how the property illustrates that history; and
5. whether the property possesses the physical features necessary to convey the aspect of history with which it is associated (NPS 1997:44).

The significance (Items 1–3 above) of a resource must be established before assessing its integrity (Items 4 and 5). The significance of a resource within its historic context must relate to one or more of the following:

A. Under Criterion A, properties are eligible for the NRHP if they are associated with events that have made a significant contribution to the broad patterns of our history.

B. Under Criterion B, properties are eligible for the NRHP if they are associated with the lives of persons significant in our past (i.e., persons whose activities are demonstrably important within a local, state, or national context).

C. Under Criterion C, properties are eligible for the NRHP if they embody the distinctive characteristics of a type, period, or method of construction, or represent the works of a master, or possess high artistic values, or represent a significant and distinguishable entity whose components may lack individual distinction (i.e., are part of a district). Discrete features, a particular building for example, may best be documented under this criterion, though collections of resources may also have significance under Criterion C for architecture or engineering association.

D. Under Criterion D, properties are eligible for the NRHP if they have yielded, or may be likely to yield, information important in history. To be eligible under Criterion D, the property must have, or have had, information to contribute to our understanding of human history and that information must be considered "important." Though this is most commonly applied to archaeological sites, buildings, structures, and objects may be eligible under Criterion D if they are the principal source of information. (NPS 1997:21)

Integrity is the ability of a property to convey its significance. To be eligible for the NRHP, a property must not only be significant under one or more of the NRHP criteria (A–D above), but it must also have integrity. The evaluation of integrity is grounded in an understanding of a property's physical features and how they relate to its significance. Historic properties either retain integrity (that is, convey their significance) or they do not. To retain integrity, a property will always possess several, and usually most, of the seven aspects of integrity, which are:

1. *Location* is the place where the historic property was constructed or the place where the historic event occurred.

2. *Design* is the combination of elements that create the form, plan, space, structure, and style of a property.
3. *Setting* is the physical environment of a historic property.
4. *Materials* are the physical elements that were combined or deposited during a particular period of time and in a particular pattern or configuration to form a historic property.
5. *Workmanship* is the physical evidence of crafts of a particular culture or people during any given period in history or prehistory.
6. *Feeling* is the property's expression of the aesthetic or historic sense of a particular period of time.
7. *Association* is the direct link between an important historic event or person and a historic property (NPS 1997:44–45).

RESULTS

Archaeological Pedestrian Survey Results

The archaeological survey was divided into two sections within the APE based on terrain. The main section was defined as the unpaved portion of the APE south of SW 4th Avenue (see Figure 1), which is generally level and at an elevation of approximately 2,190 feet amsl. The north section was defined as the portion of the APE north of SW 4th Avenue, which is approximately 30 feet lower in elevation with a steep slope descending north of SW 4th Avenue. Survey results are summarized here by section.

Main Unpaved Section

During the pedestrian survey, ground visibility across the main section of the APE was excellent. Vegetation throughout this section consists mostly of short grasses and scrub. Trees are only present along the western half of the main section, associated with the former golf course. The eastern half of the main section is relatively flat with occasional push piles present. Past surface grading of the area was evident in the form of disturbed and pushed gravels. Open spaces in the northeast corner of the main section have been graded and landscaped.

The western half of the main section is similar to the eastern half. However, the western half has been extensively modified. Remnants of golf course features are spread throughout the area, including elevated tee boxes and dried up water hazards. The newly constructed Ontario Speedway and its associated parking lots dominate the landscape along the center-west portion of the APE. A significant amount of grading has occurred around the racetrack.

A notable observation during the survey was the presence of burrows. SWCA archaeologists observed ground squirrel and badger burrows as well as coyote dens. A family of coyotes (mother and newborns) were known to be present in the western half of the main section but were not observed. The density of these burrows is exceptional, averaging up to 5 holes per square meter. No archaeological materials were observed within the main section of the APE.

North Section

The north section of the APE is steeply sloped downward to the north from SW 4th Avenue. Modern trash was observed throughout the area next to the road and along the slope. The trash can likely be

attributed to dumping from the road. A drainage ditch runs east-west at the base of the slope, and an agricultural field sits north of the ditch. Ground visibility throughout the north section was less than 1 percent. The slope is covered with grasses, weeds, and scrub, and the agricultural field is covered with waist high grasses. No archaeological materials were observed within the north section of the APE.

Aboveground Historic Resources Inventory Results

Existing Conditions

The existing conditions of the built environment at OMA are divided into six distinct character areas that were observed during the aboveground resources survey (Figure 8). These character areas feature collections of buildings, structures, and landscape features that have a relatively cohesive character that is related to patterns of development, use, and overall aesthetics. These character areas include the following:

- **Airfield**: the central portion of the OMA property that includes the runways, taxiways, and airside infrastructure.
- **Airport Administration Area**: the contemporary terminal, administrative building, and other airport operations buildings located at the center of the airport.
- **Old Airport and South Hangars**: the collection of hangars and support facilities at the east side of OMA that date from the mid-1930s through the remainder of the twentieth century.
- **North Hangars**: the collection of aircraft hangars located at the northeast corner of the property that exhibit recent periods of construction from the late 1970s to the present day.
- **Former Golf Course**: the expanses of land at the west side and southeast corner of the OMA property, which was previously utilized as a golf course.
- **North Fields**: City-owned agricultural lands located north of the OMA property.

The following summary of the existing conditions of the built environment at OMA describes the general conditions observed at each character area. Specific descriptions for each individual building, structure, or landscape feature have not been developed as part of this report, but can be found within the accompanying SHPO documentation forms.

AIRFIELD

The airfield is characterized by the open, flat, and paved expanses of the airport's runways, taxiways, parking aprons, and adjacent lands, as well as the supporting navigation infrastructure. The main runway at OMA, Runway 15/33, is over 5,000 feet long and 100 feet wide, and is generally oriented north-south and diagonally to the northwest (Figure 9). The runway is accessed by a parallel taxiway, known as Taxiway A, that extends the length of the runway to the east. It is connected to the runway by six short connecting taxiways identified as Taxiways B through G moving south to north (Figure 10). The majority of the connecting taxiways are relatively narrow, except for Taxiway E, which is wider and is an extension of the North Aircraft Parking Apron that serves as the main apron for the airport. The North Aircraft Parking Apron and Taxiway E utilize the remnants of a former runway that extends east-west and crosses the main runway. The North Aircraft Parking Apron is located near the central Airport Administration Area and many of the hangar facilities at the airport (Figure 11). A second aircraft parking apron, referred to here as the South Aircraft Parking Apron, is located to the south and is separated from the main apron by a sodded area. Generally, the south apron is smaller and provides access to the Old Airport and South Hangars character area. It is connected to the North Aircraft Parking Apron by a

connecting taxiway. All runways, taxiways, and aircraft parking aprons exhibit contemporary paving. These features are generally surrounded by open, flat expanses of unpaved lands with typical grasses.

In addition to the runways, taxiways, and aprons, the Airfield character area features the airport navigational aids and similar elements, including taxiway signage, runway lighting, and directional wind cones (Figure 12 and Figure 13). These elements appear to be relatively contemporary in construction and are typical to airports and the operation of aircraft.

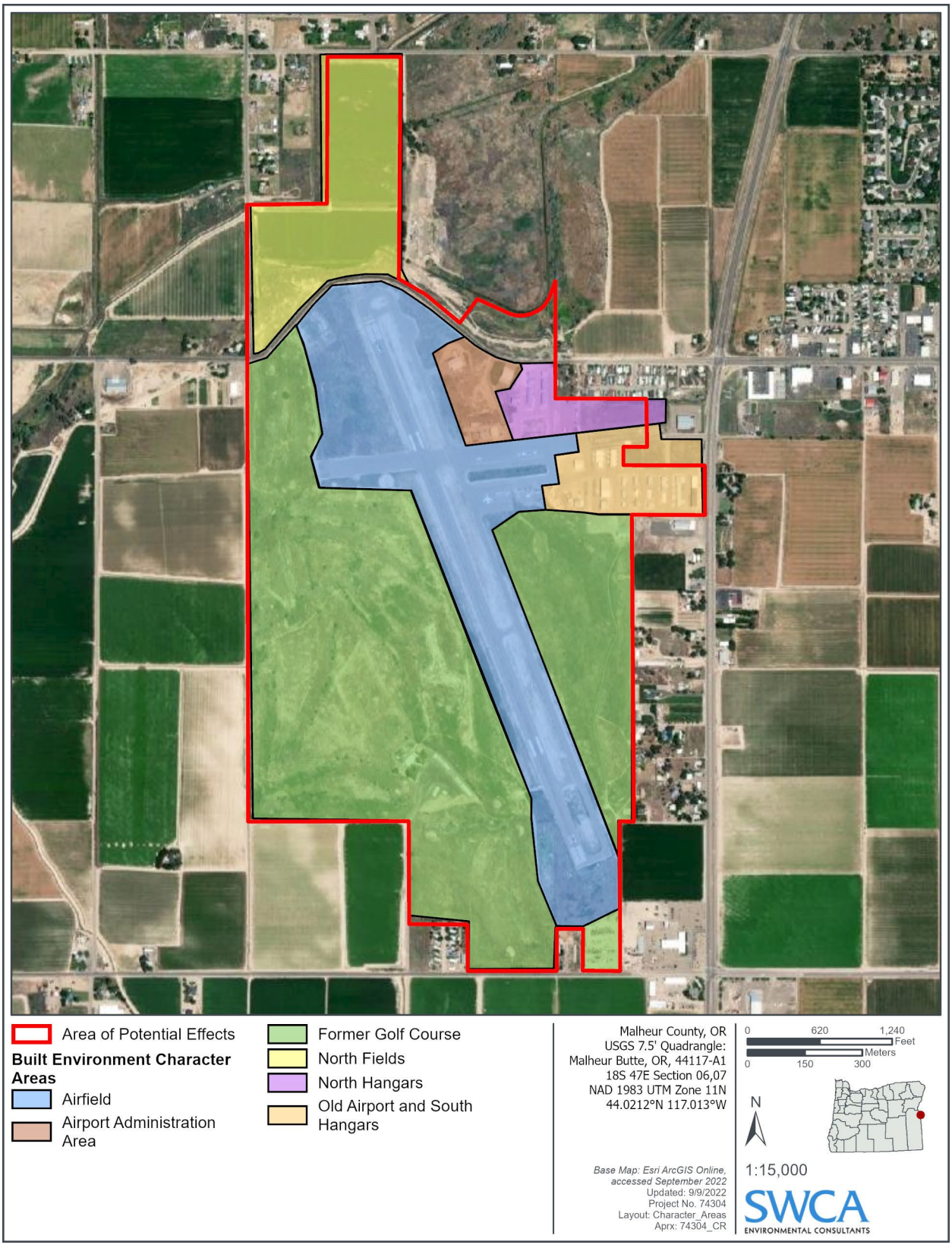

Figure 4. Built environment character areas at OMA.

Figure 5. Overview of the main runway, Runway 15/33, view south from the north end.

Figure 6. Typical connecting taxiway at OMA.

Figure 7. Overview of the North Aircraft Parking Apron.

Figure 8. Typical airfield taxiway signage.

Figure 9. Directional wind cone at the center of the airfield.

AIRPORT ADMINISTRATION AREA

The Airport Administration Area is located at the north end of the OMA property, immediately north of the North Aircraft Parking Apron and east of the north-south runway. It is accessed via the primary entrance to the airport, which is located at the north end of the property at the intersection of SW 4th Avenue and SW 33rd Street. The area is centered around the collection of contemporary airport administrative facilities. This includes the ca. 1975 terminal building and the adjacent hangar and fixed-base operator (FBO) hangar that are set between the publicly accessible portions of OMA and the airfield, namely the North Aircraft Parking Apron and taxiways (Figure 14 through Figure 17). This also includes the current fuel farm and fueling pit, which is located toward the eastern edge of the central concentration of the administration area (Figure 18). A prefabricated building is located north of the central collection of administration area buildings, which is occupied by Oregon State University.

The terminal building is a simple, single-story building with a square plan. It is composed in a Late Modern architectural style and is defined by its Mansard-inspired roof with metal screening parapet wall and flared eaves, as well as the use of concrete masonry unit blocks and aluminum framed fenestration. The two hangar buildings are typical of the property type with concrete masonry unit construction, gable and barrel roof profiles, and large hangar doors at the primary façades. The adjacent fuel farm is also typical with a simple operators shed, aboveground storage tank, and refueling infrastructure.

Figure 10. Administration area with terminal, hangar, and FBO hangar, view northeast from the North Aircraft Parking Apron.

Figure 11. Administration area, view south from the main entrance at OMA.

Figure 12. OMA terminal and administrative offices.

Figure 13. Hangar (left) and FBO hangar (right) at the Airport Administration Area.

Figure 14. Fuel farm at OMA.

Beyond the central collection of administrative and support buildings, the Airport Administration Area features expanses of open fields with other dispersed facilities that are tangentially related to the operation of the airfield. This includes the flight school operations building, which is located at the north end of the property, as well as a fire station, which is located immediately east of the main airport entrance (Figure 19 and Figure 20). Both buildings, constructed in 2010 and 2011, respectively, are simple buildings composed in a Contemporary and utilitarian style.

OLD AIRPORT AND SOUTH HANGARS

The Old Airport and South Hangars character area is located in the eastern portion of the OMA property. It features a collection of buildings, structures, and site features that range in age from the early development of the airport during the 1930s through the post–World War II expansion and more recent developments of the late twentieth century. The old airport portion is located immediately east of the South Aircraft Parking Apron in a location that was south of the former east-west runway (Figure 21). This area is defined by the old airport office building, which is a simple one-story wood-framed building that was constructed ca. 1935. The building features wood channel siding, wood-framed windows, and a simple gable roof with a short brick masonry chimney (Figure 22). The old airport office building features a more contemporary prefabricated metal aircraft hangar building directly east adjacent and airfield support structures to the west. These support structures include a prefabricated electrical vault, a beacon tower, and a wood shed that appears to date to the mid-1930s (Figure 23). The remnants of a former fueling station with fueling pits and an aboveground storage tank are also extant northwest of the old airport office building.

Figure 15. Northern administrative buildings, flight school (left) and fire station (right), and typical field conditions.

Figure 16. Primary (north) façade of the fire station.

Figure 17. Overview of the old airport area with the fueling station, old airport office, contemporary hangar, shed, and beacon.

Figure 18. Primary (west) and north façades of the old airport office building.

Figure 19. Beacon, electrical vault, and wood shed in the old airport area.

East of the old airport area is a collection of hangar buildings that date from the 1940s to recent decades. One of the most notable buildings is the experimental aircraft building, which is a simple one-story building that was originally constructed in 1941 as the flight school repair shop, but exhibits multiple alterations. The building in its current form clearly exhibits a former wood hangar that was greatly altered in subsequent years. The original barrel-shaped roof and wood siding of the hangar are visible within the broader composition of the building, particularly at the rear (east) and north façades, whereas the remainder of the building is defined by concrete masonry unit construction, aluminum framed fenestration, and metal seam cladding (Figure 24 and Figure 25).

Other hangars observed to the east and north of this area range are all simple one-story buildings, but vary in overall forms and materials, which reflect multiple periods of construction. The collection of hangars at the eastern end were constructed from the 1950s through the 1980s. They are typically simple, prefabricated buildings with corrugated metal siding, although some buildings exhibit some wood construction and hangar doors that utilized extended track frames as opposed to simple roll-up door configurations (Figure 26 and Figure 27). Hangars in the north area typically date to the late 1970s and 1980s and are all of metal, prefabricated construction (Figure 28 and Figure 29).

Figure 20. Primary (west) and south façades of the experimental aircraft building.

Figure 21. Rear (east) and south façades of the experiment aircraft building; note the wood-clad barrel-roofed portion to the north (right).

Figure 22. Overview of eastern hangars with varied forms and materials.

Figure 23. Eastern hangars that date to the 1950s and 1960s with varied forms and materials.

Figure 24. Typical hangars located north of the old airport area.

Figure 25. Typical hangars located north of the old airport area.

NORTH HANGARS

The North Hangars character area is located at the northeast corner of the airfield. It is largely defined by a collection of hangars that were constructed between the late 1970s and the present day. The northwest collection of hangars features a collection of simple, prefabricated metal hangar structures that are one-story and feature simple rectangular plans, gable roof profiles, and aircraft doors (Figure 30). The south and eastern collection of hangars features recently constructed metal hangar buildings (Figure 31). These are typically square in plan with gable roofs and prominent aircraft hangar doors at the primary façades. At the time of surveying, there were several new hangars that were under construction.

In addition to the collections of hangars, this character area also features a Bureau of Land Management (BLM) Air Tanker Base. This complex, located near the northeast corner of the OMA property, features a simple two-story building with side gable roof that is surrounded by a service yard with a mixture of prefabricated buildings, structures, and other support elements (Figure 32). The BLM property is enclosed by a perimeter security fence with several vehicle and pedestrian gates.

Figure 26. Collection of late 1970s and 1980s hangars constructed at the northwest corner of the North Hangar character area.

Figure 27. Recently constructed hangars at OMA.

Figure 28. BLM Air Tanker Base at OMA.

FORMER GOLF COURSE

The Former Golf Course character area includes the entire area west of the airfield, as well as the southwestern portion of the OMA property. Initially developed in 1964, the golf course was a simple 18-hole golf course that flanked the main north-south runway of the airfield to the east and west. By 2001, the golf course was reconfigured away from the south and east portion of the OMA property to include the northwest corner, allowing for the south extension of the runway. The golf course ultimately ceased operations in 2014, leaving the vast majority of the former course unused.

The former golf course is primarily accessed at the southwest corner of the OMA property via Golf Course Road, which leads to a central former parking lot that is fronted by the clubhouse, and collection of golf cart storage sheds. The golf course clubhouse is a Mid-Century Modern style building that is rectangular in plan, a one-story over-basement building that is defined by its folded plate roof and stack-bond concrete masonry unit veneer (Figure 33). The building features a simple landscape scheme with turf, shrubs, and select trees. The former golf cart sheds are simple, modular aluminum buildings that have elongated rectangular plans, regularly repeating garage doors, and simple gable rooflines (Figure 34).

With the golf course closed, the majority of the character area has not been maintained and the former golf course itself is largely characterized by open expanses of tall grasses. Some former golf course features can be observed through the slight variations in topography, notably the rolling hills and depressions of former sand bunkers and water traps (Figure 35). At some locations, more tangible buildings, structures, and features associated with the former golf course, such as comfort stations, tee boxes, and segments of paved golf cart pathways, can be observed. The two comfort stations, which are located on the east and west side, are the same design with simple concrete masonry unit construction, flat rooflines with extended eaves, and simple restroom entrances (Figure 36).

Overall, the western portion of the golf course retains more features that are reminiscent of the former use of the area as a golf course, which is directly correlated with the collection of the remaining golf course buildings and the more recent period of use. It exhibits more topographical features, as well as buildings and structures, such as remaining segments of paved golf cart paths, that are still observable compared to the eastern portion (Figure 37). In the eastern portion of the former golf course area, those elements are largely absent of these elements, and the eastern portion appears largely as an open area of typical grasslands, although a former comfort station and an operations building are set towards the northeast corner of the property (Figure 38).

The most notable change at the former golf course is the flat-bottom jet boat racing track, which was constructed in 2021. Located at the former driving range location, the racetrack is defined by a circuit of depressions that were excavated to create the course, all of which are bordered by a built-up earthen berm that serves as a containment levee for the course (Figure 39).

Figure 29. Primary (east) façade of the former golf course clubhouse.

Figure 30. Overview of the former golf cart shed buildings.

Figure 31. Former sand trap at the northwest corner of the former golf course.

Figure 32. Former golf course comfort station at the west side of the character area.

Figure 33. Typical conditions at the western portion of the former golf course.

Figure 34. Typical conditions at the southeastern portion of the former golf course.

Figure 35. Jet boat racetrack at the former golf course, adjacent to the northwest of the golf course clubhouse at the location of the former driving range.

NORTH FIELDS

The North Fields character area is located north of the main OMA property (Figure 40). The City-owned fields are rectangular agricultural properties that are located downhill from OMA. The fields are typical with an irrigation ditch that ties into a larger network known as the Dork Canal, which is an irrigation and stormwater channel that extends throughout the surrounding community towards the Malheur River (Figure 41). The irrigation ditches are simple earthen irrigation channels with support structures that feature a mixture of gates and pumps that appear to be recent construction with polyvinyl chloride (PVC) and similar materials.

Figure 36. Overview of north field character area.

Figure 37. Irrigation ditch and typical conditions.

Discussion of Potential Historic Properties

Preliminary investigations and observable conditions of the built environment identified several property types—buildings, structures, and landscape features—that were 50 years and older, thus meeting the age threshold for NRHP-eligibility. These individual properties were observed within the context of two potential historic districts:

- Ontario Municipal Airport: the OMA property was initially developed in 1928 with the construction of the initial runways and airfield as the Ontario American Legion Airport. The airport property features a mixture of buildings, structures, and landscape features that were developed over the following decades, reflecting multiple periods of construction.

- Ontario Municipal Golf Course: the former golf course property was initially constructed in 1964. While located on the OMA property, the former golf course area is unique in its use and overall development as a recreational property. It and its individual components, such as the clubhouse buildings, were examined as a separate property from the larger airport.

Table 3 and Figure 42 outline those properties—buildings, structures, and site features—that are identified as being of the right age to be eligible for the NRHP (i.e., over 50 years; of-age properties). The table includes the OMA identification number, historic and current property names, construction date, the broader associated property area (OMA or golf course), and a summary of the individual NRHP eligibility findings prepared as part of this intensive survey of the built environment.

As outlined in Table 3, none of the of-age properties appear to be individually eligible for the NRHP, due in combination to a lack of historical significance and, in some instances, a lack of historical integrity. Furthermore, these properties do not appear to be contributors to larger historic districts associated with OMA or the former golf course. The full evaluations in accordance with the NRHP eligibility criteria are included within the SHPO Section 106 Documentation Forms prepared as part of this survey effort and are summarized in the following sections.

ONTARIO MUNICIPAL AIRPORT

The OMA property was initially developed in 1928 as the Ontario American Legion Airport, which saw the first iterations of the north-south and east-west runways constructed. Development of the airport during the early years included the construction of the old office building (Building No. 17) and a series of hangars, none of which are extant. In 1941, the flight school repair shop (Building No. 20) was constructed as a requirement of the CPTP program that was operating at the property. Subsequent development did not occur until the 1950s and 1960s with the construction of several individual hangars (Building Nos. 21 through 27), which remain extant at the property. The airport underwent extensive alterations in the 1970s with the closure of the east-west runway and its conversion to the North Aircraft Parking Apron. This coincided with the construction of the new terminal building and hangars of the Airport Administration Area. The late 1970s and 1980s saw increased construction of new hangars. Further improvements, including extension of the runway, new hangars, and the construction of other airport support buildings and structures occurred in the early 2000s and continue to the present day.

Table 3. Summary of Individual Of-Age Built Environment Properties at Ontario Municipal Airport and Eligibility Status

OMA Property No.	Historic Property Name	Current Property Name	Date Constructed	Property Area	Individual NRHP Eligibility
–	North-South Runway	Runway 15/33	1928 (altered multiple times between 1941 and the present)	Airport	Not eligible
–	East-West Runway	North Aircraft Parking Apron	1928 (altered multiple times, no longer a runway)	Airport	Not eligible
–	Connecting Taxiway	Taxiway A	1941	Airport	Not eligible
–	Connecting Taxiway	Taxiway B	1941	Airport	Not eligible
17	Airport Office	Small Wooden Building	ca.1935	Airport	Not eligible
–	Wood Shed	Wood Shed	ca.1935	Airport	Not eligible
20	Flight School Repair Shop	Experimental Aircraft Building	1941	Airport	Not eligible
21	Hangar	Hangar	ca.1965	Airport	Not eligible
22	Hangar	Hangar	ca.1960	Airport	Not eligible
23	Hangar	Hangar	ca.1960	Airport	Not eligible
24	Hangar	Hangar	ca.1960	Airport	Not eligible
25	Hangar	Hangar	ca.1960	Airport	Not eligible
26	Hangar	Hangar	ca.1950	Airport	Not eligible
27	Hangar	Hangar	ca.1965	Airport	Not eligible
46	Golf Course Clubhouse	Golf Course Clubhouse	1964	Golf Course	Not eligible
41	Golf Course Maintenance	Maintenance Building	1964	Golf Course	Not eligible
–	Comfort Station	West Comfort Station	1964	Golf Course	Not eligible
–	Comfort Station	East Comfort Station	1964	Golf Course	Not eligible

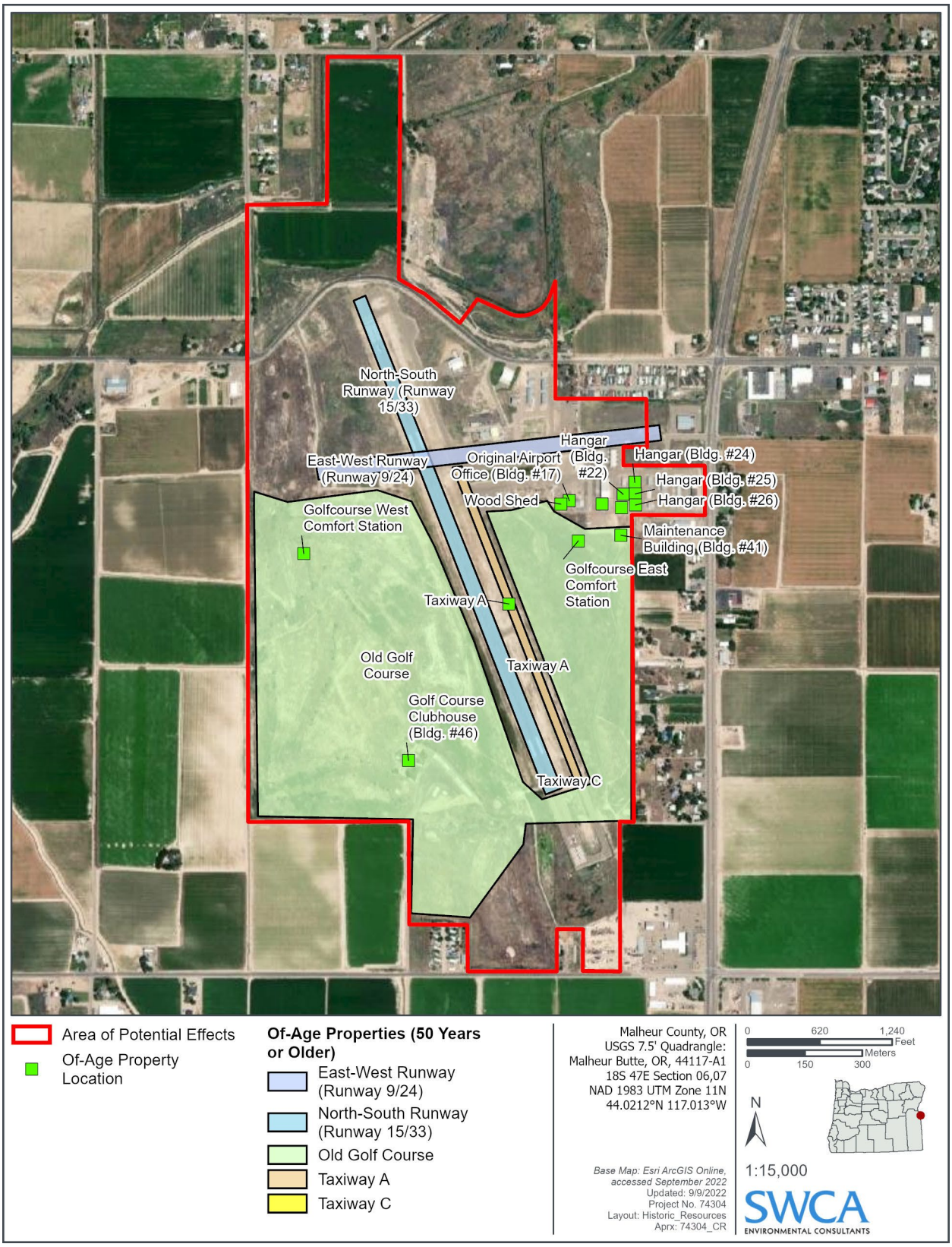

Figure 38. Of-age built environment properties at OMA.

Regarding OMA as potential historic district, several historical contexts were examined as part of the NRHP evaluation, including the following:

- Development of OMA and its associations with Ontario, Oregon, and the region
- Early development of OMA as an American Legion Airport
- Development of OMA and its associations with the WPA
- Associations of OMA with the CPTP program
- Associations of OMA with contexts related to women in aviation
- Associations with noteworthy individuals, namely Casey Jones and Bessie G. Halladay
- OMA as an example of a property type or architectural style

In all of these contexts, the overall OMA property does not appear to exhibit historical significance under the relevant NRHP significance criteria. In almost all instances, OMA is a typical, small regional airport that is reflective of the general patterns of history under each of the aforementioned contexts and does not rise to a level of historical significance. This is exacerbated further by the numerous alterations and periods of development at the airport, namely the major alterations that occurred in the late twentieth and early twenty-first century, that have disrupted the property's overall ability to convey any associations or cohesive character that would be related to any significant event, pattern of development, individual, or architectural character. Given this, there is no apparent historic district at OMA that would qualify as eligible for the NRHP (see Section 106 Documentation Forms for full evaluations).

Regarding the individual of-age buildings outlined above, these buildings similarly do not appear to rise to a level of historical significance under any of the established NRHP significance criteria, but rather reflect the established typical and general patterns of history. Furthermore, the individual properties have undergone various alterations that detract from any associations or cohesive character that would qualify as historically significant. As such, none of these properties are recommended eligible for the NRHP.

ONTARIO MUNICIPAL GOLF COURSE

Designed by notable golf course architect Bob E. Baldock and constructed in 1964, the golf course at OMA operated until 2014. The golf course appears to be a typical municipal golf course and was not associated with any significant events or patterns of development related to Ontario, nor the development of golf as a form of recreation at the local, state, or national level. It does not appear to be associated with any significant individuals and does not appear to be a significant example of golf course design, nor a significant representation of Baldock's catalogue of designs. This is exacerbated further by extensive alterations that have occurred at the golf course, which occurred in the early 2000s with the reorganization of the course from the east side of OMA to the northwest corner, the subsequent closure of the course and lack of maintenance, and the construction of the jet boat racetrack at the former driving range location.

Given this, the golf course as a potential historic district does not appear to exhibit historical significance under any of the established NRHP significance criteria. Therefore, the property does not qualify as eligible for the NRHP (see Section 106 Documentation Form for full NRHP evaluation).

Golf Course Clubhouse

In addition to the aforementioned contexts of the broader golf course, the golf course clubhouse was examined as an individual property, specifically as an example of Mid-Century Modern architecture in Ontario, Oregon. While the building features some noteworthy character-defining architectural features

that are associated with the Mid-Century Modern style—the folded plate roof and use of stack bond veneer—the overall composition appears to be typical to the period and the style. The clubhouse building does not appear to be particularly significant within the broader context of Mid-Century Modern resources in Ontario, which includes multiple examples of the architectural style executed in a variety of property types. Similarly, the clubhouse does not appear to be a significant example of the clubhouse property type in a way that would qualify it as eligible for the NRHP.

CONCLUSIONS AND RECOMMENDATIONS

To determine if cultural resources are present within the APE, SWCA archaeologists and architectural historians conducted background research and field investigations within the APE in July 2022. The field investigations consisted of archaeological pedestrian survey and an intensive survey of the built environment for aboveground historic resources.

SWCA identified no archaeological sites within the APE. The intensive-level survey of the built environment and evaluation of aboveground historic resources found that none of the buildings, structures, and landscape features that are 50 years old or older are eligible for the NRHP due to lack of historical significance. This includes two potential historic districts related to the OMA property and the golf course, which were founded in 1928 and 1964, respectively, as well as individual buildings and structures.

SWCA's background research indicates that the OMA property was initially developed in 1928 as an American Legion Airport, which was part of a larger national campaign by the American Legion to develop airfields in the years following World War I. The OMA property was slow to develop but underwent some updates in the lead-up to World War II through WPA-constructed improvements in the airfield and CPTP-related flight school improvements. The flight school was a central component of the airfield in the years before, during, and after World War II, which was typical of smaller airfields during this period. While OMA did host some passenger traffic during the immediate post-war years, commercial airline traffic to the airport ceased in the 1970s. The airport underwent an expansive period of modernization in the 1970s, 1980s, and in the 2000s that saw the closure of the east-west runway, extension of the north-south runway, and construction of new administrative and hangar facilities throughout the property. Additionally, the airport property was the location of a municipal golf course from 1964 to 2014. This too underwent extensive alterations related to the changes to the airport.

SWCA identified no NRHP-eligible properties within the APE. SWCA therefore recommends a finding for the undertaking of **no historic properties affected**, per 36 CFR 800.4(d)(1).

It is important to take into consideration that the risk of encountering cultural resources during ground disturbance can never be ruled out. The APE lies within the traditional homeland of multiple Indigenous groups, and historical agricultural activities occurred throughout the APE. SWCA recommends that a project-specific inadvertent discovery plan (IDP) be developed and distributed to construction workers prior to the start of any project-related ground disturbance. The IDP should outline what to do in the event of an inadvertent discovery. In brief, should unanticipated archaeological or historic-era resources be inadvertently encountered during future activities at this location, all ground-disturbing activity within a 100-foot buffer of the find(s) should be halted and SHPO promptly notified to ensure compliance with relevant state and federal laws and regulations. Should evidence of human remains be encountered, all ground-disturbing activity in the vicinity should be halted immediately, actions should be taken on-site to secure the location of the find(s), and the Oregon State Police, SHPO, the appropriate Tribes, and the Commission on Indian Services promptly notified pursuant to Oregon Revised Statute 97.745(4).

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ADO APPROVAL LETTER
SHEET 1

ADO APPROVAL LETTER
SHEET 2

AIRPORT LAYOUT PLAN

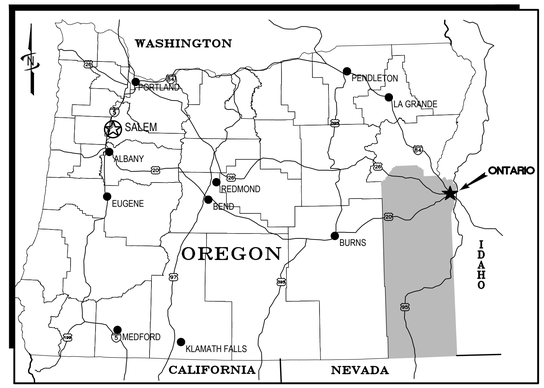
ONTARIO MUNICIPAL AIRPORT

CITY OF ONTARIO, MALHEUR COUNTY, OREGON

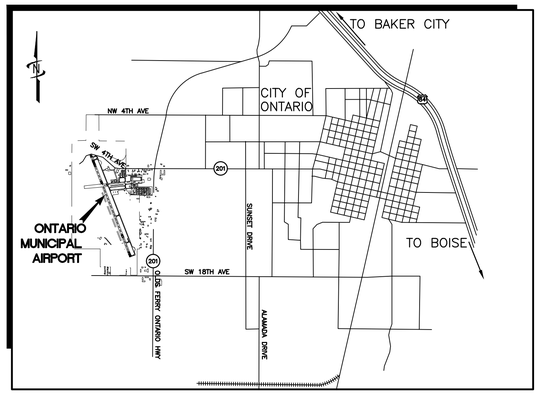
APRIL 2023

SPONSOR APPROVAL	
CITY MANAGER, CITY OF ONTARIO, OREGON	DATE

AIP NO. 3-41-0044-019-2021



AREA MAP



VICINITY MAP

INDEX OF SHEETS		
NUMBER	SHEET TITLE	REVISION DATE
AF–1	TITLE SHEET	
AF–2	AIRPORT LAYOUT PLAN	
AF–3	AIRPORT DATA SHEET	
AF–4	AIRPORT AIRSPACE PLAN	
AF–5	RUNWAY 15 INNER APPROACH SURFACE	
AF–6	RUNWAY 33 INNER APPROACH SURFACE	
AF–7	RUNWAY 15 END DEPARTURE SURFACE	
AF–8	RUNWAY 33 END DEPARTURE SURFACE	
AF–9	RUNWAY CENTERLINE PLAN AND PROFILE	
AF–10	TERMINAL AREA PLAN – EAST APRON AREA	
AF–11	TERMINAL AREA PLAN – WEST APRON AREA	
AF–12	LAND USE PLAN	
AF–13	EXHIBIT A – AIRPORT PROPERTY INVENTORY MAP	

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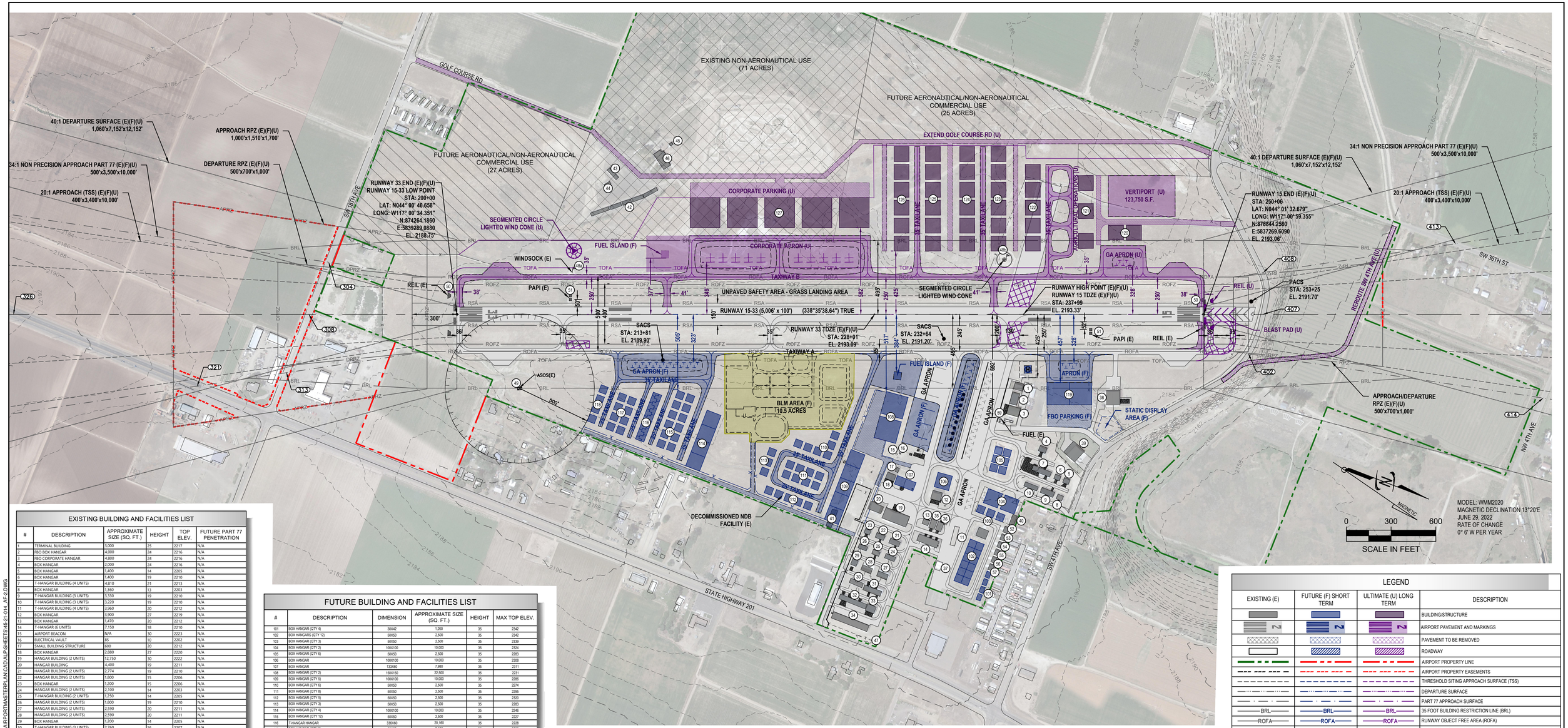
REVISION				
NO.	DESCRIPTION	FAA UPDATE	APP.	DATE

LAST UPDATED: March 1, 2023

SHEET NUMBER:

AF-1

Plot Date:3/30/2023 4:33 PM Plotted By: Shawn Dulin
Date Created:3/1/2023 \\JUB.COM\CENTRAL\CLIENTS\OR\ONTARIOCITY\PROJECTS\45-21-914_ONTARIOMPUPDATE\PLANNING\AIRPORTMASTERPLAN\CAD\ALP\SHEETS\45-21-914_AF-1.DWG



EXISTING BUILDING AND FACILITIES LIST

#	DESCRIPTION	APPROXIMATE SIZE (SQ. FT.)	HEIGHT	TOP ELEV.	FUTURE PART 77 PENETRATION
1	TERMINAL BUILDING	3,000	25	2217	N/A
2	FBO BOX HANGAR	4,000	24	2216	N/A
3	FBO CORPORATE HANGAR	4,800	24	2216	N/A
4	BOX HANGAR	2,000	24	2216	N/A
5	BOX HANGAR	1,400	14	2205	N/A
6	BOX HANGAR	1,400	19	2210	N/A
7	T-HANGAR BUILDING (4 UNITS)	4,810	21	2213	N/A
8	BOX HANGAR	1,360	13	2203	N/A
9	T-HANGAR BUILDING (3 UNITS)	3,330	19	2210	N/A
10	T-HANGAR BUILDING (3 UNITS)	3,220	19	2210	N/A
11	T-HANGAR BUILDING (4 UNITS)	3,960	20	2212	N/A
12	BOX HANGAR	3,900	27	2219	N/A
13	BOX HANGAR	1,470	20	2212	N/A
14	T-HANGAR (6 UNITS)	7,150	18	2210	N/A
15	AIRPORT BEACON	N/A	30	2223	N/A
16	ELECTRICAL VAULT	85	10	2202	N/A
17	SMALL BUILDING STRUCTURE	600	20	2212	N/A
18	BOX HANGAR	2,880	27	2220	N/A
19	HANGAR BUILDING (2 UNITS)	12,750	30	2222	N/A
20	HANGAR BUILDING	4,400	19	2211	N/A
21	HANGAR BUILDING (2 UNITS)	2,774	19	2210	N/A
22	HANGAR BUILDING (2 UNITS)	1,800	15	2206	N/A
23	BOX HANGAR	1,200	15	2206	N/A
24	HANGAR BUILDING (2 UNITS)	2,100	14	2203	N/A
25	T-HANGAR BUILDING (2 UNITS)	1,250	14	2205	N/A
26	HANGAR BUILDING (2 UNITS)	1,800	19	2210	N/A
27	HANGAR BUILDING (2 UNITS)	2,590	20	2211	N/A
28	HANGAR BUILDING (2 UNITS)	2,590	20	2211	N/A
29	BOX HANGAR	1,200	14	2205	N/A
30	T-HANGAR BUILDING (3 UNITS)	2,760	16	2207	N/A
31	T-HANGAR BUILDING (4 UNITS)	4,674	23	2214	N/A
32	T-HANGAR BUILDING (6 UNITS)	6,270	17	2208	N/A
33	BOX HANGAR	3,000	21	2213	N/A
34	HANGAR BUILDING (8 UNITS)	11,475	20	2211	N/A
35	HANGAR BUILDING (2 UNITS)	2,400	17	2209	N/A
36	HANGAR BUILDING (2 UNITS)	2,400	18	2209	N/A
37	HANGAR BUILDING	1,600	21	2212	N/A
38	HANGAR BUILDING - LIFE FLIGHT	9,200	25	2218	N/A
39	FIRE STATION	6,768	20	2213	N/A
40	BLM SEAT BASE	2,250	23	2214	N/A
41	MAINTENANCE BUILDING	4,690	17	2210	N/A
42	GOLF CART STORAGE BUILDING	10,850	12	2201	N/A
43	GOLF COURSE STORAGE BUILDING	2,279	12	2195	N/A
44	GOLF COURSE STORAGE BUILDING	885	12	2195	N/A
45	GOLF COURSE STORAGE BUILDING	395	12	2198	N/A
46	GOLF COURSE BUILDING CLUB HOUSE	7,870	15	2204	N/A
47	ADVERTISING SIGN	N/A	17	2218	N/A
48a	WIND CONE	N/A	17	2200	N/A
48b	LIGHTED WIND CONE / SEG CIRCLE	N/A	17	2196	N/A
49	ASOS	N/A	10	N/A	N/A
50	REIL	N/A	2	N/A	N/A
51	PAPI	N/A	2	N/A	N/A
52	BOX HANGAR	1,260	25	2216	N/A
53	BOX HANGAR	1,260	25	2216	N/A
54	BOX HANGAR	1,260	25	2216	N/A
55	BOX HANGAR	1,260	25	2216	N/A
56	BOX HANGAR	1,260	25	2216	N/A
57	BOX HANGAR	1,260	25	2216	N/A
59	FUEL TANK FARM	1,260	25	2216	N/A

FUTURE BUILDING AND FACILITIES LIST

#	DESCRIPTION	DIMENSION	APPROXIMATE SIZE (SQ. FT.)	HEIGHT	MAX TOP ELEV.
101	BOX HANGAR (QTY 4)	30X42	1,260	35	2342
102	BOX HANGARS (QTY 12)	50X50	2,500	35	2342
103	BOX HANGAR (QTY 3)	50X50	2,500	35	2339
104	BOX HANGAR (QTY 2)	100X100	10,000	35	2324
105	BOX HANGAR (QTY 6)	50X50	2,500	35	2283
106	BOX HANGAR	100X100	10,000	35	2308
107	BOX HANGAR	133X60	7,980	35	2311
108	BOX HANGAR (QTY 2)	150X150	22,500	35	2331
109	BOX HANGAR (QTY 5)	100X100	10,000	35	2286
110	BOX HANGAR (QTY 6)	50X50	2,500	35	2274
111	BOX HANGAR (QTY 8)	50X50	2,500	35	2266
112	BOX HANGAR (QTY 5)	50X50	2,500	35	2320
113	BOX HANGAR (QTY 3)	50X50	2,500	35	2283
114	BOX HANGAR (QTY 4)	100X100	10,000	35	2246
115	BOX HANGAR (QTY 12)	50X50	2,500	35	2227
116	T-HANGAR HANGAR	336X60	20,160	35	2228
117	BOX HANGAR (QTY 8)	50X50	2,500	35	2228
118	BOX HANGAR (QTY 4)	50X50	2,500	35	2221
119	FBO HANGAR/TERMINAL BUILDING	200X400	80,000	35	2222

ULTIMATE BUILDING AND FACILITIES LIST

#	DESCRIPTION	DIMENSION	APPROXIMATE SIZE (SQ. FT.)	HEIGHT	MAX TOP ELEV.
120	BOX HANGAR (QTY 2)	100X100	10,000	35	2227
121	AGRICULTURAL HANGAR (QTY 3)	100X100	10,000	35	2219
122	BOX HANGAR (QTY 5)	100X100	10,000	35	2217
123	BOX HANGAR (QTY 6)	100X100	10,000	35	2217
124	BOX HANGAR (QTY 6)	100X100	10,000	35	2217
125	BOX HANGAR (QTY 6)	100X100	10,000	35	2217
126	BOX HANGAR (QTY 6)	100X100	10,000	35	2217
127	CORPORATE HANGAR (QTY 5)	200x200	40,000	35	2238

CLEARANCE TABLE WITHIN RUNWAY 15 PART 77 APPROACH SURFACES

OBS ITEM	LOCATION	GROUND ELEVATION	TRAVERSE WAY ADJUSTMENT	APPROACH ELEVATION	APPROACH CLEARANCE
402	EAST EDGE OF EXISTING/FUTURE APPROACH AT SW 4TH AVE	2188.4	+15'	2196.0	-7.4'
407	EXISTING/FUTURE APPROACH CENTERLINE AT SW 4TH AVE	2185.3	+15'	2198.9	-1.4'
408	WEST EDGE OF EXISTING/FUTURE APPROACH AT SW 4TH AVE	2189.0'	+15'	2199.0	-5.0'
413	WEST EDGE OF EXISTING/FUTURE APPROACH AT SW 36TH ST	2158.9	+15'	2206.8	62.8
414	EAST EDGE OF EXISTING/FUTURE APPROACH AT NW 4TH AVE	2158.2	+15'	2254.1	81.1

CLEARANCE TABLE WITHIN RUNWAY 33 PART 77 APPROACH SURFACES

OBS ITEM	LOCATION	GROUND ELEVATION	TRAVERSE WAY ADJUSTMENT	APPROACH ELEVATION	APPROACH CLEARANCE
304	WEST EDGE OF EXISTING APPROACH AT SW 18TH AVE	2183.4	+15'	2208.1	9.7'
308	EXISTING APPROACH CENTERLINE AT SW 18TH AVE	2182.8	+15'	2212.0	13.3'
313	EAST EDGE OF EXISTING APPROACH AT SW 18TH AVE	2182.8	+15'	2216.5	17.7'
321	EAST EDGE OF EXISTING APPROACH AT HIGHWAY 201	2185.1	+17'	2234.0	31.9'
326	EXISTING APPROACH CENTERLINE AT HIGHWAY 201	2192.9	+17'	2270.2	60.3'

NOTE : APPROACH CLEARANCE IS MEASURED FROM TOP OF TRAVERSE WAY ADJUSTMENT TO THE APPROACH SURFACE. A POSITIVE VALUE IS THE CLEARANCE FROM THE TOP OF THE TRAVERSE WAY TO THE APPROACH SURFACE. A NEGATIVE VALUE IS THE AMOUNT THE TRAVERSE WAY IS ABOVE THE APPROACH SURFACE.

FAA CONDITIONAL APPROVAL

SPONSOR APPROVAL

CITY MANAGER, CITY OF ONTARIO, OREGON _____ DATE _____

LEGEND

EXISTING (E)	FUTURE (F) SHORT TERM	ULTIMATE (U) LONG TERM	DESCRIPTION
			BUILDING/STRUCTURE
2	2	2	AIRPORT PAVEMENT AND MARKINGS
			PAVEMENT TO BE REMOVED
			ROADWAY
			AIRPORT PROPERTY LINE
			AIRPORT PROPERTY EASEMENTS
			THRESHOLD SITING APPROACH SURFACE (TSS)
			DEPARTURE SURFACE
			PART 77 APPROACH SURFACE
BRL	BRL	BRL	35 FOOT BUILDING RESTRICTION LINE (BRL)
ROFA	ROFA	ROFA	RUNWAY OBJECT FREE AREA (ROFA)
RPZ	RPZ	RPZ	RUNWAY PROTECTION ZONE (RPZ) (APPROACH AND DEPARTURE)
APRZ	ARPZ	APRZ	APPROACH RUNWAY PROTECTION ZONE (ARPZ)
DPRZ	DRPZ	DRPZ	DEPARTURE RUNWAY PROTECTION ZONE (DRPZ)
RSA	RSA	RSA	RUNWAY SAFETY AREA (RSA)
ROFZ	ROFZ	ROFZ	RUNWAY OBSTACLE FREE ZONE (ROFZ)
TOFA	TOFA	TOFA	TAXIWAY OBJECT FREE AREA (TOFA)
			NAVAID CRITICAL AREA
x x	X	X	FENCE
			THRESHOLD LIGHTS
			LANDING AID (PAPI-2)
			LANDING AID (REILS)
			SUPPLEMENTAL WINDCONE
			AIRPORT REFERENCE POINT (ARP)
			TREE
			GROUND CONTOURS (2' INTERVAL)
			FENCE TO BE RELOCATED
			AIRPORT CONTROL STATION - PACS/SACS

NOTES:
1. TRUE BEARINGS LISTED FOR RUNWAYS ARE GEODETIC VALUES. ELEVATIONS PUBLISHED ARE BASED ON NAD88 VERTICAL DATUM. HORIZONTAL DATUM IS NAD83/2011.
2. FUTURE TAXIWAY A WIDTH: 35 FT, TAXIWAY B: 35 FT, ALL OTHER FUTURE TAXIWAYS ARE 35' UNLESS SHOWN OTHERWISE.
3. RUNWAY 33 PAPI-2 IS LOCATED AT STATION 207+61 (E,F,U), 90 FT FROM RUNWAY CENTERLINE. RUNWAY 15 PAPI-2 IS LOCATED AT STATION 242+49 (E,F,U), 92 FT FROM RUNWAY CENTERLINE
4. RUNWAY 33 REILS ARE LOCATED AT STATION 199+60 (E,F,U), 125 FT FROM RUNWAY CENTERLINE. RUNWAY 15 REILS ARE LOCATED AT STATION 249+91 (E,F), 250+50 (U) 95 FT FROM RUNWAY CENTERLINE.
5. TAXIWAY EDGE SAFETY MARGIN (TESM); TAXIWAY DESIGN GROUP (TDG) 2A: 7.5 FT (E,F,U)
6. TAXIWAY SHOULDER WIDTH; TAXIWAY DESIGN GROUP (TDG) 2A (E,F,U): 15 FT
7. TAXIWAY OBJECT FREE AREA (TOFA); AIRPLANE DESIGN GROUP(ADG) II: 124 FT (E,F,U)
8. TAXILANE OBJECT FREE AREA (TOFA); AIRPLANE DESIGN GROUP (ADG) II: 110 FT (E,F,U)
9. TAXIWAY/TAXILANE SAFETY AREA (TSA); AIRPLANE DESIGN GROUP (ADG) II: 79 FT (E,F,U)
10. RUNWAY SHOULDER WIDTH; B-II: 10 FT (E,F,U)
11. ALL FENCES ARE 6 FEET IN HEIGHT UNLESS OTHERWISE NOTED.
12. THE DEPICTED 35-FOOT BUILDING RESTRICTION LINE IS INTENDED AS A GUIDELINE ONLY. FUTURE HANGARS MUST RECEIVE A NO-HAZARD DETERMINATION VIA FAA FROM 7460 FILING.
13. APRON (E) 10,438 SQUARE YARDS, APRON (F) 9,654 SQUARE YARDS, APRON (U) 8,727 SQUARE YARDS

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FILE: 45-21-014 AF-2
JUB PROJ. # : 45-21-014
DRAWN BY: SMD
DESIGN BY: SMD
CHECKED BY: TJE

ONE INCH
AT FULL SIZE, IF NOT ONE INCH, SCALE ACCORDINGLY

CITY OF ONTARIO
ONTARIO MUNICIPAL AIRPORT

AIRPORT LAYOUT PLAN

LAST UPDATED: 3/31/2023
SHEET NUMBER:
AF-2

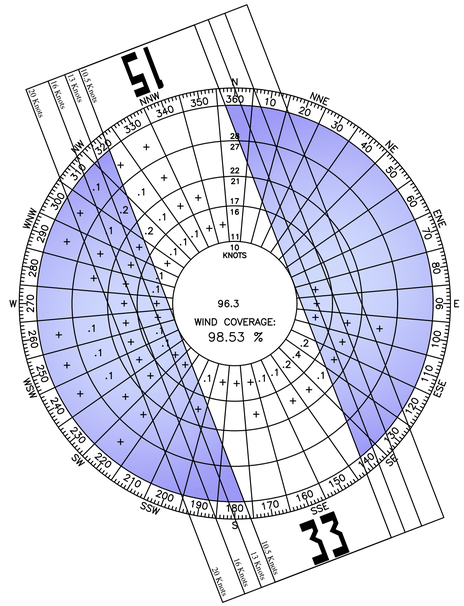
Plot Date:3/31/2023 12:04 PM Plotted By: Shawn Dulin
Date Created:3/30/2023 I:\JUB.COM\CENTRAL\CLIENTS\OREGON\ONTARIOCITY\PROJECTS\45-21-014_ONTARIOMIP\2PDATE\PLANNING\AIRPORTMASTERPLAN\CAD\ALP-SHEETS\45-21-014_AF-2.DWG

AIRPORT DATA TABLE		
ITEM	EXISTING	FUTURE/ULTIMATE
AIRPORT REFERENCE CODE (ARC)	B-II	B-II
MEAN MAXIMUM TEMPERATURE	JULY 91.2°F	JULY 91.2°F
AIRPORT ELEVATION (ABOVE MSL)	2193.3	2193.3
AIRPORT NAVIGATIONAL AIDS (OWNERSHIP)	BEACON, PAPI, REILS (CITY OF ONTARIO)	BEACON, PAPI, REILS (CITY OF ONTARIO)
AIRPORT REFERENCE POINT	N44°01'16.02", W117°00'50.30"	N44°01'16.02", W117°00'50.30"
MISCELLANEOUS FACILITIES	SEGMENTED CIRCLE, LIGHTED WIND CONE, ASOS, MITL	SEGMENTED CIRCLE, LIGHTED WIND CONE, ASOS, MITL
CRITICAL AIRCRAFT	RAYTHEON KING AIR B-200	RAYTHEON KING AIR B-200
MAGNETIC DECLINATION, RATE OF CHANGE*	13°19'E, 0° 06' W / 2020 (NOAA)	12°19'E, 0° 06' W / 2020 (NOAA) (10 YR PROJECTION)
NPIAS SERVICE LEVEL	GENERAL AVATION	GENERAL AVATION
STATE EQUIVALENT SERVICE LEVEL (OAP v6.0)	REGIONAL GENERAL AVATION	REGIONAL GENERAL AVATION

*DECLINATION BASED ON WORLD MAGNETIC MODEL 2020

RUNWAY DATA TABLE				
ITEM	EXISTING		FUTURE/ULTIMATE	
	RUNWAY 15	RUNWAY 33	RUNWAY 15	RUNWAY 33
RUNWAY IDENTIFICATION	NON-UTILITY (LARGE)		NON-UTILITY (LARGE)	
RUNWAY DESIGN CODE (RDC)	B-II-5000	B-II-4000	B-II-5000	B-II-4000
RUNWAY APPROACH AND DEPARTURE REFERENCE CODE (APRC-DPRC)	B-II/4000 - B/II	B-II/4000 - B/II	B-II/4000 - B/II	B-II/4000 - B/II
RUNWAY SURFACE TYPE	ASPHALT		ASPHALT	
PAVEMENT STRENGTH (SINGLE WHEEL GEAR-S) (DUAL WHEEL GEAR-D)	30,000 (S), 60,000 (D)		30,000 (S), 60,000 (D)	
PAVEMENT CLASSIFICATION RATING (PCR)	298/F/B/X/T	298/F/B/X/T	298/F/B/X/T	298/F/B/X/T
SURFACE TREATMENT	NONE	NONE	NONE	NONE
EFFECTIVE / MAX. LONG. GRADIENT	0.09% / 0.20%		0.09% / 0.20%	
PERCENT WIND COVERAGE (15-33)	97.37% (10.5KT) 98.65% (13KT)		97.37% (10.5KT) 98.65% (13KT)	
RUNWAY DIMENSIONS (ACTUAL*)	5,006' X 100'		5,006' X 100'	
DISPLACED THRESHOLD	NO	NO	NO	NO
RUNWAY SAFETY AREA (RSA) WIDTH	150'	150'	150'	150'
BEYOND DEPARTURE END	300'	300'	300'	300'
RUNWAY END COORDINATES	LAT: N44°01'32.73" LONG: W117°00'59.38" EL. 2193.06	LAT: N44°00'46.66" LONG: W117°00'34.35" EL. 2188.75	LAT: N44°01'32.73" LONG: W117°00'59.38" EL.2193.06	LAT: N44°00'46.66" LONG: W117°00'34.35" EL. 2188.75
RUNWAY LIGHTING TYPE	MIRL		MIRL	
RUNWAY PROTECTION ZONE (RPZ) (APPROACH)	500'x700'x1,000'	500'x700'x1,000'	500'X700'X1,000	500'X700'1,000'
RUNWAY PROTECTION ZONE (RPZ) (DEPARTURE)	500'x700'x1,000'	500'x700'x1,000'	500'X700'X1,000	500'X700'X1,000
RUNWAY MARKINGS	NON-PRECISION	NON-PRECISION	NON-PRECISION	NON-PRECISION
FAR PART 77 APPROACH CATEGORY	34:1	34:1	34:1	34:1
FAR PART 77 APPROACH TYPE	NON-PRECISION	NON-PRECISION	NON-PRECISION	NON-PRECISION
VISIBILITY MINIMUMS	1-MILE	7/8-MILE	1-MILE	7/8-MILE
SURVEY REQ'D FOR APPROACH	NOT VERT. GUIDED	NOT VERT. GUIDED	NOT VERT. GUIDED	NOT VERT. GUIDED
RUNWAY DEPARTURE SURFACE	YES	YES	YES	YES
RUNWAY OBJECT FREE AREA (ROFA) WIDTH	500'	500'	500'	500'
ROFA LENGTH BEYOND RWY END/PRIOR TO THRESHOLD	300'	300'	300'	300'
OBSTACLE FREE ZONE (OFZ) WIDTH/LENGTH	400'/200'	400'/200'	400'/200'	400'/200'
THRESHOLD SITING SURFACE (TSS)	NO TSS PENETRATIONS		NO TSS PENETRATIONS	
VISUAL / INSTRUMENT NAVAIDS	PAPI, REIL	PAPI, REIL	PAPI, REIL	PAPI, REIL
TOUCHDOWN ZONE ELEVATION (TDZ)	2193.32	2193.08	2193.32	2193.08

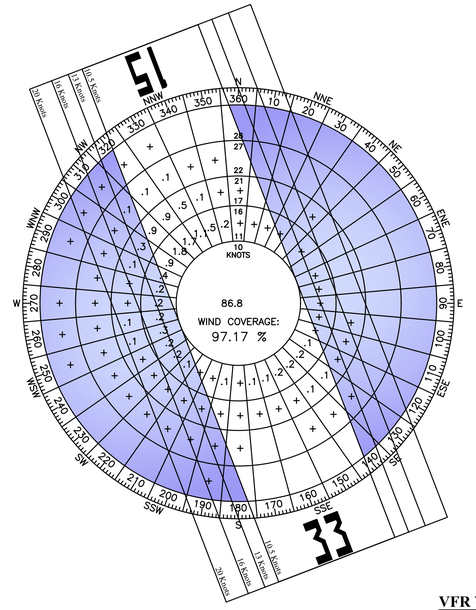
* ACTUAL DISTANCE IS SURVEYED RUNWAY END TO RUNWAY END BASED ON NAD83



IFR Wind Rose

Source: NOAA's Integrated Surface Database
Station: Ontario Municipal Airport
Period: 2011 - 2020
Number of Observations: 9,504

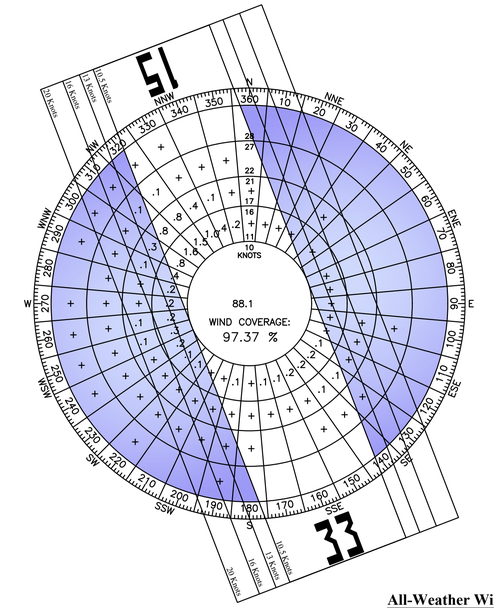
IFR WIND COVERAGE				
RUNWAY	10.5KT	13KT	16KT	20KT
15/33	98.53%	98.92%	99.24%	99.52%



VFR Wind Rose

Source: NOAA's Integrated Surface Database
Station: Ontario Municipal Airport
Period: 2011 - 2020
Number of Observations: 82,450

VFR WIND COVERAGE				
RUNWAY	10.5KT	13KT	16KT	20KT
15/33	97.17%	98.59%	99.57%	99.88%



All-Weather Wind Rose

Source: NOAA's Integrated Surface Database
Station: Ontario Municipal Airport
Period: 2011 - 2020
Number of Observations: 94,906

ALL-WEATHER WIND COVERAGE				
RUNWAY	10.5KT	13KT	16KT	20KT
15/33	97.37%	98.65%	99.54%	99.85%

DATUM
VERTICAL DATUM: NAVD88
HORIZONTAL DATUM: NAD83

TAXIWAY AND TAXILANE INFO		
ITEM	EXISTING (ADG-II,TDG-2A)	FUTURE/ULTIMATE (ADG-II,TDG-2B)
TAXIWAY A WIDTH	35'	35'
TAXIWAY B WIDTH	N/A	35'
TAXILANE WIDTH	35'	35'
TAXIWAY SAFETY AREAS (TSA)	79'	79'
TAXIWAY OBJECT FREE AREA (TOFA)	124'	124'
TAXILANE OBJECT FREE AREA (TLOFA)	110'	110'
TAXIWAY CENTERLINE TO OBJECT (OBJECTS)	62'	62'
TAXILANE CENTERLINE TO OBJECT (OBJECTS)	55'	55'
TAXIWAY LIGHTING	MITL	MITL
TAXILANE LIGHTING	NONE	NONE

MODIFICATIONS TO STANDARDS	
RUNWAY 15	RUNWAY 33
NONE REQUIRED	

DECLARED DISTANCES TABLE				
	RUNWAY 15 EXISTING	RUNWAY 33 EXISTING	RUNWAY 15 FUTURE/ULTIMATE	RUNWAY 33 FUTURE/ULTIMATE
TAKEOFF RUNWAY AVAILABLE (TORA)	5,006'	5,006'	5,006'	5,006'
TAKEOFF DISTANCE AVAILABLE (TODA)	5,006'	5,006'	5,006'	5,006'
ACCELERATE STOP DISTANCE AVAILABLE (ASDA)	5,006'	5,006'	5,006'	5,006'
LANDING DISTANCE AVAILABLE (LDA)	5,006'	5,006'	5,006'	5,006'

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JUB PROJ. # : 45-21-014
DRAWN BY: SMD
DESIGN BY: SMD
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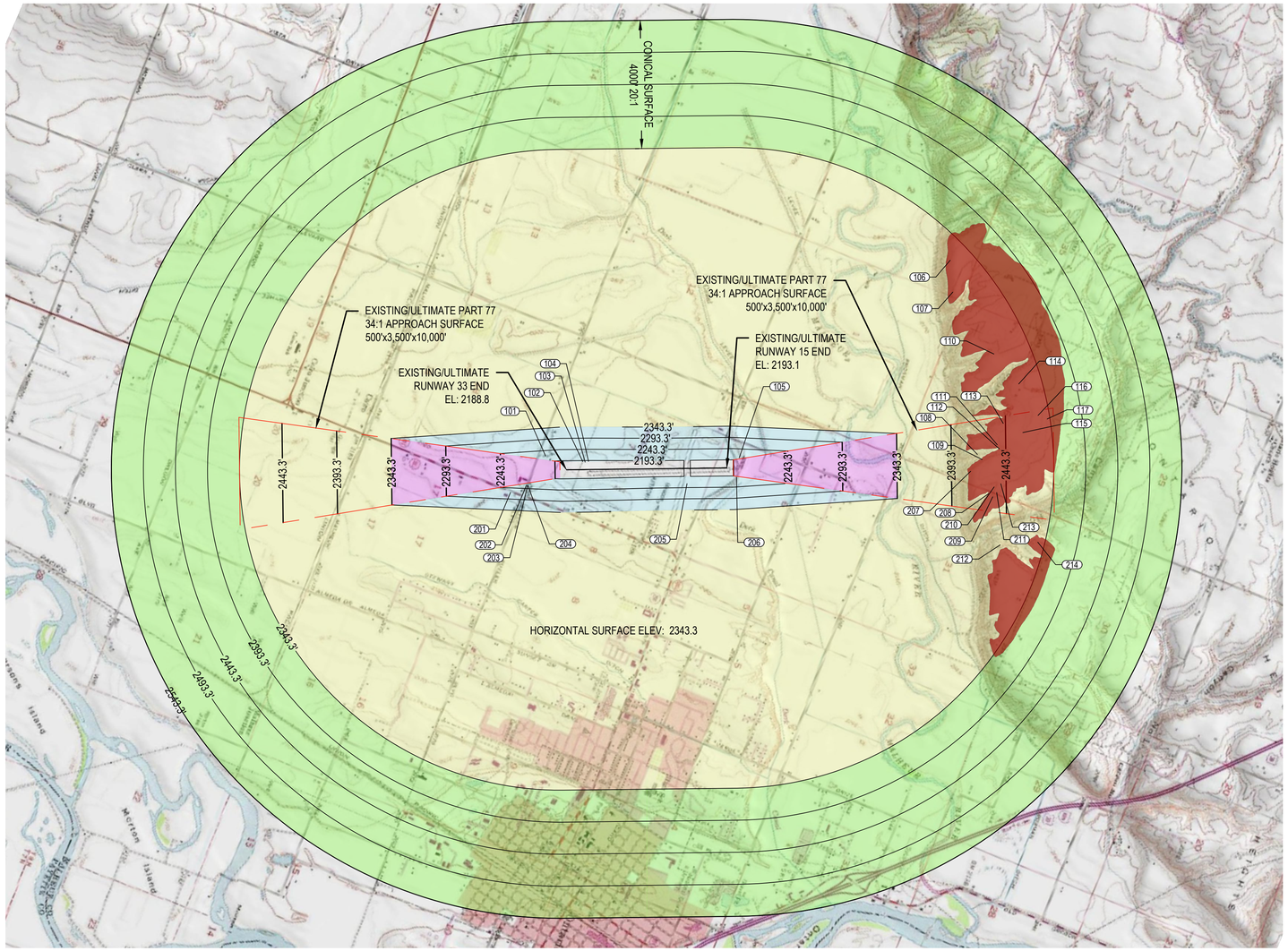
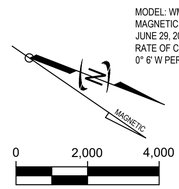
CITY OF ONTARIO
ONTATRIO MUNICIPAL AIRPORT

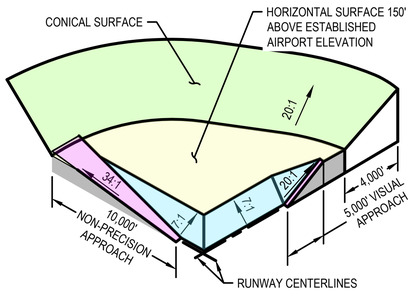
AIRPORT DATA SHEET

LAST UPDATED: 3/31/2023
SHEET NUMBER:
AF-3

Plot Date:3/31/2023 10:34 AM Plotted By: Shawn Dulin
Date Created:3/30/2023 I:\JUB.COM\CENTRAL\CLIENTS\ONTARIO\CITY\PROJECTS\45-21-014_ONTATRIOMUPDATE\PLANNING\AIRPORTMASTERPLAN\CAD\ALP\SHEETS\45-21-014_AF-3.DWG



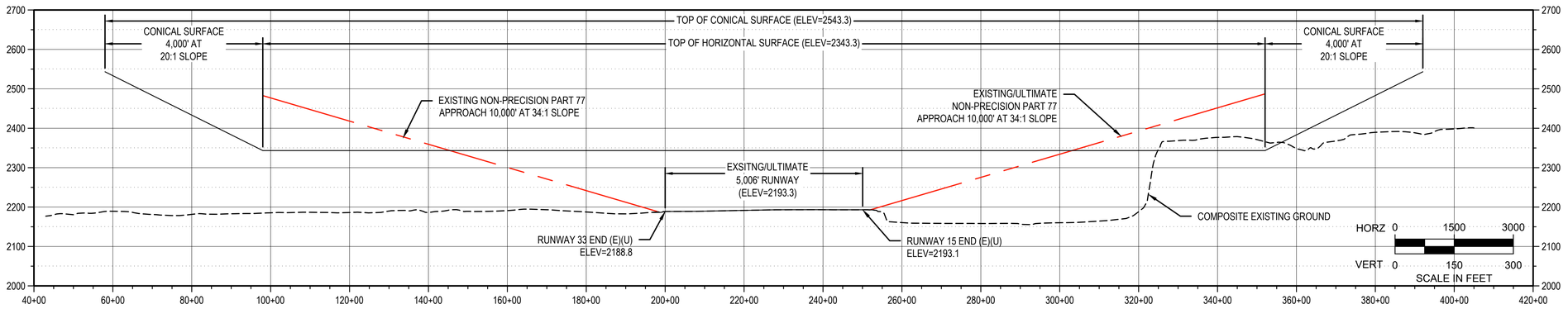




OBSTRUCTION TABLE

OBS ITEM	DESCRIPTION	DATE OF SURVEY	GROUND ELEV (FT)	OBJECT TOP ELEV (FT)	PENETRATION (FT)	SURFACE PENETRATED	PROPOSED ACTION	PROPOSED ACTION DATE
101	TREE 41-027456	OCT 2015	2182	2225	6	TRANSITIONAL	TBD	TBD
102	FENCE 41-027553	OCT 2015	2186	2190	1	TRANSITIONAL	TBD	TBD
103	TERRAIN 41-025178	OCT 2015	2187	2190	1	PRIMARY	TBD	TBD
104	FENCE 41-027514	OCT 2015	2187	2192	3	PRIMARY	TBD	TBD
105	TRAVERSE_WAY 41-041878	OCT 2015	2189	2204	1	TRANSITIONAL	TBD	TBD
106	BUILDING 41-022065	OCT 2015	2390	2399	56	HORIZONTAL	NONE	N/A
107	POLE 41-022066	OCT 2015	2385	2406	63	HORIZONTAL	NONE	N/A
108	TREE 41-023773	OCT 2015	2293	2402	59	HORIZONTAL	NONE	N/A
109	POLE 41-022060	OCT 2015	2357	2382	39	HORIZONTAL	NONE	N/A
110	TREE 41-027625	OCT 2015	2374	2435	92	HORIZONTAL	NONE	N/A
111	TREE 41-023772	OCT 2015	2361	2424	81	HORIZONTAL	NONE	N/A
112	TREE 41-024503	OCT 2015	2346	2430	87	HORIZONTAL	NONE	N/A
113	TREE 41-027627	OCT 2015	2368	2447	104	HORIZONTAL	NONE	N/A
114	POLE 41-027583	OCT 2015	2380	2426	83	HORIZONTAL	NONE	N/A
115	TREE 41-027545	OCT 2015	2347	2441	98	HORIZONTAL	NONE	N/A
116	POLE 41-027626	OCT 2015	2376	2415	72	HORIZONTAL	NONE	N/A
117	POLE 41-041899	OCT 2015	2370	2413	70	HORIZONTAL	NONE	N/A
201	ANTENNA 41-027535	OCT 2015	2184	2266	2	TRANSITIONAL	TBD	TBD
202	TOWER 41-022073	OCT 2015	2183	2240	12	TRANSITIONAL	TBD	TBD
203	TRANSMISSION_LINE 41-022094	OCT 2015	2183	2230	2	TRANSITIONAL	TBD	TBD
204	POLE 41-023793	OCT 2015	2183	2230	2	TRANSITIONAL	TBD	TBD
205	BUILDING 41-022063	OCT 2015	2192	2227	1	TRANSITIONAL	TBD	TBD
206	TRAVERSE_WAY 41-027507	OCT 2015	2184	2204	4	TRANSITIONAL	TBD	TBD
207	TOWER 41-022075	OCT 2015	2366	2413	70	HORIZONTAL	NONE	N/A
208	POLE 41-027547	OCT 2015	2344	2388	45	HORIZONTAL	NONE	N/A
209	TREE 41-027548	OCT 2015	2357	2429	86	HORIZONTAL	NONE	N/A
210	TREE 41-041864	OCT 2015	2360	2431	88	HORIZONTAL	NONE	N/A
211	TREE 41-027549	OCT 2015	2363	2421	78	HORIZONTAL	NONE	N/A
212	POLE 41-027501	OCT 2015	2326	2367	24	HORIZONTAL	NONE	N/A
213	POLE 41-027546	OCT 2015	2365	2395	52	HORIZONTAL	NONE	N/A
214	TREE 41-027550	OCT 2015	2351	2418	75	HORIZONTAL	NONE	N/A

NOTE: PENETRATION VALUE IS THE AMOUNT THE TOP OF THE OBSTRUCTION PROTRUDES ABOVE THE ULTIMATE CFR TITLE 14 PART 77 IMAGINARY SURFACES. ANY PENETRATION TO THE CFR PART 77 IMAGINARY SURFACES, WHETHER MANMADE OR NATURAL GROWTH, IS CLASSIFIED AS AN "OBSTRUCTION," PRESUMED TO BE A HAZARD TO NAVIGATION, AND IS SUBJECT TO AN FAA AERONAUTICAL STUDY WHICH WILL DETERMINE WHETHER THE OBSTRUCTION IS IN FACT CONSIDERED A HAZARD.



ONTARIO RUNWAY 15-33 PROFILE

LEGEND

LAND MASS OBSTRUCTION

OBSTRUCTION ITEM CALLOUT

NOTES:
1. NO OBSTRUCTION FLIGHT WAS FLOWN AS PART OF THIS UPDATE. DATE OF PRIOR OBSTACLE SURVEY WAS OCTOBER 2015.
2. AGIS AND DOF OBSTRUCTS ACCOUNTED FOR.
3. USGS MAP OBTAINED FROM: HTTP://GOTO.ARCGISONLINE.COM/MAPS/USA_TOPO_MAPS, COPYRIGHT:© 2013 NATIONAL GEOGRAPHIC SOCIETY, I-CUBED
4. PLAN VIEW DEPICTS ULTIMATE AIRSPACE CONFIGURATION.
5. SEE LAND USE PLAN SHEET AF-11 FOR CITY OF ONTARIO AIRPORT OVERLAY ZONES PROTECTING SURROUNDING AIRSPACE.

HORIZONTAL ACCURACY:
AT A MAP SCALE OF 1"=50' NOT MORE THAN 10% OF ALL WELL-DEFINED PLANIMETRIC FEATURES ARE IN ERROR BY MORE THAN 1.0'
VERTICAL ACCURACY:
CONTOUR INTERVAL 1.0 NOT MORE THAN 10% OF ALL VERTICAL POINTS ARE IN ERROR BY MORE THAN 1/2 THE ABOVE CONTOUR INTERVAL.

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CITY OF ONTARIO
ONTATRIO MUNICIPAL AIRPORT

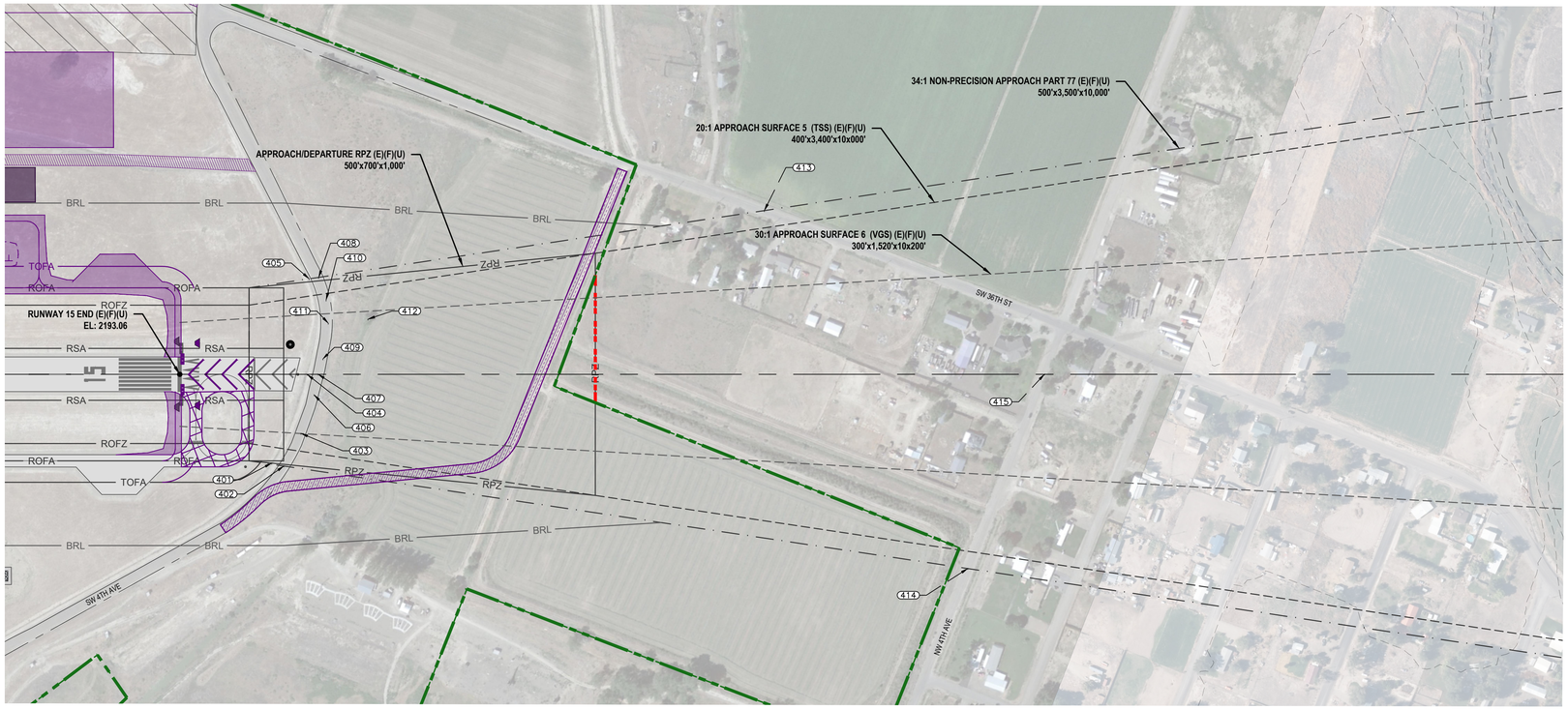
AIRPORT AIRSPACE PLAN

LAST UPDATED: 3/30/2023

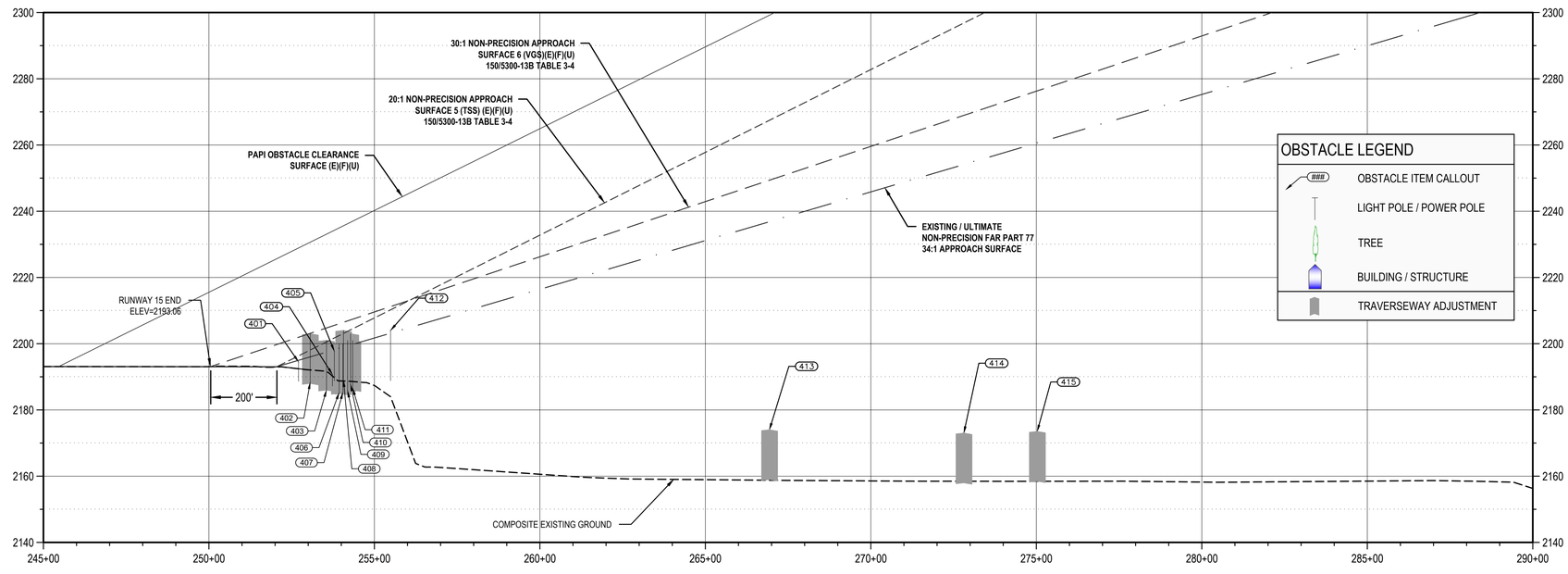
SHEET NUMBER:

AF-4

Plot Date:3/30/2023 5:21 PM Plotted By: Shawn Dulin
Data Created:3/30/2023 \\JUB.COM\CENTRAL\CLIENTS\OR\ONTARIO\CITYPROJECTS\45-21-014 ONTARIO\MP\UPDATE\PLANNING\AIRPORTMASTERPLAN\CAD\ALP\SHEETS\45-21-014_AF-4.DWG



RUNWAY 15 END - PLAN



RUNWAY 15 END - PROFILE

VERTICAL SCALE: 20:1, HORIZONTAL SCALE: 200:1

MODEL: WMM2020
MAGNETIC DECLINATION 13°20'E
JUNE 29, 2022
RATE OF CHANGE
0° 6' W PER YEAR

HORZ 0 200 400

VERT 0 20 40

SCALE IN FEET

OBSTACLES WITHIN RUNWAY 15 APPROACH

OBS ITEM	DESCRIPTION	GND ELEV (FT)	OBJ TOP ELEV (FT)	EXISTING SURFACE PENETRATION (FT)	EXISTING SURFACE PENETRATED	FUTURE/ULTIMATE SURFACE PENETRATION (FT)	FUTURE/ULTIMATE SURFACE PENETRATED	PROPOSED ACTION	PROPOSED ACTION DATE
401	FENCE	2189	2195	-1	APPROACH	-1	APPROACH	N/A	N/A
402	TRAVERSE_WAY 41-023778	2188	2203	7	APPROACH	7	APPROACH	TBD	TBD
403	TRAVERSE_WAY 41-023776	2186	2201	4	APPROACH	4	APPROACH	TBD	TBD
404	FENCE	2185	2191	-7	APPROACH	-7	APPROACH	N/A	N/A
405	FENCE	2192	2198	0	APPROACH	0	APPROACH	N/A	N/A
406	TRAVERSE_WAY 41-023777	2185	2200	1	APPROACH	1	APPROACH	TBD	TBD
407	TRAVERSE_WAY	2185	2200	1	APPROACH	1	APPROACH	TBD	TBD
408	TRAVERSE_WAY	2189	2204	5	APPROACH	5	APPROACH	TBD	TBD
409	TRAVERSE_WAY 41-023779	2186	2201	2	APPROACH	2	APPROACH	TBD	TBD
410	TRAVERSE_WAY 41-023780	2188	2203	3	APPROACH	3	APPROACH	TBD	TBD
411	TRAVERSE_WAY 41-025184	2187	2201	1	APPROACH	1	APPROACH	TBD	TBD
412	TREE 41-023775	2173	2204	1	APPROACH	1	APPROACH	TBD	TBD
413	TRAVERSE_WAY	2159	2174	-63	APPROACH	-63	APPROACH	N/A	N/A
414	TRAVERSE_WAY	2158	2173	-81	APPROACH	-81	APPROACH	N/A	N/A
415	TRAVERSE_WAY	2158	2174	-87	APPROACH	-87	APPROACH	N/A	N/A
416	TRAVERSE_WAY	2158	2173	-95	APPROACH	-95	APPROACH	N/A	N/A

NOTE: NOT ALL SIGNIFICANT OBSTACLES SHOWN ARE OBSTRUCTIONS TO THE EXISTING AND FUTURE 14 CFR PART 77 APPROACH SURFACES. OBJECTS WITH A POSITIVE PENETRATION VALUE PROTRUDING ABOVE THE APPROACH SURFACES WILL BE CONSIDERED OBSTRUCTIONS. ANY PENETRATION TO THE 14 CFR PART 77 IMAGINARY SURFACES, WHETHER MANMADE OR NATURAL GROWTH, IS CLASSIFIED AS AN "OBSTRUCTION." PRESUMED TO BE A HAZARD TO NAVIGATION, AND IS SUBJECT TO AN FAA AERONAUTICAL STUDY WHICH WILL DETERMINE WHETHER THE OBSTRUCTION IS IN FACT CONSIDERED A HAZARD.

CLEARANCE TABLE WITHIN RUNWAY 15 PART 77 APPROACH SURFACES

OBS ITEM	LOCATION	GROUND ELEVATION	TRAVERSE WAY ADJUSTMENT	APPROACH ELEVATION	APPROACH CLEARANCE
402	EAST EDGE OF EXISTING/FUTURE APPROACH AT SW 4TH AVE	2188.4	+15'	2196.0	-7.4'
407	EXISTING/FUTURE APPROACH CENTERLINE AT SW 4TH AVE	2185.3	+15'	2198.9	-1.4'
408	WEST EDGE OF EXISTING/FUTURE APPROACH AT SW 4TH AVE	2189.0'	+15'	2199.0	-5.0'
413	WEST EDGE OF EXISTING/FUTURE APPROACH AT SW 36TH ST	2158.9	+15'	2236.8	62.8
414	EAST EDGE OF EXISTING/FUTURE APPROACH AT NW 4TH AVE	2158.2	+15'	2254.1	81.1
415	EXISTING/FUTURE APPROACH CENTERLINE AT NW 4TH AVE	2158.5	+15'	2260.6	87.1

NOTE : APPROACH CLEARANCE IS MEASURED FROM TOP OF TRAVERSE WAY ADJUSTMENT TO THE APPROACH SURFACE. A POSITIVE VALUE IS THE CLEARANCE FROM THE TOP OF THE TRAVERSE WAY TO THE APPROACH SURFACE. A NEGATIVE VALUE IS THE AMOUNT THE TRAVERSE WAY IS ABOVE THE APPROACH SURFACE.

NOTES:
1. NO OBSTRUCTION FLIGHT WAS FLOWN AS PART OF THIS UPDATE.DATE OF PRIOR OBSTRUCTION SURVEY WAS OCTOBER 2015.
2. AGIS AND DOF OBSTRUCTIONS ACCOUNTED FOR.
3. SEE SHEET AF-9 FOR LINE OF SIGHT PROFILE
4. TAXIWAY EDGE SAFETY MARGIN (TESM): TAXIWAY DESIGN GROUP (TDG) 2A: 7.5 FT (E,F,U)
5. TAXIWAY SHOULDER WIDTH: TAXIWAY DESIGN GROUP (TDG) 2A (E,F,U): 15 FT
6. TAXIWAY OBJECT FREE AREA (TOFA): AIRPLANE DESIGN GROUP(ADG) II: 124 FT (E,F,U)
7. TAXILANE OBJECT FREE AREA (TOFA): AIRPLANE DESIGN GROUP (ADG) II: 110 FT (E,F,U)
8. TAXIWAY/TAXILANE SAFETY AREA (TSA): AIRPLANE DESIGN GROUP (ADG) II: 79 FT (E,F,U)
9. RUNWAY SHOULDER WIDTH: B-II: 10 FT (E,F,U)

LEGEND

EXISTING (E)	FUTURE (F) SHORT TERM	ULTIMATE (U) LONG TERM	DESCRIPTION
			BUILDING/STRUCTURE
			AIRPORT PAVEMENT AND MARKINGS
			PAVEMENT TO BE REMOVED
			ROADWAY
			AIRPORT PROPERTY LINE
			AIRPORT PROPERTY EASEMENTS
			THRESHOLD SITING APPROACH SURFACE (TSS)
			DEPARTURE SURFACE
			PART 77 APPROACH SURFACE
BRL	BRL	BRL	35 FOOT BUILDING RESTRICTION LINE (BRL)
ROFA	ROFA	ROFA	RUNWAY OBJECT FREE AREA (ROFA)
RPZ	RPZ	RPZ	RUNWAY PROTECTION ZONE (RPZ) (APPROACH AND DEPARTURE)
APRZ	APRZ	APRZ	APPROACH RUNWAY PROTECTION ZONE (ARPZ)
DPRZ	DPRZ	DPRZ	DEPARTURE RUNWAY PROTECTION ZONE (DRPZ)
RSA	RSA	RSA	RUNWAY SAFETY AREA (RSA)
ROFZ	ROFZ	ROFZ	RUNWAY OBSTACLE FREE ZONE (ROFZ)
TOFA	TOFA	TOFA	TAXIWAY OBJECT FREE AREA (TOFA)
			NAVAID CRITICAL AREA
X	X	X	FENCE
			THRESHOLD LIGHTS
			LANDING AID (PAPI-2)
			LANDING AID (REILS)
			SUPPLEMENTAL WINDCONE
			AIRPORT REFERENCE POINT (ARP)
			TREE
			GROUND CONTOURS (2' INTERVAL)
			FENCE TO BE RELOCATED
			AIRPORT CONTROL STATION - PACS/SACS

HORIZONTAL ACCURACY:
AT A MAP SCALE OF 1"=50' NOT MORE THAN 10% OF ALL WELL-DEFINED PLANIMETRIC FEATURES ARE IN ERROR BY MORE THAN 1.0'
VERTICAL ACCURACY:
CONTOUR INTERVAL 1.0 NOT MORE THAN 10% OF ALL VERTICAL POINTS ARE IN ERROR BY MORE THAN 1/2 THE ABOVE CONTOUR INTERVAL.

"THE PREPARATION OF THESE DOCUMENTS WAS FINANCED IN PART THROUGH A PLANNING GRANT FROM THE FEDERAL AVIATION ADMINISTRATION AS PROVIDED UNDER SECTION 505 OF THE AIRPORT AND AIRWAY IMPROVEMENT ACT OF 1982, AS AMENDED. THE CONTENTS DO NOT NECESSARILY REFLECT THE OFFICIAL VIEWS OR POLICY OF THE FAA. ACCEPTANCE OF THESE DOCUMENTS BY THE FAA DOES NOT IN ANY WAY CONSTITUTE A COMMITMENT ON THE PART OF THE UNITED STATES TO PARTICIPATE IN ANY DEVELOPMENT DEPICTED HEREIN NOR DOES IT INDICATE THAT THE PROPOSED DEVELOPMENT IS ENVIRONMENTALLY ACCEPTABLE IN ACCORDANCE WITH APPROPRIATE PUBLIC LAWS."

REUSE OF DRAWINGS
J-U-B SHALL RETAIN ALL COMMON LAW, STATUTORY, COPYRIGHT AND OTHER RESERVED RIGHTS OF THESE DRAWINGS, AND THE SAME SHALL NOT BE REUSED WITHOUT J-U-B'S PRIOR WRITTEN CONSENT. ANY REUSE WITHOUT WRITTEN CONSENT BY J-U-B WILL BE AT CLIENT'S SOLE RISK AND WITHOUT LIABILITY OR LEGAL EXPOSURE TO J-U-B.

REVISION

NO.	DESCRIPTION	FAA UPDATE	APR.	DATE

J-U-B ENGINEERS, INC.
2760 W. Excursion Lane
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Meridian, ID 83642
Phone: 208.376.7330
www.jub.com

FILE :	45-21-014_AF-5
JUB PROJ. # :	45-21-014
DRAWN BY:	SMD
DESIGN BY:	SMD
CHECKED BY:	TJE

ONE INCH
AT FULL SIZE, IF NOT ONE INCH, SCALE ACCORDINGLY

CITY OF ONTARIO
ONTARIO MUNICIPAL AIRPORT

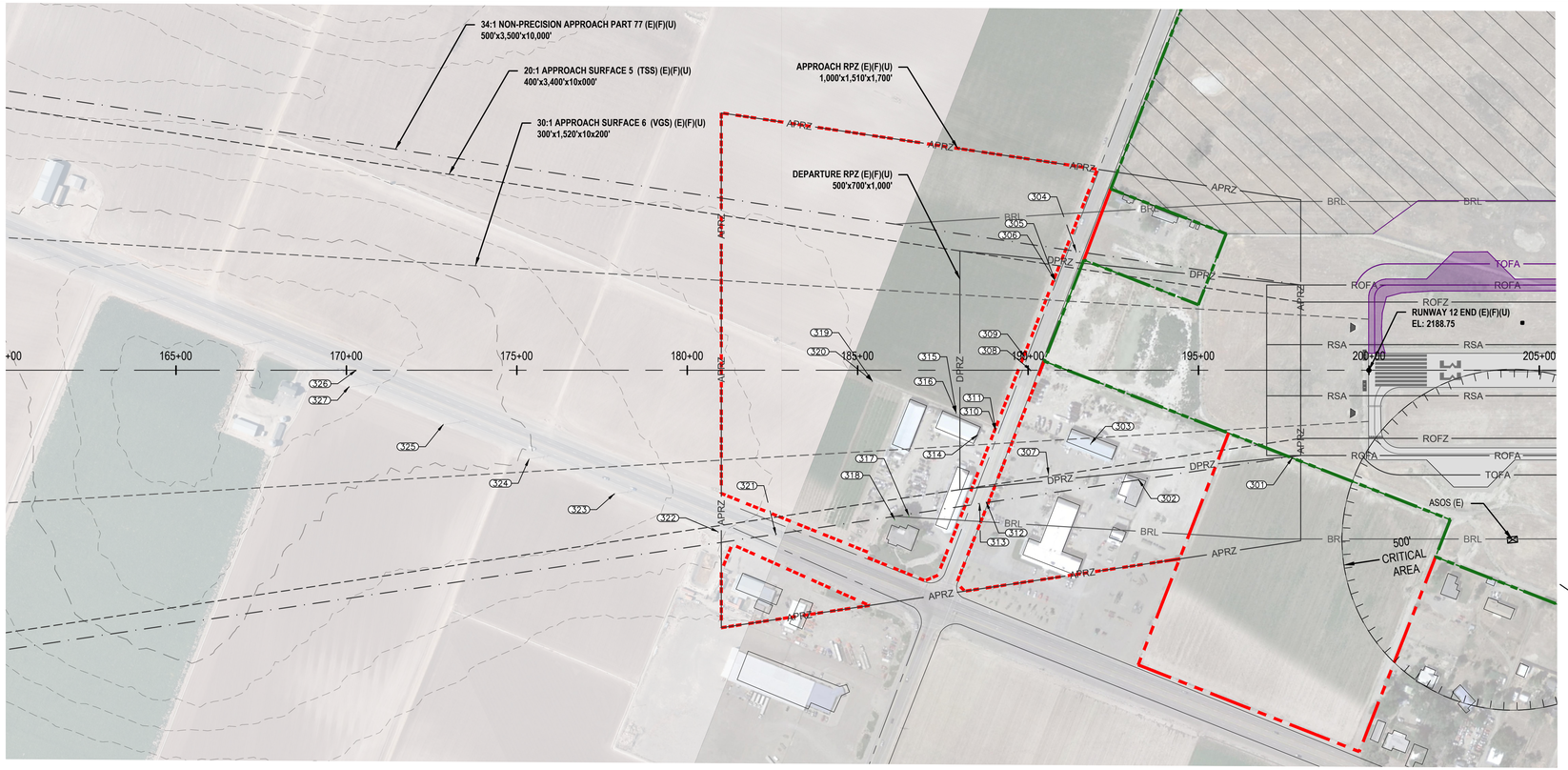
RUNWAY 15 INNER APPROACH SURFACE

LAST UPDATED: 3/31/2023

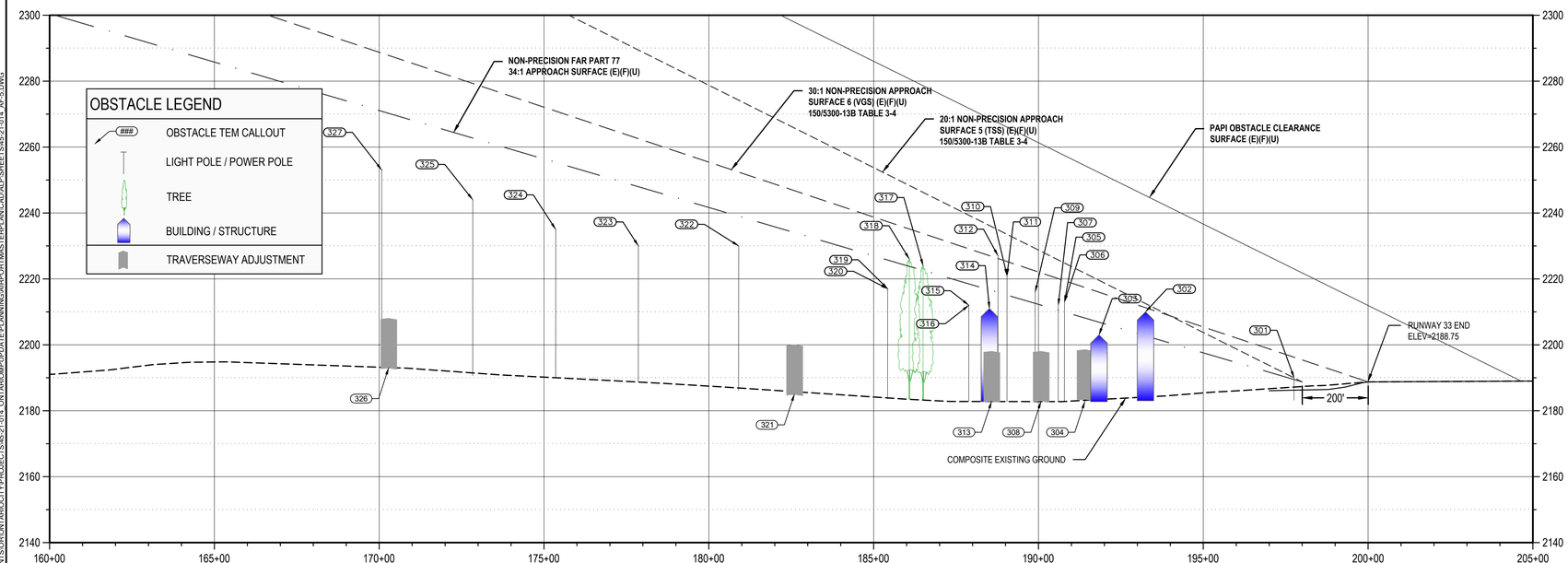
SHEET NUMBER:

AF-5

Plot Date:3/31/2023 11:35 AM Plotted By: Shawn Dulin
Date Created:3/31/2023 J:\JUB.COM\CENTRAL\CLIENTS\OR\ONTARIO\CITYPROJECTS\45-21-014_ONTARIOMPUPDATE\PLANNING\AIRPORTMASTERPLAN\CAD\ALP\SHEETS\45-21-014_AF-5.DWG

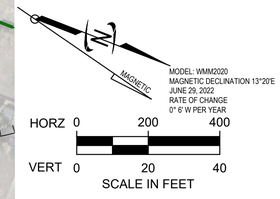


EXISTING RUNWAY 33 END - PLAN



EXISTING RUNWAY 33 END - PROFILE

VERTICAL SCALE: 20:1, HORIZONTAL SCALE: 200:1



OBSTACLES WITHIN RUNWAY 33 APPROACH

OBS ITEM	DESCRIPTION	GND ELEV (FT)	OBJ TOP ELEV (FT)	EXISTING SURFACE PENETRATION (FT)	EXISTING SURFACE PENETRATED	FUTURE/ULTIMATE SURFACE PENETRATION (FT)	FUTURE/ULTIMATE SURFACE PENETRATED	PROPOSED ACTION	PROPOSED ACTION DATE
301	FENCE 41-027458	2183	2190	0	TRANSITIONAL	0	TRANSITIONAL	N/A	N/A
302	BUILDING 41-022069	2183	2210	7	TRANSITIONAL	7	TRANSITIONAL	TBD	TBD
303	BUILDING 41-022088	2183	2203	-4	APPROACH	-4	APPROACH	N/A	N/A
304	TRAVERSE_WAY	2183	2198	-10	APPROACH	-10	APPROACH	N/A	N/A
305	TRANSMISSION_LINE 41-022101	2183	2213	3	APPROACH	3	APPROACH	TBD	TBD
306	POLE 41-024212	2183	2213	3	APPROACH	3	APPROACH	TBD	TBD
307	POLE 41-022104	2183	2212	2	APPROACH	2	APPROACH	TBD	TBD
308	TRAVERSE_WAY	2183	2199	-13	APPROACH	-13	APPROACH	N/A	N/A
309	TRANSMISSION_LINE 41-022091	2183	2216	3	APPROACH	3	APPROACH	TBD	TBD
310	TRANSMISSION_LINE 41-022095	2183	2221	6	APPROACH	6	APPROACH	TBD	TBD
311	POLE 41-023794	2183	2221	6	APPROACH	6	APPROACH	TBD	TBD
312	TRANSMISSION_LINE 41-022090	2183	2227	6	APPROACH	11	APPROACH	N/A	N/A
313	TRAVERSE_WAY	2183	2199	-18	TRANSITIONAL	-18	TRANSITIONAL	N/A	N/A
314	BUILDING 41-022072	2183	2211	-6	APPROACH	-6	APPROACH	N/A	N/A
315	TRANSMISSION_LINE 41-022102	2183	2212	-6	APPROACH	-6	APPROACH	N/A	N/A
316	POLE 41-041866	2183	2212	-6	APPROACH	-6	APPROACH	N/A	N/A
317	TREE 41-027533	2184	2224	1	TRANSITIONAL	1	TRANSITIONAL	TBD	TBD
318	TREE 41-024258	2184	2226	1	TRANSITIONAL	1	TRANSITIONAL	TBD	TBD
319	POLE 41-024213	2184	2217	-9	APPROACH	-9	APPROACH	N/A	N/A
320	TRANSMISSION_LINE 41-022103	2184	2217	-9	APPROACH	-9	APPROACH	N/A	N/A
321	TRAVERSE_WAY	2185	2202	-32	TRANSITIONAL	-32	TRANSITIONAL	N/A	N/A
322	TRANSMISSION_LINE 41-021539	2186	2230	-9	APPROACH	-9	APPROACH	N/A	N/A
323	TRANSMISSION_LINE 41-021540	2189	2230	-18	APPROACH	-18	APPROACH	N/A	N/A
324	TRANSMISSION_LINE 41-021541	2190	2235	-20	APPROACH	-20	APPROACH	N/A	N/A
325	TRANSMISSION_LINE 41-021542	2191	2244	-19	APPROACH	-19	APPROACH	N/A	N/A
326	TRAVERSE_WAY	2193	2210	-60	APPROACH	-60	APPROACH	N/A	N/A
327	TRANSMISSION_LINE 41-021534	2193	2253	-18	APPROACH	-18	APPROACH	N/A	N/A

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CLEARANCE TABLE WITHIN RUNWAY 33 PART 77 APPROACH SURFACES

OBS ITEM	LOCATION	GROUND ELEVATION	TRAVERSE WAY ADJUSTMENT	APPROACH ELEVATION	APPROACH CLEARANCE
304	WEST EDGE OF EXISTING APPROACH AT SW 18TH AVE	2183.4	+15'	2208.1	9.7'
308	EXISTING APPROACH CENTERLINE AT SW 18TH AVE	2182.8	+15'	2212.0	13.3'
313	EAST EDGE OF EXISTING APPROACH AT SW 18TH AVE	2182.8	+15'	2216.5	17.7'
321	EAST EDGE OF EXISTING APPROACH AT HIGHWAY 201	2185.1	+17'	2234.0	31.9'
326	EXISTING APPROACH CENTERLINE AT HIGHWAY 201	2192.9	+17'	2270.2	60.3'

NOTE : APPROACH CLEARANCE IS MEASURED FROM TOP OF TRAVERSE WAY ADJUSTMENT TO THE APPROACH SURFACE. A POSITIVE VALUE IS THE CLEARANCE FROM THE TOP OF THE TRAVERSE WAY TO THE APPROACH SURFACE. A NEGATIVE VALUE IS THE AMOUNT THE TRAVERSE WAY IS ABOVE THE APPROACH SURFACE.

NOTES:
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3. SEE SHEET AF-9 FOR LINE OF SIGHT PROFILE
4. TAXIWAY EDGE SAFETY MARGIN (TESM): TAXIWAY DESIGN GROUP (TDG) 2A: 7.5 FT (E,F,U)
5. TAXIWAY SHOULDER WIDTH, TAXIWAY DESIGN GROUP (TDG) 2A (E,F,U): 15 FT
6. TAXIWAY OBJECT FREE AREA (TOFA): AIRPLANE DESIGN GROUP(ADG) II: 124 FT (E,F,U)
7. TAXILANE OBJECT FREE AREA (TOFA): AIRPLANE DESIGN GROUP (ADG) II: 110 FT (E,F,U)
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9. RUNWAY SHOULDER WIDTH: B-II: 10 FT (E,F,U)

LEGEND

EXISTING (E)	FUTURE (F) SHORT TERM	ULTIMATE (U) LONG TERM	DESCRIPTION
			BUILDING/STRUCTURE
			AIRPORT PAVEMENT AND MARKINGS
			PAVEMENT TO BE REMOVED
			ROADWAY
			AIRPORT PROPERTY LINE
			AIRPORT PROPERTY EASEMENTS
			THRESHOLD SITING APPROACH SURFACE (TSS)
			DEPARTURE SURFACE
			PART 77 APPROACH SURFACE
BRL	BRL	BRL	35 FOOT BUILDING RESTRICTION LINE (BRL)
ROFA	ROFA	ROFA	RUNWAY OBJECT FREE AREA (ROFA)
RPZ	RPZ	RPZ	RUNWAY PROTECTION ZONE (RPZ) (APPROACH AND DEPARTURE)
APRZ	APRZ	APRZ	APPROACH RUNWAY PROTECTION ZONE (ARPZ)
DPRZ	DPRZ	DPRZ	DEPARTURE RUNWAY PROTECTION ZONE (DRPZ)
RSA	RSA	RSA	RUNWAY SAFETY AREA (RSA)
ROFZ	ROFZ	ROFZ	RUNWAY OBSTACLE FREE ZONE (ROFZ)
TOFA	TOFA	TOFA	TAXIWAY OBJECT FREE AREA (TOFA)
			NAVAID CRITICAL AREA
X	X	X	FENCE
			THRESHOLD LIGHTS
			LANDING AID (PAPI-2)
			LANDING AID (REILS)
			SUPPLEMENTAL WINDCONE
			AIRPORT REFERENCE POINT (ARP)
			TREE
			GROUND CONTOURS (2' INTERVAL)
			FENCE TO BE RELOCATED
			AIRPORT CONTROL STATION - PACS/SACS

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REVISION				
NO.	DESCRIPTION	FAA UPDATE	APR.	DATE

J-U-B ENGINEERS, INC.
2760 W. Excursion Lane
Suite 400
Meridian, ID 83642
Phone: 208.376.7330
www.jub.com

FILE :	45-21-014_AF-5
JUB PROJ. # :	45-21-014
DRAWN BY:	SMD
DESIGN BY:	SMD
CHECKED BY:	TJE

ONE INCH
AT FULL SIZE, IF NOT ONE INCH, SCALE ACCORDINGLY

CITY OF ONTARIO
ONTARIO MUNICIPAL AIRPORT

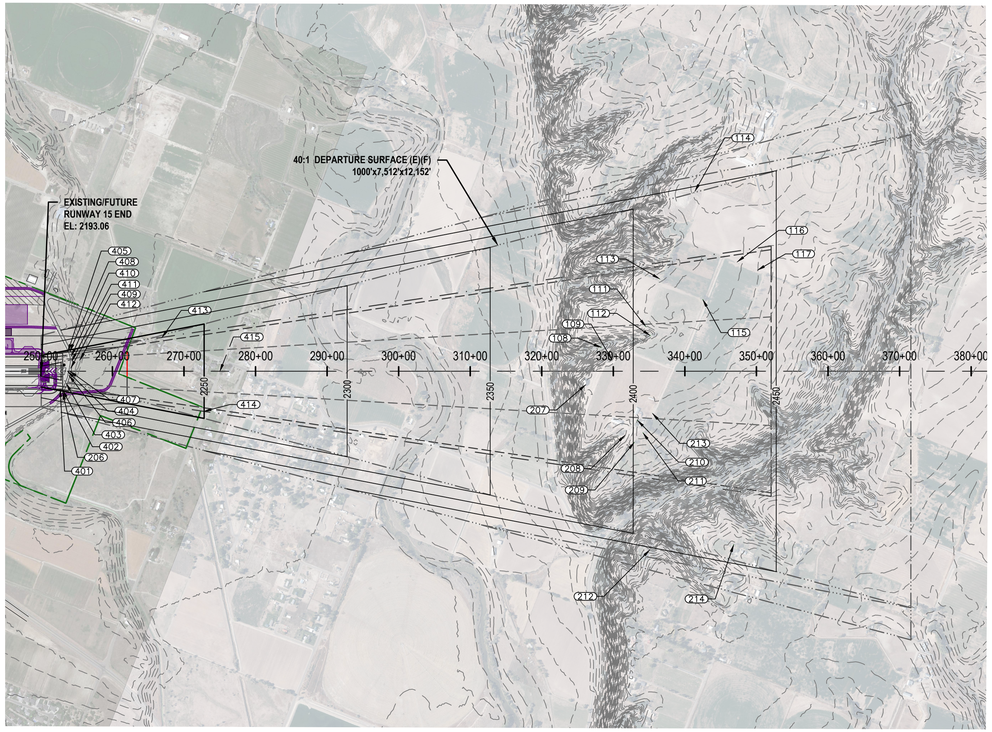
RUNWAY 33 INNER APPROACH SURFACE

LAST UPDATED: 3/31/2023

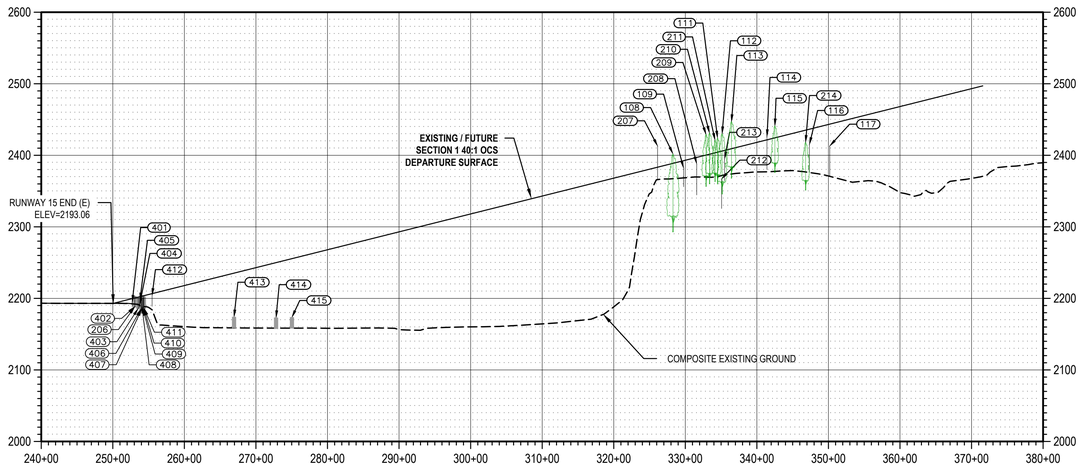
SHEET NUMBER:

AF-6

Plot Date:3/31/2023 11:32 AM Plotted By: Shawn Dulin
Date Created:3/31/2023 J:\JUB.COM\CENTRAL\CLIENTS\ORONTARIOCITY\PROJECTS\45-21-014_ONTARIOMPUPDATE\PLANNING\AIRPORTMASTERPLAN\CAD\ALP SHEETS\45-21-014_AF-5.DWG



RUNWAY 15 END - PLAN



RUNWAY 15 END - PROFILE

VERTICAL SCALE: 20:1, HORIZONTAL SCALE: 200:1

CLEARANCE TABLE WITHIN RUNWAY 15 END DEPARTURE SURFACE

OBS ITEM	LOCATION	GROUND ELEVATION	TRAVERSE WAY ADJUSTMENT	DEPARTURE ELEVATION	DEPARTURE CLEARANCE
402	SW 4TH AVE EAST OF CENTERLINE	2188.4	+15'	2245.4	42.0'
407	SW 4TH AVE AT CENTERLINE	2185.3	+15'	2203.1	2.8'
408	SW 4TH AVE WEST OF CENTERLINE	2189.0'	+15'	2244.0	40.0'
413	SW 36TH ST WEST OF CENTERLINE	2158.9	+15'	2235.3	61.4'
414	NW 4TH AVE EAST OF CENTERLINE	2158.2	+15'	2250.0	76.8'
415	NW 4TH AVE AT CENTERLINE	2158.5	+15'	2255.5	82.0'

NOTE : DEPARTURE CLEARANCE IS MEASURED FROM TOP OF TRAVERSE WAY ADJUSTMENT TO THE DEPARTURE SURFACE. A POSITIVE VALUE IS THE CLEARANCE FROM THE TOP OF THE TRAVERSE WAY TO THE DEPARTURE SURFACE. A NEGATIVE VALUE IS THE AMOUNT THE TRAVERSE WAY IS ABOVE THE DEPARTURE SURFACE.

OBSTACLES WITHIN RUNWAY 15 END DEPARTURE SURFACE

OBS ITEM	DESCRIPTION	GND ELEV (FT)	OBJ TOP ELEV (FT)	EXISTING/FUTURE SURFACE PENETRATION (FT)	PROPOSED ACTION	PROPOSED ACTION DATE
108	TREE 41-023773	2293	2402	13	TBD	TBD
109	POLE 41-022060	2357	2382	-10	NONE	N/A
111	TREE 41-023772	2361	2424	20	TBD	TBD
112	TREE 41-024503	2346	2430	24	TBD	TBD
113	TREE 41-027627	2368	2447	38	TBD	TBD
114	POLE 41-027583	2380	2426	-2	NONE	N/A
115	TREE 41-027545	2347	2441	17	TBD	TBD
116	POLE 41-027626	2376	2415	-21	NONE	N/A
117	POLE 41-041899	2370	2413	-31	NONE	N/A
206	TRAVERSE_WAY 41-027507	2184	2204	-51	NONE	N/A
207	TOWER 41-022075	2366	2413	30	TBD	TBD
208	POLE 41-027547	2344	2388	-9	NONE	N/A
209	TREE 41-027548	2357	2429	29	TBD	TBD
210	TREE 41-041864	2360	2431	29	TBD	TBD
211	TREE 41-027549	2363	2421	18	TBD	TBD
212	POLE 41-027501	2326	2367	-96	NONE	N/A
213	POLE 41-027546	2365	2395	-12	NONE	N/A
214	TREE 41-027550	2351	2418	-17	NONE	N/A
401	FENCE	2189	2195	-50	NONE	N/A
402	TRAVERSE_WAY 41-023778	2188	2203	-42	NONE	N/A
403	TRAVERSE_WAY 41-023776	2186	2201	-10	NONE	N/A
404	FENCE	2185	2191	-12	NONE	N/A
405	FENCE	2192	2198	-47	NONE	N/A
406	TRAVERSE_WAY 41-023777	2185	2200	-3	NONE	N/A
407	TRAVERSE_WAY	2185	2200	-3	NONE	N/A
408	TRAVERSE_WAY	2189	2204	-40	NONE	N/A
409	TRAVERSE_WAY 41-023779	2186	2201	-2	NONE	N/A
410	TRAVERSE_WAY 41-023780	2188	2203	-18	NONE	N/A
411	TRAVERSE_WAY 41-025184	2187	2201	-3	NONE	N/A
412	TREE 41-023775	2173	2204	-3	NONE	N/A
413	TRAVERSE_WAY	2159	2174	-61	NONE	N/A
414	TRAVERSE_WAY	2158	2173	-77	NONE	N/A
415	TRAVERSE_WAY	2158	2174	-82	NONE	N/A
416	TRAVERSE_WAY	2158	2173	-95	NONE	N/A

NOTE: NOT ALL SIGNIFICANT OBSTACLES SHOWN ARE OBSTRUCTIONS TO THE EXISTING AND FUTURE DEPARTURE SURFACE. OBJECTS WITH A POSITIVE PENETRATION VALUE PROTRUDING ABOVE THE DEPARTURE SURFACE WILL BE CONSIDERED OBSTRUCTIONS AND WILL NEED TO BE DETERMINED WHETHER THE OBSTRUCTION IS IN FACT CONSIDERED A HAZARD.

MODEL: WMM2020
MAGNETIC DECLINATION 13°20'E
JUNE 29, 2022
RATE OF CHANGE
0° 6' W PER YEAR

HORZ 0 1000 2000
VERT 0 100 200
SCALE IN FEET

OBSTACLE LEGEND

- OBSTACLE ITEM CALLOUT
- LIGHT POLE / POWER POLE
- TREE
- BUILDING / STRUCTURE
- TRAVERSEWAY ADJUSTMENT

LEGEND			
EXISTING (E)	FUTURE (F) SHORT TERM	ULTIMATE (U) LONG TERM	DESCRIPTION
			BUILDING/STRUCTURE
			AIRPORT PAVEMENT AND MARKINGS
			PAVEMENT TO BE REMOVED
			ROADWAY
			AIRPORT PROPERTY LINE
			DEPARTURE SURFACE
			NAVAID CRITICAL AREA
			FENCE
			THRESHOLD LIGHTS
			LANDING AID (PAPI-2)
			LANDING AID (REILS)
			TREE
			GROUND CONTOURS (5' INTERVAL)

NOTES:
1. NO OBSTRUCTION FLIGHT WAS FLOWN AS PART OF THIS UPDATE.DATE OF PRIOR OBSTRUCTION SURVEY WAS OCTOBER 2015.
2. AGIS AND DOF OBSTRUCTIONS ACCOUNTED FOR.
3. SEE SHEET AF-9 FOR LINE OF SIGHT PROFILE
4. TAXIWAY EDGE SAFETY MARGIN (TESM); TAXIWAY DESIGN GROUP (TDG) 2A: 7.5 FT (E,F,U)
5. TAXIWAY SHOULDER WIDTH: TAXIWAY DESIGN GROUP (TDG) 2A (E,F,U): 15 FT
6. TAXIWAY OBJECT FREE AREA (TOFA); AIRPLANE DESIGN GROUP(ADG) II: 124 FT (E,F,U)
7. TAXILANE OBJECT FREE AREA (TOFA); AIRPLANE DESIGN GROUP (ADG) II: 110 FT (E,F,U)
8. TAXIWAY/TAXILANE SAFETY AREA (TSA); AIRPLANE DESIGN GROUP (ADG) II: 79 FT (E,F,U)
9. RUNWAY SHOULDER WIDTH; B-II: 10 FT (E,F,U)

HORIZONTAL ACCURACY:
AT A MAP SCALE OF 1"=50' NOT MORE THAN 10% OF ALL WELL-DEFINED PLANIMETRIC FEATURES ARE IN ERROR BY MORE THAN 1.0'
VERTICAL ACCURACY:
CONTOUR INTERVAL 1.0 NOT MORE THAN 10% OF ALL VERTICAL POINTS ARE IN ERROR BY MORE THAN 1/2 THE ABOVE CONTOUR INTERVAL.

"THE PREPARATION OF THESE DOCUMENTS WAS FINANCED IN PART THROUGH A PLANNING GRANT FROM THE FEDERAL AVIATION ADMINISTRATION AS PROVIDED UNDER SECTION 505 OF THE AIRPORT AND AIRWAY IMPROVEMENT ACT OF 1982, AS AMENDED. THE CONTENTS DO NOT NECESSARILY REFLECT THE OFFICIAL VIEWS OR POLICY OF THE FAA. ACCEPTANCE OF THESE DOCUMENTS BY THE FAA DOES NOT IN ANY WAY CONSTITUTE A COMMITMENT ON THE PART OF THE UNITED STATES TO PARTICIPATE IN ANY DEVELOPMENT DEPICTED HEREIN NOR DOES IT INDICATE THAT THE PROPOSED DEVELOPMENT IS ENVIRONMENTALLY ACCEPTABLE IN ACCORDANCE WITH APPROPRIATE PUBLIC LAWS."

REUSE OF DRAWINGS
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REVISION				
NO.	DESCRIPTION	FAA UPDATE	APR.	DATE

J-U-B ENGINEERS, INC.
2760 W. Excursion Lane
Suite 400
Meridian, ID 83642
Phone: 208.376.7330
www.jub.com

FILE :	45-21-014_AF-7X
JUB PROJ. # :	45-21-014
DRAWN BY:	SMD
DESIGN BY:	SMD
CHECKED BY:	TJE

ONE INCH
AT FULL SIZE, IF NOT ONE INCH, SCALE ACCORDINGLY

CITY OF ONTARIO
ONTATRIO MUNICIPAL AIRPORT

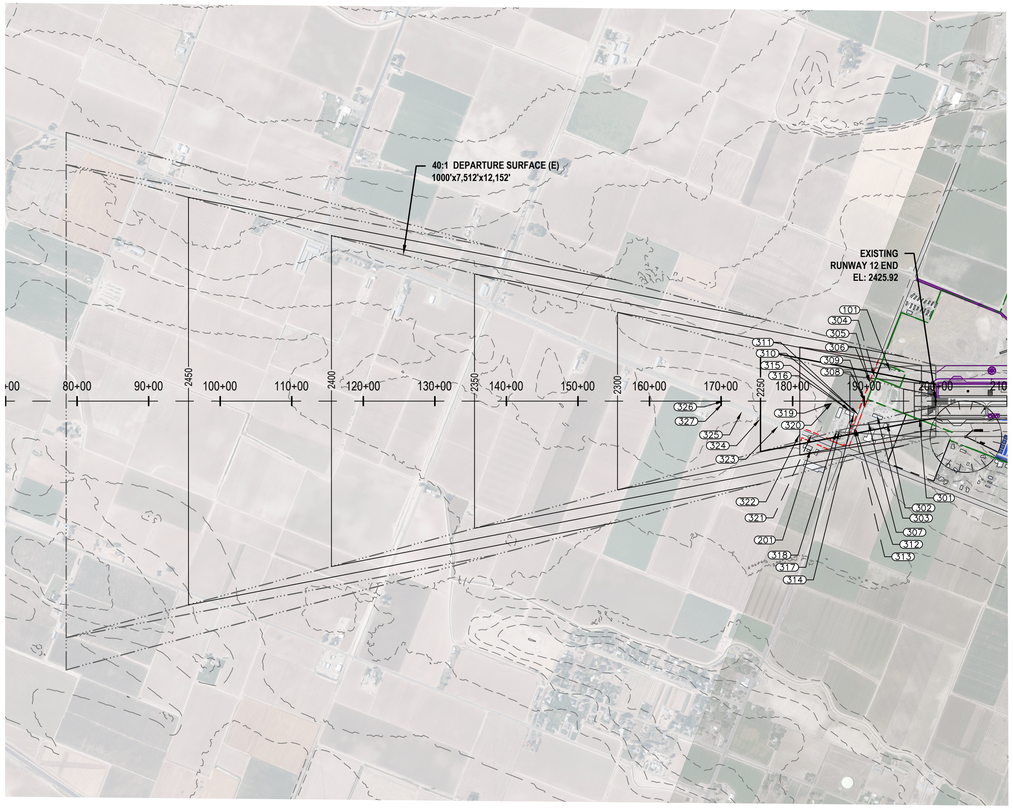
RUNWAY 15 END DEPARTURE SURFACE

LAST UPDATED: 3/31/2023

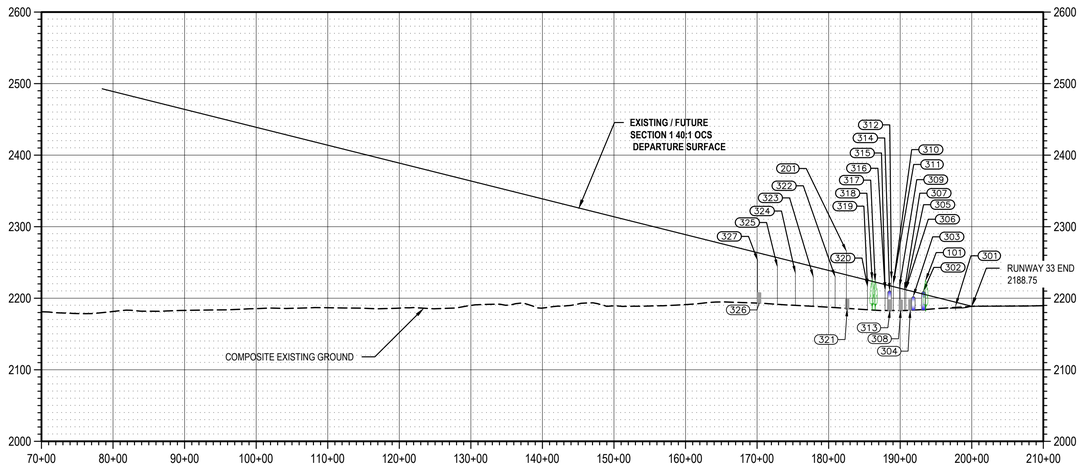
SHEET NUMBER:

AF-7

Plot Date:3/31/2023 1:02 PM Plotted By: Shawn Dulin
Date Created:3/31/2023 \\JUB.COM\CENTRAL\CLIENTS\ORONTARIOCITY\PROJECTS\45-21-014_ONTARIO\MIP\UPDATE PLANNING\AIRPORT\MASTER\PLAN\CAD\ALP SHEETS\45-21-014_AF-7X.DWG



EXISTING RUNWAY 33 END - PLAN



EXISTING RUNWAY 33 END - PROFILE

VERTICAL SCALE: 20:1, HORIZONTAL SCALE: 200:1

CLEARANCE TABLE WITHIN RUNWAY 33 END DEPARTURE SURFACE

OBS ITEM	LOCATION	GROUND ELEVATION	TRAVERSE WAY ADJUSTMENT	DEPARTURE ELEVATION	DEPARTURE CLEARANCE
304	SW 18TH AVE WEST OF CENTERLINE	2188.4	+15'	2233.1	34.7'
308	SW 18TH AVE AT CENTERLINE	2182.8	+15'	2213.6	14.8
313	SW 18TH AVE EAST OF CENTERLINE	2182.8	+15'	2229.1	30.3'
321	HIGHWAY 201 EAST OF CENTERLINE	2185.1	+17'	2232.3	30.2
326	HIGHWAY 201 AT CENTERLINE	2192.9	+17'	2283.1	53.2'

NOTE : DEPARTURE CLEARANCE IS MEASURED FROM TOP OF TRAVERSE WAY ADJUSTMENT TO THE DEPARTURE SURFACE. A POSITIVE VALUE IS THE CLEARANCE FROM THE TOP OF THE TRAVERSE WAY TO THE DEPARTURE SURFACE. A NEGATIVE VALUE IS THE AMOUNT THE TRAVERSE WAY IS ABOVE THE DEPARTURE SURFACE.

OBSTACLES WITHIN RUNWAY 33 END DEPATURE SURFACE

OBS ITEM	DESCRIPTION	GND ELEV (FT)	OBJ TOP ELEV (FT)	EXISTING/FUTURE SURFACE PENETRATION (FT)	PROPOSED ACTION	PROPOSED ACTION DATE
101	TREE 41-027456	2182	2225	-51	NONE	N/A
201	ANTENNA 41-027535	2184	2266	-23	NONE	N/A
301	FENCE 41-027458	2183	2190	-53	NONE	N/A
302	BUILDING 41-022069	2183	2210	-26	NONE	N/A
303	BUILDING 41-022088	2183	2203	-6	NONE	N/A
304	TRAVERSE_WAY	2183	2198	-35	NONE	N/A
305	TRANSMISSION_LINE 41-022101	2183	2213	1	TBD	TBD
306	POLE 41-024212	2183	2213	1	TBD	TBD
307	POLE 41-022104	2183	2212	-2	NONE	N/A
308	TRAVERSE_WAY	2183	2199	-15	NONE	N/A
309	TRANSMISSION_LINE 41-022091	2183	2216	2	TBD	TBD
310	TRANSMISSION_LINE 41-022095	2183	2221	5	TBD	TBD
311	POLE 41-023794	2183	2221	5	TBD	TBD
312	TRANSMISSION_LINE 41-022090	2183	2227	-2	NONE	N/A
313	TRAVERSE_WAY	2183	2199	-30	NONE	N/A
314	BUILDING 41-022072	2183	2211	-6	NONE	N/A
315	TRANSMISSION_LINE 41-022102	2183	2212	-7	NONE	N/A
316	POLE 41-041866	2183	2212	-7	NONE	N/A
317	TREE 41-027533	2184	2224	-4	NONE	N/A
318	TREE 41-024258	2184	2226	-2	NONE	N/A
319	POLE 41-024213	2184	2217	-8	NONE	N/A
320	TRANSMISSION_LINE 41-022103	2184	2217	-8	NONE	N/A
321	TRAVERSE_WAY	2185	2200	-32	NONE	N/A
322	TRANSMISSION_LINE 41-021539	2186	2230	-7	NONE	N/A
323	TRANSMISSION_LINE 41-021540	2189	2230	-14	NONE	N/A
324	TRANSMISSION_LINE 41-021541	2190	2235	-15	NONE	N/A
325	TRANSMISSION_LINE 41-021542	2191	2244	-13	NONE	N/A
326	TRAVERSE_WAY	2193	2208	-55	NONE	N/A
327	TRANSMISSION_LINE 41-021534	2193	2253	-11	NONE	N/A

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MODEL: WMM2020
MAGNETIC DECLINATION 13°20'E
JUNE 29, 2022
RATE OF CHANGE
0° 6' W PER YEAR

HORZ 0 1000 2000
VERT 0 100 200
SCALE IN FEET

OBSTACLE LEGEND

- OBSTACLE ITEM CALLOUT
- LIGHT POLE / POWER POLE
- TREE
- BUILDING / STRUCTURE
- TRAVERSEWAY ADJUSTMENT

LEGEND			
EXISTING (E)	FUTURE (F) SHORT TERM	ULTIMATE (U) LONG TERM	DESCRIPTION
			BUILDING/STRUCTURE
N	N	N	AIRPORT PAVEMENT AND MARKINGS
			PAVEMENT TO BE REMOVED
			ROADWAY
			AIRPORT PROPERTY LINE
			DEPARTURE SURFACE
			NAVAID CRITICAL AREA
x	x	x	FENCE
			THRESHOLD LIGHTS
			LANDING AID (PAPI-2)
			LANDING AID (REILS)
			TREE
			GROUND CONTOURS (5' INTERVAL)

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2. AGIS AND DOF OBSTRUCTIONS ACCOUNTED FOR.
3. SEE SHEET AF-9 FOR LINE OF SIGHT PROFILE
4. TAXIWAY EDGE SAFETY MARGIN (TESM); TAXIWAY DESIGN GROUP (TDG) 2A: 7.5 FT (E,F,U)
5. TAXIWAY SHOULDER WIDTH; TAXIWAY DESIGN GROUP (TDG) 2A (E,F,U): 15 FT
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7. TAXILANE OBJECT FREE AREA (TOFA); AIRPLANE DESIGN GROUP (ADG) II: 110 FT (E,F,U)
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REVISION

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J-U-B ENGINEERS, INC.
2760 W. Excursion Lane
Suite 400
Meridian, ID 83642
Phone: 208.376.7330
www.jub.com

FILE : 45-21-014_AF-7X
JUB PROJ. # : 45-21-014
DRAWN BY: SMD
DESIGN BY: SMD
CHECKED BY: TJE

ONE INCH
AT FULL SIZE, IF NOT ONE INCH, SCALE ACCORDINGLY

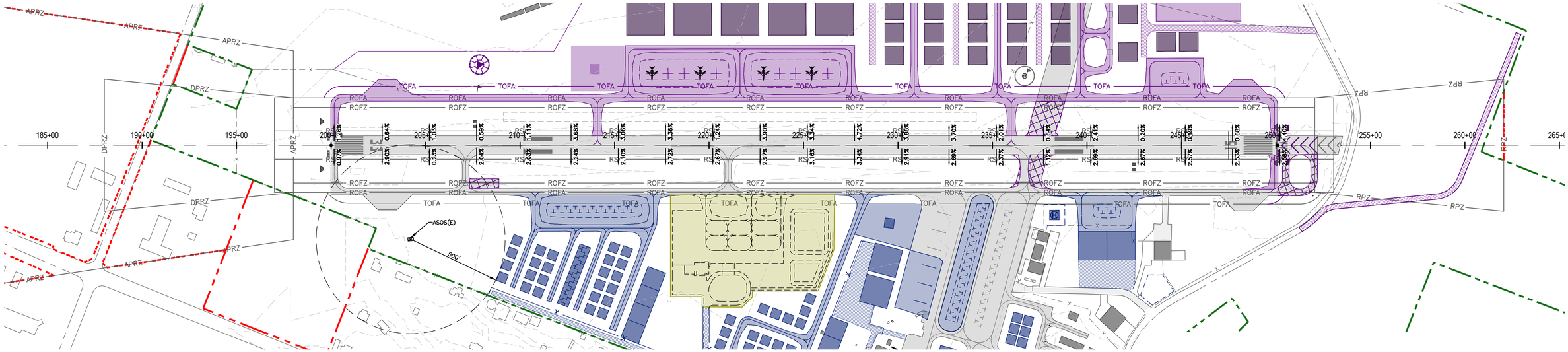
LAST UPDATED: 3/31/2023

CITY OF ONTARIO
ONTARIO MUNICIPAL AIRPORT

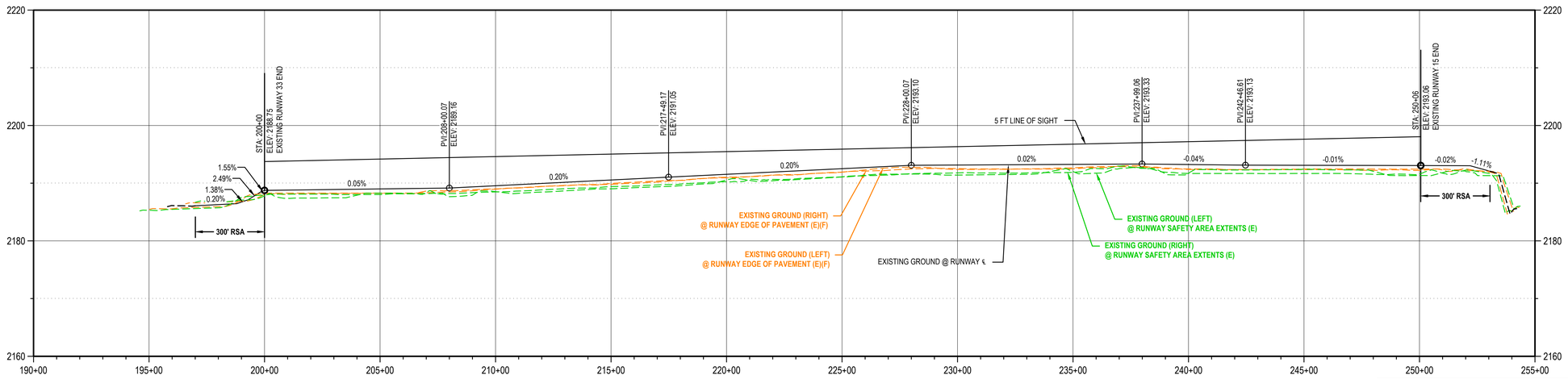
RUNWAY 33 END DEPARTURE SURFACE

SHEET NUMBER:
AF-8

Plot Date:3/31/2023 1:27 PM Plotted By: Shawn Dulin
Date Created:3/31/2023 J:\JUB.COM\CENTRAL\CLIENTS\OR\ONTARIO\CITY\PROJECTS\45-21-014_ONTARIOMPU\PUDATE\PLANNING\AIRPORTMASTERPLAN\CAD\ALP\SHEETS\45-21-014_AF-7X.DWG

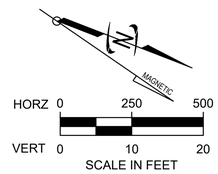


RUNWAY 15-33 PLAN



RUNWAY 15-33 PROFILE

VERTICAL SCALE: 10:1, HORIZONTAL SCALE: 250:1



MODEL: WMM2020
MAGNETIC DECLINATION 13°20'E
JUNE 29, 2022
RATE OF CHANGE
0° 6' W PER YEAR

LEGEND			
EXISTING (E)	FUTURE (F) SHORT TERM	ULTIMATE (U) LONG TERM	DESCRIPTION
			BUILDING/STRUCTURE
			AIRPORT PAVEMENT AND MARKINGS
			ROADWAY
			AIRPORT PROPERTY LINE
ROFA	ROFA	ROFA	RUNWAY OBJECT FREE AREA (ROFA)
RPZ	RPZ	RPZ	RUNWAY PROTECTION ZONE (RPZ) (APPROACH AND DEPARTURE)
APRZ	APRZ	APRZ	APPROACH RUNWAY PROTECTION ZONE (ARPZ)
DPRZ	DPRZ	DPRZ	DEPARTURE RUNWAY PROTECTION ZONE (DRPZ)
RSA	RSA	RSA	RUNWAY SAFETY AREA (RSA)
ROFZ	ROFZ	ROFZ	RUNWAY OBSTACLE FREE ZONE (ROFZ)
TOFA	TOFA	TOFA	TAXIWAY OBJECT FREE AREA (TOFA)
X	X	X	FENCE
			THRESHOLD LIGHTS
			LANDING AID (PAPI-2)
			LANDING AID (REILS)
			SUPPLEMENTAL WINDCONE
			GROUND CONTOURS (2' INTERVAL)

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REVISION

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J-U-B ENGINEERS, INC.
2760 W. Excursion Ln.
Suite 400
Meridian, ID 83642

Phone: 208.376.7330
www.jub.com

FILE :	45-21-014_AF-9
JUB PROJ. # :	45-21-014
DRAWN BY:	SMD
DESIGN BY:	SMD
CHECKED BY:	TJE

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CITY OF ONTARIO
ONTATRIO MUNICIPAL AIRPORT

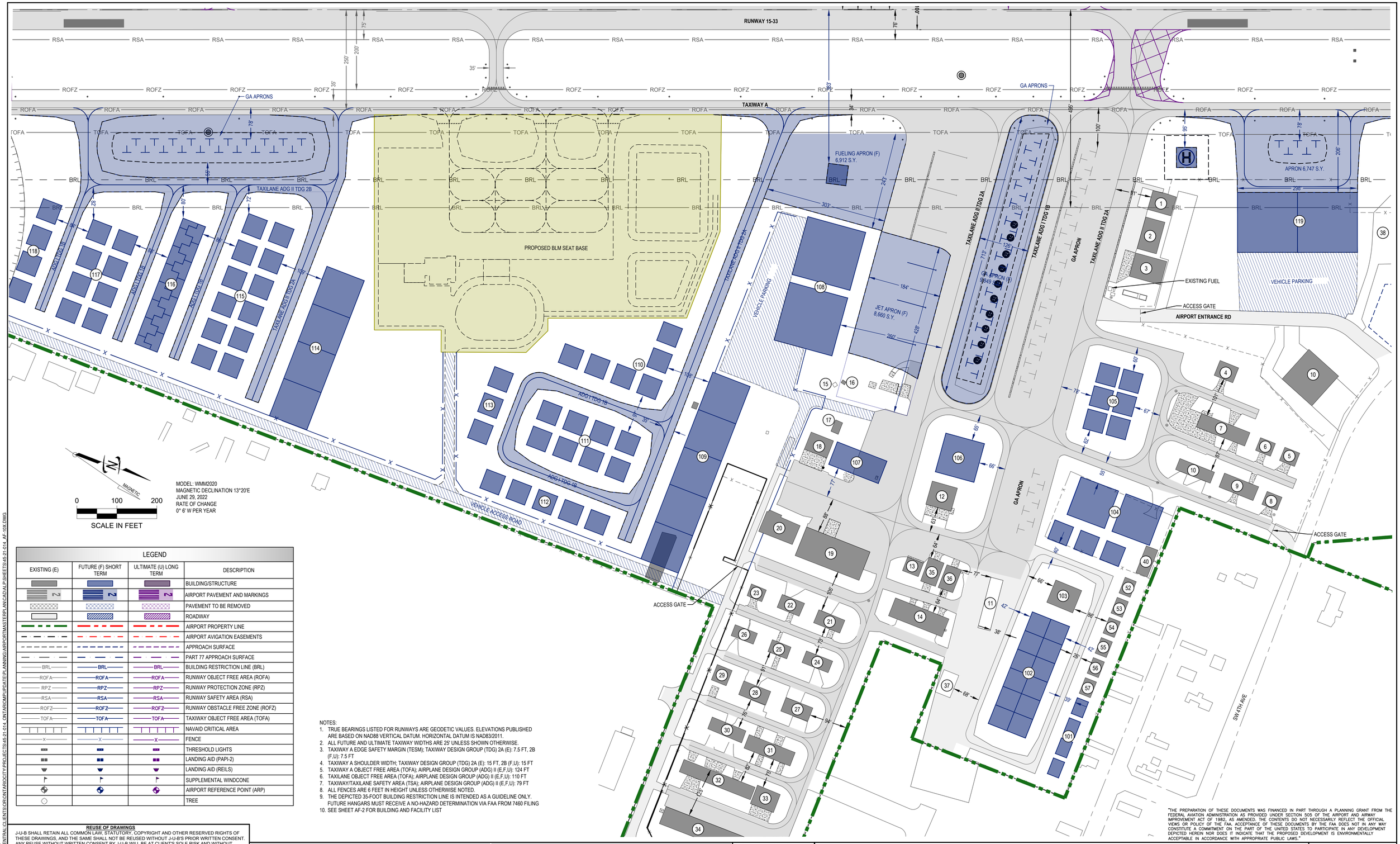
RUNWAY CENTERLINE PLAN AND PROFILE

LAST UPDATED: 3/30/2023

SHEET NUMBER:

AF-9

Plot Date: 3/30/2023 3:42 PM Plotted By: Shawn Dulin
Date Created: 2/2/2023 \\JUB.COM\CENTRAL\CLIENTS\OR\ONTARIO\CITYPROJECTS\45-21-014 ONTARIOMPUPDATE\PLANNING\AIRPORTMASTERPLAN\CAD\ALP\SHEETS\45-21-014_AF-9.DWG



LEGEND			
EXISTING (E)	FUTURE (F) SHORT TERM	ULTIMATE (U) LONG TERM	DESCRIPTION
			BUILDING/STRUCTURE
			AIRPORT PAVEMENT AND MARKINGS
			PAVEMENT TO BE REMOVED
			ROADWAY
			AIRPORT PROPERTY LINE
			AIRPORT AVIGATION EASEMENTS
			APPROACH SURFACE
			PART 77 APPROACH SURFACE
BRL	BRL	BRL	BUILDING RESTRICTION LINE (BRL)
ROFA	ROFA	ROFA	RUNWAY OBJECT FREE AREA (ROFA)
RPZ	RPZ	RPZ	RUNWAY PROTECTION ZONE (RPZ)
RSA	RSA	RSA	RUNWAY SAFETY AREA (RSA)
ROFZ	ROFZ	ROFZ	RUNWAY OBSTACLE FREE ZONE (ROFZ)
TOFA	TOFA	TOFA	TAXIWAY OBJECT FREE AREA (TOFA)
			NAVAID CRITICAL AREA
X	X	X	FENCE
			THRESHOLD LIGHTS
			LANDING AID (PAPI-2)
			LANDING AID (REILS)
			SUPPLEMENTAL WINDCONE
			AIRPORT REFERENCE POINT (ARP)
			TREE

NOTES:
1. TRUE BEARINGS LISTED FOR RUNWAYS ARE GEODETIC VALUES. ELEVATIONS PUBLISHED ARE BASED ON NAD88 VERTICAL DATUM. HORIZONTAL DATUM IS NAD83/2011.
2. ALL FUTURE AND ULTIMATE TAXIWAY WIDTHS ARE 25' UNLESS SHOWN OTHERWISE.
3. TAXIWAY A EDGE SAFETY MARGIN (TESM); TAXIWAY DESIGN GROUP (TDG) 2A (E): 7.5 FT, 2B (F,U): 7.5 FT
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7. TAXIWAY/TAXILANE SAFETY AREA (TSA); AIRPLANE DESIGN GROUP (ADG) II (E,F,U): 79 FT
8. ALL FENCES ARE 6 FEET IN HEIGHT UNLESS OTHERWISE NOTED.
9. THE DEPICTED 35-FOOT BUILDING RESTRICTION LINE IS INTENDED AS A GUIDELINE ONLY. FUTURE HANGARS MUST RECEIVE A NO-HAZARD DETERMINATION VIA FAA FROM 7460 FILING
10. SEE SHEET AF-2 FOR BUILDING AND FACILITY LIST

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DESIGN BY:	SMD
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CITY OF ONTARIO
ONTARIO MUNICIPAL AIRPORT

TERMINAL AREA PLAN - EAST

LAST UPDATED: 3/30/2023

SHEET NUMBER:

AF-10

"THE PREPARATION OF THESE DOCUMENTS WAS FINANCED IN PART THROUGH A PLANNING GRANT FROM THE FEDERAL AVIATION ADMINISTRATION AS PROVIDED UNDER SECTION 505 OF THE AIRPORT AND AIRWAY IMPROVEMENT ACT OF 1982, AS AMENDED. THE CONTENTS DO NOT NECESSARILY REFLECT THE OFFICIAL VIEWS OR POLICY OF THE FAA. ACCEPTANCE OF THESE DOCUMENTS BY THE FAA DOES NOT IN ANY WAY CONSTITUTE A COMMITMENT ON THE PART OF THE UNITED STATES TO PARTICIPATE IN ANY DEVELOPMENT DEPICTED HEREIN NOR DOES IT INDICATE THAT THE PROPOSED DEVELOPMENT IS ENVIRONMENTALLY ACCEPTABLE IN ACCORDANCE WITH APPROPRIATE PUBLIC LAWS."

Plot Date:3/30/2023 3:56 PM Plotted By: Shawn Dulin
Date Created:3/1/2023 J:\JUB.COM\CENTRAL\CLIENTS\ONTARIO\CITY\PROJECTS\45-21-014_ONTARIOMPUPDATE\PLANNING\AIRPORTMASTERPLAN\CAD\ALP\SHEETS\45-21-014_AF-10X.DWG

LEGEND			
EXISTING (E)	FUTURE (F) SHORT TERM	ULTIMATE (U) LONG TERM	DESCRIPTION
			BUILDING/STRUCTURE
2	2	2	AIRPORT PAVEMENT AND MARKINGS
			PAVEMENT TO BE REMOVED
			ROADWAY
			AIRPORT PROPERTY LINE
			AIRPORT AVIGATION EASEMENTS
			APPROACH SURFACE
			PART 77 APPROACH SURFACE
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RPZ	RPZ	RPZ	RUNWAY PROTECTION ZONE (RPZ)
RSA	RSA	RSA	RUNWAY SAFETY AREA (RSA)
ROFZ	ROFZ	ROFZ	RUNWAY OBSTACLE FREE ZONE (ROFZ)
TOFA	TOFA	TOFA	TAXIWAY OBJECT FREE AREA (TOFA)
			NAVAID CRITICAL AREA
X	X	X	FENCE
			THRESHOLD LIGHTS
			LANDING AID (PAPI-2)
			LANDING AID (REILS)
			SUPPLEMENTAL WINDCONE
			AIRPORT REFERENCE POINT (ARP)
			TREE

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1. TRUE BEARINGS LISTED FOR RUNWAYS ARE GEODETIC VALUES. ELEVATIONS PUBLISHED ARE BASED ON NAD88 VERTICAL DATUM. HORIZONTAL DATUM IS NAD83/2011.
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MAGNETIC

0 100 200

SCALE IN FEET

MODEL: WMM2020
MAGNETIC DECLINATION 13°20'E
JUNE 29, 2022
RATE OF CHANGE
0° 6' W PER YEAR

ACCESS ROAD
VEHICLE PARKING
VEHICLE ACCESS ROAD
TAXILANE ADG II TDG 2A
TAXIWAY ADG II TDG 2A
TAXIWAY ADG II TDG 4B
AIR TAXI APRON (U)
13,728 S.Y.
CORPORATE APRON (U)
61,296 S.Y.
CORPORATE APRON (U)
61,296 S.Y.
GA APRON (U)
6,697 S.Y.
WIND CONE AND SEGMENTED CIRCLE TO BE RELOCATED
TAXIWAY ADG II TDG 2A
UPAVED SAFETY AREA-GRASS LANDING AREA
RUNWAY 15-33
RUNWAY 15-33
126
125
124
123
122
121
120
127
BRL
TOFA
ROFA
ROFZ
RSA

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2760 W. Excursion Ln.
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Meridian, ID 83642
Phone: 208.376.7330
www.jub.com

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CITY OF ONTARIO
ONTARIO MUNICIPAL AIRPORT

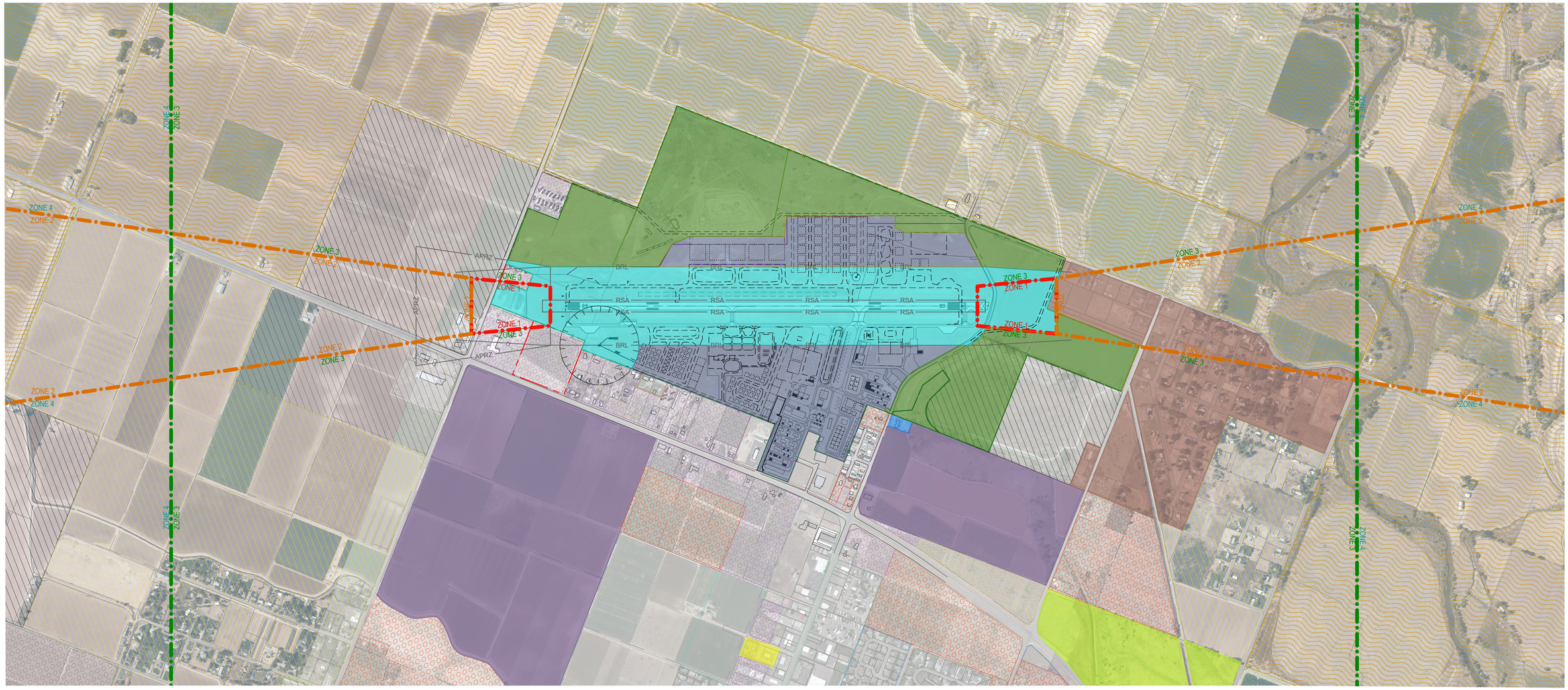
TERMINAL AREA PLAN - WEST

LAST UPDATED: 3/30/2023

SHEET NUMBER:

AF-11

Plot Date:3/30/2023 3:56 PM Plotted By: Shawn Dulin
Date Created:3/1/2023 \\JUB.COM\CENTRAL\CLIENTS\ORONTARIOCITY\PROJECTS\45-21-014_ONTARIOMPUPDATE\PLANNING\AIRPORTMASTERPLAN\CAD\ALP\SHEETS\45-21-014_AF-10X.DWG



CITY LAND USE ZONES
C1 - NEIGHBORHOOD COMMERCIAL
C2 - GENERAL COMMERCIAL
C2H - GENERAL HEAVY COMMERCIAL
I1 - LIGHT INDUSTRIAL
I2 - HEAVY INDUSTRIAL
I(BP) - INDUSTRIAL BUSINESS PARK
RMH - MOBILE HOME
RS50 - SINGLE FAMILY RESIDENTIAL

URBAN GROWTH AREA ZONES
C-UGA - COMMERCIAL UGA
C(BP)-UGA - COMMERCIAL BUSINESS PARK UGA
I2-UGA - HEAVY INDUSTRIAL UGA
PF-UGA - PUBLIC FACILITY UGA
R-UGA - RESIDENTIAL UGA

URBAN RESERVE AREA ZONES
C(5AC)-URA - COMMERCIAL 5 ACRES URA
C(BP)-URA - COMMERCIAL BUSINESS PARK URA
I-URA - INDUSTRIAL URA
R-URA - RESIDENTIAL URA

COUNTY LAND USE ZONES
A1 - COUNTY EXCLUSIVE FARM USE
RR - COUNTY RURAL RESIDENTIAL

STATE PUBLIC USE AIRPORT COMPATIBILITY ZONES
ZONE 1 - RUNWAY PROTECTION ZONE
ZONE 2 - APPROACH SURFACE
ZONE 3 - DIRECT IMPACT AREA
ZONE 4 - SECONDARY IMPACT AREA

NOTE:
1. AIRPORT OVERLAY ZONES SHOWN AS DEFINED IN THE OREGON DEPARTMENT OF AVIATION AIRPORT LAND USE COMPATIBILITY GUIDEBOOK JANUARY 2003.

AIRPORT LAND USE
AIRFIELD OPERATIONS
GENERAL AVIATION ZONE
NON-AVIATION USE

LEGEND		
EXISTING	FUTURE	DESCRIPTION
		BUILDING/STRUCTURE
		AIRPORT PAVEMENT
		AIRPORT PROPERTY LINE
		PARCEL LINES
		CITY LIMITS
BRL	BRL	BUILDING RESTRICTION LINE (BRL)
RSA	RSA	RUNWAY SAFETY AREA (RSA)
RPZ	RPZ	RUNWAY PROTECTION ZONE (RPZ) (APPROACH AND DEPARTURE)
APRZ	APRZ	APPROACH RUNWAY PROTECTION ZONE (ARPZ)
DPRZ	DPRZ	DEPARTURE RUNWAY PROTECTION ZONE (RPZ)
		NAVAID CRITICAL AREA
X	X	FENCE

MODEL: WMM2020
MAGNETIC DECLINATION 13°20'E
JUNE 29, 2022
RATE OF CHANGE
0° 6' W PER YEAR

0 600 1,200
SCALE IN FEET

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1	FAA COMMENTS			8/5/21

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2760 W. Excursion Ln.
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CITY OF ONTARIO
ONTARIO MUNICIPAL AIRPORT

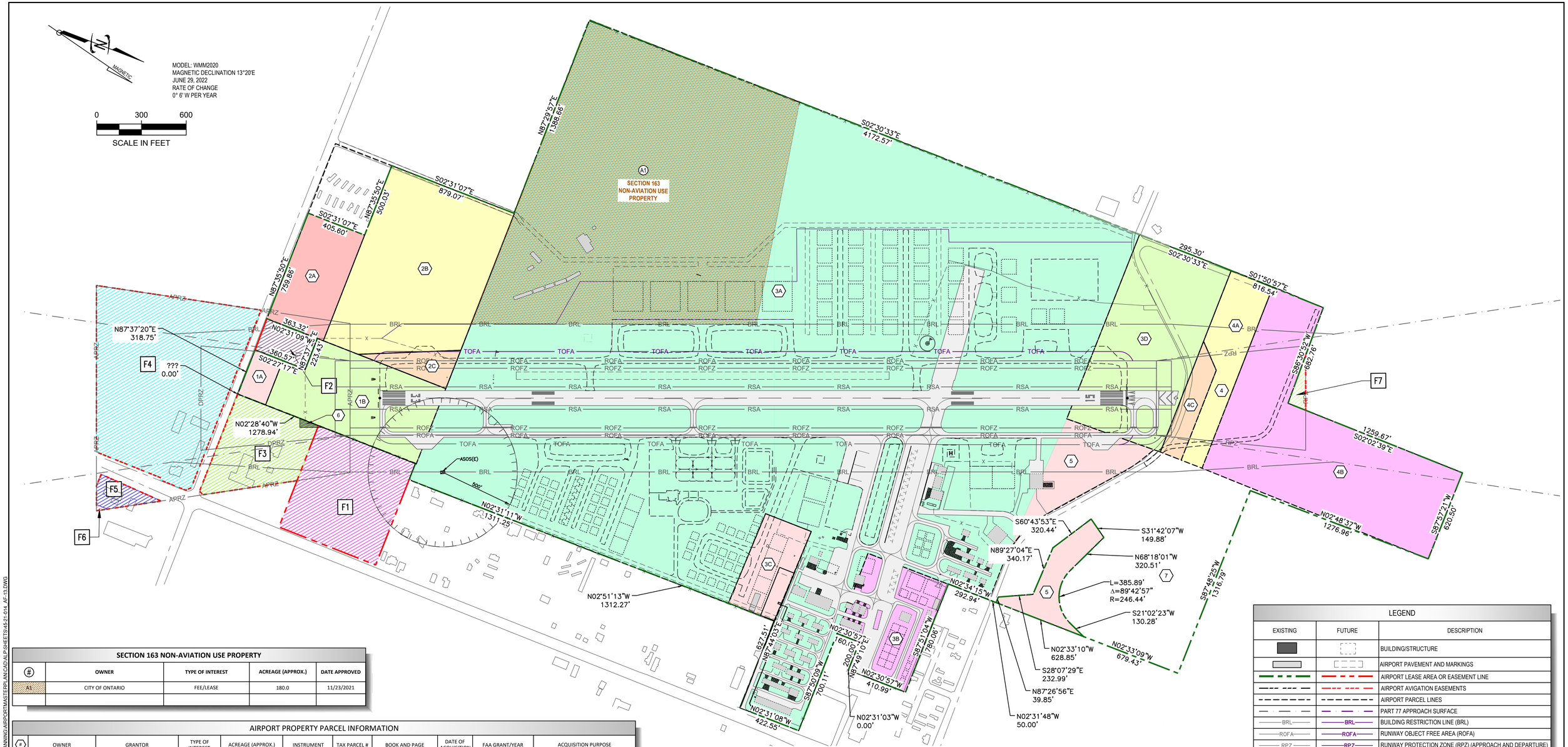
LAND USE PLAN

LAST UPDATED: 3/30/2023

SHEET NUMBER:

AF-12

Plot Date:3/30/2023 4:11 PM Plotted By: Shawn Dulin
Date Created:3/29/2023 \\JUB.COM\CENTRAL\CLIENTS\OR\ONTARIO\CITYPROJECTS\45-21-014 ONTARIOMPUPDATE\PLANNING\AIRPORTMASTERPLAN\CAD\ALP\SHEETS\45-21-014_AF-12.DWG



SECTION 163 NON-AVIATION USE PROPERTY

#	OWNER	TYPE OF INTEREST	ACREAGE (APPROX.)	DATE APPROVED
A1	CITY OF ONTARIO	FEE/LEASE	180.0	11/23/2021

AIRPORT PROPERTY PARCEL INFORMATION

#	OWNER	GRANTOR	TYPE OF INTEREST	ACREAGE (APPROX.)	INSTRUMENT	TAX PARCEL #	BOOK AND PAGE	DATE OF ACQUISITION	FAA GRANT/YEAR	ACQUISITION PURPOSE
1A	CITY OF ONTARIO	MURAKAMI FARMS	FEE	1.88	97195	3001		3/28/1969	FAAP - 02	APPROACH PROTECTION
1B	CITY OF ONTARIO	EST OF BELLE LEES	FEE	16.35	97196	3001		3/5/1969	FAAP - 02	RPZ/SAFETY AREA
2A	CITY OF ONTARIO	TSURUYO NISHI ET VIR	FEE	9.12	6061	3400		12/24/1941	AP - 4	AIRFIELD
2B	CITY OF ONTARIO	IDA WATANABE ET VIR	FEE	30.29	6062	3300		12/24/1941	AP - 4	RIGHT OF WAY
2C	CITY OF ONTARIO	RAYMOND HASHITANI	FEE	2.58	6060	3200		12/24/1941	AP - 4	AIRFIELD
3A	CITY OF ONTARIO	MALHEUR COUNTY	FEE	370.01	98480	4100	BOOK 38, PAGE 437	1/3/1934	N/A	AIRFIELD
3B	CITY OF ONTARIO	MALHEUR COUNTY	FEE	12.24	101054	4100	BOOK 39, PAGE 428	1/3/1934	N/A	AIRPORT DEVELOPMENT
3C	CITY OF ONTARIO	A.W. CONOVER	FEE	6.31	11314	4100	BOOK 51, PAGE 421	8/3/1942	AP - 4	AIRPORT DEVELOPMENT
3D	CITY OF ONTARIO	EST OF BELLE LEES	FEE	25.81	2473	4100		5/29/1941	AP - 4	AIRFIELD
4	CITY OF ONTARIO	C.H. & EDNA TOEDTER	EASEMENT	N/A	114094	500		8/18/1970	FAAP - 02	RPZ
4A	CITY OF ONTARIO	W.M. TOEDTER	FEE	3.20	7103	500		2/19/1942	AP - 4	AIRFIELD
4B	CITY OF ONTARIO	MONTGOMERY/SNOW	FEE	37.51		500		7/1/2006	N/A	APPROACH PROTECTION
4C	CITY OF ONTARIO	MALHEUR COUNTY	FEE	8.39	3552	500		2/19/1942	N/A	RPZ
5	CITY OF ONTARIO	STATE OF OREGON	FEE	18.63		800	BOOK 52, PAGE 109	3/22/1941	AP - 4	APPROACH PROTECTION
6	CITY OF ONTARIO	MURAKMI & LEES	EASEMENT	N/A			BOOK 141, PAGE 371	3/5/0969	FAAP - 02	RPZ
7	SNAKE RIVER SPORTSMAN	CITY OF ONTARIO	FEE	29.13	2006-6611	700		9/6/2006	LAND REALEASE	APPROVED BY FAA 4/06

PROPERTY TO BE AQUIRED

#	OWNER	TYPE OF INTEREST	ACREAGE (APPROX.)	DATE OF ACQUISITION
F1	HOLLINGSWORTH INC. OF ONTARIO	FEE	11.6	
F2	TYLER ETAL WILSON	FEE	1.9	
F3	AM PROPERTIES, LLC	AVIGATION EASEMENT	7.5	
F4	BAKER FAMILY TRUST	AVIGATION EASEMENT	24.8	
F5	MURAKAMI FARMS, INC	AVIGATION EASEMENT	1.2	
F6	PEPSI-COLA BOTTLING CO.	AVIGATION EASEMENT	0.04	
F7	CITY OF ONTARIO	AVIGATION EASEMENT	0.50	

LEGEND

EXISTING	FUTURE	DESCRIPTION
		BUILDING/STRUCTURE
		AIRPORT PAVEMENT AND MARKINGS
		AIRPORT LEASE AREA OR EASEMENT LINE
		AIRPORT AVIGATION EASEMENTS
		AIRPORT PARCEL LINES
		PART 77 APPROACH SURFACE
BRL	BRL	BUILDING RESTRICTION LINE (BRL)
ROFA	ROFA	RUNWAY OBJECT FREE AREA (ROFA)
RPZ	RPZ	RUNWAY PROTECTION ZONE (RPZ) (APPROACH AND DEPARTURE)
APRZ	APRZ	APPROACH RUNWAY PROTECTION ZONE (ARPZ)
DPRZ	DPRZ	DEPARTURE RUNWAY PROTECTION ZONE (RPZ)
RSA	RSA	RUNWAY SAFETY AREA (RSA)
ROFZ	ROFZ	RUNWAY OBSTACLE FREE ZONE (ROFZ)
TOFA	TOFA	TAXIWAY OBJECT FREE AREA (TOFA)
		NAVAID CRITICAL AREA
X	X	FENCE

NOTES:
1. THIS INFORMATION SHOULD BE USED FOR PLANNING PURPOSES ONLY. MEETS AND BOUNDS LABELS OF PROPERTY LINE ARE BASED ON BEST AVAILABLE INFORMATION FROM CONDUCTED RESEARCH. AN OFFICIAL LAND SURVEY SHOULD BE COMPLETED TO ATTAIN ACCURATE PROPERTY BOUNDARIES.
2. RESEARCH CONDUCTED TO PROVIDE THE INFORMATION PRESENTED ON THIS SHEET DID NOT YIELD CONVEYANCE DOCUMENTS FOR ALL PORTIONS OF THESE PARCELS AS THEY ARE DEPICTED ON THE BENTON COUNTY ASSESSOR'S WEBSITE. FOR A PROPER AND COMPLETE BOUNDARY RESOLUTION A RECORD OF SURVEY MUST BE PERFORMED AND CHAIN OF TITLE REQUESTED FOR EACH PARCEL.

SPONSOR APPROVAL

CITY OF CALDWELL, IDAHO — DATE

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LAST UPDATED: 3/30/2023

CITY OF ONTARIO
ONTARIO MUNICIPAL AIRPORT

EXHIBIT "A" AIRPORT PROPERTY INVENTORY MAP

SHEET NUMBER: AF-13

Plot Date:4/10/2023 7:18 AM Plotted By: Shawn Dulin
Data Created:3/29/2023 \\JUB.COM\CENTRAL\CLIENTS\OR\ONTARIO\CITY\PROJECTS\45-21-014_ONTARIOMPUPDATE\PLANNING\AIRPORTMASTERPLAN\CAD\ALP\SHEETS\45-21-014_AF-13.DWG