

ORLAND HAIGH FIELD

CHRONOLOGY OF AIRPORT DEVELOPMENT

1942	Airport constructed by U.S. Army as an auxiliary training field (Chico Auxiliary Field A-1) for Chico Army Airfield. Airfield consists of 3,000-foot square asphalt landing mat on 558 acres of land and is operated under the West Coast Army Air Force Training Command.
1944 October	Army declares facility surplus.
1947 May	U.S. government transfers 480 acres to County of Glenn for use as a civilian airport. Name designated as Haigh Field honoring a County Supervisor.
1947 October	Master Plan prepared by Kaiser Engineers, Inc. adopted by Glenn County Board of Supervisors.
1949 September	Original public airport permit issued by State of California.
1950 February	Airport released from U.S. government prohibition on using surplus airport land for industrial purposes.
1958	Federal Aviation Administration releases northwest 60 acres from provisions of Instrument of Transfer and Glenn County sells property to City of Orland for a sewage treatment plant.
1960 March	County ordinance (no. 383) adopted limiting heights of buildings near Airport.
1968 November	Federal Aviation Administration releases 17 acres for use as orchard.
1974 March	Reissuance of State Airport Permit following construction of overlay on asphalt mat portion of runway and extensions to north and south bringing total runway length to 5,160 feet.
1977 April	Glenn County Board of Supervisors establishes Orland Haigh Field Advisory Board.
1981 December	Airport Layout Plan prepared by Landon Engineering and Surveying, Inc. approved by County Board of Supervisors.
1984	County Department of Public Works takes over operation of Airport from fixed base operator.
1985 February	City of Orland approves negative declaration of environmental impact for proposed industrial treatment facility at Haigh Field.
1985 February	Federal Aviation Administration releases from the terms of the 1947 Instrument of Transfer the 51.5 acres of land required for the Orland wastewater treatment facility. Deed of Release requires that county retain an aviation easement on the property when sold.
1985 April	Airport Land Use Commission established by Glenn County Board of Supervisors.

PAVEMENT CONDITION EVALUATION

Segment	Rough	Alligator Cracking	Rutting	Ravelling	Block Cracking	Drainage	Comments
Runway	1	0	1	1	1	1-2	No load induced distress; some ponding
North End of Parallel Taxiway	0	0	4	0	0	2	Pavement damaged by passage of heavy aircraft
Asphalt Mat (Apron)	3	3	4	3	1	3	Age distress; poor drainage

CODES

Note: Location is a factor in determining the acceptability or unacceptability of each type of pavement distress

Rough

- 0 – Smooth
- 1 – Acceptable roughness
- 2 – Tolerable roughness
- 3 – Barely tolerable roughness
- 4 – Unacceptably rough

Alligator Cracking

- 0 – None observed
- 1 – Acceptable severity or extent
- 2 – Tolerable severity over less than 25% of wheel path area
- 3 – Tolerable severity over greater than 25% of wheel path area and/or unacceptable severity on no more than 5% of wheel path area
- 4 – Unacceptable severity over greater than 5% of wheel path area

Rutting

- 0 – None Observed
- 1 – Less than 1/4" ruts in any extent
- 2 – 1/4" to 1/2" ruts over no more than 25% of wheel path area
- 3 – 1/4" to 1/2" ruts over more than 25% of wheel path area and/or greater than 1/2" ruts over no more than 5% of wheel path area
- 4 – Unacceptable rutting

Ravelling

- 0 – None Observed
- 1 – Acceptable degree of ravelling
- 2 – Tolerable ravelling on no more than 10% of surface area
- 3 – Tolerable ravelling on more than 10% of surface area
- 4 – Unacceptable ravelling over any amount of area

Block Cracking

- 0 – None observed
- 1 – Acceptable cracks up to 3/8" wide and/or tolerable cracks up to 1/8" wide
- 2 – Acceptable cracks wider than 3/8" and/or unacceptable cracks up to 1/8" wide
- 3 – Tolerable cracks wider than 1/8"
- 4 – Unacceptable cracks wider than 1/8"

Drainage

- 0 – Good drainage
- 1 – Minor ponding
- 2 – Moderate ponding
- 3 – Poor drainage

GENERAL CRITERIA FOR AIRPORT DESIGN STANDARDS

The Federal Aviation Administration has established standards pertaining to runway length, pavement strength, runway and taxiway clearances, etc. These standards, extensively revised in 1983, vary depending upon the airport's specific operating conditions (e.g. elevation, average maximum temperature, type of approach) and the characteristics of the "critical" aircraft which regularly use the facility or are expected to do so. At airports having multiple runways, each runway may have a different set of standards if each has a different type of approach or critical aircraft.

Aircraft are differentiated primarily according to weight, approach speed, and wingspan.

- *Weight* – Aircraft weight, specifically maximum certificated takeoff weight, is a determining factor in pavement strength and other basic airfield design components.
- *Approach Speed* – Aircraft approach speed influences runway length, runway setback distances, and various safety requirements.
- *Wingspan* – Airplane wingspan is a principal determinant of required runway and taxiway clearance standards.

These characteristics of the critical user aircraft determine the type of airport (or runway) as Basic Utility, General Utility, or Transport as summarized in Table C-1. Table C-2 lists the characteristics of specific aircraft and notes the categories in which each aircraft belongs.

Table C-1

**GENERAL AVIATION AIRPORT
CLASSIFICATION CHARACTERISTICS**

Airport Classification	Aircraft Accommodated				Precision Approach Commonly Available?
	Weight	Approach Speed	Wingspan	Examples	
Basic Utility Stage I	75% of fleet up to 12,500 lbs. (including some twins)	up to 121 knots	up to 49 ft.	Cessna 172 Skyhawk Piper PA-28 Archer	No
Basic Utility Stage II	Most airplanes up to 12,500 lbs. (including many twins plus some air taxi types)	up to 121 knots	up to 49 ft.	Beech Bonanza A36 Mitsubishi Marquis	No
General Utility Stage I	All airplanes up to 12,500 lbs.	up to 121 knots	up to 49 ft.	Cessna 404 Cessna Citation I Piper PA-31 Navajo Swearingen Merlin III	No
General Utility Stage II	All airplanes up to 12,500 lbs plus some heavier	up to 121 knots	up to 79 ft.*	Beech Super King Air 200 Cessna Citation II Dassault Falcon 50 DeHavilland DHC-6 Otter DeHavilland DHC-7 Embraer 110 Bandeirante	Yes
Transport	All weights	up to 166 knots	up to 262 ft.	Canadair Challenger CL-600 Fairchild F-27 Gulfstream III Learjet 35 Rockwell Sabre 75A	Yes

* Up to 118 feet if approach speed is less than 91 knots.

**Table C-2
AIRCRAFT CHARACTERISTICS**

Aircraft	Engines	Maximum Seats	Maximum Takeoff Weight (pounds)	Wingspan (feet)	Approach Speed (knots)	Weight Group	Design Group	Approach Category
<i>Piston Propellor</i>								
Beech Bonanza A36	1	5	3,600	33.5	72	small	I	A
Cessna 172 Skyhawk	1	4	2,400	36.0	70	small	I	A
Cessna 404 Titan	2	10	8,450	46.3	92	small	I	B
Mitsubishi Marquise	2	9	11,575	39.1	88	small	I	A
Piper PA-28 Archer	1	4	2,550	35.0	69	small	I	A
Piper PA-32 Navajo	2	6	6,500	40.7	100	small	I	B
<i>Turboprop</i>								
Beech Super King Air 200	2	15	12,500	54.5	103	small	II	B
DeHavilland DHC-6 Otter	2	22	12,500	65.0	75	small	II	A
DeHavilland DHC-7	4	53	44,000	93.0	86	large	III	A
Embraer 110 Bandeirante	2	19	12,500	50.3	92	small	II	B
Fairchild F-27	2	48	42,000	95.2	109	large	III	B
Gulfstream I	2	40	35,100	78.5	113	large	II	B
Short Brothers SD3-60	2	36	26,453	74.8	102	large	II	B
Swearingen Merlin III	2	10	12,500	46.3	105	small	I	B
<i>Jet</i>								
British Aerospace BAe-146-200	4	109	89,500	86.4	100	large	III	B
Canadair Challenger CL-600	2	21	32,500	61.8	125	large	II	C
Cessna Citation I	2	9	11,850	47.1	108	small	I	B
Cessna Citation II	2	11	13,300	51.6	108	large	II	B
Cessna Citation III	2	15	17,000	53.5	114	large	II	B
Dassault Falcon 50	3	16	38,480	61.9	113	large	II	B
Gulfstream III	2	22	68,700	77.8	136	large	II	C
Learjet 25	2	10	15,000	35.6	137	large	I	C
Learjet 35	2	10	18,000	39.6	143	large	I	D
Rockwell Sabre 40	2	10	18,650	44.4	120	large	I	B
Rockwell Sabre 60	2	10	20,172	44.6	120	large	I	B
Rockwell Sabre 75A	2	10	23,000	44.7	137	large	I	C

Definitions

Weight Groups

	Maximum Certificated Takeoff Weight
Small	12,500 pounds or less
Large	Over 12,500 pounds

Design Groups

	Wingspan
I	Less than 49 feet
II	49 to* 79 feet
III	79 to* 118 feet
IV	118 to* 171 feet
V	171 to* 197 feet
VI	197 to* 262 feet
	* but not including

Approach Category

	Approach Speed**
A	Less than 91 knots
B	91 to* 121 knots
C	121 to* 141 knots
D	141 to* 166 knots
E	166 knots or more
	* but not including

** Defined as 1.3 times stall speed (V_{so}) at maximum certificated landing weight

INITIAL STUDY OF ENVIRONMENTAL IMPACTS

BACKGROUND

This Initial Study addresses the environmental impacts associated with implementation of the Orland Haigh Field Master Plan. The temporary and permanent impacts resulting from construction of the proposed facilities as well as the long-term effects of increased airport use are covered. Specific improvements are depicted on the Airport Layout Plan and itemized in Table 1 of the Master Plan Report. Forecasts of future airport activity are presented in Table 6.

A major uncertainty with regard to the environmental impacts of future development at Orland Haigh Field concerns the potential nonaviation commercial/industrial development. The Airport Master Plan sets aside some 60 acres on the east side of the Airport and up to 175 acres on the west side as excess to aviation needs and available for such uses. The specific characteristics and timing of this development is currently unknown. The following analysis notes the general types of impacts that typical commercial/industrial development at an airport might have. Additional environmental review would, however, be required when specific proposals are set forth.

The lead agency for the proposed airport projects is the County of Glenn. This Initial Study was prepared by Hodges & Shutt in conjunction with the Airport Master Plan study.

ENVIRONMENTAL CHECKLIST

	YES	MAYBE	NO
1. Earth. Will the proposal result in:			
a. Unstable earth conditions or in changes in geologic substructures?	___	___	<u>X</u>
b. Disruption, displacements, compaction or overcovering of the soil?	<u>X</u>	___	___
c. Change in topography or ground surface relief features?	___	___	<u>X</u>
d. The destruction, covering or modification of any unique geologic or physical feature?	___	___	<u>X</u>
e. Any increase in wind or water erosion of soils, either on or off the site?	___	<u>X</u>	___
f. Changes in deposition or erosion of beach sands, or changes in siltation, deposition or erosion which may modify the channel of a river or stream or the bed of the ocean or any bay, inlet or lake?	___	___	<u>X</u>

		YES	MAYBE	NO
	g. Exposure of people or property to geologic hazards such as earthquakes, landslides, mudslides, ground failure, or similar hazards?	___	___	<u>X</u>
2.	Air. Will the proposal result in:			
	a. Substantial air emissions or deterioration of ambient air quality?	___	___	<u>X</u>
	b. The creation of objectionable odors?	___	___	<u>X</u>
	c. Alteration of air movement, moisture or temperature, or any change in climate, either locally or regionally?	___	___	<u>X</u>
3.	Water. Will the proposal result in:			
	a. Changes in currents, or the course or direction of water movements, in either marine or fresh waters?	___	___	<u>X</u>
	b. Changes in absorption rates, drainage patterns or the rate and amount of surface water runoff?	<u>X</u>	___	___
	c. Alterations to the course or flow of flood waters?	___	___	<u>X</u>
	d. Change in the amount of surface water in any water body?	___	___	<u>X</u>
	e. Discharge into surface waters, or in any alteration of surface water quality, including but not limited to temperature, dissolved oxygen or turbidity?	___	<u>X</u>	___
	f. Alteration of the direction or rate of flow of ground waters?	___	___	<u>X</u>
	g. Change in the quantity of ground waters, either through direct additions or withdrawals, or through interception of an aquifer by cuts or excavations?	___	___	<u>X</u>
	h. Substantial reduction in the amount of water otherwise available for public water supplies?	___	___	<u>X</u>
	i. Exposure of people or property to water-related hazards such as flooding or tidal waves?	___	___	<u>X</u>
4.	Plant Life. Will the proposal result in:			
	a. Change in the diversity of species, or number of any species of plants (including trees, shrubs, grass, crops, and aquatic plants)?	___	___	<u>X</u>
	b. Reduction of the numbers of any unique, rare or endangered species of plants?	___	___	<u>X</u>

		YES	MAYBE	NO
	c. Introduction of new species of plants into an area, or in a barrier to the normal replenishment of existing species?	___	___	<u>X</u>
	d. Reduction in acreage of any agricultural crop?	___	<u>X</u>	___
5.	Animal Life. Will the proposal result in:			
	a. Change in the diversity of species, or numbers of any species of animals (birds, land animals including reptiles, fish and shellfish, benthic organisms or insects)?	___	___	<u>X</u>
	b. Reduction of the numbers of any unique, rare or endangered species of animals?	___	___	<u>X</u>
	c. Introduction of new species of animals into an area, or result in a barrier to the migration or movement of animals?	___	___	<u>X</u>
	d. Deterioration to existing fish or wildlife habitat?	___	___	<u>X</u>
6.	Noise. Will the proposal result in:			
	a. Increases in existing noise levels?	<u>X</u>	___	___
	b. Exposure of people to severe noise levels?	___	___	<u>X</u>
7.	Light and Glare. Will the proposal produce new light or glare?	<u>X</u>	___	___
8.	Land Use. Will the proposal result in a substantial alteration of the present or planned land use of an area?	___	<u>X</u>	___
9.	Natural Resources. Will the proposal result in:			
	a. Increase in the rate of use of any natural resources?	___	___	<u>X</u>
	b. Substantial depletion of any nonrenewable natural resource?	___	___	<u>X</u>
10.	Risk of Upset. Will the proposal involve:			
	a. A risk of an explosion or the release of hazardous substances (including but not limited to oil, pesticides, chemicals or radiation) in the event of an accident or upset conditions?	___	<u>X</u>	___
	b. Possible interference with an emergency response plan or an emergency evacuation plan?	___	___	<u>X</u>
11.	Population. Will the proposal alter the location, distribution, density, or growth rate of the human population of an area?	___	___	<u>X</u>

		YES	MAYBE	NO
12.	Housing. Will the proposal affect existing housing, or create a demand for additional housing?	—	—	<u>X</u>
13.	Transportation/Circulation. Will the proposal result in:			
a.	Generation of substantial additional vehicular movement?	—	—	<u>X</u>
b.	Effects on existing parking facilities, or demand for new parking?	<u>X</u>	—	—
c.	Substantial impact upon existing transportation systems?	—	—	<u>X</u>
d.	Alterations to present patterns of circulation or movement of people and/or goods?	—	—	<u>X</u>
e.	Alterations to waterborne, rail or air traffic?	—	—	<u>X</u>
f.	Increase in traffic hazards to motor vehicles, bicyclists, or pedestrians?	—	—	<u>X</u>
14.	Public Services. Will the proposal have an effect upon, or result in a need for new or altered governmental services in any of the following areas:			
a.	Fire protection?	<u>X</u>	—	—
b.	Police protection?	<u>X</u>	—	—
c.	Schools?	—	—	<u>X</u>
d.	Parks or other recreational facilities?	—	—	<u>X</u>
e.	Maintenance of public facilities, including roads?	<u>X</u>	—	—
f.	Other governmental services?	<u>X</u>	—	—
15.	Energy. Will the proposal result in:			
a.	Use of substantial amounts of fuel or energy?	—	—	<u>X</u>
b.	Substantial increase in demand upon existing sources of energy, or require the development of new sources of energy?	—	—	<u>X</u>

21. **Mandatory Findings of Significance.**

- | | | | | |
|----|---|-----|--------------|--------------|
| a. | Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory? | ___ | ___ | <u> X </u> |
| b. | Does the project have the potential to achieve short-term, to the disadvantage of the long-term, environmental goals? (A short-term impact on the environment is one which occurs in a relatively brief, definitive period of time while long-term impacts will endure well into the future.) | ___ | ___ | <u> X </u> |
| c. | Does the project have impacts which are individually limited, but cumulatively considerable? (A project may impact on two or more separate resources where the impact on each resource is relatively small, but where the effect of the total of those impacts on the environment is significant.) | ___ | <u> X </u> | ___ |
| d. | Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly? | ___ | ___ | <u> X </u> |

DISCUSSION

1. **Earth**

- b. Construction of new pavement and buildings would cover the native soil. The impact is unavoidable, but not of major consequence. *Mitigation:* None proposed.
- e. Earthwork essential to the proposed projects would temporarily leave the soil exposed to erosion by wind or water. The nature of the work and the conditions of the project are expected to make any such impacts insignificant. *Mitigation:* If deemed necessary, construction contracts can be written to require that the work be completed prior to the onset of winter rains.

3. **Water**

- b. The construction of new pavement and buildings would reduce the surface area available for absorption of water and therefore very modestly increase the volume of water runoff into adjacent drainage courses. The impact is not judged to be significant. *Mitigation:* None proposed.
- e. Project construction could have a temporary, but negligible, impact on water quality if storms occur before construction is complete. During use of the facilities, tiny amounts of rubber from tires and oil from engines would wash from paved areas onto surrounding soils, but would not significantly affect water quality. *Mitigation:* If deemed

necessary, construction contracts can be written to require that the work be completed prior to the onset of winter rains. As provided for in federal and state laws, measures to protect against fuel spills from underground storage tanks and fuel transfers will be taken in the design and use of facilities.

4. Plant Life

- d. Approximately 40 acres of agricultural land would be acquired in and adjacent to the clear zone at the south end of the Airport. This land would remain available for agricultural use, but crops would be limited to hay, field crops, and other low-lying plants as opposed to orchards. Currently the property is not in active agricultural production. *Mitigation:* None is warranted.

6. Noise

- a. Any increase in aircraft operations fostered by the airport improvements would unavoidably result in additional overflights of the rural residences beneath the traffic pattern. No residences are located within the projected 60 dBA Community Noise Equivalent Level (CNEL) contour. Two residences south of the Airport fall within the projected 55-CNEL contour. This noise level is not normally considered significant, but could be annoying to noise-sensitive individuals particularly if loud noise events occur at night. *Mitigation:* In order to prevent incompatible land use development around the Airport, the compatibility concerns addressed on pages 66-68 of the *Airport Master Plan Report* should be addressed by County staff and acted upon by the Board of Supervisors. No restrictions on aircraft operations are proposed.

7. Light and Glare

Upgrading of the runway edge lights from low to medium intensity, installation of Visual Glide Slope Indicators at both ends of the runway, and placement of more lighting in the building area would produce additional light visible from adjacent roads and some nearby residences. It is unlikely that such light would be intrusive. *Mitigation:* Security lighting should be evaluated at night to assure that lights are aimed properly.

8. Land Use

Acquisition of conservation easements on approximately 40 acres of property north of the Airport would preclude possible future land use changes which could allow residential development in the area. Present land use designations and zoning permit one or two additional residences in this area. *Mitigation:* This action is itself a mitigation for potential noise and other airport/land use compatibility concerns. Property owners will be financially compensated for the acquired property rights in accordance with established federal, state, and local property acquisition procedures.

Development of nonaviation commercial or industrial uses on excess airport property made available for that purpose would have a potentially significant effect on the land use character of the airport area. *Mitigation:* The extent of these impacts and the need for mitigation measures should be assessed in future environmental impact analysis conducted when specific property development proposals are put forth. This development would be consistent with the Airport Master Plan provided that the specific uses are compatible with airport activities. The broader community issues of whether such uses are appropriate in this location would need to be addressed as part of the process of modifying the county general plan.

10. Risk of Upset

- a. The principal risk associated with expansion of aviation facilities and activity is that of aircraft accidents. Increased activity would increase the numbers of accidents likely to occur within any given period of time. Enhancing the safety of airport operations, however, is a principal objective behind the proposed runway safety area improvements and clear zone property acquisition. *Mitigation:* Airport improvements will be constructed in accordance with Federal Aviation Administration and California Division of Aeronautics standards. Operation of the Airport also is in accordance with federal and state aviation regulations. The noise and land use compatibility measures noted above will reduce the aircraft accident risks to people and property beyond the airport boundaries.

13. Transportation/Circulation

- a. Increased aviation activity would result in additional vehicular traffic to and from the Airport. This increase would represent a small fraction of the traffic on most local roads with the possible exceptions of County Roads 200 and P immediately adjacent to the Airport. Development of the nonaviation commercial/industrial property could have a more significant impact on local traffic volumes. *Mitigation:* Airport-related traffic is not expected to be of such volume as to necessitate mitigation measures. Mitigation of the impacts of nonaviation development, if required, would need to be addressed in conjunction with specific development proposals.
- b. Additional aviation and nonaviation development at the Airport would require additional automobile parking. These requirements would be met on site. *Mitigation:* None is needed.

14. Public Services

- a. Additional structures and more people at the Airport would increase the chance that fire protection services would be needed. Actual emergency usage would continue to be very infrequent and would not be expected to put any significant strain on the Orland Rural Fire Protection District which serves the Airport. *Mitigation:* New structures should meet the requirements of local fire regulations.
- b. More facilities, airplanes, and people at the Airport increase the prospects that police services would be required. *Mitigation:* No additional police staffing appears warranted to serve the expanded activity. To increase security at the Airport, the Master Plan proposes that additional fencing be constructed, particularly in public areas of the Airport. Also, it is expected that a county or fixed base operations employee will continue to live in the residence at the Airport and serve as a watchman.
- e. The new facilities constructed at the Airport would need to be maintained. Additional county staff time and budget would be required. *Mitigation:* Revenues generated by increased airport usage are expected to partially offset the added costs.
- f. Management of airport development activities as well as increased usage would place additional demands on county staff time. *Mitigation:* Additional taxes and other revenues generated by increased airport usage are expected to partially offset the added costs.

16. Utilities

- a. Power supply to the site is adequate for any aviation-related functions as well as for average nonaviation uses which might be developed. Activities needing high power levels might require installation of additional distribution lines. Natural gas service is not currently available to the Airport or the surrounding area and is not necessary for proposed aviation-related development. The need for extension of gas lines to serve nonaviation uses would depend upon the specific uses eventually proposed, but is not essential for commercial/industrial development of the property. *Mitigation:* New commercial/industrial development will be required to pay for connection to utility systems in accordance with established local rates and procedures.
- b. Certain nonaviation commercial/industrial uses potentially could require added telephone and other communications service to the site. *Mitigation:* New users will pay for connection and service as determined by the local rate structure.
- c. The current water supply at the Airport is from a well on site. Additional wells may be necessary to support future expanded aviation-related activity. Nonaviation development of the property excess to aviation needs could generate substantially higher water supply demands. Ample ground water is available to support aviation-related uses and the most probable types of nonaviation commercial/industrial development. Provision of flow rates adequate for fire protection, especially for commercial/industrial uses, may require construction of a water storage reservoir on the site. *Mitigation:* No additional measures are proposed.
- d. Continued use of septic systems would be adequate to meet the need of future aviation-related functions at the Airport. Substantial nonaviation development is expected to entail connection to the City of Orland wastewater treatment facilities located on the west edge of the Airport. A lift station would be required since the airport building area is at a lower elevation than the treatment plant. *Mitigation:* New commercial/industrial development will pay for connection to and use of wastewater treatment systems.
- f. Additional solid waste would be generated by future aviation and nonaviation uses at the Airport. It is not anticipated that either would have abnormal disposal requirements. *Mitigation:* No particular measures are necessary.

18. Aesthetics

Commercial/industrial development at the Airport would change the visual character of the area. *Mitigation:* Suitable landscaping and building design would help soften the potential visual contrast with surrounding agricultural lands.

19. Recreation

The Airport is largely a recreational facility and the proposed improvements would enhance this opportunity. *Mitigation:* None is necessary.

20. Mandatory Findings of Significance

- c. The cumulative impacts of the airport development and increased usage over the 20-year time frame of the Airport Master Plan would potentially be significant. All anticipated impacts are noted in this Initial Study. *Mitigation:* No additional measures are proposed.

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GLOSSARY

ABOVE GROUND LEVEL (AGL): An elevation datum given in feet above ground level.

AIR CARRIER: A person who undertakes directly by lease, or other arrangement, to engage in air transportation. (FAR 1) (Also see Certificated Route Air Carrier)

AIR CARRIERS: The commercial system of air transportation, consisting of the certificated route air carriers, air taxis (including commuters), supplemental air carriers, commercial operators of large aircraft, and air travel clubs. (FAA Census)

AIR ROUTE TRAFFIC CONTROL CENTER (ARTCC): A facility established to provide air traffic control service to aircraft operating on IFR flight plans within controlled airspace, principally during the en route phase of flight. (AIM)

AIR TAXI: A classification of air carriers which directly engage in the air transportation of persons, property, mail, or in any combination of such transportation and which do not directly or indirectly utilize large aircraft (over 30 seats or a maximum payload capacity of more than 7,500 pounds) and do not hold a Certificate of Public Convenience and Necessity or economic authority issued by the Department of Transportation. (Also see commuter air carrier and demand air taxi.) (FAA Census)

AIR TRAFFIC CONTROL (ATC): A service operated by appropriate authority to promote the safe, orderly, and expeditious flow of air traffic. (FAR 1)

AIRPORT TRAFFIC CONTROL TOWER (ATCT): A terminal facility that uses air/ground communications, visual signaling, and other devices to provide ATC services to aircraft operating in the vicinity of an airport or on the movement area. (AIM)

AIRCRAFT ACCIDENT: An occurrence associated with the operation of an aircraft which takes place between the time any person boards the aircraft with the intention of flight until such time as all such persons have disembarked, and in which any person suffers death or serious injury as a result of being in or upon the aircraft or by direct contact with the aircraft or anything attached thereto, or in which the aircraft receives substantial damage. (NTSB)

AIRCRAFT OPERATION: The airborne movement of aircraft in controlled or noncontrolled airport terminal areas and about given en route fixes or at other points where counts can be made. There are two types of operations – local and itinerant. (FAA Stats)

AIRCRAFT PARKING LINE LIMIT (APL): A line established by the airport authorities beyond which no part of a parked aircraft should protrude. (Utility AC)

AIRPORT: An area of land or water that is used or intended to be used for the landing and taking off of aircraft, and includes its buildings and facilities, if any. (FAR 1)

AIRPORT ELEVATION: The highest point of an airport's usable runways, measured in feet above mean sea level. (AIM)

AIRPORT HAZARD: Any structure or natural object located on or in the vicinity of a public airport, or any use of land near such airport, that obstructs the airspace required for the flight of aircraft in landing or taking off at the airport or is otherwise hazardous to aircraft landing, taking off, or taxiing at the airport. (Utility AC)

AIRPORT LAYOUT PLAN: A scale drawing of existing and proposed airport facilities, their location on the airport, and the pertinent clearance and dimensional information required to demonstrate conformance with applicable standards.

AIRPORT RADAR SERVICE AREA (ARSA): Regulatory airspace surrounding designated airports wherein FAA Air Traffic Control provides radar vectoring and sequencing on a full-time basis for all IFR and VFR aircraft. (AIM)

AIRPORT REFERENCE POINT: A point established on an airport, having equal relationship to all existing and proposed landing and takeoff areas, and used to geographically locate the airport and for other planning purposes. (Utility AC)

AIRWAY/FEDERAL AIRWAY: A control area or portion thereof established in the form of a corridor, the centerline of which is defined by radio navigational aids. (AIM)

ALERT AREA: A special use airspace which may contain a high volume of pilot training activities or an unusual type of aerial activity, neither of which is hazardous to aircraft. (AIM)

APPROACH LIGHT SYSTEM (ALS): An airport lighting system which provides visual guidance enabling a pilot to align the aircraft with the extended runway centerline during a final approach to landing. Among the specific types of systems are:

- LDIN – Sequenced Flashing Lead-in Lights.
- ODALS – Omnidirectional Approach Light System, a combination of LDIN and REILS.
- SSALR – Simplified Short Approach Light System with Sequenced Flashing Lights. (AIM)

APPROACH SPEED: The recommended speed contained in aircraft manuals used by pilots when making an approach to landing. This speed will vary for different segments of an approach as well as for aircraft weight and configuration. (AIM)

AUTOMATED WEATHER OBSERVING SYSTEM (AWOS): Airport electronic equipment which automatically measures meteorological parameters, reduces and analyzes the data via computer, and broadcasts weather information which can be received on aircraft radios.

AUTOMATIC DIRECTION FINDER (ADF): An aircraft radio navigation system which senses and indicates the direction to a nondirectional radio beacon ground transmitter. (AIM)

AUTOMATIC TERMINAL INFORMATION SERVICE (ATIS): The continuous broadcast of recorded noncontrol information in selected terminal areas. (AIM)

BACK COURSE APPROACH: A nonprecision instrument approach utilizing the rearward projection of the ILS localizer beam.

BASED AIRCRAFT: Aircraft stationed at an airport on a long-term basis.

BUILDING RESTRICTION LINE (BRL): A line established with respect to the runway centerline to assure that structures will not project above the imaginary surfaces required by FAR Part 77.

CEILING: Height above the earth's surface to the lowest layer of clouds or obscuring phenomena. (AIM)

CERTIFICATED ROUTE AIR CARRIER: An air carrier holding a Certificate of Public Convenience and Necessity issued by the Department of Transportation authorizing the performance of scheduled service over specified routes, and a limited amount of nonscheduled service. (FAA Census)

CIRCLING APPROACH/CIRCLE-TO-LAND MANEUVER: A maneuver initiated by the pilot to align the aircraft with a runway for landing when a straight-in landing from an instrument approach is not possible or not desirable. (AIM)

COMMERCIAL OPERATOR: A person who, for compensation or hire, engages in the carriage by aircraft in air commerce of persons or property, other than as an air carrier. (FAR 1)

COMPASS LOCATOR: A low power, low or medium frequency radio beacon installed at the site of the outer or middle marker of an instrument landing system (ILS). (AIM)

COMPASS ROSE: A circle, graduated in degrees, printed on some charts or marked on the ground at an airport. It is used as a reference to either true or magnetic direction. (AIM)

COMMUNITY NOISE EQUIVALENT LEVEL (CNEL): The noise rating adopted by the State of California for measurement of airport noise. It represents the average daytime noise level during a 24-hour day, measured in decibels and adjusted to an equivalent level to account for the lower tolerance of people to noise during evening and nighttime periods.

COMMUTER AIR CARRIER: An air taxi operator which performs at least five round trips per week between two or more points and publishes flight schedules which specify the times, days of the week and places between which such flights are performed. (FAA Census)

CONTROLLED AIRSPACE: Any of several types of airspace within which some or all aircraft may be subject to air traffic control. (FAR 1)

CONTROL ZONE: Controlled airspace surrounding one or more airports, normally a circular area with a radius of 5 statute miles plus extensions to include instrument arrival and departure paths. Most control zones surround airports with air traffic control towers and are in effect only for the hours the tower is operational.

DEMAND AIR TAXI: Use of an aircraft operating under Federal Aviation Regulations, Part 135, passenger and cargo operations, including charter and excluding commuter air carrier. (FAA Census)

DISPLACED THRESHOLD: A threshold that is located at a point on the runway other than the designated beginning of the runway. (See Threshold) (AIM)

DISTANCE MEASURING EQUIPMENT (DME): Equipment (airborne and ground) used to measure, in nautical miles, the slant range distance of an aircraft from the DME navigational aid. (AIM)

FAR PART 77: The part of the Federal Aviation Regulations which deals with objects affecting navigable airspace.

FAR PART 77 SURFACES: Imaginary surfaces established with relation to each runway of an airport. There are five types of surfaces: (1) primary; (2) approach; (3) transitional; (4) horizontal; and (5) conical.

FEDERAL AVIATION ADMINISTRATION (FAA): The United States government agency which is responsible for insuring the safe and efficient use of the nation's airspace.

FIXED BASE OPERATOR (FBO): A business operating at an airport that provides aircraft services to the general public, including but not limited to sale of fuel and oil; aircraft sales, rental, maintenance, and repair; parking and tiedown or storage of aircraft; flight training; air taxi/charter operations; and specialty services, such as instrument and avionics maintenance, painting, overhaul, aerial application, aerial photography, aerial hoists, or pipeline patrol.

FLIGHT SERVICE STATION (FSS): FAA facilities which provide pilot briefings on weather, airports, altitudes, routes, and other flight planning information.

GENERAL AVIATION: That portion of civil aviation which encompasses all facets of aviation except air carriers. (FAA Stats)

GLIDE SLOPE: An electronic signal radiated by a component of an ILS to provide descent path guidance to approaching aircraft.

HELIPAD: A small, designated area, usually with a prepared surface, on a heliport, airport, landing/takeoff area, apron/ramp, or movement area used for takeoff, landing, or parking of helicopters. (AIM)

INSTRUMENT APPROACH PROCEDURE: A series of predetermined maneuvers for the orderly transfer of an aircraft under instrument flight conditions from the beginning of the initial approach to a landing or to a point from which a landing may be made visually. It is prescribed and approved for a specific airport by competent authority. (AIM)

INSTRUMENT FLIGHT RULES (IFR): Rules governing the procedures for conducting instrument flight. Generally, IFR applies when meteorological conditions with a ceiling below 1,000 feet and visibility less than 3 miles prevail. (AIM)

INSTRUMENT LANDING SYSTEM (ILS): A precision instrument approach system which normally consists of the following electronic components and visual aids: (1) Localizer; (2) Glide Slope; (3) Outer Marker; (4) Middle Marker; (5) Approach Lights. (AIM)

INSTRUMENT OPERATION: An aircraft operation in accordance with an IFR flight plan or an operation where IFR separation between aircraft is provided by a terminal control facility. (FAA ATA)

INSTRUMENT RUNWAY: A runway equipped with electronic and visual navigation aids for which a precision or nonprecision approach procedure having straight-in landing minimums has been approved. (AIM)

ITINERANT OPERATION: An arrival or departure performed by an aircraft from or to a point beyond the local airport area.

LARGE AIRCRAFT: An aircraft of more than 12,500 pounds maximum certificated takeoff weight. (FAR 1)

LIMITED REMOTE COMMUNICATIONS OUTLET (LRCO): An unmanned, remote air/ground communications facility which may be associated with a VOR. It is capable only of receiving communications and relies on a VOR or a remote transmitter for full capability.

LOCALIZER (LOC): The component of an ILS which provides course guidance to the runway. (AIM)

LOCAL OPERATION: An arrival or departure performed by an aircraft: (1) operating in the traffic pattern, (2) known to be departing or arriving from flight in local practice areas, or (3) executing practice instrument approaches at the airport. (FAA ATA)

MARKER BEACON (MB): The component of an ILS which informs pilots that they are at a significant point on the approach course.

MEAN SEA LEVEL (MSL): An elevation datum given in feet above mean sea level.

MICROWAVE LANDING SYSTEM (MLS): A precision instrument approach system providing a function similar to an ILS, but operating in the microwave spectrum. It normally consists of three components: azimuth station, elevation station, and precision distance measuring equipment.

MILITARY OPERATIONS AREA (MOA): A type of special use airspace established to separate certain military activities from IFR traffic and to identify for VFR traffic where these activities are conducted.

MINIMUM DESCENT ALTITUDE (MDA): The lowest altitude, expressed in feet above mean sea level, to which descent is authorized on final approach or during circle-to-land maneuvering in execution of a standard instrument approach procedure where no electronic glide slope is provided. (FAR 1)

MISSED APPROACH: A maneuver conducted by a pilot when an instrument approach cannot be completed to a landing. (AIM)

NAVIGATIONAL AID/NAVAID: Any visual or electronic device airborne or on the surface which provides point-to-point guidance information or position data to aircraft in flight. (AIM)

NONDIRECTIONAL BEACON (NDB): A radio beacon transmitting nondirectional signals whereby the pilot of an aircraft equipped with direction finding equipment can determine his bearing to or from the radio beacon and "home" on or track to or from the station. (AIM)

NONPRECISION APPROACH PROCEDURE: A standard instrument approach procedure in which no electronic glide slope is provided. (FAR 1)

NONPRECISION INSTRUMENT RUNWAY: A runway with an instrument approach procedure utilizing air navigation facilities, with only horizontal guidance, or area-type navigation equipment for which a straight-in nonprecision instrument approach procedure has been approved or planned, and no precision approach facility or procedure is planned. (Utility AC)

OBSTACLE: An existing object, object of natural growth, or terrain, at a fixed geographical location, or which may be expected at a fixed location within a prescribed area, with reference to which vertical clearance is or must be provided during flight operation. (AIM)

OBSTRUCTION: An object, including a mobile object, which penetrates an imaginary surface described in FAR Part 77.

OUTER MARKER: A marker beacon at or near the glide slope intercept position of an ILS approach. (AIM)

PRECISION APPROACH PATH INDICATOR (PAPI): An airport landing aid similar to a VASI, but which has light units installed in a single row rather than two rows.

PRECISION APPROACH PROCEDURE: A standard instrument approach procedure in which an electronic glide slope is provided. (FAR 1)

PRECISION INSTRUMENT RUNWAY: A runway with an instrument approach procedure utilizing an instrument landing system (ILS), microwave landing system (MLS), or precision approach radar (PAR). (Utility AC)

REMOTE COMMUNICATIONS AIR/GROUND FACILITY (RCAG): An unmanned VHF/UHF transmitter/receiver facility which is used to expand ARTCC air/ground communications coverage and to facilitate direct contact between pilots and controllers. (AIM)

REMOTE COMMUNICATIONS OUTLET (RCO) AND REMOTE TRANSMITTER/RECEIVER (RTR): An unmanned communications facility remotely controlled by air traffic personnel. RCO's serve FSS's. RTR's serve terminal ATC facilities. (AIM)

RESTRICTED AREA: Designated airspace within which the flight of aircraft, while not wholly prohibited, is subject to restriction. (FAR 1)

RUNWAY CLEAR ZONE: A trapezoidal area at ground level, under the control of the airport authorities, for the purpose of protecting the safety of approaches and keeping the area clear of the congregation of people. The runway clear zone begins at the end of each primary surface and is centered upon the extended runway centerline. (Utility AC)

RUNWAY EDGE LIGHTS: Lights used to define the lateral limits of a runway. Specific types include:

- HIRL – High-Intensity Runway Lights.
- MIRL – Medium-Intensity Runway Lights.

RUNWAY END IDENTIFIER LIGHTS (REIL): Two synchronized flashing lights, one on each side of the runway threshold, which provide a pilot with a rapid and positive visual identification of the approach end of a particular runway. (AIM)

RUNWAY SAFETY AREA: A cleared, drained, graded, and preferably turfed area symmetrically located about the runway which, under normal conditions, is capable of supporting snow removal, fire fighting, and rescue equipment and of accommodating the occasional passage of aircraft without causing major damage to the aircraft.

SMALL AIRCRAFT: An aircraft of 12,500 pounds or less maximum certificated takeoff weight. (FAR 1)

SPECIAL USE AIRSPACE: Airspace of defined horizontal and vertical dimensions wherein activities must be confined because of their nature and/or wherein limitations may be imposed upon aircraft operations that are not a part of those activities. (AIM)

STANDARD INSTRUMENT DEPARTURE (SID): A preplanned instrument flight rules (IFR) air traffic control departure procedure printed for pilot use in graphic and/or textual form. SID's provide transition from the terminal to the appropriate en route structure. (AIM)

STANDARD TERMINAL ARRIVAL ROUTE (STAR): A preplanned instrument flight rule (IFR) air traffic control arrival route published for pilot use in graphic and/or textual form. STARs provide transition from the en route structure to an outer fix or an instrument approach fix/arrival waypoint in the terminal area. (AIM)

STOPWAY: An area beyond the takeoff runway, no less wide than the runway and centered upon the extended centerline of the runway, able to support the airplane during an aborted takeoff, without causing structural damage to the airplane, and designated by the airport authorities for use in decelerating the airplane during an aborted takeoff. (FAR 1)

STRAIGHT-IN INSTRUMENT APPROACH: An instrument approach wherein final approach is begun without first having executed a procedure turn; it is not necessarily completed with a straight-in landing or made to straight-in landing weather minimums. (AIM)

TAXILANE: The portion of the aircraft parking area used for access between taxiways, aircraft parking positions, hangars, storage facilities, etc. (Utility AC)

TAXIWAY: A defined path, from one part of an airport to another, selected or prepared for the taxiing of aircraft. (Utility AC)

TERMINAL CONTROL AREA (TCA): Controlled airspace extending upward from the surface or higher to specified altitudes, within which all aircraft are subject to operating rules and pilot and equipment requirements specified in FAR Part 91. (AIM)

TERMINAL INSTRUMENT PROCEDURES (TERPS): Procedures for instrument approach and departure of aircraft to and from civil and military airports. There are four types of terminal instrument procedures: precision approach, nonprecision approach, circling, and departure.

TERMINAL RADAR SERVICE AREA (TRSA): Airspace surrounding designated airports wherein ATC provides radar vectoring, sequencing, and separation on a full-time basis for all IFR and participating VFR aircraft. (AIM)

THRESHOLD: The beginning of that portion of the runway usable for landing. (AIM) (Also see Displaced Threshold)

TOUCH-AND-GO: A practice maneuver consisting of a landing and a takeoff performed in one continuous movement. A touch-and-go is defined as two operations.

TRAFFIC PATTERN: The traffic flow that is prescribed for aircraft landing at, taxiing on, or taking off from an airport. The components of a typical traffic pattern are upwind leg, crosswind leg, downwind leg, base leg, and final approach. (AIM)

TRANSIENT AIRCRAFT: Aircraft not based at the airport.

TRANSMISSOMETER: An apparatus used to measure runway visibility on an ILS runway.

TRANSPORT AIRPORT: An airport designed, constructed, and maintained to serve airplanes having approach speeds of 121 knots or more. (Utility AC)

UNICOM (Aeronautical Advisory Station): A nongovernment air/ground radio communication facility which may provide airport information at certain airports. (AIM)

UTILITY AIRPORT: An airport designed, constructed, and maintained to serve airplanes having approach speeds less than 121 knots. (Utility AC)

VERY-HIGH-FREQUENCY OMNIDIRECTIONAL RANGE (VOR): The standard navigational aid used throughout the airway system to provide bearing information to aircraft. When combined with Tactical Air Navigation (TACAN) the facility, called VORTAC, provides distance as well as bearing information.

VISUAL APPROACH SLOPE INDICATOR (VASI): An airport landing aid which provides a pilot with visual descent (approach slope) guidance while on approach to landing. Also see PAPI.

VISUAL FLIGHT RULES (VFR): Rules that govern the procedures for conducting flight under visual conditions. VFR applies when meteorological conditions are equal to or greater than the specified minimum – generally, a 1,000-foot ceiling and 3-mile visibility.

VISUAL GLIDE SLOPE INDICATOR (VGS): A generic term for the group of airport visual landing aids which includes Visual Approach Slope Indicators (VASI), Precision Approach Path Indicators (PAPI), and Pulsed Light Approach Slope Indicators (PLASI). When FAA funding pays for this equipment, whichever type receives the lowest bid price will be installed unless the airport owner wishes to pay the difference for a more expensive unit.

VISUAL RUNWAY: A runway intended solely for the operation of aircraft using visual approach procedures, with no straight-in instrument approach procedure and no instrument designation indicated on an FAA-approved airport layout plan. (Utility AC)

WARNING AREA: Airspace which may contain hazards to nonparticipating aircraft in international airspace. (AIM)

REFERENCES

FAR 1: Federal Aviation Regulations Part 1, Definitions and Abbreviations. (1974)

AIM: Airman's Information Manual, Pilot/Controller Glossary. (1988)

Utility AC: Federal Aviation Administration. *Utility Airports – Air Access to National Transportation.* Advisory Circular 150/5300-4B. (1987)

FAA ATA: Federal Aviation Administration. *Air Traffic Activity.* (1986)

FAA Census: Federal Aviation Administration. *Census of U.S. Civil Aircraft.* (1986)

FAA Stats: Federal Aviation Administration. *Statistical Handbook of Aviation.* (1984)

NTSB: National Transportation Safety Board.