

FAR Part 150 Noise Exposure Maps Update.

Snohomish
County Airport

PaineField 

FAR Part 150
Noise Exposure Maps
Update

» Barnard Dunkelberg & Company

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» **Barnard Dunkelberg & Company**

Cherry Street Building
1616 East 15th Street
Tulsa, Oklahoma 74120
Phone Number. 918 585 8844
FAX Number. 918 585 8857
Email Address. Mark@BD-C.com

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FAR Part 150 Noise Exposure Map Checklist

I. IDENTIFICATION AND SUBMISSION OF MAP DOCUMENT:	Page Number
<p>A. Is this submittal appropriately identified as one of the following, submitted under FAR Part 150:</p> <ul style="list-style-type: none"> 1. A NEM only 2. A NEM and NCP 3. A revision to NEMs which have previously been determined by FAA to be in compliance with Part 150? 	<p>Cover, Cover Letter</p> <p style="margin-left: 100px;">Yes</p> <p style="margin-left: 100px;">No</p> <p style="margin-left: 100px;">Yes</p>
<p>B. Is the airport name and the qualified airport operator identified?</p>	<p>Cover</p>
<p>C. Is there a dated cover letter from the airport operator which indicates the documents are submitted under Part 150 for appropriate FAA determination?</p>	<p>Yes</p>
II. CONSULTATION: [150.21 (b), A150.(a)]	
<p>A. Is there a narrative description of the consultation accomplished, including opportunities for public review and comment during map development?</p>	<p>22-24, Appendix</p>
<p>B. Identification:</p> <ul style="list-style-type: none"> 1. Are the consulted parties identified? 2. Do they include all those required by 150.21 (b) and A150.105 (a)? 	<p>22-24, Appendix</p> <p>Yes, 22-24, Appendix</p>
<p>C. Does the documentation include the airport operator's certification, and evidence to support it, that interested persons have been afforded adequate opportunity to submit their view, data, and comments during map development and in accordance with 150.21 (b)?</p>	<p>Cover Letter, 22-24, Appendix</p>
<p>D. Does the document indicate whether written comments</p>	

were received during consultation and, if there were comments, that they are on file with the FAA region?

22-24, Appendix

III. **GENERAL REQUIREMENTS:** [150.21]

A. Are there two maps, each clearly labeled on the face with year (existing condition year and 5-year)? 19-20

B. Map currency:

1. Does the existing condition map year match the year on the airport operator's submittal letter? Yes, 19

2. Is the 5-year map based on reasonable forecasts and other planning assumptions and is it for the fifth calendar year after the year of submission? Yes, 20

3. If the answer to 1 and 2 above is no, has the airport operator verified in writing that data in the documentation are representative of existing condition and 5-year forecast conditions as of the date of submission? N/A

C. If the NEM and NCP are submitted together:

1. Has the airport operator indicated whether the 5-year map is based on 5-year contours without the program vs. contours if the program is implemented? Cover Letter

2. If the 5-year map is based on program implementation:
a. are the specific program measures which are reflected on the map identified? No

b. does the documentation specifically describe how these measures affect land use compatibilities depicted on the map? No

3. If the 5-year NEM does not incorporate program implementation, has the airport operator included an additional NEM for FAA determination after the program is approved which show program implementation conditions and which is intended to replace the 5-year NEM as the new official 5-year map? N/A

IV. **MAP SCALE, GRAPHICS, AND DATA REQUIREMENTS:**
[A150.101, A150.105, 150.21 (a)]

A. Are the maps of sufficient scale to be clear and readable (they must not be less than 1" to 8,000') and is the scale indicated on the maps? Yes, 19-20

- B. Is the quality of the graphics such that required information is clear and readable? Yes, 19-20
- C. Depiction of the airport and its environs.
1. Is the following graphically depicted to scale on both the existing condition and 5-year maps:
 - a. Airport boundaries Yes, 19-20
 - b. Runway configurations with runway end numbers No
 2. Does the depiction of the off-airport data include:
 - a. A land use base map depicting streets and other identifiable geographic features Yes
 - b. The area within the 65 Ldn (or beyond, at local discretion) Yes
 - c. Clear delineation of geographic boundaries and the names of all jurisdictions with the 65 Ldn (or beyond, at local discretion) Yes
- D. 1. Continuous contours for at least the Ldn 65, 70, and 75? Yes, 19-20
2. Based on current airport and operational data for the existing condition year NEM, and forecast data for the 5-year NEM? 9, 19-20
- E. Flight tracks for the existing condition and 5-year forecast time frames (these may be on supplemental graphics which must use the same land use base map as the existing conditioned and 5-year NEM), which are numbered to correspond to accompanying narrative? 10, 12
- F. Locations of any noise monitoring sites (these may be on supplemental graphics which must use the same land use base map as the official NEMs) Yes, 11
- G. Noncompatible land use identification:
1. Are noncompatible land uses within at least the 65 Ldn depicted on the maps? Yes, 19-20
 2. Are noise sensitive public buildings identified? Yes
 3. Are the noncompatible uses and noise sensitive public buildings readily identifiable and explained on the map legend? Yes
 4. Are compatible land uses, which would normally be

considered noncompatible, explained in the accompanying narrative? N/A

V. **NARRATIVE SUPPORT OF MAP DATA:**
[150.21 (a), A150.1, A150.103]

- A. 1. Are the technical data, including data sources, on which the NEMs are based adequately described in the narrative? Yes
- 2. Are the underlying technical data and planning assumptions reasonable? Yes

B. Calculation of Noise Contours:

- 1. Is the methodology indicated?
 - a. Is it FAA approved? Yes, 9
 - b. Was the same model used for both maps? Yes
 - c. Has AEE approval been obtained for use of a model other than those which have previous blanket FAA approval? N/A
- 2. Correct use of noise models:
 - a. Does the documentation indicate the airport operator has adjusted or calibrated FAA-approved noise models or substituted one aircraft type for another? No
 - b. If so, does this have written approval from AEE? N/A
- 3. If noise monitoring was used, does the narrative indicate that Part 150 guidelines were followed? Permanent Monitors
- 4. For noise contours below 65 Ldn, does the supporting documentation include explanation of local reasons? (Narrative explanation is highly desirable but not required by the Rule.) Cover Letter

C. Noncompatible Land Use Information:

- 1. Does the narrative give estimates of the number of people residing in each of the contours (Ldn 65, 70 and 75, at a minimum) for both the existing condition and 5-year maps? Yes, 21
- 2. Does the documentation indicate whether Table 1 of Part 150 was used by the airport operator? Cover Letter, 21
 - a. If a local variation to Table 1 was used:
 - (1) does the narrative clearly indicate which adjustments were made and the local

- | | |
|---|-------|
| reasons for doing so? | N/A |
| (2) does the narrative include the airport operator's complete substitution for Table 1? | N/A |
| 3. Does the narrative include information of self-generated or ambient noise where compatible/noncompatible land use identifications consider non-airport/aircraft sources? | N/A |
| 4. Where normally noncompatible land uses are not depicted as such on the NEMs, does the narrative satisfactorily explain why, with reference to the specific geographic areas? | N/A |
| 5. Does the narrative describe how forecasts will affect land use compatibility? | 8, 21 |

VI. **MAP CERTIFICATIONS:** [150.21 (b), 150.21 (e)]

- | | |
|---|----------------------------|
| A. Has the operator certified in writing that interested persons have been afforded adequate opportunity to submit views, data, and comments concerning the correctness and adequacy of the draft maps and forecasts? | Cover Letter, 22 |
| B. Has the operator certified in writing that each map and description of consultation and opportunity for public comment are true and complete? | Cover Letter, 22, Appendix |

Snohomish County Airport/Paine Field Part 150 Noise Exposure Maps Update

Introduction

The noise exposure maps for Paine Field were originally prepared as a component of a Part 150 Noise and Land Use Compatibility Study that was adopted by Snohomish County in July 1995. Those noise exposure maps, with a five-year planning horizon, are now out of date and the adopted forecasts contained in the 2002 Master Plan Update for Paine Field have been used as a basis to formulate updated Noise Exposure Maps.

The need to update the noise exposure maps was identified as a result of the public meetings and process used in the preparation of the 2002 Master Plan Update. Aircraft operation numbers and types of aircraft have changed since the preparation of the last Noise Exposure Maps, especially with the removal of military helicopter operations from the airport. The Noise Compatibility Recommendations contained in the previous Part 150 Study have not been amended and are still current.

Inventory

Paine Field is located in an unincorporated area of Snohomish County. The northern and eastern portion of airport property abuts the City of Everett, while the western portion of airport property abuts the City of Mukilteo. The corporate boundaries of the cities of Lynnwood and Edmonds are approximately three miles to the south of airport property. The relationship of Paine Field to the surrounding cities is illustrated in the following figure, entitled *AIRPORT ENVIRONS MAP*.

The following narrative provides a general description of the existing land uses, land use zoning, and future land uses in the area surrounding Paine Field.

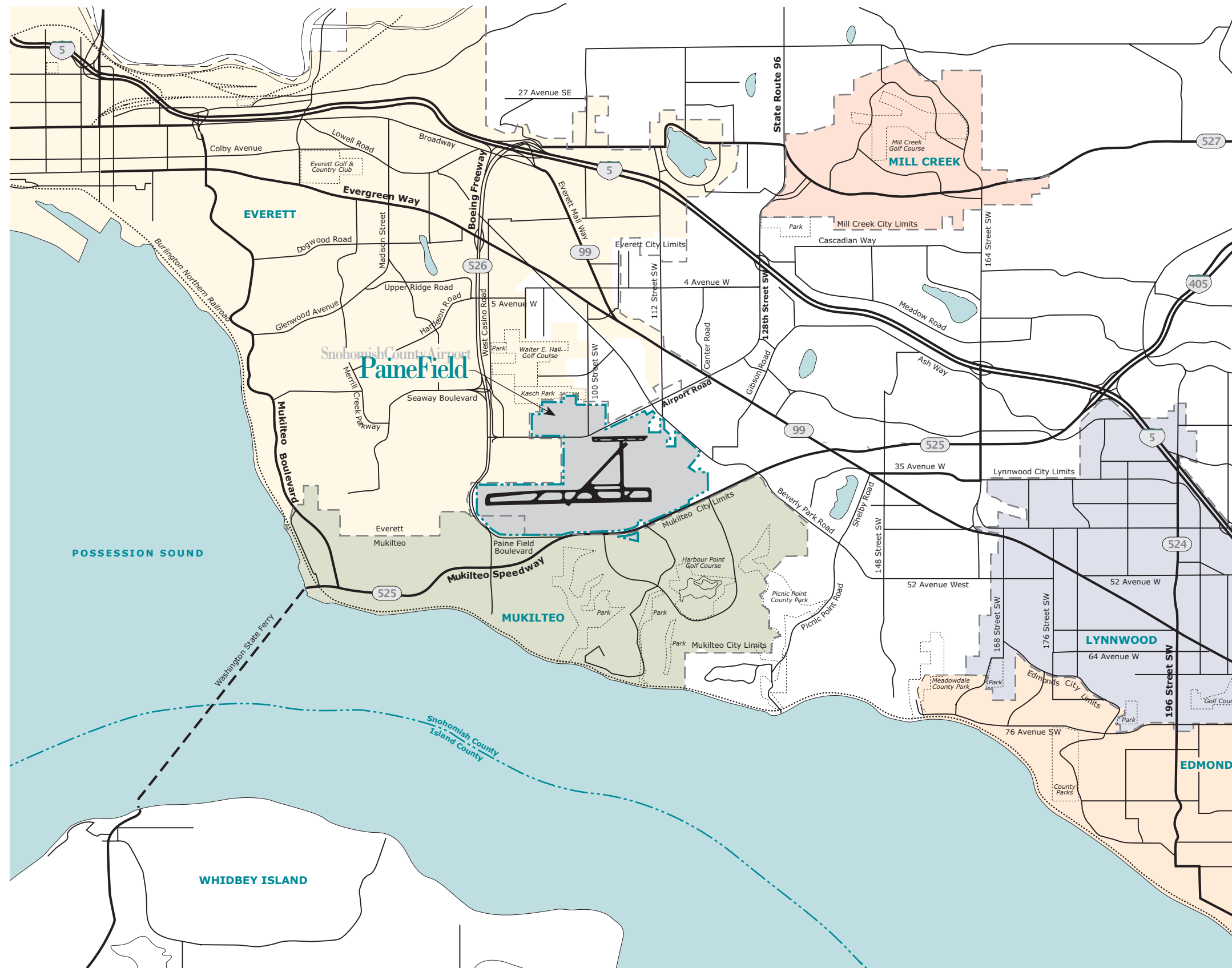


Figure 1
Airport Environs Map

- Edmonds
- Everett
- Lynnwood
- Mill Creek
- Mukilteo

1" = 6,000'



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Source: Snohomish County Planning Department Mapping, Aerial Photography, and United States Geological Survey (USGS) Quadrangle Sheets.

Existing Zoning

Generalized existing zoning within the vicinity of Paine Field is illustrated in following figure, entitled *GENERALIZED EXISTING ZONING*, reflecting the zoning designations of the cities of Everett and Mukilteo, along with those for the unincorporated areas of Snohomish County. For purposes here, zoning is categorized into the following types: residential, commercial (including office), industrial, and open/parks. The airport itself is zoned light industrial.

In the area north of the airport, there is a large manufacturing/industrial and office zoning tract associated with the Boeing facilities. The area north of the airport and adjacent to Possession Sound is primarily zoned residential. Some commercial zoning does exist north of the airport associated with the ferry landing and at the intersection of Mukilteo Speedway and Mukilteo Boulevard.

The area east of the airport is characterized by residential zoning with strips of commercial zoning along the major roadways, i.e., SR 99 and Airport Road. In addition, Kasch Park and Walter E. Hall Golf Course are located directly east of airport property, south of Casino Road.

The area directly southeast of the airport is dominated by business park and residential zoning, while southwest of the airport, zoning uses along Mukilteo Speedway are characterized by a combination of general commercial, community business, industrial, and manufacturing. General commercial and community business zoning extend laterally along SR99. The area south of the airport is dominated by various residential uses, with dispersed areas of commercial and industrial zoning.

Within Mukilteo, west of the airport, lies the Harbour Pointe Community zoned primarily for residential uses, with several areas of park/open space and community business. In the northwest portion of Mukilteo, zoning consists of residential uses, waterfront mixed use and downtown business district.

Existing Land Use

As illustrated in Figure 3, entitled *GENERALIZED EXISTING LAND USE*, land use basically reflects existing zoning. In the area directly adjacent to the airport, industrial and commercial uses prevail; one notable exception is the residential area west of Paine Field Boulevard. Commercial uses are found along major arterials and at the intersections of these arterials. Densities of residential use vary in the area, but generally reflect single-family, suburban development with areas of open space. Additionally, significant clusters of multi-family development exist laterally along Casino Road, between Airport Road and SR99; along 112th St. SW, between SR99 and I-5; and along

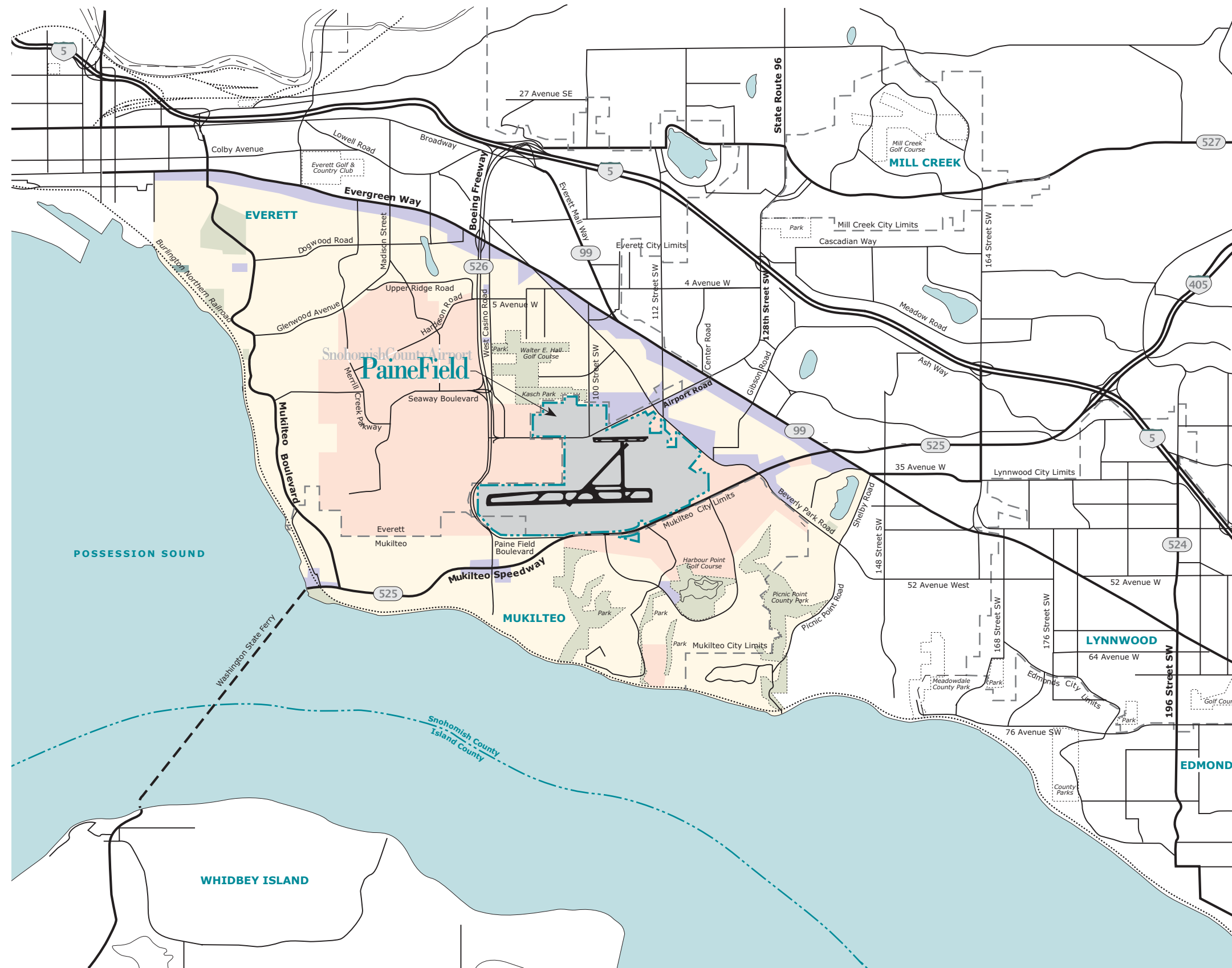


Figure 2
Generalized
Existing Zoning

- Airport Property
- Residential
- Commercial
- Industrial/Office Park
- Parks/Open Space
- Outside of Study Area

1" = 6,000'



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Source: Snohomish County Planning Department Mapping, Aerial Photography, and United States Geological Survey (USGS) Quadrangle Sheets. Zoning: Snohomish County Zoning Map.

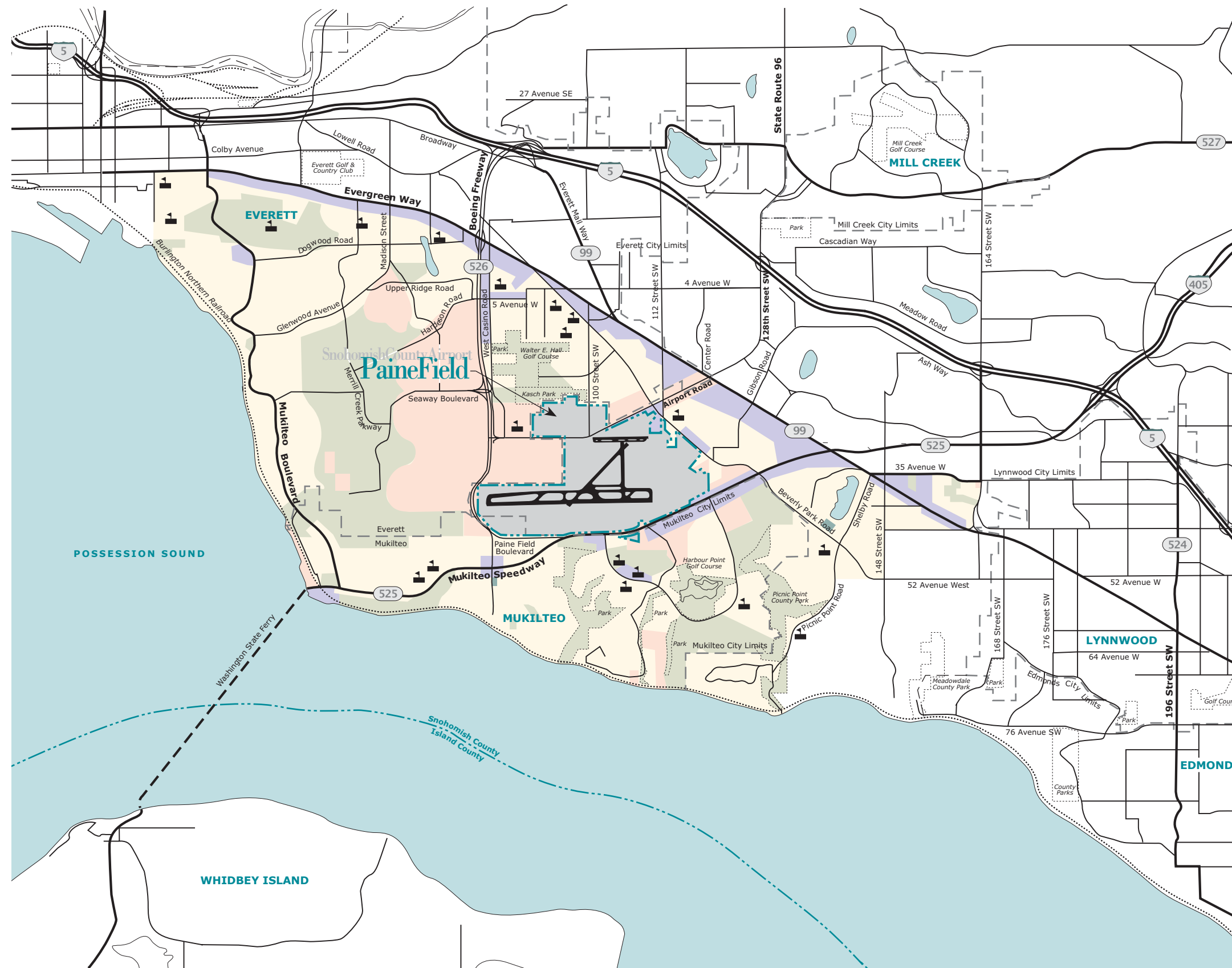


Figure 3
Generalized
Existing Land Use

- Airport Property
- Residential
- Commercial
- Industrial/Office Park
- Undeveloped/Parks/Open Space
- Schools
- Outside of Study Area

1" = 6,000'



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Source: Snohomish County Planning Department Mapping, Aerial Photography, and United States Geological Survey (USGS) Quadrangle Sheets. Existing Land Use: Field Surveys.

128th St. SW, between SR99 and I-5. The waters of Possession Sound are located approximately one and one-half miles west of the airport property and approximately two miles north of the airport. In addition, it should be noted that there is a substantial amount of land which is undeveloped or dedicated to parks/open space in the vicinity of the airport.

Several large tracts of undeveloped land exist within the environs on the airport. Some of these are associated with parks, or areas with limited development potential because of steep slopes or drainage features. There are two large open spaces near the airport; the west side of airport property and the area directly north and west of The Boeing Company plant.

Future Land Use

Generalized future land use within the vicinity of Paine Field is illustrated in Figure 4, entitled *GENERALIZED FUTURE LAND USE*. Information supplied by Snohomish County shows that Paine Field has been designated as urban industrial. Urban Commercial is adjacent to SR99, on both the east and west portions, extending from 112th St. SW to 164th St. SW. Situated between SR99 and Beverly Park Road, urban medium density residential is the dominant classification, with a small pocket of urban high density residential. South and east of SR99, various densities of residential use make up future land uses. Several “Centers Designations” have been established at various locations in and around Paine Field. These centers represent the focal point of commercial and employment activity and include: Paine Field Airport, the intersection of Airport Road and SR99, the converging point of Mukilteo Speedway, SR99, and SR525, the intersection of 128th St. SW and Interstate 5 (I-5), and the intersection of Interstate 5 (I-5) and 164th St. SW.

Southwest/west of Paine Field, an approximately 1/3 to 1/2 mile band of commercial and light industrial tracts parallel Mukilteo Speedway. Further west, extending down toward Puget Sound is the Harbour Pointe Golf Course, multi-family and single family residential land uses. West and northwest of Paine Field, land uses consist mostly of single family residential with small pockets of commercial and parks/open space.

Existing Noise Abatement Procedures

The airport has established noise abatement procedures. A copy of the noise abatement procedure pamphlet is in the Appendix.

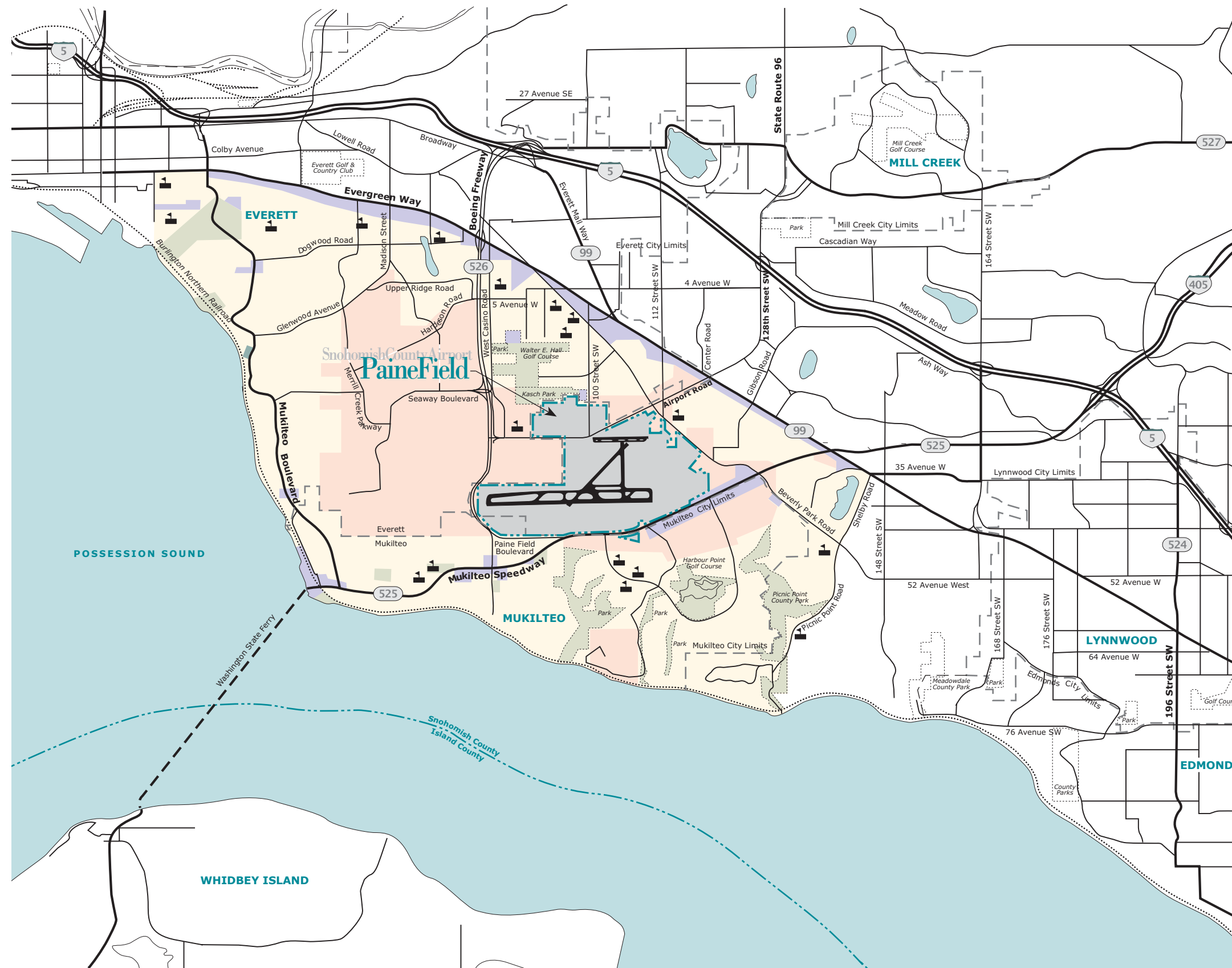


Figure 4
Generalized
Future Land Use

- Airport Property
- Residential
- Commercial
- Industrial/Office Park
- Parks/Open Space
- Outside of Study Area

1" = 6,000'



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Source: Snohomish County Planning Department Mapping, Aerial Photography, and United States Geological Survey (USGS) Quadrangle Sheets. Future Land Use: City and County Comprehensive Plans.

Aircraft Operations Forecasts Summary

As stated previously, the aircraft operations forecasts were developed as part of the recently completed Airport Master Plan Update. These forecasts are summarized below. Paine Field will continue to be the primary general aviation and industrial aviation airport serving Snohomish County and the northern portion of the Seattle Metropolitan area. In addition, the forecasts indicate that, to some degree, there is unconstrained demand for commercial passenger service at an airport in the vicinity of Paine Field.

The following table, entitled *SUMMARY OF OPERATIONS DEMAND FORECAST BY AIRCRAFT TYPE*, summarizes the activity for current (calendar year 2002) and expected future (calendar year 2008) aircraft operational activity. Although the forecasts are based on "unconstrained demand", without regard to site-specific physical or environmental constraints, it is realized that conditions on the airport and in the area surrounding the airport will influence the type and quantity of aviation activity which can be reasonably accommodated. The forecasts are consistent with the 1978-79 Mediated Role Determination defined for Paine Field.

It should be noted that 2002 data provided in the following table includes an estimate of aircraft operations that occur during hours when the ATCT is closed (9:00 pm to 7:00 am), which were not included in the 2002 Master Plan Update documentation. This estimate of operations during the time of ATCT closure was critical for the Noise Exposure Map Update because nighttime aircraft operations (those occurring between 10:00 pm and 7:00 am) receive a penalty in the computerized noise model that is used to generate noise contours (see additional explanation in the *Aircraft Operations Data and Flight Tracks* section below). Because the Noise Exposure Maps are the "official" maps used for land use planning in the vicinity of the airport, an estimate of nighttime operations is necessary to most accurately depict noise contours. The 2008 forecast numbers provided in the table below also includes consideration of aircraft operations that occur during nighttime hours.

It is also important to point out that although the future (2008) forecast of aircraft operations used for this INM update is extrapolated from of the adopted forecast numbers provided in the 2002 Master Plan Update; the 2008 number incorporates some recalibration related to recent historic events and trends (the events of September 11, 2001 and subsequent economic downturn effects on general aviation) and the inclusion of nighttime aircraft activity estimates.

Table 1
SUMMARY OF OPERATIONS DEMAND FORECAST BY AIRCRAFT TYPE
Paine Field Noise Exposure Map Update

Operations By Type¹	2002 Day	2002 Night	2008 Day	2008 Night
<i>Industrial Aviation Air Carrier</i>				
Jet	3,545	71	6,060	121
<i>Military</i>				
	1,295	44	2,020	70
<i>General Aviation</i>				
Single Engine Piston	168,210	6,393	230,523	8,760
Multi-Engine Piston	15,832	475	21,685	650
Turboprop	5,937	178	9,605	288
Business Jet	5,937	178	9,605	288
Helicopter	1,978	59	3,020	91
<i>Passenger Air Carrier/Commuter</i>				
Jet	---	---	10,619	212
Turboprop	---	---	3,716	74
	---	---	6,903	138
TOTAL ANNUAL OPERATIONS	202,734	7,398	293,137	10,480

Source: Barnard Dunkelberg & Co.

¹ Existing – ATCT Counts During Hours of Operation (7:00 am to 9:00 pm) Plus Airport Staff Estimate for Hours When ATCT is closed.

Noise Contour Development

Noise Monitoring

No noise monitoring was done specifically for this NEM Update; however, the airport's noise monitoring system was used to help evaluate the noise contours.

Noise Contours Development Explanation

The DNL noise contours were generated using the Integrated Noise Model (INM) Version 6.0c, which is the most current computer program developed by the Federal Aviation Administration specifically for modeling the noise environment at airports. The INM program requires the input of the physical and operational characteristics of the airport. Physical characteristics include runway end coordinates, displaced thresholds, airport altitude, topography, and temperature. Operational characteristics include aircraft mix and flight tracks. Optional data that can be incorporated in the model includes approach and departure profiles, approach and departure procedures, and aircraft noise

curves. Data from Paine Field's Aircraft Flight Tracking and Environmental Monitoring System (AFTEMS) was used to calculate the INM flight tracks and noise levels.

Aircraft Operations Data and Flight Tracks

The percent of aircraft operations that occur during the nighttime is also presented in the previously presented table entitled, *SUMMARY OF OPERATIONS DEMAND FORECAST BY AIRCRAFT TYPE*. In the DNL metric, aircraft operations that occur after 10 pm and before 7 am are considered more intrusive and receive a 10 dBA penalty. As there is not a twenty-four hour tower at Paine Filed, the nighttime operations are an estimate, and may reflect a "worst case" scenario for such operations. Aircraft flight tracks, runway utilizations and profiles were obtained by observations during on-site visits; review of Air Route traffic radar plats, discussion with the Air Traffic Control personnel, discussion with airport management, data provided in the 1995 FAR Part 150 Study, and data from the airport's Aircraft Flight Tracking and Environmental Monitoring System (AFTEMS). The flight tracks are shown in the following figure, entitled *FLIGHT TRACKS WITH EXISTING LAND USE*, which is a computer plot of the actual flight tracks used in the INM. It must be remembered that these are generalized average flight tracks and are not intended to illustrate the exact location that aircraft fly on each track. Flight tracks are the same for both the existing and future conditions.

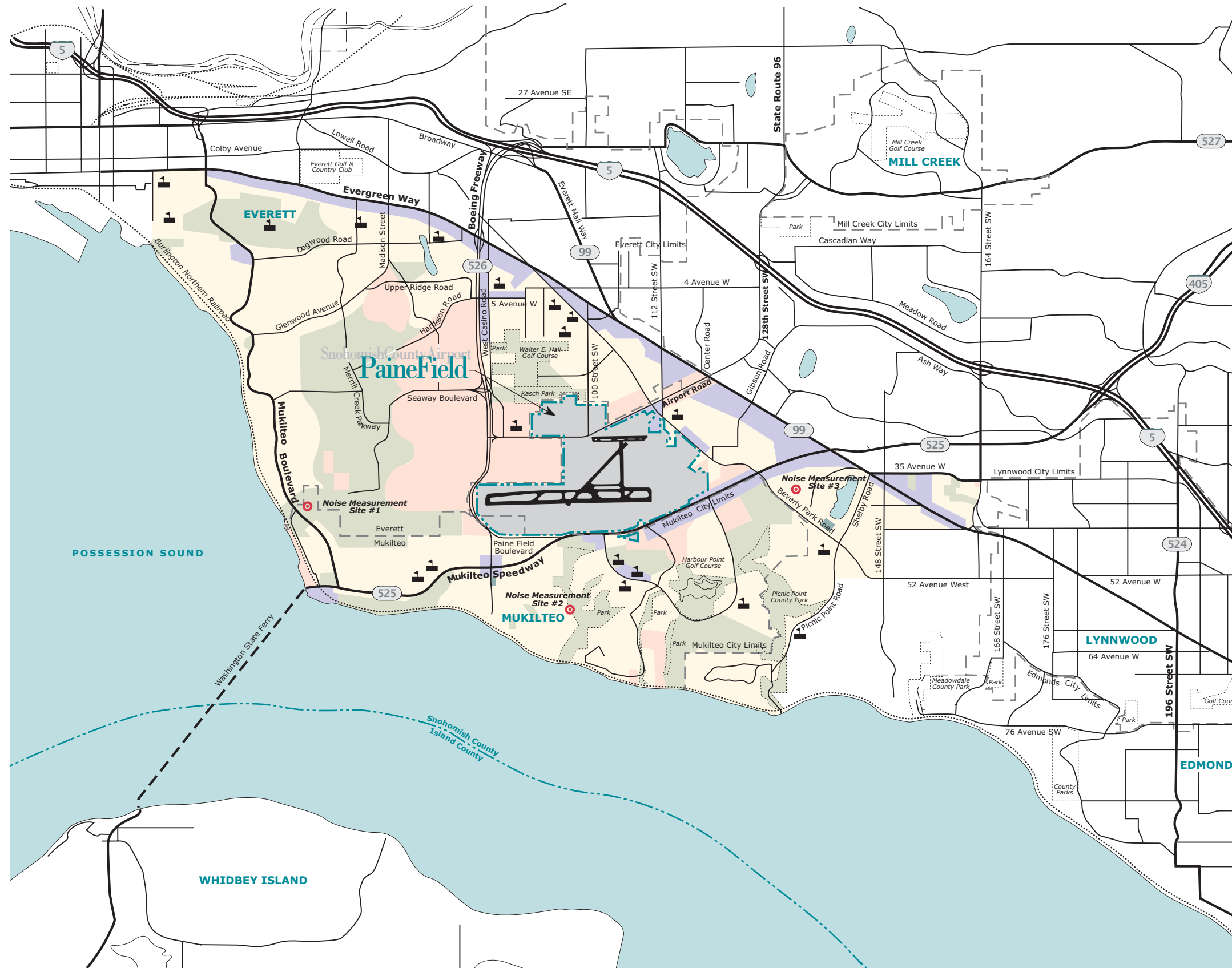


Figure 5
Noise Measurement
Locations

- Airport Property
- Residential
- Commercial
- Industrial/Office Park
- Undeveloped/Parks/Open Space
- Schools
- Outside of Study Area
- Noise Monitor Location N

1" = 6,000'

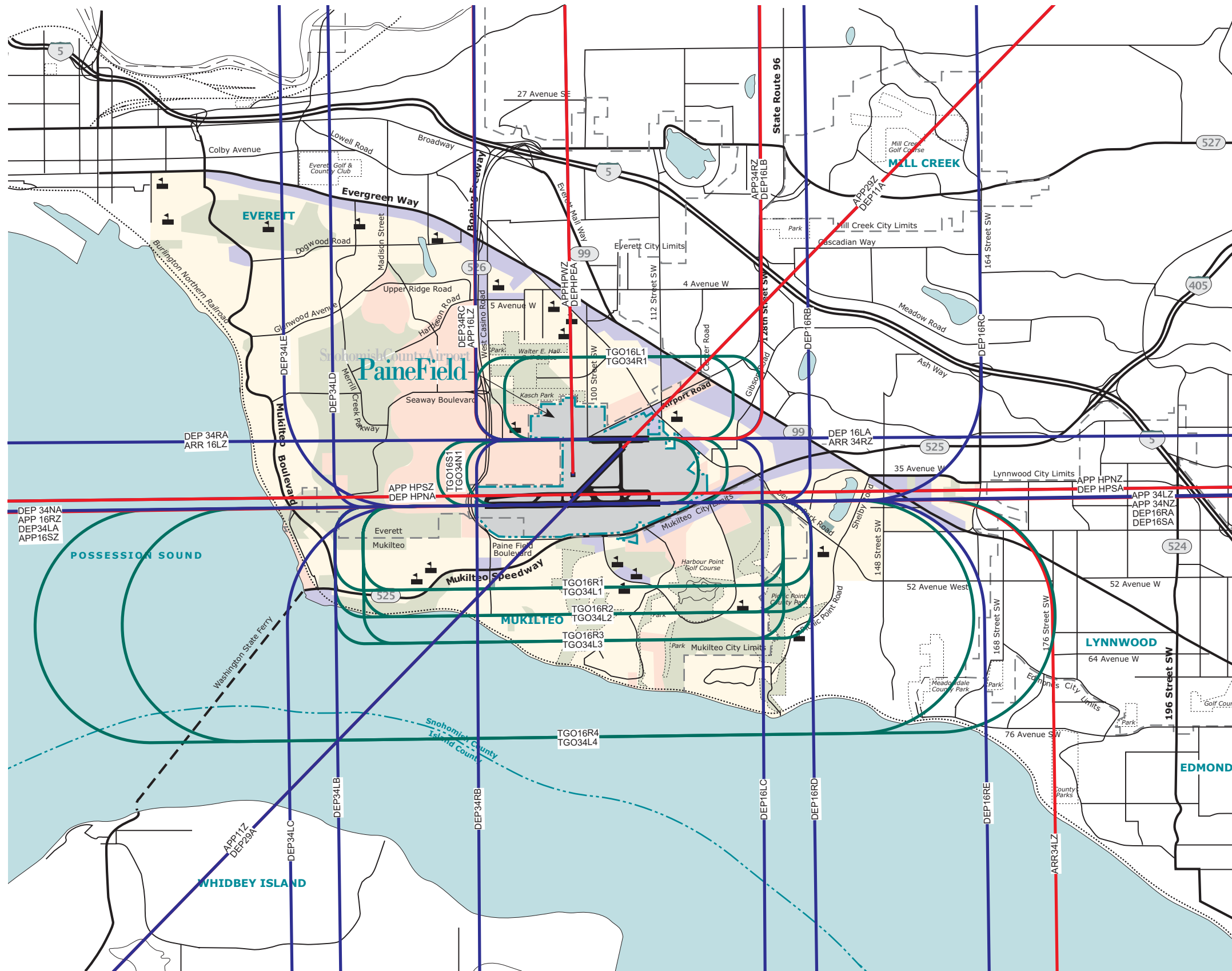


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Source: Snohomish County Planning Department Mapping, Aerial Photography, and United States Geological Survey (USGS) Quadrangle Sheets. Existing Land Use: Field Surveys.

Figure 6
Flight Tracks with
Generalized Existing Land Use



- Airport Property
- Residential
- Commercial
- Industrial/Office Park
- Undeveloped/Parks/Open Space
- Schools
- Outside of Study Area

1" = 6,000'



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Source: Snohomish County Planning Department Mapping, Aerial Photography, and United States Geological Survey (USGS) Quadrangle Sheets. Existing Land Use: Field Surveys.

An additional important factor in developing the noise contours is the percent of time each runway is utilized. The runway that is utilized by an aircraft is dictated by the speed and direction of the wind. From a safety and stability standpoint, it is desirable, and at times necessary, to arrive and depart an aircraft toward the direction of the wind. When the wind direction changes, the aircraft operational activity will shift to the runway that favors the new wind direction. The runway utilization and percent of use of each flight track is presented in the following tables entitled *EXISTING AND FUTURE FLIGHT TRACK UTILIZATION – DEPARTURES*, *EXISTING AND FUTURE FLIGHT TRACK UTILIZATION PERCENTAGE – ARRIVALS* and *EXISTING AND FUTURE FLIGHT TRACK UTILIZATION PERCENTAGE – TOUCH AND GO*. In addition, the utilization of the runways broken down by day and night is provided in Table 5, entitled *EXISTING AND FUTURE RUNWAY UTILIZATION PERCENTAGE*. The contours also reflect the engine run-ups (trims) that the Boeing Company and Goodrich, Inc. perform.

Table 3

EXISTING AND FUTURE FLIGHT TRACK UTILIZATION PERCENTAGE – ARRIVALS*Paine Field Noise Exposure Map Update*

Aircraft	Existing (ops/day)	Future (ops/day)	Flight Tracks Use By Percentage								
			16LZ	34LZ	16LZ	34RZ	11Z	29Z	HPNZ	HPSZ	HPWZ
GASEPF	89.0793	122.1914	26	21	27	23	1	2			
GASEPV	22.1208	30.3154	41	34	13	10	1	1			
BEC58P	15.1811	20.7935	41	34	13	10	1	1			
CNA441	6.5770	10.6368	55	45							
CL600	0.6556	1.0604	55	45							
G II	0.5911	0.2456	55	45							
CNA500	1.3287	1.4385	55	45							
G IV	0.8839	2.1403	55	45							
CNA750	3.8340	6.9119	55	45							
B206L	2.8523	4.3582							40	40	20
DHC830	0.0000	9.4566	55	45							
CL601	0.0000	5.0901	55	45							
737-300	0.1701	0.3556	55	45							
737-400	0.1168	0.2441	55	45							
737-500	0.0330	0.0690	55	45							
737-700	0.2437	0.5095	55	45							
747-200	0.0178	0.0371	55	45							
747-400	0.3945	0.8247	55	45							
767-300	0.3448	0.7207	55	45							
767-400	0.4123	0.8618	55	45							
777-200	0.7215	1.5082	55	45							
777-300	0.1066	0.2229	55	45							
757PW	0.4544	0.9499	55	45							
757RR	0.2412	0.5041	55	45							
767JT9	0.1315	0.2749	55	45							
MD-81	0.0869	0.1491	55	45							
C-130	0.0174	0.0271	55	45							
727EM1	0.1157		55	45							
727EM2	0.3329		55	45							
727QF	0.0718		55	45							
DC9Q7	0.0071		55	45							
DC9Q9	0.0569		55	45							
DC-10/40	0.0107		55	45							
737N17	0.1848		55	45							
737QN	0.0498		55	45							
TOTAL	147.426	221.8974									

Table 4

EXISTING AND FUTURE FLIGHT TRACK UTILIZATION PERCENTAGE – TOUCH AND GO*Paine Field Noise Exposure Map Update*

Aircraft	Existing (ops/day)	Future (ops/day)	Flight Tracks Use By Percentage									
			16R1	16R2	16R3	16R4	34L1	34L2	34L3	34L4	16L1	34R1
GASEPF	193.0051	264.7480	10	10	5		8	8	4		31	24
GASEPV	47.9285	65.6834	9	17	17		7	14	14		12	10
BEC58P	13.0124	17.8230	9	17	17		7	14	14		12	10
CNA441	3.2885	5.3184			15	40				10	35	
CL600	0.3278	0.5302				55					45	
G-II	0.1314	0.0546				55					45	
CNA500	1.1473	1.8556				55					45	
G-IV	0.1964	0.4756				55					45	
737-300	0.1458	0.3048				55					45	
737-400	0.1001	0.2092				55					45	
737-500	0.2372	0.4958				55					45	
747-200	0.0007	0.0015				55					45	
747-400	0.0161	0.0337				55					45	
767-300	0.0647	0.1352				55					45	
757PW	0.3895	0.8142				55					45	
757RR	0.2067	0.4321				55					45	
767JT9	0.0054	0.0112				55					45	
MD81	0.0035	0.0061				55					45	
C-130	0.0007	0.0011				55					45	
F-18	0.0709	0.1107				55					45	
L188	0.1774	0.2767				55					45	
727EM1	0.0257					55					45	
727EM2	0.0740					55					45	
727QF	0.0160					55					45	
DC9Q7	0.0003					55					45	
DC9Q9	0.0023					55					45	
DC10-40	0.0004					55					45	
737N17	0.0075					55					45	
737QN	0.0020					55					45	
TOTAL	260.5844	359.3212										

Table 5
EXISTING AND FUTURE RUNWAY UTILIZATION PERCENTAGE
Paine Field Noise Exposure Map Update

Runway	Arrivals Day	Departures Day	Arrivals Night	Departures Night
16R	33.5	33.0	56.4	53.6
34L	27.3	27.2	43.6	46.4
16L	20.0	20.8		
34R	16.8	17.1		
11	0.9	0.6		
29	1.5	1.2		
Total	100	100	100	100

Noise Exposure Maps

The existing and forecast aircraft operation numbers presented earlier, along with the data and methodology presented above, noise exposure maps for existing and future conditions have been prepared and are graphically depicted in the following illustrations entitled *EXISTING (2002) NOISE EXPOSURE MAP WITH EXISTING LAND USE* and *FUTURE (2008) NOISE EXPOSURE MAP WITH EXISTING LAND USE*. The 55, 60, 65, 70, and 75 DNL noise contours are illustrated on each map.

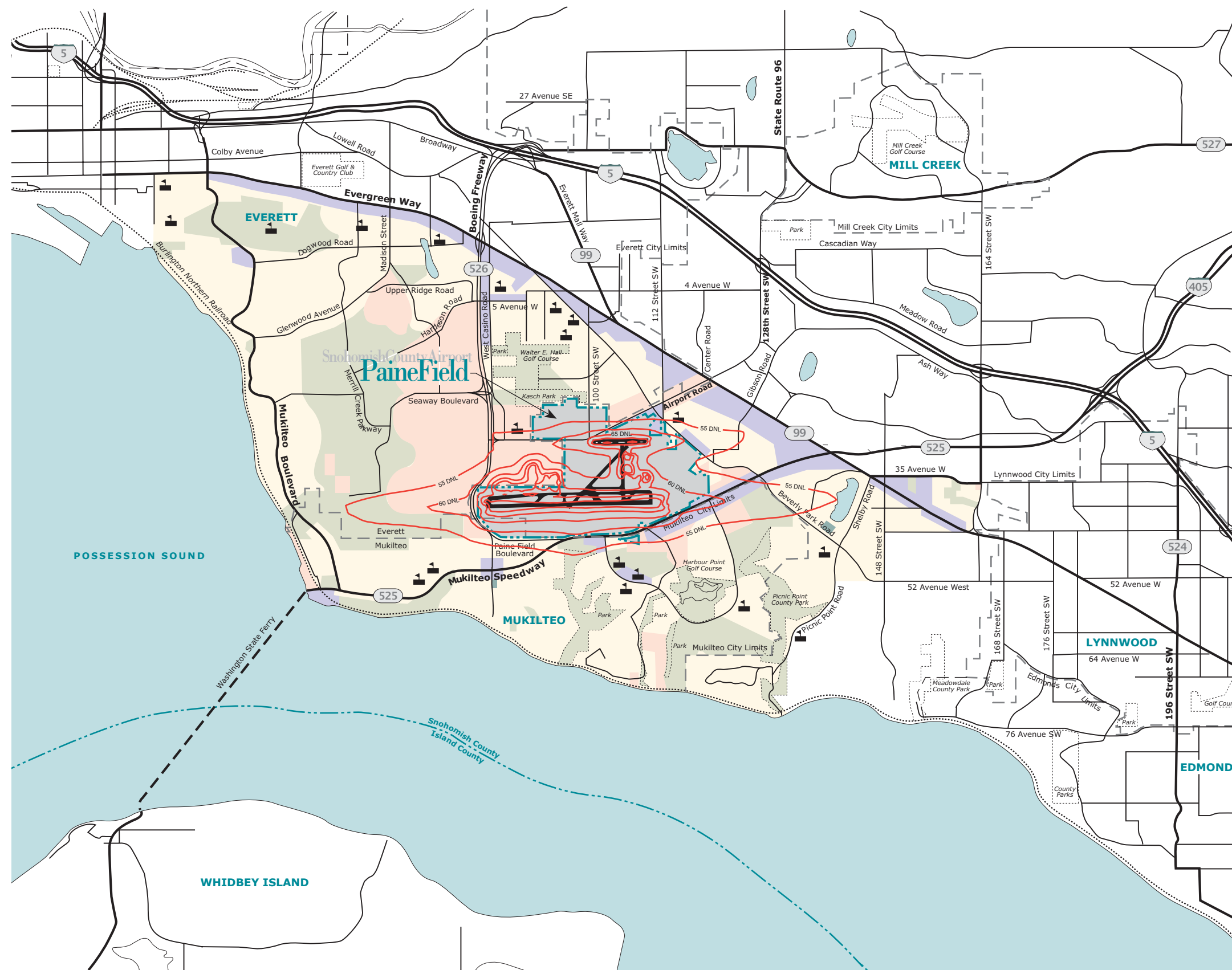


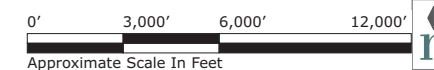
Figure 7
Existing (2002)
Noise Exposure Map

- Airport Property
- Residential
- Commercial
- Industrial/Office Park
- Undeveloped/Parks/Open Space
- Schools
- Outside of Study Area

The 65 DNL noise contour contains approximately 591 acres and no people.
 The 70 DNL noise contour contains approximately 342 acres and no people.
 The 75 DNL noise contour contains approximately 140 acres and no people.
 Planning jurisdictions are as shown on the map.
 Noise measurement sites and flight tracks are depicted on the Noise Measurement Sites and Flight Tracks Map.
 Residential land use is defined as incompatible within the 65 DNL noise contour or greater by the FAR Part 150.

The Noise Exposure Map and accompanying documentation for the Noise Exposure Map for Paine Field, submitted in accordance with FAR Part 150 with the best available information, are hereby certified as true and complete to the best of my knowledge and belief. In addition, it is hereby certified that the public was afforded the opportunity to review and comment on the document and its contents.

Signed _____ Date _____



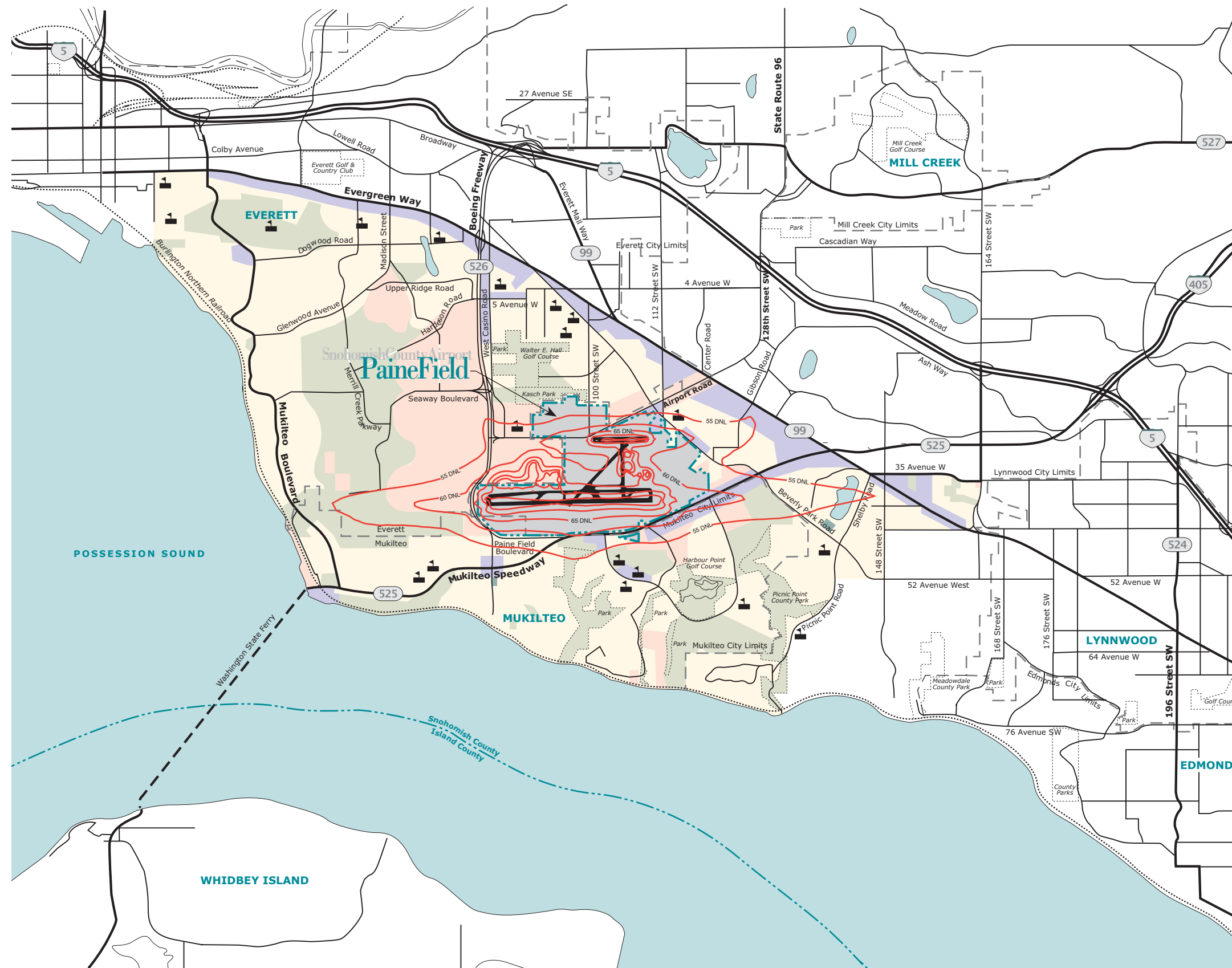
NOISE

EXPOSURE

MAP UPDATE

PaineField
Snohomish County Airport

Figure 8
Future (2008) Noise Exposure Map
Existing Land Use

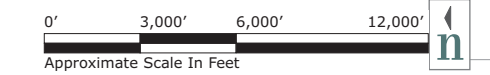


- Airport Property
- Residential
- Commercial
- Industrial/Office Park
- Undeveloped/Parks/Open Space
- Schools
- Outside of Study Area

The 65 DNL noise contour contains approximately 644 acres and no people.
 The 70 DNL noise contour contains approximately 364 acres and no people.
 The 75 DNL noise contour contains approximately 147 acres and no people.
 Planning jurisdictions are as shown on the map.
 Noise measurement sites and flight tracks are depicted on the Noise Measurement Sites and Flight Tracks Map.
 Residential land use is defined as incompatible within the 65 DNL noise contour or greater by the FAR Part 150.

The Noise Exposure Map and accompanying documentation for the Noise Exposure Map for Paine Field, submitted in accordance with FAR Part 150 with the best available information, are hereby certified as true and complete to the best of my knowledge and belief. In addition, it is hereby certified that the public was afforded the opportunity to review and comment on the document and its contents.

Signed _____ Date _____



NOISE
EXPOSURE
MAP UPDATE

PaineField
 Snohomish County Airport

Land Use Within Contours

Existing Noise Exposure Map. The existing Noise Exposure Map contours encompass various land uses. The Federal Aviation Administration considers residential and other noise sensitive land uses within the 65 or greater DNL contours as being incompatible. The 75 DNL noise contour is the smallest contour and the 55 DNL noise contour is the largest contour generated. The existing 75 DNL noise contour contains approximately 140 acres, all within airport/Boeing Company property. The 70 DNL noise contour contains approximately 342 acres, also all contained within airport/Boeing Company property. The 65 DNL encompasses roughly 591 acres, all of which is contained on airport/Boeing Company property. The 60 DNL noise contour contains approximately 1,130 acres, while the existing 55 DNL contour contains approximately 2,510 acres. The 60 DNL noise contour extends off of airport property to the south of both parallel runways and to the north of the main runway. The 55 DNL noise contour extends off of airport property in all directions. ***There are no residential or other noise sensitive land uses within the 65 or greater DNL noise contours associated with the Existing Noise Exposure Map.***

For comparison purposes, perhaps it is important to note that the future 65 DNL noise contour (1999) illustrated in the 1995 *Paine Field FAR Part 150* contained 832 acres and was based on a forecast of 237,700 annual aircraft operations. The actual number of aircraft operations recorded in calendar year 2000 (used as the base year in this Master Plan Update) was 213,371. The new noise contours created with INM Version 6.0c provide a more accurate depiction of noise generated at the airport by aircraft engine run-ups at Goodrich and Boeing, and better account for the effects of topography than the earlier version of the INM used in the 1995 Part 150 Study.

Future Noise Exposure Map. Like the Existing (2002) Noise Exposure Map, the Future (2008) Noise Exposure Map noise contours encompass various types of land uses. Again, the 75 DNL is the smallest noise contour and the 55 DNL is the largest noise contour. The future 75 DNL noise contour encompasses some 147 acres, while the 70 DNL contains approximately 364 acres, both of which are contained entirely within airport/Boeing Company property. The future 65 DNL noise contour contains approximately 644 acres, all of which is contained on airport/Boeing Company property. The future 60 DNL noise contour contains approximately 1,322 acres and extends off of airport property to the south of both parallel runways and to the north of the main runway. The 55 DNL noise contour encompasses approximately 2,889 acres and extends off of airport property to the north, south, east, and west. ***There are no residential or other noise sensitive land uses within the 65 or greater DNL noise contours associated with the Future Noise Exposure Map.*** It should be noted that reference to Table 1 from the Part 150 was used to identify land use compatibility issues for the existing and future conditions.

Consultation

Introduction

The development of the Paine Field Master Plan Update involved an extensive public participation process. As stated previously, the need to update the noise exposure maps was identified as a result of the public meetings and process used in the preparation of the 2002 Master Plan Update. An inclusive tone was set by Snohomish County from the very beginning by establishing a 25-member Study Advisory Committee membership that was broadly representative of all stakeholders.

The elements of the public involvement process were:

- Comprehensive Public Involvement Program
- Five Study Advisory Committee Meetings
- Five Open House/Public Meetings
- Meetings with Individual Citizens
- Project Information Brochure
- Airport Website Publications
- Numerous Working Papers
- Project Workbooks
- Public Hearing

Study Advisory Committee

A key component of the Master Plan Update's public involvement process was the establishment of a Study Advisory Committee. Composition of the Study Advisory Committee (SAC) was developed to include representatives from neighborhoods surrounding the Airport, business interests, and local government representatives.

All meetings of the SAC were advertised and open to the public.

Project Brochure

An introductory brochure was published and made available at all public meetings that explained the purpose and process of the study, outlined the schedule and named the participants and sponsors.

Open Houses/Public Information Meetings

Five Open House/Public Information Meetings were held during the Study where members of the public were able to interact directly with Airport and consulting staff on their noise related concerns. Display boards were available to present information being discussed among the SAC. At each Open House, members of the public were afforded the opportunity to have their questions answered and provide written comments. Public input from these Open Houses was influential in prioritizing issues during the Study.

The locations for the Open Houses were publicly advertised in local newspapers and announced on the Airport's Website.

Project Notebooks

Notebooks were provided to each SAC members for the organization of materials that were distributed throughout the preparation process. In addition, copies of the notebook were provided to local libraries. The project materials in the library notebooks were kept up to date throughout the preparation process.

Website

The airport's web site was used extensively during the preparation of the Master Plan Update to enable broad access to technical data, meeting summaries, schedules, meeting agendas and other pertinent information.

Working Documents/Draft Report

A working document was prepared and presented to airport staff and the public before the Draft Report recommendations were formulated. In addition, the Draft Report's recommendations were presented to and adopted by the Snohomish County Council in public hearing on December 4, 2002. At this initial public hearing a review of the process was presented and one Study Advisory Committee member eloquently requested that the County provide noise information to surrounding school districts so that adequate consideration on noise attenuating design features can be incorporated into the districts' capital improvement programs for affected school facilities. Following this adoption, at the suggestion of the FAA, the base year 2002 aircraft operational data and INM inputs were refined, which resulted in new 2002 and 2008 NEM contours and this Revised Draft Report. The Revised Draft Report has been circulated for public review to the Master Plan Update Study Advisory Committee members and the public through local public libraries and the Airport's webpage.

Public Hearing

As stated above the Revised Draft Report was circulated to the public through the Study Advisory Committee, as well as the public libraries, the airport's webpage, and in the

airport administrative office. Notice of the public hearing was distributed with each copy of the Revised Draft Report, on the airport's webpage, along with being published in the following newspapers (see proof of publication in the Appendix):

- Seattle Times
- Mukilteo Beacon
- Everett Herald
- Mukilteo Tribune

The public hearing was held on June 30, 2003 at the Public Works Transportation Committee meeting of the Snohomish County Council. Airport staff briefed the committee. One written comment (see appendix) and no verbal comments were received. The County Council continued the Public Hearing to its legislative session on July 1, 2003. No further comments were received during the July 1 hearing and the County Council adopted the Noise Exposure Maps with the attached motion (see appendix).

Appendix

6/25/03

ARMY RECORDS WRONG, MAYORAL CANDIDATE SAYS

CONTINUED FROM PREVIOUS PAGE

tificate of award or general order, those documents would have to be corroborated by Army records, unit logs and witnesses.

The Army's criteria for awarding a Purple Heart say in part that "the wound for which the award is made must have required treatment by a medical officer and records of medical treatment for wounds or injuries must have been made as a matter of official record."

Day said he was treated at the landing zone by a medic and did not require further medical attention.

Woody Woodruff, a senior service officer of the Snohomish County Veterans Assistance Fund and a former state president of the

yourself to the highest level of accountability," he said.

Day's military record, obtained through the federal Freedom of Information Act, does list other awards for wartime service.

He received a National Defense Service Medal and a Vietnam Service Medal, given to all military personnel involved in Vietnam military campaigns.

Day also received a Gallantry Cross Unit Citation Badge, awarded by the South Vietnamese government to all members of his unit.

Day, who is challenging Mayor Gary Haakenson in this fall's election, has never run for office or served on a city commission. He

Day, a California native, moved to Edmonds two years ago, after living in Seattle for about eight years.

He describes himself as a political independent in the mold of former Minnesota Gov. Jesse Ventura.

The conversations among regulars at his downtown Edmonds coffee shop, Billy's Cubby Hole, tend to echo conservative talk radio with its anti-tax and anti-government themes.

Day said he decided to run for mayor because so many of the concerns voiced by his customers weren't being heard at City Hall.

Through June 16, Day has raised \$358 for his campaign, according to the state Public Disclosure Commission. Haakenson, a former businessman who is seeking

NOTICE

A PUBLIC HEARING WILL BE HELD AT 3:00 PM ON TUESDAY JULY 1, 2003 ON THE ADOPTION OF NEW PART 150 NOISE EXPOSURE MAPS FOR PAINE FIELD.

The Hearing will be held by the **Snohomish County Council**, in the **Jackson Board room on the 6th floor of the County Administration building at 3000 Rockefeller Ave in downtown Everett**, as they consider adopting the new 2002 and 2008 noise maps as the "Official Noise Exposure Maps" for Paine Field. Public participation is encouraged. The Part 150 Revised Draft Report is available for review in local public libraries, at the airport office and on the web at paineinfo.com.

For more information please contact Bill Dolan at 425 353-2110 extension 2228

NOTICE

A PUBLIC HEARING WILL BE HELD AT 9:30 AM ON TUESDAY,
JULY 1, 2003 ON THE ADOPTION OF NEW PART 150
NOISE EXPOSURE MAPS FOR PAINE FIELD.

The Hearing will be held by the Snohomish County Council, in the Jackson Board room on the 6th floor of the County Administration building at 3000 Rockefeller Ave in downtown Everett, as they consider adopting the new 2002 and 2008 noise maps as the "Official Noise Exposure Maps" for Paine Field. Public participation is encouraged. The Part 150 Revised Draft Report is available for review in local public libraries, at the airport office and on the web at painefield.com.

For more information please contact Bill Dolan at 425 353-2110 extension 2228

Mukitico Beacon 6/25/03

NOTICE

Public Hearing on The Adoption of the
New Part 150 Noise Exposure Maps for Paine Field
Tuesday July 1, 2003 3:00 AM

The Hearing will be held by the Snohomish County Council, in the Jackson Board room on the 6th floor of the County Administration building at 3000 Rockefeller Ave in downtown Everett, as they consider adopting the new 2002 and 2008 noise maps as the "Official Noise Exposure Maps" for Paine Field. Public participation is encouraged. The part 150 Revised Draft Report is available for review in local public libraries, at the airport office and on the web at painefield.com.

For more information please contact Bill Dolan 425-353-2110 ext 2228

Tribune 6/25/03

would start this fall.

New neighborhood parks: City officials recently received proposals from architects and are in the process of choosing one for the two new neighborhood parks.

One is planned at 60th Avenue W. and 186th Street SW. The other is located in the 7500 block of 33rd Place W. One or both are planned to be budgeted for 2003.

They will be smaller, but similar to the new Meadowdale park

at 168th Street SW.

Heritage Park: A ahead of schedule for completion, Larsen said and will be ready in October.

Contractors are framing the shell that will house the historic mill, and the historic Wicker building is being reframed and a new roof is being added. The Wicker's building will hold the city's information center, and the south county information center will be moved to it from 128th Street SW in Everett.

REVISED NOTICE

A PUBLIC HEARING WILL BE HELD AT 3:00 PM ON TUESDAY JULY 1, 2003 ON THE ADOPTION OF NEW PART 150 NOISE EXPOSURE MAPS FOR PAINE FIELD.

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For more information please contact Bill Dolan at 425-353-2110 extension 2226

0001023369-04

Readers:

We want to hear from you.
Call us with your comments or suggestions.

425-339-3016

THE DAILY
Herald

LEGAL NOTICES

03-269

Carol Howard Aguayo
4012 173rd Pl. S.W.
Lynnwood, WA 98037
June 11, 2003

To: Bob Drewel, Snohomish County Executive
Re: Paine Field Master Plan FAA requested redefinition of noise boundaries

At the May 13th meeting of the Paine Field Community Council, it was mentioned that the FAA had requested a revision of the noise boundaries of the Paine Field Master Plan to then be resubmitted to the County Council. It was mentioned that they were redesigned using the 9/11/2001 timeframe noise reportings as their base. Of course, everyone knows that there was little noise because flying was restricted. It is not a realistic baseline timeframe and is a further example of diminishing focus and responsibility of airplane noise to the community by the FAA.

With Boeing using less of its buildings in the Paine Field area, and the possibility of using even less after their June 20th decision, I find it most interesting that the effort to get this noise section passed before the Boeing decision is so "coincidentally" timed. (I also hope the Council has not committed any funding to the National Flight Interpretative Center until Boeing's decision has been made to stay in this area, or we will be paying for empty buildings, unless, of course, they will be part of some airline's future terminal!)

I was told by the previous Paine Field director that the Paine Field Community area would not be impacted by thoughts of a regional airport as long as Boeing was using the runways at Paine Field, Seattle, and Renton, but if they were to every leave (someone has been doing their 20 year planning-probably the same ones who added the 1979 revision "commuter service" to the mediated agreement!) then possibilities of Paine Field as a regional airport would increase. We seem to be on the "(H) horizon" of that moment.

As this noise piece of the Paine Field Master Plan is quietly slipped into the document, I once again call on the County Council to be proactive with their dealings with all the factors that can reduce the impact of noise and air pollution to the surrounding communities in Snohomish Co.

I have enclosed two recent articles, May 9th 2003 Enterprise Business Showcase about Paine Field (interestingly split into three sections on three different pages toward the back of the paper), and a May 21, 2003, Seattle Times article on noise impact to community health. As you may remember the DNL dilutes airplane noise as a single event by mixing it with other noises of the community. I firmly believe that those of us living in the flight paths of Paine Field will most definitely notice the impact of a regular take-off and departure schedule of an increasing active Paine Field. Learn from the lessons of SEA/TAC and be proactive for this county. Though you may have retired before Snohomish County feels all the negative impacts to which I refer, it will be your names that will be remembered as the ones who had the opportunity to inform and guide the County into the healthiest legislation possible, and we look to you to do that.

I request that this letter and these articles be submitted as part of public record.

Sincerely,
Carol Howard Aguayo
Carol Howard Aguayo

RECEIVED
SNOHOMISH COUNTY
EXECUTIVE OFFICE

JUN 11 2003

SNOHOMISH COUNTY AIRPORT

Snohomish County Airport (Paine Field) was originally constructed in 1936 as a Works Progress Administration (WPA) project to create new jobs and become a "super airport". While the "super airport" status was never realized, the Airport has evolved into one of the busiest general aviation, industrial, and reliever airports in the Puget Sound region. Although there is currently no commercial passenger air service at Paine Field, the Airport Master Plan documents the potential

To next page

2003 Business Showcase

market for future commuter or regional service. There are currently over 500 based aircraft and 200,000 airfield operations a year. These figures are projected to increase.

Major Paine Field tenants include the Boeing Company and Goodrich; but, there are also over fifty smaller firms on the airport. Two flight schools offer flight instruction from Private Pilot up through Instructor, Instrument, Multi-engine and Commercial ratings. The Everett Community College has an Aviation Maintenance Technical School at Paine that provides training for future aviation technicians. The Museum of Flight operates its

restoration center on the field, offering free tours Tuesday through Saturday.

Paine Field has over 200 acres of undeveloped land and supports economic development by providing facilities for commercial and industrial uses. Current projects at the Airport include: Construction of 70 new hangars for small and midsize general aviation aircraft. The Airport currently has a three-year waiting list for this type hangar.

The Federal Aviation Administration (FAA) is finishing up on a new \$8M, 192-foot control tower that is due to open in October of this year.

The newest entrepreneurial

2003 Business Showcase

visitors coming from outside Snohomish County and 60 percent from outside the U.S., an indication of how appealing the proposed new facility should be with the Boeing Tour Center and NFIC museum being co-located. The proposed National Flight Interpretative Center is projected to become a major tourist destination in Snohomish County by potentially increasing the annual number of county visitors by 100,000 and annual county tourism revenues by \$3.5m.

endeavor being considered at Paine is an aviation museum and tour center presently referred to as the National Flight Interpretative Center (NFIC). The NFIC would be a Public Facilities District project proposed for development and ownership by Snohomish County.

The proposed new facility would house an aviation museum, conference center, gift store and educational space. The Boeing Company would relocate and operate their Boeing Tour Center in the proposed NFIC facility. The Museum of Flight in Seattle has been selected as operator of the museum portion of the proposed NFIC.

Among the attractions projected to

be offered at the proposed new NFIC are:

- Aircraft and aviation history displays.
- An education center for students.
- A restaurant, gift shop, meeting rooms and a theater.
- Views of runway flight activity at Paine Field just as the Museum of Flight offers at Boeing Field.
- Tours of the Boeing 747/767/777 assembly plant from the center.
- Possible future construction of an adjoining 125-room hotel.

The Boeing Tour Center has historically been shown to be one of the most popular tourist attractions in Washington, with 75 percent of the

PERSONAL HEALTH AND WELL-BEING |

Noise annoys

— and that's not all

Mid-volume sound | Sure, high decibels are bad for the ears. But the stress caused by the hum of everyday life can harm many other aspects of our physical and emotional well-being.

BY CAROL M. OSTROM
Seattle Times staff reporter

Ah, the halcyon days of just-about-summer in Seattle. The air is warm and fragrant, and you're dying to send some of that stuff through your stale, winter-weary home.

You throw open your windows. The warm air rushes in, bringing the heady scents of lilac and mock orange.

And ... noise.
The dull roar of traffic, punctuated by the distinctive blats of Harley's and rumbles of muscle cars. The window-cutting vibration from the plane overhead. The rock music played by the guy across the street, who — like you — has thrown open his windows.

The big dog next door: Woof-woof-woof-woof ... WOOF!

Very likely, researchers say, if somebody were to sleep some monitors on you, they'd find your blood pressure up, breath coming a little faster, stomach starting to get a bit balky. They'd probably find you were having trouble concentrating, maybe even getting crabby.

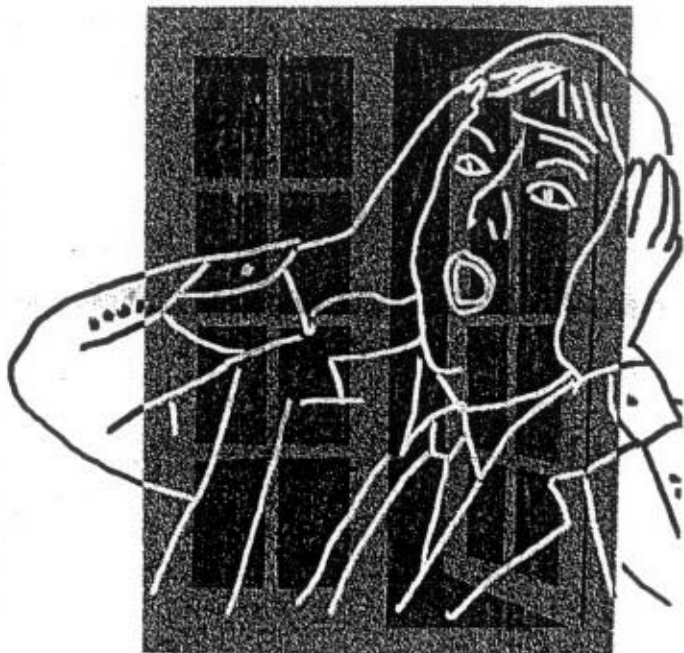
Everybody knows that Big Noise can permanently hurt your hearing. An epidemic of baby boomers with hearing damage — including former President Clinton — has reinforced warnings about ear-blasting rock concerts, close-by fireworks, gunfire and even saxophones. Even common noises at 85 decibels, a measurement of sound somewhere between the typical alarm clock and a lawn mower, can damage ears if they bang around long enough.

But what about that low-level noise? Dishwashers, traffic, music, vacuum cleaners, air conditioners, airplanes?

While such noise may not damage your hearing, researchers are finding that your body reacts to it in the same ways it does to other types of stress. Unwanted sound, says Cornell University noise researcher Gary Evans, "puts demands on you, and you try to cope with that — but some of the things you do to cope aren't very healthy."

Noise, says the American Speech-Language-Hearing Association, can elevate blood pressure, cause fatigue, reduce sleep, increase frustration and anxiety, disturb digestion and impair concentration.

The World Health Organization, which also has studied "community noise," concluded these effects can lead to reduced productivity and ability to learn, absenteeism, accidents, "annoyance responses" and



TRACY FORTER / THE SEATTLE TIMES

even increased drug use.

A study of workplace noise published in the *Journal of Occupational Health Psychology* last year found that job complexity, coupled with exposure to chronic noise, may cause blood pressure to rise and could lead to greater risk of cardiovascular disease. A Swedish study found people living in the highest-noise zones near airports were much more likely to have high blood pressure than those who lived farther away.

One study — a staged incident with someone getting out of a car and accidentally dropping an object — also found passers-by less likely to help when a nearby lawnmower was running, Evans notes.

Researchers have found that hearing improves during times of stress. But that super-alert state can make us even more susceptible to noise.

decibels	
Painful 140	firearms, air-raid siren
130	jackhammer
120	jet-plane takeoff
Extremely loud 110	rock music
100	snowmobile, chain saw
90	lawnmower
80	alarm clock
70	busy traffic, vacuum
60	dishwasher
Moderate 50	moderate rainfall
40	quiet room
Faint 30	whisper

Source: American Speech-Language-Hearing Association

Noise can make students lag and elevate stress hormones

NOISE

CONTINUED FROM F 1

Some of noise's effects on the body involve age-old "fight-or-flight" mechanisms which cause your body to pump out stress hormones, constrict your blood vessels and, in other ways, prepare you to fight or get away.

And if you can't? Evans and other researchers say being repeatedly annoyed by something you can't do anything about brings about "learned helplessness syndrome," in which motivation diminishes. For example: When researchers asked test subjects to solve a puzzle, they found people in noisy environments gave up sooner.

For children, noise that's loud enough to interfere with hearing words can have even more serious effects. Like adults, they can "get used to" noise. But to cope, they ignore not only the noise, but speech, which leads to problems learning to read, says Evans, an environmental psychologist.

Arlene Bronzoff, a New York psychologist and noise researcher who consults for many anti-noise groups, found children in classrooms facing a noisy elevated train track, by the sixth grade, had fallen behind in learning by as much as a year, compared with kids in classes on the quiet side of the building.

Even when people say they're not being annoyed, their bodies can be experiencing detrimental changes, Evans said. Blood tests on workers in noisy offices found elevated stress hormones such as cortisol and epinephrine, even when they said they weren't bothered by the noise.

"You can get used to noise, and after a while it doesn't bother you too much," he said. "But you pay a heavy price for getting used to it, because it's something that does place demands on your system. You can figure out strategies to cope with it, but there is no free lunch."

Bronzoff says even people who claim to sleep through noise may experience its effects. "They often get knocked out of the cycles of sleep," she says. "They may not realize they're reacting to it, but they are. There's always a toll."

Noise annoys

But wait, just say you make noise, too. And you like your noise. When you're alone in your car, you crank up the music, and even belt out a harmony line. You like a boisterous party just as much as the next person. And you're excited about building a deck onto your home, a project you'll work on after you come home from work.

One person's noise, it seems, is another person's lullaby. Is the staccato roar of a gas lawn mower early on Saturday morning a rude noise that awakens you groggy and tired from a sound sleep? Or is it an evocative drone that sends you back to sleep, drowsing off lazy afternoons in a hammock?

One of the definitions of noise, says Curt Horner, longtime noise expert with the Seattle-King County health department, is that it isn't yours to control.

Many sources of noise — construction, airplanes and traffic — appear to be out of your control. And political solutions, these days, seem less likely. Since 1993, says Horner, the city-county health department's noise program hasn't been funded, although laws exist regulating noise both in Seattle and King County. In Seattle, police respond to some complaints, and the Department of Construction and Land Use (DCLU) to others (see "To file a noise complaint" on this page).

David George, a noise coordinator with DCLU, says Seattle's topography makes it very hard to mitigate noise. Its geographic boundaries prompt dense development and intense traffic, its many bodies of water reflect sound, and homes on hills are bombarded by commercial and industrial noise from below. Residents repeatedly exposed to construction noise express high levels of frustration, he says. "This last five years, people are going insane, because it never stops. It's legal, but it's annoying."

Around Puget Sound, as in many communities, battles between airports and homeowners or



Madrona Elementary in SeaTac is among schools benefiting from a noise-mitigation agreement between the Highline School District, the Port of Seattle, the Federal Aviation Administration and the state.

To file a noise complaint

Construction, mechanical equipment, commercial facility noise: Department of Design, Construction and Land Use (DCLU) noise coordinators at 206-684-7843 or www.cityofseattle.net/dclu/noise.

Public nuisance noise, such as dogs, fowl, other animals, horns or sirens, music, amplified sound, motor vehicles or watercraft: Seattle Police Department's nonemergency number at 206-425-5000.

Aviation Noise: Noise from aircraft and helicopters in flight is controlled by the Federal Aviation Administration (FAA). However, local airports have responsibility for collecting information on noise complaints and notifying the operators.

- Sea-Tac International Airport: 206-433-0393.
- King County International Airport (Boeing Field): 206-205-5242.
- Renton Municipal Airport: 425-430-7471.

If you don't know which noise hotline number to use, and for airplanes, call the FAA noise complaint line at 425-227-1389.

If the noise complaint concerns noise emanating from ground operations of an aircraft at Boeing Field, or at a seaplane base or heliport within the Seattle city limits, you may file a complaint with DCLU by calling a Noise Abatement coordinator at 206-684-7843.

SOURCE: CITY OF SEATTLE

school districts can take decades to resolve. After a quarter-century of negotiations, the Port of Seattle, the state and the Federal Aviation Administration agreed a couple of years ago to pay for noise mitigation in 15 schools, including 10 elementary schools. The first, Madrona Elementary in SeaTac, will re-open in 2004, said Highline School District spokeswoman Catherine Carbone Rogers.

Restaurants have become a new battlefield in the noise wars. Seattle Times restaurant critic Nancy Leson, after hearing from many readers, said she'd been forced to "lower the whistle" on clamor. Now, she evaluates restaurants' noise along with their food and service.

At the San Francisco Chronicle, restaurant critics carry meters that measure decibels. Noise ratings have gotten "tremendous feedback," says executive food and wine editor Michael Bauer. In his recent "top 100" list, he said, about 75 percent were rated "four bells" — environments in which people must raise their voices to talk.

Many would-be diners tell him they avoid patronizing such noisy places, he noted.

Psychological effects

Most people don't have to go out to find noise, unfortunately. The U.S. Census Bureau, after an American Housing Survey of more than 106 million households in 2001, reported that noise was the No. 1 neighborhood complaint — more worrisome than neighborhood crime.

Sometimes noise contributes to that neighborhood crime: "Noise" and "shooting deaths" too often link in reports. For example: In New York City's Brooklyn Borough last month, a 65-year-old

Nipping noise

If you're bothered about environmental noise, here are some suggestions from Noise Free America:

- Don't use leaf blowers, and don't hire gardeners who do.
- Don't use car alarms or keyless entry systems if they annoy neighbors.
- Keep your car's muffler and exhaust system in good shape.
- Use your horns only in emergencies.
- Position your TV and stereo so that sound stays inside your home. Consider using headphones.
- Train your dog not to bark; never leave it alone in the yard.
- Warn your neighbors if you're going to make unavoidable noise.
- Turn down your telephone ringer.
- Keep your cellphone on vibrate.
- Think about noise levels when you buy new appliances, especially vacuum cleaners and air conditioners.
- If you own a restaurant or store, monitor noise levels.
- If your home is being renovated, insist on quiet before 8 a.m.
- If someone lodges a noise complaint against you, treat it seriously and respectfully.

On the Web

- For more information on the health effects of noise:
- Noise Free America: www.noisefree.org
- League for the Hard of Hearing: www.lh.org/noise/index.htm
- City of Seattle noise page: www.cityofseattle.net/dclu/noise

who had complained about foot stomping and loud music from the apartment overhead was charged in the shooting deaths of the neighbor and his friend.

Noise was by far the most frequent complaint to a new New York City "311" nonemergency city response line set up in March, noted Bronzoff, who sits on the

mayor's council on the environment. Out of a total of 47,639 complaints over six weeks, more than 20,000 concerned noise.

A Seattle City Council staff report in 1999 put noise complaints at about 12,000 per year, up considerably from previous years.

"Noise psychologically drives people mad," said Bronzoff, who is

often called in to help mediate noise complaints. Before she can help solve their problems, she said, "I have to calm the person down. . . . That's how anguished they are. As a psychologist, I just know what it does to your head. Most people just can't take it."

Evans and other researchers say much more research is needed on specific health effects of noise, particularly on the effects over time. "The U.S. is so far behind," says Evans. "Almost all of the really good research that's being done is in Europe and now Japan." Controversial but intriguing findings that need more work include those showing noise may affect placental physiology, newborn birth weight and early development.

Some noise problems already have technical solutions: infrared headphones for television, better sound insulation in construction, quieter plants and tools. "It's not the know-how that's missing," says Bronzoff. "It's the will. We haven't attended to this."

For now, as with many health issues, these researchers say the place to start is with yourself.

Assume your happy sounds are "noise" in the ears of your neighbors and act accordingly. Horner advises. "Noise is the greatest stressor in American urban life, and even sometimes suburban life," he says. "If everyone were courteous to their neighbors, we wouldn't have a noise problem."

Carol M. Ostrum, 206-404-2249 or costrum@seattletimes.com

Note: Paine Field left-out



Snohomish County

County Executive's Office

Robert J. Drewel
County Executive

June 16, 2003

Carol Howard Aguayo
4012 173rd Pl. SW
Lynnwood WA 98037

M/S #407
3000 Rockefeller Avenue
Everett, WA 98201
(425) 388-3460
FAX (425) 388-3434
TTY/TDD (425) 388-3700
county.executive@co.snohomish.wa.us
www.co.snohomish.wa.us

Dear Ms. Howard Aguayo:

Thank you for writing to County Executive Bob Drewel regarding Paine Field. He has asked me to respond on his behalf. We appreciate your understanding of the many opportunities that exist at Paine Field, including the National Flight Interpretive Center and possible Boeing tour center.

Paine Field does have an exciting future that will entail changes. As in the past, however, we are committed to working in an open and public manner with the Paine Field Community Council and neighbors and communities adjacent to Paine Field to minimize the impacts that changes could have. I am aware of the significant problems, especially noise, that have been a battleground for other airports and their neighbors. Changes in technology and a long history of positive interaction between Paine Field and surrounding communities give me hope that we can work constructively in the future.

Please stay actively engaged in this important issue. We need engaged citizens to make balanced and informed decisions.

Sincerely,

Stephen L. Holt
Executive Director

cc: Dave Waggoner, Airport Director

June 2003

*My copy
one to Bill D.,
one to
Dumplingsburg*

SNOHOMISH COUNTY COUNCIL
SNOHOMISH COUNTY, WASHINGTON

MOTION NO. 03-316

A MOTION ADOPTING THE PAINE FIELD AIRPORT PART 150 NOISE
EXPOSURE MAPS

WHEREAS, the County Council adopted a Part 150 Noise Compatibility Plan, including Noise Exposure Maps, for the Snohomish County Airport at Paine Field pursuant to Motion No. 95-220 in July 1995, and

WHEREAS, the County Council adopted new forecasts of aviation activity at Paine Field as part of the Airport Master Plan update study by Motion No. 01-255 on July 25, 2001, and

WHEREAS, the Noise Exposure Maps are required to be updated pursuant to CFR 14 Part 150 and the County Council adopted new Noise Exposure Maps on December 4, 2002, subject to FAA approval, and

WHEREAS, the FAA has requested revisions in the Noise Exposure Maps database and the proposed Noise Exposure Maps are based on the new forecast and reflect the database revisions requested by FAA, and

WHEREAS, the County Executive and Airport staff recommend adoption of the new Part 150 Noise Exposure Maps

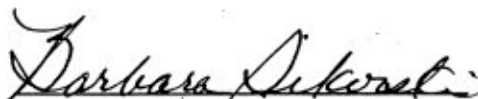
NOW THEREFORE ON MOTION: the Snohomish County Council adopts the new Part 150 Noise Exposure Maps dated June 2003 for Paine Field as the official Airport Noise Exposure Maps.

DATED this 2nd day of July 2003.

SNOHOMISH COUNTY COUNCIL
Snohomish County, Washington


Chairperson

ATTEST:


Asst. Clerk of the Council



RECEIVED

JAN 16 2004

U.S. Department
of Transportation **BY SNOHOMISH COUNTY AIRPORT**

**Federal Aviation
Administration**

Northwest Mountain Region
Colorado, Idaho, Montana
Oregon, Utah, Washington,
Wyoming

1601 Lind Avenue, S. W.
Renton, Washington 98055

January 8, 2004

Mr. Dave Waggoner, Airport Director
Paine Field/Snohomish County Airport
3220 100th Street S.W.
Everett, Washington 98204-1390

Dear Mr. Waggoner:

The 2002/2003 and 2008 noise exposure maps (Figures 7 and 8) and supporting documentation you submitted to us, in accordance with Section 47503(a) of Title 49 United States Code (49 U.S.C.), have been reviewed. We have determined that your submission complies with applicable requirements of Title 14 Code of Federal Regulations, Part 150, and that the following applies:

a. The base map of the airport environs land use was prepared in consultation with public agencies and political jurisdictions within the 65 day/night noise level (DNL) contour.

b. The maps listed above are reasonably consistent with the provisions set forth in Federal Aviation Regulation (FAR) Part 150.

Our determination is limited to a finding that the maps were developed in accordance with the procedures contained in FAR Part 150. Such determination does not constitute approval of your data, information, or plans.

In addition, we will not be involved in determining the relative locations of specific properties with regard to the depicted noise contours. We will not interpret the maps to resolve questions concerning, for example, which properties should be covered by the provisions of Section 47507 of 49 U.S.C. These functions are inseparable from the ultimate land-use-control and planning responsibilities of local government.

The local responsibilities are not changed in any way under FAR Part 150, or through our determination relative to your noise exposure maps. Responsibility for the detailed overlaying of noise exposure contours onto maps that depict properties on the surface rests exclusively with you, the airport operator, or with those public agencies and planning agencies with which consultation is required under Section

47503(a)(1) of 49 U.S.C. We rely on your certification that the statutorily required consultation, under Section 150.21 of FAR Part 150, has been accomplished.

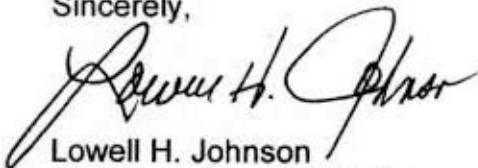
We will publish a notice in the Federal Register announcing our determination of the noise exposure maps for Paine Field/Snohomish County Airport.

To satisfy the requirements of Section 47506 of 49 U.S.C., you are required to publish a notice of our determination, and the availability of the noise exposure maps. This notice is to be published at least three times in a newspaper of general circulation in the county or counties where affected properties are located.

Also, you are required, under Section 150.21(d) of FAR Part 150, to promptly submit revisions to these maps, should there be any actual or proposed change in the operation of Paine Field/Snohomish County Airport that might create any substantial or new non-compatible use in any areas depicted on the maps.

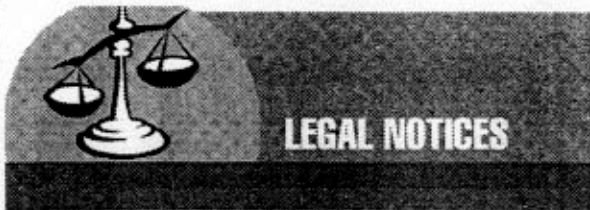
Congratulations on your successful completion of the FAR Part 150 noise exposure maps. We look forward to our continuing relationship with you to mitigate aircraft noise impacts.

Sincerely,



Lowell H. Johnson
Manager, Airports Division
Northwest Mountain Region

cc:
APP-600
SEA-600



NOISE EXPOSURE MAP NOTICE

AGENCY: Federal Aviation Administration, DOT

ACTION: Notice

SUMMARY: The Federal Aviation Administration (FAA) announces its determination that the noise exposure maps submitted by Snohomish County for Paine Field/Snohomish County Airport under the provisions of 49 U.S.C. 47501 et. seq (Aviation Safety and Noise Abatement Act) and 14 CFR Part 150 are in compliance with applicable requirements.

EFFECTIVE DATE: The effective date of the FAA's determination on the noise exposure maps is January 8, 2004.

FOR FURTHER INFORMATION CONTACT: Dennis Ossenkop, Federal Aviation Administration, Airports Division, 1601 Lind Ave. S.W., Renton, WA, 98055-4056, telephone 425 227 2611.

SUPPLEMENTARY INFORMATION: This notice announces that the FAA finds that the noise exposure maps submitted for Paine Field/Snohomish County Airport are in compliance with applicable requirements of Part 150, effective January 8, 2004. Under 49 U.S.C. section 47503 of the Aviation Safety and Noise Abatement Act (hereinafter referred to as "the Act"), an airport operator may submit to the FAA noise exposure maps which meet applicable regulations and which depict non-compatible land uses as of the date of submission of such maps, a description of projected aircraft operations, and the ways in which such operations will affect such maps. The Act requires such maps to be developed in consultation with interested and affected parties in the local community, government agencies, and persons using the airport. An airport operator who has submitted noise exposure maps that are found by FAA to be in compliance with the requirements of Federal Aviation Regulations (FAR) Part 150, promulgated pursuant to the Act, may submit a noise compatibility program for FAA approval which sets forth the measures the operator has taken or proposes to take to reduce existing non-compatible uses and prevent the introduction of additional non-compatible uses.

The FAA has completed its review of the noise exposure maps and accompanying documentation submitted by Snohomish County for Paine Field/Snohomish County Airport. The documentation that constitutes the "noise exposure maps" as defined in section 150.7 of Part 150 includes the following from the September 2003, Paine Field FAR Part 150 Noise Exposure Maps Update:

- Figure 7 at page 19, Existing Noise Exposure Map, 2002/2003;
- Figure 8 at page 20 Future Noise Exposure Map, 2008;
- Figure 6 at page 12 Flight Tracks;
- Figure 5 at page 11 Noise Monitoring Sites;
- Table 1 at page 9 Summary of Aviation Forecasts 2002-2008;
- Tables 2 through 5 at pages 14-18 present flight track utilizations by runway and aircraft type
- Figure 7 at page 19, Existing 2002 Noise Exposure Map, presents estimates of the number of persons residing with the DNL 55, 60, and 65 noise contours;
- Figure 8 at page 20, Future 2008 Noise Exposure Map, presents estimates of the number of persons

- residing with the DNL 55, 60, and 65 noise contours;
- Pages 20 through 24 and the Appendix present consultation details.
- The year of submission (2003) airport operations data is equivalent to the submitted existing condition Noise Exposure Map (2002) operations data and the five-year forecast Noise Exposure Map is reasonable.
- There are no properties on or eligible for inclusion in the National Register of Historic Places within the DNL 65 contour.

The FAA has determined that these noise exposure maps and accompanying documentation are in compliance with applicable requirements. This determination is effective on January 8, 2004.

FAA's determination on an airport operator's noise exposure maps is limited to a finding that the maps were developed in accordance with the procedures contained in appendix A of FAR Part 150. Such determination does not constitute approval of the applicant's data, information or plans, or a commitment to approve a noise compatibility program or to fund the implementation of that program. If questions arise concerning the precise relationship of specific properties to noise exposure contours depicted on a noise exposure map submitted under section 47503 of the Act, it should be noted that the FAA is not involved in any way in determining the relative locations of specific properties with regard to the depicted noise contours, or in interpreting the noise exposure maps to resolve questions concerning, for example, which properties should be covered by the provisions of section 47506 of the Act. These functions are inseparable from the ultimate land use control and planning responsibilities of local government. These local responsibilities are not changed in any way under Part 150 or through FAA's review of noise exposure maps. Therefore, the responsibility for the detailed overlaying of noise exposure contours onto the map depicting properties on the surface rests exclusively with the airport operator that submitted those maps, or with those public agencies and planning agencies with which consultation is required under section 47503 of the Act. The FAA has relied on the certification by the airport operator, under section 150.21 of FAR Part 150, that the statutorily required consultation has been accomplished.

Copies of the full noise exposure map documentation and of the FAA's evaluation of the maps are available for examination at the following locations:

Federal Aviation Administration
Airports Division, Suite 315
1601 Lind Avenue, S.W.
Renton, Washington
Federal Aviation Administration
Seattle Airports District Office
1601 Lind Ave. S.W. Suite 250
Renton, Washington
Snohomish County Airport
Office of the Airport Director
3220 100th Street S.W.
Everett, WA

Questions may be directed to the individual named above under the heading FOR FURTHER INFORMATION CONTACT. Issued in Renton, Washington, January 8, 2004
Original Signed by

Lowell H. Johnson, Manager
Airports Division
Northwest Mountain Region
Published: January 24, 25, 26, 2004.

-----Original Message-----

From: Sheri.Kasen@faa.gov [mailto:Sheri.Kasen@faa.gov]

Sent: Tuesday, September 16, 2003 11:23 AM

To: Cayla.Morgan@faa.gov; Dolan, Bill

Subject: Paine Field Part 150 estimate

Cayla-

I just wanted you to know that I have reviewed the forecasts from Paine Field. Bill Dolan spent considerable time with me last week describing the process that was used to derive the forecasts. I support what Paine Field has done and I concur with their process and estimates.

If you need any further information, please let me know.

Sheri Kasen

NOISE ABATEMENT PROCEDURES FOR ALL AIRCRAFT

Noise abatement procedures are designed to minimize exposure of residential areas to aircraft noise, while ensuring safety of flight operations. There are communities surrounding the airport which are noise sensitive. We want to minimize the noise impacts on these communities. The procedures described herein are intended for noise abatement procedures and are subject to air traffic control and pilot discretion for reasons of safety.

SMALL PROPELLER AIRCRAFT (Single and twin engine under 12,500 pounds)

- Avoid overflights of school sites shown on map.
- Aircraft with engines rated over 250 total horsepower are requested to use Runway 16R/34L except itinerant operations as noted below.

Approaches:

- Itinerant arrivals and low approaches of small aircraft over 250 horsepower are authorized on Runways 29, 16L and 34R.
- Enter Class D Airspace from the suggested reporting points as shown on the map at or above 1600' MSL.
- Runway 16R/34L, Runway 16L/34R, Runway 11/29: Remain as high as practical until intercepting the VASI, PAPI or glide slope unless directed otherwise by ATC

Departures:

- Itinerant departures allowed on Runways 11/29 and 34R. Itinerant departures from Runway 29 should proceed with a 50 degree north turn over 34L.
- Climb runway heading to 1100' MSL or higher before turning unless directed otherwise by ATC.
- Runway 16L/34R and Runway 11/29: Avoid intersection departures except for Runway 11 from D1.
- Maintain 1600' MSL or higher until leaving the Class D Airspace.

JET, TURBOPROP & LARGE PROPELLER AIRCRAFT Noise abatement procedures in effect unless directed otherwise by ATC

Use Runway 16R/34L:

- Touch and go operations and repetitive training flights are discourag-d.
- Runway 34L departures are discouraged in calm wind conditions.

Approaches:

- Standard NBAA/Aircraft Operating Manual noise abatement procedures should be used.
- Practice IFR approaches during VMC.
- Circle to land maneuvers are discouraged.
- Missed approach instructions will be assigned by ATC.

VFR Approaches:

- Downwind should be flown midchannel.
- Runway 16R: Make turn to final north of shoreline or 2.5 DME.
- Fly final at or above ILS glide slope, VASI or PAPI.
- Straight-In Approach: Maintain at or above 2,000' MSL until intercepting ILS glide slope, VASI or PAPI.

Departures (IFR or VFR):

- Intersection takeoffs are discouraged.
- Standard NBAA/Aircraft Operating Manual noise abatement procedures should be used.
- Runway 34L: Avoid turns before reaching the shoreline or at 2.5 D.
- Runway 16R: Avoid turns until reaching 3000' MSL.

ROTARY WING AIRCRAFT

- Military - Copies of military procedures are available from airport Operation
- Civilian - Contact Air Traffic Control for takeoff and landing procedures

OPERATIONS WITH ATC TOWER CLOSED

- Announce intentions on CTAF 132.95.
- Runways 11/29 and 16L/34R closed.
- Caution for converging traffic on base to final legs to Runway 16R - 34L.
 - Large aircraft fly a west pattern to 16R or 34L over the water.
 - Small aircraft fly east pattern on 16R or 34L.
- Intersection departures and repetitive training operations are discouraged.
- PPR for Air Carrier Service 2100 - 0700 local (425-771-0488 or 353-1606).