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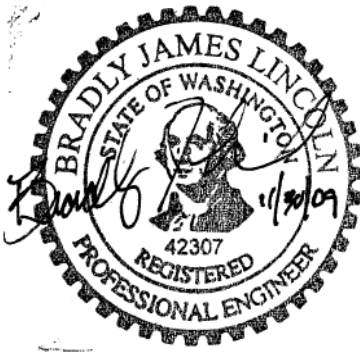
Proposed Commercial Service at Paine Field
Vehicle Miles Traveled Analysis

Prepared for: Federal Aviation Administration
November 2009



GTC #09-017

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1. EXECUTIVE SUMMARY

The proposed project is the introduction of commercial service at Paine Field. The project is proposed to consist of 20 daily operations by Horizon Air and 20 weekly operations by Allegiant Air at full operations. These operations are anticipated to result in 956 average daily vehicle trips impacting the surrounding roadways and intersections. These trip generation calculations are consistent with the traffic impact analysis performed for the project.

The analysis of the surface vehicle miles traveled (VMT) in the Puget Sound air quality attainment area assumes all the vehicle trips are new. This assumption does not take into account any vehicle trips that may divert from Sea-Tac International Airport or Bellingham International Airport. This assumption results in the highest possible impact on VMT from the project. The VMT has been calculated by multiplying the trips generated by passengers and employees by the distance they will travel to Paine Field. The vehicle miles traveled is anticipated to increase by 11,890 miles daily and 4,161,870 miles yearly under the 2010/2011 opening operations conditions. The vehicle miles traveled are anticipated to increase to 15,010 miles daily and 5,252,415 miles yearly under the 2016 full operations.

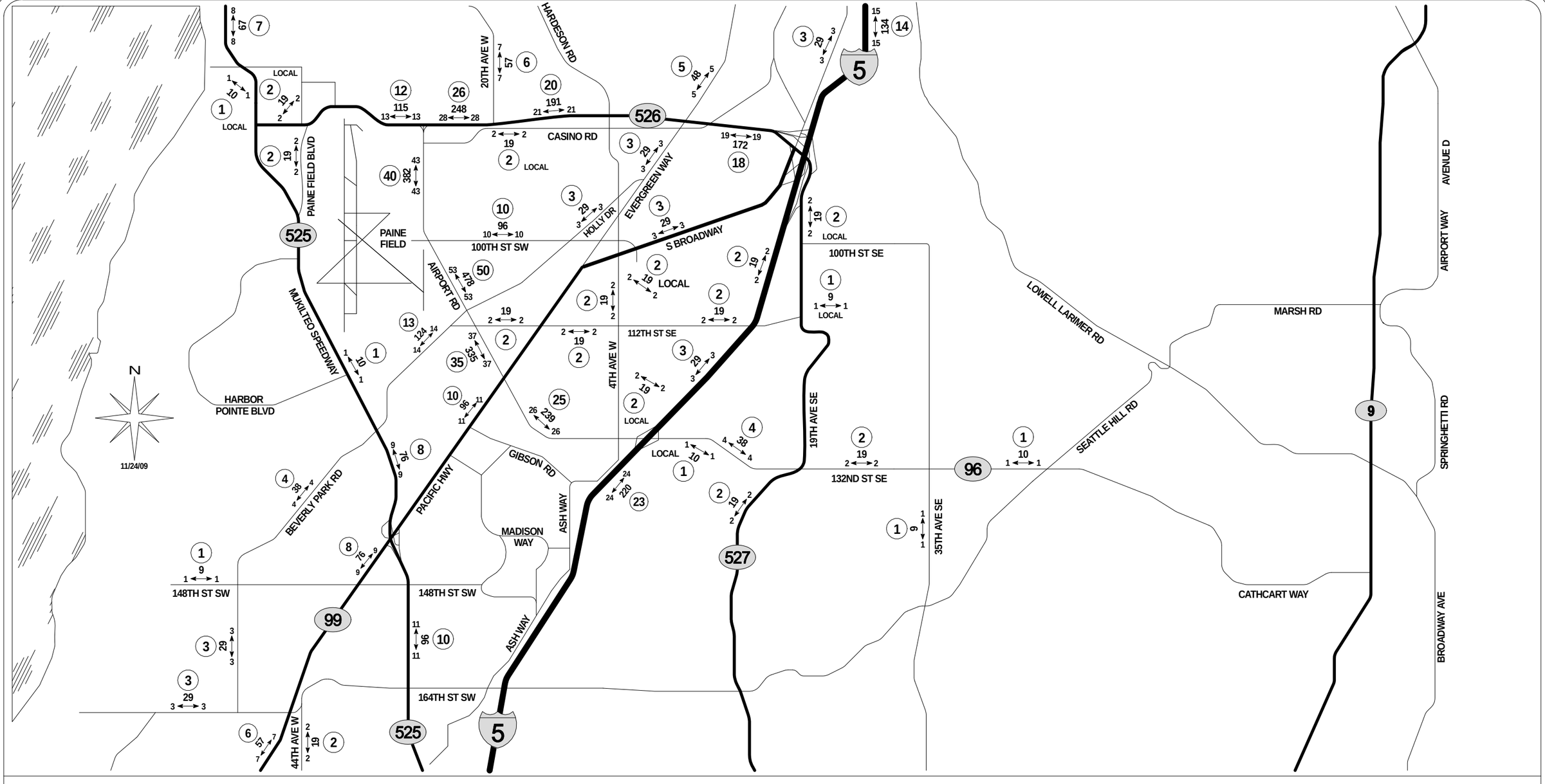
2. PROJECT IDENTIFICATION

Gibson Traffic Consultants (GTC) is a Snohomish County approved professional traffic engineering consulting firm registered and licensed in the State of Washington. Brad Lincoln, responsible for this report, is a licensed professional engineer (Civil) in the State of Washington and member of the Washington State section of ITE.

The project will add commercial airline flights to Paine Field, which currently serves only general aviation. The access to the project will be from the existing intersection of Airport Road at 100th Street SW. This intersection is currently signalized and provides the primary access to Paine Field. A site vicinity map is included in Figure 1.

The project will provide service by Horizon Air and by Allegiant Air. Horizon Air is anticipated to start at 12 daily operations and grow to 20 daily operations. Allegiant Air is anticipated to begin with 4 weekly operations and grow to 20 weekly operations. For the purposes of this report, each operation is either an arrival or a departure and it has been assumed the operations will be evenly split between arrivals and departures.

The traffic impact analysis for the project was also prepared by Gibson Traffic Consultants. The analysis in the traffic impact analysis shows the project generating 956 external average daily trips.



GIBSON TRAFFIC CONSULTANTS

TRAFFIC IMPACT STUDY
GTC #09-017

PROPOSED COMMERCIAL SERVICE
AT PAINE FIELD

SNOHOMISH COUNTY

LEGEND

AWDT
PM ◄► PEAK — NEW SITE TRAFFIC (DAILY/PEAK-HOUR)

25 — TRIP DISTRIBUTION %

FIGURE 1

DISTRIBUTION OF TRIPS
GENERATED BY THE PROJECT

3. METHODOLOGY

3.1 General Operations

The vehicle miles traveled (VMT) calculations are based on the anticipated daily operations of the project. Horizon Air plans to service Portland, Oregon and Spokane, Washington from Paine Field. Allegiant Air plans to service Las Vegas, Nevada from Paine Field. The analysis in this report assumes all the vehicle trips are new. This assumption does not take into account any vehicle trips that may divert from Sea-Tac International Airport or Bellingham International Airport.

The VMT calculations have been performed for the daily and yearly timeframes. An assumption of 350 operation days per year has been used for the yearly calculations, based on information from the airlines.

3.2 Study Area

The study area for the VMT calculations is based on the Central Puget Sound Region Designated Maintenance Areas for air quality. The attainment area for Carbon Monoxide and the Former 1-Hour Ozone Maintenance Area, see A-1 in the attachments, has been used in the VMT calculations.

The service radius for the project is assumed to be 30 miles. The service radius for new trips is based on data provided by Mead & Hunt as part of the *Passenger Core Market Analysis* performed for Snohomish County Airport/Paine Field in September 2004. The report included a catchment area based on zip codes for passengers that were likely to use Snohomish County Airport/Paine Field. That catchment area has a radius of approximately 30 miles. The average radius is half of that, 15 miles. Relevant pages from the Mead & Hunt report and the service radius graphic is included in the attachments. It is important to note that previous analysis for the catchment area of Paine Field only had an average service radius of 9 miles. The use of the 15 mile average service radius is more conservative.

The distance traveled by employees is based on a 30 minute commute time, which has been assumed to relate to a 25 mile commute.

3.3 Trip Generation

The trip generation calculations used for the VMT calculations are based on the calculations performed for the traffic impact analysis of the project. The trip generation calculations results in 956 average daily trips impacting the surrounding street system with the full operations of the project.

The analysis in the traffic impact analysis is conservative since it was assumed the same number of trips will be generated under the 2010/2011 opening operations as the 2016 full operations. This is not likely to occur since Horizon Air anticipates 80% operation in the year 2010/2011 and Allegiant Air assumes 60% operation in the year 2010/2011. These reduced operations result in the project generating 748 average daily trips under the 2010/2011 opening operations conditions. The yearly trip generation calculations are based on 350 days of operation. The yearly trip generation is not equal to the daily trip generation times 350 due to rounding within the yearly trip generation calculations. The trip generation calculations are included in the attachments.

The trip generation calculations are summarized in Table 1.

Table 1: Trip Generation Summary

Trip Generator	2010/2011 Opening Operations		2016 Full Operations	
	Daily Trips	Yearly Trips	Daily Trips	Yearly Trips
Horizon Airlines	586	205,054	733	256,318
Allegiant Airlines	95	33,134	156	57,574
Employees	67	23,562	67	23,562
Total	**748**	**261,750**	**956**	**334,454**

The number of employees is based on the 2016 full operations and has not been reduced for the 2010/2011 opening operations, which should be considered a conservatively high assumption.

4. VMT CALCULATIONS

The VMT calculations have been performed for the 2010/2011 opening operations and 2016 full operations. The VMT calculations assume that all of the trips are new and there is no credit for converting vehicle traffic to airplane traffic and diverting traffic from Sea-Tac International Airport and Bellingham International Airport. The VMT calculations for the 2010/2011 opening operations conditions are summarized in Table 2.

Table 2: 2010/2011 Opening Operations VMT Calculations

Trip Generator	Distance (mi)	Daily Trip Generation	Daily VMT (mi)	Yearly Trip Generation	Yearly VMT (mi)
Horizon Airlines	15	586	8,790	205,054	3,075,810
Allegiant Airlines	15	95	1,425	33,134	497,010
Employees	25	67	1,675	23,562	589,050
Total		**748**	**11,890**	**261,750**	**4,161,870**

The VMT calculations 2016 full operations are summarized in Table 3.

Table 3: 2016 Full Operations VMT Calculations

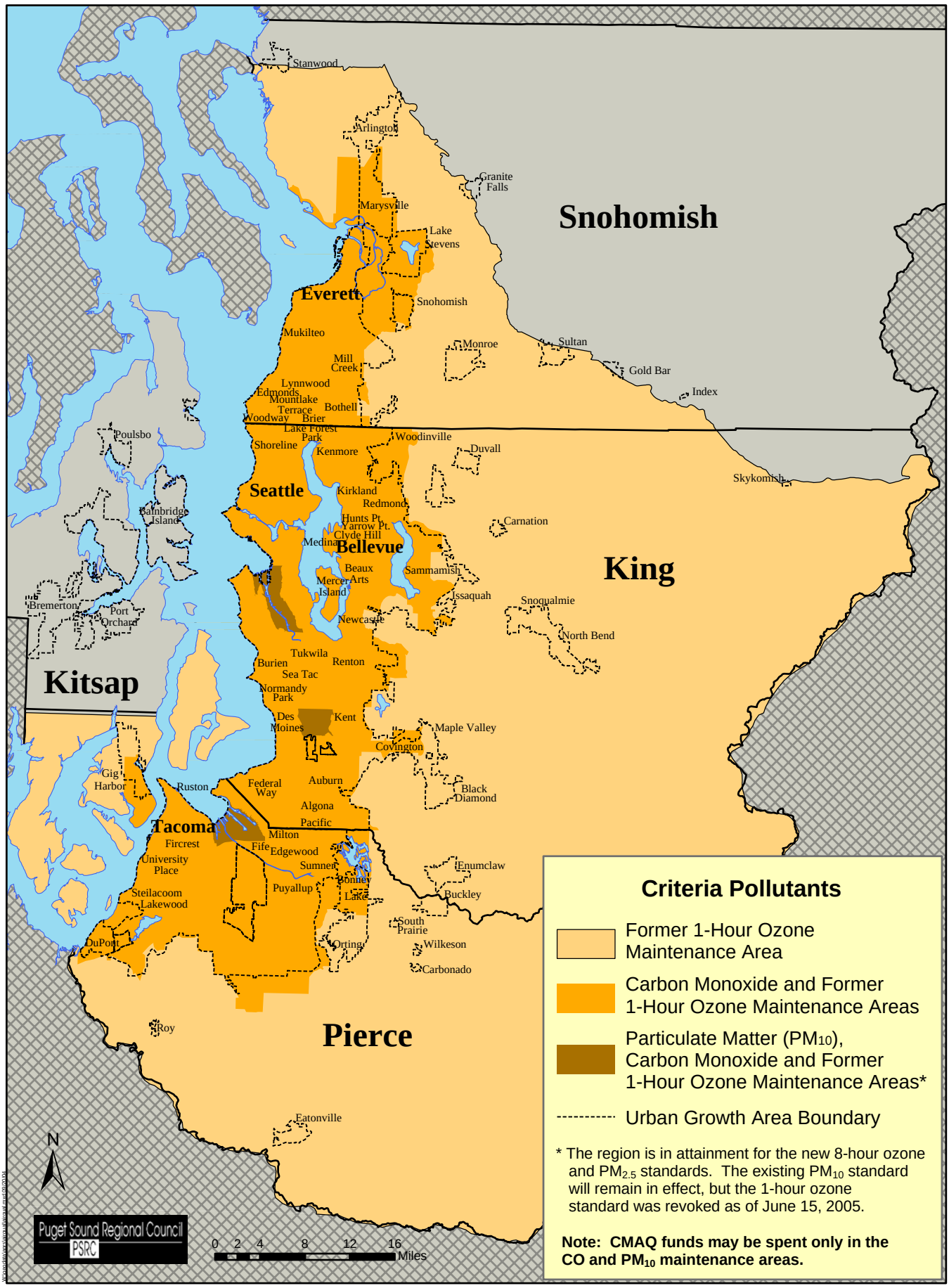
Trip Generator	Distance (mi)	Daily Trip Generation	Daily VMT (mi)	Yearly Trip Generation	Yearly VMT (mi)
Horizon Airlines	15	733	10,995	256,318	3,844,755
Allegiant Airlines	15	156	2,340	57,574	818,610
Employees	25	67	1,675	23,562	589,050
Total		**956**	**15,010**	**334,454**	**5,252,415**

5. CONCLUSIONS

The VMT calculations for this report have assumed that there will not be a diversion of trips within the Puget Sound region with the project. This assumption results in the project generating a daily VMT of 11,890 miles and yearly VMT of 4,161,870 with the 2010/2011 opening operations. The 2016 full operations will result in a daily VMT of 15,010 and yearly VMT of 5,252,415.

Central Puget Sound Region
Designated Maintenance Areas

Central Puget Sound Region Designated Maintenance Areas



Service Radius Information

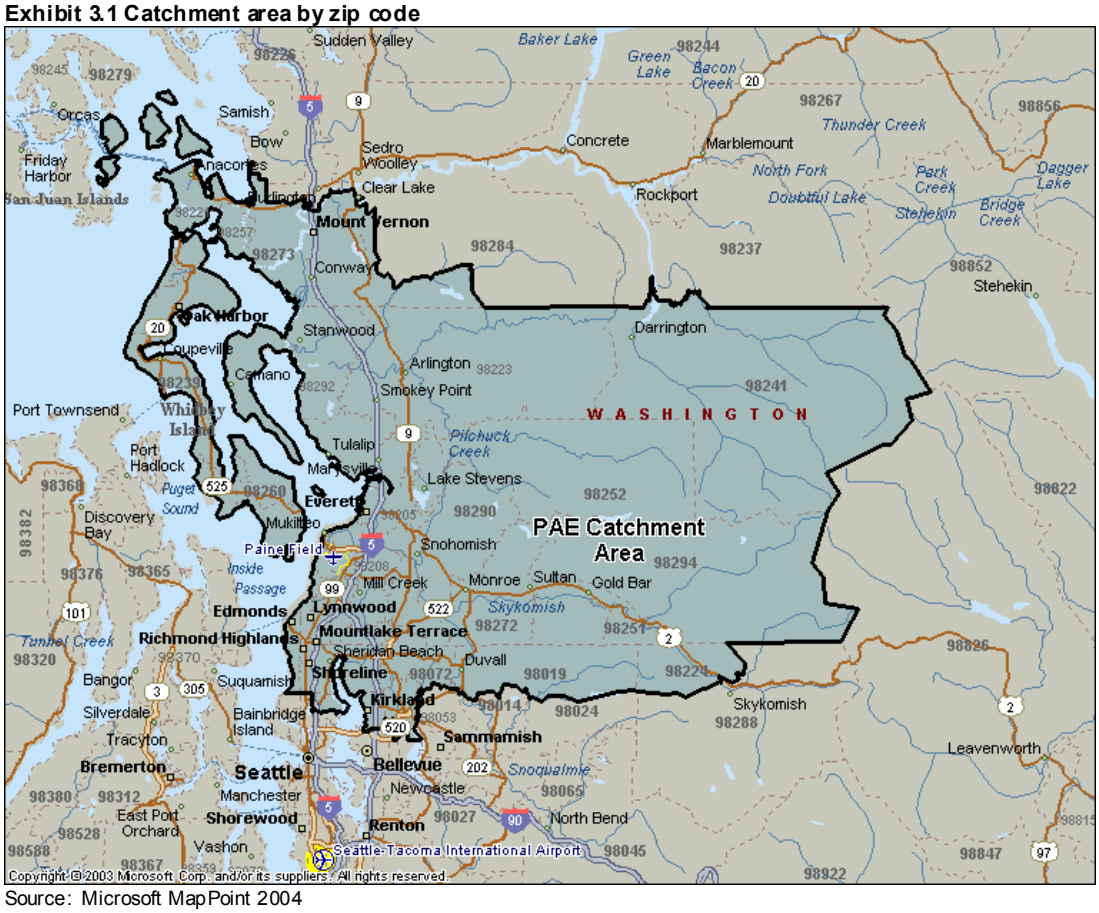
Section 3. Airport catchment area, activity, and use

Airport catchment area

The airport catchment area is the geographic area from which an airport can reasonably expect to draw commercial air service passengers. However, airport use by the airport catchment area population is affected by a variety of factors, including the proximity to competing airport(s), airfares, destinations offered, and flight frequency.

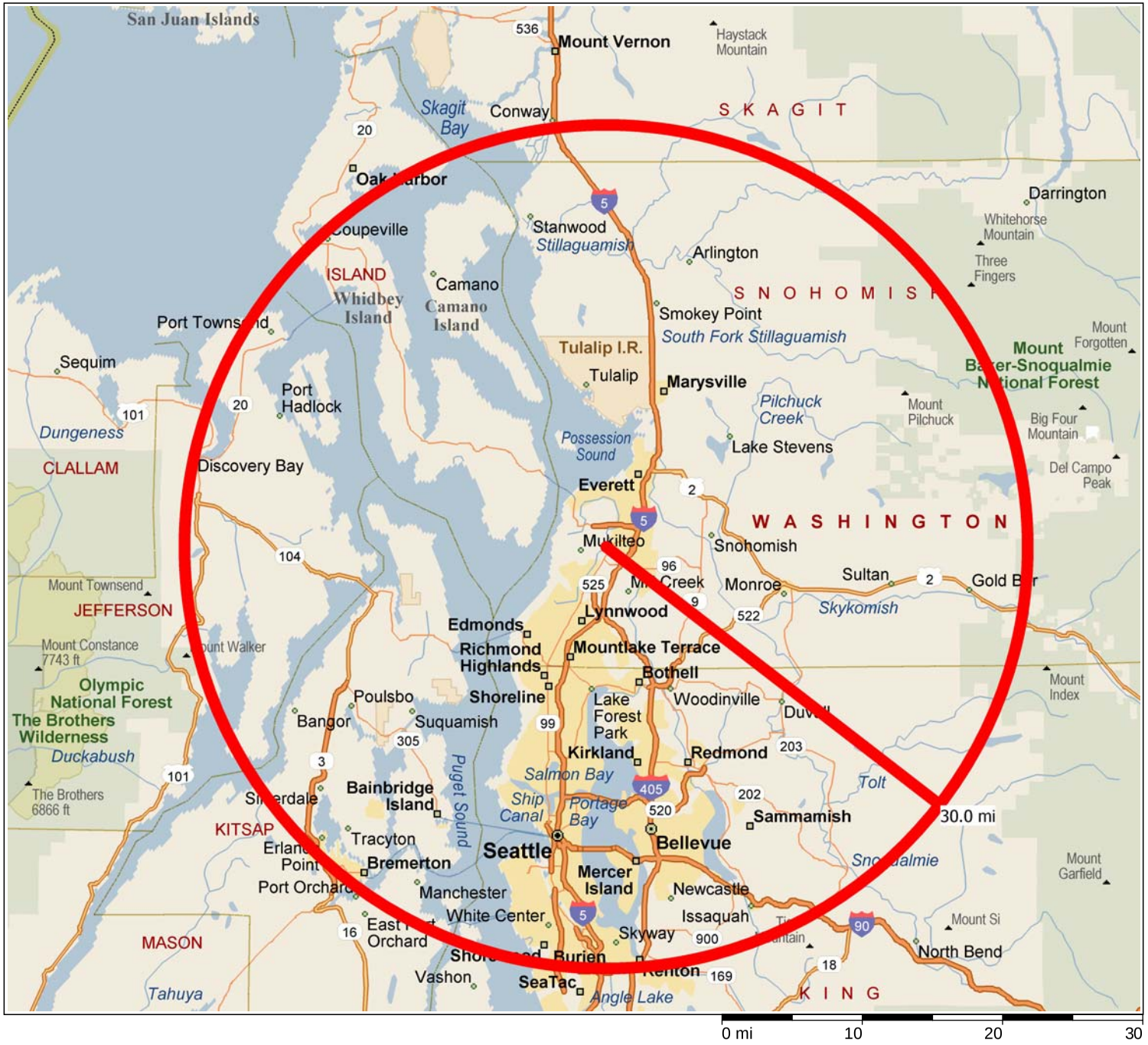
Exhibit 3.1 identifies the zip codes included in the Snohomish County Airport/Paine Field catchment area. The Snohomish County Airport/Paine Field catchment area is comprised of 61 zip codes with a combined population of 1,118,315. It is within this catchment area that potential users of Snohomish County Airport/Paine Field air service are most likely to reside. The proximity of the catchment area to Seattle-Tacoma International Airport will make passenger retention at Snohomish County Airport/Paine Field challenging. For this report, airline booking information from travel agencies within the catchment area was pulled through the GDS as one factor to determine the commercial air service potential of Snohomish County Airport/Paine Field.

Exhibit 3.1 Catchment area by zip code



Source: Microsoft MapPoint 2004

Service Radius Map



Trip Generation Calculations

HORIZON AIR	
2010/2011 Daily Trip Generation	
Directional Flights (per day):	16
Seats:	76
Load Factor:	73%
Vehicle Occupancy:	1.50
Total ADT:	586
2010/2011 Yearly Trip Generation	
Directional Flights (per day):	16
Operating Days per Year:	350
Seats:	76
Load Factor:	73%
Vehicle Occupancy:	1.50
Total YDT:	205,054
2016 Daily Trip Generation	
Directional Flights (per day):	20
Seats:	76
Load Factor:	73%
Vehicle Occupancy:	1.50
Total ADT:	733
2016 Yearly Trip Generation	
Directional Flights (per day):	20
Operating Days per Year:	350
Seats:	76
Load Factor:	73%
Vehicle Occupancy:	1.50
Total YDT:	256,318

ALLEGIANT AIR	
2010/2011 Daily Trip Generation	
Directional Flights (per day):	1.7
Seats:	150
Load Factor:	90%
Vehicle Occupancy:	2.40
Total ADT:	95
2010/2011 Yearly Trip Generation	
Directional Flights (per day):	1.7
Operating Days per Year:	350
Seats:	150
Load Factor:	90%
Vehicle Occupancy:	2.40
Total YDT:	33,134
2016 Daily Trip Generation	
Directional Flights (per day):	2.8
Seats:	150
Load Factor:	90%
Vehicle Occupancy:	2.40
Total ADT:	156
2016 Yearly Trip Generation	
Directional Flights (per day):	2.8
Operating Days per Year:	350
Seats:	150
Load Factor:	90%
Vehicle Occupancy:	2.40
Total YDT:	54,574

EMPLOYEES	
2010/2011 Daily Trip Generation	
Total Employees:	34
Daily Trips per Employee:	2
Total ADT:	67
2010/2011 Yearly Trip Generation	
Total Employees:	34
Daily Trips per Employee:	2
Operating Days per Year:	350
Total YDT:	23,562
2016 Daily Trip Generation	
Total Employees:	34
Daily Trips per Employee:	2
Total ADT:	67
2016 Yearly Trip Generation	
Total Employees:	34
Daily Trips per Employee:	2
Operating Days per Year:	350
Total YDT:	23,562