

MEMORANDUM

To: Mark Reichin, Propeller
From: Brad Lincoln, PE
Project: Paine Field Passenger Terminal
Subject: Maximum Potential Operations
Date: January 27, 2017
GTC #: 15-081



This memorandum has been prepared in response to the January 24, 2017 review letter from Tom Barnett at Snohomish County requesting additional analysis regarding the maximum potential operations of the Paine Field Passenger Terminal.

1. BACKGROUND

The analysis performed for the Paine Field Passenger Terminal that was documented in the May 18, 2016 traffic impact analysis was conservatively high for the AM and PM peak-hours. The analysis assumed a full arrival and departure of both plane types (76-seat and 150-seat aircrafts) and utilized overly conservative assumptions, particularly the load factor. Data collected for similar operations at the Bellingham International Airport showed that a full arrival and departure of similar aircrafts actually occurs over a 2-hour period. Additionally, the Paine Field Passenger Terminal would not be able to accommodate more than 2 aircraft during a 1-hour period. The AM and PM peak-hour analysis is used by Snohomish County to determine the traffic concurrency of a development activity and by the surrounding jurisdictions (WSDOT, City of Everett and City of Mukilteo) to determine SEPA impacts under the interlocal agreements. The May 18, 2016 traffic impact analysis was based on 966 average daily trips and 214 peak-hour trips being added to the off-site street system.

2. MAXIMUM POTENTIAL OPERATIONS

Snohomish County staff identified during a conference call that the larger aircraft analyzed could be a 166-seat aircraft, as opposed to a 150-seat aircraft. Snohomish County staff identified in the comment memo that the maximum potential operations of the Paine Field Passenger Terminal were not fully identified.

2.1. 166-Seat Aircraft

The use of the seat size of the aircraft and the load factors were integral parts of the trip generation calculations. The load factors utilized for the trip generation calculations were therefore conservative in their nature. The load factors utilized in the trip generation calculations were 73% for the 76-seat aircraft and 90% for the 150-seat aircraft for the daily trip generation calculations. The peak-hour trip generation calculations utilized a 90% load factor for both aircraft. It is important to note that Table

5 of the May 18, 2016 traffic analysis had a typographical error showing a 73% load factor for the 76-seat aircraft, even though a 90% load factor was actually utilized. The load factors utilized for the peak-hour trip generation calculations were overly conservative.

Snohomish County staff identified that Allegiant Airlines MD83/88 aircraft are identified as having 166 seats. However, Allegiant Airlines identifies a load factor of 83.4%. Utilizing a 166-seat aircraft and a load factor of 83.4% would result in 960 average daily trips and 214 PM peak-hour trips (see calculations included in the attachments). This is 4 daily trips and 2 peak-hour trips (1 inbound trip and 1 outbound trip) higher than what was analyzed in the May 18, 2016 traffic analysis. This represents a change of less than 1% and should not be considered significant.

2.2. Additional Potential Operations

Snohomish County staff identified the potential for additional operations based on reasonably foreseeable “full” operations, specifically 16 operations (8 arrivals and 8 departures) of the 76-seat aircraft and 16 operations (8 arrivals and 8 departures) of the 166-seat aircraft per day. The May 18, 2016 traffic analysis assumed 20 daily operations (10 arrivals and 10 departures) by the 76-seat aircraft and an average of 2.8 daily operations (based on 10 arrivals and 10 departures per week) of the 150-seat aircraft. Any increase in operations beyond what was identified in the May 18, 2016 traffic analysis would only increase the daily trip generation, which is not utilized for the concurrency analysis for Snohomish County or the SEPA analysis for the surrounding jurisdictions (WSDOT, City of Everett and City of Mukilteo). The only portion of the May 18, 2016 traffic analysis that is based on average daily trips are the traffic mitigation fees for Snohomish County and WSDOT.

Traffic mitigation fees are typically only assessed by Snohomish County and WSDOT for the anticipated operations of development activity. The May 18, 2016 traffic impact analysis reflects the anticipated trip generation and impacts of the Paine Field Passenger Terminal. The Snohomish County and WSDOT traffic mitigation fees identified in the May 18, 2016 traffic impact analysis should therefore not required to be changed for any potential increase in operations.

3. CONCLUSIONS

The May 18, 2016 traffic impact analysis for the Paine Field Passenger Terminal represented the anticipated operations based on the capacity of the terminal and the anticipated directional flights. Changing to a 166-seat aircraft and/or increasing the operations will not significantly change the trip generation during the peak-hour of the Paine Field Passenger Terminal. These changes could increase the daily trip generation of the Paine Field Passenger Terminal. However, these changes would only affect the traffic mitigation fee assessments for Snohomish County and WSDOT. Since Snohomish County and WSDOT assess traffic mitigation fee based on anticipated operations of a development and the fees that were identified in the May 18, 2016 traffic impact analysis are based on the anticipated operations, the May 18, 2016 traffic impact analysis should still be deemed acceptable. The Paine Field Passenger Terminal should not be assessed additional Snohomish County and WSDOT traffic mitigation fees for potential operations.

Trip Generation Calculations

Paine Field Passenger Terminal
GTC #15-081

76-Seat Aircraft		166-Seat Aircraft		EMPLOYEES	
Daily Trip Generation		Daily Trip Generation		Daily Trip Generation	
Directional Flights (per day):	20	Directional Flights (per day):	2.8	Total Employees:	34
Seats:	76	Seats:	166		
Load Factor:	73%	Load Factor:	83.4%		
Vehicle Occupancy:	1.50	Vehicle Occupancy:	2.40		
Total ADT:	740	Total ADT:	162	Total ADT:	68
Peak-Hour Trip Generation		Peak-Hour Trip Generation		Peak-Hour Trip Generation	
Directional Flights:	2	Directional Flights:	2	Total Employees:	17
Seats:	76	Seats:	166	Percent during Peak-Hour:	~50%
Load Factor:	90%	Load Factor:	83.4%	Employees during Peak-Hour:	8
Vehicle Occupancy:	1.50	Vehicle Occupancy:	2.40		
Total Peak-Hour Trips:	92	Total Peak-Hour Trips:	116	Total Peak-Hour Trips:	8
Inbound Peak-Hour Trips:	46	Inbound Peak-Hour Trips:	58	Inbound Peak-Hour Trips:	4
Outbound Peak-Hour Trips:	46	Outbound Peak-Hour Trips:	58	Outbound Peak-Hour Trips:	4
TOTAL TRIP GENERATION		TOTAL TRIP GENERATION		OFF-SITE TRIPS	
Daily Trip Generation		Daily Trip Generation		Daily Trip Generation	
Total ADT: 970		Total ADT: 970		Total ADT: 960	
Peak-Hour Trip Generation		Peak-Hour Trip Generation		Peak-Hour Trip Generation	
Total Peak-Hour Trips: 216		Total Peak-Hour Trips: 216		Total Peak-Hour Trips: 214	
Inbound Peak-Hour Trips: 108		Inbound Peak-Hour Trips: 108		Inbound Peak-Hour Trips: 107	
Outbound Peak-Hour Trips: 108		Outbound Peak-Hour Trips: 108		Outbound Peak-Hour Trips: 107	