



U.S. Department
of Transportation
**Federal Aviation
Administration**

Office of the Air Traffic Organization
Western Service Area

1601 Lind Avenue Southwest
Renton, Washington 98057

Dr. Allyson Brooks
State Historic Preservation Officer
1100 Capitol Way South
Suite 30
Olympia, WA 98501

RE: Section 106 Consultation for the proposed automation of a 250 heading for turboprops departing Seattle-Tacoma International Airport

Dear Dr. Brooks,

The Federal Aviation Administration (FAA), in accordance with Section 106 of the National Historic Preservation Act of 1966 and implementing regulations 36 CFR Part 800, requests your consultation for the proposed automation of a 250^o heading for turboprop aircraft departing Seattle Tacoma Airport (SEA).

The FAA proposes to make a finding of “no adverse effect” on historic properties under 36 C.F.R. 800.5. Information supporting this finding, including a description of the undertaking and its effect on historic properties and other information required under 36 C.F.R. 800.11(e) are included in this letter. The background to and a description of the proposed action is summarized below:

Background

SEA’s arrivals and departures operate in two flows, dependent upon weather. Generally speaking, SEA’s arrivals and departures are directed to the north in fair weather conditions (“North Flow”). North Flow occurs approximately 30% of the year. During the remaining 70% of the year, SEA arrivals and departures are directed to the south (“South Flow”).

For over a decade, SEA has turned certain turboprops to the west in North Flow. This practice has three benefits:

- Enhances safety by moving the slower turboprop departures out of the stream of the faster jet departures.
- Enhances safety by reducing conflicts with the air traffic associated with Boeing Field/King County Airport (BFI), located just to the north of SEA.
- Reduces ground delays at SEA and other airports in the National Airspace (NAS), by allowing ATC to safely reduce the time between each departure at SEA. This is especially important since operations at SEA have climbed by approximately 8% annually in the past few years.

Historic data shows that North Flow prop traffic constitutes, on average, 1% of SEA total departures or 6% of SEA total prop departures.

Figure 1 below illustrates seasonal variability of westerly turned North Flow prop departures as a percentage of total SEA departures and just SEA turboprop departures respectively.

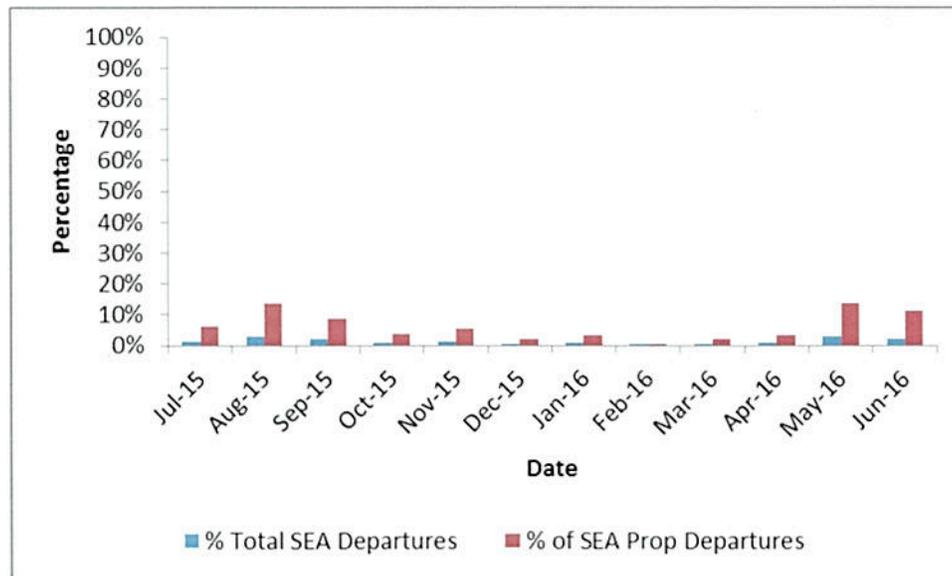


Figure 1: Percentage of North Flow turboprops turned to the West as a percentage of total SEA departure and turboprop departures

Historically, ATC has manually coordinated this westerly turn of turboprops in North Flow. This manual coordination causes a delay to when aircraft are directed to turn and uncertainty in where these westerly turboprops fly. As a result, some of these turboprops may still be in conflict with BFI traffic.

Proposed Action

The Proposed Action is the automation of a 250° heading within 1 NM of the runway end for turboprop aircraft. This would enhance the benefits provided by the manual turn by ensuring that these turboprops are not in conflict with BFI traffic as well as allowing ATC more time to manage the increasing number of aircraft operating in and out of SEA.

Definition of the Area of Potential Effect

Federal regulations define the Area of Potential Effect (APE) as the geographic area or areas within which an undertaking may directly or indirectly cause alternation in the character of use of historic properties, if any such properties are present. The APE is influenced by the scale and nature of the undertaking. The FAA delineated the APE to encompass the area to the west of SEA within which the historical west-turned turboprops overflow in North Flow and in which the proposed west-turned turboprops are expected to overfly. The APE is illustrated in Figure 2 below.



Figure 2: General Study Area

Properties listed on or eligible to be listed on the National Register of Historic Properties (NRHP) within the APE

Utilizing the Washington State Department of Archaeology and Historic Preservation's Wisaard's application¹, the FAA identified two places listed on the Washington Heritage Register and NRHP within the APE. In addition, the FAA identified six places eligible to be listed on the NRHP and Washington Heritage Register within the APE. The location of these properties is listed below in Table 1 and shown in Figure 3.

		Register Name	Address	Resource ID
National Register; Washington Heritage Register	1	White Center Fieldhouse and Caretaker Cottage	1321 SW 102nd Street, Seattle, WA	674769
	2	14th Avenue South Bridge - Seattle	Spans Duwamish River, Seattle, WA	675190
Eligible	3	St. James Lutheran Church	9403 18th Ave SW, Seattle, WA 98106	41529
	4	South Park Firehouse	8201 10th Ave S, (South Park), Seattle, WA	35527
	5	Boeing Primary Building	7775 E Marginal Way S, Tukwila, WA 98108	46715
	6	14th Avenue South Brick Road	14th Ave S, Seattle, WA 98108	46718
	7	Beverly Park Tank	11044 4th Ave SW, White Center, WA	622399
	8	YMCA - Burien	17874 Des Moines Memorial Dr S, Burien, WA	618817

Table 1: Places on the NRHP and Washington Heritage Register, and places eligible for listing on the NRHP and Washington Heritage Register within the Study Area

¹ <https://fortress.wa.gov/dahp/wisaardp3/>



Figure 3: Locations of properties listed and eligible to be listed on the NRHP

Proposed Methodology for Determination of Adverse Effects

The National Historic Preservation Act Section 106 regulations direct federal agencies to make reasonable and good faith efforts to identify historic properties in regards to a proposed action (36 CFR § 800.4(b)(1)). Federal agencies are to take into account the nature and extent of potential effects on historic properties, and the likely nature and location of historic properties within areas that may be affected.

Primary effects include the removal or alteration of historic resources.

Secondary or indirect effects include changes in noise, vehicular traffic, light emissions, or other changes that could interfere substantially with the use or character of the resource. Indirect effects include noise impacts that would diminish the integrity of the property's significant historic features.

Because of the nature of the Proposed Action, no land acquisition, construction, or other ground disturbance would occur under the Proposed Action. Accordingly, there would be no direct effects on resources listed on or eligible to be listed on the NRHP. Therefore, the determination of adverse effects would be limited to identification of indirect effects related to diminishing the integrity of a property.

The primary basis for determining the adverse effects of the undertaking on historic and cultural resources was the degree of increase in aircraft noise exposure level between the Proposed Action and the No Action Alternative. The analysis for potential adverse effects considered the change in aircraft noise exposure level measured in decibels (dB) of:

- Day-Night Average Sound Level (DNL) +1.5 dB or more in areas exposed to the DNL 65 dB and higher

In addition, if the analysis identified a reportable noise increase, the FAA further considered whether the reportable noise increase would result in the potential for adverse effects. A reportable noise increase represents a change in noise exposure levels when comparing the Proposed Action with the No Action Alternative, of:

- DNL +3 dB or more, within areas exposed to the DNL 60 - 65 dB
- DNL +5 dB or more, within areas exposed to the DNL 45 - 60 dB

The FAA analyzed the potential adverse effects to historic resources by calculating the noise exposure levels at points arranged at 0.5 nautical mile intervals within the APE for both the No Action and Proposed Action. These two sets of noise exposure levels were then compared to determine the change in noise exposure.

Determination of Adverse Effects to Historical, Archaeological and Cultural Resources

The noise exposure level of the No Action and Proposed Action alternatives was determined through the use of the FAA approved TARGETs plugin which used the Aviation Environmental Design Tool (AEDT) version 2c. The modelling of the No Action alternative was based upon westerly turned turboprops within 60 randomly selected days from August 2015 – January 2016. The modelling of the Proposed Action alternative was

based upon westerly turning turboprops within the same listing of days, but from August 2016 – January 2017. The results are showed below in Tables 2-4.

No Action Exposure					
%65+dB	%65-60dB	%60-55dB	%55-50db	%50-45dB	%<45dB
0	0	0	0.1	0.5	99.4

Table 2: Noise exposure from the No Action as percentage of grid points contained within specified dBA DNL groups.

Proposed Action Exposure					
% 65+dB	% 65-60dB	% 60-55dB	% 55-50db	% 50-45dB	% <45dB
0	0	0	0.2	0.7	99.1

Table 3: Noise exposure from the Proposed Action as percentage of grid points contained within specified dBA DNL groups.

IMPACT			
Increase 1.5 dB or more in areas exposed to the DNL 65 dB and higher	Increase 3 dB or more in areas exposed to the 60 – 65 DNL dB	Increase 5 dB or more in areas exposed to the DNL 45 -60 dB	No Change
0	0	0	100%

Table 4: Results from the comparison of the No Action to Proposed Action noise exposure as percentage of grid points contained within specified dBA DNL groups.

This noise modelling shows that there are no reportable or significant noise impacts as a result of implementation of the Proposed Action. Further, as illustrated in Figure 4 below, this noise modelling showed that the APE is primarily subjected to noise levels of < 45 dBA DNL as a result of the No Action and Proposed Action Alternatives.

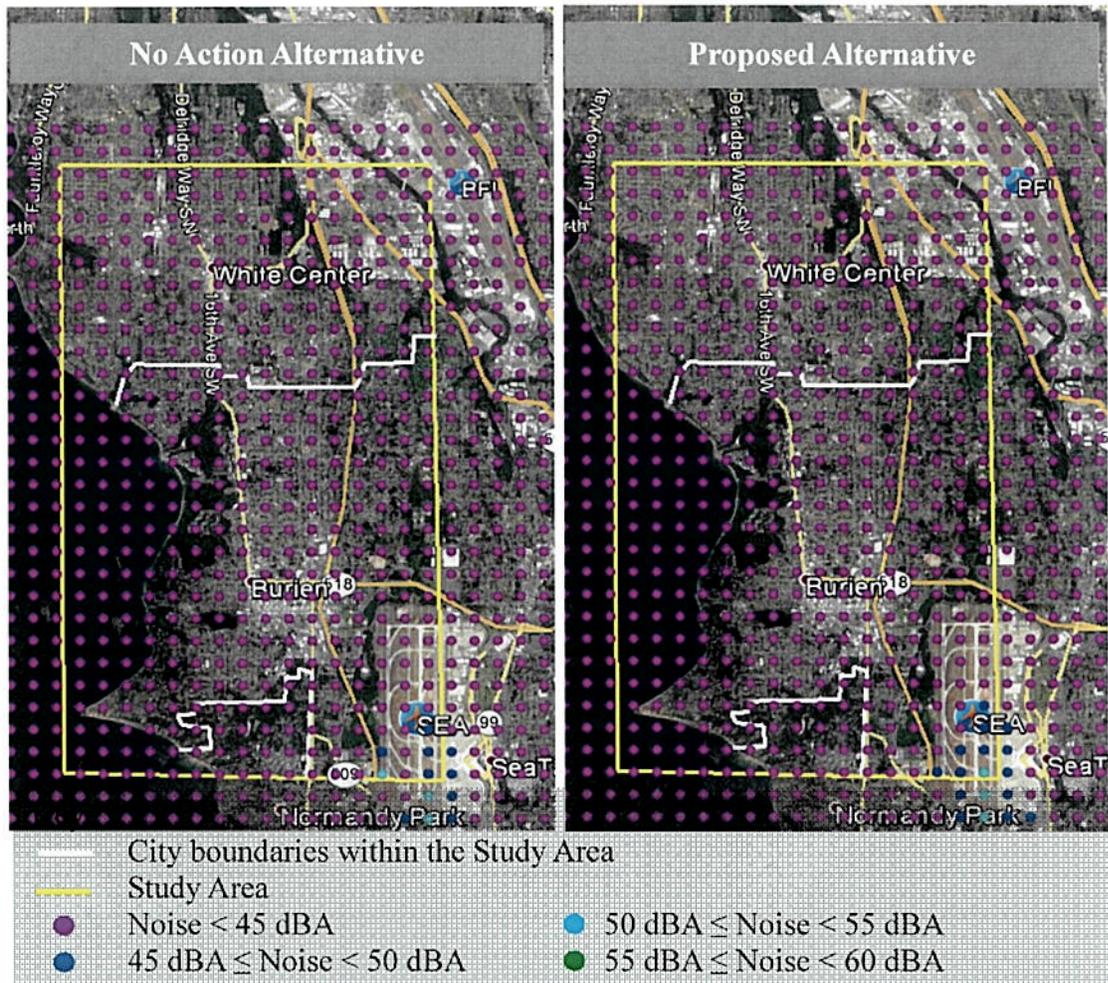


Figure 4 Noise exposure of the No Action and Proposed Action:

Finding of Effect

The results of the AEDT Plug in computations for the change in noise indicated no threshold noise increase as a result of the proposed action. No historic resources would experience an increase in noise exposure as a result of the proposed automation of the 250° heading for certain turboprops in departing SEA in North Flow. Thus, there are no adverse impacts to historic resources resulting from implementation of the Proposed Action.

A Draft Categorical Exclusion in accordance with the NEPA is currently being prepared. Based on the above discussion, the FAA would like to recommend a finding of no historic properties or other archaeological or cultural resources adversely affected for the proposed action.

We look forward to your response. We understand that your office has thirty days for review, but we would greatly appreciate if this could be expedited. The summer months are the primary months for north flow and it would benefit the National Airspace as well as the travelling public if the FAA could implement the new heading by summer. If you should need any further information or wish to discuss the project, please contact Dr. Caroline Poyurs at (425) 203-4539.

Sincerely,



Mindy Wright
Manager, NAS Analytics and Environmental Team
Federal Aviation Administration
Air Traffic Organization, Western Service Center
Operations Support Group

cc: Tony Piasecki, Interim City Manager, City of Burien



Allyson Brooks Ph.D., Director
State Historic Preservation Officer

May 10, 2017

Dr. Caroline Poyurs
Analysis Lead
Federal Aviation Administration
1601 Lind Avenue SW
Renton, WA 98057

In future correspondence please refer to:
Project Tracking Code: 2017-05-03303
Property: Automation of a 250 Heading for Turboprop Airplanes Departing Seattle-Tacoma
International Airport
Re: Project Initiation, APE Review, No Adverse Effect

Dear Dr. Poyurs:

Thank you for contacting the State Historic Preservation Officer (SHPO) and Department of Archaeology and Historic Preservation (DAHP) regarding the automation of a 250 heading for turboprop airplanes at SeaTac Airport project. This action has been reviewed on behalf of the SHPO under provisions of Section 106 of the National Historic Preservation Act of 1966 (as amended) and 36 CFR Part 800. Our review is based upon documentation contained in your communication.

First, we agree with the Area of Potential Effect (APE) as mapped in your submittal. I also concur with your determination that the project, as proposed, will have no adverse effect on historic properties within the APE that are listed in, or determined eligible for listing in, the National Register of Historic Places. As a result of our concurrence, further contact with DAHP on this proposal is not necessary. However, if new information about affected resources becomes available and/or the project scope of work changes significantly, please resume consultation as our assessment may be revised. Also, if any archaeological resources are uncovered during construction, please halt work immediately in the area of discovery and contact the appropriate Native American Tribes and DAHP for further consultation.

Thank you for the opportunity to review and comment. If you have any questions, please feel free to contact me.

Sincerely,

Matthew Sterner, M.A.
Transportation Archaeologist
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