

# INTRODUCTION

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## A. BASIS FOR THE STUDY

On March 21, 2018, the Washington State Legislature formally asked the state Department of Commerce via a “two-corners” letter to complete a study that evaluates how the current and ongoing operations of Seattle-Tacoma International Airport affect its surrounding communities. The Washington State Legislature enacted Engrossed Substitute Senate Bill (ESSB) 6032 – Section 127(63) during the 2018 regular session to implement this study.

ESSB 6032 provided \$300,000 for this study, with another \$300,000 in matching funds from six airport-area cities (Burien, Des Moines, Federal Way, Normandy Park, SeaTac, and Tukwila) in matching funds. Of the total \$600,000, a maximum of \$500,000 was made available to hire a consultant to prepare this study, with the remaining \$100,000 dedicated for Department of Commerce staff time in support of the project.

It is important to note that this study (hereafter referred to as the 2020 study) is not to oppose or impede the operations, growth, or success of Seattle-Tacoma International Airport. While there is some similarity to a 1997 study regarding the third runway, it is not an extension or continuation of that 1997 study.

### Difference Between the 1997 Study and the 2020 Study

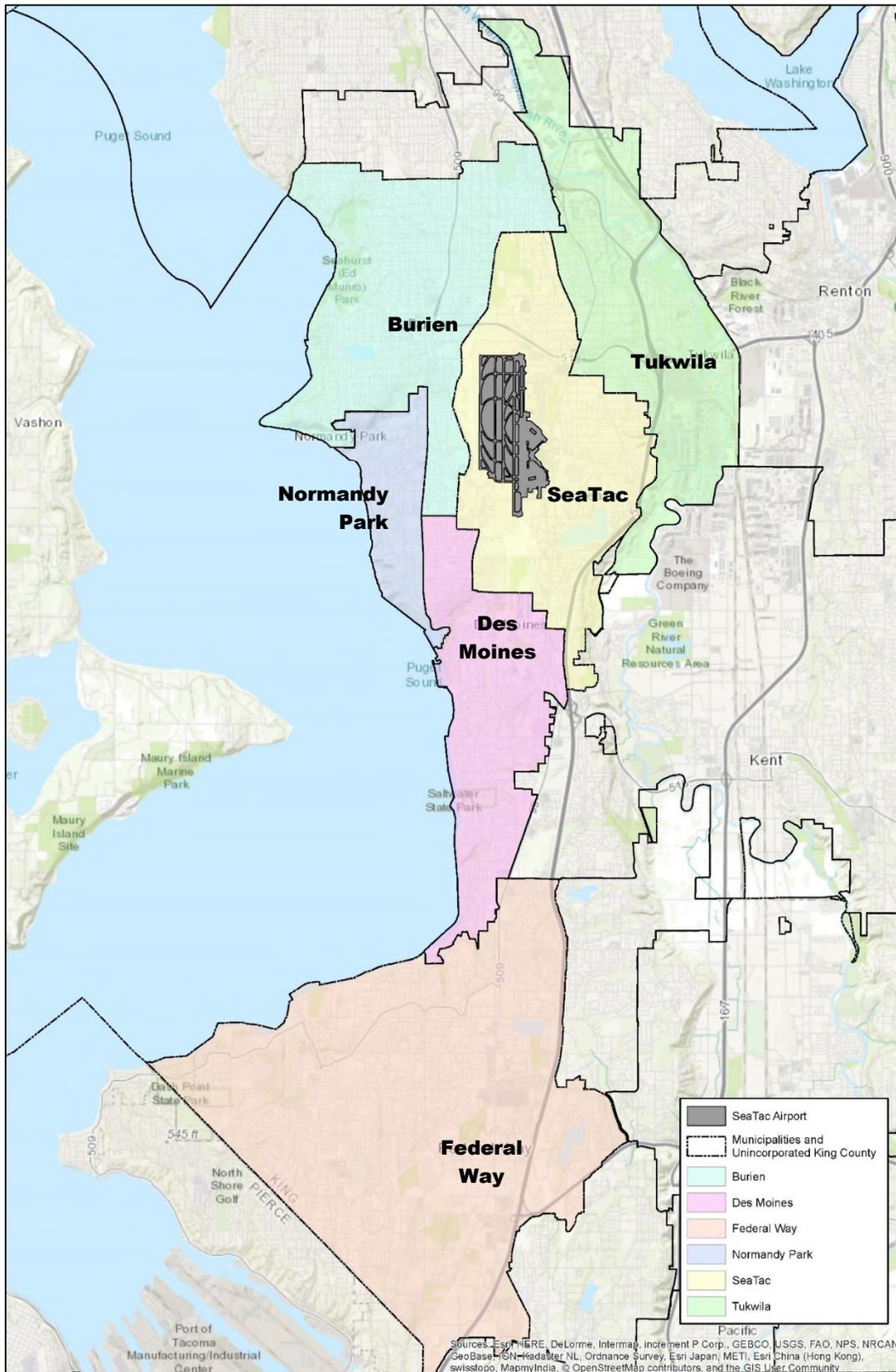
The 1997 study – the “Sea-Tac International Airport Mitigation Study” (February 1997) – was authorized by a 1995 grant by then-State Sen. Mike Heavy and was administered by the Department of Commerce’s predecessor (the Department of Community, Trade, and Economic Development, known as CTED). It was in response to concerns regarding the potential for increased aviation-related effects upon neighboring communities as a result of Seattle-Tacoma International Airport’s then-proposed third runway. The 1997 study was tasked with assessing the third runway’s projected construction and operational effects of the then-proposed third runway, and developing mitigation strategies for the cities of Burien, Des Moines, Federal Way, Normandy Park, and Tukwila, the Highline School District, and the Highline Community Hospital. That study was completed in February 1997.

The 1997 study reviewed the draft environmental impact statement (EIS) and considered how an expanded Seattle-Tacoma International Airport with the third runway would affect its surrounding communities.

The 2020 study looks at historical data between 1997 and roughly 2019 and seeks to establish a baseline of airport-related performance criteria using a variety of metrics. The 2020 study does not include new modelling or sampling, nor should it be considered in any way to be an EIS or an environmental assessment (EA).

The two studies are not the same, have slightly different study areas, and are not to be considered as directly related. Where the 1997 study projected future potential conditions based on an EIS, the 2020 study evaluates historical data for the last 23 years. It is not an extension of the 1997 study.

**Figure 1.1**  
**Study Area**



## B. THE STUDY AREA

The 1997 and 2020 studies do have some degree of similarity – Burien, Des Moines, Federal Way, Normandy Park, and Tukwila were included in both studies (the city of SeaTac was not officially a part of the 1997 study). While the 2020 study does not include the Highline School District and the Highline Community Hospital, the expansion of the city of Burien’s corporate limits now includes many of these same areas. Figure 1.1 shows a map of the current study area and Figure 1.2 details the six study area cities.

**Figure 1.2**  
**Study Area Cities**

City	Incorporated	Total Area (in square miles)	2018 Population	Average Density (people per square mile)
City of Burien	1993	10.11	51,908	5,134.3/sq. mi.
City of Des Moines	1959	6.41	32,364	5,049.0/sq. mi.
City of Federal Way	1990	22.49	97,044	4,330.4/sq. mi.
City of Normandy Park	1953	2.51	6,649	2,649.0/sq. mi.
City of SeaTac	1990	* 10.24	29,239	* 2,855.4/sq. mi.
City of Tukwila	1908	9.60	20,294	2,113.9/sq. mi.
<b>TOTALS</b>		<b>61.36</b>	<b>237,498</b>	<b>3,870.6/sq. mi.</b>

Source: Cities of Burien, Des Moines, Federal Way, Normandy Park, SeaTac and Tukwila; and U.S. Census

- \* According to officials from the city of SeaTac, approximately 40% of the city’s 10.24 square mile area is composed of Seattle-Tacoma International Airport land, making the non-airport portion of the city approximately 6.15 square miles. Using this adjusted area, the average density increases to 4,754.3 persons per square mile (up from 2,855.4 as shown in Figure 1.2), making it the third most densely populated study area city behind Burien and Des Moines.

The study area covers 61.36 square miles (approximately 2.65% of the total area of King County), but its population of represents 10.7% of King County’s population (237,498 people). The study area’s density is roughly 3.3 times greater than the county average – 3,396.3 persons per square mile in the study area versus 1,034 in King County. This shows that the study area is more densely populated and more urbanized than the average in King County. This concentration of population close to Seattle-Tacoma International Airport has contributed to concerns regarding the compatibility of airport operations, going back many decades.

## C. THE CONSULTANT TEAM

In response to ESSB 6032, the Department of Commerce solicited proposals in early 2019, advertising both locally (metropolitan Seattle area) and nationally. A shortlist was selected for interviews in April 2019 and upon conclusion, a consultant team lead by Stantec was selected to conduct this study.

Stantec is a multi-disciplinary engineering-planning-architecture firm with offices worldwide. The Stantec team includes staff from the Seattle metropolitan region as well as other offices. (The Stantec project Director leading this effort also led the 1997 study while with a previous firm.) As part of the Stantec Team, Denver-based Ricker Cunningham is providing real estate economics, community strategies, and addressing quality of life indicators for the study area. Ricker Cunningham and the leadership of the Stantec team have more than 20 years of experience in working together on similar projects.

## D. STUDY APPROACH

The purpose of the 2020 Study is to **objectively** and **independently** evaluate and assess a variety of effects (positive, negative and neutral) associated with the operation of Seattle-Tacoma International Airport and to establish a baseline that may be used to evaluate current and future operations:

- Positive effects include such factors as higher-paying jobs, increased tax revenue, etc.
- Negative effects include such factors as concerns about noise, air quality, public health, etc.
- Neutral effects are those with little to no measurable positive or negative effect.

This evaluation and assessment was limited to existing data covering the period from 1997 through 2019. No additional sampling, modelling, or new data collection was included in the scope of the study.

As part of the 2020 study, the consultant team's presented regular updates to an advisory committee and held two public workshops for public input. The consultant team also met with city staff, elected officials, staff from the Port of Seattle, and representatives from various public agencies city to gather data.

While the 2020 study acknowledges the importance of Seattle-Tacoma International Airport as a significant regional and statewide asset, the 2020 study remains independent and takes no sides. The 2020 study does not argue for or against Seattle-Tacoma International Airport, nor does it advocate for any city, neighborhood, organization, or resident. The 2020 study attempts to address the following basic questions:

- Do the study area cities enjoy any benefits by being close to Seattle-Tacoma International Airport?
- Are the study area cities shouldering a regionally disproportionate burden because of their location?

These questions are not easily answered. In the years between the 1997 and 2020 studies, the region (as well as the study area cities) have experienced multiple changes, and there has been ongoing regional growth that has roughly doubled the population of the Seattle metropolitan area. The 2020 study is tasked with determining:

- What effects are directly related to Seattle-Tacoma International Airport operations (direct effects)?
- What effects are the result of natural organic regional growth (induced effects)?

The approach to this study makes the following assumptions:

- **Available Data**

The 2020 study is based on the analysis and evaluation of available existing data from 1997 through 2019 to assess any effects associated with Seattle-Tacoma International Airport. Information to be reviewed comes from diverse sources, including the Port of Seattle, the study area cities, King County, the city of Seattle, the Puget Sound Regional Council (PSRC), various state and federal agencies, etc.

- **No New Modelling, Sampling or Data Collection**

The 2020 study is based on existing data and does not generate new information through modelling, sampling, or other data collection. (The project scope, budget and schedule did not allow for new modelling and data collection tasks).

- **Public Input**

The 2020 study considers and evaluates information provided by individual citizens from the study area cities, provided that the information can be independently verified or validated. Information that could not be verified or validated is considered as part of the anecdotal public input component to help identify additional concerns with airport operations.

- **Annual and Milestone Dates**

The 2020 study uses the following milestone years to evaluate potential effects experienced in the study Area cities that may be attributable to aviation-related activity:

- **1997** – The base year using information available from the 1997 study.
- **2009** – The first full year of operations of the third runway.

- **2019** – The most current year of available data (depending on how the data is collected, the “present” year sometimes varies between 2018 and 2019).

- **Evaluation Standards**

The 2020 study evaluates and assesses various metrics experienced by the study area cities based on appropriate existing state and federal legislation, policies, and regulations. The existence of proposed metrics, ongoing research and international studies, while of interest, are not currently enforceable but may be relevant in the future.

## E. THE TECHNICAL ADVISORY COMMITTEE

A technical advisory committee (TAC) was established to provide guidance and input to the consultant team, as well as to present a variety of draft information for review and discussion. The TAC was composed of staff and citizen representatives from each study area city, as well as two members of the Washington State Legislature. Several members of the Department of Commerce staff also attended TAC meetings. Many of the TAC members are also members of local airport committees in their respective Study Area Cities. The TAC membership is shown in Figure 1.3.

**Figure 1.3**  
**Technical Advisory Committee**

Organization	Name	Role
City of Burien	Rose Clark	Citizen Representative
	Brian Wilson	City Manager
City of Des Moines	Steve Edmiston	Citizen Representative
	Michael Matthias	City Manager
City of Federal Way	David Berger	Citizen Representative
	Bill Vadino	Policy Advisor to the Mayor
City of Normandy Park	Mark Hoppen	City Manager
	Kathleen Waters	Citizen Representative
City of SeaTac	Steve Pilcher,	Director of Community & Economic Development
	Roger Kadeg	Citizen Representative
City of Tukwila	Brandon Miles	Economic Development Liaison, Mayor’s Office
	Jim Haggerton	Citizen Representative
Washington State Legislature	Rep. Tina Orwall	33rd Legislative District
	Rep. Mike Pellicciotti	30th Legislative District
Washington Department of Commerce	Gary Idleburg	Project Manager
	Dave Anderson	Managing Director
	Mark Barkley	Assistant Director, Local Government Division
	Matthew Ojennus	Senior Planner
	<i>Mark McCaskill</i>	<i>Director, Growth Management Services Unit (former)</i>
	<i>Ike Nwankwo</i>	<i>Western Washington Manager (retired)</i>

(Note: Names in *italics* are Department of Commerce staff who left the agency prior to the completion of the project.)

TAC meetings were conducted monthly at the city of SeaTac City Council Chambers (with the exception on the 28 October 2019 TAC meeting held at North Highline Fire Station #18 while the SeaTac City Council Chamber was being renovated). TAC meetings were not intended to be public meetings and did not include opportunity for public comment or discussion. Other platforms were provided for public input (described below).

## F. PUBLIC INPUT

As noted, the purpose of the 2020 study was to conduct an independent and objective evaluation of Seattle-Tacoma International Airport operations – both positive and negative – and not to advocate on behalf of any single individual or community. The 2020 study was not intended to serve as a public forum for commentary on various aspects of Seattle-Tacoma International Airport.

During the course of the 2020 study, additional data was offered to the consultant team from study area citizens. The consultant team used data that could be independently verified and validated. Information that could not be verified/validated was considered as anecdotal input, which also helped the consultant team identify issues important to the public.

Information and insight from the public was provided during the 2020 study, and several opportunities were provided for public input:

- **June and July 2019**  
A series of interviews was conducted with nearly 50 stakeholders representing the study area cities (stakeholders were named by each individual city).
- **24 July 2019 (Public Workshop #1)**  
The first workshop was held at Tyee High School (city of SeaTac) to present the study's approach, scope, and schedule. Public comments were taken via in-person 1-to-1 meetings and through a comment board.
- **06 November 2019 (Public Workshop #2)**  
The second workshop was held at the Burien City Hall/Library to present draft research observations. Public comments were taken via Q&A session and through written comment cards.
- **16 September 2019 and 20 November 2019**  
Meetings conducted by State Rep. Tina Orwall regarding citizen concerns with the mitigation packages offered by the Port of Seattle.
- **12 November 2019**  
A meeting was conducted by Rep. Tina Orwall and State Sen. Karen Kaiser regarding citizen mitigation issues and an update of the ultra-fine particulate study from the University of Washington researchers.
- **06 January 2020**  
A special TAC meeting was conducted at the city of SeaTac City Council Chambers with selected citizen representatives invited to solicit additional detailed input on the study's approach and findings.
- **01 April 2020**  
An online video summary of the 2020 study for download by anyone from the Department of Commerce's website, accompanied by an abstract of the draft report's executive summary.

Some citizens stated that the 2020 study did not go far enough in advocating for their interests or did not extend geographically to neighborhoods that were not part of the ESSB 6032 study grant area. The study area cities were defined by ESSB 6032. The project's scope, schedule and budget defined what the consultant team could focus on during the project schedule. Further evaluation and analysis outside of these parameters could be accommodated as part of a follow-up study.

There were many residents with long-standing concerns about how operations at Seattle-Tacoma International Airport have affected their communities, and in some cases their individual homes. Some of these concerns date back to 1970 and the opening of the second runway. Concerns range from the quality of noise mitigation packages to nighttime passenger and cargo flights to issues regarding property values and effects on public health, to name a few.

While the consultant team acknowledges the importance of these issues, the 2020 study was not designed to be a forum for additional concerns regarding Seattle-Tacoma International Airport. As mentioned, public input did help determine the magnitude of some concerns, especially where data was unavailable, inconsistent, or incomplete. Those disparities are noted as part of this study.

### **An Unexpected Problem**

Beginning in early 2020, there was an unanticipated issue that derailed the remainder of public meetings and presentations. The Seattle region was one of the early U.S. outbreaks of the COVID-19 coronavirus – a global pandemic that resulted in nationwide and international travel restrictions and shelter-in-place orders. From March through June 2020, this prevented the consultant team from presenting the study’s findings, including in-person presentations to the TAC, to each study area city council, to the Department of Commerce leadership, and to state legislators and other interested parties.

Alternatively, an online TAC meeting was conducted in mid-March 2020, and a narrated video summary of the report was posted online in April 2020 for public review. The draft report was also posted on the Department of Commerce website for review and comment during this same period. Final in-person presentations were prevented in May 2020 by ongoing health concerns.

## **G. REPORT ORGANIZATION**

The following sections provide a detailed narrative of the evaluation and assessment of the 2020 study including:

- Historical background of the Study Area (Section 2).
- Case studies of three comparable airports (Section 3).
- Summary of public and community input (Section 4).
- Summary of noise and vibration evaluation and analysis (Section 5).
- Summary of air quality evaluation and analysis (Section 6).
- Summary of mobility evaluation and analysis (Section 7).
- Summary of surface water quality evaluation and analysis (Section 8).
- Summary of groundwater and soil quality evaluation and analysis (Section 9).
- Summary of light evaluation and analysis (Section 10).
- Summary of public safety evaluation and analysis (Section 11).
- Summary of public health evaluation and analysis (Section 12).
- Summary of socio-economic evaluation and analysis (Section 13).
- Summary of study findings (Section 14).
- Supporting appendices (references, stakeholder interviews, project contacts, and a technical glossary).

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