



Seattle-Tacoma
International
Airport

SEA Noise Monitoring System Overview

StART Meeting

October 28, 2020

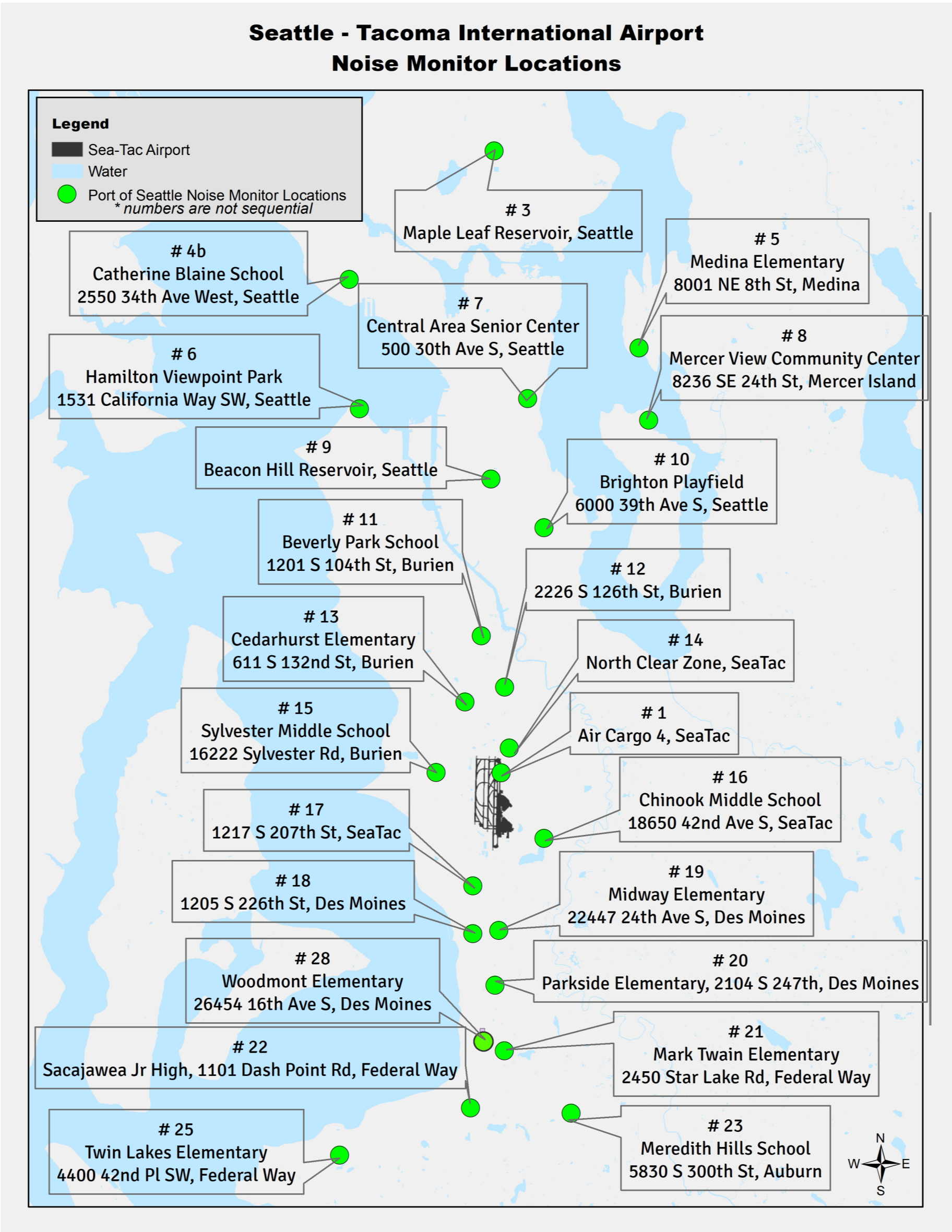
Permanent Monitoring System

SEA Noise Monitoring System

- 24 permanent monitors located in close-in communities surrounding SEA, or in locations generally north and south of the runways near a departure or arrival flight path.
 - System was upgraded in 2015
 - Larson Davis 831
- Close-in monitors are sited north and south to capture noise events to and from each of the 3 runways.
- Aircraft noise event data is gathered and shared on a monthly basis via the Port's Noise Programs website.

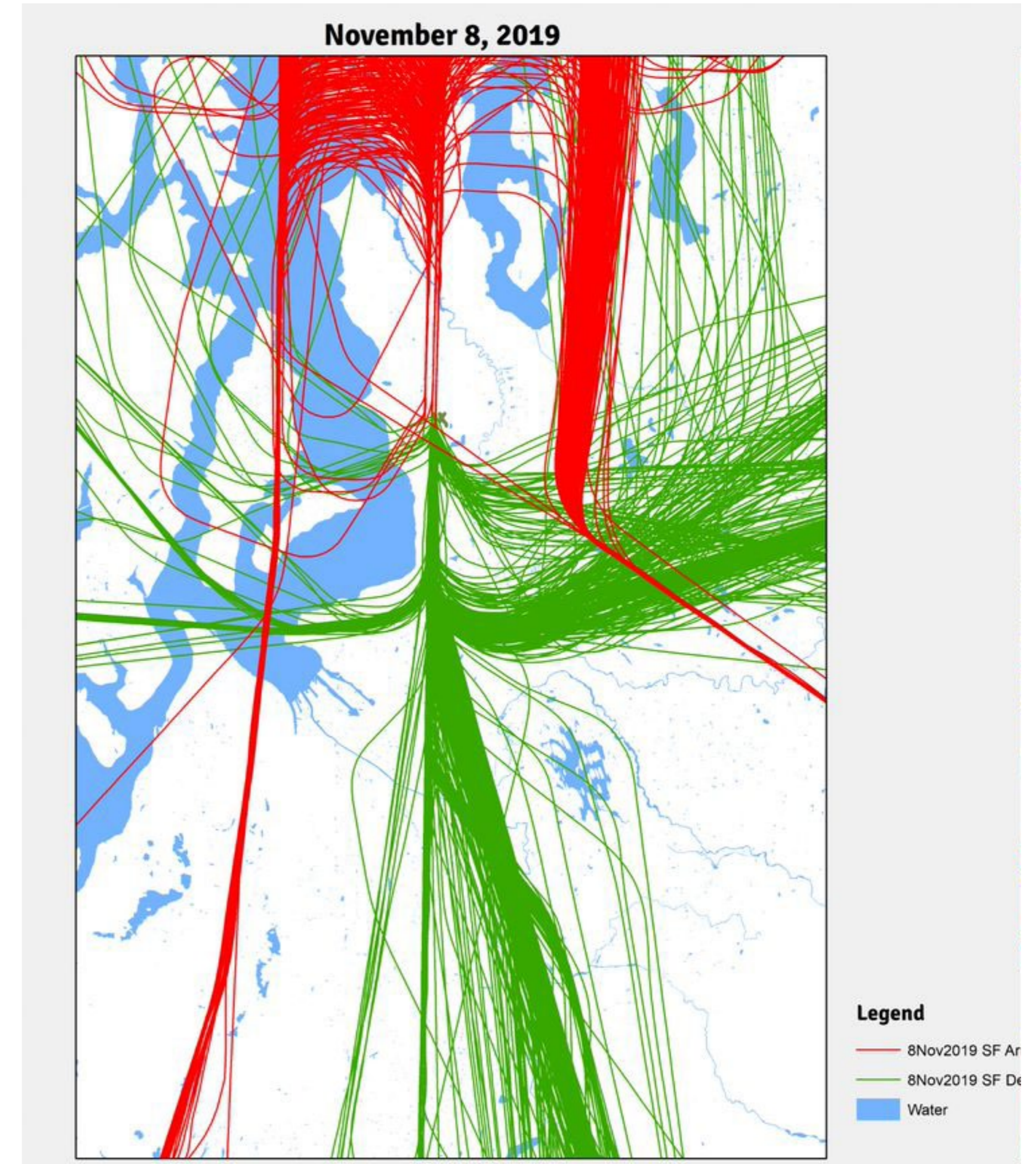


Monitor Locations



Flight Tracking System – EnvironmentalVue

- Record of all flights that occurred at SEA
- Same radar data feed the FAA uses
- Historic record of flight details
 - Altitude
 - Aircraft Type
 - Location
 - Speed
 - Airline
- Flight tracks are correlated with likely noise events
- Non-correlated noise is identified as community



Noise Monitoring Data

The purpose of the SEA's noise monitoring system is to identify aircraft overflights and correlate probable noise events.

Noise Metrics Supplied by the Port

SEL – Sound Exposure Level

- metric represents all the acoustic energy of an individual noise event as if that event had occurred within a one-second time period.

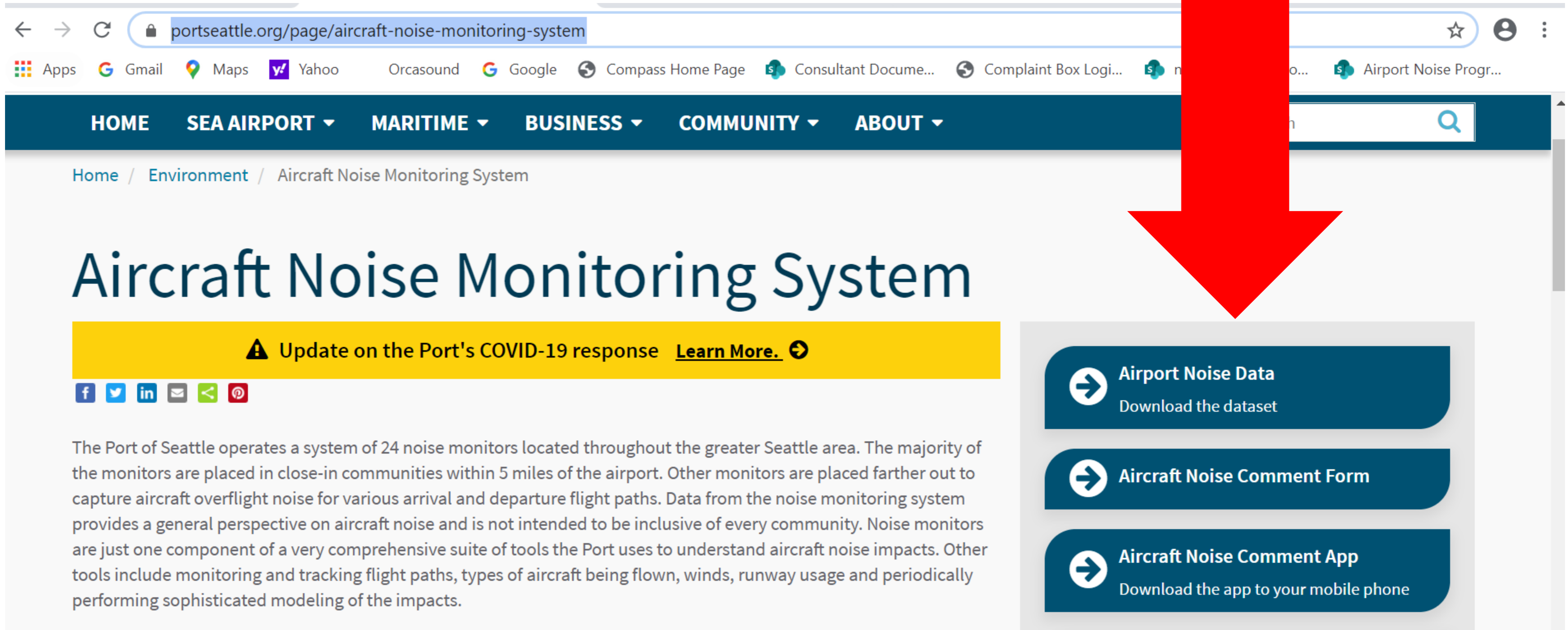
LEQ - equivalent sound level

- measures the average acoustic energy over a period of time to take account of the cumulative effect of multiple noise events

1 second Leq Data / non-correlated

- Available through public disclosure

<https://www.portseattle.org/page/aircraft-noise-monitoring-system>



portseattle.org/page/aircraft-noise-monitoring-system

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Aircraft Noise Monitoring System

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The Port of Seattle operates a system of 24 noise monitors located throughout the greater Seattle area. The majority of the monitors are placed in close-in communities within 5 miles of the airport. Other monitors are placed farther out to capture aircraft overflight noise for various arrival and departure flight paths. Data from the noise monitoring system provides a general perspective on aircraft noise and is not intended to be inclusive of every community. Noise monitors are just one component of a very comprehensive suite of tools the Port uses to understand aircraft noise impacts. Other tools include monitoring and tracking flight paths, types of aircraft being flown, winds, runway usage and periodically performing sophisticated modeling of the impacts.

- [→ Airport Noise Data](#)
Download the dataset
- [→ Aircraft Noise Comment Form](#)
- [→ Aircraft Noise Comment App](#)
Download the app to your mobile phone

Online Noise Monitoring Data



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- Contents
- Locations
- LEQ Noise
- SEL Events
- Runway map
- How to download data
- Other URL

Daily LEQ Noise (Equivalent Noise Level): Aircraft, Community and Total

Select NMT by number / location

(All) ▼

Select date(s)

10/1/2020

10/15/2020



To download data as a comma-separated value (CSV) file, click anywhere in the table below and then select Crosstab from the Download button on the top right in Tableau Server or the bottom right on Tableau Public.

Date	NMT and location	LEQ Aircraft Noise	LEQ Community Noise	LEQ Total Noise
	SEA07 - Central Area Senior Center	43	55	55
	SEA08 - Mercer View Community Center	39	54	54
	SEA09 - Beacon Hill Reservoir	57	61	63
	SEA10 - Brighton Playfield	45	54	54
	SEA11 - Beverly Park School	60	55	61
	SEA12 - 2226 S 126th St	60	55	61
	SEA13 - Cedarhurst Elementary	52	56	57
	SEA14 - North Clear Zone	61	56	62
	SEA15 - Sylvester Middle School	42	56	56
	SEA16 - Chinook Middle School	58	58	61
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Noise Monitor Data Utilization

- Airport providing aircraft noise event information to the public along with aircraft type, airline, flight number and time/date.
- Airport incentive programs such as Fly Quiet and Late Night Noise Limitation programs utilizing 4 close-in permanent monitors.
- FAA does not use data from noise monitors as the basis for air traffic or flight procedure decisions.

Noise Monitor Data Utilization (cont.)

- FAA does not use data from noise monitors as the basis for determining the sound insulation boundary area. FAA mandates that only noise modelling be used.
- Noise monitors do not provide an accurate depiction of annual DNL compared to modelling.
- Noise monitoring is not a perfect science and can be corrupted with other community noise interferences

Temporary Monitoring Program

Portable Noise Monitors for Temporary Deployment



- 2 monitors acquired in early 2020
- Same Larson Davis 831 models as the permanent system
- Noise data in the same standard metrics (SEL and LEQ)
- Resulting data will be shown alongside the permanent monitor data at the same website location

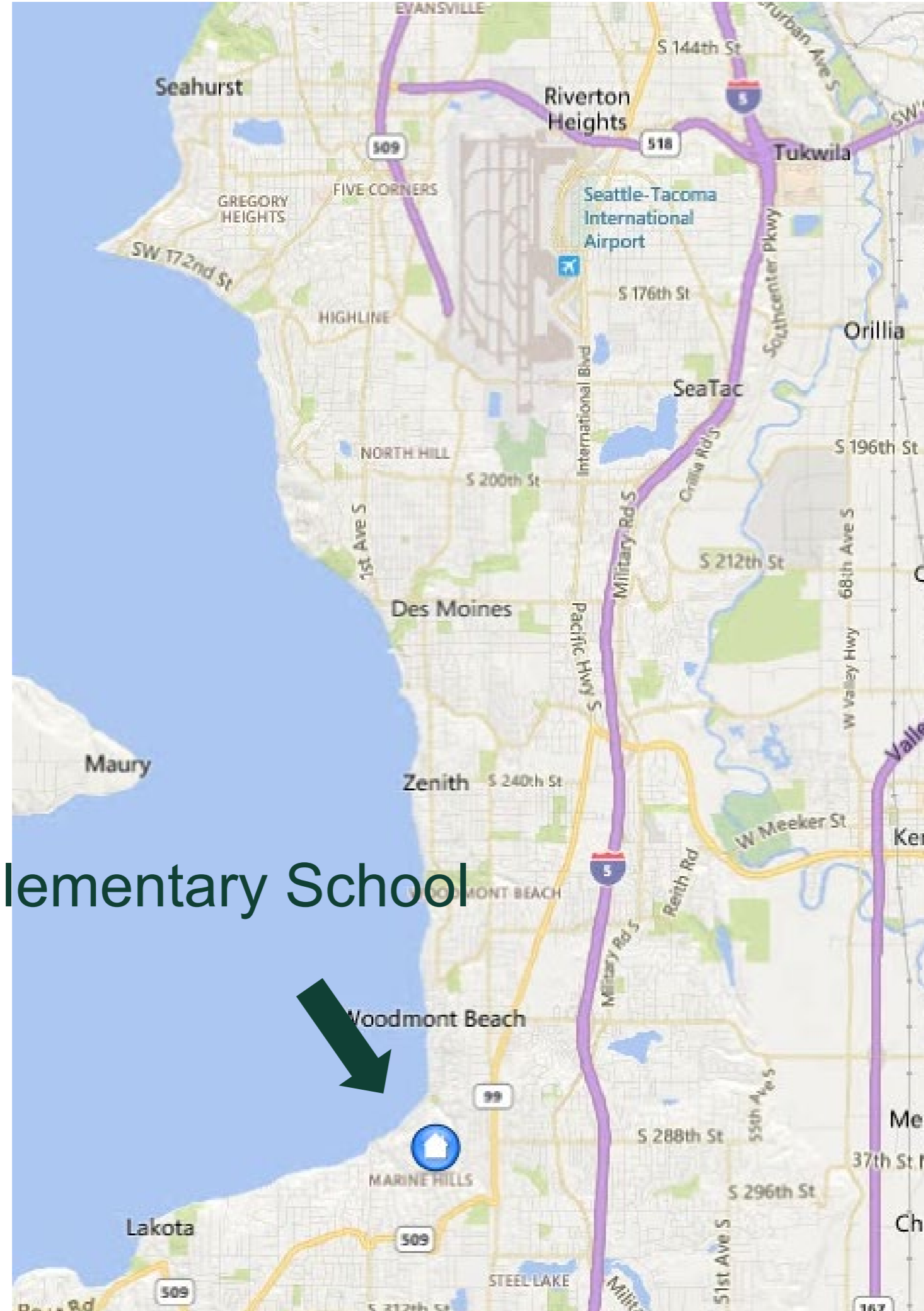
SEA's Temporary Noise Monitoring Program Procedures

- Portable noise monitoring will be considered if requested through a local jurisdiction such as city council or city administrators. Due to the volume of inquiries for temporary noise monitoring, we are unable to accept requests from individual citizens.
- Placement of portable noise monitors will be on public land and buildings when feasible. Private property may be considered when no public alternatives are available.
- A standardized report will be provided to the requesting jurisdiction consisting of the following information:
 - Sound Exposure Level (SEL)
 - Equivalent Sound Level (LEQ)
 - number and type of aircraft noise events correlated

Site Selection Criteria

- Distance from permanent monitoring sites – preferably not within 2 miles
- Proximity to established flight paths and airfield noise
- Availability of electric power
- Site accessibility for Port and vendor staff
- Site security
- Acoustically feasible
- Neighborhood equity and diversity is considered

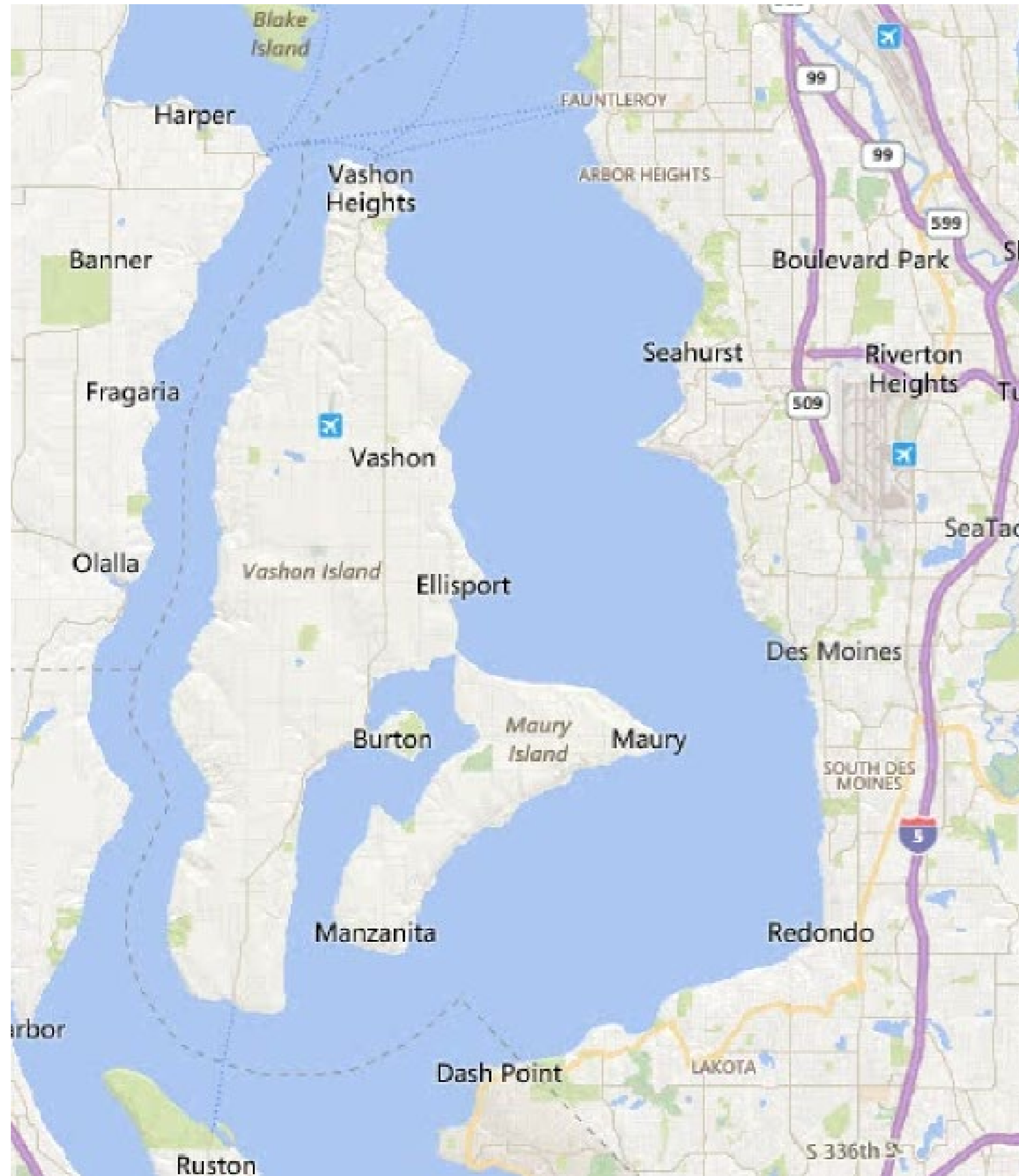
Deployment Status – first monitor



Nautilus Elementary School

- Received requests for monitor placement from the cities of Burien, Federal Way and Normandy Park
- Using the placement criteria, Burien was selected for the first placement but deferred to a later date
- Federal Way was contacted and accepted placement at Nautilus Elementary School – 2 months
- Normandy Park will have the next monitor placement

Deployment Status – second monitor



- Port Commission directed placement of monitor on Vashon Island for 12 months
- Siting decision nearly complete
- Monitor will be used for shorter terms in local region when 12 month deployment is complete

Noise Monitor Data Utilization

Temporary and permanent monitor data have the same usage limitations

- Airport providing aircraft noise event information to the public along with aircraft type, airline, flight number and time/date.
- FAA does not use data from noise monitors as the basis for air traffic or flight procedure decisions, or for determining the sound insulation boundary area.
- Noise monitors do not provide an accurate depiction of annual DNL compared to FAA required modelling.
- Noise monitoring is not a perfect science and can be corrupted with other community noise interferences



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International
Airport

Operated by the
Port of Seattle

[FlySEA.org](https://www.flysea.org)

