Land use regressions were carried out based on points surveyed using the Plume Labs FLOW monitor on four days – March 13th and 15th, April 12th, and May 10th – in Spring 2022. The former two surveying sessions were carried out by spending prolonged periods in particular areas collecting many sample points over a period of time, while the latter were carried out by gradually walking through the city of Tacoma. Survey times range from just before noon to the late afternoon.

The tool utilized was XLUR, which requires a prior prediction of the direction of influence for each variable to generate a land use regression model.

Predictor variables were as followed:

**Expected Positive -**Number of highway segments within one mile

Number of high speed (at least 35mph) non-highway road segments within one mile.

Number of rail lines within one mile.

Number of EPA toxic release facilities (2022) within one mile.

Slope (degrees)

Distance from nearest park. (feet)

Distance from the nearest non-sound water body. (feet)

**Expected Negative –**

Number of parks within one mile.

Number of non-sound water bodies within one mile.

Elevation

Distance from the nearest highway segment (feet)

Distance from the nearest high speed road segment. (feet)

Distance from the nearest rail line. (feet)

Distance from the nearest toxic release facility. (feet)

Distance from the Puget Sound (feet)

LUR calculation rules were created based on 2020 TRI sites for NO2, VOCs, PM10, PM2.5, and PM1.

Negative values were converted to zero before all values were added to generate final pollution scores, which were interpolated via a natural neighbor metric.

An alternative version was produced which discards points collected near UPS due to ongoing construction work at the time potentially prejudicing the survey results. This is the final version used. All predictions of negative values were replaced with zero prior to usage.