



Portland Environmental Justice Report

Portland neighborhoods with the highest percentage of Black, Latinx, and Asian residents are disproportionately exposed to

dangerous industrial smokestacks and unfiltered diesel truck routes. This report maps data from seven government agencies including the most recent racial diversity data publicly released by the decennial census on September 16th 2021.

The Portland neighborhoods with the most African American and Latinx residents are along the Columbia River, near the most dangerous industrial polluters according to DEQ's Level I Screening, and near Columbia Blvd. -- among the most polluted diesel truck routes according to Portland Bureau of Transportation. I-205, among the most heavily polluted Portland highways, runs through the neighborhoods with the highest percentages of Asian-American people.

According to the US Environmental Protection Agency (EPA):

"Environmental justice is the fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income with respect to the development, implementation and enforcement of environmental laws, regulations and policies. Fair treatment means no group of people should bear a disproportionate share of the negative environmental consequences resulting from industrial, governmental and commercial operations or policies."

Oregon does not include human health as a factor in the regulation of industrial air pollution with the exception of new industries coming to Oregon, which must comply with DEQ's Cleaner Air Oregon (CAO) program. Five of the most dangerous industries in Portland have been called in to CAO to complete Risk Assessments, required for DEQ to mandate pollution control equipment.

The neighborhoods of Portland where 82-92% of residents identify as white only according to the 2020 Census, are mostly located away from industry

and highways. Exceptions include NW District -- a high income area adjoined to the NW industrial area, and downtown Portland -- a low income area surrounded by high industrial-truck-count highways. And several predominantly white neighborhoods are adjoined to I-5 and I-205 which are among the most dangerously polluted highways in the US according to the most recent EPA National Air Toxics Assessment.

Portland schools with greater racial diversity or serving lower income households are more likely to experience disproportionate industrial air pollution and are unlikely to have sufficient air filtration. A 66-page report submitted to Portland Public Schools by Portland State University advised that students' "outdoor activities be limited at Harriet Tubman Middle School, especially during high traffic periods." This is virtually always due to the school's close proximity to in-city I-5, which has among the highest industrial diesel traffic counts of any Oregon highway according to ODOT. Harriet Tubman Middle School students are 67% non-white.

Cascadia Action works to assist 57 Portland Neighborhood Association boards, 16 local churches and synagogues and nine other local groups to negotiate with industry. We use statistics and data analysis, GIS mapping, computer programming, and web design to make government data understandable to everyone. To volunteer or donate money to our innovative air monitor project please contact:

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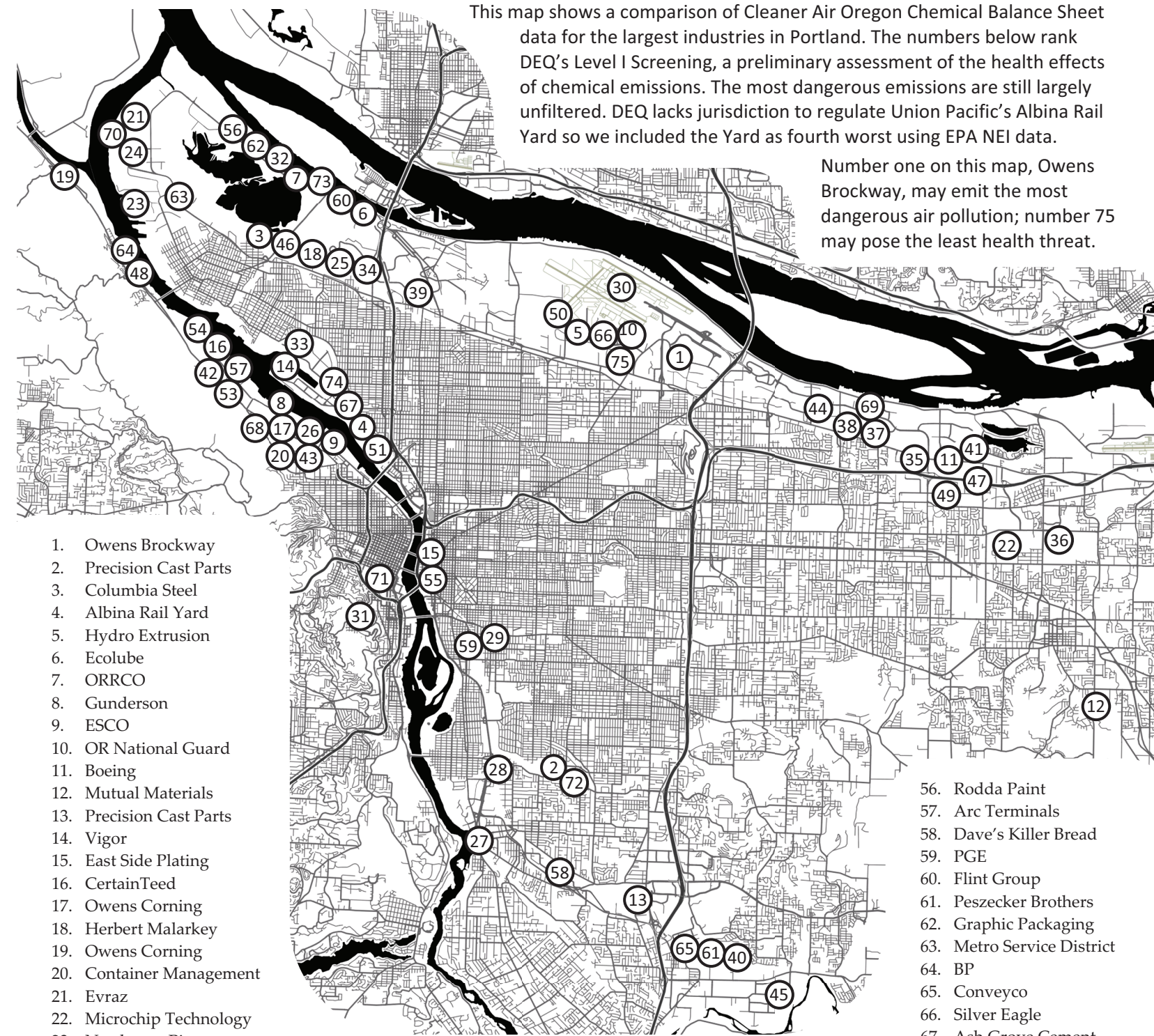
Works Cited:

- George, Linda et al. 2018. Indoor and outdoor air quality at Harriet Tubman Middle School and the design of mitigation measures: Phase I report. Online at: http://opb-imgserve-production.s3-website-us-west-2.amazonaws.com/original/tubman_-_psu_httpsreport_phase1_outdoor_monitoring_final_1530825287922.pdf
- Portland Clean Air. 2019. Portland Diesel Particulate. Online at: <http://portlandcleanair.org/files/reports/Portland%20Stack%20and%20Diesel%20Booklet%20Color.pdf>
- Portland Clean Air. (2020) Ranking procedures, Portland-area stationary industrial air polluters. Online at: <http://www.portlandcleanair.org/files/pcapubs.html>
- United States Environmental Protection Agency. 2021. Learn About Environmental Justice. Online at: www.epa.gov/environmentaljustice/learn-about-environmental-justice



INDUSTRIAL AIR POLLUTERS

Portland factories ranked by risk to human health



This map shows a comparison of Cleaner Air Oregon Chemical Balance Sheet data for the largest industries in Portland. The numbers below rank DEQ's Level I Screening, a preliminary assessment of the health effects of chemical emissions. The most dangerous emissions are still largely unfiltered. DEQ lacks jurisdiction to regulate Union Pacific's Albina Rail Yard so we included the Yard as fourth worst using EPA NEI data.

Number one on this map, Owens Brockway, may emit the most dangerous air pollution; number 75 may pose the least health threat.

1. Owens Brockway
2. Precision Cast Parts
3. Columbia Steel
4. Albina Rail Yard
5. Hydro Extrusion
6. Ecolube
7. ORRICO
8. Gunderson
9. ESCO
10. OR National Guard
11. Boeing
12. Mutual Materials
13. Precision Cast Parts
14. Vigor
15. East Side Plating
16. CertainTeed
17. Owens Corning
18. Herbert Malarkey
19. Owens Corning
20. Container Management
21. Evraz
22. Microchip Technology
23. Northwest Pipe
24. Ash Grove Cement
25. Arclin
26. Solenis
27. Clackamas County
28. East Side Plating
29. Bullseye Glass
30. Port of Portland
31. OHSU

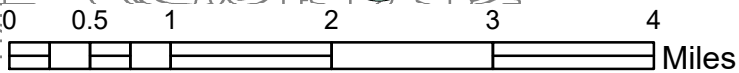
32. Supreme Perlite
33. Daimler Trucks
34. Blasen Lumber
35. US Bancorp
36. SemiConductor Comp.
37. Hickory Springs of CA
38. Signature Graphics
39. Mondelez
40. Peco
41. City of Gresham
42. Kinder Morgan
43. Galvanizers
44. Canron
45. PGE
46. City of Portland
47. Cascade

48. Shore Terminals
49. International Paper
50. Boeing
51. Oldcastle Building
52. US Bakery
53. Phillips 66
54. Siltronic
55. East Side Plating

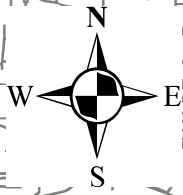
56. Rodda Paint
57. Arc Terminals
58. Dave's Killer Bread
59. PGE
60. Flint Group
61. Peszecker Brothers
62. Graphic Packaging
63. Metro Service District
64. BP
65. Conveyco
66. Silver Eagle
67. Ash Grove Cement
68. Equilon
69. Pierce Pacific
70. J. R. Simplot
71. PSU
72. McClure
73. Lacamas
74. EZFlow
75. Apex Anodizing



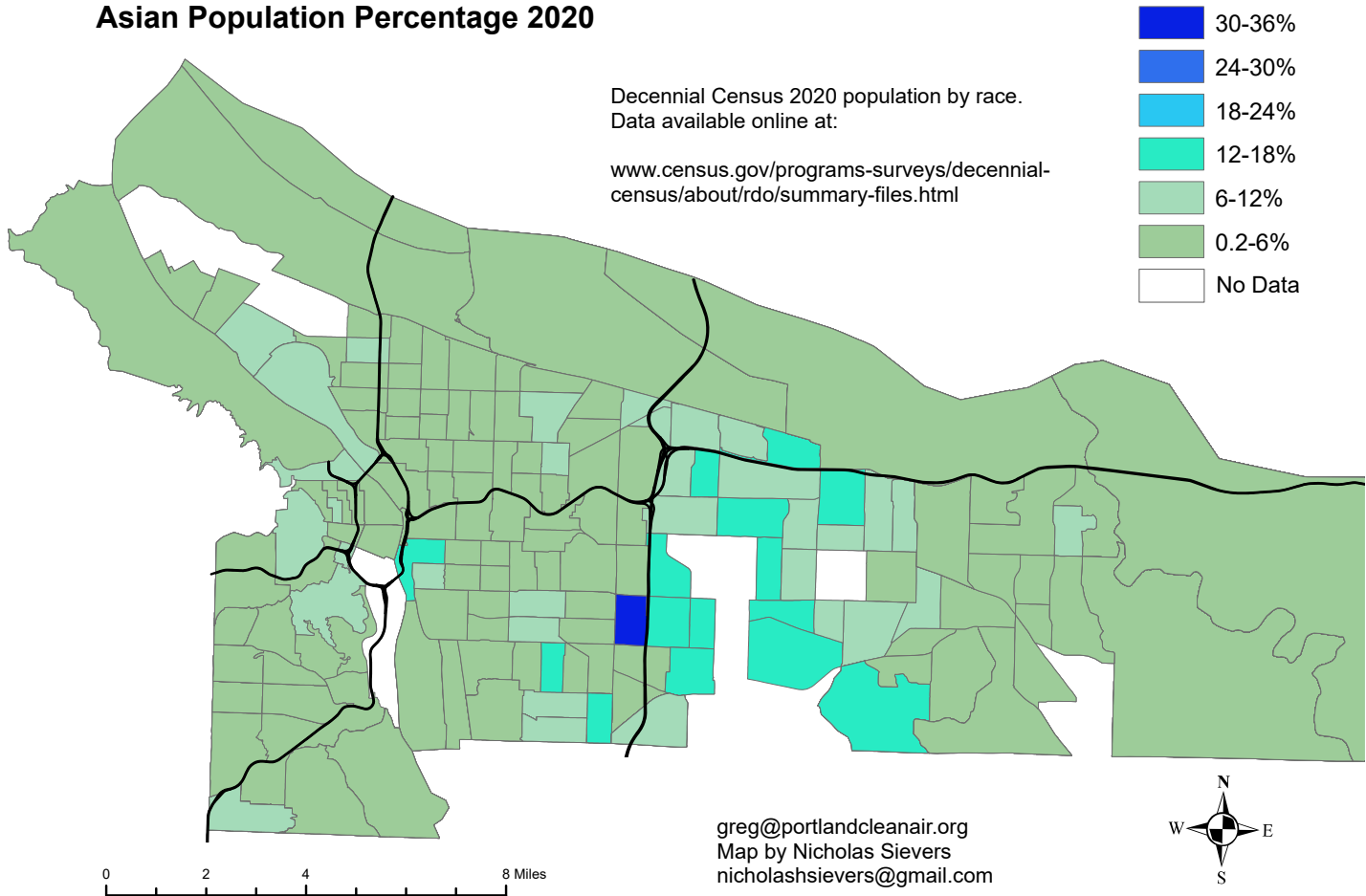
K-12 Portland Schools Racial Ethnic Background



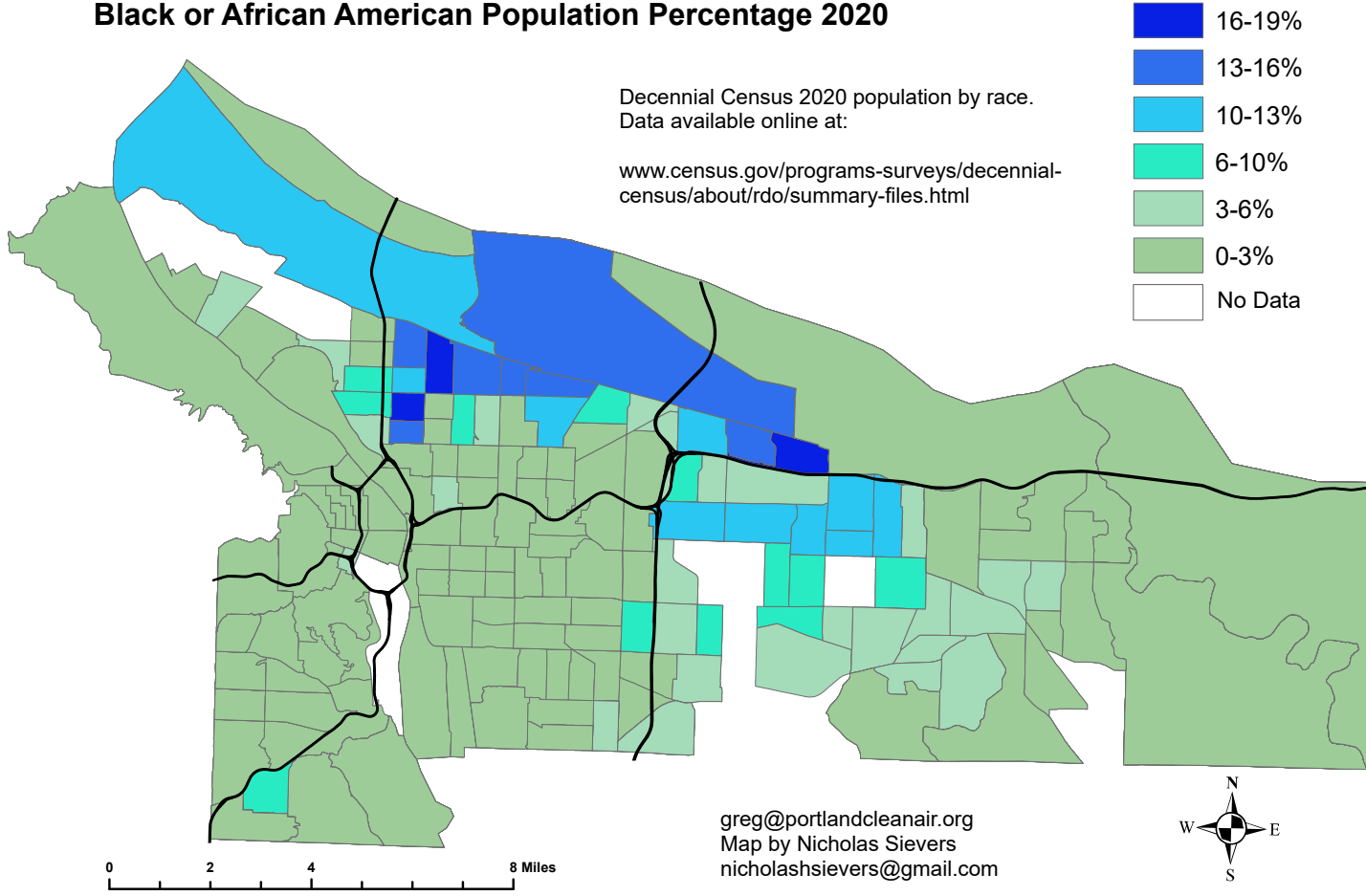
Portland Public Schools. 2018-2019. Portland Public Schools Enrollment Profile. Data compiled by Cascadia Action from: www.pps.k12.or.us/schools-c/profiles/enrollment/
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Map by Nicholas Sievers
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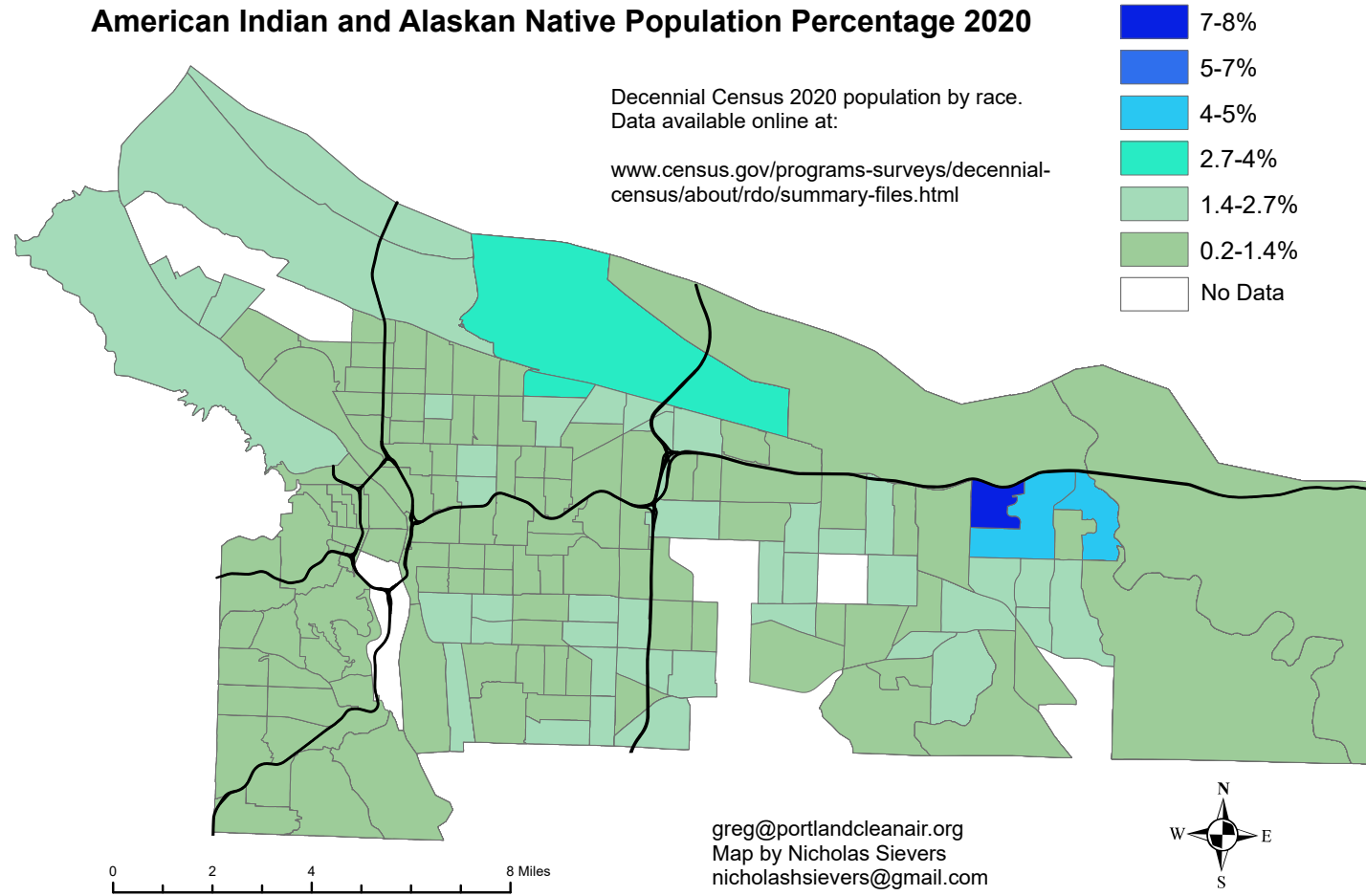
Asian Population Percentage 2020



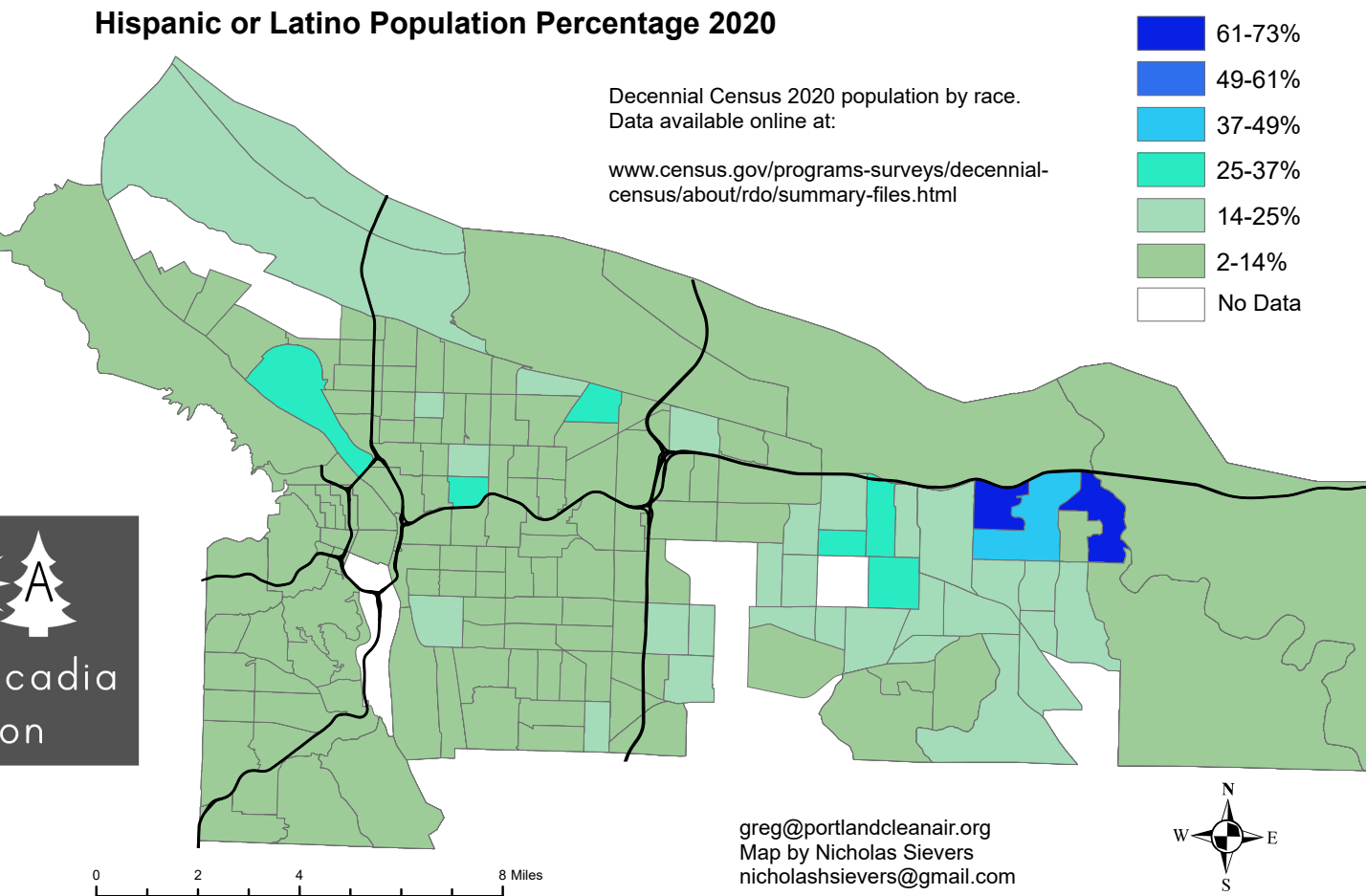
Black or African American Population Percentage 2020



American Indian and Alaskan Native Population Percentage 2020



Hispanic or Latino Population Percentage 2020



Portland Median Household Income

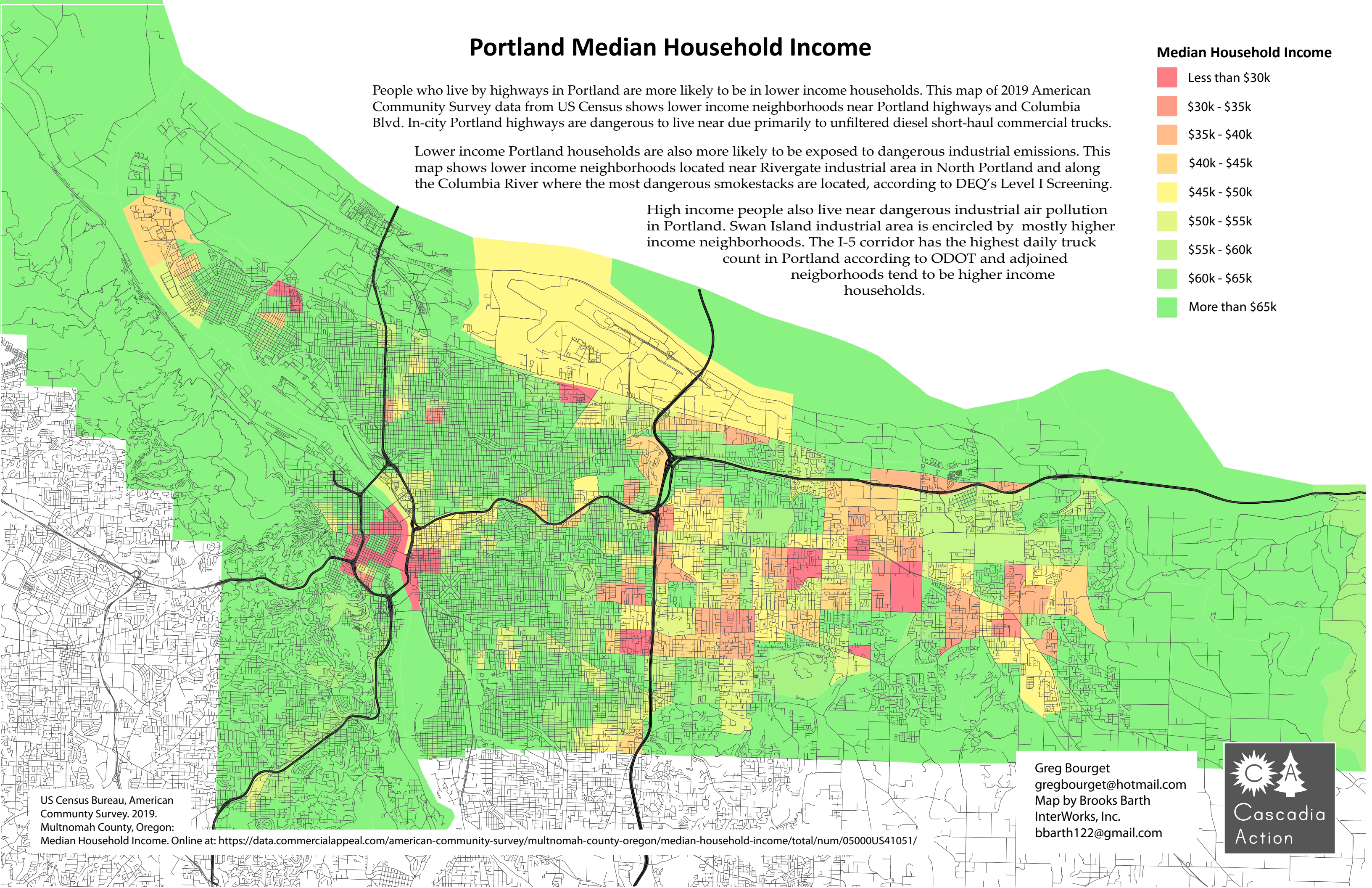
People who live by highways in Portland are more likely to be in lower income households. This map of 2019 American Community Survey data from US Census shows lower income neighborhoods near Portland highways and Columbia Blvd. In-city Portland highways are dangerous to live near due primarily to unfiltered diesel short-haul commercial trucks.

Lower income Portland households are also more likely to be exposed to dangerous industrial emissions. This map shows lower income neighborhoods located near Rivergate industrial area in North Portland and along the Columbia River where the most dangerous smokestacks are located, according to DEQ's Level I Screening.

High income people also live near dangerous industrial air pollution in Portland. Swan Island industrial area is encircled by mostly higher income neighborhoods. The I-5 corridor has the highest daily truck count in Portland according to ODOT and adjoined neighborhoods tend to be higher income households.

Median Household Income

- Less than \$30k
- \$30k - \$35k
- \$35k - \$40k
- \$40k - \$45k
- \$45k - \$50k
- \$50k - \$55k
- \$55k - \$60k
- \$60k - \$65k
- More than \$65k



US Census Bureau, American Community Survey, 2019.
Multnomah County, Oregon:
Median Household Income. Online at: <https://data.commercialappeal.com/american-community-survey/multnomah-county-oregon/median-household-income/total/num/05000US41051/>

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Air Pollution from Portland Industries

Portland Clean Air used Oregon Department of Environmental Quality, Oregon State Fire Marshall, and US Environmental Protection Agency data to create this map, the first and only map to show every industry emitting dangerous chemicals into the air here.

Industries depicted with teardrop symbols, as well as railyards, generally emit the most dangerous pollution to human health here. A heavy concentration of industry along the Columbia River disproportionately affects neighborhoods with the highest proportion of African Americans and Latinx residents in Portland.

An interactive version of this map that also includes emissions and chemical storage data is online at portlandcleanair.org.

Oregon Department of Environmental Quality. 2016. Air Contaminant Discharge Permits, Multnomah and Washington Counties. Spreadsheets emailed by DEQ, obtained by information request.

Office of State Fire Marshall. 2016. Hazardous Substance Information System. From password protected HSIS database, combined, edited by PCA to remove nonhazardous substances and warehouse or retail chemicals, and placed online at: <http://pdxcleanair.org/files/data/joined-filtered.tab>

Environmental Protection Agency. 2018. Airport and rail yard emissions 2014 NEI. Excerpt obtained by information request to EPA placed online at: http://portlandcleanair.org/files/data/emis_sum_fac_7439.xlsx

Yelp. 2019. Auto Body Painters Multnomah and Washington Counties. Downloaded using a data download tool.



- Title V Permit
- Standard Permit
- Simple Permit
- DEQ General Permits:
 - 1 Hard Chrome Electroplaters
 - 2 Decorative Chrome
 - 3 Degreasers - All
 - 4 Dry Cleaners
 - 5 Asphalt Plants
 - 6 Rock Crushers
 - 7 Ready-Mix/Concrete Plants
 - 8 Sawmills
 - 9 Boilers
 - 10 Crematories
 - 11 Prepared Feeds/Cereal/Flour
 - 12 Seed Cleaning
 - 13 Bulk Gasoline Plants
 - 14 Electric Power Generators
 - 15 Clay Manufacturing
 - 16 Metal Fabrication and Finishing: Large
 - 17 Plating and Polishing
 - 18 Surface Coating
 - 19 Metal Fabrication and Finishing: Small
 - 20 Paint and Allied Product Manufacturing
- DEQ Basic Permit
- Fire Marshal HSIS
- Auto Body Painter
- ✈ EPA NEI - Airport
- 🚂 EPA NEI - Railyard

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Portland Diesel Exposure from Industrial Trucks

The counts of industrial truck trips taken along Columbia Blvd by PBOT and at Swan Island Industrial Area and in-city I-5 by ODOT were among the highest in Portland. These truck routes are adjoined to neighborhoods with the highest proportion of African American and Latinx residents. I-205 counts in Eastside Portland by ODOT were similarly high, which are adjoined to neighborhoods with the highest proportion of Asian residents.

Commercial trucks are only 6% of Oregon vehicles on the road according to DEQ, yet cause 81% of airborne diesel particulate in Portland according to the EPA. A 2018 statistical analysis of ODOT and DMV records by Portland Clean Air found that 82% of diesel trucks in the Portland area were commercially owned and 75% of them were unfiltered. Unfiltered trucks emit 10x more diesel particulate than filtered trucks. The State of California, which banned unfiltered diesel trucks, reported that diesel particulate is "responsible for about 70% of California's estimated known cancer risk attributable to toxic air contaminants."

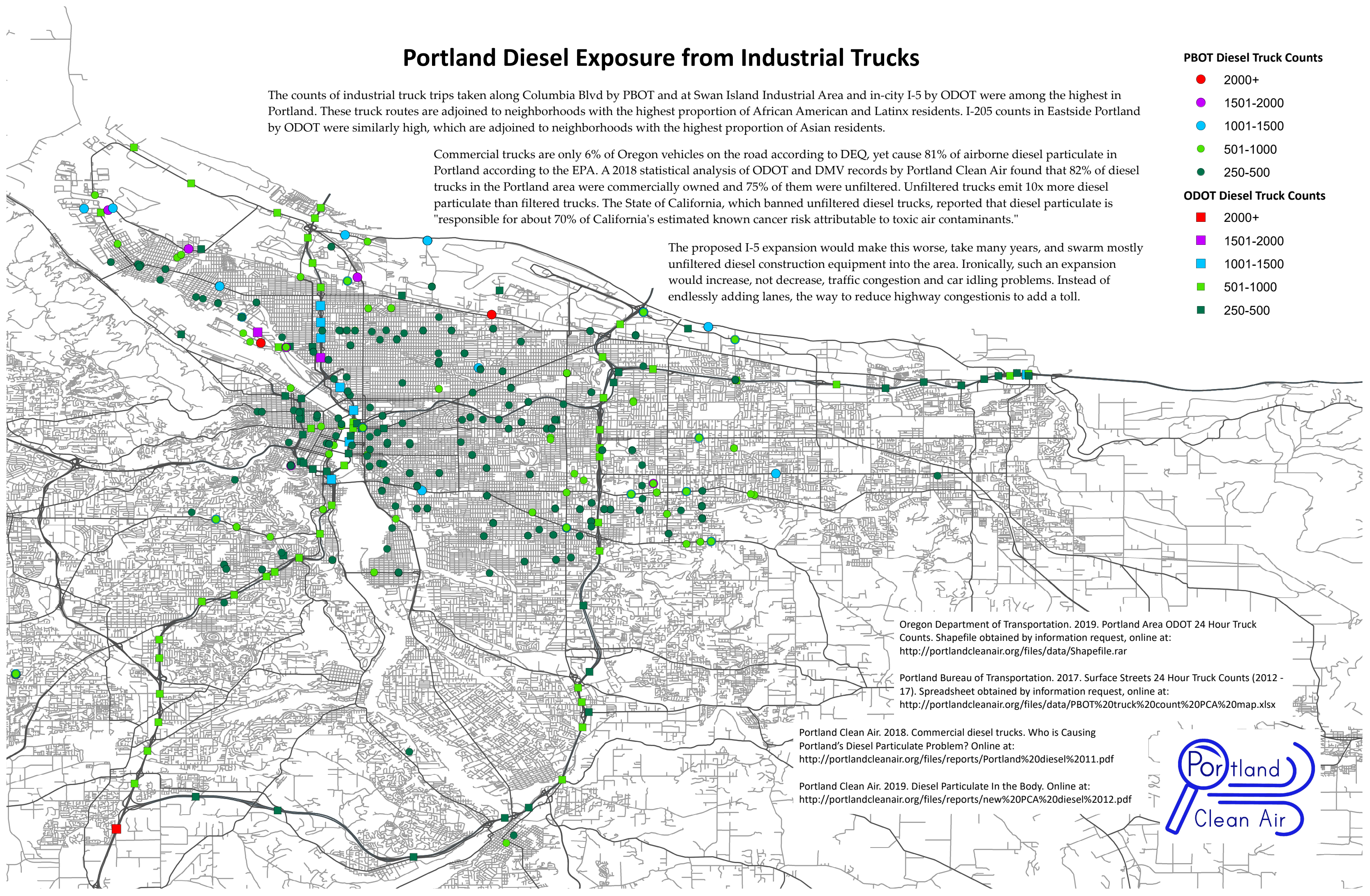
The proposed I-5 expansion would make this worse, take many years, and swarm mostly unfiltered diesel construction equipment into the area. Ironically, such an expansion would increase, not decrease, traffic congestion and car idling problems. Instead of endlessly adding lanes, the way to reduce highway congestion is to add a toll.

PBOT Diesel Truck Counts

- 2000+
- 1501-2000
- 1001-1500
- 501-1000
- 250-500

ODOT Diesel Truck Counts

- 2000+
- 1501-2000
- 1001-1500
- 501-1000
- 250-500



Oregon Department of Transportation. 2019. Portland Area ODOT 24 Hour Truck Counts. Shapefile obtained by information request, online at: <http://portlandcleanair.org/files/data/Shapefile.rar>

Portland Bureau of Transportation. 2017. Surface Streets 24 Hour Truck Counts (2012 - 2017). Spreadsheet obtained by information request, online at: <http://portlandcleanair.org/files/data/PBOT%20truck%20count%20PCA%20map.xlsx>

Portland Clean Air. 2018. Commercial diesel trucks. Who is Causing Portland's Diesel Particulate Problem? Online at: <http://portlandcleanair.org/files/reports/Portland%20diesel%2011.pdf>

Portland Clean Air. 2019. Diesel Particulate In the Body. Online at: <http://portlandcleanair.org/files/reports/new%20PCA%20diesel%2012.pdf>

