



Neighborhood Association

Air Pollution Report

Version 3

6/20/19



Residents' review of data and records of the

- Environmental Protection Agency,
- Oregon Department of Environmental Quality,
- and Oregon State Fire Marshal

All 121 air polluting industries in N and NW Portland
Swan Island and Rivergate industrial areas

Introduction

Originally a narrow, eight-mile river shelf, boxed in by a nearly vertical thousand-foot ridge, Linnton is a striking but awkward flood plain gripped between ridge and river — a place one passes on the way to someplace else. Before Portland was established, orchards and dairy sprouted along the torturous Linnton country road, which wound between giant trees, sloughs and marshes. A rail line went through in 1889. By the turn of the century the first industries were built — a smelter and a horse meat cannery — and as quickly failed. Still, a real town had begun. By 1906 there were 400 people, the first lumber mill, and a few oil tanks. By 1915 there were 2000 people, five mills, ship building, company housing, and a thriving community of immigrants.

Linnton's defining event happened in Portland in 1911 when a terrible fire at an oil company killed the fire chief and the city banned oil tanks from the city. Linnton wasn't annexed into the city until 1915, so tank farms sprouted like mushrooms along the river. The city's tank ban was quietly rescinded in 1917; by then Linnton already had an albatross-colored necklace of tanks around its throat.

There are now well over 300 large tanks in Linnton, holding 90% of Oregon's petroleum supply. The tanks are fed by a pipeline from Anacortes, Washington. Linnton has two gas stations, two bars, a 7-Eleven, a community center, and six hillside alcoves holding just under 1000 people above three miles of aggressive highway. These neighborhoods are surrounded by Forest Park, the ridge's 5,200-acre green gem, the enclaves separated from each other by creeks and their ravines. Linntonians admire each other's views — volcanoes! the Cascade Range! rivers! — and laugh about getting incinerated on the hill. Newcomers think it's a joke, then learn about the predicted Cascadia earthquake event, the fault line under the tank farms, and the chemicals contained in those railcars.

Ubiquitous semi trucks, many with no exhaust filter, blast diesel exhaust on the nearby St. Johns Bridge, which serves the industrial areas across the river, as well as on Highway 30 going through Linnton, a feeder route to I-5. These aging semi trucks supply five gasoline terminals in Linnton, which distribute to the state of Oregon and southwest Washington. There's also the rail line, where engines idle 24 hours a day. Diesel exhaust emanates from the river, where ocean-going ships pass nearly every day, as well as from tug boat traffic. Dump trucks pace back and forth from the quarry up the highway to Portland's building boom.

One train used to idle all night a few hundred yards north of Linnton resident Rob Lee, below the Looney's home, where the topography funneled the exhaust to their house. Dave Looney would wake to the smell in the middle of the night and call the rail supervisor saying, "If I can't sleep, you're not going to sleep either." The engine was finally moved to idle elsewhere.

Many of the trucks and rail engines used in Oregon are from California where diesel engines are required by law to have filters. Filtered trucks emit one-tenth as much diesel particulate as unfiltered trucks. According to Oregon Department of Environmental Quality (DEQ), diesels make up only 6% of vehicular traffic and emit 60-70% of all particulate emissions. A 2004 study cited by DEQ in the *Journal of Air and Waste Management* found that diesel exhaust is 100 times more toxic than gasoline engine exhaust.

The air near the tank farms on NW Front Avenue smells like a sloppy gas station, enough to make you feel a bit woozy. Sometimes that same smell reaches houses one to five miles away. The EPA, in their last National Air Toxics Assessment, rated Portland as the worst city in the US for respiratory distress from air pollution. There is a lot we don't know. DEQ maintains three air monitors around Portland, one permanent and two mobile, but none in Linnton.

Scientists predict the Cascadia earthquake will strike Portland with a 8.7–9.2 magnitude as it has in the past. While the “Big One” could initiate major catastrophic fires, we’ve been reminded in the past few years that Linnton is prone to smaller fires, especially involving railcars, that raise air quality issues. Almost four years ago a railcar carrying logs derailed and was pulled for two miles, nearly to Cornelius Pass Road, where logs hit a tank car full of ethanol. The car ignited and the fire department arrived quickly. A fire hose trained on the ethanol car, next to the burning car, kept it from becoming involved as well. The firemen withdrew to escape the intense heat, and let the single car burn itself out.

Recently a gasoline tank truck left the highway near the St. Johns Bridge and crashed down the embankment, overturning under two of the eight tank cars on a siding. The truck was completely consumed, killing the driver. The only thing left of the truck, once it burned itself out, were the axles. Thick black smoke rolled for hours across the river to St. Johns. Fortunately, the rail tank cars contained asphalt, which didn’t explode or burn. One hundred feet from this large, intense fire were the pipes for the giant liquefied natural gas tank, the tank itself 300 feet from the fire. If those tank cars had been full of the alcohol that was in eight tank cars one week later, in that very same spot, it may have been an air and infrastructure catastrophe of historic proportions.

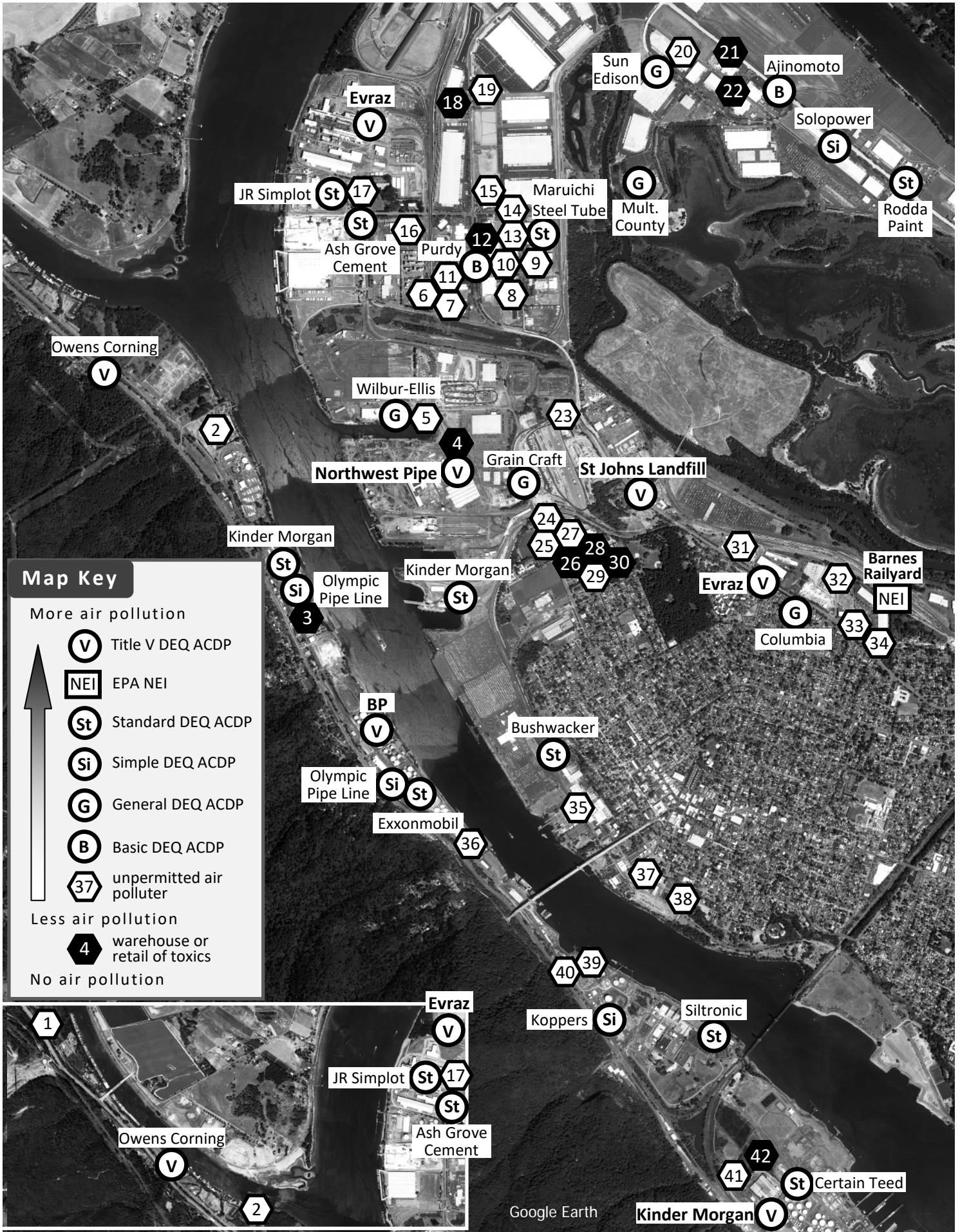
The entirety of Linnton’s riverfront is the north half of the Portland Harbor Superfund site. We are concerned that PCBs and other hazardous chemicals go airborne from the area. The former Arkema chemical plant, just south of the railroad bridge, used to manufacture DDT, hexavalent chromium, ammonium perchlorate, herbicide, rocket fuel, and at an adjacent site, Agent Orange. All ground water flowing into the Arkema site is put through a giant filtration system. There are likely other air quality issues at the superfund site such as PAHs, furan, dioxin, and heavy metals. Just north of Arkema

is the Gasco site, where coal was made into natural gas, leaving a giant blob of tar in the river. It’s not clear how this site affects our air, though when the tar is removed there will likely be noxious chemicals released skyward.

There is a rather astonishing volume of petrochemicals in Linnton. Under the tank farms and pipe line is an active fault line, a slip fault. Much of the infrastructure is over a hundred years old and none of it up to modern seismic standards. The whole cluster is situated on ground prone to liquefaction because it rests on fill. The seismic volatility of the region wasn’t discovered until the late 1980s.

According to *The Energy Cluster in Linnton*, a 2005 report by Olympic Pipeline Company, BP, and Kinder-Morgan, a fire at the large gasoline tanks in Linnton would generate extreme heat and smoke and burn for "fifteen hours." The report warns "in the event of such a fire or other emergency in the Linnton industrial area, there is only one way out — along Highway 30. In the event of a fire, one direction of Highway 30 is likely to be closed, depending on the direction of the wind."

Goal seven of “Natural Hazard Planning,” from *Oregon’s Statewide Planning Goals & Guidelines* states “Local governments shall adopt comprehensive plans to reduce risk to people and property from Natural Hazards,” and that local government "shall respond to new inventory information on natural hazards within 36 months after being notified by the Department of Land Conservation and Development, unless extended by the Department." Contrary to these rules, neither the state nor the city of Portland has taken any measures whatsoever, since the danger of catastrophic earthquakes became apparent decades ago, to protect the residents of Linnton from the obvious risks the tank farms present. DEQ has been asleep at the wheel, failing to regulate air pollution from tank farms and other manufacturers near our neighborhoods.



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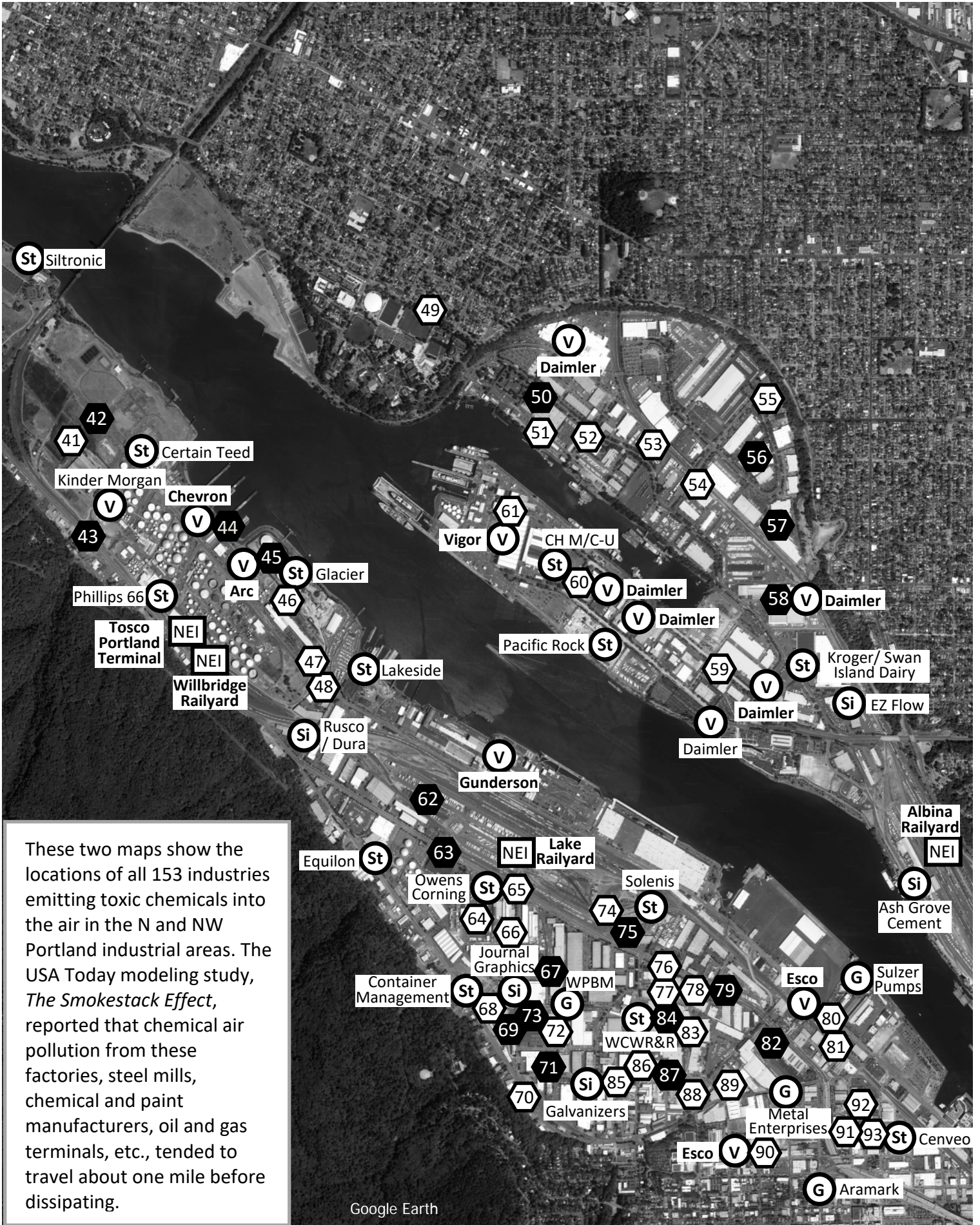
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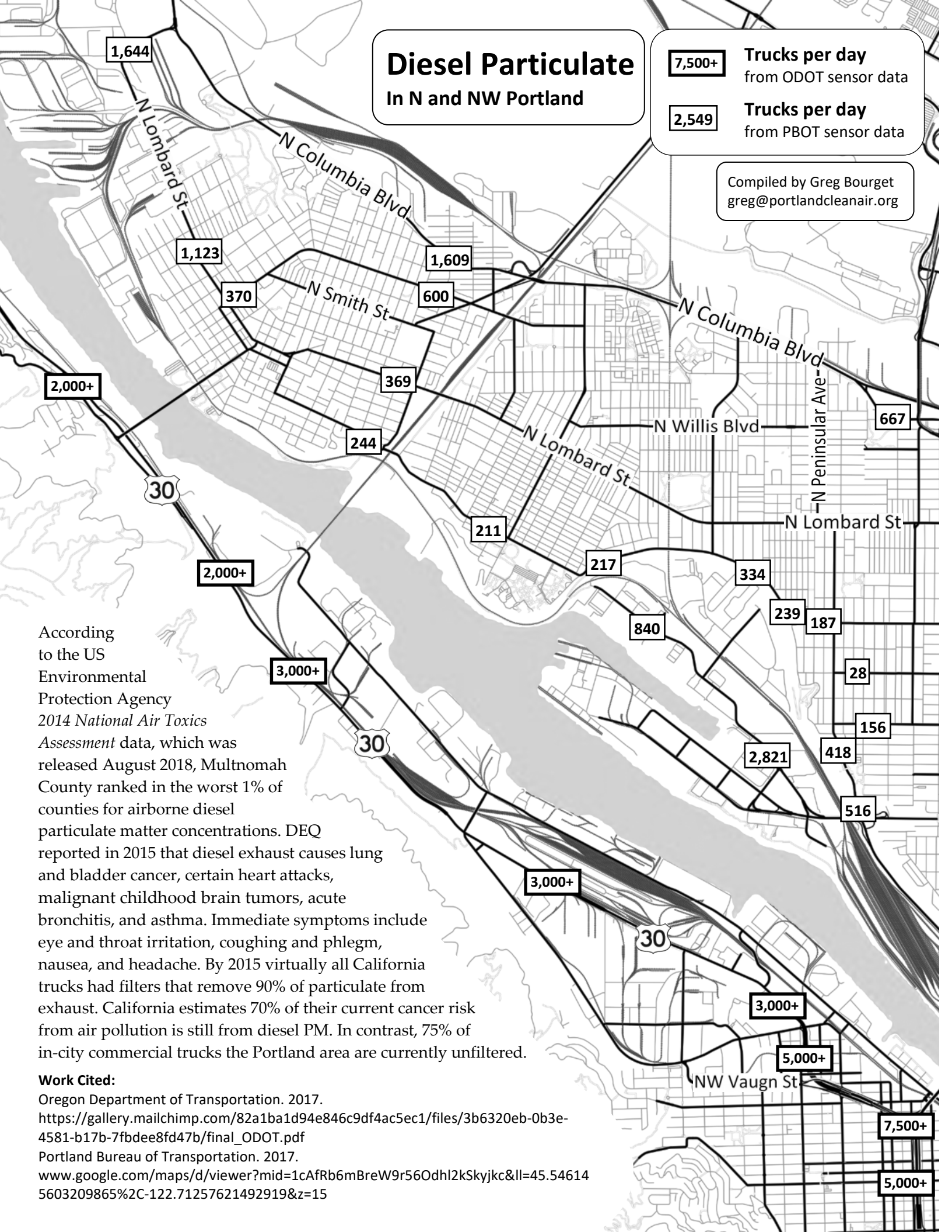
These two maps show the locations of all 153 industries emitting toxic chemicals into the air in the N and NW Portland industrial areas. The USA Today modeling study, *The Smokestack Effect*, reported that chemical air pollution from these factories, steel mills, chemical and paint manufacturers, oil and gas terminals, etc., tended to travel about one mile before dissipating.

Diesel Particulate In N and NW Portland

7,500+ Trucks per day
from ODOT sensor data

2,549 Trucks per day
from PBOT sensor data

Compiled by Greg Bourget
greg@portlandcleanair.org

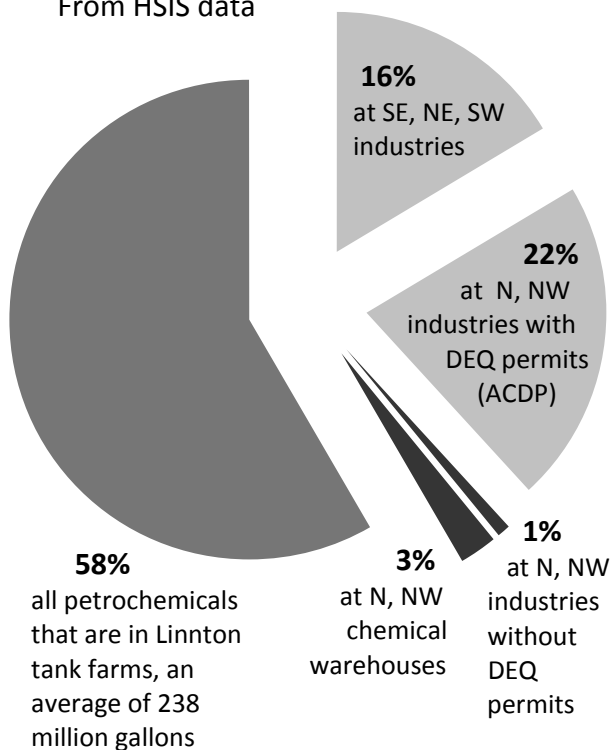


According to the US Environmental Protection Agency 2014 National Air Toxics Assessment data, which was released August 2018, Multnomah County ranked in the worst 1% of counties for airborne diesel particulate matter concentrations. DEQ reported in 2015 that diesel exhaust causes lung and bladder cancer, certain heart attacks, malignant childhood brain tumors, acute bronchitis, and asthma. Immediate symptoms include eye and throat irritation, coughing and phlegm, nausea, and headache. By 2015 virtually all California trucks had filters that remove 90% of particulate from exhaust. California estimates 70% of their current cancer risk from air pollution is still from diesel PM. In contrast, 75% of in-city commercial trucks the Portland area are currently unfiltered.

Work Cited:
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www.google.com/maps/d/viewer?mid=1cAfrB6mBreW9r56Odh12kSkyjkc&ll=45.546145603209865%2C-122.71257621492919&z=15

Hazardous Industrial Chemicals Stored on Site in Portland

From HSIS data



This report has an associated 93-page dataset printout, also available in spreadsheets. The data and our methodology are available at:

linntonna.org/report

This data includes chemical storage, usage, and emission data from EPA, DEQ, and Oregon State Fire Marshal for all 150 N and NW Portland industries including:

ACDP: Air Contaminant Discharge Permits and Reviews from Oregon Department of Environmental Quality

HSIS: Hazardous Substance Information System from Oregon State Fire Marshal

NEI: National Emissions Inventory from Environmental Protection Agency

TRI: Toxics Release Inventory from Environmental Protection Agency

Linnton has changed utterly since the 60s when it was a thriving community with goods and services, where a family could buy groceries, visit the Post Office, get a haircut, a hamburger, and walk a few blocks home. Now Linnton's "downtown" has been reduced to slices of strip mall; our necessities are now found in St. Johns or Scappoose. Why do the people of Linnton love this place? Linnton is far enough from downtown Portland for it to feel rural, yet close enough to drive to the city within 20 minutes.

Apart from riverside industry, Linnton is rural, nestled in the wooded ridge of Forest Park, with Sauvie Island, the Willamette, and the Burlington lowlands close by. Many of us live a few steps from Forest Park trails, where we can quickly leave city noises behind, and our community actively cultivates rural greenery with ecological restoration along the corridor. On a clear day we can see four snow-capped volcanoes, the Cascade Range, two major rivers, a lovely bridge, scurrying tugs, lumbering ships, the mysterious looming of heavy industry on river banks, and endlessly changing clouds in a vast sky.

There are six neighborhoods up there, behind the trees, separated from each other by rushing creeks. A few local families go back generations, but most are relatively new to the area. Neighbors here are active in making this homely home of ours a better place, so it's surprisingly easy to become very fond of each other. This sort of bonding leads to solstice bon fires, summer picnics, and Christmas dinner parties that have a depth of comity and inclusiveness.

Carmen Merlo, head of Portland Bureau of Emergency Management, suggested the city buy out our area to remove us from the danger. Instead we intend to stay and require nearby industry to become good neighbors.

How to Get Involved

So far, five of us in Linnton have been working as volunteers in our spare time to address this air pollution problem. Linnton Neighborhood Association is one of 15 grassroots groups in the Portland Area working together to improve air quality here. Of the approximately 40 regular workers in these groups combined, only five are paid staff. Most have full-time jobs, kids, and other responsibilities. Numerous other folks have contributed time on a one-time or casual basis.

Neighbors can help out in many ways — no experience necessary. We also need specific skills such as familiarity with spreadsheets, research, negotiation, public health, weather science, or grant writing.

One way to get involved is with political action. Although this can be done as an individual, taking political action as a group is far more effective. We need assistance developing an action plan and preparing for public involvement. We have access to guides that make legal, media, and outreach tactics understandable. Volunteers working on this task would work with the Association to insure elected officials and industry leaders make decisions that include public health.

Who to Contact

Please email
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or call (503) 713-3468
or email
greg@portlandcleanair.org



Join our Linnton Neighborhood Association
Newsletter mailing list online at:
linntonna.org

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