

# Georgetown dust – screening results

**Goal: To promptly screen for dust levels due to community concerns. Many Georgetown community members have expressed concern about dust and associated health impacts in their neighborhood.**

## What were some of the community's questions?

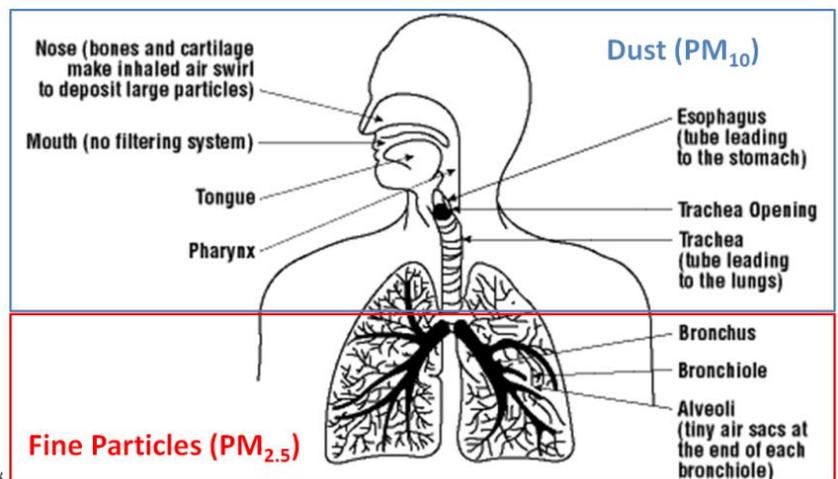
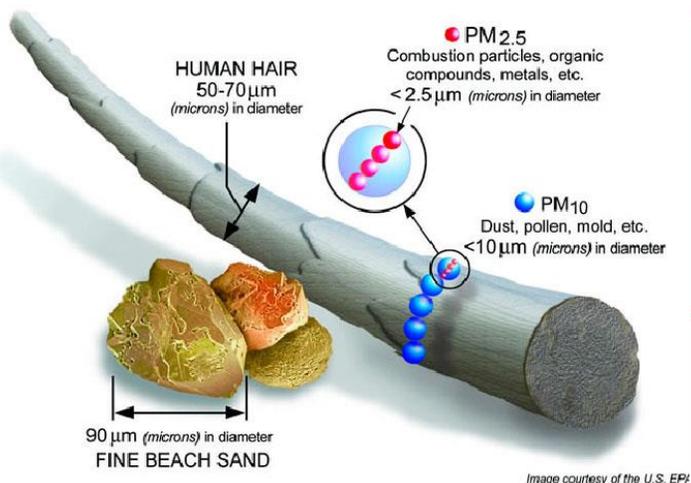
- Is the dust unhealthy? Is the mist unhealthy?
- Is the dust actively released at night?
- Can you demonstrate where the dust is coming from specifically?
- Is the dust higher than in other locations?
- Are there specific dust events, or is it long term?
- Are there more complaints when dust levels are higher?

## Summary of findings:

- 1) Our screening didn't show extremely sharp increases in dust at any of the sites. We also didn't see higher levels in the late evening hours. Complaints didn't appear to overlap with higher dust levels.
- 2) However, dust levels on average were relatively higher than our comparison monitor two miles north at Alaska St. The monitor closest to E Marginal Way S (Site 3) had the highest levels.
- 3) Higher levels of dust generally came from the south, but we can't definitively identify exactly where with our monitoring approach.
- 4) Levels of the smaller, more harmful particles were comparable to other Seattle monitors.

## How did we measure dust levels?

Particles come in different sizes. Large particles (dust) are smaller than a human hair (with a diameter of roughly 10 micrometers). Fine particles are even smaller (with a diameter of 2.5 micrometers or less). Our portable air monitoring device, the Dylos DC1700 particle counter, divides particles into two sizes: "small" (in pink below) and "large" (blue particles). The large particles are closest to the size of dust. The instrument isn't perfect and requires a relative humidity correction, but it is a helpful screening tool and can be quickly deployed.





## Are the health risks the same for smaller and larger particles?

No --- the small particles have more long and short-term risks as they can reach the deepest part of your lungs (the red box in the image on Page 1), whereas dust and larger particles are filtered in your upper airways (the blue box in the image). Decades of research has shown that the small particles cause heart attacks, strokes, and premature death. Although there is less long-term risk from dust, the upper airways can still be irritated by dust and larger particles.

Individuals most sensitive to air pollution are pregnant women, children, older adults, and people with pre-existing lung or heart conditions, like asthma.

## Where were the air monitors?

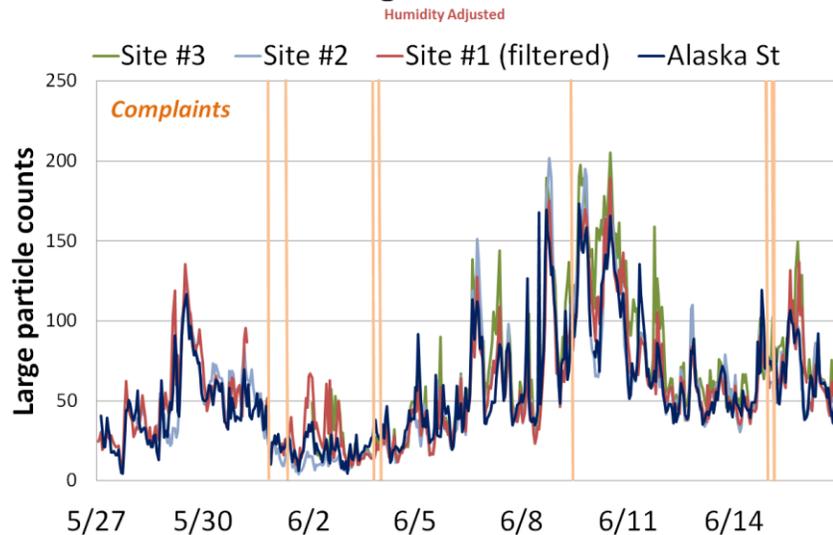
The map shows the locations of three community members' yards in Georgetown (Sites 1-3), and the Puget Sound Clean Air Agency permanent monitoring station on the intersection of Alaska Street and East Marginal Way S about two miles away.

## What did the levels look like?

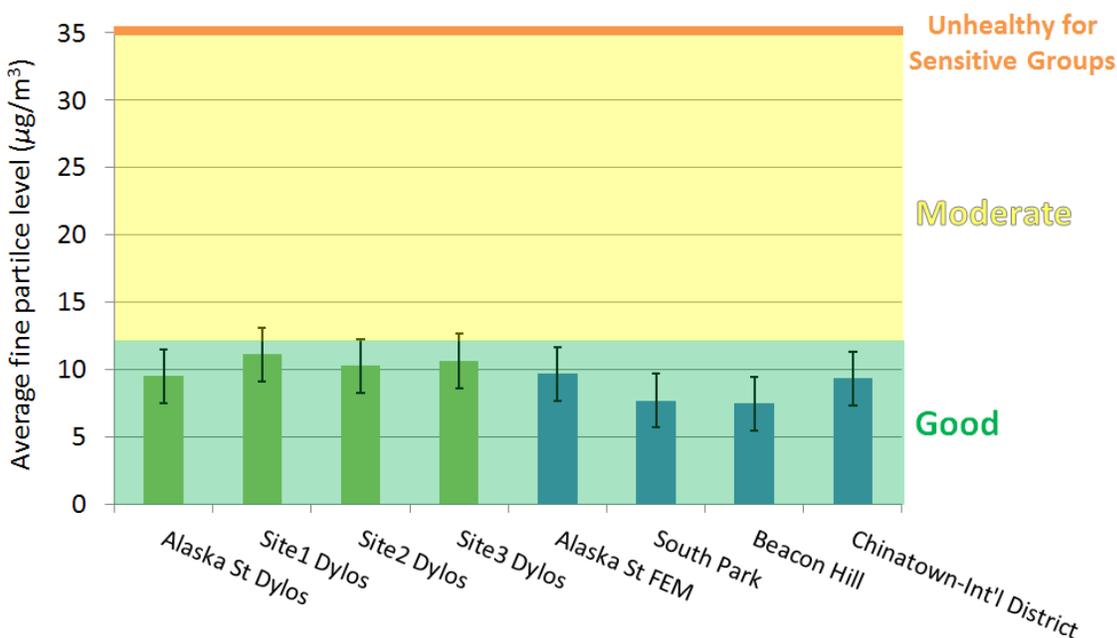
We monitored for three weeks from May 27 through June 17. The figure to the right shows the levels of all the sites over that time period.

We included the time of complaints reported to the Agency during that time (the orange vertical bars). The figure shows that the dust levels were fairly uniform across the sites, including the Alaska Street site two miles away. Overall, Site 3 is slightly higher than the other sites (monitoring at Site 3 started on June 2). There was also an episode from June 1 through June 3 where levels were relatively higher than the Alaska Street site.

## Large Particles



## Small Particles



## What were the results for the smaller, more harmful particles?

The graph on the left compares the small particle levels from the temporary sites with other Seattle area air monitors. Levels all fell in the "good" range. Also, all the monitors are comparable to each other and show no statistical difference over this time period.