



Bicycle Monitoring: 2014 Bike to Work Month



**Monitoring Group along with Planning,
Analysis, and Forecasting**

What's happening in my neighborhood?

- **As technology advances, expectation grows to learn more**
- **smart phones yield location, weather, attractions... people want air quality information**
- **many bikers motivated by health, but notice fumes and worry about exposure**
- **as large sources are being more tightly regulated, micro scale is receiving more attention**

History

- **fairly straight forward to gather particle count data (2013 pilot study)**
- **a lot of work to process**
- **not clear what are our desired messages and what might be interesting to public**
- **expanded for May 2014 to include more instruments**
- **still processing data and developing themes and approaches**

The Setup

- primarily use 3 sets with:
 - Dylos laser particle counter
 - GPS logger
 - GO Pro camera
- added this year:
 - CO sensor (CairPol)
 - MircroAeth for black carbon
 - NO₂+O₃ sensor (CairPol)
- some were handle-bar mounted, others on back rack on in backpack



Technical Setup

- example backpack setup
- But be warned! particle counts don't always directly relate to PM mass and AQI, so must interpret with caution



Results!

- about 27 round trips



Dylos on the job



Interest from the public



Near the interstate



Another example setup



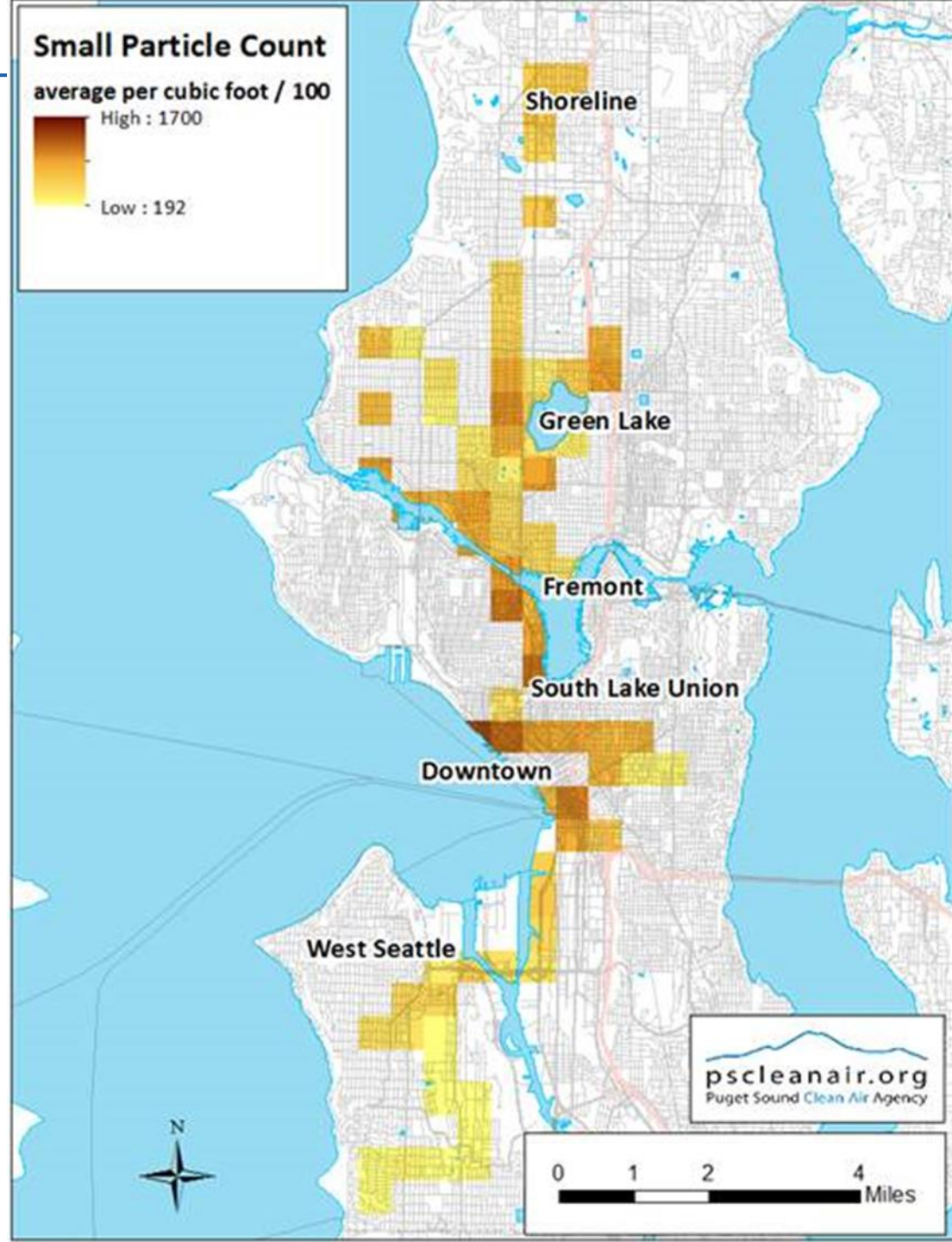
Other highlights

- encountered smoking cyclist who produced the “highest” values from our study



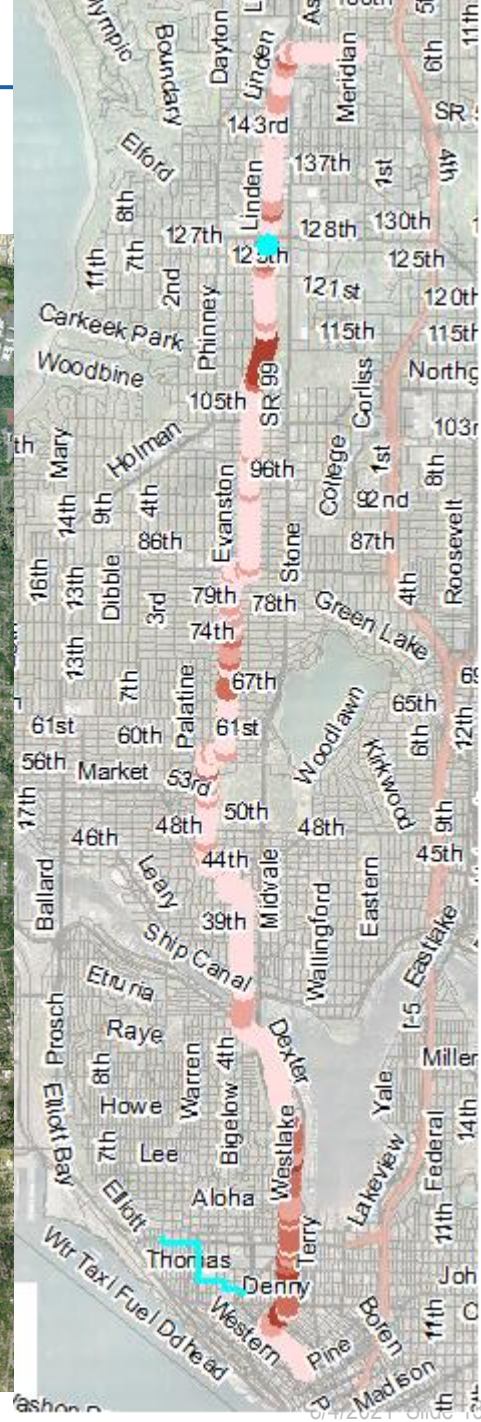
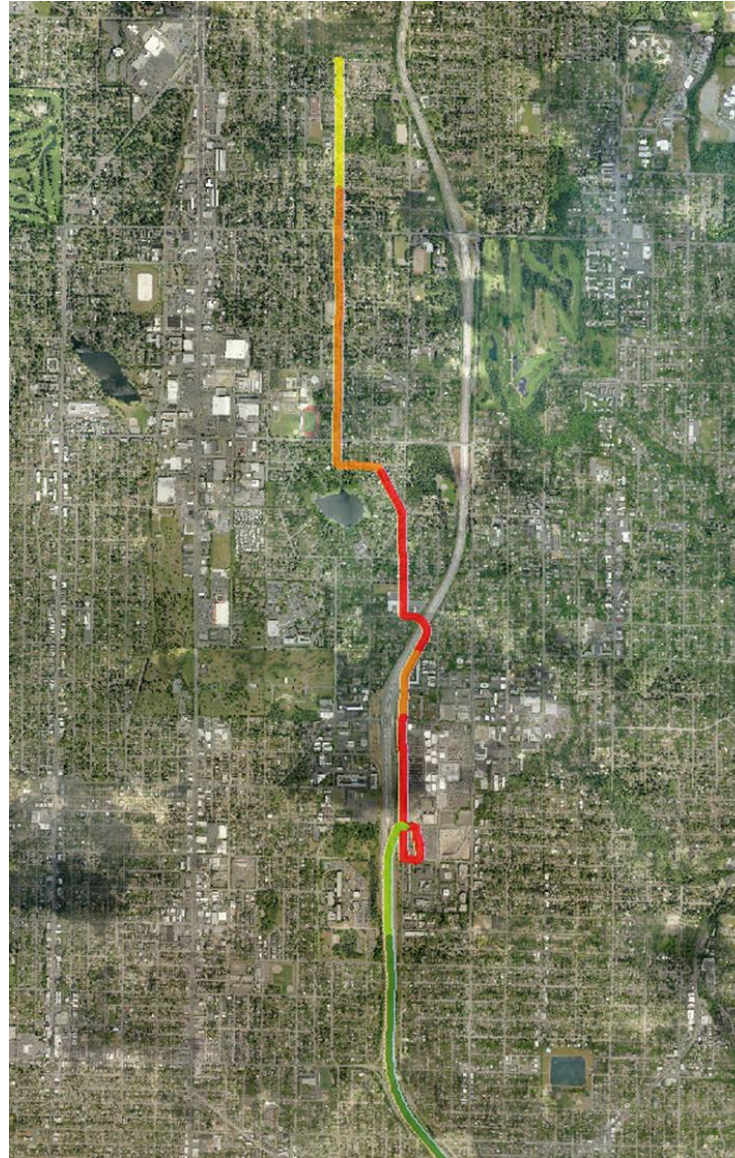
Summary Results

- **Compilation map**
- **highest downtown**
- **a few spikes near big intersections**
- **outlying neighborhoods are low**
- **no averages would exceed annual or daily PM2.5**



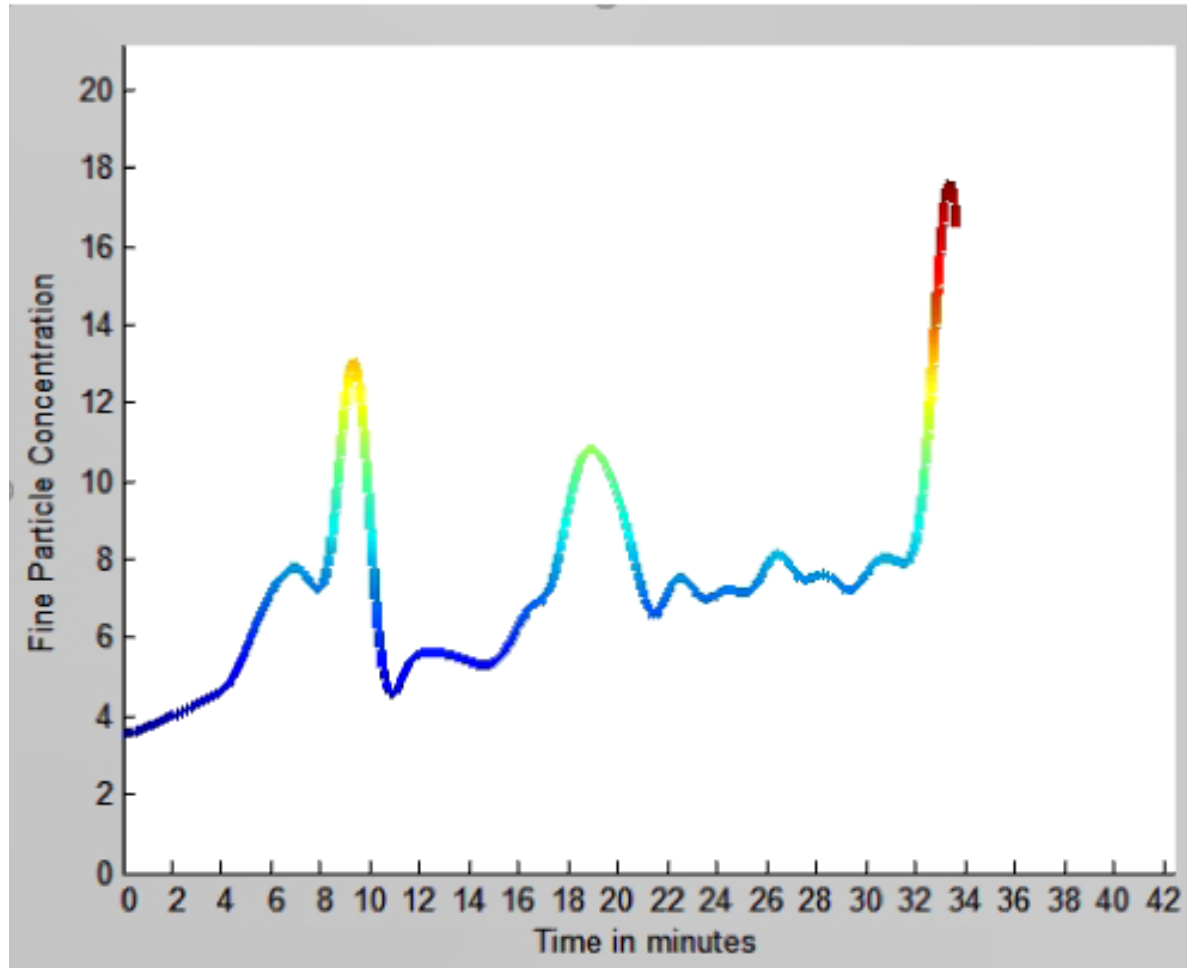
How to present and share?

- maps?
- need to avoid confusion with AQI
- how to color?
- particles count doesn't tell the whole story (or even most of the story)



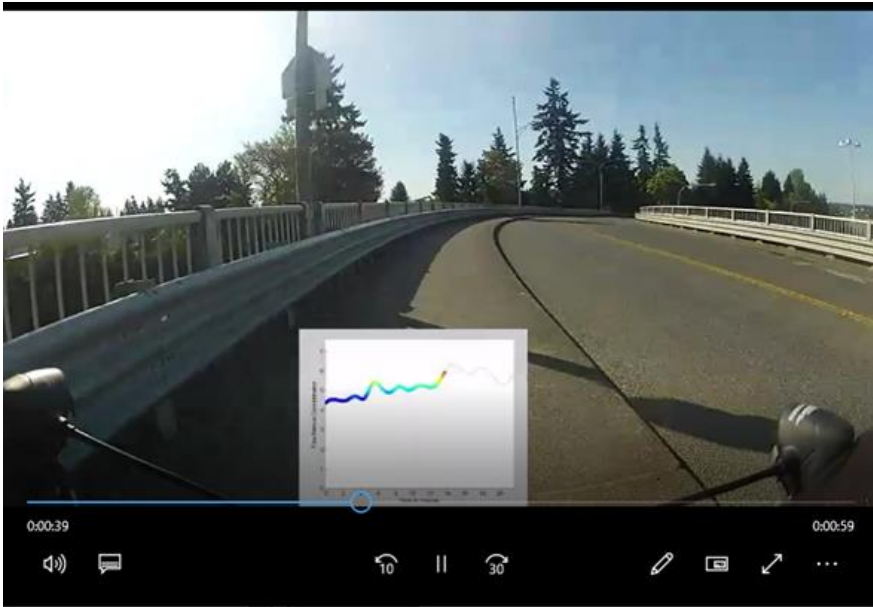
How to present and share

- plots?



How to present and share

- a full video?



Thanks!

- **thoughts, ideas, suggestions, feedback???**