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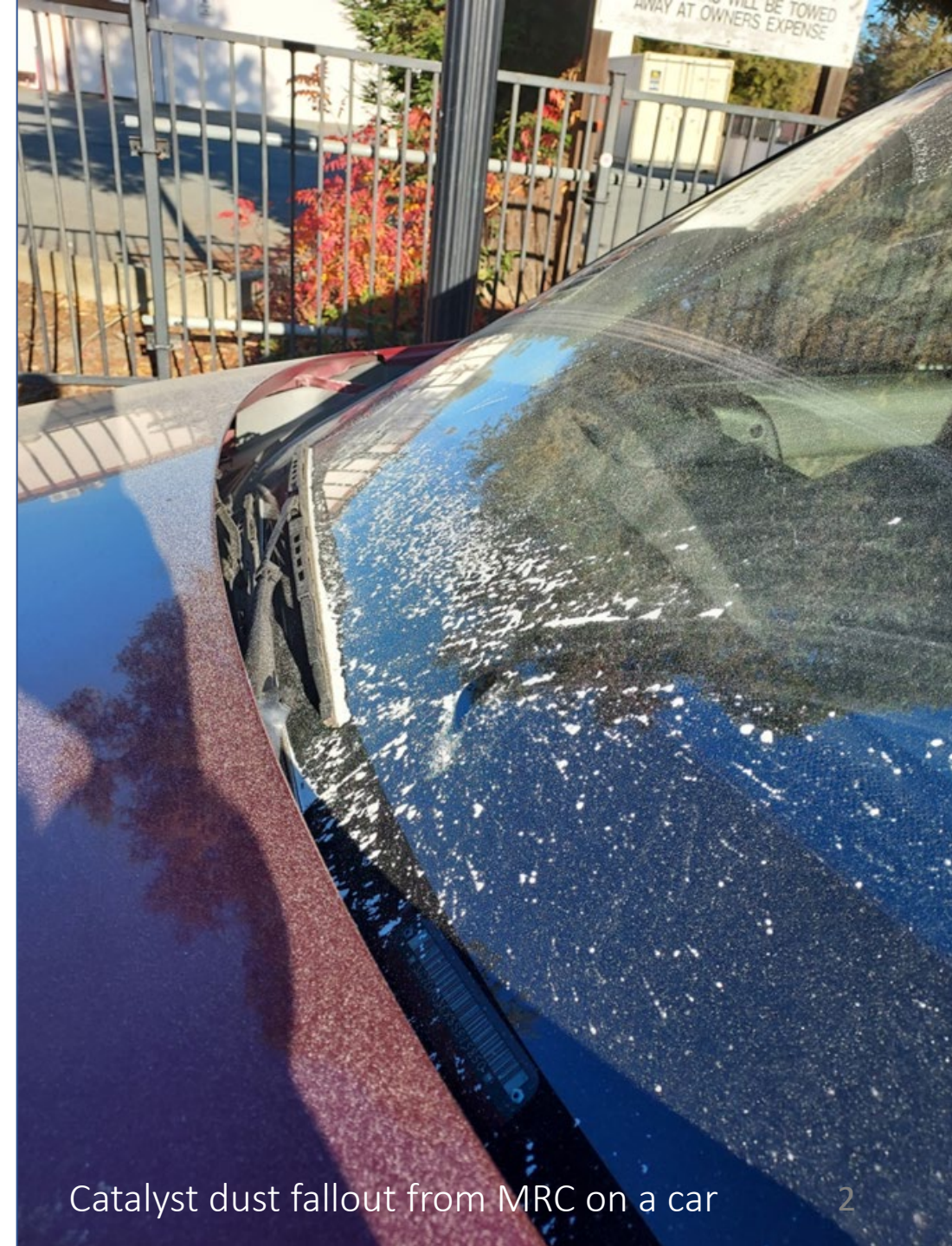
Mapping Dust Fallout from the November 2022 Martinez Refining Company Incident Using Observations and Modeling

Martinez City Council Meeting
April 5, 2023

Phil Martien, Ph.D.
Bay Area Air Quality Management District
Assessment, Inventory, & Modeling Division Director
pmartien@baaqmd.gov

Martinez Refining Company (MRC) Catalyst Dust Release

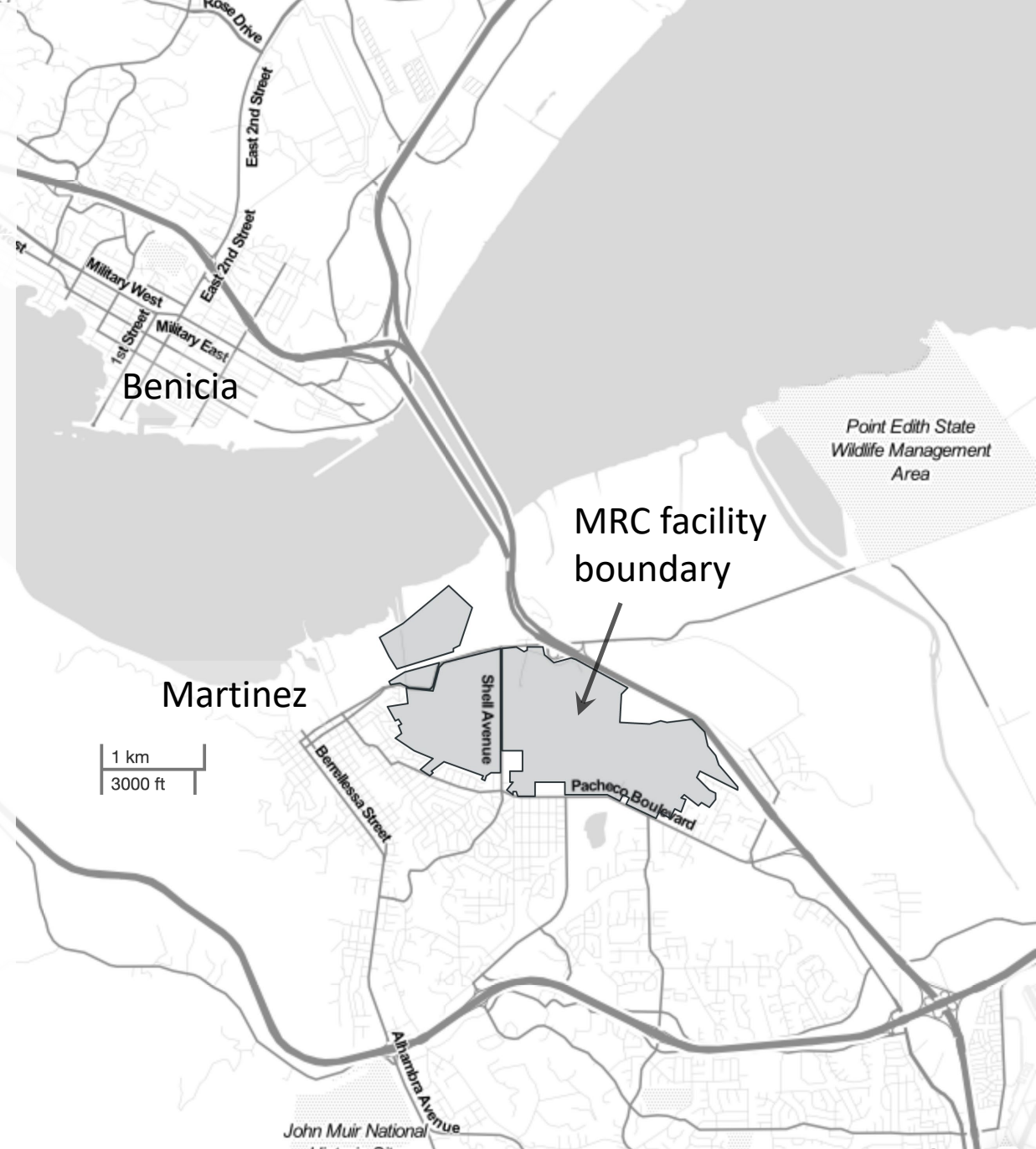
- Late Sun. Nov. 20th, 2022: Upset at MRC's Fluid Catalytic Cracking Unit (FCCU)
- Until Nov. 25th: Electrostatic precipitators (ESPs) remained off
- On Nov. 21st after repairs: MRC operators had trouble restarting the FCCU
- Nov. 24th to 25th: MRC released 20 to 24 tons of catalyst from two CO boilers (COBs)
- Catalyst dust fallout was visible on surfaces in parts of Martinez



Catalyst dust fallout from MRC on a car

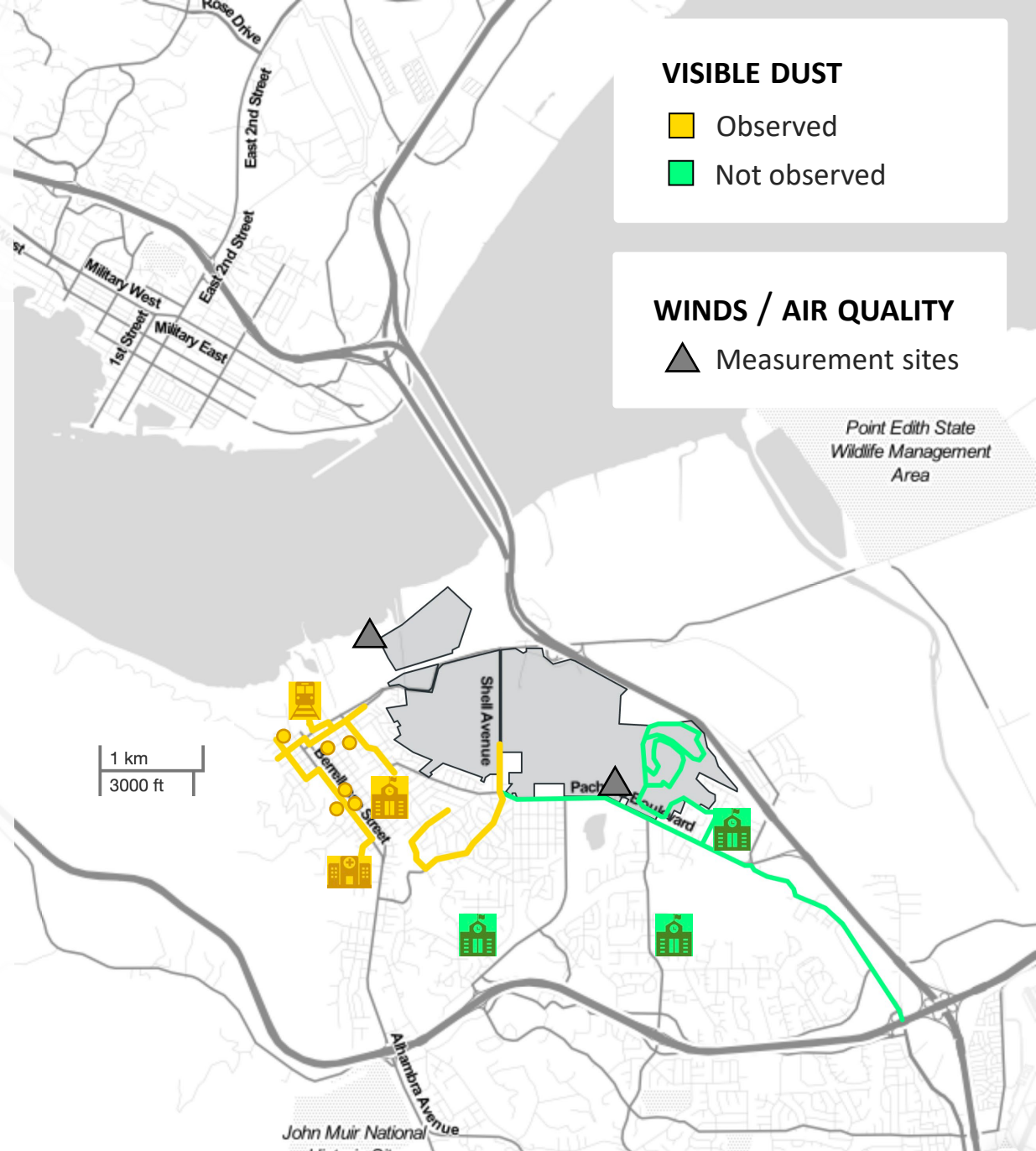
Mapping to Inform a Soil Sampling Program

- Bay Area Air District and Contra Costa Health have acted on multiple fronts
- Contra Costa Health is preparing to conduct soil sampling
- To help develop a soil-sampling plan, Air District created a map using observations and air quality modeling
- **The map does not definitively establish levels or locations of impacts,** but can help guide soil sampling



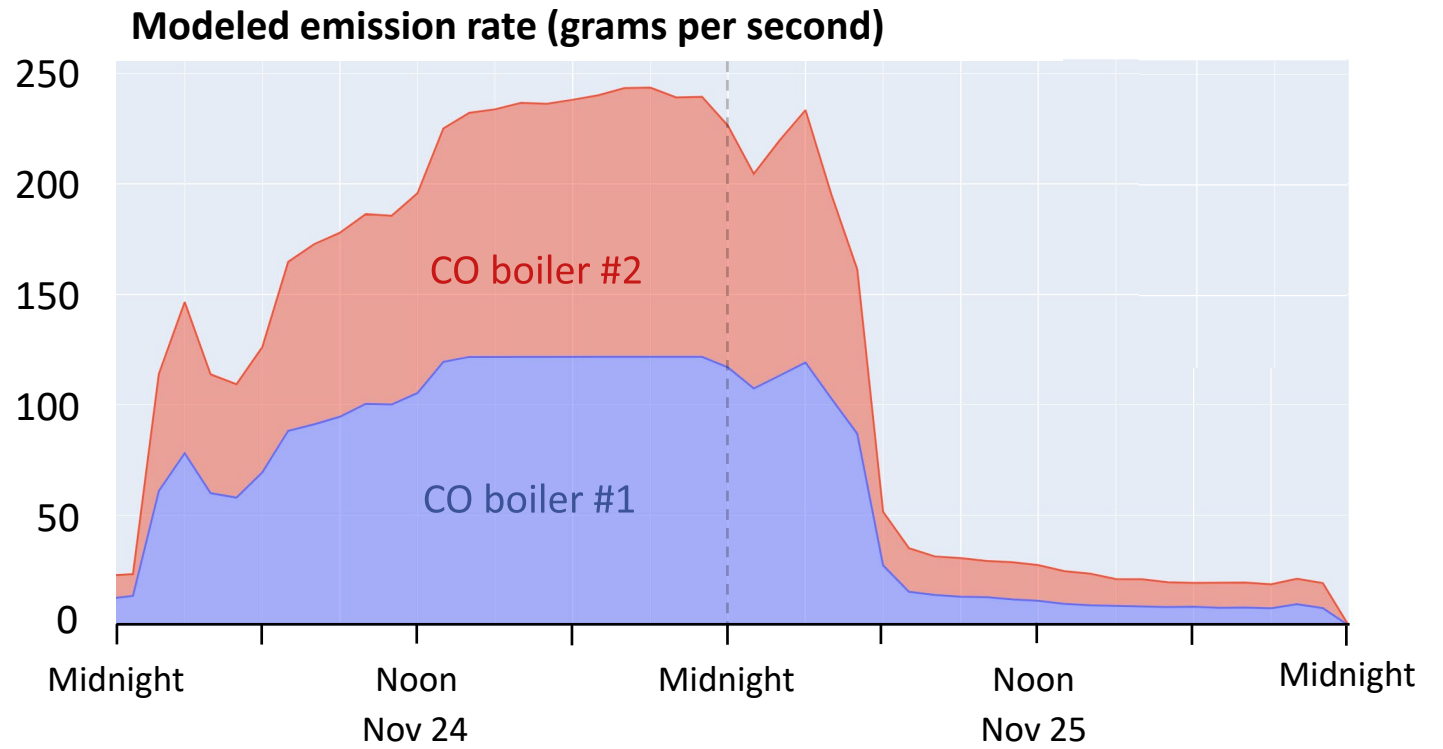
Using Available Observations

- Visual observations of dust were recorded at schools, Amtrak station, health center, and other locations
- Dust was mostly observed west of MRC
- Winds were light and toward the west, southwest, or northwest, as observed at the eastern measurement site
- Observed dust was consistent with the release location and measured winds



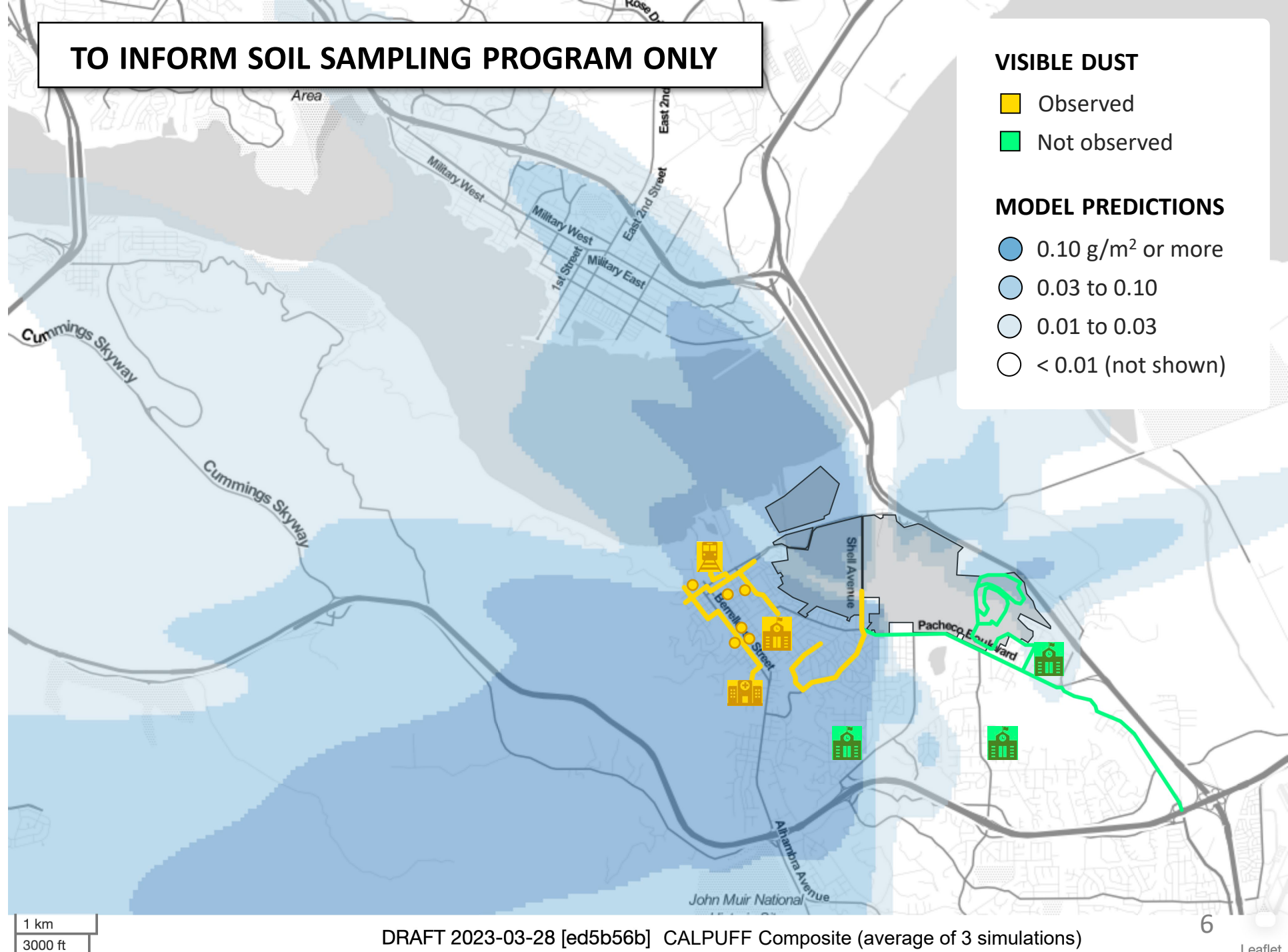
Dust Modeling Setup

- Used an air quality model (CALPUFF) to simulate potential dust fallout
- Used stack opacity measurements to inform the timing of simulated emissions
- Ran simulations of two days (Nov. 24th, 25th) using three particle sizes (24, 50, and 85 micrometers)
- Smaller particles tend to travel farther
- Averaged multiple simulations to develop a composite map to inform soil sampling



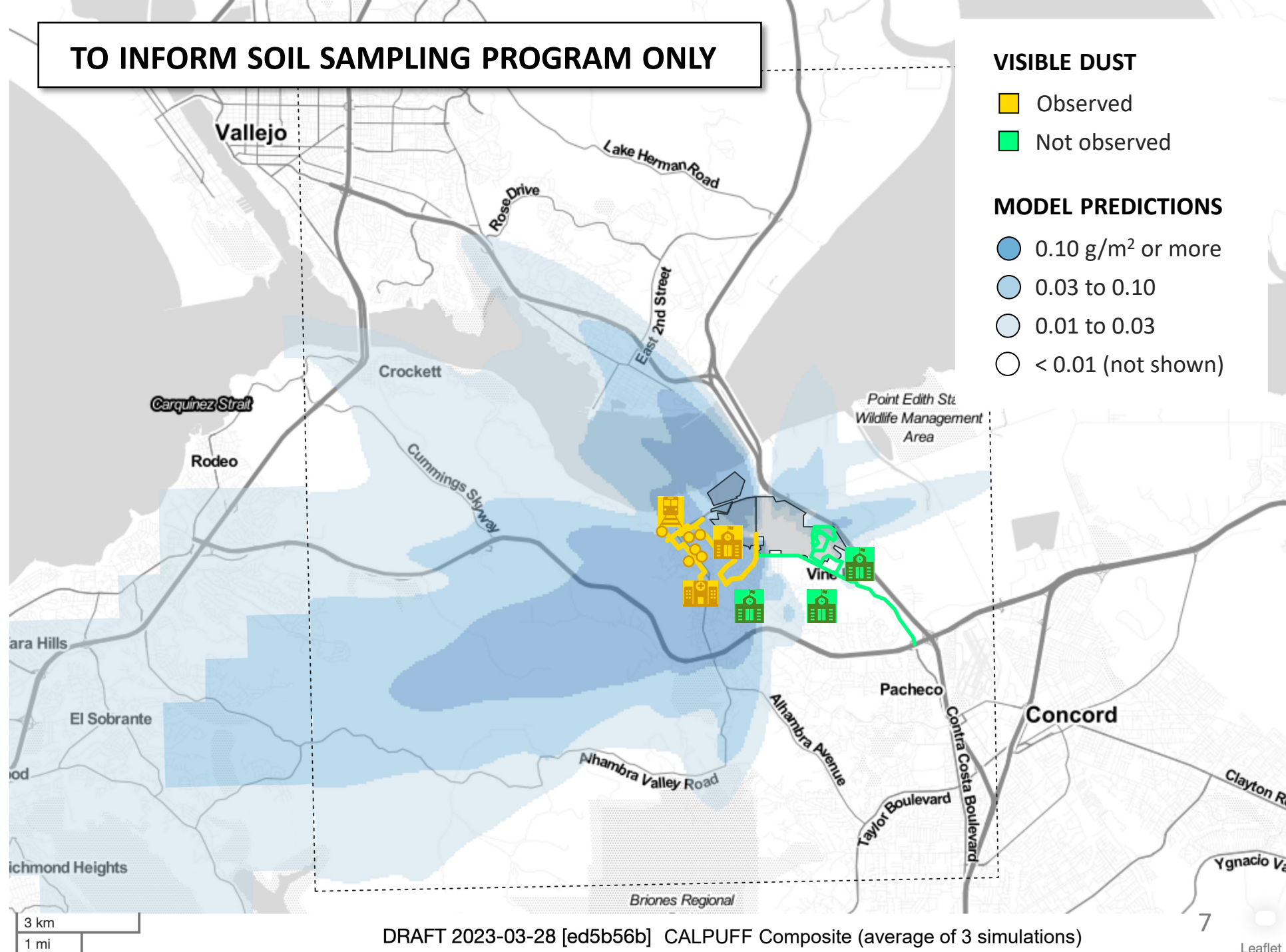
Composite Map

- Simulated levels of dust fallout on outdoor surfaces
- Overlaid with observations of visible dust
- Generally in agreement



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Uses and Limitations

The modeling-based map will inform soil sampling, but **has limitations:**

- Simulations are highly uncertain, because key inputs are highly uncertain:
 - Exact timing of the catalyst emissions; and
 - Sizes of the catalyst particles when they were released.
- In view of the large amount of rain since the event, the catalyst material has likely moved since the initial fallout. Soil sampling aims to determine how much catalyst material is currently in the soil.
- The County's Oversight Committee has selected a toxicologist that will develop a sampling plan to determine the extent of community impact from the release.

Next Steps

- Air District will continue to pursue actions toward preventing future problems at MRC
- Air District will be available to assist in applying the map to inform the sampling plan
- CC Health next steps

Kat Galileo

From: Katia Novak <katianovak@live.com>
Sent: Tuesday, April 4, 2023 7:26 PM
To: CityClerk
Subject: Question for 4/5 7:00 Meeting

Categories: Pending Mike/Lauren

Hello. My name is Katia Novak and this is my question pertaining to item 13/14 (SRC MRC update) of the April 5 City Council meeting:

“In January, Contra Costa Health services requested that the DA take legal action against the Martinez Refinery for allegedly not reporting the release of catalyst through the proper channels and preventing news of the release from reaching residents sooner. Has the DA taken legal action or not? Have they made any statements about CCH’s request?”

Thank you

Kat Galileo

From: Wendy Ke <wke_aloha@yahoo.com>
Sent: Tuesday, April 4, 2023 11:02 AM
To: CityClerk; Kat Galileo
Cc: Brianne Zorn; Jay Howard; Lauren Sugayan
Subject: RE: Public Comment Martinez City Council Meeting April 5, 2023 on Presentation #5: Air District Presentation

Hello Kat,

I spoke with a City employee who recommended contacting you about a written public comment for this week's (4/5) City Council Meeting. Please see below and confirm that this will be distributed to the Council and included in the public record.

Thank you,
Wendy Ke
318 Haven Street, Martinez

RE: Public Comment Martinez City Council Meeting April 5, 2023
Presentation #5: Air District Presentation - An Assessment of Dust Fallout from the November 2022 Martinez Refining Company Incident Using Observations and Modeling

To Martinez City Council:

I live with my family on downtown Martinez property that was impacted by the 11/24-25 MRC spent catalyst release. Four months after the incident, BAAQMD has released plume models identifying downtown Martinez as the primary area affected by fallout. Given this delay in reporting pertinent data to a vulnerable fenceline community, it seems justifiable to place an independent BAAQMD monitoring station in downtown Martinez, comparable to a new BAAQMD-run point monitoring station that Benicia is set to receive (source: 3/27/23 Benicia Community Air Monitoring Program (BCAMP) forum). With a BAAQMD-run point monitoring station in downtown Martinez, regulatory agencies, the City and the public would have access to real time air emissions data: a seemingly more effective arrangement than the current dependence on MRC to divulge that data either at will or by request. With local control, agencies could: 1) notify the public in a more timely manner about emission exposures and 2) gather sufficient data to require refineries to operate at the highest industry standards available (e.g. install gas scrubbers that significantly reduce air pollutants).

Last month, I experienced inadequacies with BAAQMD's current air monitoring and complaint system, which further convinced me that Martinez needs an independently run, transparent air monitoring system. I filed a complaint with BAAQMD about suspicious dust on our detailed car that coincided with night time Purple Air monitor spikes in the neighborhood. The dust was clay and black colored with a gritty texture and looked and felt different from pollen. It resembled the spent catalyst we found on our property after MRC's Thanksgiving incident. I followed the proper channels for reporting to BAAQMD and yet it took 4 days to connect with an air inspector, which also happened after rains had washed away the residue. I learned that the District did not have a record of my initial phone report, only a written one I had submitted the next day. I had to provide a detail of my call history to BAAQMD, as proof of my initial complaint. I also learned that the only avenue for BAAQMD to get emissions data from MRC is to request it: a process that depends on MRC to be forthcoming with data and allows the refinery long turnaround times - 4 days for BAAQMD's initial request then a 30 day window of time to present data, at which time it was unclear to me what happens if MRC continues to withhold information.

Within fenceline communities where health and safety risks from refineries exist, there is a justifiable need for a more immediate and transparent system of air emissions monitoring. Placement of a BAAQMD-run point monitoring station in downtown Martinez would provide the District and local agencies immediate access to current and historical data versus the existing system, which lacks control over local refinery air emissions data. The community could be notified in a more timely manner of health and safety threats and the data could be used to further support the need for upgrading all fenceline refineries to the highest industry standards available (e.g. installing wet scrubbers) to significantly reduce and/or prevent particulate emissions.

Thank you,

Wendy Ke, 318 Haven Street, Martinez