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Manila Air Quality during the COVID-19 lockdown

ASIA BLUE SKIES PROGRAM

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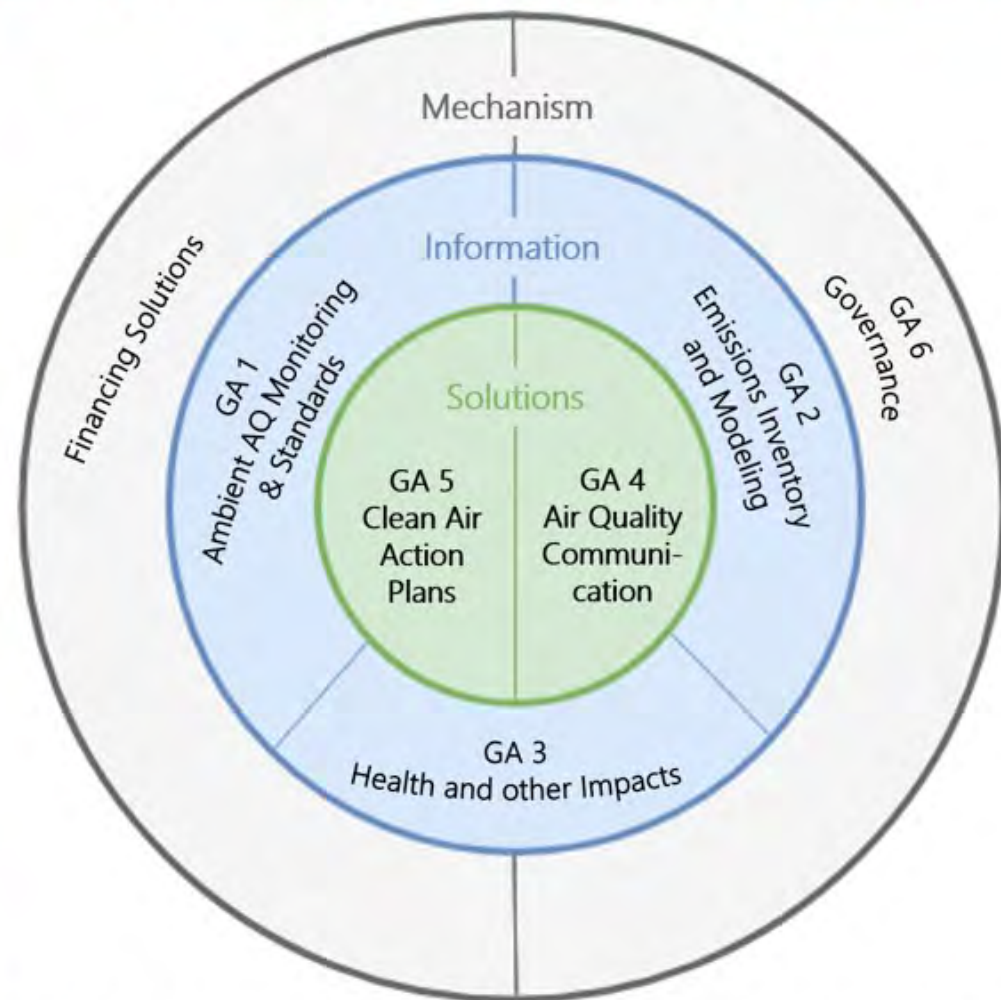
September 2020



The Asia Blue Skies Program



GUIDANCE FRAMEWORK FOR BETTER AIR QUALITY IN ASIAN CITIES



SOLUTIONS BASED ON SCIENCE, AND INSTITUTIONALIZED THROUGH CLEAN AIR ACTION PLANS

Air quality sensor installation (Jan & Feb 2020)



ALL SECTIONS Tuesday April 28, 2020 manilastandard.net

Manila installs first of 3 air quality sensors

The first of three air quality sensors has been deployed in the nation's capital, according to a recent report by the City of Manila's Public Information Office.

The air quality sensor was installed by the Manila City government's air quality management technical working group led by the Department of Public Services.

"This is part of the 'Air Blue Skies Program', a partnership program between Clean Air Asia, 3M Philippines, and the Manila City government," the city government's statement read.

"It aims to deliver air quality solutions through the development of a science-based Clean Air Action Plan," it said.

The DPS was assisted by the Department of Engineering and Public Works and the Manila Disaster Risk Reduction and Management Office during the installation of the equipment.

The agencies were joined by representatives from the Department of Environment and Natural Resources-Environmental Management Bureau, National Capital Region, Clean Air Asia, and 3M Philippines.

The gadget was installed by the city government after ash from Taal Volcano's initial eruption on Jan. 12 this year fell on the city.



Freedom Triangle (near Manila City Hall, Taft Ave.)



Very busy roadside

Rizal Park (near the Rizal Shrine)



Open area, green space

Mendiola (corner Concepcion Aguila St.)

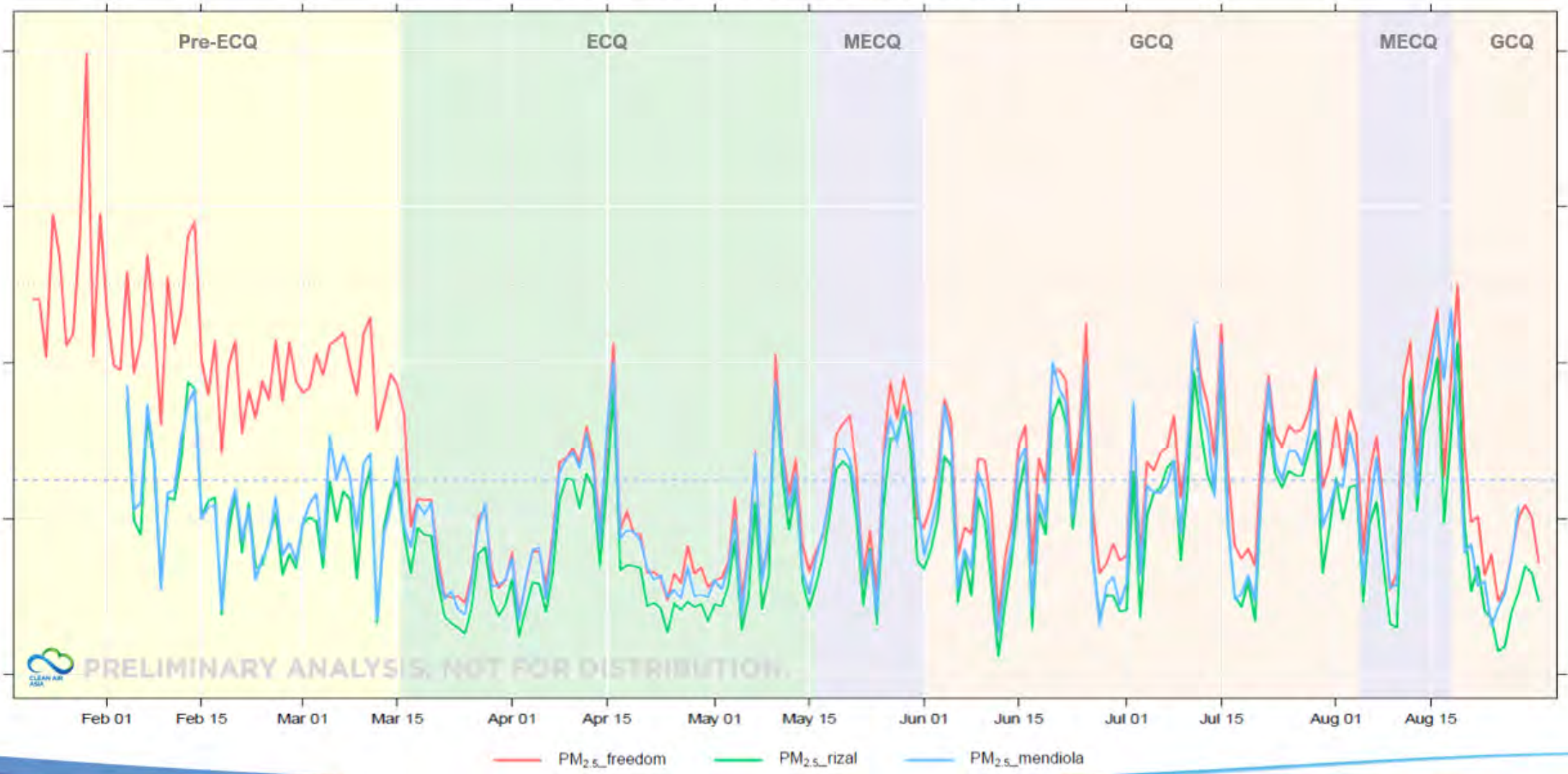


School zone

Air quality significantly improved during the ECQ in the three monitoring sites in Manila, with up to 57% reduction in PM_{2.5} in the roadside area, and 23 to 33% decrease in non-roadside sites. Post-ECQ, levels start to increase again, similar to pre-ECQ air quality.

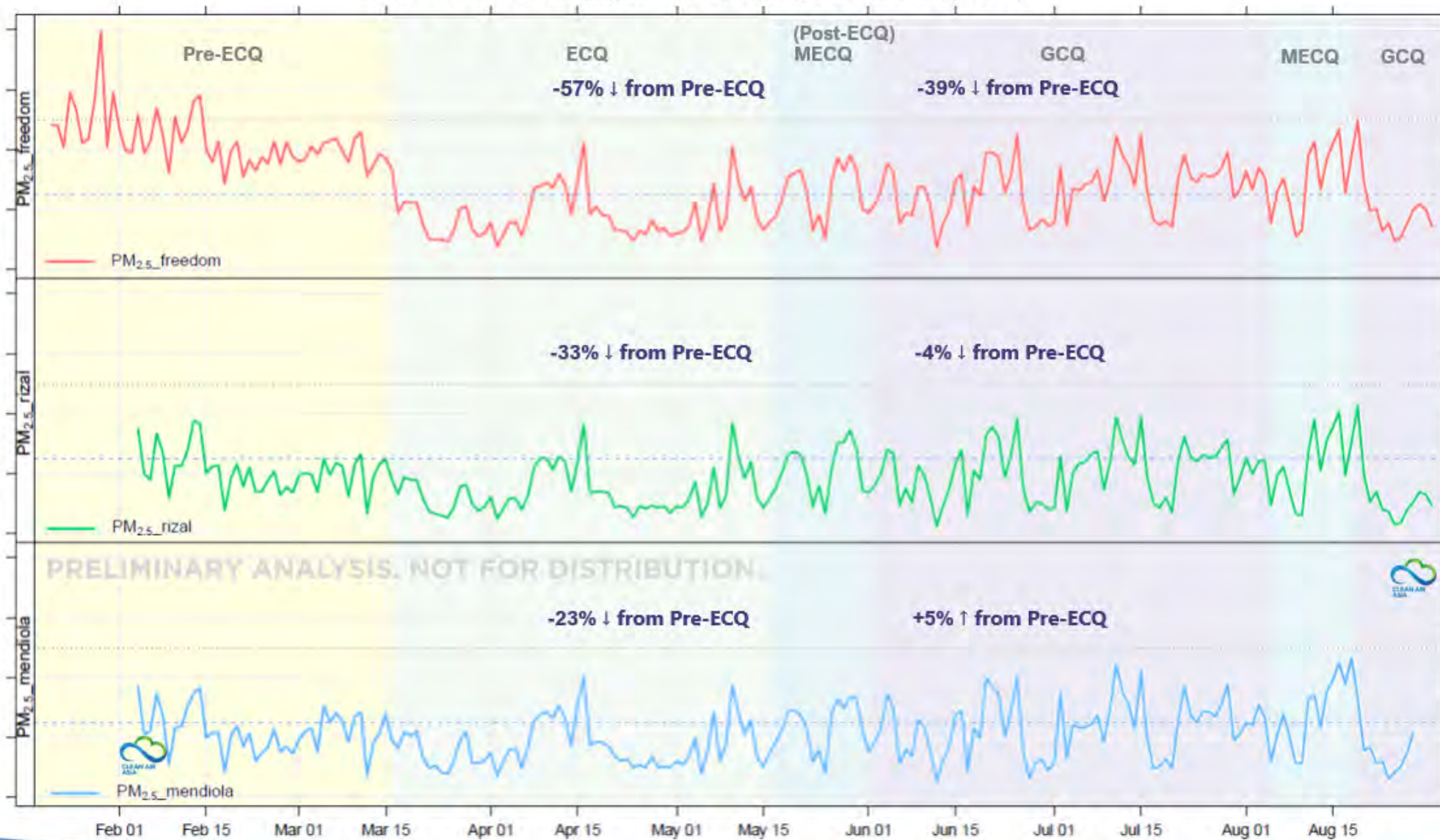


Time series data of PM_{2.5} in 3 Manila sites (21 Jan to 31 Aug 2020)



Air quality trends in 3 Manila sites from Pre to Post ECQ lockdown

Time series data of PM_{2.5} in 3 Manila sites (21 Jan to 31 Aug 2020)



- **Lockdown PM_{2.5} levels are significantly lower than pre-ECQ in Freedom Triangle (roadside)**
- **Freedom Triangle values during the lockdown are still far from Pre-ECQ levels but for Rizal and Mendiola, values started to return to Pre-ECQ values by the start of MECQ**

Communication of air quality data (April 2020 onwards)

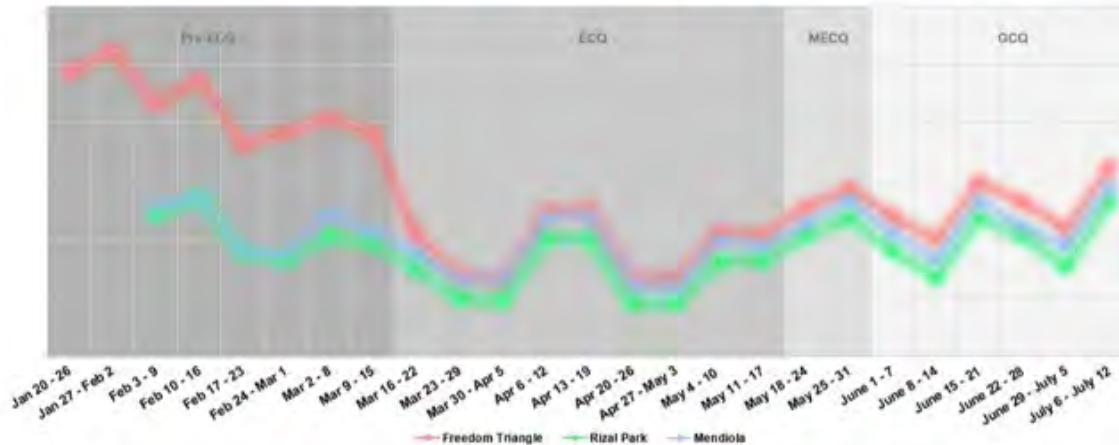
ANO ANG NANGYARI SA POLUSYON SA HANGIN SA MAYNILA MULA NANG IPATUPAD ANG ECQ?

Mendiola, San Miguel

Freedom Triangle, City Hall

Rizal Park, Ermita

Percentage Change of PM_{2.5} Levels in Manila



Mean of daily averages of PM_{2.5} during weekdays



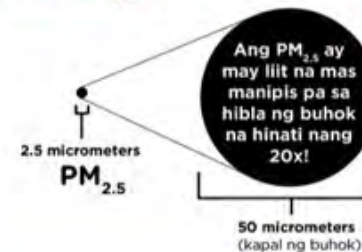
Sa linggong ito (July 6 to July 12):

Tumaas ang antas ng polusyon sa tatlong lokasyon mula sa nakaraang linggo. Kung ihahambing ang kasalukuyang antas ng polusyon sa Freedom Triangle, Rizal Park, at Mendiola, maikukumpara na ito sa antas bago mag ECQ.

Ano ang PM_{2.5}?

Ang bawat isang PM_{2.5} ay hindi nakikita dahil sa napakaliit na sukat nito, na mas manipis pa sa hibla ng buhok na hinati nang 20 beses. PM = Particulate Matter

Nakasasama ito sa kapaligiran at kalusugan.



Ano ang gagawin?

Kasalukuyang pinag-aaralan ang mga susunod na hakbang upang mapabuti ang kalidad ng hangin sa Maynila.

Patuloy ang pagsukat sa polusyon, kasama ng iba pang datos, sa programang Asia Blue Skies ng 3M, Clean Air Asia, at gobyerno ng Maynila.



Bakit ito mahalaga?

Dahil sa pagbabago ng mga gawain at paggalaw ng mga tao, ito ay nagkakaroon ng epekto sa polusyon sa hangin.



Communication of air quality data (April 2020 onwards)



Air pollution levels in Manila's Freedom Park drop by 42% after ECQ

Published April 24, 2020 11:26pm

Listen now
01:08
Powered by Telly Audio

Manila Public Information Office
on Friday

DATA: Air pollution levels in selected areas in the City of Manila continue to change after the government ordered a strict stay-at-home policy among its residents.

Based on air quality monitoring performed under the Asia Blue Skies Program – a partnership among 3M, the City Government of Manila and Clean Air Asia – average PM2.5 levels at Freedom Park at the Manila City Hall from April 13 to 17 dropped by 42 percent compared to measurements during the regular work/school week. See more.



Air pollution levels in the vicinity of Manila City Hall go down

Published April 27, 2020 3:58 PM

By Mirika Tiangco

The city of Manila continues to enjoy cleaner air after residents retreated indoors amid the threat of the coronavirus disease-2019 (COVID-19) and the implementation of the enhanced community quarantine, an environmental group said.



Asia Blue Skies Program, a partnership between the Manila city government, Clean Air Asia, and 3M, tracks air cleanliness in the city by measuring the amount of fine particulate matter or PM2.5.

PM2.5 is atmospheric particulate matter that have a diameter of less than 2.5 micrometers. They come from power plants, motor vehicles, airplanes, burning of wood and plants, volcanic eruptions, and dust storms, among other sources.

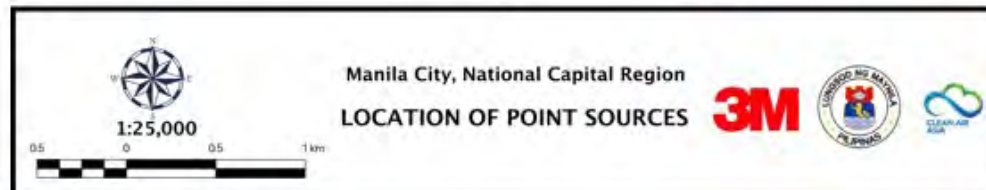
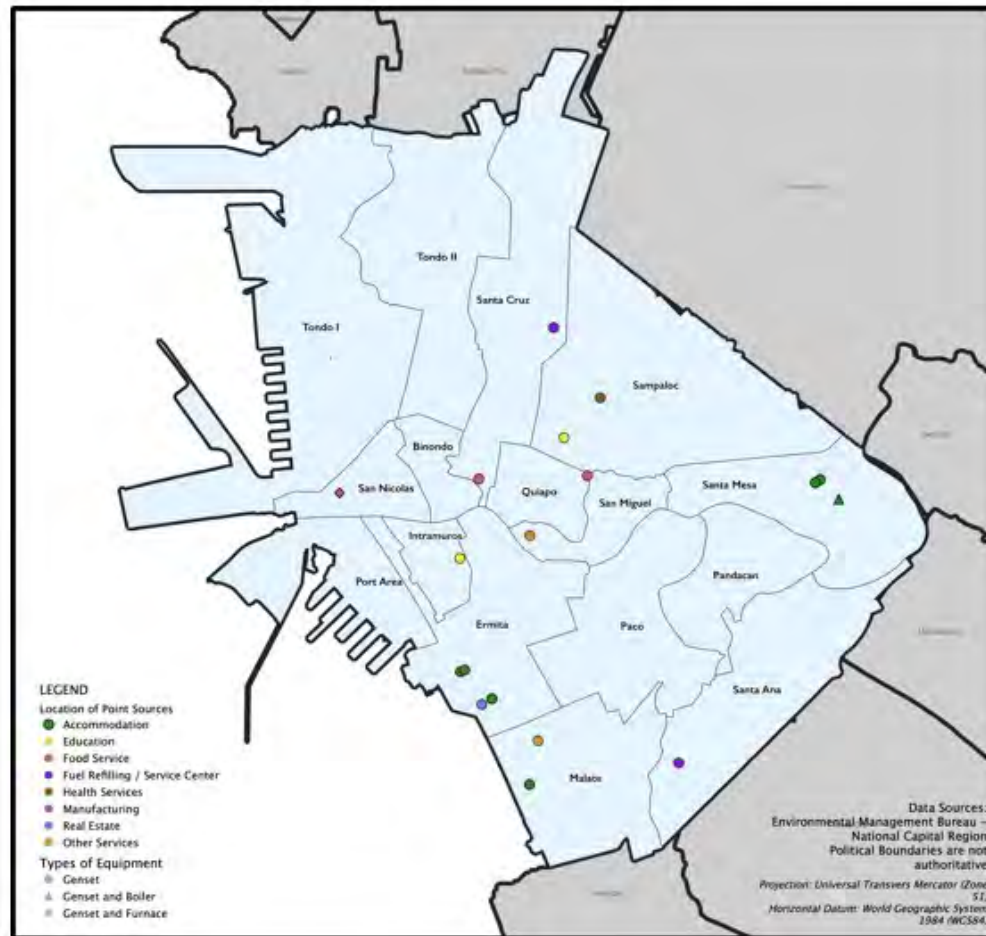
"I love the fact that the city is very serious in implementing green advocacies 🙌 kudos Mayor"

"All citizens should participate in this program, it's time to impose strict penalties on all ordinances...Environmental protection Agencies, local and national should also participate. Just like in other countries."

"Please build protected bicycle lanes."

"Something is wrong with your data. While the freedom park. Pm2.5 dropped to 42%..in luneta and aguila rose to 2 %.and 4 %.respectively which means the air quality has become.worse during the ecq even with less.cars. what was added.to.the places where.p_m 2.5.rose."

Understanding local context: emission sources and weather impacts



Mapping emission sources

Point Sources (Heavy industries and Manufacturing Facilities)

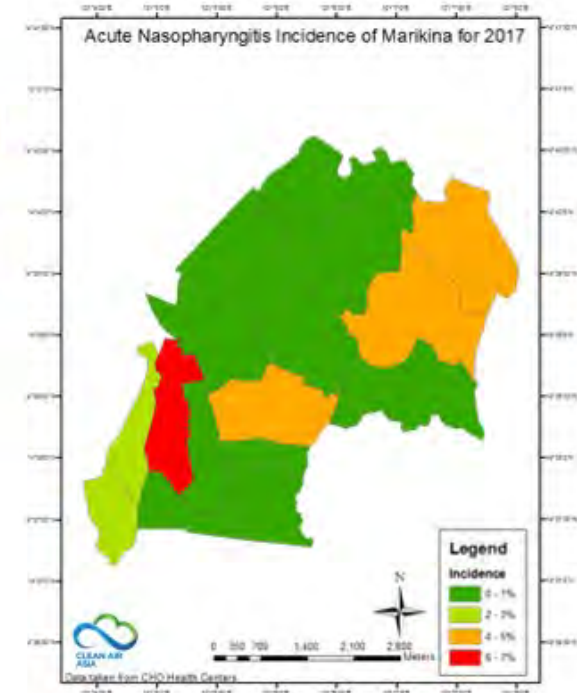
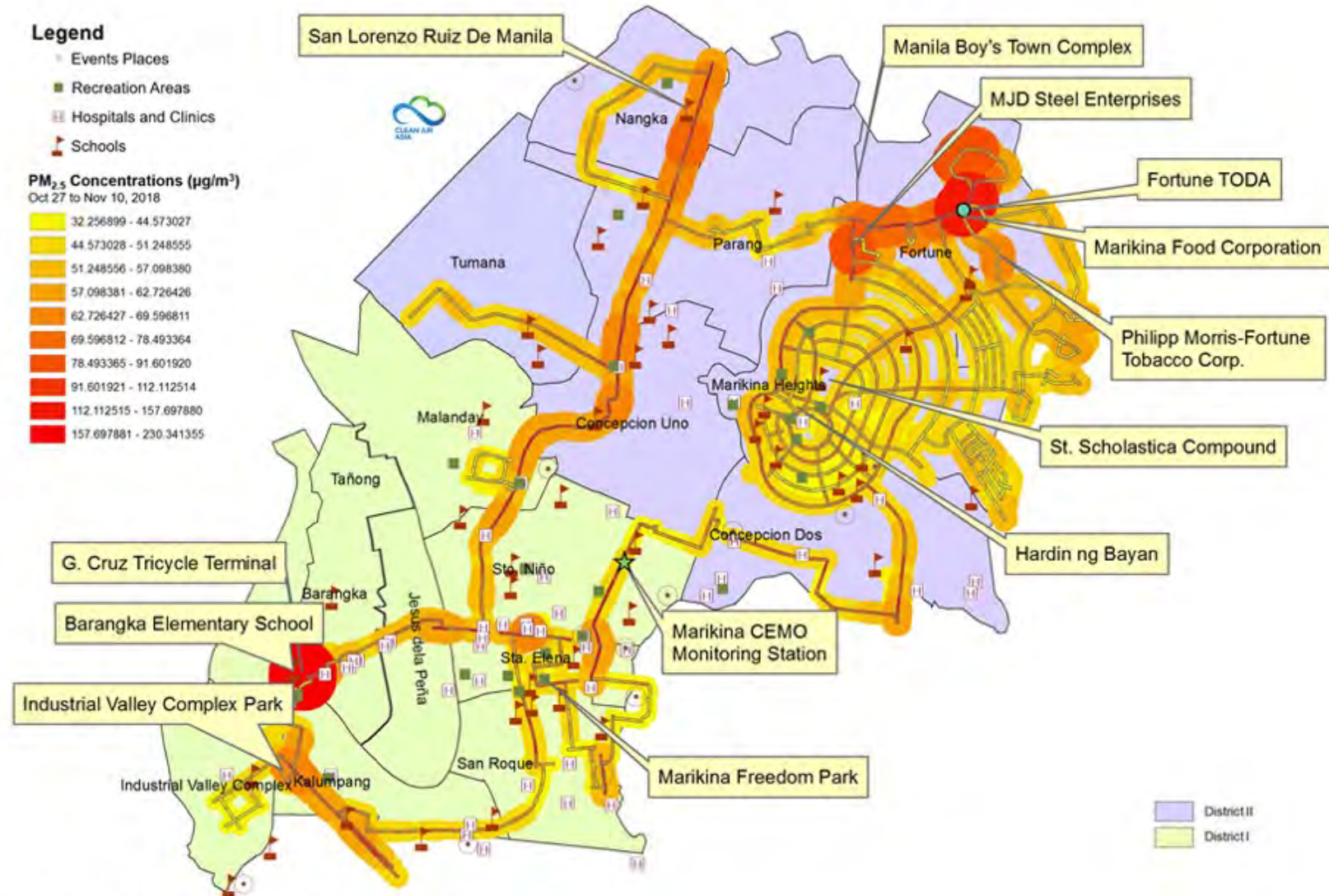
Area Sources (Residential - District level)

Mobile Sources (Road and Port)

Meteorological conditions (wind and PM_{2.5})



Understanding local context



Clean Air Asia (2019). Marikina CAAP Development

Our work with Cities: Clean Air Action Planning for Sustainable Air Quality Improvements

Mongolia



- National Action Program on Reducing Air Pollution
- National Emissions Inventory for Mongolia
- Capacity building for CAAP development in 22 cities/provinces
- CAAP development in Erdenet

- Regional knowledge sharing platforms for AQM
- Capacity building for CAAP components in over 100 Chinese cities

China



India



- AQM capacity assessment in 30 cities
- Capacity building for CAAP development in Indian Cities

- **Clean Air Action Plan for Iloilo, Cagayan de Oro, Marikina**
- **Clean Air Action Plan for Santa Rosa, La Trinidad, Baguio City and Bataan (planned)**
- **Air quality monitoring and AQM roadmapping for Quezon City**
- **Emission inventory and dispersion modeling for NCR**
- **Emission inventory for Santa Rosa**
- **Emission inventory and air quality modeling for La Trinidad, Limay**

Philippines



Viet Nam



- National emissions inventory guideline for industries
- Clean Air Action Plan for Can Tho
- CAAP development in Ho Chi Minh and Vinh Yen

Indonesia



- CAAP development in Faridpur, Bangladesh; Sialkot and Peshawar in Pakistan

- Clean Air Action Plan for Bogor
- Capacity building for health impact assessment and CAAP development for Indonesia¹⁰ cities

Thank you!

For questions, please email
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