



GOVERNMENT OF PUERTO RICO
DEPARTMENT OF NATURAL AND ENVIRONMENTAL RESOURCES

FEB 19 2025

MR. MICHAEL MARTUCCI
REGIONAL ADMINISTRATOR
USEPA-REGION II
290 BROADWAY 25th FLOOR
NEW YORK NY, 10007-1866

Dear Mr. Martucci:

RE: Puerto Rico Designation Recommendation for the 2024 Revised Primary Annual Fine Particulate (PM_{2.5}) National Ambient Air Quality Standard

The Puerto Rico Department of Natural and Environment Resources (PRDNER) as representative of the Government of Puerto Rico is submitting the initial recommendations of Puerto Rico as attainment for San Juan and Ponce MAs and attainment-unclassifiable for Mayaguez and Guayama MAs. The designation recommendation is submitted according to Section 107 (d) (1) (A) of the Clean Air Act.

On February 7, 2024, the Environmental Protection Agency (EPA) promulgated a revised National Ambient Air Quality Standard for the primary annual fine particle (PM_{2.5}). The PM_{2.5} annual primary standard was revised from 12 µg/m³ to 9 µg/m³. The annual secondary standard of 15 µg/m³ and the 24-hour PM_{2.5} standard of 35 µg/m³ were retained.

PRDNER classified the San Juan and Ponce MAs as attainment with the revised PM_{2.5} Primary Annual Standard. Although PM_{2.5} network is designed and meets the criteria of location by area, PRDNER is classifying the Mayaguez and Guayama MAs as attainment-unclassifiable because the available data shows compliance with the new standard but is not from 2022-2024.

The latest PM_{2.5} air quality monitoring data for Guayama MA is from 2015-2017 and for Mayaguez MA is from 2011-2013. PRDNER is working with the air monitoring network to restore the PM_{2.5} air quality monitors in Mayaguez and Guayama by the end of 2025 and have a complete set of data by the end of 2028.

Puerto Rico Designation Recommendation for the 2024 Revised Primary Annual Fine Particulate (PM2.5) National Ambient Air Quality Standard

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Please feel free to contact me, at (787)999-2200 if you have any questions regarding these recommendations, or you can reach our staff contact César O. Rodríguez at (787)999-2200, ext. 5810.

Cordially,



Waldemar Quiles Pérez
Secretary
Department of Natural and Environmental Resources



GOVERNMENT OF PUERTO RICO
DEPARTMENT OF NATURAL AND ENVIRONMENTAL RESOURCES

**Puerto Rico Area Designation Recommendation for the Revised Primary PM_{2.5} Annual
National Ambient Air Quality Standard**

Government of Puerto Rico
Department of Natural and Environmental Resources

February 2025

San José Industrial Park, 1375 Ave Ponce de León, San Juan, PR 00926

Area Designation Recommendation for the Revised PM_{2.5} Primary Annual National Ambient Air Quality Standard

On February 7, 2024¹, the Environmental Protection Agency (EPA) promulgated a revised National Ambient Air Quality Standard for the primary annual fine particle (PM_{2.5}). The PM_{2.5} annual primary standard was revised from 12 µg/m³ to 9 µg/m³. The annual secondary standard of 15 µg/m³ and the 24-hour PM_{2.5} standard of 35 µg /m³ were retained. The annual primary standard was revised based on the available health effects and evidence that supports causal relationship between long and short-term exposures and mortality and cardiovascular effects, and the evidence supports a likely to be a causal relationship between long-term exposures and respiratory effects, nervous system effects, and cancer.

Section 107(d) of the Clean Air Act (CAA) governs the process for area designations following the establishment of a new revised NAAQS. Under this section, States are required to submit recommendations to EPA not later than one year after promulgation of a new or revised standard. The recommendations must be submitted to EPA by February 7, 2025.

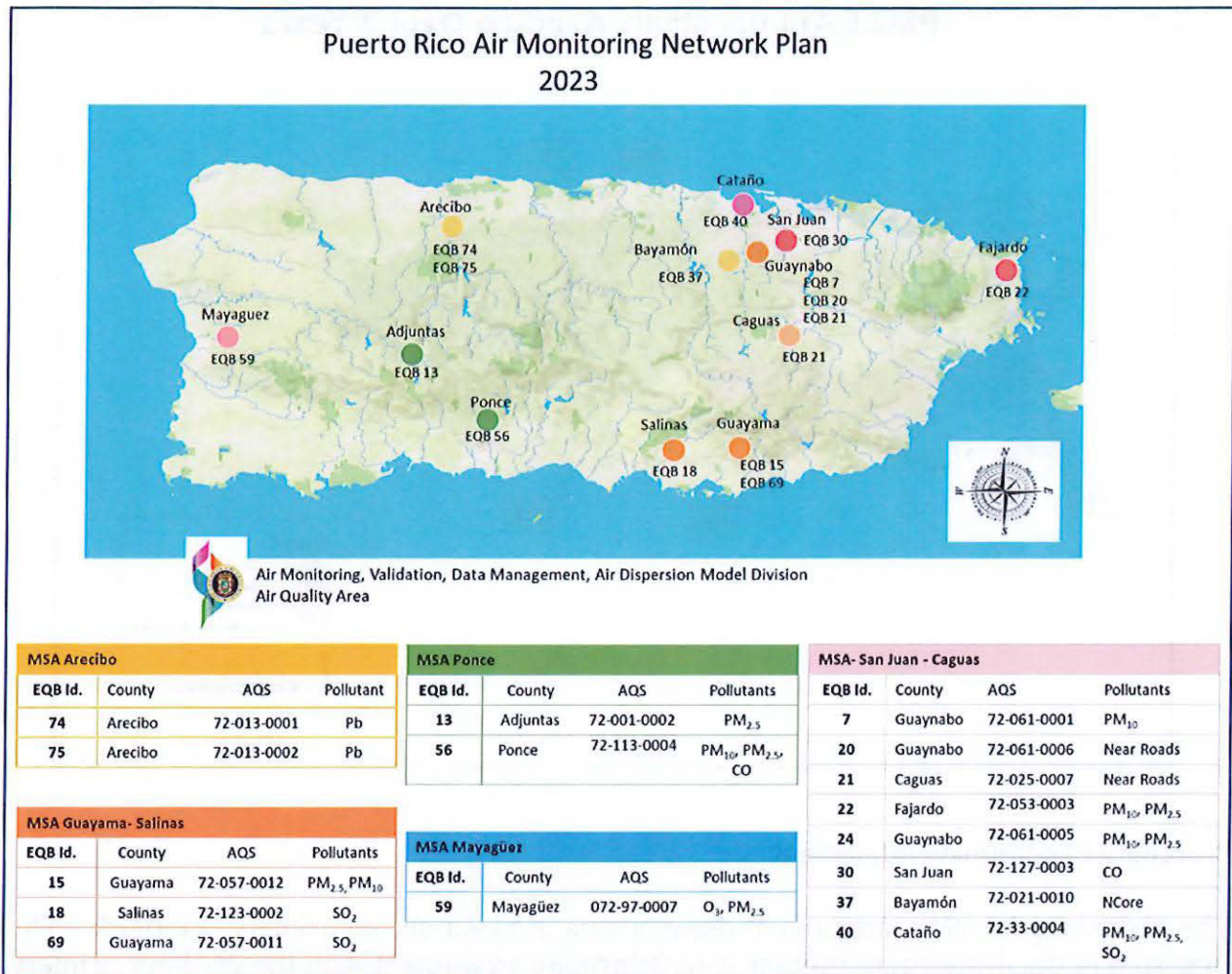
As required by section 107(d) the Government of Puerto Rico (GOVPR) is submitting the designations and recommendations for the revised PM_{2.5} annual primary standard. The Department of Natural and Environmental Resources (DNER) is responsible for developing and implementing emission control programs for attaining and maintaining the standard.

As a result of this change DNER includes the designation and recommendations for the newly revised Annual Primary PM_{2.5} National Ambient Air Quality Standard. The resulting average or design values are compared to the standard. The DNER evaluated the most recent and complete three years of monitoring data for each metropolitan area and determined that none of the monitors exceed the PM_{2.5} standard. The most recent and complete three-year period of monitoring data for San Juan and Ponce metropolitan areas was 2022-2024. For Mayaguez metropolitan area, the most recent and complete three-years of monitoring data was from 2011-2013 and for Guayama was 2015-2017.

DNER used the statistical definition for Metropolitan Area provided by the Office of Management and Budget and the Census Bureau to design the GOVPR Monitoring Network. The GOVPR has six Metropolitan Areas, which are: San Juan-Bayamon-Caguas, Humacao, Ponce, Mayaguez, Guayama and Fajardo.

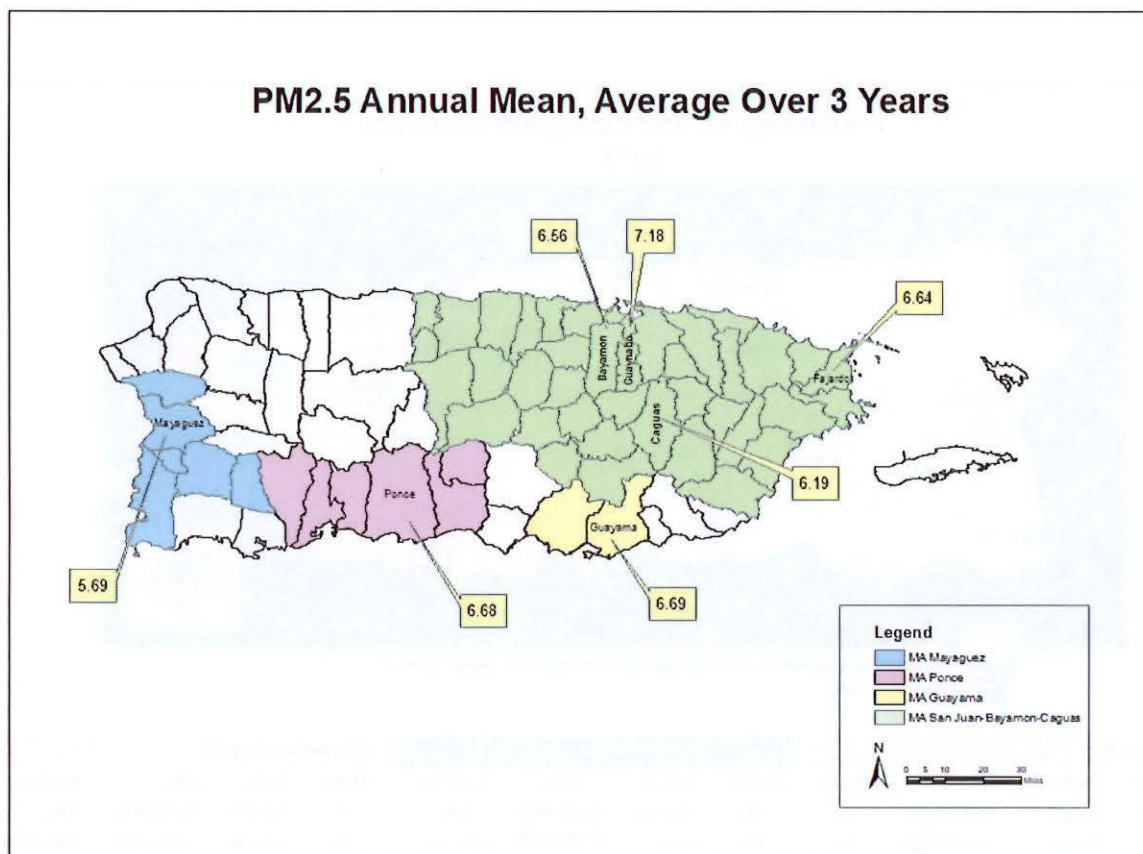
The GOVPR Network includes ten (10) monitors for PM_{2.5} which are located as follow: San Juan: 3 monitors; Caguas: 1 monitor; Adjuntas: 1 monitor; Guayama: 1 monitor; Salinas: 1 monitor (new), Mayaguez: 1 monitor; Ponce: 1 monitor; Fajardo: 1 monitor (background).

¹ 89 Federal Register 16202



¹Map from Puerto Rico Air Monitoring Network Plan-2024.

Metropolitan Area	Population
San Juan	1,967,627
Mayaguez	253,347
Ponce	361,094
Caguas	308,365
Arecibo	174,300
Aguadilla	146,424



Procedure to determine Attainment

The procedure for PM_{2.5} attainment designations is based on the primary standards. The first step in the designation process is to determine attainment with the 24-hour primary standard. The approach is based on the average for each area. The second step was to determine attainment with the annual primary standard. The designation is determined by calculating the primary PM_{2.5} annual mean, average over three years.

The air quality data was used from the EPA Air Quality System to calculate PM_{2.5} design values. The design values shown are calculated in accordance with 40CFR Part 50 Appendix N. The 3-year average mean concentration for the annual PM_{2.5} is computed at each monitor by averaging the daily Federal Reference Method (FRM) samples taken each quarter, averaging these quarterly averages to obtain an annual average, and then averaging the three annual averages. Quarters with data capture less than 75 percent were replaced with maximum data values for the same quarter according to the Guideline on Data Handling Conventions for the PM NAAQS.

The data was flagged for natural and exceptional events were excluded from the design value calculations.

Calculation of the 3-Years Average 98th Percentile for PM_{2.5} (24-Hours Primary Standard)

MA	Station	2022	2023	2024
San Juan-Bayamon-Caguas	Bayamon	20	17.8	23.3
	Guaynabo	18.9	18.8	24.5
	Fajardo	18.5	19.6	25.4
	Caguas	17.4	15.1	22.2
	Humacao ¹	0	0	0
Ponce	Guayanilla ²	0	0	0
	Adjuntas ³	0	0	0
	Ponce	17.5	17	21.6

¹Inactive since 2014, not considered for the 3 Years Average 98th Percentile calculation.

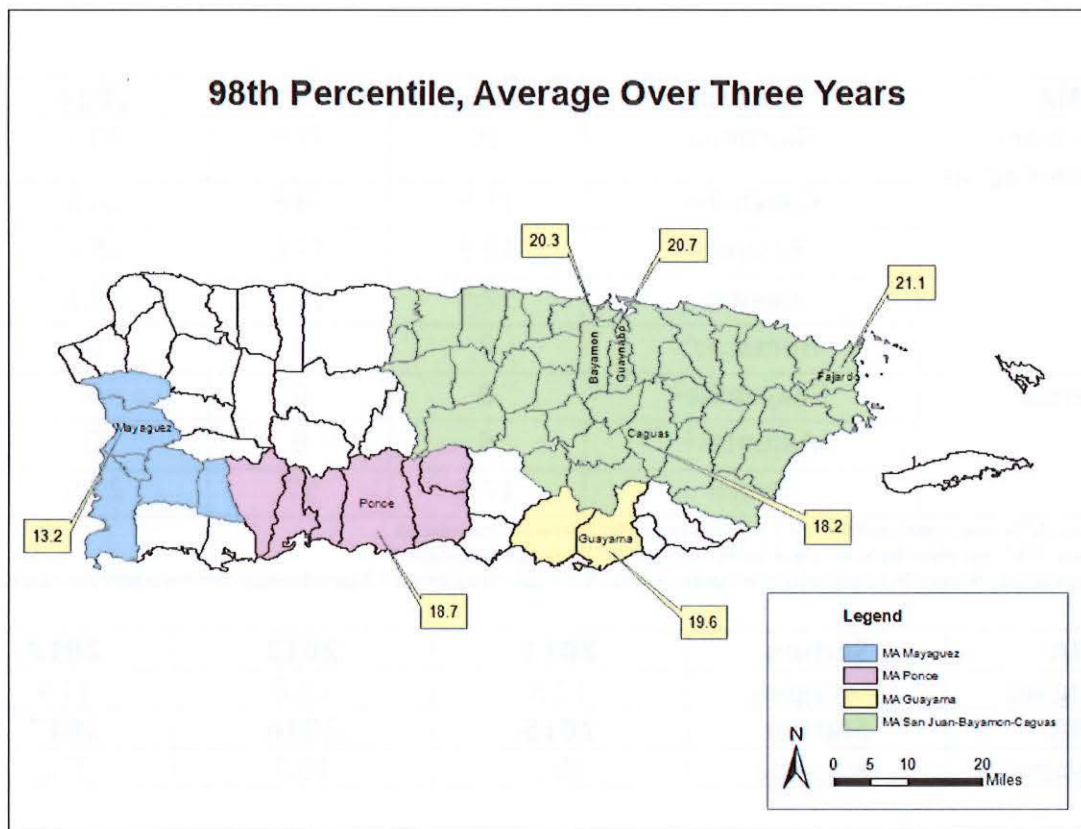
²Inactive since 2017, not considered for the 3 Years Average 98th Percentile calculation.

³Last monitoring data is from 2021 and only one month of data. Not considered for the 3 Years Average 98th Percentile calculation

MA	Station	2011	2012	2013
Mayaguez	Mayaguez	12.5	15.8	11.4
MA	Station	2015	2016	2017
Guayama	Guayama	15.3	16.5	27.2

To find the 3-years average of the 98th percentile to each site is as follows:

Metropolitan Areas	Station	3-Year 98 th Percentile
San Juan-Bayamon-Caguas	2022-2024	
	Bayamon	20.3
	Guaynabo	20.7
	Caguas	18.2
	Fajardo	21.1
Ponce	Guayanilla	0
	Ponce	18.7
Mayaguez	2011-2013	
	Mayaguez	13.2
Guayama	2015-2017	
	Guayama	19.6



Calculation of the 3 -Years Average of Spatially Averaged Annual Mean

San Juan-Bayamon-Caguas MA

Year	Bayamon	Guaynabo	Fajardo	Caguas	Humacao ¹	Annual Spatial
2022	6.44	6.96	6.16	5.97	0	6.38
2023	6.51	7.14	6.84	5.49	0	6.49
2024	6.74	7.44	6.94	7.12	0	7.06

¹Inactive since 2014, not considered for annual spatial calculation.

The three years average spatial mean:

$$(6.38 + 6.49 + 7.06) / 3 = 6.64 \mu\text{g}/\text{m}^3$$

Ponce MA

Year	Ponce	Guayanilla ¹	Adjuntas ²	Annual Spatial
2022	6.66	0	0	6.66
2023	6.36	0	0	6.36
2024	7.03	0	0	7.03

¹Inactive since 2017, not considered for annual spatial calculation.

²Last monitoring data is from 2021 and only one month, not considered for annual spatial calculation.

The three-year average spatial mean:

$$(6.66 + 6.36 + 7.03) / 3 = 6.68 \mu\text{g}/\text{m}^3$$

Mayaguez MA

Year	Mayaguez
2011	5.49
2012	6.22
2013	5.38

The three-year average spatial mean:

$$(5.49 + 6.22 + 5.38) / 3 = 5.69 \mu\text{g}/\text{m}^3$$

Guayama MA

Year	Guayama
2015	6.07
2016	6.37
2017	7.64

The three-year average spatial mean:

$$(6.07 + 6.37 + 7.64) / 3 = 6.69 \mu\text{g}/\text{m}^3$$

Conclusion

Based on the technical documentation and the most recent and complete data presented above, all the design values are below the PM_{2.5} standard. The DNER compare the 3 – Year PM_{2.5} Annual Average data with the new revised primary standard and all monitors are in conformity with the PM_{2.5} primary annual standard of 9 µg/m³, and with the retain secondary standard of 15 µg/m³.

The 24 hours 3- Years 98th Percentile was also revised, and the data is in conformity with the retained standard of 35 µg/m³. EPA expects that making final designations recommendations will rely on air quality data from 2022-2024. Therefore, the DNER recommendation is that Puerto Rico is in attainment with the revised PM_{2.5} Primary Annual Standard for the San Juan and Ponce MA and is in attainment/unclassifiable for Mayaguez and Guayama MA.