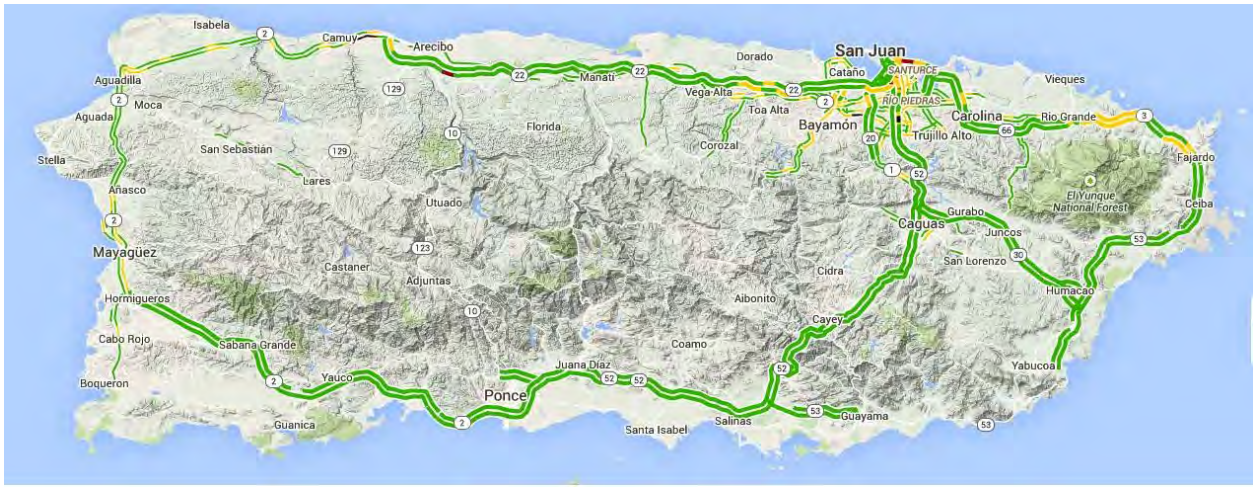
Commonwealth of Puerto Rico/ Office of the Governor

Puerto Rico Environmental Quality Board

Puerto Rico Air Monitoring Network Plan



EQB

Environmental Quality Board

Commonwealth of Puerto Rico

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Acronyms and Abbreviations

AQS: Air Quality System
CFR: Code Federal Register
CBSA: Core-based Statistical Area
EPA: Environmental Protection Agency
FEM: Federal Equivalent Method
FRM: Federal Reference Method
MSA: Metropolitan Statistical Area
NAAQS: National Air Ambient Quality Standards
NAMS: National Air Monitoring Stations
NCore: National Core Multi-pollutant Monitoring Stations
NO_2: Nitrogen Dioxide
O_3: Ozone
OSI: Information System Office
PAMS: Photochemical Assessment Monitoring Stations
PB: Lead
PM_{10}: Particulate Matter
$PM_{2.5}$: Fine Particulate Matter
ppm: parts per million
PR: Puerto Rico
PREQB: Puerto Rico Environmental Quality Board
PREPA: Puerto Rico Power Electrical Authority
QAMP: Quality Assurance Monitoring Plan
QAPP: Quality Assurance Project Plan
RCPA: Regulation for the Control of Atmospheric Pollution of Puerto Rico
SLAMS: State and Local Air Monitoring Stations
SO_2: Sulfur Dioxide
SO_4: Sulfate
SPM: Special Purpose Monitor
TEOM: Tapered Element Oscillating Microbalance
TSP: Total Suspended Particulate

1.0 Introduction

An annual review of the Air Quality Monitoring Network is required by Federal Regulations as a means to identify and report needs for additions, relocations, or terminations of monitoring sites or instrumentation. This document describes the network of ambient air quality monitors in the jurisdiction of and operated by the Puerto Rico Environmental Quality Board (PREQB). It includes a review of actions taken during the 2014-2015 fiscal year and plans for action in the year ahead. This plan addresses the requirement for an annual network plan as listed in Title 40, Part 58, Section 10 of the Code of Federal Regulations (40 CFR § 58.10). Regulations require the report be submitted to the U.S. Environmental Protection Agency (EPA) by July 1 of each year after a 30 day public comment period.

The Plan is a review of the PREQB ambient air pollution monitoring stations network. Each year, PREQB staff conducts an annual review of its air monitoring network and submits it to the EPA. The review process focuses on current and future network air monitoring strategies and the network modifications are made in consultation with the EPA.

When re-location of monitoring sites is required, site reports are updated in the EPA's Air Quality System (AQS) to document compliance with established sitting criteria for the new locations. The *2015 PR Air Monitoring Network Plan* includes a review of actions taken since preparation of the last plan (July 2014), and plans for action in the next 18 months.

2.0 Public Comments

Pursuant to Federal regulations, this report will be available for a 30 day public inspection and comment period prior to submission of the final plan to EPA. Any comments received during the public inspection period will be forwarded to the United States Environmental Protection Agency (EPA) concurrently with submittal of the plan. This report may be viewed on the PREQB's website, www.jca.gobierno.pr and hardcopies are available for review at PREQB office. Written comments should be submitted to Lucía Fernández Fontán, Chief of the Air Sampling, Validation and Data Management Division at luciafernandez@jca.gobierno.pr, 787-767-8181 ext. 3254. The final document is submitted to the EPA on July 1, 2015 along with any public comments received to fulfill Federal regulatory requirements.

3.0 MONITORING DATA QUALITY ASSURANCE

The Quality Assurance Management Plan (QAMP) was prepared by the Puerto Rico Environmental Quality Board and approved by EPA Region II. The air monitoring network meets the criteria identified in the QAMP.

The Quality Assurance Project Plan (QAPP) is under revision. The QAPP describes in greater detail the monitoring effort and quality assurance procedures that the data must meet before it is considered as quality assured and acceptable for submittal to the public and EPA. The Standard Operating Procedure (SOP) manuals have been prepared by the Air Quality Area. It identifies the steps, procedures and criteria that must be meets in operating of the monitoring network and the validation of the air quality data.

4.0 Network Design

The PREQB permanent multi-pollutant monitoring stations as follows:

- eight (8) $PM_{2.5}$ FRM
- two (2) continuous $PM_{2.5}$
- five (5) PM_{10} FRM sites
- two (2) continuous PM_{10} sites
- two (2) ozone sites
- four (4) sulfur dioxide (SO_2) sites
- three (3) lead (Pb) sites
- three (3) nitrogen oxide (NO_2) sites
- three (3) carbon monoxide (CO) sites
- four (4) PM_{10} -Sulfates (SO_4) sites
- one (1) NCore site
- three (3) Near roads sites

The Appendix 1 provides a list of monitoring locations, the EPA AQS site codes, the pollutants measured at each site, the spatial scale and the site type for each monitor at all sites, the monitoring purpose for the monitors at each site and the monitoring purpose for continuous particulate analyzers at each site.

4.1 $PM_{2.5}$ Air-Monitoring Network

The PREQB operates ten (10) $PM_{2.5}$ sites in the air-monitoring network, eight (8) FRM, two (2) continuous $PM_{2.5}$ and two (2) collocated $PM_{2.5}$ FRM samplers. The FRM operate on a 1-in-3 day sample schedule. The QA FRM samplers operate on a 1-in-6 day sample schedule. The continuous $PM_{2.5}$ samplers are operated year-round and the measurements are sent to the EPA AQS on an hourly basis. All continuous $PM_{2.5}$ samplers have TEOM 1400 AB. All the sites of $PM_{2.5}$ continuous will be for AQI purposes. The details of these sites are included in Appendix 1: Site Description.

Changes proposed to $PM_{2.5}$ network

EQB propose replace some exiting $PM_{2.5}$ SLAMS sites operating filters-based FRMS with continuous FEMS according with the recent NAAQS reviews and with the recently $PM_{2.5}$ continuous FEMS and near roads stations. The FEMS monitors will be located with near-road NO_2 and CO monitors required in CBSAs of 2.5 million or more persons. Also, the NCore site (Section 4.9) will have a $PM_{2.5}$ continuous monitor. The changes will be phased in between 2015 and 2017 as is proposed in the NAAQS and Ambient Monitoring requirements.

4.2 PM_{10} Air-Monitoring Network

The PREQB operates five (5) PM_{10} FRM sites and two (2) continuous PM_{10} site in the air-monitoring network. Two of the sites of the FRM are operated every day and three sites are operated every three days (1-in-3 day) sample schedule. Also, PREQB operate two collocated PM_{10} FRM samplers on a 1-in-6 day sample schedule. The continuous PM_{10} samplers are operated year-round and the measurements are sent to the EPA AQS website and used for AQI purposes on an hourly basis. The details of these sites are included in Appendix 1: Site Description.

Changes proposed to PM_{10} network

PREQB propose changes the frequencies to the Guaynabo monitor to 1-3 days according with the EPA recommendations to the PM_{10} network also consideration of travel time, shipping costs, laboratory processing workload, and little change in annual values through time have discouraged changing to the monitoring schedule.

4.3 Ozone Air-Monitoring Network

The PREQB operates two ozone sites in the air-monitoring network and one monitor is located as part of the NCore site. The ozone samplers are operated year-round and the measurements are sent to the EPA AQS on an hourly basis. The ozone sites are classified as SLAMS. Details of the sites location are included in Appendix 1: Site Description.

Changes proposed to Ozone network

PREQB don't propose changes to the Ozone network.

4.4 SO_2 Air-Monitoring Network

The PREQB operates four (4) sulfur dioxide (SO_2) sites in the air-monitoring network and one monitor is located as part of the NCore site. All SO_2 samplers are operated year-round and the measurements are sent to the EPA AQS on an hourly basis.

The existing SO_2 monitoring locations represent appropriate monitoring locations for the new 1-hour standard monitoring requirements. The monitoring network was design to meet three primary monitoring objectives, as listed in 40 CFR Part 58 Appendix D, Section 1. It includes install the new SO_2 monitor at Guayanilla as proposed during the 2012-2013 fiscal year and plans for action in the year ahead. The details are including at Appendix 1: Site Description.

Changes proposed to SO_2 network

EQB proposes still has to add a SO_2 monitor at Guayanilla that EPA approved in 2014.

4.5 Lead Air-Monitoring Network

The PREQB operates three (3) lead (Pb) sites in the air-monitoring network and operated one at Bayamón NCore site. All Pb samplers are operated year-round and the measurements are sent to the EPA AQS on daily basis. The SLAMS Pb sites use FRM monitors. The details of these sites are included in Appendix 1: Site Description.

Changes proposed to lead network

EQB proposes maintain the lead networks as identical to the Network Plan 2014 approved by EPA. EQB maintain four (4) stations and install a new station at Guayanilla according to the regulation as proposed during the 2012-2013 fiscal year and plans for action in the year ahead. This site was proposed in the Network Plan 2012 and approved by EPA. Also, maintain the monitor at Bayamon NCore.

4.6 NO_2 Air-Monitoring Network

The PREQB operates two (2) nitrogen oxide (NO_2) sites in the air-monitoring network and operated one at Bayamón NCore site. The NO_2 samplers are operated year-round and the measurements are sent to the EPA AQS on an hourly basis. The SLAMS NO_2 sites are used as a FRM. The monitor locates at Salinas is temporary shutdown. The details of these sites are included in Appendix 1: Site Description.

Changes proposed to NO_2 network

PREQB propose changes in the NO_2 network based at the new monitoring requirements near roads stations. Specifically, PREQB install a new site at Guaynabo area (Buchanan) in 2014 and propose other two site, new one at San Juan Area (Caguas) and new one site at Ponce Area. The site proposed at Salinas will be eliminated. And the NO_2 monitor located at Cataño will be closed, the NO_2 monitor located at NCore site (Bayamon) provides sufficient coverage for attainment / nonattainment determinations in the metro area.

The new stations at Ponce and San Juan areas are according to the regulation as proposed during the 2012-2013 fiscal year and plans for action in the year ahead. The sites were proposed in the Network Plan 2012 and approved by EPA.

4.7 CO Air-Monitoring Network

The PREQB operates three (3) carbon monoxide (CO) sites in the air-monitoring network and operated one at Bayamón NCore site. All CO samplers are operated year-round and the measurements are sent to the EPA AQS on an hourly basis. The SLAMS CO sites use FRM monitors. The details of these sites are included in Appendix 1: Site Description.

Changes proposed to CO network

PREQB proposes located a new CO monitor with near-road NO_2 and $PM_{2.5}$ monitors required in CBSAs of 2.5 million or more persons. Also, the NCore site have a CO monitor. The changes will be phased in between 2015 and 2017 as is proposed in the NAAQS and Ambient Monitoring requirements.

4.8 PM Sulfate Air Monitoring Network

The PREQB operates four (4) PM_{10} -Sulfates (SO_4) sites in the air-monitoring network. The particulate sulfate-monitoring network utilizes PM_{10} filter sampling analysis to generate ambient sulfate concentrations. All SO_4 samplers are operated year-round and the measurements are sent to the EPA AQS on a daily basis. Details of the sites locations are included in Appendix 1: Site Description.

Changes proposed to SO_4 network

PREQB don't propose changes to the PM Sulfate network.

4.9 NCore – Air Monitoring Network

For Puerto Rico is required to operate at least one NCore site. According with the requirements, PREQB selected the AIRS 72-021-0010 site at Bayamón to establish the NCore.

PREQB in coordination with EPA install the new station at Bayamon area as was proposed during the 2012-2013 fiscal year. The sites were proposed in the Network Plan 2012 and approved by EPA. The parameters monitored are: CO, O_3, NO_2, NO_y, NO, SO_2, Pb, $PM_{2.5}$, PM_{10}, $PM_{10-2.5}$.

Changes proposed to NCore Site

PREQB propose add the parameters $PM_{2.5}$ continuous and $PM_{2.5}$ speciation at NCore site. For the parameters of $PM_{2.5}$ continuous and $PM_{2.5}$ speciation, EQB is in process of acquiring new equipment. As soon EQB have the equipment, EQB will begin to report data to AQS and report the $PM_{2.5}$ AQI.

Figure 1: $PM_{2.5}$ Network

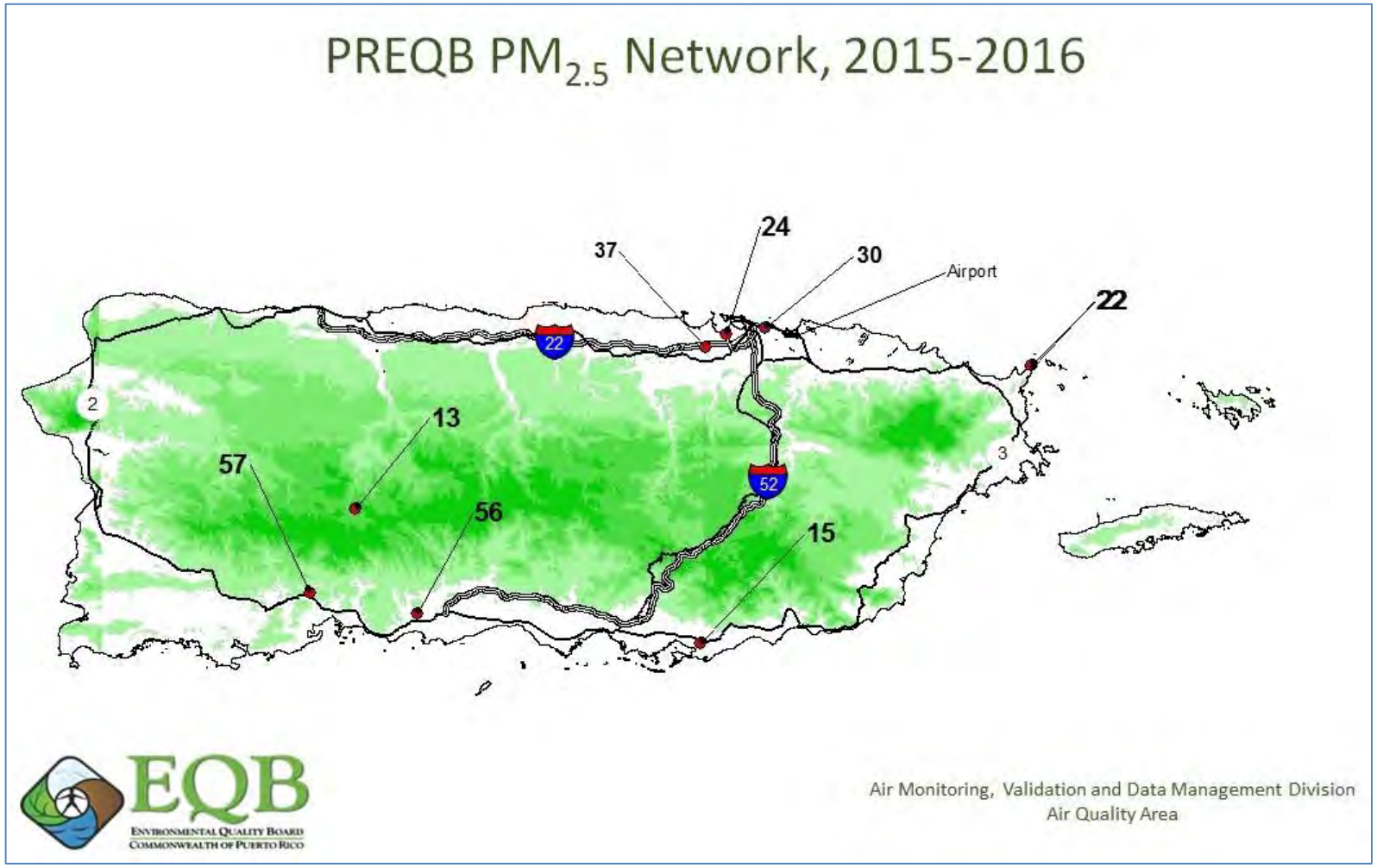


Figure 2: PM_{10} Network

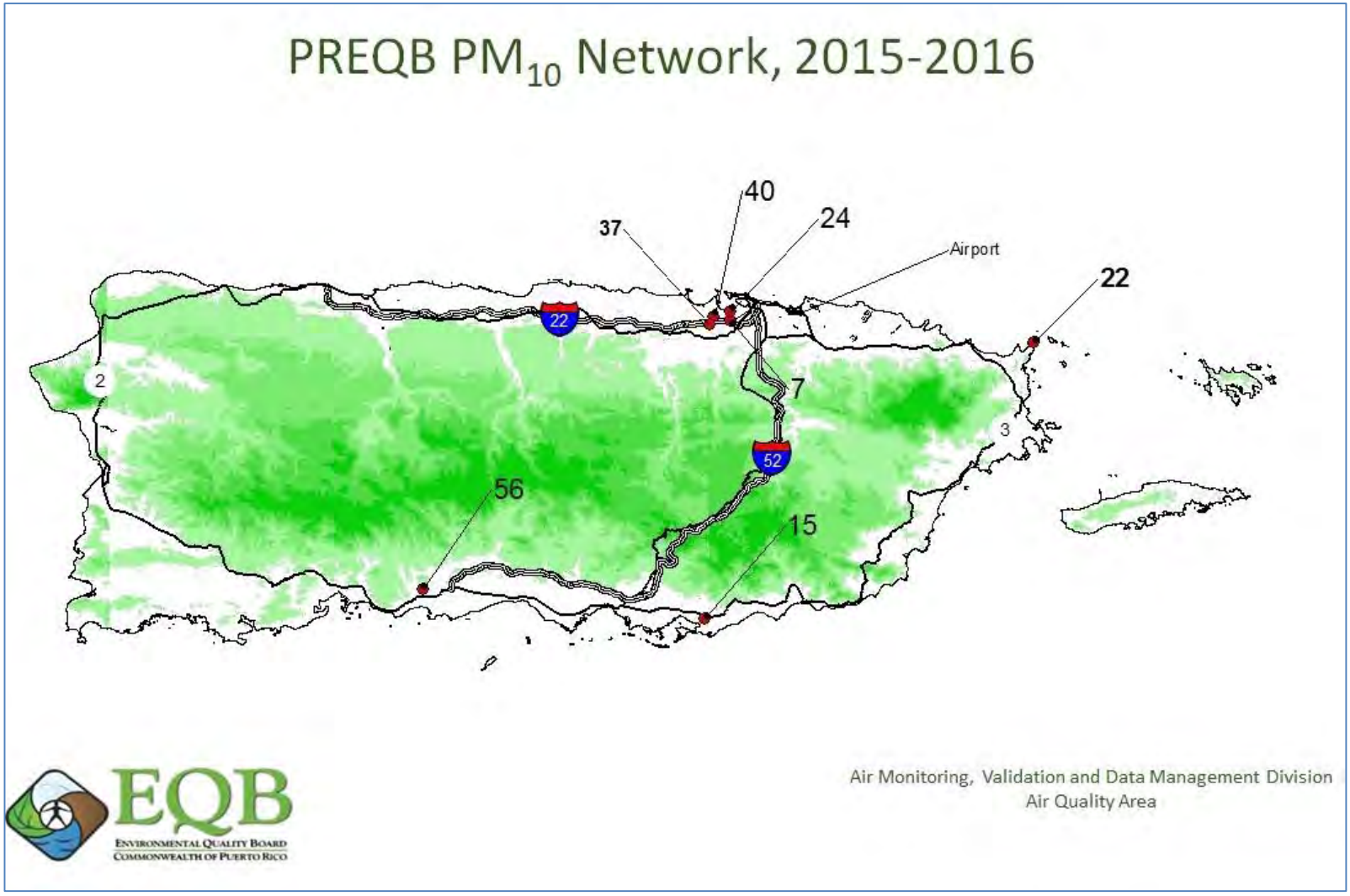


Figure 3: Ozone Network

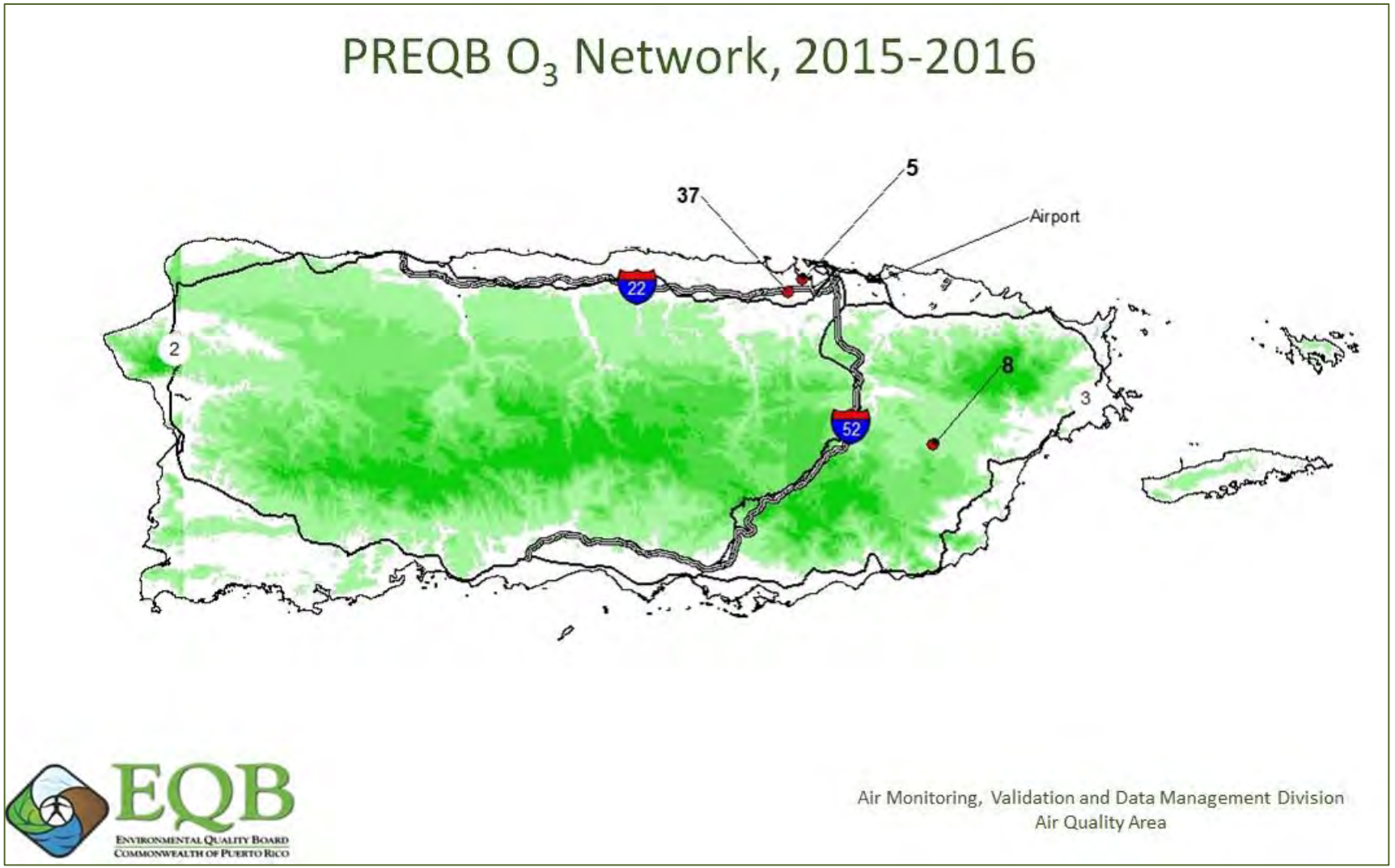


Figure 4: Sulfur Bioxide Network

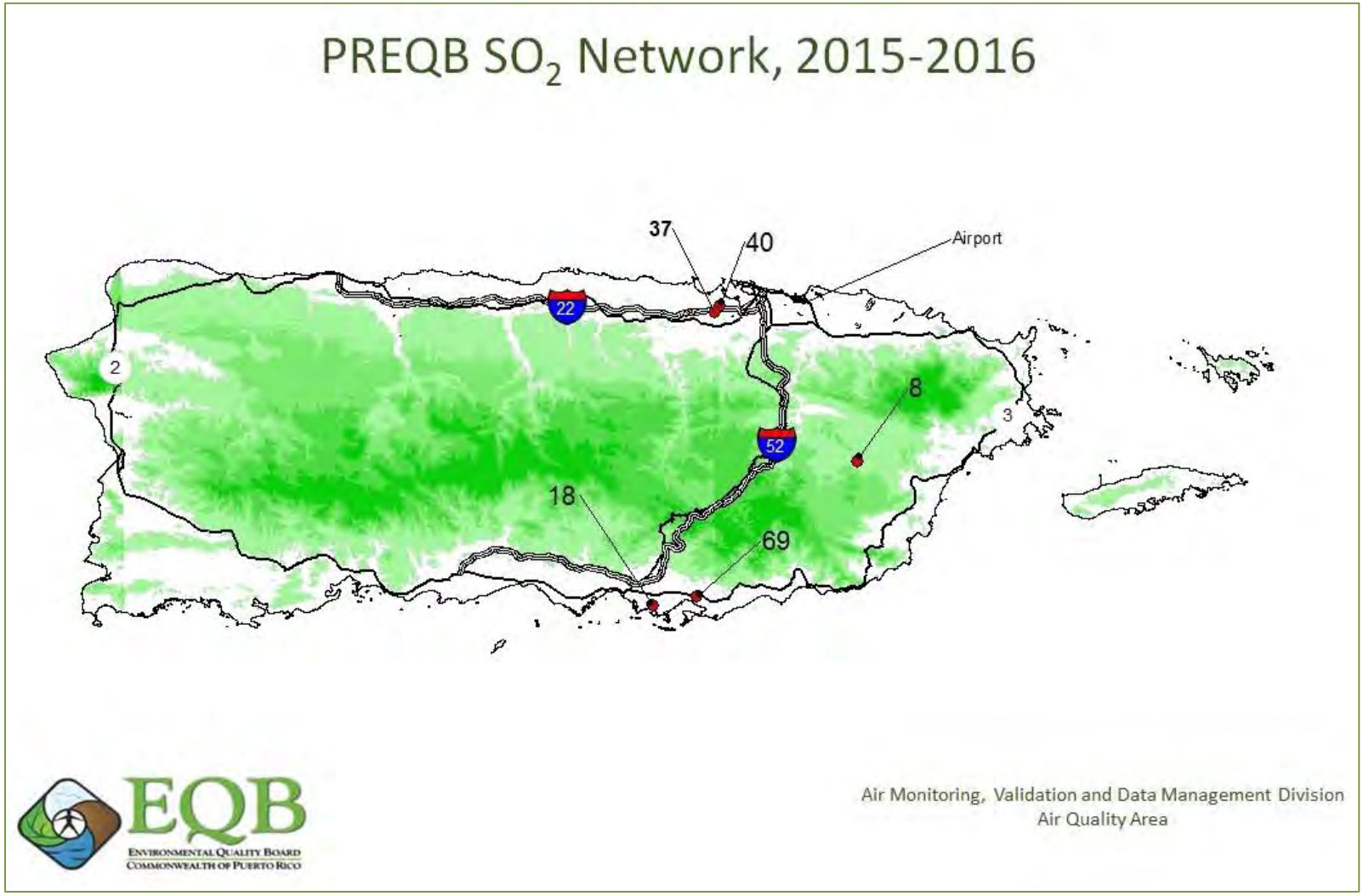


Figure 5: Lead Network

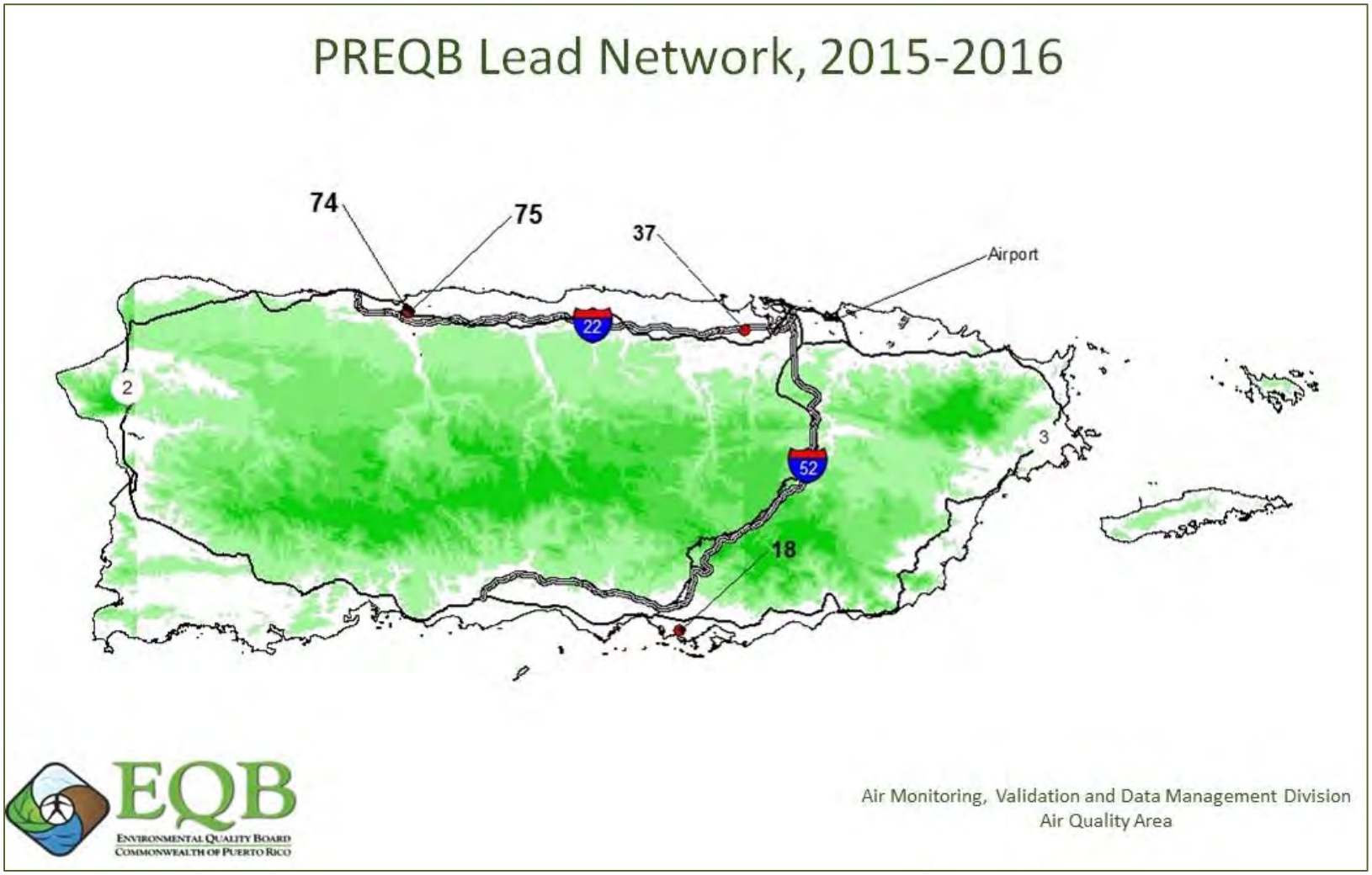


Figure 6 Nitrogen Bioxide Network

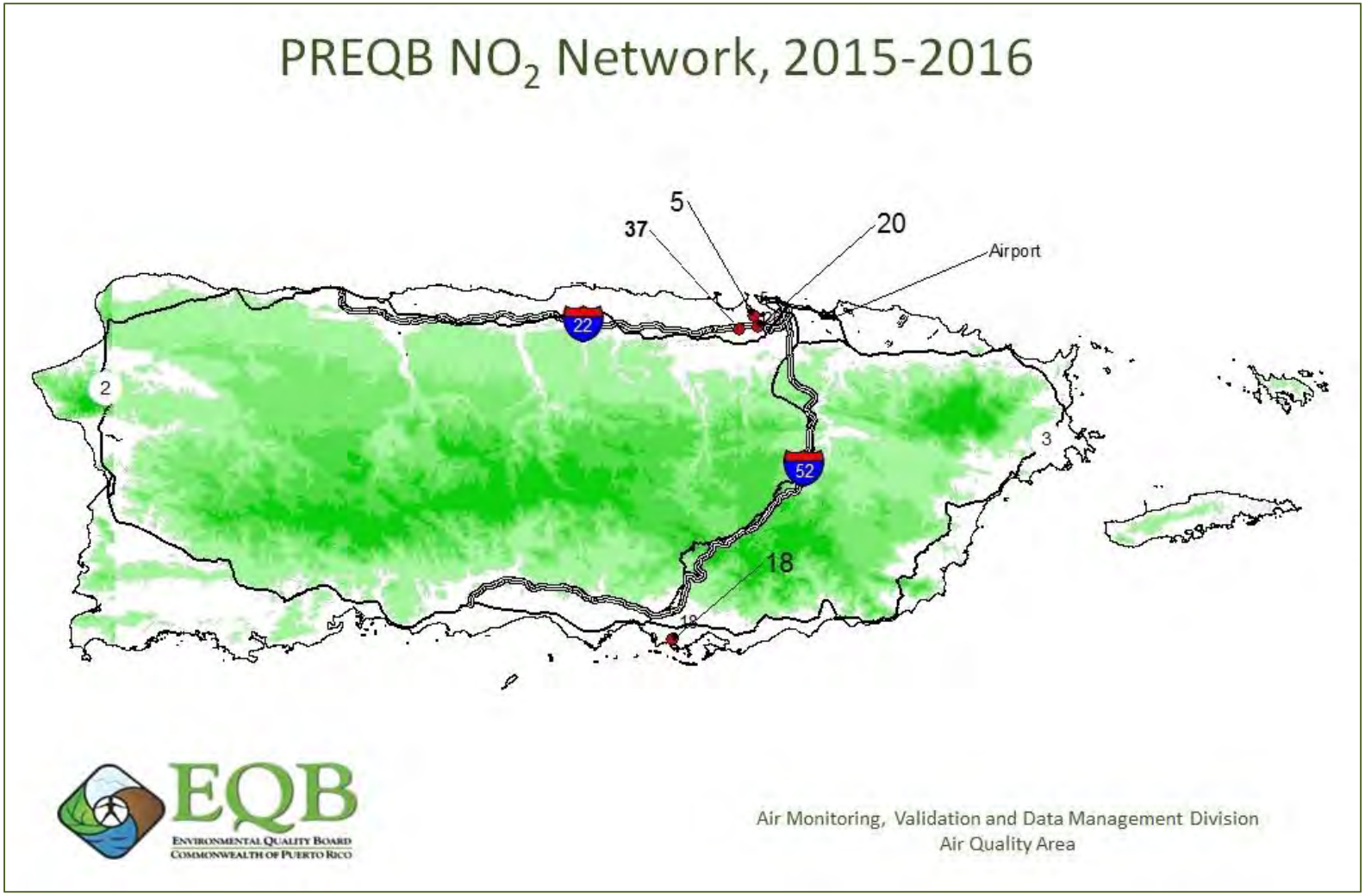


Figure 7 Near Roads proposed Site

Figure 8 Near Roads proposed Site

Figure 9 Carbon Monoxide Network

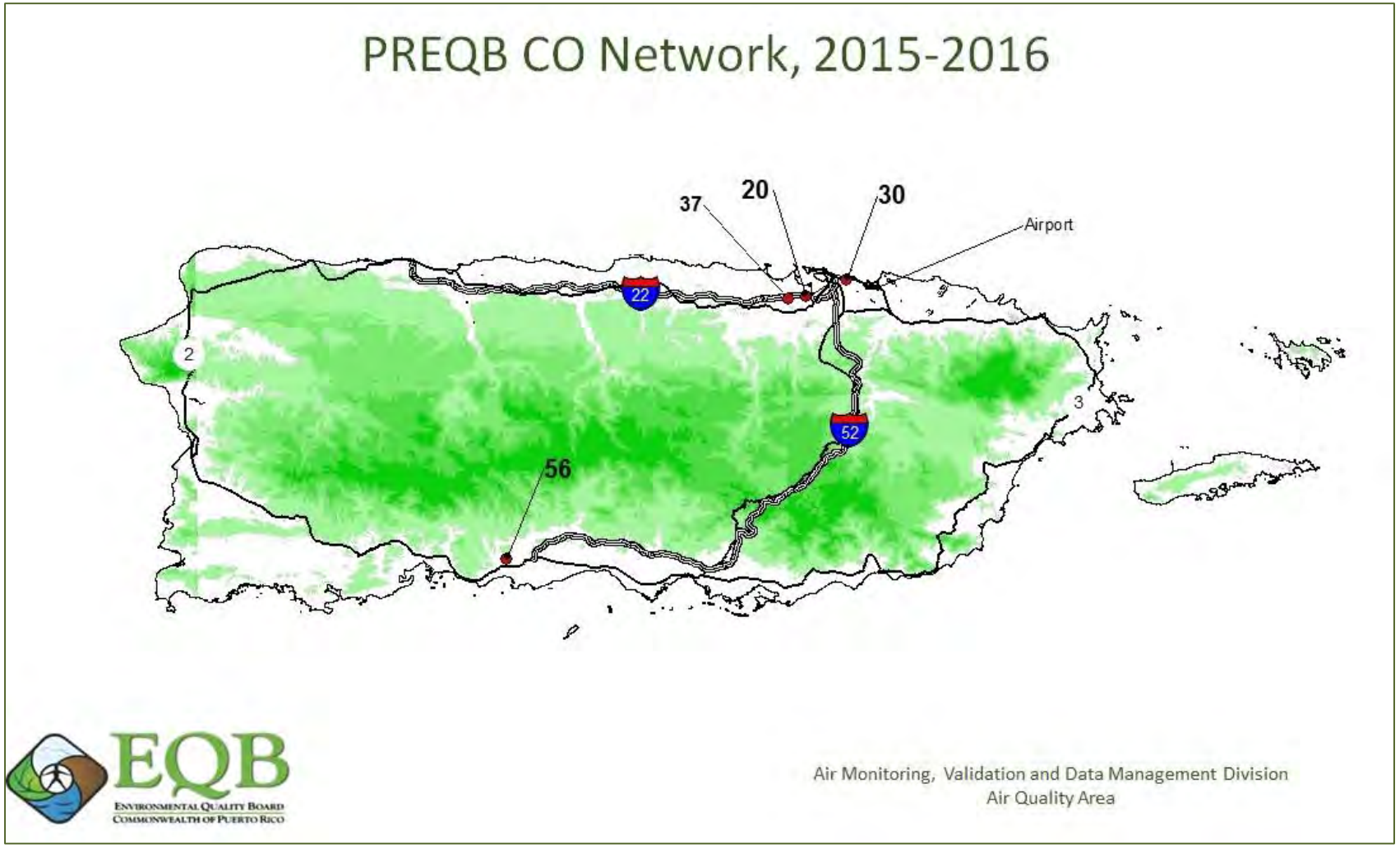
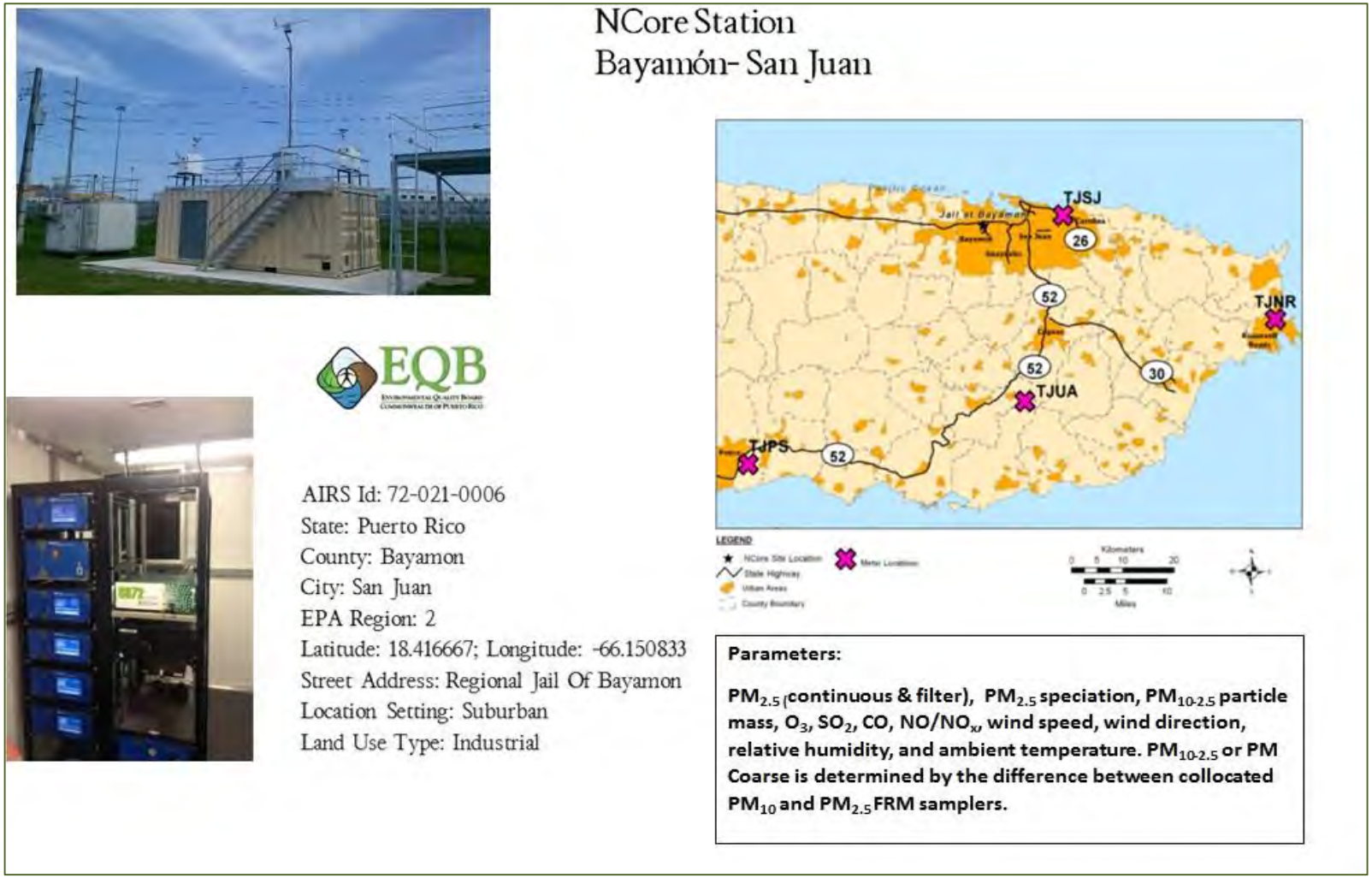


Figure 10 NCore Station



5.0 NETWORK MODIFICATION FORMS

Network modification forms will be prepared for submittal to EPA Region II to implement the network modifications identified in this network plan.

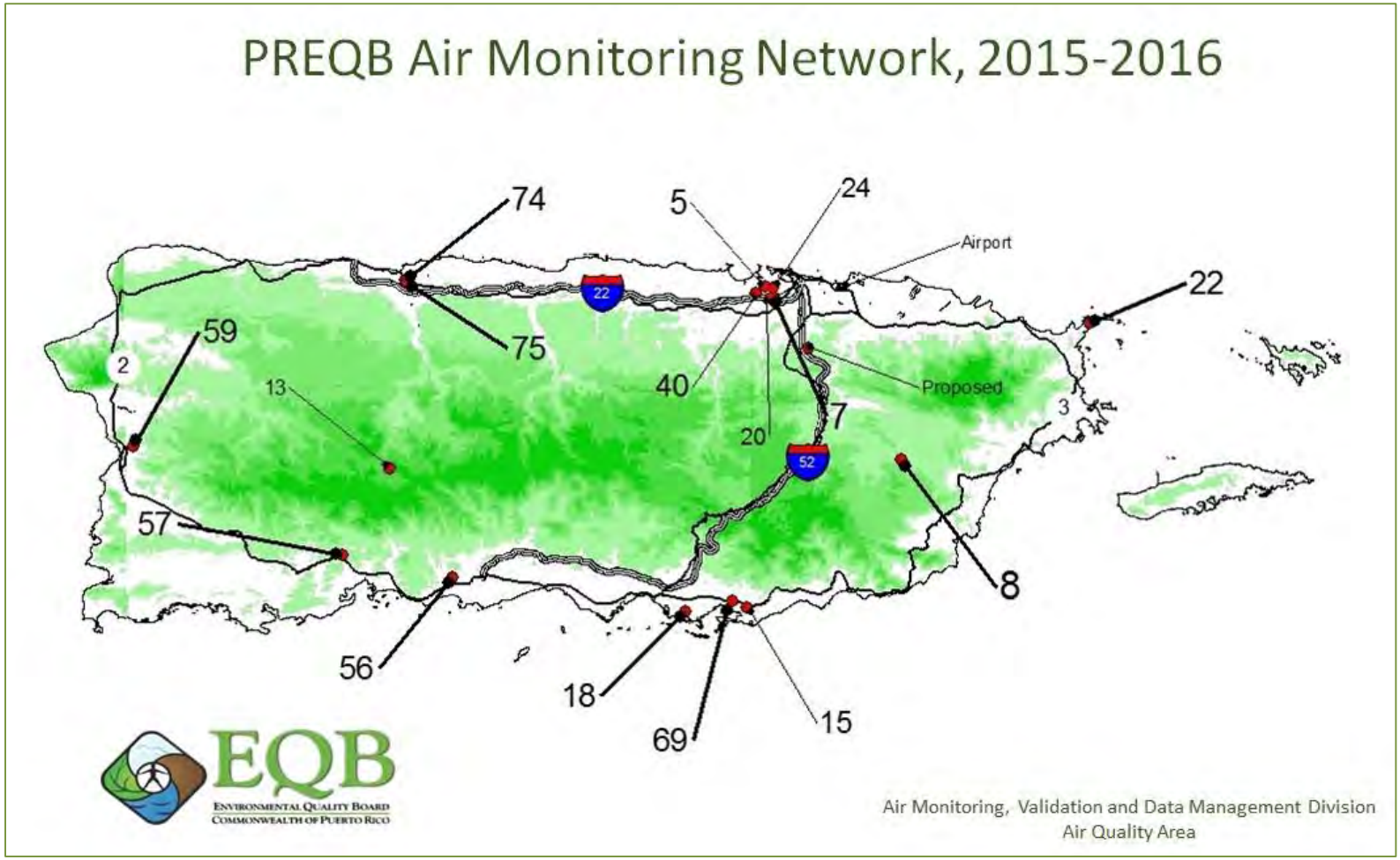
6.0 SUMMARY AND CONCLUSIONS

The monitoring requirements identified by federal regulation are currently met with the existing monitoring network in Puerto Rico. The procedures that are being used and the instruments that are being operated meet the standards that have been established by EPA.

The significant network changes proposed through 2015-16 include:

- Establish one new TSP lead filter sampling with atomic emission spectrometry analysis to generate ambient lead concentrations at Guayanilla.
- Establish the $PM_{2.5}$ Speciation Site at NCore site, and complete to install the minimal parameter requested at the NCore site.
- Establish a new SO_2 site al Guayanilla according with the regulations for the new 1-hour.
- Establish a $PM_{2.5}$ continuous monitor at Ponce to be used for AQI
- Establish the near road NO_2 new sites, (Caguas and Ponce)
- Replace existing $PM_{2.5}$ SLAMS sites operating filters-based FRMS with continuous FEMS at near-road NO_2 and CO monitors required in CBSAs of 2.5 million or more persons.
- Located a CO monitor with near-road NO_2 and $PM_{2.5}$ monitors required in CBSAs of 2.5 million or more persons.
- Reduce the frequency to the PM_{10} monitor located at Guaynabo from daily to 1-3 days.

Figure 11: Map: Air Monitoring Network 2015-16



Site Name	EQB #13
Address	Road #123
City	Adjuntas
AQS Code	72-001-0002
PR County	Adjuntas
MSA/CSA	N/A
Latitude	+18.17537759
Longitude	-66.72598803
Suitable for Comparison to $PM_{2.5}$ NAAQS?	Yes

Parameter	Sampling Method	Analysis Method	Schedule	Spatial Scale	Monitoring Objective	Date Established
Ambient Average Temperature		Electronic	1 in 3	Urban		2005/01/01
Sample Average Barometric Pressure		Barometric Sensor	1 in 3	Urban		2005/01/01
$PM_{2.5}$	R&P Model 2025	Gravimetric	1 in 3	Urban	Upwind Background	2005/01/01

Parameter	Monitor Type
$PM_{2.5}$	SLAMS

Site Purpose	Reference for Extreme downwind
Plans for the next 18 months	No changes
Other comments	

Site Name	EQB #74
Address	Victor Santoni Cordero Road #123
City	Arecibo
AQS Code	72-013-0001
PR County	Arecibo
MSA/CSA	N/A
Latitude	+18.45703907
Longitude	-66.69669257
Suitable for Comparison to $PM_{2.5}$ NAAQS?	n/a

Parameter	Sampling Method	Analysis Method	Schedule	Spatial Scale	Monitoring Objective	Date Established
Ambient Temperature Average			1 in 6			
Ambient Pressure Average			1 in 6			
Lead TSP	Hi-Vol	Atomic Emission Spectrometry	1 in 6	Micro Scale	Source Oriented	2010/01/01

Parameter	Monitor Type
Lead	SLAMS

Site Purpose	Reference for Extreme downwind
Plans for the next 18 months	No changes
Other comments	

Site Name	EQB #75
Address	PR Road #2
City	Arecibo
AQS Code	72-013-0002
PR County	Arecibo
MSA/CSA	N/A
Latitude	+18.45338923
Longitude	-66.69498698
Suitable for Comparison to $PM_{2.5}$ NAAQS?	n/a

Parameter	Sampling Method	Analysis Method	Schedule	Spatial Scale	Monitoring Objective	Date Established
Ambient Temperature Average			1 in 6			
Ambient Pressure Average			1 in 6			
Lead TSP	Hi-Vol	Atomic Emission Spectrometry	1 in 6	Micro Scale	Source Oriented	2012/08/19

Parameter	Monitor Type
Lead	SLAMS

Site Purpose	Reference for Extreme downwind
Plans for the next 18 months	No changes
Other comments	Pb collocated

Site Name	EQB #40
Address	11 Final St. Las Vegas
City	Cataño
AQS Code	72-033-0004
PR County	Cataño
MSA/CSA	San Juan - Bayamón
Latitude	+18.43120758
Longitude	-66.14168262
Suitable for Comparison to $PM_{2.5}$ NAAQS?	N/A

Parameter	Sampling Method	Analysis Method	Schedule	Spatial Scale	Monitoring Objective	Date Established
Sulfur Dioxide	Instrumental	Pulsed Fluorescent	Continuous	Neighborhood	Population Exposure	1993/12/07
PM_{10}	R&P SA246B	Continuous	Urban	Population exposure	TEOM-AQI	2000/07/13
$PM_{2.5}$	R&P SA246B	Continuous	Urban	Population Exposure	TEOM- AQI	02/2015

Parameter	Monitor Type
Sulfur Dioxide	SLAMS
PM_{10}	SLAMS
$PM_{2.5}$	SLAMS

Site Purpose	Protection for the population
Plans for the next 18 months	New $PM_{2.5}$ continuous monitor
Other comments	AQI (PM_{10}, $PM_{2.5}$)

Site Name	EQB #5
Address	PR Rd. 165
City	Cataño
AQS Code	72-033-0008
PR County	Cataño
MSA/CSA	San Juan - Bayamón
Latitude	+18.4407744
Longitude	-66.12653082
Suitable for Comparison to $PM_{2.5}$ NAAQS?	NO

Parameter	Sampling Method	Analysis Method	Schedule	Spatial Scale	Monitoring Objective	Date Established
Ozone	Instrumental	Ultra Violet	Continuous	Urban	Population exposure	2004/07/22

Parameter	Monitor Type
Ozone	SLAMS

Site Purpose	Protection for the population
Plans for the next 18 months	NO_2 Monitor proposed to close 2015. $PM_{2.5}$ continuous monitor closed
Other comments	

Site Name	EQB #22
Address	Fajardo Lighthouse
City	Fajardo
AQS Code	72-053-0003
PR County	Fajardo
MSA/CSA	Humacao - Fajardo
Latitude	+18.38398349
Longitude	-66.61888794
Suitable for Comparison to $PM_{2.5}$ NAAQS?	Yes

Parameter	Sampling Method	Analysis Method	Schedule	Spatial Scale	Monitoring Objective	Date Established
$PM_{2.5}$	R&P Model 2025	Gravimetric	1 in 3	Regional	Regional Transport	1999/04/20
PM_{10}	Hi-Vol	Gravimetric	1 in 1	Neighborhood	Background	1989/03/05
PM_{10} Sulfate	Colorimetric		1 in 6	Neighborhood	Background	1998/01/05

Parameter	Monitor Type
$PM_{2.5}$	SLAMS
PM_{10}	SLAMS
PM_{10} Sulfate	SPM

Site Purpose	Reference and Background
Plans for the next 18 months	No changes
Other comments	

Site Name	EQB #15
Address	Barrio Jobos, Intersection Highway 3 & 707
City	N/A
AQS Code	72-057-0008
PR County	Guayama
MSA/CSA	Guayama
Latitude	+17.95789438
Longitude	-66.16501599
Suitable for Comparison to $PM_{2.5}$ NAAQS?	Yes

Parameter	Sampling Method	Analysis Method	Schedule	Spatial Scale	Monitoring Objective	Date Established
$PM_{2.5}$	R&P Model 2025	Gravimetric	1 in 3	Neighborhood	Population Exposure	1999/01/15
PM_{10}	Hi-Vol	Gravimetric	1 in3	Neighborhood	Population Exposure	1988/10/06
PM_{10} Sulfate	Hi-Vol	Colorimetric	1 in 6	Neighborhood	Population Exposure	1998/01/05

Parameter	Monitor Type
$PM_{2.5}$	SLAMS
PM_{10}	SLAMS
PM_{10} Sulfate	SPM

Site Purpose	Protection for the population
Plans for the next 18 months	No changes
Other comments	PM_{10} collocated monitor

Site Name	EQB #69
Address	At the south side of the police station
City	Guayama
AQS Code	72-057-0009
PR County	Guayama
MSA/CSA	Guayama
Latitude	+17.96763771
Longitude	-66.18747065
Suitable for Comparison to $PM_{2.5}$ NAAQS?	N/A

Parameter	Sampling Method	Analysis Method	Schedule	Spatial Scale	Monitoring Objective	Date Established
Sulfur Dioxide	Instrumental	Pulsed Fluorescence	Continuous	Neighborhood	Source Oriented	2001/11/14

Parameter	Monitor Type
Sulfur Dioxide	SLAMS

Site Purpose	Protection for the population
Plans for the next 18 months	No changes
Other comments	

Site Name	EQB #57
Address	Road 377 Bo. Quebrada
City	Guayanilla
AQS Code	72-059-0016
PR County	Guayanilla
MSA/CSA	Ponce
Latitude	+18.0451106
Longitude	-66.80225307
Suitable for Comparison to $PM_{2.5}$ NAAQS?	Yes

Parameter	Sampling Method	Analysis Method	Schedule	Spatial Scale	Monitoring Objective	Date Established
Ambient Average Temperature		Electronic	1 in 3			
Sample Average Barometric Pressure		Barometric Sensor	1 in 3			
$PM_{2.5}$	R&P Model 2025	Gravimetric	1 in 3	Neighborhood	Population Exposure	1999/01/15

Parameter	Monitor Type
$PM_{2.5}$	SLAMS

Site Purpose	Protection for the population
Plans for the next 18 months	No changes
Other comments	

Site Name	EQB # (new)
Address	
City	Guayanilla
AQS Code	72-059-0001
PR County	Guayanilla
MSA/CSA	Ponce
Latitude	
Longitude	
Suitable for Comparison to $PM_{2.5}$ NAAQS?	N/A

Parameter	Sampling Method	Analysis Method	Schedule	Spatial Scale	Monitoring Objective	Date Established
Sulfur Dioxide	Instrumental	Pulsed Fluorescent	Continuous	Neighborhood	Source Oriented	new
Lead TSP	Hi- Vol	Atomic Absorption	1 in 6	Micro Scale	Population Exposure	new
Ambient Temperature Average			1 in 6			
Ambient Pressure Average			1 in 6			

Parameter	Monitor Type
Sulfur Dioxide	SLAMS
Lead TSP	SLAMS

Site Purpose	Protection for the population
Plans for the next 18 months	New Site
Other comments	Near South Coast PREPA

Site Name	EQB #7
Address	USGS & Water Resources Bldg.
City	Guaynabo
AQS Code	72-061-0001
PR County	Guaynabo
MSA/CSA	San Juan - Bayamón
Latitude	+18.42565192
Longitude	-66.11584553
Suitable for Comparison to $PM_{2.5}$ NAAQS?	No

Parameter	Sampling Method	Analysis Method	Schedule	Spatial Scale	Monitoring Objective	Date Established
PM_{10}	Hi-Vol	Gravimetric	1 in 3	Micro Scale	Highest Concentration	1999/02/28
PM_{10} Sulfate	Hi-Vol	Colorimetric	1 in 6	Neighborhood	Population Exposure	1999/02/28

Parameter	Monitor Type
PM_{10}	SLAMS
PM_{10} Sulfate	SPM

Site Purpose	Determine Highest Concentration
Plans for the next 18 months	No changes
Other comments	PM_{10} Monitor is part of PM_{10} SIP for Guaynabo LMP

Site Name	EQB #24
Address	Electrical Substation
City	Guaynabo
AQS Code	72-061-0005
PR County	Guaynabo
MSA/CSA	San Juan - Bayamón
Latitude	+18.44009541
Longitude	-66.11445975
Suitable for Comparison to $PM_{2.5}$ NAAQS?	Yes

Parameter	Sampling Method	Analysis Method	Schedule	Spatial Scale	Monitoring Objective	Date Established
$PM_{2.5}$	R&P Model 2025	Gravimetric	1 in 3	Neighborhood	Population Exposure	1999/01/15
PM_{10}	Hi-Vol	Gravimetric	1 in 1	Neighborhood	Population Exposure	1988/01/05
PM_{10} Sulfate	Hi-Vol	Colorimetric	1 in 6	Neighborhood	Population Exposure	1998/01/05

Parameter	Monitor Type
$PM_{2.5}$	SLAMS
PM_{10}	SLAMS
PM_{10} Sulfate	SPM

Site Purpose	Protection for the population
Plans for the next 18 months	Reduce the frequency from daily to 1-3 days to the PM_{10} monitor
Other comments	PM_{10} Monitor is part of PM_{10} SIP for Guaynabo LMP, $PM_{2.5}$ collocated monitor, PM_{10} collocated monitor

Site Name	EQB #20
Address	Buchanan (Metropista)
City	Guaynabo
AQS Code	72-061-0006
PR County	Guaynabo
MSA/CSA	San Juan - Bayamón
Latitude	+18.2519
Longitude	-66.0714
Suitable for Comparison to $PM_{2.5}$ NAAQS?	Yes

Parameter	Sampling Method	Analysis Method	Schedule	Spatial Scale	Monitoring Objective	Date Established
$PM_{2.5}$						
Carbon Monoxide	Instrumental	Non Dispersive Infrared	Continuous	urban	High concentration	2014/07/08
NO_2	Instrumental	Chemilulinescence	Continuous	Urban	High Concentration	2015/02/20

Parameter	Monitor Type
$PM_{2.5}$	SLAMS
NO_2	SLAMS
Carbon Monoxide	SLAMS

Site Purpose	Protection for the population
Plans for the next 18 months	Add the $PM_{2.5}$ continuous
Other comments	Near Roads Site

Site Name	EQB #59
Address	Nenadich Street
City	Mayagüez
AQS Code	72-097-0006
PR County	Mayagüez
MSA/CSA	Mayagüez
Latitude	+18.20009892
Longitude	-67.14587984
Suitable for Comparison to $PM_{2.5}$ NAAQS?	Yes

Parameter	Sampling Method	Analysis Method	Schedule	Spatial Scale	Monitoring Objective	Date Established
Ambient Average Temperature		Electronic	1 in 3			
Sample Average Barometric Pressure		Barometric Sensor	1 in 3			
$PM_{2.5}$	R&P Model 2025	Gravimetric	1 in 3	Neighborhood	Source Oriented	2007/02/21

Parameter	Monitor Type
$PM_{2.5}$	SLAMS

Site Purpose	Protection for the population
Plans for the next 18 months	Intends to re localizer in same area in a location more accessible
Other comments	$PM_{2.5}$ temporary shutdown

Site Name	EQB #8
Address	Road 183
City	Juncos
AQS Code	72-077-0001
PR County	Juncos
MSA/CSA	Juncos
Latitude	+18.17793873
Longitude	-65.91548245
Suitable for Comparison to $PM_{2.5}$ NAAQS?	N/A

Parameter	Sampling Method	Analysis Method	Schedule	Spatial Scale	Monitoring Objective	Date Established
Sulfur Dioxide	Instrumental	Pulsed Fluorescent	Continuous	Neighborhood	Population Exposure	2007/10/03
Ozone	Instrumental	Ultra violet	Continuous	Neighborhood	Population Exposure	2007/10/03

Parameter	Monitor Type
Sulfur Dioxide	SLAMS
Ozone	SLAMS

Site Purpose	Protection for the population
Plans for the next 18 months	No changes
Other comments	Meteorological monitor

Site Name	EQB #56
Address	Civil Defense Bldg. Urb. San Antonio
City	Ponce
AQS Code	72-113-0004
PR County	Ponce
MSA/CSA	Ponce
Latitude	+18.00955831
Longitude	-66.62724916
Suitable for Comparison to $PM_{2.5}$ NAAQS?	Yes

Parameter	Sampling Method	Analysis Method	Schedule	Spatial Scale	Monitoring Objective	Date Established
$PM_{2.5}$	R&P Model 2025	Gravimetric	1 in 3	Neighborhood	Population Exposure	1999/01/15
PM_{10}	Hi-Vol	Gravimetric	1 in3	Neighborhood	High Concentration	1999/01/06
Carbon Monoxide	Instrumental	Non Dispersive Infrared	Continuous	Neighborhood	Population Exposure	2011/10/01
PM_{10} continuous	R&P SA246B	Continuous	Continuous	Neighborhood	TEOM-AQI	2011/10/05

Parameter	Monitor Type
$PM_{2.5}$	SLAMS
PM_{10}	SLAMS
CO	SLAMS
PM_{10-} continuous	SLAMS

Site Purpose	Determine High Concentration
Plans for the next 18 months	Add a $PM_{2.5}$ continuous monitor to AQI purposes.
Other comments	

Site Name	EQB #18
Address	Road Las Mareas
City	Salinas
AQS Code	72-123-0002
PR County	Salinas
MSA/CSA	Ponce
Latitude	+17.95300579
Longitude	-66.26146111
Suitable for Comparison to $PM_{2.5}$ NAAQS?	N/A

Parameter	Sampling Method	Analysis Method	Schedule	Spatial Scale	Monitoring Objective	Date Established
Sulfur Dioxide	Instrumental	Pulsed Fluorescent	Continuous	Neighborhood	Population Oriented	2008/09/24
Lead TSP	Hi-Vol	Atomic Emission Spectrometry	1 in 6	Micro Scale	Source Oriented	2011/10/18

Parameter	Monitor Type
Sulfur Dioxide	SLAMS
Lead	SLAMS

Site Purpose	Protection for the population
Plans for the next 18 months	No changes
Other comments	Meteorological monitor

Site Name	EQB #30
Address	Baldorioty de Castro Ave.
City	San Juan
AQS Code	72-127-0003
PR County	San Juan
MSA/CSA	San Juan- Bayamón
Latitude	+18.4498145
Longitude	-66.05250955
Suitable for Comparison to $PM_{2.5}$ NAAQS?	Yes

Parameter	Sampling Method	Analysis Method	Schedule	Spatial Scale	Monitoring Objective	Date Established
Ambient Average Temperature		Electronic	1 in 3			
Sample Average Barometric Pressure		Barometric Sensor	1 in 3			
$PM_{2.5}$	R&P Model 2025	Gravimetric	1 in 3	Neighborhood	Population Exposure	1999/03/21
Carbon Monoxide	Instrumental	Non Dispersive Infrared	Continuous	Neighborhood	High Concentration	1995/04/01

Parameter	Monitor Type
$PM_{2.5}$	SLAMS
Carbon Monoxide	SLAMS

Site Purpose	Determine High Concentration and protection of population
Plans for the next 18 months	Intents to relocate CO monitor in the same area in location with highest concentration.
Other comments	$PM_{2.5}$ collocated monitor; $PM_{2.5}$ temporary shutdown

Site Name	EQB #37 NCore Station
Address	Regional Jail of Bayamón
City	Bayamón
AQS Code	72-021-0010
PR County	Bayamón
MSA/CSA	San Juan - Bayamón
Latitude	+18.42008912
Longitude	-66.1506155
Suitable for Comparison to $PM_{2.5}$ NAAQS?	N/A

Parameter	Sampling Method	Analysis Method	Schedule	Spatial Scale	Monitoring Objective	Date Established
Sulfur Dioxide	Instrumental	Pulsed Fluorescent	Continuous	Neighborhood	Population Exposure	2011/03/16
Carbon Monoxide	Instrumental	Non Dispersive Infrared	Continuous	Neighborhood	Population Exposure	2011/03/16
Lead TSP	Hi-Vol	Emission Spectrometry ICAP	1 in 6	Neighborhood	Population Exposure	2011/03/22
Oxide Nitrogen	Instrumental 699	Chemiliminescence Teledyne API	Continuous	Neighborhood	Population Exposure	2014/05/21
Oxide Nitrogen (NOy)	Instrumental 699	Chemiliminescence Teledyne API	Continuous	Neighborhood	Population Exposure	2014/05/21
Ozone	Instrumental 087	Ultra violet absorption	Continuous	Neighborhood	Population Exposure	2014/05/21
PM_{10}	R&P Model 2025	Gravimetric	1-3	Neighborhood	Population Exposure	
$PM_{2.5}$	R&P Model 2025	Gravimetric	1-3	Neighborhood	Population Exposure	
$PM_{2.5}$/ PM_{10}	Teledyne 602 Beta	Beta Plus Particle measurement System	Continuous	Neighborhood	Population Exposure	

Parameter	Monitor Type
Sulfur Dioxide	SLAMS
Carbon Monoxide	SLAMS
Lead TSP	SLAMS
Oxide Nitrogen	SLAMS
Oxide Nitrogen (NOy)	SLAMS
Ozone	SLAMS
$PM_{2.5}$	SLAMS
PM_{10}	SLAMS
$PM_{2.5}/PM_{10}$	SLAMS

Site Purpose	Protection for the population
Plans for the next 18 months	Add a $PM_{2.5}$ speciation monitor and $PM_{2.5}$ continuous as part of NCore
Other comments	The PM_{10} and $PM_{2.5}$ filter was install but EQB have issues with the warranty of the Equipment