



Update on the Air Quality Monitoring Strategy and NAQI Stations Project

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Presentation Outline

- Update on AQM Strategy
- Update on the NAQI Stations Project
- Background
- Problem Statement
- DEA Intervention
- Overview of NAQI Stations
- NAQI Project Implementation
- Consultation Process
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1. Update on AQM Strategy

Background

- DEA presented the National Air Quality Monitoring Strategy at the Annual Air Quality Governance Lekgotla last year;
- This Strategy seeks to provide **GUIDANCE** for effective air quality monitoring in South Africa;
- This strategy will also identify:
 - Which areas **MUST** monitor ambient air quality continuously?
 - Which areas **MAY** monitor continuously?
 - In which areas is it **NOT ADVISABLE** to monitor continuously?

Proposed Monitoring Categories

Recommendations

MUST

- Level 1 - Core monitoring of ALL pollutants using reference methods

MAY

- Level 2 Requirements to install continuous monitoring **MUST** be informed by screening
- Monitoring **MUST** include PM and SO₂ and O₃
- Other specific pollutants can be considered
- No requirement to monitor all pollutants

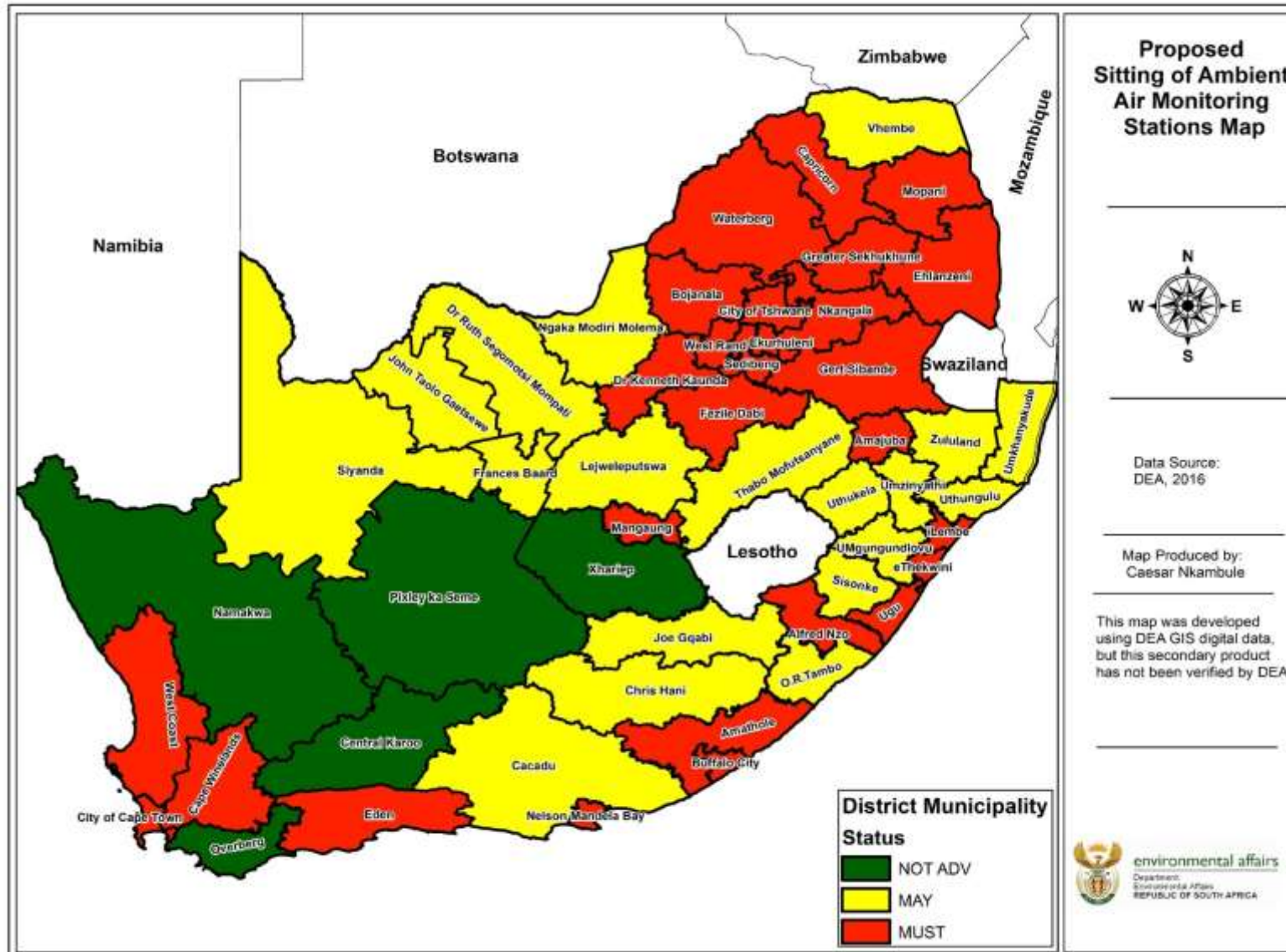
NOT ADVISABLE

- Level 3 – Regularly conducting screening monitoring in order to assess AQ status
- In case of deteriorating AQ levels, Level 2 monitoring **MUST** be considered

What Informed the Classification?

- **Number of NAEIS Facility** reporting – both Section 21 facilities and Mine and Quarries
 - Gives an indication on Listed Activities
 - A proxy on emissions
- **From Stats SA** – Number of households using dirty fuel for heating and cooking
 - Gives an indication on the domestic emissions
- First level of classification – down to **METRO/DISTRICT LEVEL**
- Refined to **LOCAL MUNICIPAL** level for the **MUST** areas based on the NAEIS statistics

National Overview of AQM Strategy



2. Update on the NAQI Stations Project

Background

- Currently there are over **130** fully automated air quality monitoring stations owned by various spheres of government across the country.
- Majority of these stations are located in areas with the highest density of people in order to measure human exposure to air pollution.
- The data from these monitoring stations provide valuable information regarding the state of ambient air quality that the citizens of the Republic are exposed to.
- In addition to providing information on the state of air, data from these stations has been used to develop the National Air Quality Indicator (NAQI) for South Africa – **Presentation by NAQO.**
- The NAQI is based on an annual measure of particulates (PM10) and sulphur dioxide (SO2), two of the most prevalent pollutants in the country.
- The NAQI is based on a **FUNCTIONAL** and **OPERATIONAL** monitoring network, the NAAQMN.

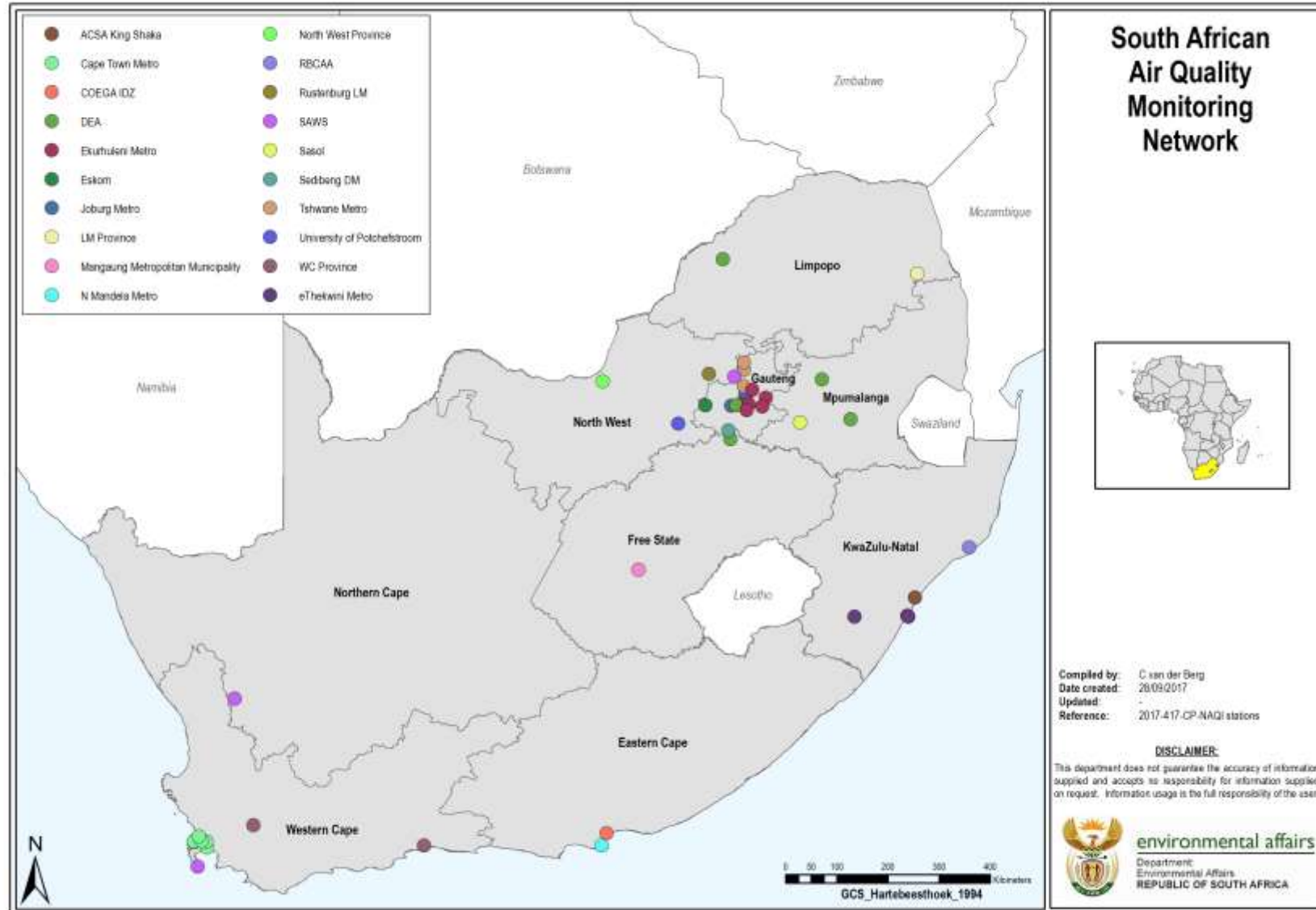
Problem Statement

- The NAQI was based on networks reporting to the South African Air Quality Information System (SAAQIS), and the number of stations reporting was not fixed.
- The number of monitoring stations reporting to the SAAQIS is continually fluctuating as new stations come online or the existing networks become non-operational and stop reporting to SAAQIS.
- As a result, the NAQI was continually being informed by an **EVER-CHANGING TARGET**, thereby making its calculation inconsistent over the calculation period.
- Commissioning of ambient air quality monitoring stations has been an immense investment by all spheres of government (a monitoring station cost between R2 mil to R3 million depending on the number of instruments installed at the station).
- What has emerged over the years is that many provinces and municipalities have been unable to manage and maintain their monitoring stations at the required level in order to produce credible air quality data, primarily due to the following:
 - No budgetary provisions for maintenance and overall operation;
 - Lack of skills and capacity;
 - Lack of proper planning for management of stations;
 - No provision for instrument recapitalization.

DEA Intervention

- In light of the current challenges with most of these stations, DEA took a resolution to assist some of the Provinces and Municipalities by outsourcing the overall management of the stations with a view to have a consistent reporting of NAQI going forward.
- A **FIXED** number of stations measuring PM10, PM2.5 and SO2 from 2015 have been identified for the reporting of the NAQI.
- Forty-three (43) stations have been selected for the NAQI reporting.
- These NAQI stations represent the spectrum of the National Ambient Air Quality Monitoring Network (NAAQMN) stations characterised by:
 - Industrial
 - Urban
 - Residential
 - Traffic
 - Background ambient conditions across the country

Proposed NAQI Stations



Project Implementation

Project Implementation

- DEA will procure and manage the project
- A Project Steering Committee (PSC) will be established, made up of NAQI network owners
- The service provider will commission new instruments in some of the sites, where new instruments will be needed
- The procurement for the new equipment will be limited to only PM_{10} , $PM_{2.5}$ & SO_2 instruments as the indicator pollutants

Consultation Process

- DEA currently in consultation with network owners;
- The following networks were consulted:
 - Gauteng;
 - Western Cape;
 - KwaZulu Natal;
- **Networks still to be consulted (Lekgotla):**
 - LEDET;
 - North West;
 - Free State;
 - Eastern Cape;
 - Private Stations

Proposed Gauteng Province NAQI Stations

Item	Station Name	Owner	Station Type
1.	Alexandra	City of Johannesburg	Suburban (Low Income Residential Settlements)
2.	Bucceleugh	City of Johannesburg	Traffic
3.	Jabavu	City of Johannesburg	Suburban (Low Income Residential Settlements)
4.	Bedfordview	Ekurhuleni	Traffic
5.	Thokoza	Ekurhuleni	Suburban (Low Income Residential Settlements) + Industrial
6.	Etwatwa	Ekurhuleni	Suburban (Low Income Residential Settlements)
7.	Olifantsfontein	Ekurhuleni	Industrial

Proposed Gauteng Province NAQI Stations

Item	Station Name	Owner	Station Type
8.	Springs	Ekurhuleni	Industrial
9.	Diepkloof	SAWS	Suburban (Low Income Residential Settlements)
10.	Elandsfontein	Eskom	Peri-Urban
11.	Olievenhoutbosch	City of Tshwane	Suburban (Low Income Residential Settlements)
12.	Soshanguve (Bodibeng)	City of Tshwane	Suburban (Low Income Residential Settlements)
13.	Rosslyn	City of Tshwane	Industrial
14.	Vanderbijlpark	Sedibeng	Industrial

Proposed WC Province NAQI Stations

Item	Station Name	Owner	Station Type
15.	City Hall	City of Cape Town	Traffic
16.	Foreshore	City of Cape Town	Traffic
17.	Khayelitsha	City of Cape Town	Suburban (Low Income Residential Settlements)
18.	Bellville South	City of Cape Town	Industrial
19.	Goodwood	City of Cape Town	Suburban (Medium & Upper Residential Settlements)
20.	Table View	City of Cape Town	Suburban (Medium & Upper Residential Settlements)
21.	George	WC DEA&DP	Suburban (Medium & Upper Residential Settlements)

Proposed WC Province NAQI Stations

Item	Station Name	Owner	Station Type
22.	Worcester	WC DEA&DP	Suburban (Medium & Upper Residential Settlements)
23.	Cape GAW	SAWS	Background

Proposed KZN Province NAQI Stations

Item	Station Name	Owner	Station Type
24.	City Hall	eThekwini	Traffic
25.	Ganges	eThekwini	Traffic
26.	Settlers	eThekwini	Industrial
27.	Southern Works	eThekwini	Industrial
28.	ACSA (King Shaka International Airport)	ACSA	Traffic
29.	Richards Bay (CBD)	RBCAA	Urban

Proposed NW Province NAQI Stations

Item	Station Name	Owner	Station Type
30.	Mafikeng	NW READ	Urban
31.	Marikana	Rustenburg LM	Suburban (Low Income Residential Settlements)
32.	Welgegund	NW University	Background
33.	Xanadu	SAWS	Background

Proposed LM Province NAQI Stations

Item	Station Name	Owner	Station Type
34.	Lephalale	DEA-SAWS	Urban
35.	Phalaborwa	LEDET	Urban

Proposed FS Province NAQI Stations

Item	Station Name	Owner	Station Type
36.	Zamdela	DEA-SAWS	Suburban (Low Income Residential Settlements)
37.	Pelonomi Hospital	Mangaung Metro	Urban

Proposed MP Province NAQI Stations

Item	Station Name	Owner	Station Type
38.	Middleburg	DEA-SAWS	Urban
39.	Sasol Club	Sasol	Industrial

Proposed EC Province NAQI Stations

Item	Station Name	Owner	Station Type
40.	Walmer	Nelson Mandela Bay Metro	Urban
41.	Saltworks	Coega IDZ	Industrial

Proposed NC Province NAQI Stations

Item	Station Name	Owner	Station Type
42.	Hantam (Karoo)	SAWS	Background

Outcomes of the Consultations

- Dual vs Single PM Instrument
- Some metros have already committed to manage the NAQI Stations project in-house
- Others will be managed by the appointed service provider
- Procurement of required instruments will be done in certain stations
- Procurement of spares and consumables also required
- Procurement of data logging systems compatible with the new SAAQIS is essential
- All NAQI Stations will be reporting data “**LIVE**” to SAAQIS

Thank You