

# NATIONAL STATUS OF AIR QUALITY AND AIR QUALITY STANDARDS



## Climate Change and Air Quality



**environmental affairs**

Department:  
Environmental Affairs  
REPUBLIC OF SOUTH AFRICA

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**PCEA Briefing AQM**  
**Parliament**  
**28 October 2014**



# Presentation Outline

- Air Quality Legislation in South Africa: APPA 1965 to AQA 2004
- Air Quality Standards
- State of Air in South Africa: 2005 – 2013



# Air Pollution Prevention Act (45) of 1965 - APPA

- 1965 to 2005: approach to air quality management in South Africa was informed and driven by the Atmospheric Pollution Prevention Act (Act No. 45 of 1965) (APPA)
- APPA was regarded ineffective as it had not defended South Africa's air quality from the emergence of various air pollution "hotspots" around the country.



# APPA 1965

- Specifically focused on individual source emissions – no consideration of the accumulative impacts of emissions
- Scheduled processes – mostly regulating only Particulate Matter (PM) and reporting was also not formally provided for in some cases
- Largely based on agreements between Chief Pollution Control Officer (CAPCO) and facility
- No consideration of ambient air quality



# APPA 1965

- APPA was broadly regarded as being outdated and un-constitutional
- Non-conformity with:
  - Constitution of the Republic of South Africa Act, 1996
  - National Environmental Management Act, 1998
  - Promotion of Administrative Justice Act, 2000
  - Promotion of Access to Information Act, 2000



# NEM: Air Quality Act (39) of 2004 – AQA

- The National Environmental Management Air Quality Act (39) “AQA” was established in 2004. On 9 September 2004, under section 64(1), read with section 64(2) of the AQA, the Minister of Environmental Affairs and Tourism, determined 11 September 2005 as the date on which the AQA, with the exclusion of sections 21, 22, 36 to 49, 51(1)(e), 51(1)(f), 51(3), 60 and



# AQA 2004

- Distinct shift from exclusively source-based air pollution control to holistic and integrated effects-based air quality management
- Focuses on adverse impacts of air pollution on the ambient environment
- Sets standards for pollutant levels in ambient air
- Sets emission standards to minimise the amount of pollution that enters the



# Repeal of the APPA 1965

- Minister's notice bringing the remainder of the NEM: AQA into operation, namely, sections 21, 22, chapter 5, 51(1)(e), 51(1)(f), 51(3), 60 and 61 was published on 26 March 2010
- 31 March 2010: publication of Section 21 Notice

**APPA 1965  
LAID TO  
REST**





# National Environmental Management: Air Quality Act (39) of 2004 - AQA

- The following are objects of the AQA:
  - Generally to give effect to Section 24(b) of the Constitution of South Africa (1996) in order to enhance the quality of ambient air for the sake of securing an environment that is not harmful to the health and well-being of people.
  - To protect the environment by providing reasonable measures for:
    - the protection and enhancement of the quality of air in the Republic;
    - the prevention of air pollution and ecological degradation; and
    - securing ecologically sustainable development while promoting justifiable economic and social development



# National Environmental Management: Air Quality Act (39) of 2004 - AQA

- Section 7 of the AQA instructs the Minister to establish a National Framework (NF) for achieving the object of the Act.
- The National Framework includes, among others:
  - Mechanisms, systems and procedures to attain compliance with ambient air quality standards;
  - National norms and standards for the control of emissions from point and non-point sources;
  - National norms and standards for air quality monitoring;
  - Any other matter which the Minister considers necessary for achieving the object of the Act; etc.



# S7: National Framework

- Section 7(1) of the AQA - the Minister must, within 2 years, by notice in the Gazette, establish a National Framework (NF) and such must be reviewed every 5 years – 2007 NF repealed by 2012 NF
- The NF serves as a blueprint for air quality management and aims to achieve the air quality objectives as described in the preamble of the AQA.





# S8: AQ Monitoring and Information Management

- Minister must, in the NF, establish national standards for municipalities and provinces to monitor ambient air quality, among other requirements, in order to report compliance with ambient air quality standards.
- Different spheres of government have invested in continuous air pollution monitoring hardware across the country to meet this objective – [List available in pack](#)



# S9: National Ambient Air Quality Standards

- The AQA defines air quality that is not harmful to health and well-being through national ambient air quality standards
- In essence this represents acceptable levels of pollution beyond which the people are deprived of their Section 24 right is to air that is safe and not harmful to their health and well-being
- Reflects the continuous improvement approach of the AQA



### 3.1 National Ambient Air Quality Standards for Sulphur Dioxide (SO<sub>2</sub>)

Averaging Period	Concentration	Frequency of Exceedence	Compliance Date
10 minutes	500 µg/m <sup>3</sup> (191 ppb)	526	Immediate
1 hour	350 µg/m <sup>3</sup> (134 ppb)	88	Immediate
24 hours	125 µg/m <sup>3</sup> (48 ppb)	4	Immediate
1 year	50 µg/m <sup>3</sup> (19 ppb)	0	Immediate

The reference method for the analysis of sulphur dioxide shall be ISO 6767

### 3.2 National Ambient Air Quality Standards for Nitrogen Dioxide (NO<sub>2</sub>)

Averaging Period	Concentration	Frequency of Exceedence	Compliance Date
1 hour	200 µg/m <sup>3</sup> (106 ppb)	88	Immediate
1 year	40 µg/m <sup>3</sup> (21 ppb)	0	Immediate

The reference method for the analysis of nitrogen dioxide shall be ISO 7996

### 3.3 National Ambient Air Quality Standards for Particulate Matter (PM<sub>10</sub>)

Averaging Period	Concentration	Frequency of Exceedence	Compliance Date
24 hours	120 µg/m <sup>3</sup>	4	Immediate – 31 December 2014
24 hours	75 µg/m <sup>3</sup>	4	1 January 2015
1 year	50 µg/m <sup>3</sup>	0	Immediate – 31 December 2014
1 year	40 µg/m <sup>3</sup>	0	1 January 2015

The reference method for the determination of the particulate matter fraction of suspended

### 3.4 National Ambient Air Quality Standards for Ozone (O<sub>3</sub>)

Averaging Period	Concentration	Frequency of Exceedence	Compliance Date
8 hours (running)	120 µg/m <sup>3</sup> (61 ppb)	11	Immediate
The reference method for the analysis of ozone shall be UV photometric method as described in SANS 13964			

### 3.5 National Ambient Air Quality Standards for Benzene (C<sub>6</sub>H<sub>6</sub>)

Averaging Period	Concentration	Frequency of Exceedence	Compliance Date
1 year	10 µg/m <sup>3</sup> (3.2 ppb)	0	Immediate – 31 December 2014
1 year	5 µg/m <sup>3</sup> (1.6 ppb)	0	1 January 2015
The reference methods for the sampling and analysis of benzene shall either be EPA compendium method TO-14 A or method TO-17			





### 3.6 National Ambient Air Quality Standards for Lead (Pb)

Averaging Period	Concentration	Frequency of Exceedence	Compliance Date
1 year	0.5 $\mu\text{g}/\text{m}^3$	0	Immediate

The reference method for the analysis of lead shall be ISO 9855

### 3.7 National Ambient Air Quality Standards for Carbon Monoxide (CO)

Averaging Period	Concentration	Frequency of Exceedence	Compliance Date
1 hour	30 $\text{mg}/\text{m}^3$ (26 ppm)	88	Immediate
8 hour (calculated on 1 hourly averages)	10 $\text{mg}/\text{m}^3$ (8.7 ppm)	11	Immediate

The reference method for analysis of Carbon Monoxide shall be ISO 4224



### 3. NATIONAL AMBIENT AIR QUALITY STANDARD FOR PARTICULATE MATTER (PM<sub>2.5</sub>)

Averaging Period	Concentration	Frequency of Exceedence	Compliance Date
24 hours	65 µg/m <sup>3</sup>	4	Immediate - 31 December 2015
24 hours	40 µg/m <sup>3</sup>	4	1 January 2016 - 31 December 2029
24 hours	25 µg/m <sup>3</sup>	4	1 January 2030
1 year	25 µg/m <sup>3</sup>	0	Immediate - 31 December 2015
1 year	20 µg/m <sup>3</sup>	0	1 January 2016 - 31 December 2029
1 year	15 µg/m <sup>3</sup>	0	1 January 2030

The reference method for the determination of PM<sub>2.5</sub> fraction of suspended particulate matter shall be EN 14907

Section 10 and 11 provide for the establishment of provincial and local ambient air quality standards respectively with the provision that such standards “may not alter any such national standards for the province or municipality except by stricter standards...”



# S14: Appointment of Air Quality Officers

- Minister, MEC and each municipality must designate an official within their jurisdictions and such persons must be responsible for co-ordinating air quality management in their respective spheres.
- Air Quality Officers Functions are further stipulated in the National Framework.
- National Air Quality Officer: Chief Director – Air Quality Management



# S15: Air Quality Management Plans

- Development of air quality management plans (AQMPs).
- 15 (1) provinces and national departments' requirements to establish and implement AQMPs
- 15 (2) municipalities to do the same and include their AQMPs in their integrated development plans (IDPs).



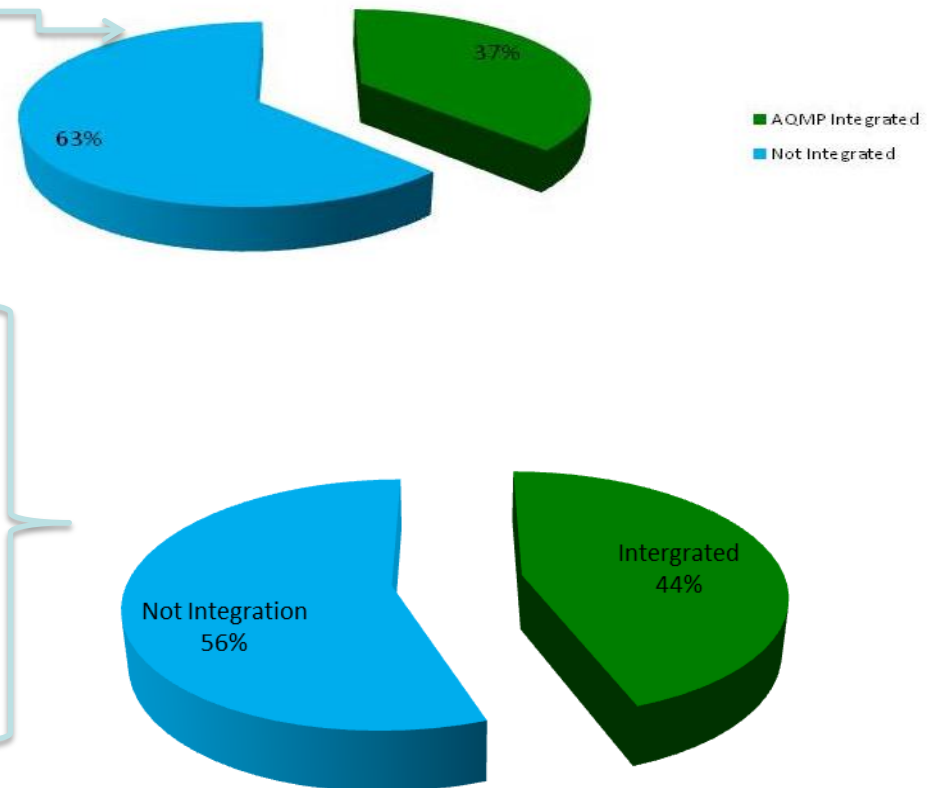
# Air Quality Management Planning

Strategy development (AQA S.15): Each province/ municipality is responsible for the development of AQMP and integration into the EIP/IDP

## AQMP development

<b>Provinces</b>	5 of 8
<b>Metros</b>	7 of 8
<b>Districts</b>	8 of 20 (3 in progress)
<b>Locals</b>	8 of 18

## Integration into other plans



# S16 & 17 AQMPs

- Section 16 stipulates the contents of the AQMPs and section 17 deals with the reporting requirements of the AQMPs.
- The NF serves as the Department's AQMP
- AQMP manual to guide the development and management of AQMPs in 2007 and this manual was revised in 2011



# Purpose of AQMPs

- Identify all air pollution sources
- Develop a baseline report of the status quo
- Set air quality management objectives or “desired state”
- Identify resources required to get to the desired state
- Implement, monitor and report against the AQMP



# S18: National Air Quality Priority Areas

- Declaration of Priority areas:
  - Ambient standards are being exceeded
  - Minister or MEC reasonably believes that such may be the case
- Criteria:
  - National: crosses provincial boundaries or MEC requests Minister
  - Provincial: within a provincial boundary

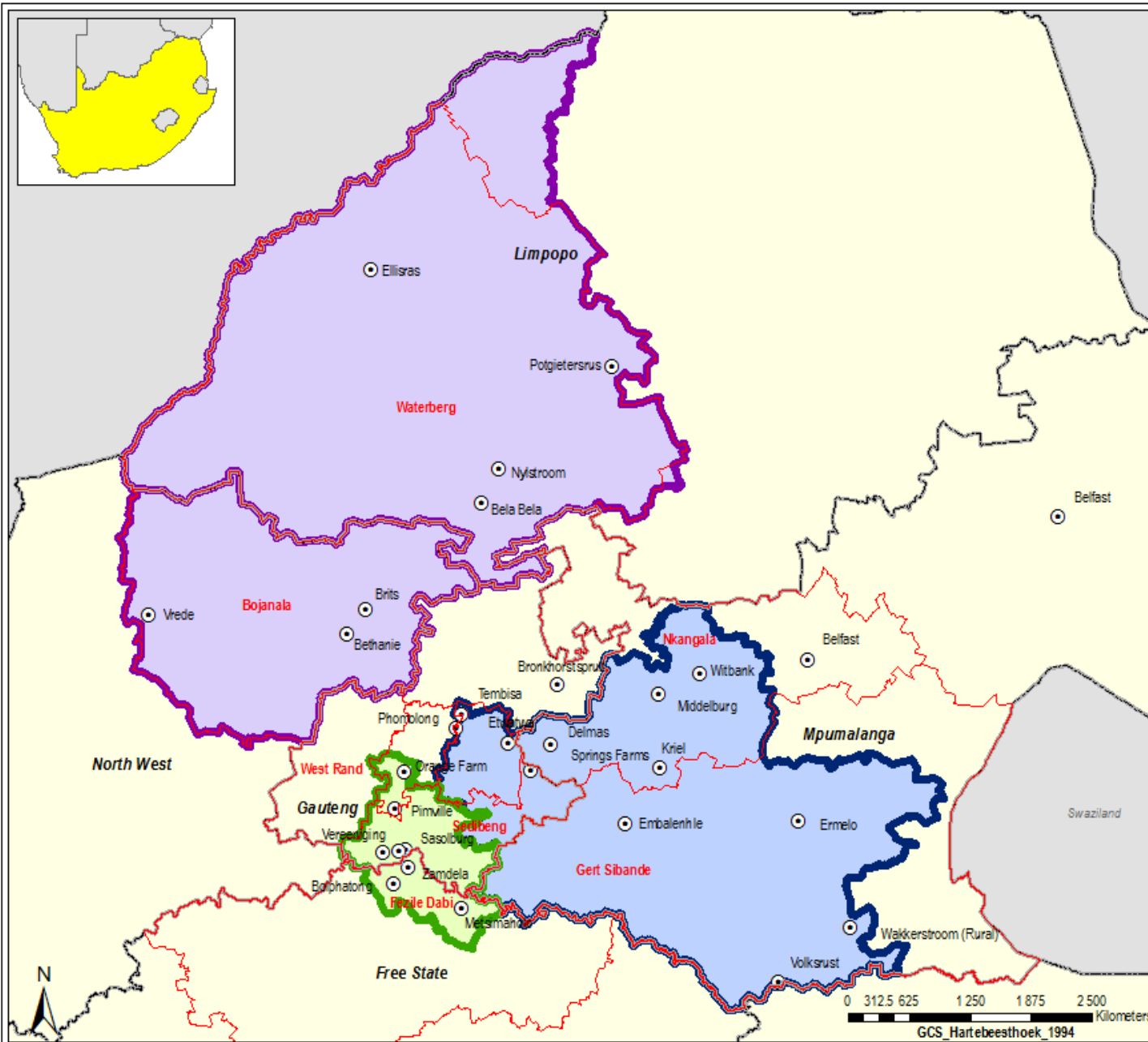
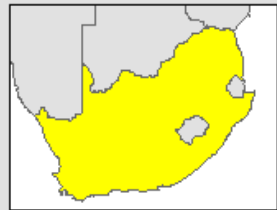




# S19-20: Management and Regulations of Priority Areas

- AQMP must be established following a consultative and participatory process
- Regulations may be developed to enforce the AQMP
- To date 3 priority areas have been declared and action is underway to address the problems:
  - Vaal Triangle Airshed Priority Area (VTAPA)
  - Highveld Priority Area (HPA)
  - Waterberg-Bojanala Priority Area (WBPA)





## VTAPA/HPA & WPA Priority Areas

### LEGEND:

- Towns
- Bojanala & Waterberg
- Vaal TriAngle Airshed
- Highveld
- District Municipalities (DMs)
- SA Provinces

Compiled by: C van der Berg  
 Date created: 17/04/2012  
 Updated: -  
 Reference: M./GIS operational/CvdBerg/tasks/  
 2012-017-CP-Priority areas

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0 312.5 625 1250 1875 2500  
 Kilometers

GCS\_Hartebeesthoek\_1994

# Main Air Pollution Sources in the Priority Areas

**Challenging:  
Quantifying  
and Controlling**

**Response:  
Dust Control  
Regulations**

**Command and  
Control: AELs**

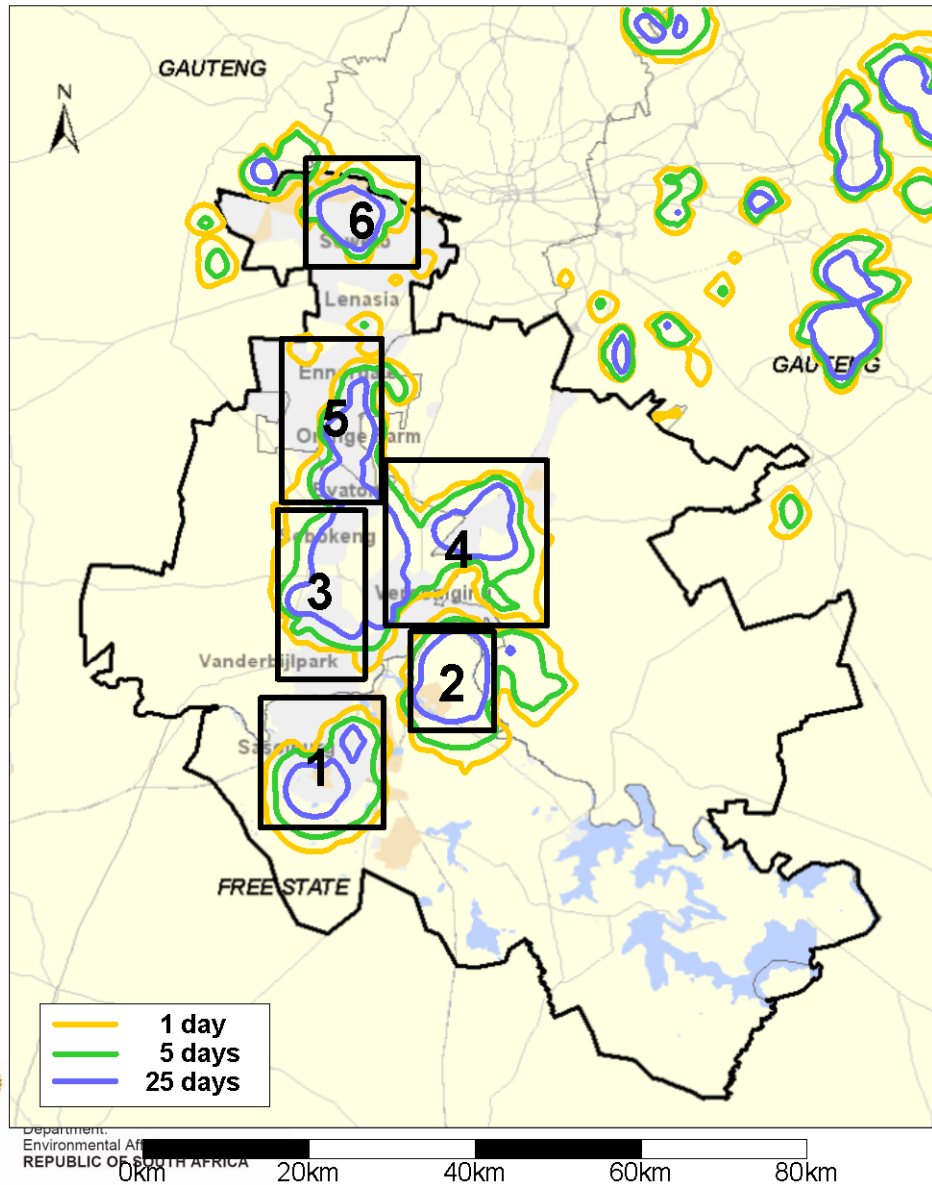
**Vehicle  
Emissions  
Strategy**

- Domestic Burning of Dirty Fuels in densely populated areas
- Dust and Gaseous Emissions from Mining Operations
- Industrial Emissions (e.g. power stations, pulp complexes) – APPA consequences
- Vehicle Tail-Pipe Emissions



# Hotspots in the VTAPA

FREQUENCY OF EXCEEDANCE OF DAILY PM10 LIMIT OF 75  $\mu\text{g}/\text{m}^3$   
ALL CURRENT SOURCES

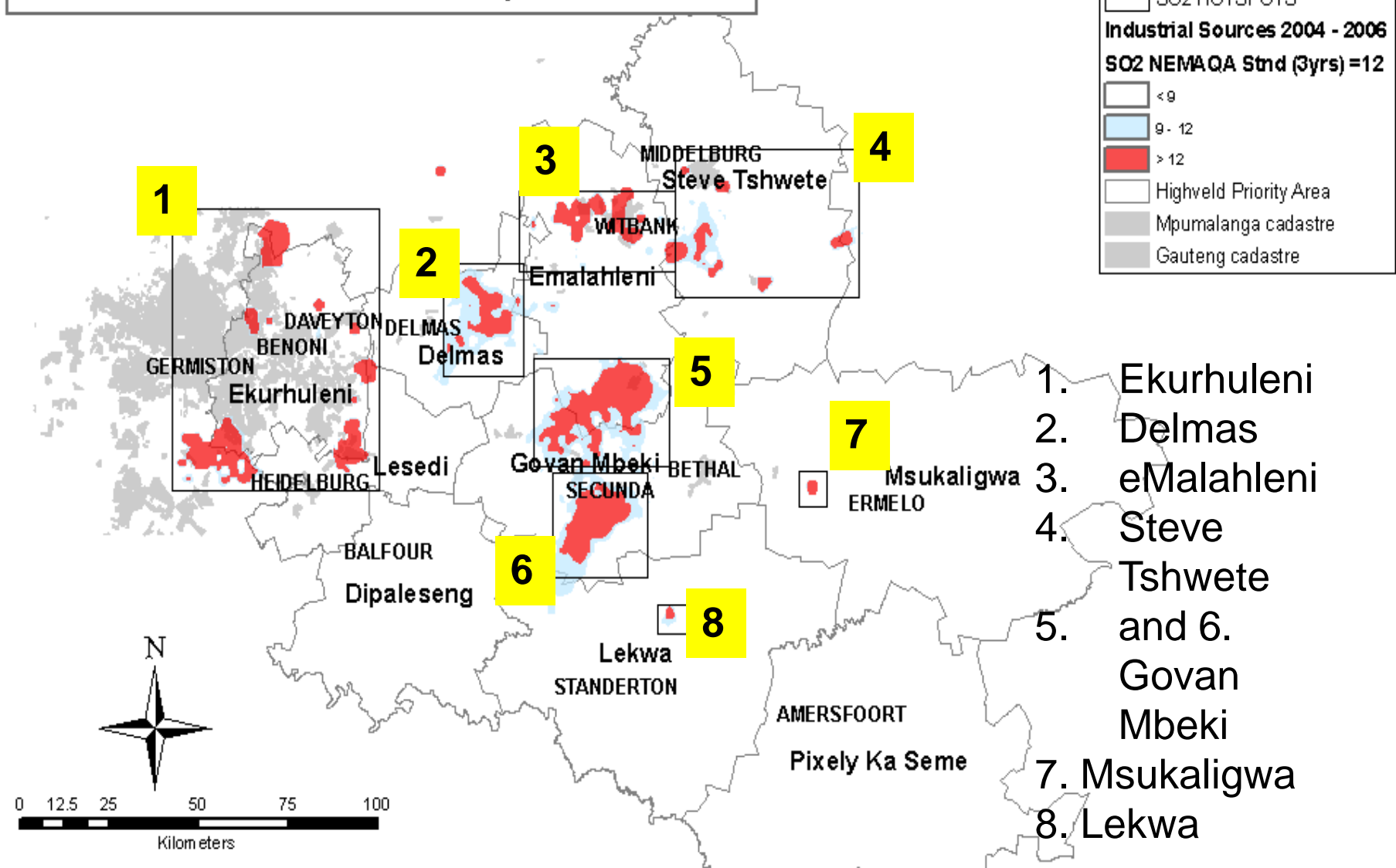
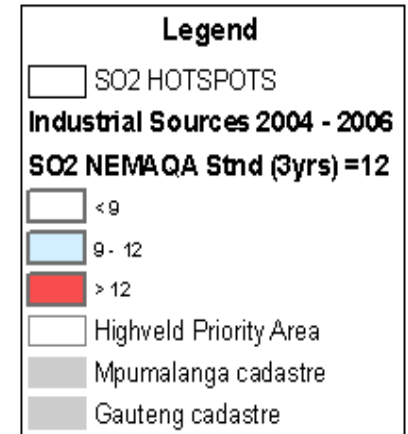


1. Sasolburg
2. Vereeniging
3. Vanderbijlpark
4. Meyerton
5. Orange Farm
6. Soweto

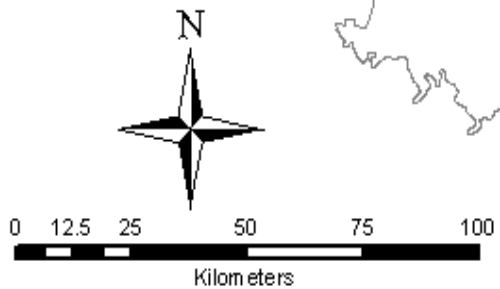


# SO<sub>2</sub> Hotspots in the HPA

## Baseline SO<sub>2</sub> Hotspots

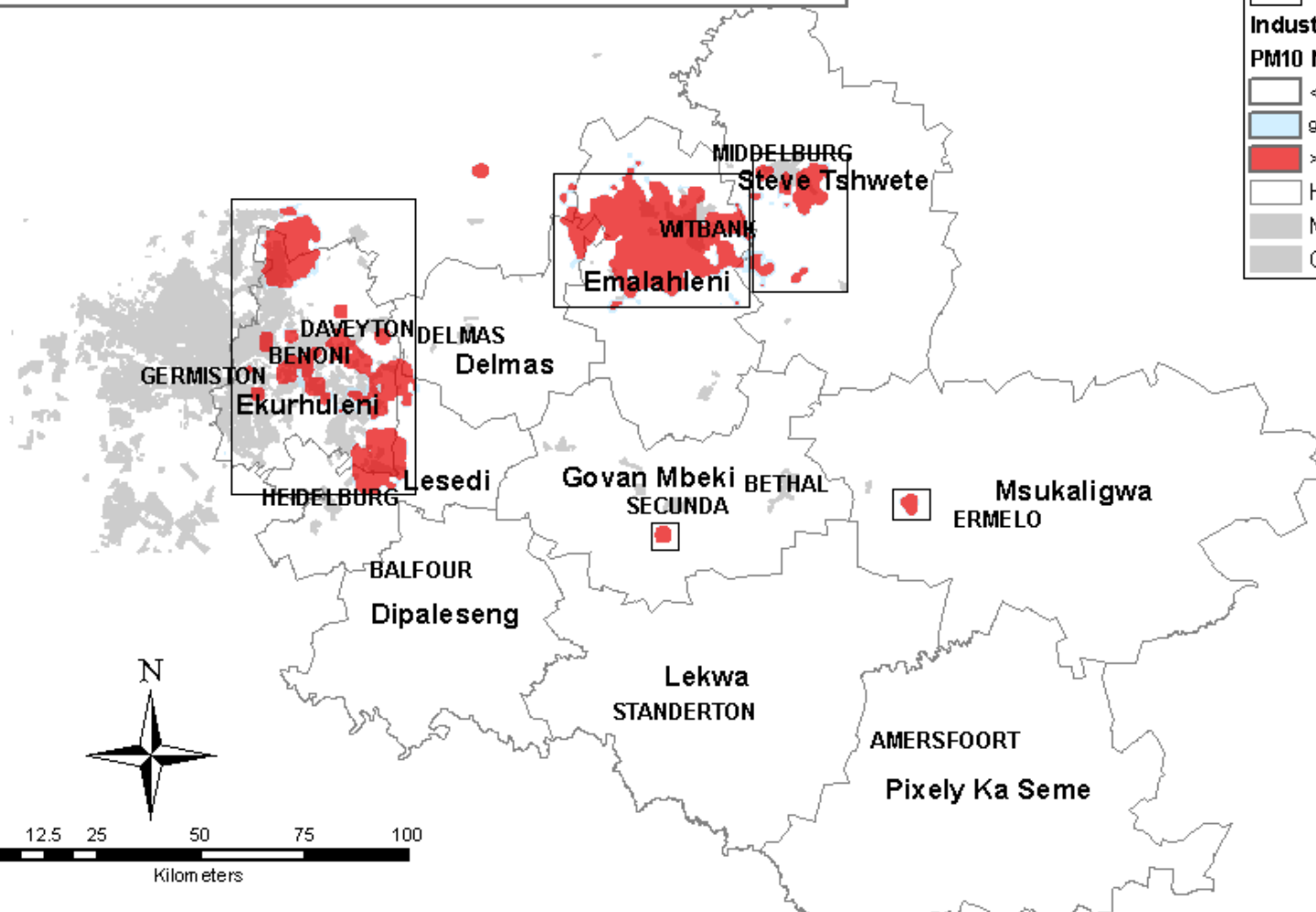
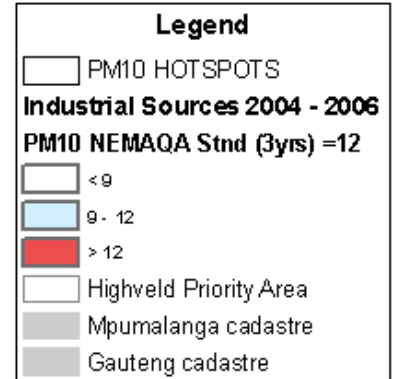


1. Ekurhuleni
2. Delmas
3. eMalahleni
4. Steve Tshwete
5. and 6. Govan Mbeki
7. Msukaligwa
8. Lekwa



# PM<sub>10</sub> Hotspots in the HPA

## Baseline PM10 Hotspots



# National Environmental Management: Air Quality Act (39) of 2004

- **Regulation of Industrial Facilities:** Section 21 of the AQA instructs the Minister to publish a list of activities which result in atmospheric emissions and to establish minimum emission standards in respect of a substance or mixture of substances resulting from those listed activities – **not only PM** (document available in the AQA booklet)
- The consequence of the listing is prescribed in Section 22; and it is -
  - To conduct a listed activity in the Republic, any person requires a Provisional Atmospheric Emission License or an Atmospheric Emission License
  - Atmospheric Emission Licensing Authorities are defined in Section 36



# S23 – S25: Declaration of Controlled Emitters (Outside S21)

- Declaration of controlled emitters:
  - Significant sources in terms of cumulative impacts but as single pollution units do not cause major problems
  - Do not require an AEL and EIA to operate
  - Currently (small boilers, temporary asphalt plants); in process small scale char and charcoal plants
  - Partnership with the SABS has been used successfully in the implementation of these sections as well as S9





# S29: Pollution Prevention Plans

- Minister or MEC may declare any substance contributing to air pollution as a priority pollutant
- Current work:
  - Draft Notice to declare Greenhouse Gases as priority pollutants
    - To require mitigation plans according to country's international commitments
    - To enable monitoring, evaluation and reporting against those mitigation plans
    - Finalization awaiting design of carbon budgets



# Other Regulations: Dust Control

- The purpose of the regulations is to prescribe general measures for the control of dust (settleable particulate matter) in all areas.
- Differentiation is made between residential areas and non-residential areas
- Empowers the Air Quality Officer to hold “polluters” accountable
- These regulations cover sources such as mine dumps and mining generated dust, among others.



# Model Air Quality Municipal By-Laws

- Model Air Quality Management by-law for easy adoption and adaptation by Municipalities – Established in February 2009.
- Regulating air pollution within the area of the municipality's jurisdiction and provide a legal and administrative framework to deal with localised sources of air pollution such as sugar-cane burning



# Regulations Prescribing the AEL Processing Fee Calculator:

- Draft Regulations were Published in terms of Section 53(o) and section 37,44,45 & 47 read with section 57(1) of AQA.
- The purpose:
  - To prescribe the atmospheric emission licence processing fee calculator
  - To regulate the administrative process of determining the prescribed processing fees and the prescribed processing fees bands, as contemplated in Chapter 5 of NEM: AQA.



# Air Dispersion Modelling Regulations

- The draft regulations published on 11 July 2014 (Notice 589, Government Gazette No.37804) in terms of Section 53 of AQA.
- The purpose of these regulations is to regulate air dispersion modelling for regulatory processes to enable authorities to “compare apples to apples”



# Non-Conventional Sources of Air Pollution

- Strategy to Address Air Pollution in Dense Low-Income Settlements
  - Difficult to control: cannot use command and control
  - **Massive impact – breathing zone**
  - Lack of alternative energy sources
  - Require government concerted effort
- Draft Strategy developed:
  - Presented to Stakeholders
  - Approved by MINTECH and MINMEC for tabling to FOSAD Clusters and Cabinet Process



# Non-Conventional Sources of Air Pollution

- Integrated Strategy on the Control of Vehicle Emissions
  - Impacts on air pollution and climate change
  - Socio-economic issue
  - Also at breathing zone
  - Requires concerted government effort (clean fuels, emissions testing, public transport)
- Draft Strategy completed:
  - Approval by FOSAD Clusters for tabling to cabinet process



# State of Air: 2005-2013

- Minimum Data Requirements:
  - Sampling locations representing regional, urban, neighbourhood, and source-oriented spatial scale
  - Long sampling periods and durations that represent range of source contribution conditions
  - Sampling site measuring criteria pollutants
  - Sampling sites generating an average data recovery of 80% or above





# What is covered...

- Annual averages of PM<sub>10</sub>, PM<sub>2.5</sub> and SO<sub>2</sub> data from 2005 to 2013
- National Air Quality Indicator
- Data from some stations have been excluded due to low data recovery



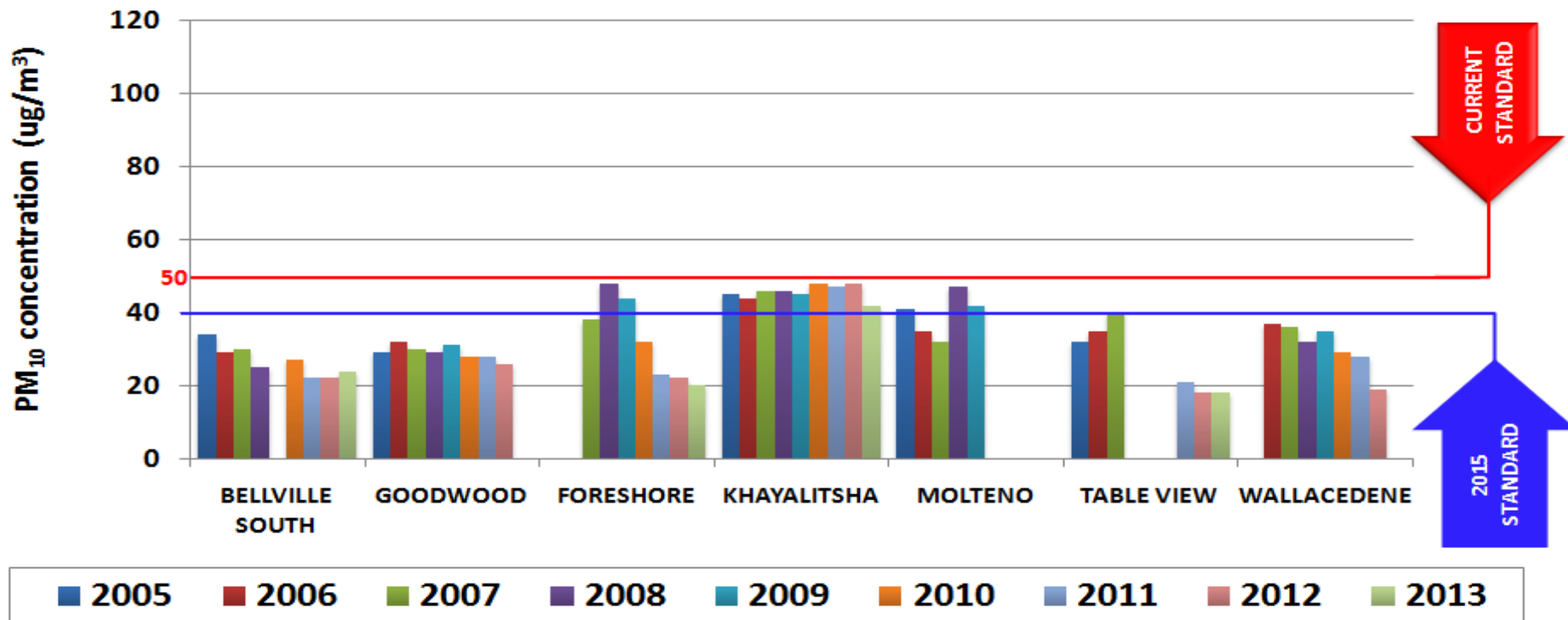
# Monitoring networks included

- Cape Town
- eThekweni
- Tshwane
- Johannesburg (not fully operational since 2012)
- Ekurhuleni (not operational since 2012)
- Vaal Triangle Priority Area
- Highveld Priority Area
- Provinces:
  - KwaZulu-Natal (Low data recovery in 2013, hence 2012 annual trend)
  - Western Cape
- Eskom, Sasol and Richards Bay Clean Air Association



# Cape Town

## PM<sub>10</sub> - 9 YEAR TREND

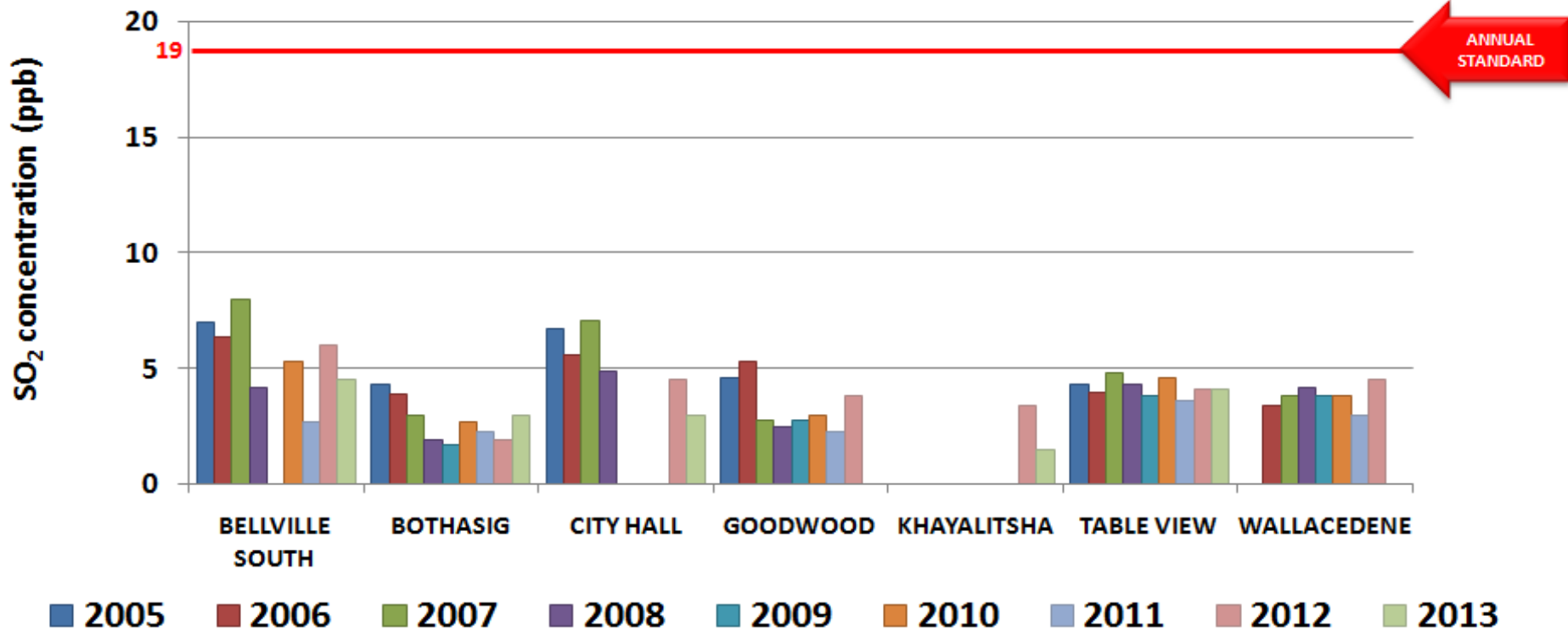


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# Cape Town

## SO<sub>2</sub> - 9 YEAR TREND

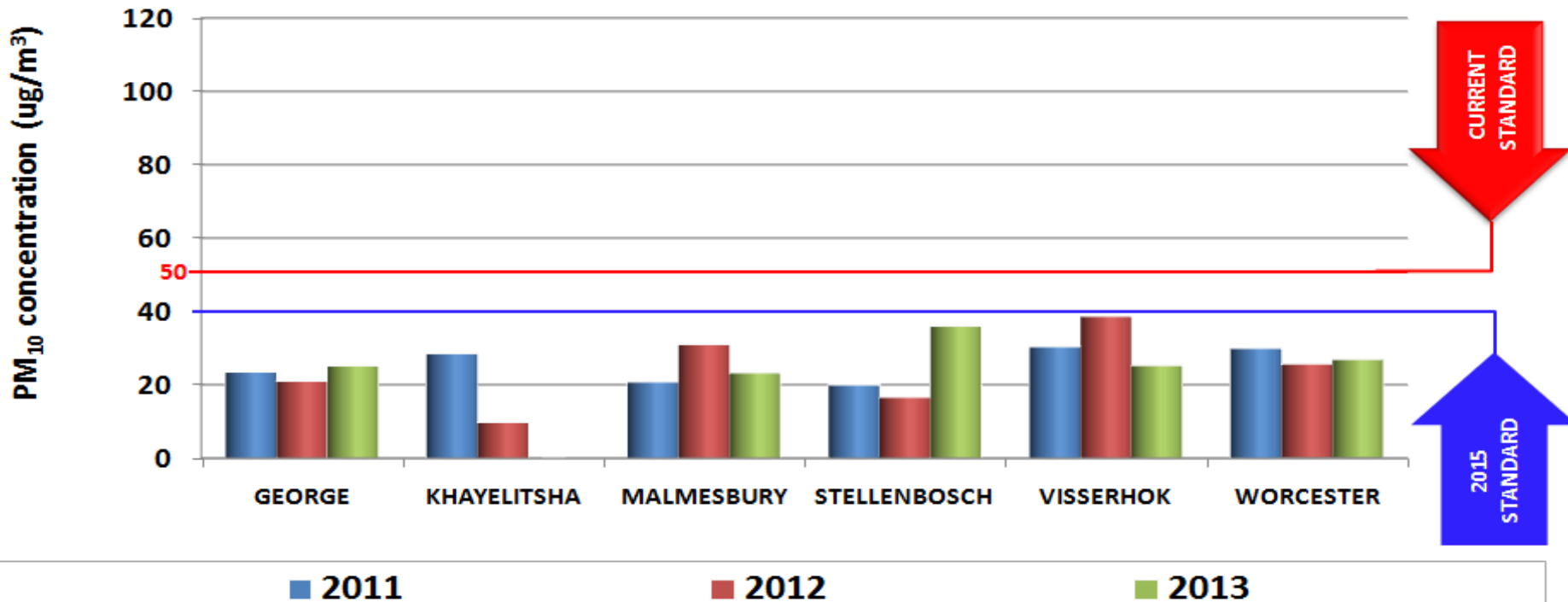


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# Western Cape

## PM<sub>10</sub> - 3 YEAR TREND

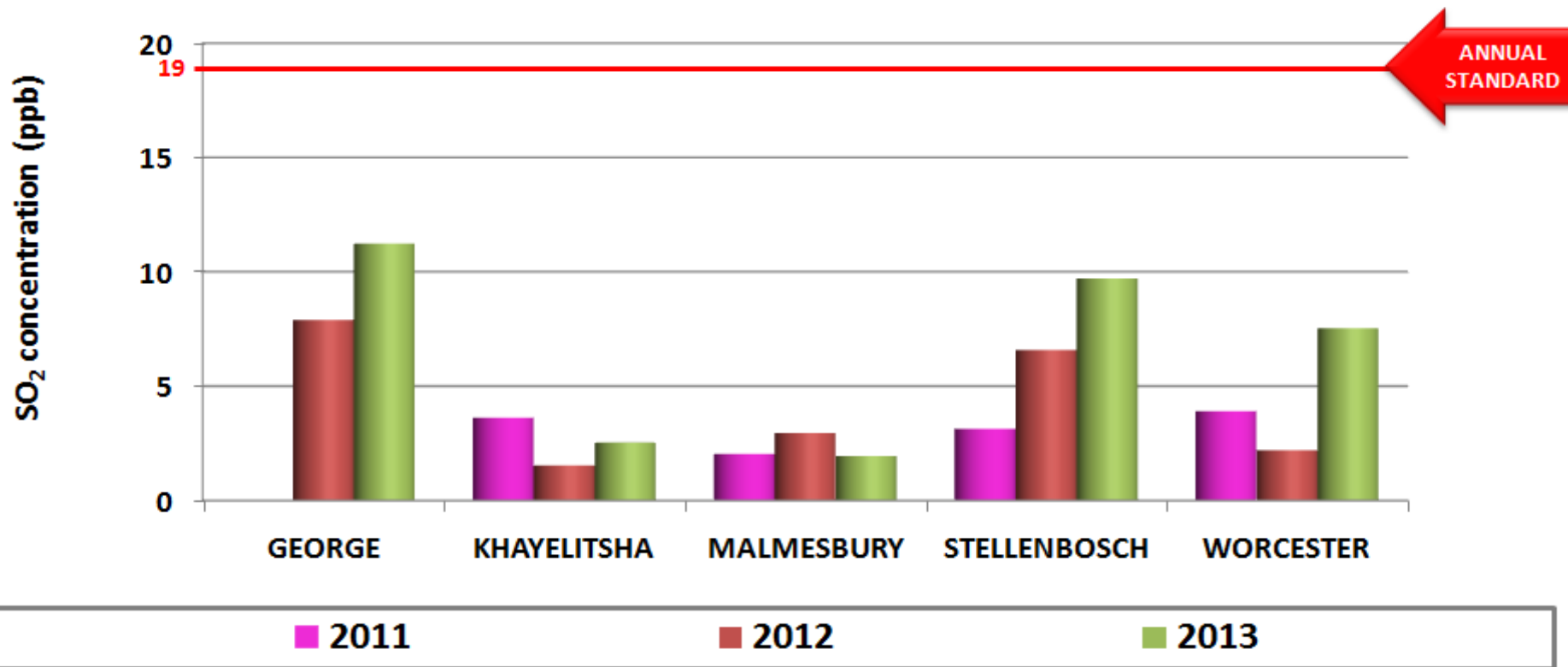


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# Western Cape

## SO<sub>2</sub> - 3 YEAR TREND

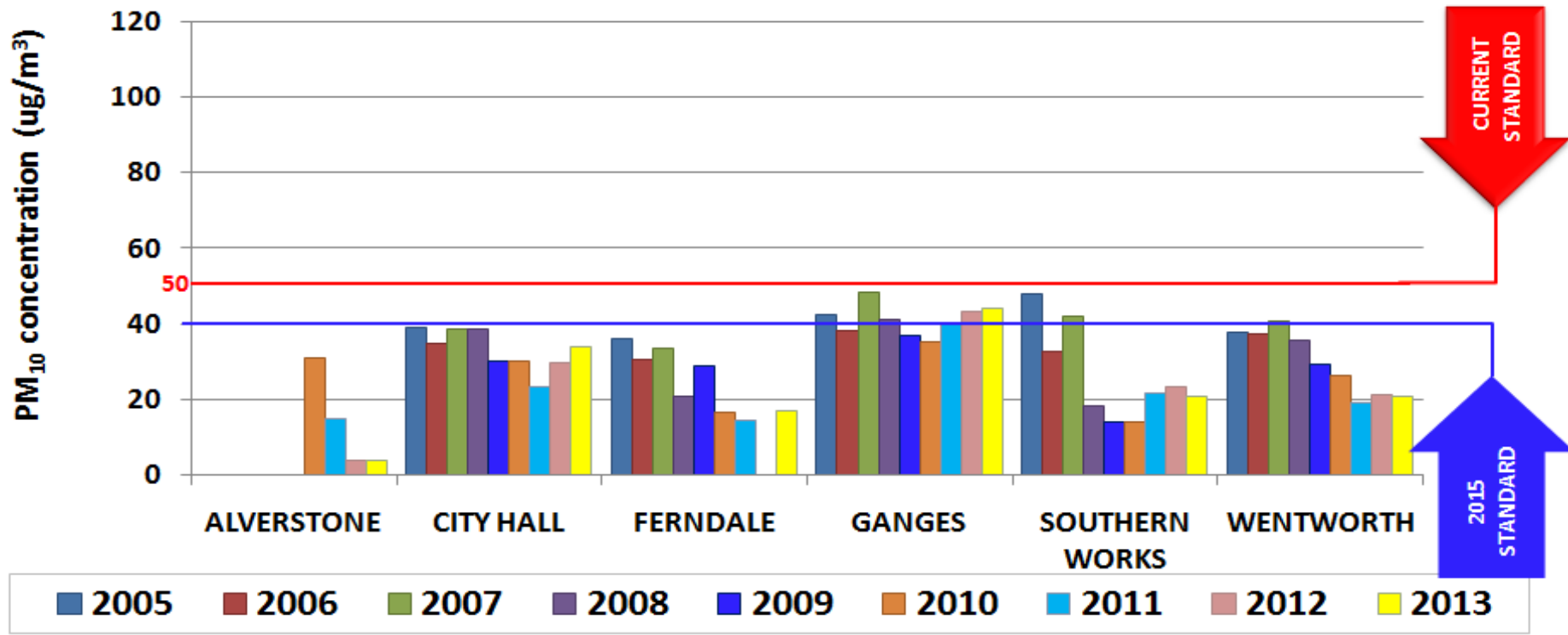


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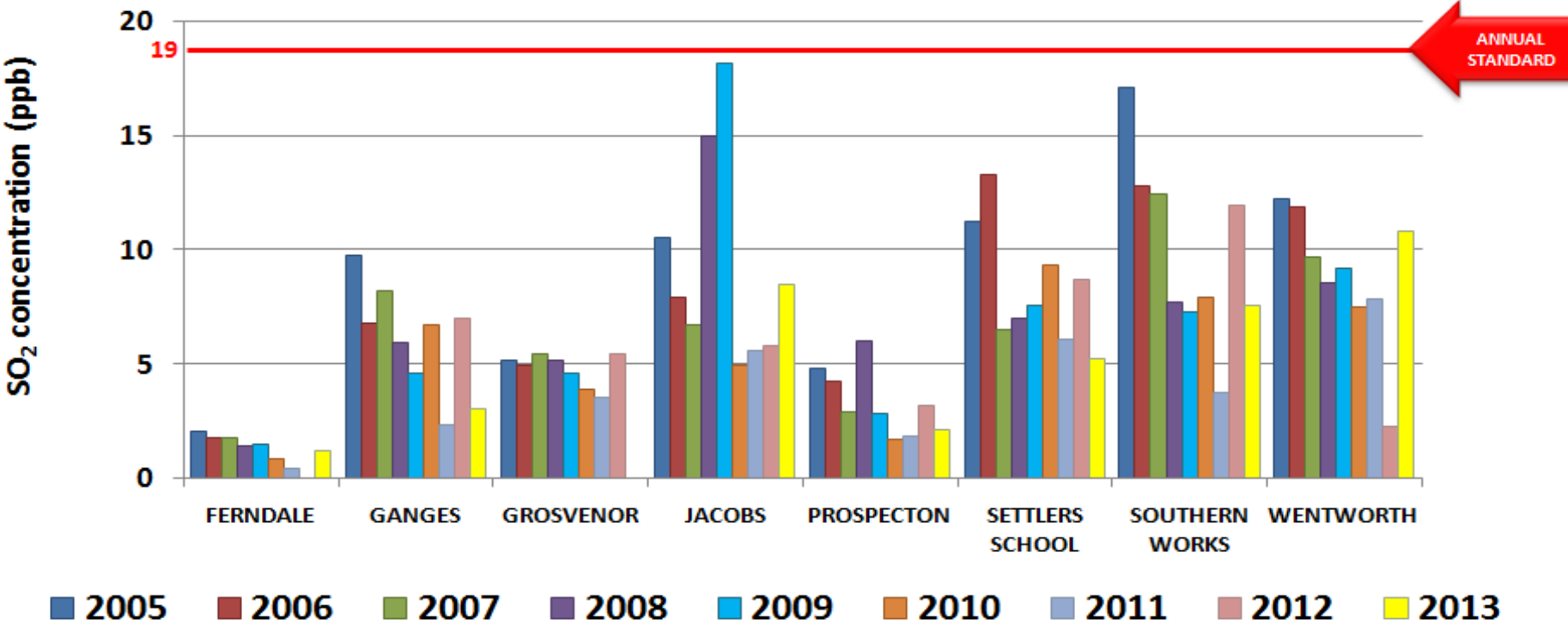
# eThekweni

## PM<sub>10</sub> - 9 YEAR TREND



# eThekweni

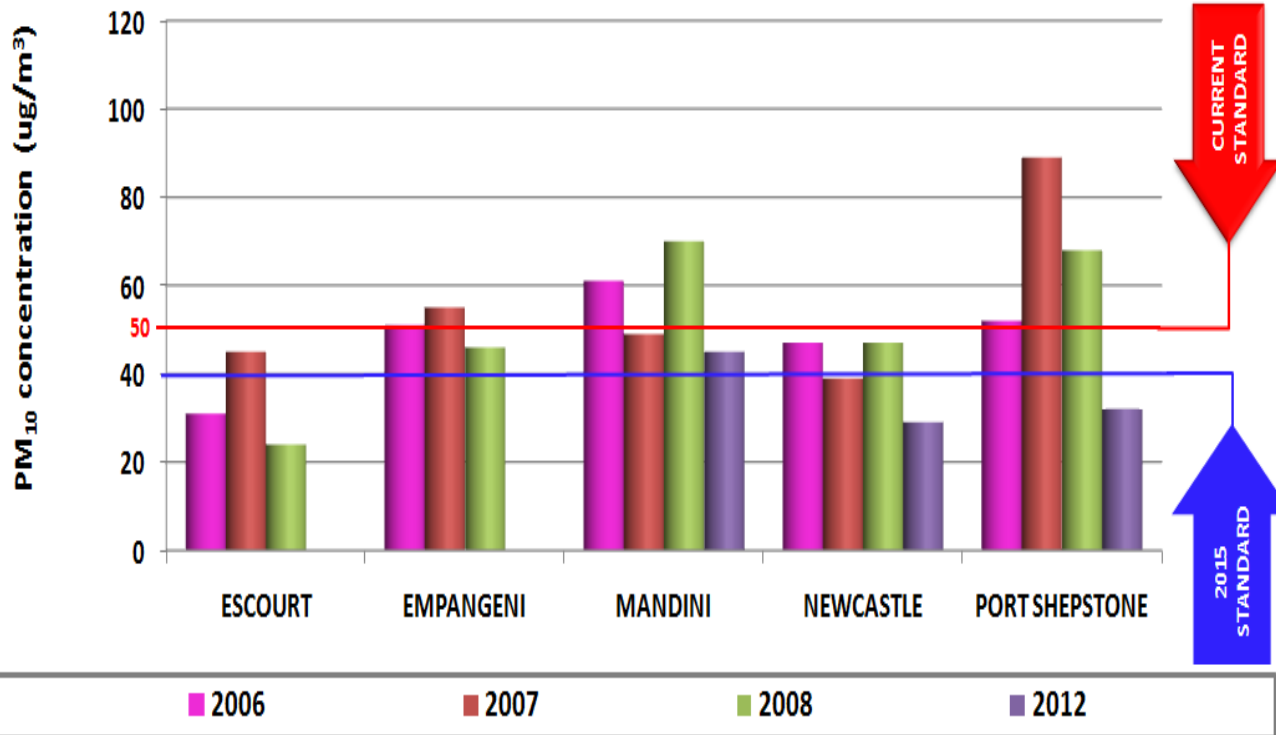
## SO<sub>2</sub> - 9 YEAR TREND





# KwaZulu-Natal

## PM<sub>10</sub> - 4 YEAR TREND



The graph shows the historical trend PM<sub>10</sub> in KZN. All the stations were below the annual NAAQS in 2012.

Data for 2013 excluded due to low data recovery.

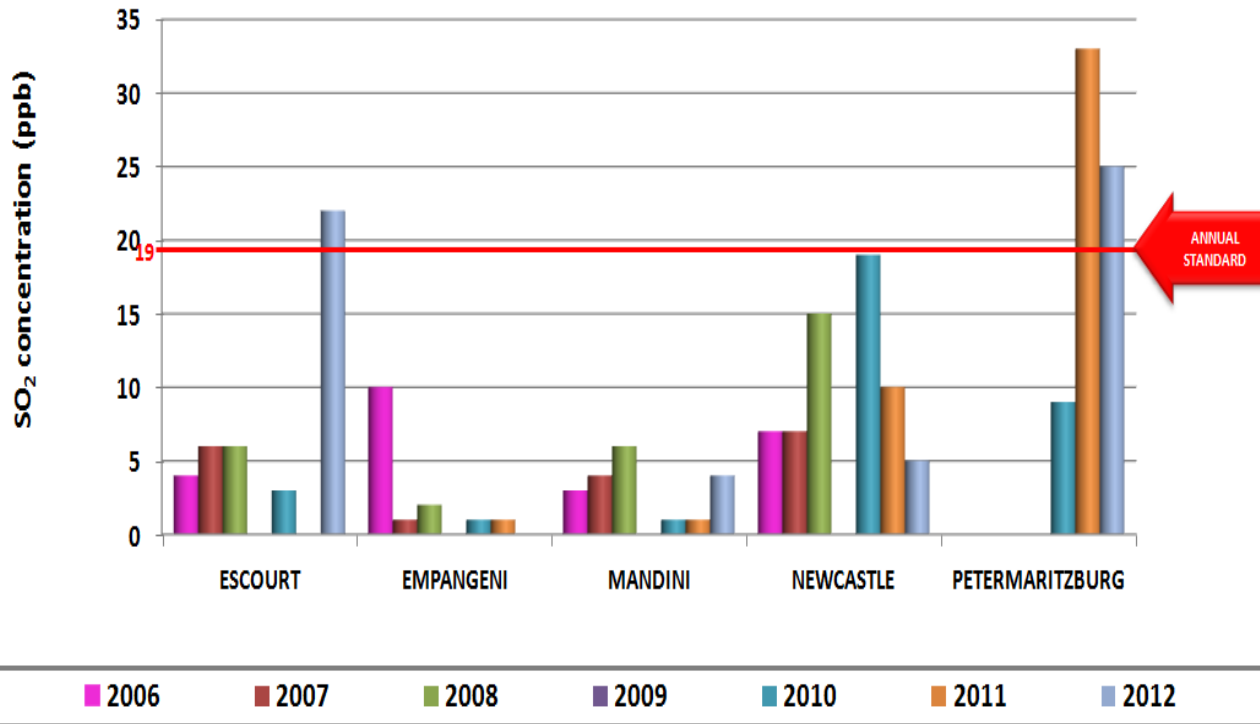


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# KwaZulu-Natal

SO<sub>2</sub> - 7 YEAR TREND



The graph shows the historical trend SO<sub>2</sub> in KZN. Based on the 2012 data, areas of concern in terms of SO<sub>2</sub> in the province are Escourt and Pietermaritzburg.

Data for 2013 excluded due to low data recovery.

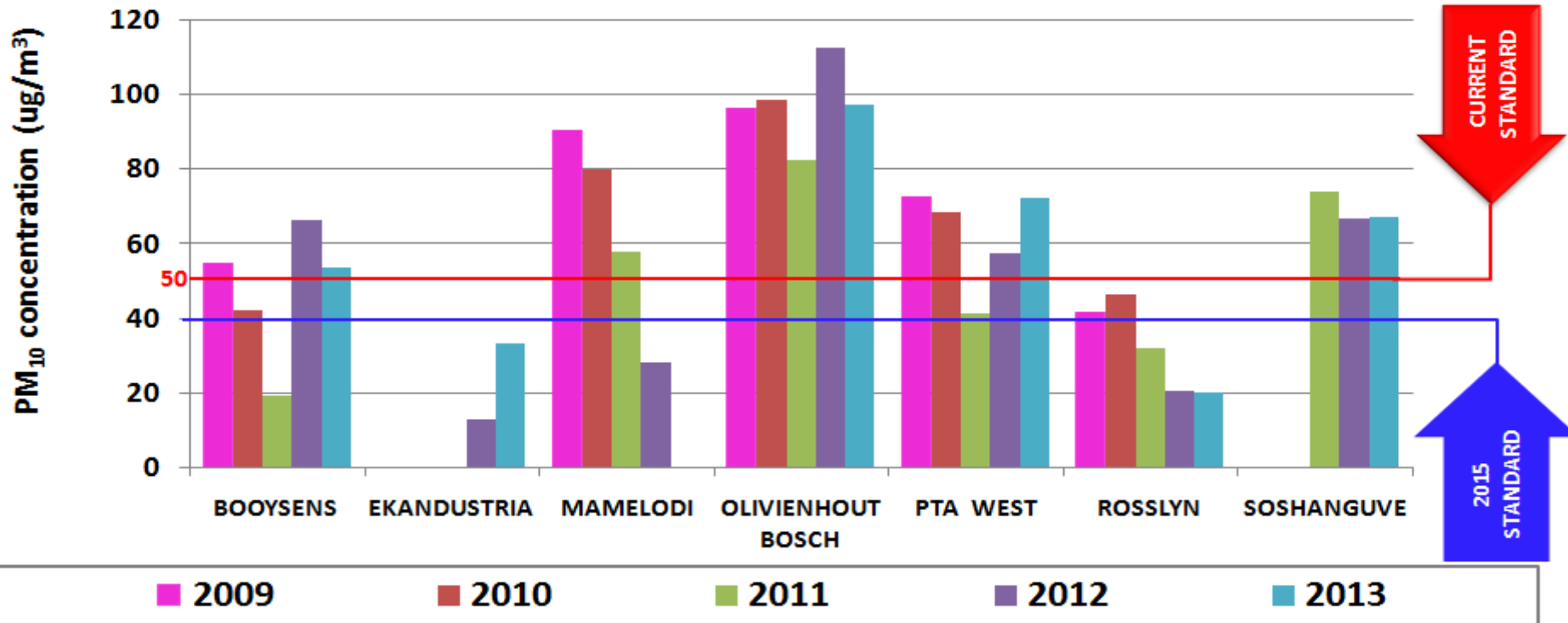


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# Tshwane

## PM<sub>10</sub> - 5 YEAR TREND

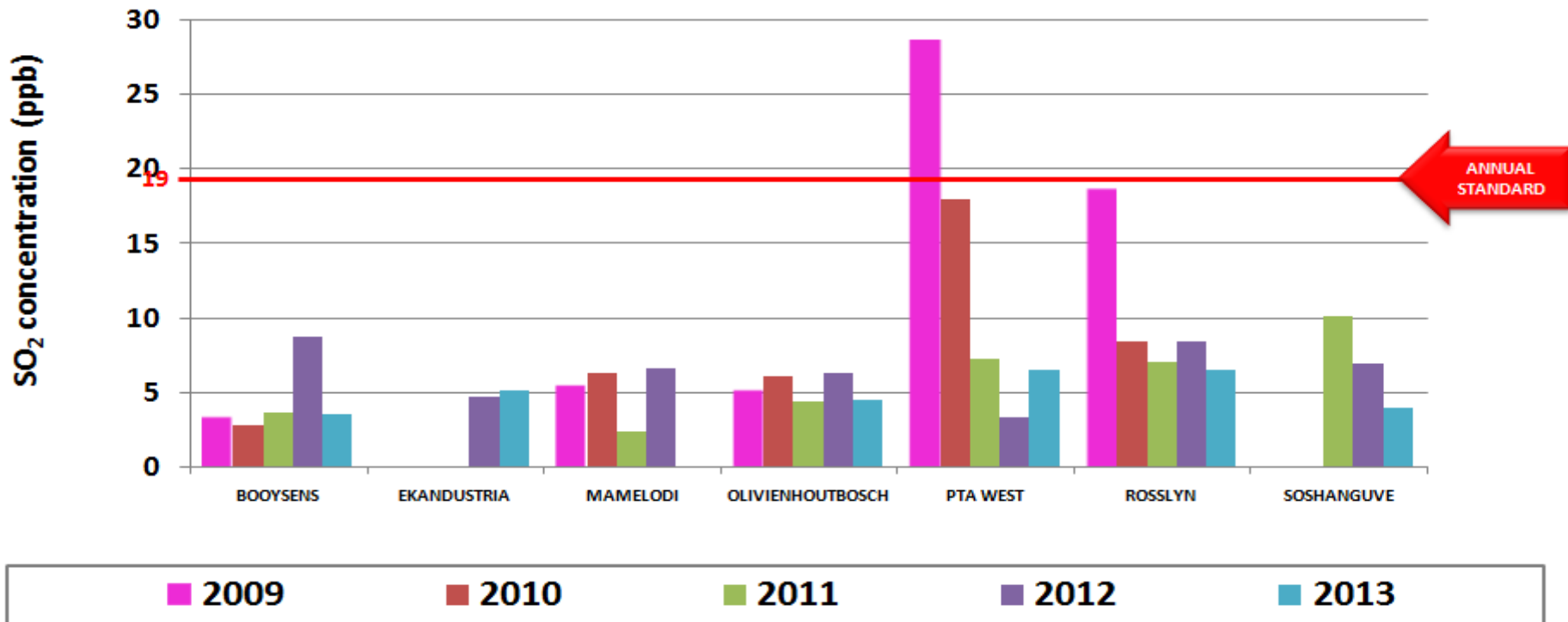


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# Tshwane

## SO<sub>2</sub>- 5 YEAR TREND

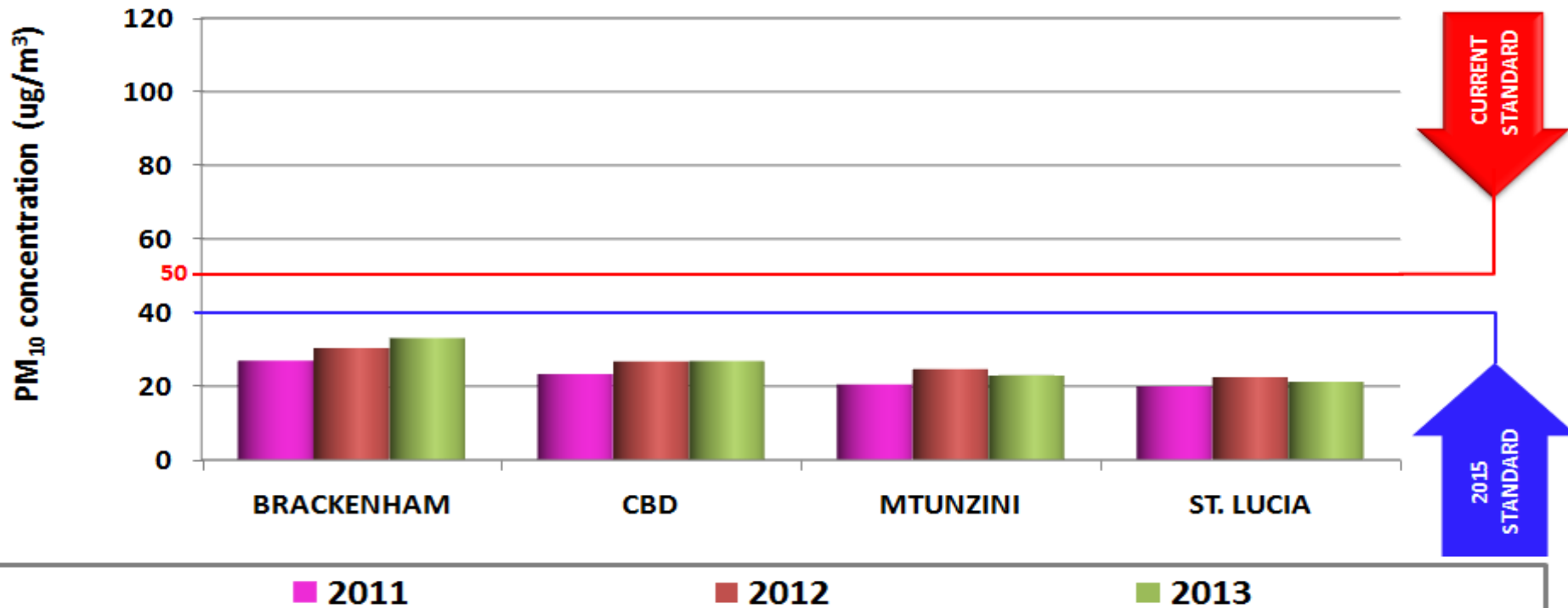


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# Richards Bay Clean Air Association

## PM<sub>10</sub> - 3 YEAR TREND

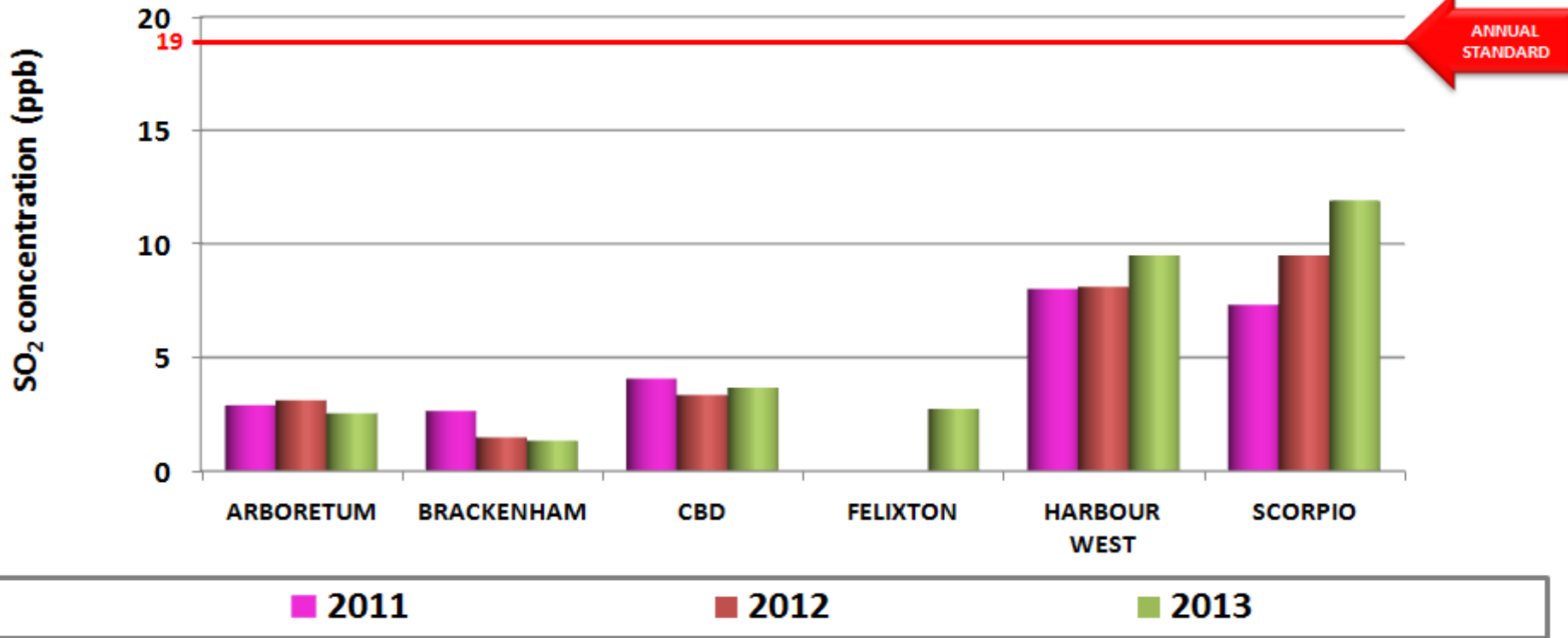


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# Richards Bay Clean Air Association

## SO<sub>2</sub> - 3 YEAR TREND



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# Declared Priority Area Networks

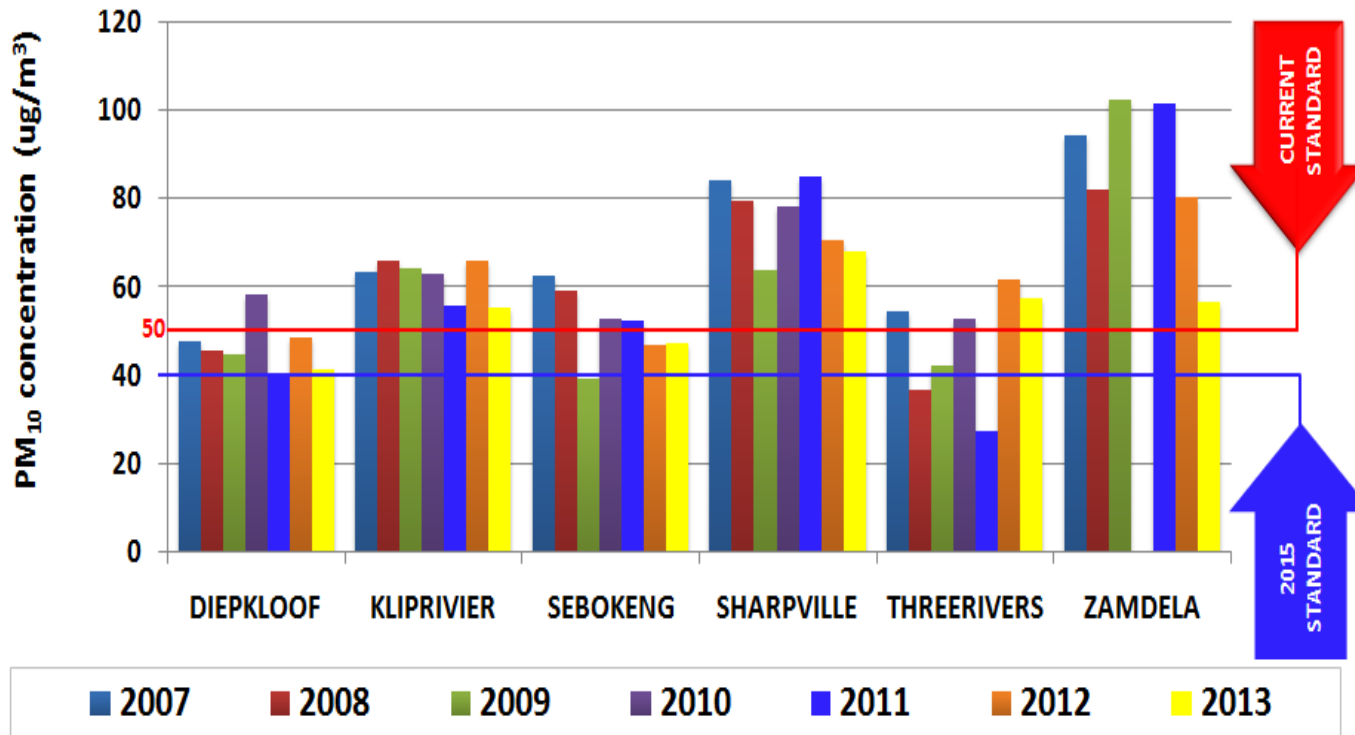


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# Vaal Triangle Priority Area

## PM<sub>10</sub> - 7 YEAR TREND



Based on the 2013 data PM<sub>10</sub> is above the current annual; NAAQS in four of the six stations in the VTAPA.

Based on the current trend all stations are likely to exceed 2015 PM<sub>10</sub> NAAQS.

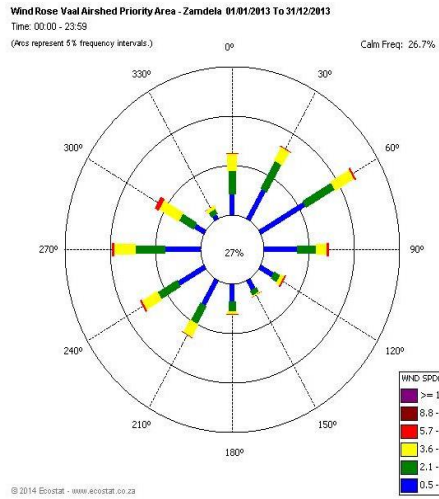


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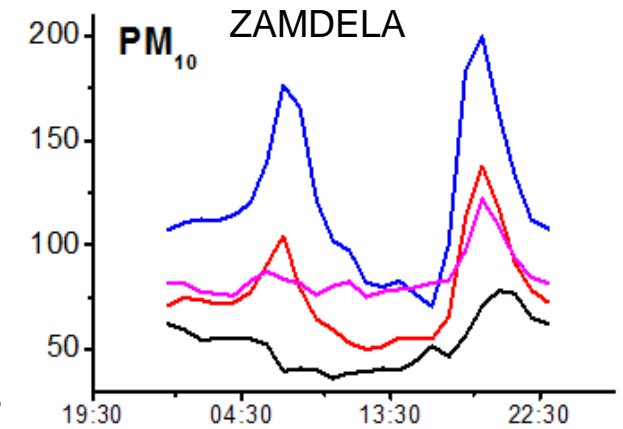
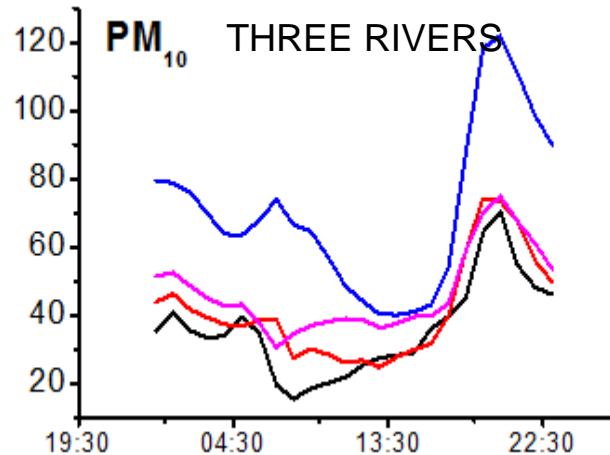
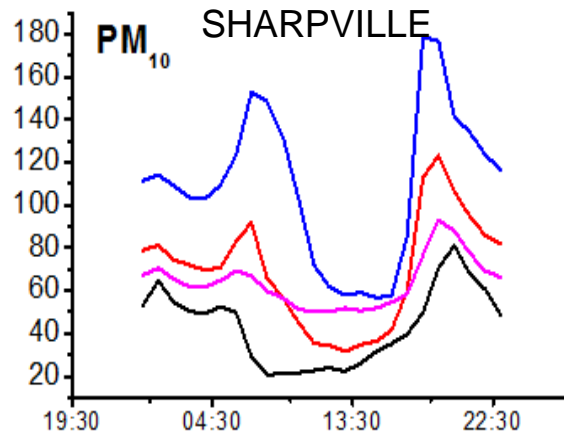
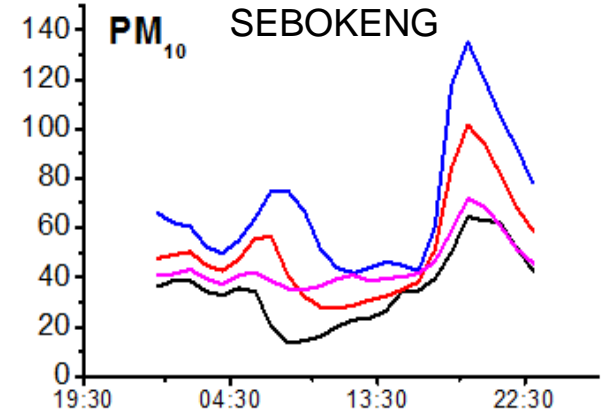
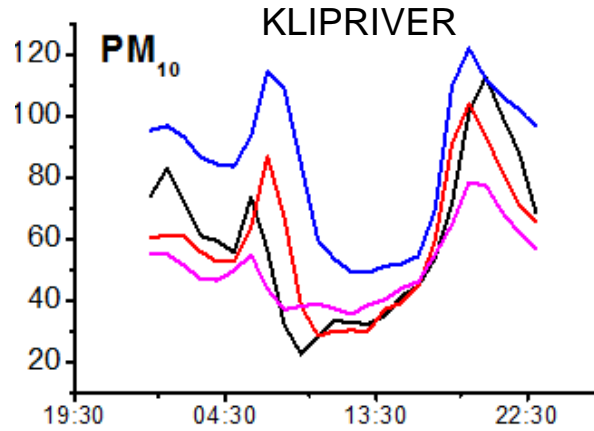
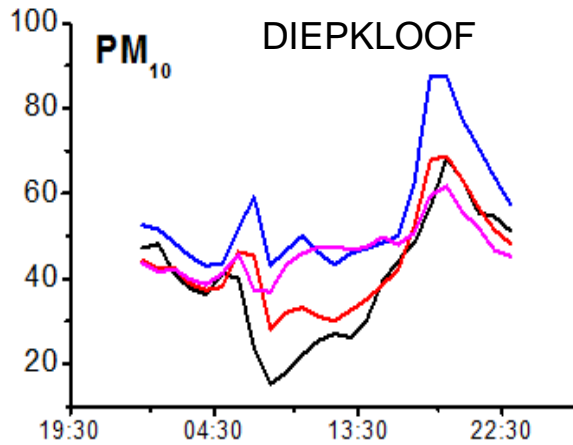
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# Zamdela



# VTAPA PM<sub>10</sub> Seasonal Cycles



- Summer
- Autumn
- Winter
- Spring

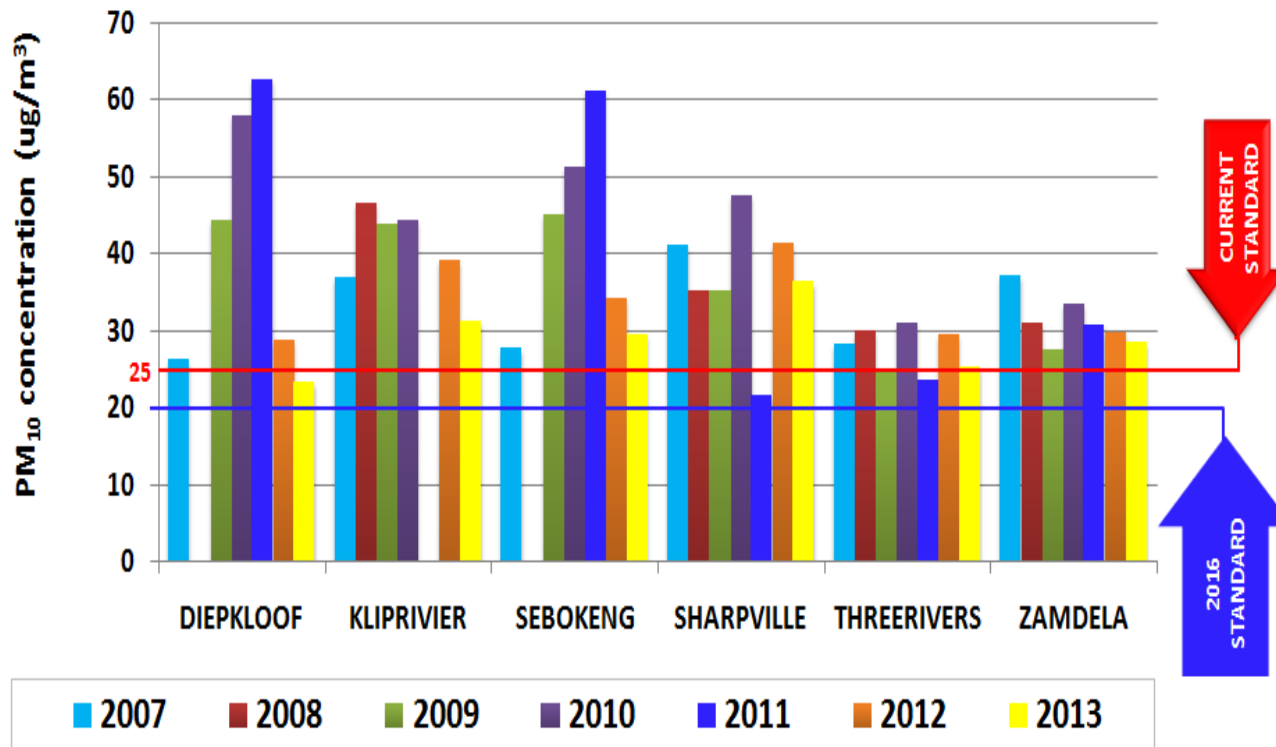


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# Vaal Triangle Priority Area

## PM<sub>2.5</sub> - 7 YEAR TREND



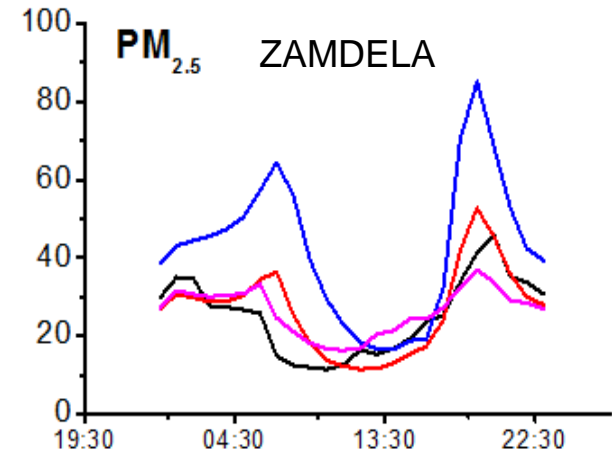
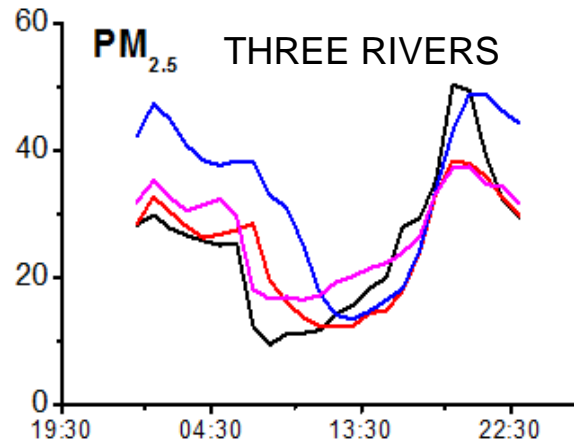
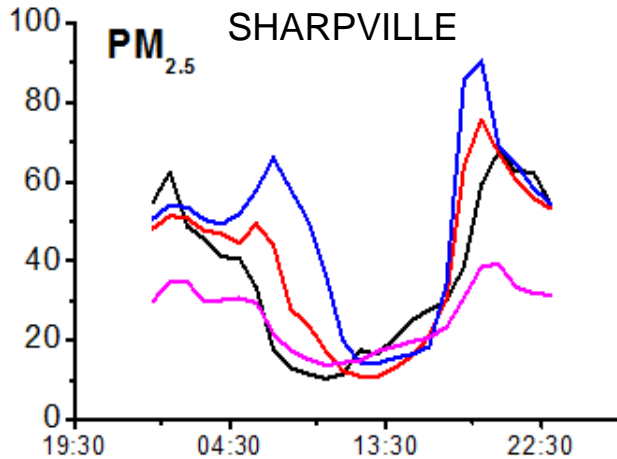
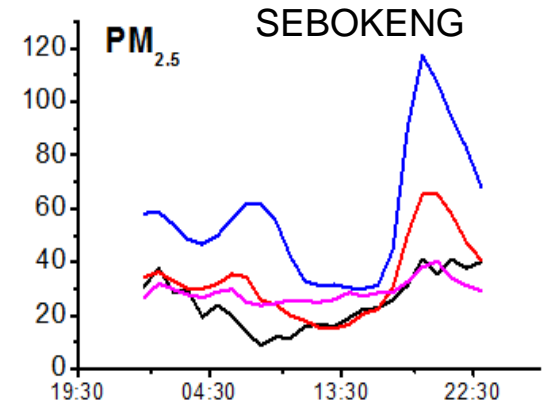
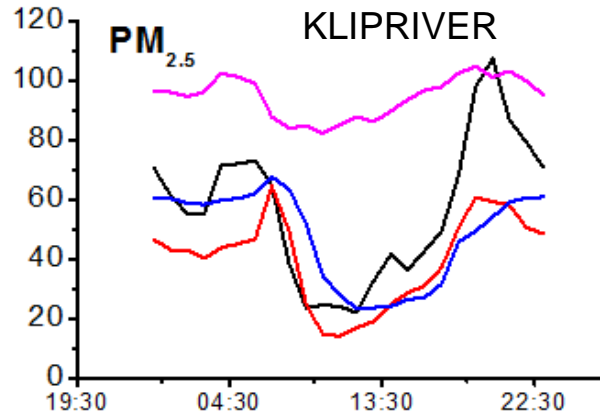
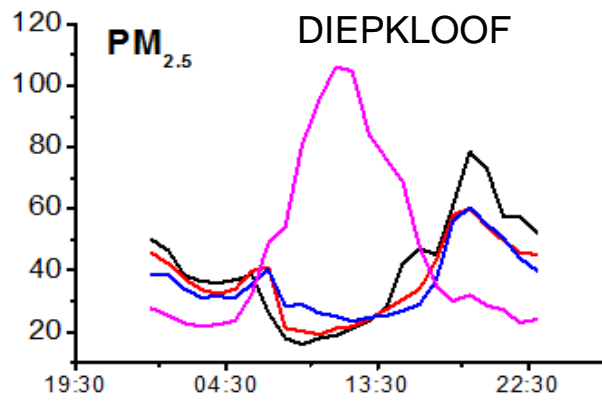
PM<sub>2.5</sub> is a major concern in the Vaal as most stations have exceeded the PM<sub>2.5</sub> NAAQS for the year 2013 except for Diepkloof.



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# VTAPA PM<sub>2.5</sub> Seasonal Cycles



— Summer  
— Autumn  
— Winter  
— Spring

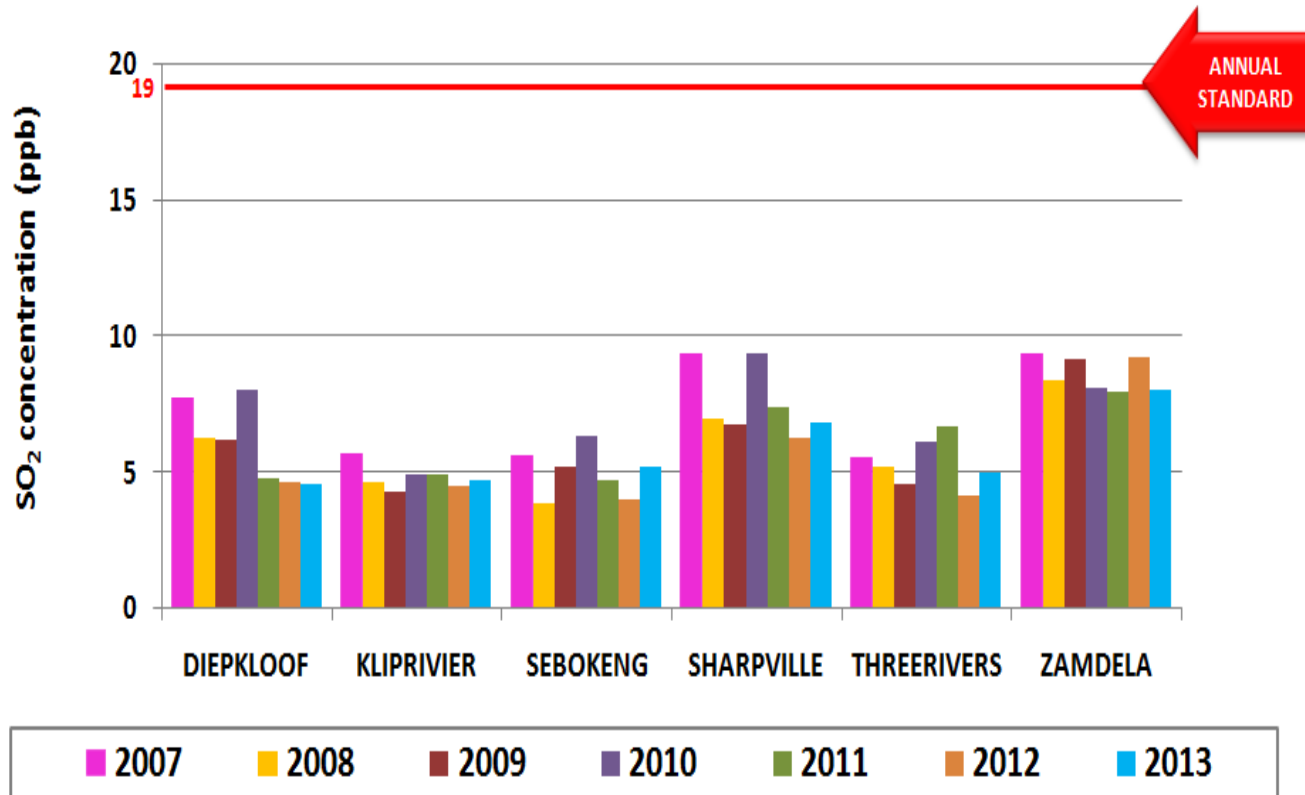


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# Vaal Triangle Priority Area

## SO<sub>2</sub> - 7 YEAR TREND



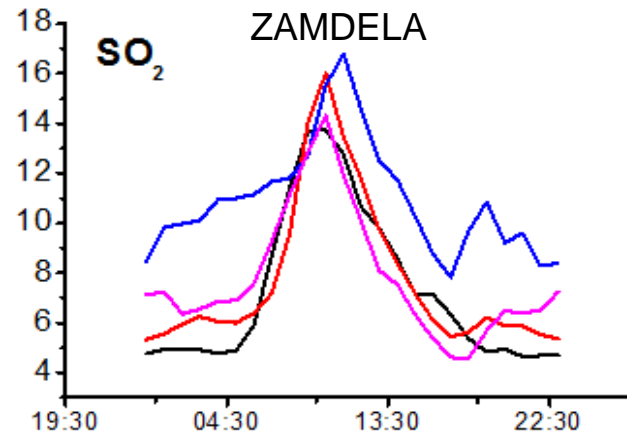
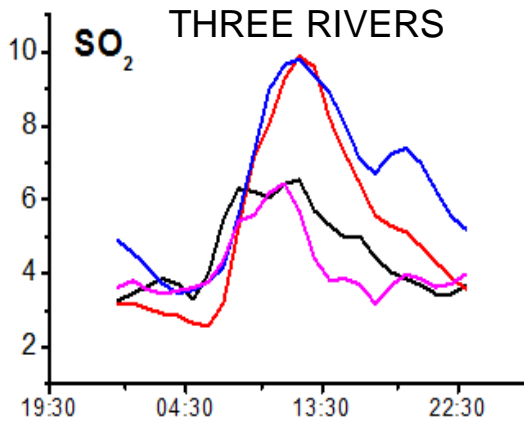
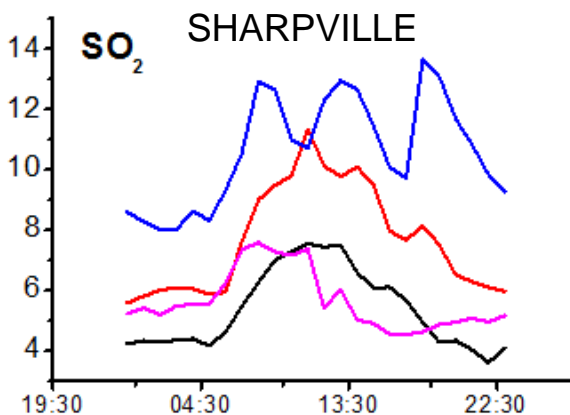
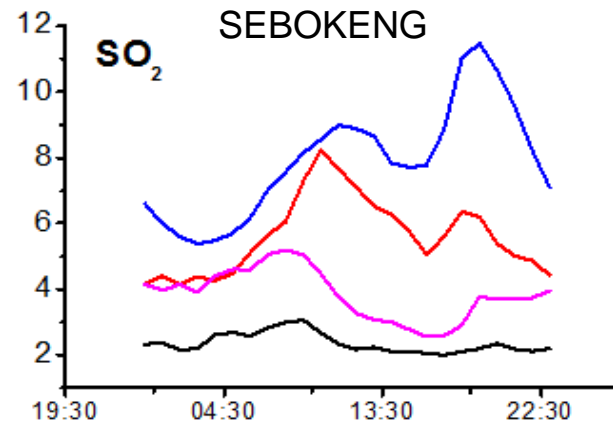
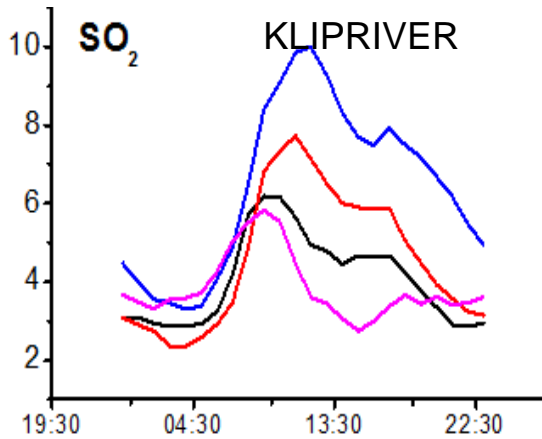
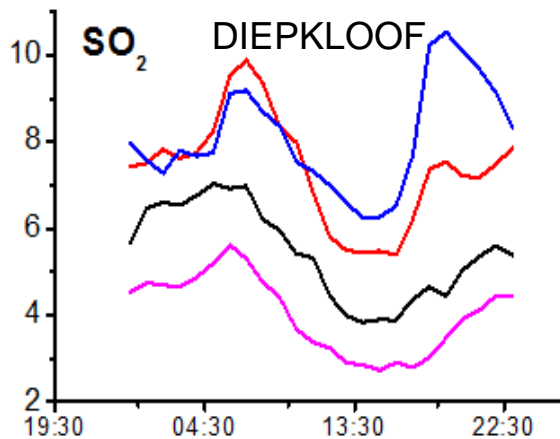
Based on the current trend SO<sub>2</sub> is below the annual NAAQS in the Vaal Triangle priority Area (VTAPA).



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# VTAPA SO<sub>2</sub> Seasonal Cycles



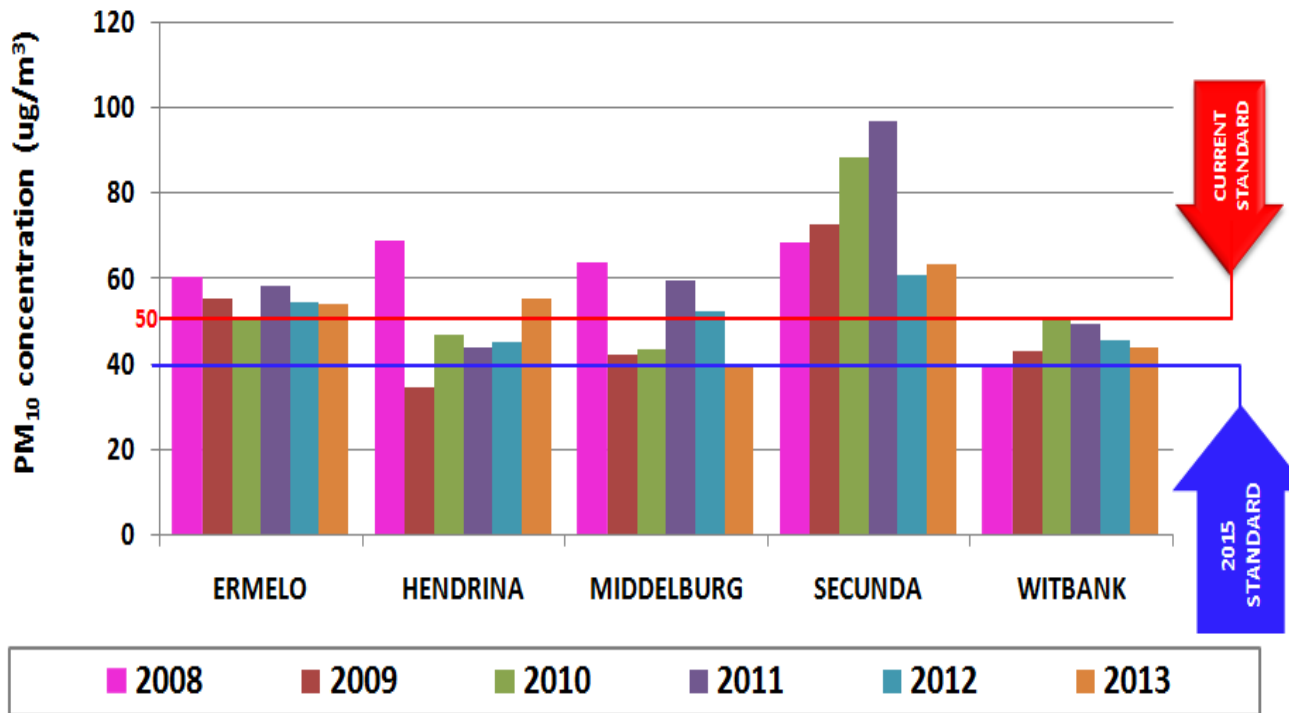
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— Summer  
— Autumn  
— Winter  
— Spring

# Highveld Priority Area

## PM<sub>10</sub> - 7 YEAR TREND



Based on the 2013 data PM<sub>10</sub> is above the current annual; NAAQS in three of the five stations in the HPA.

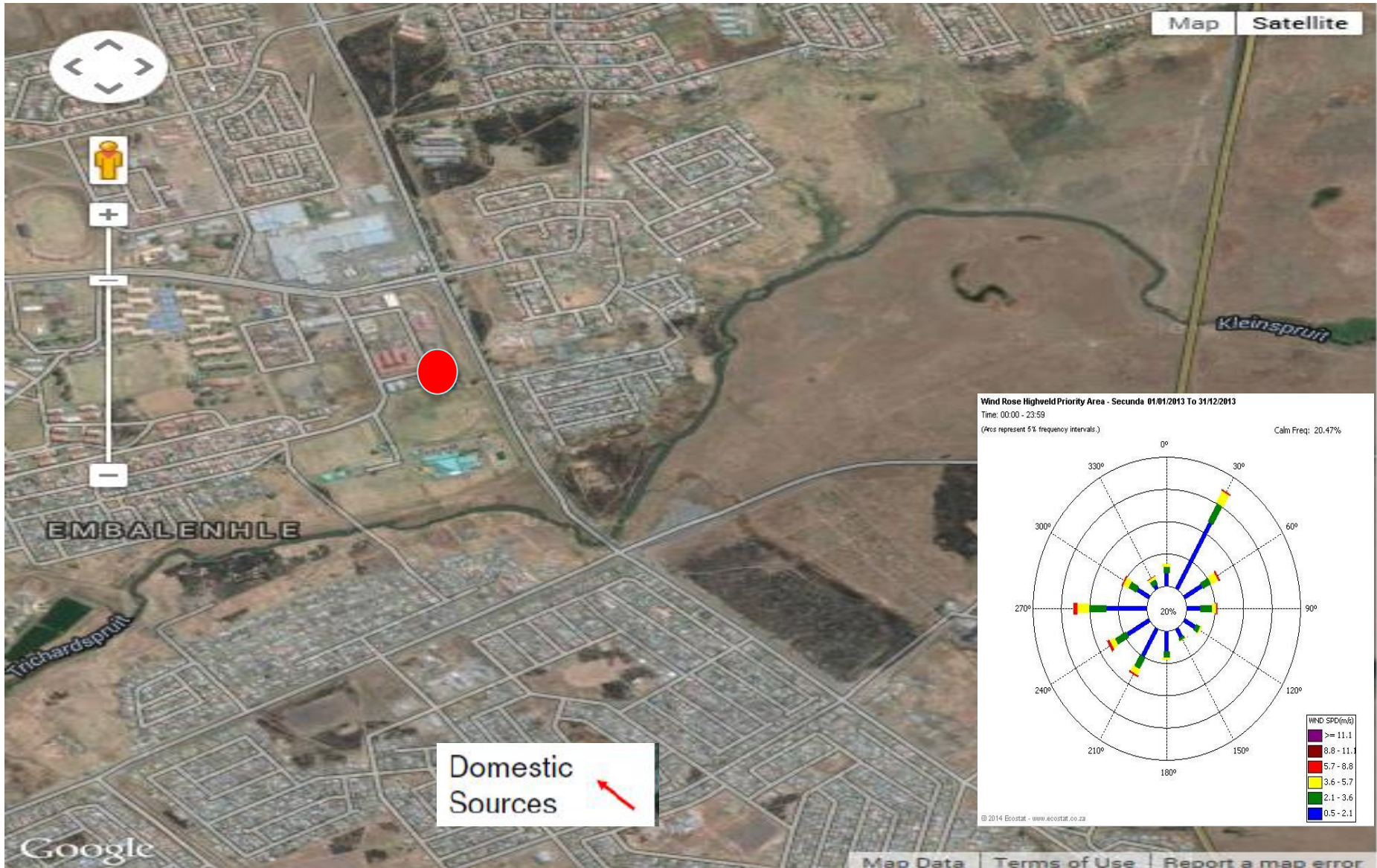
Based on the current trend all stations are likely to exceed 2015 PM<sub>10</sub> NAAQS.



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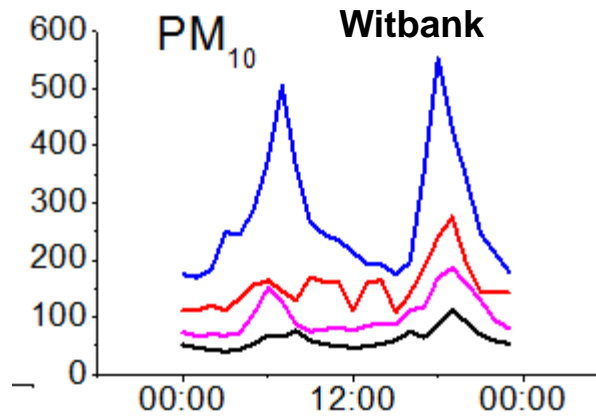
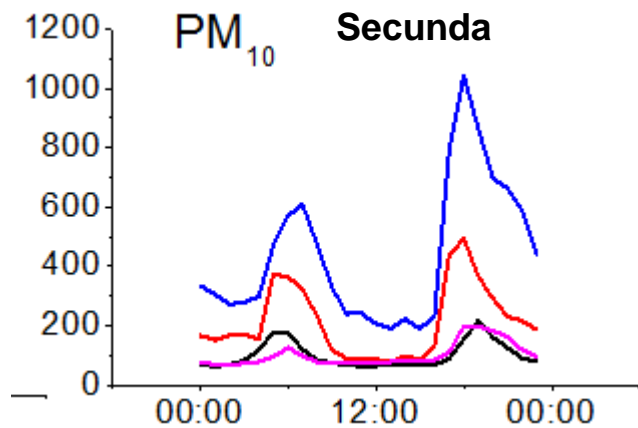
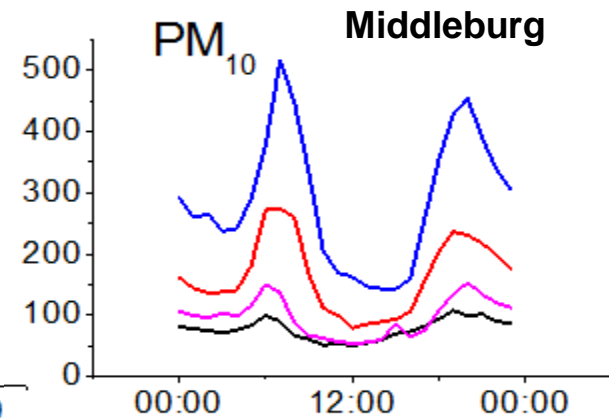
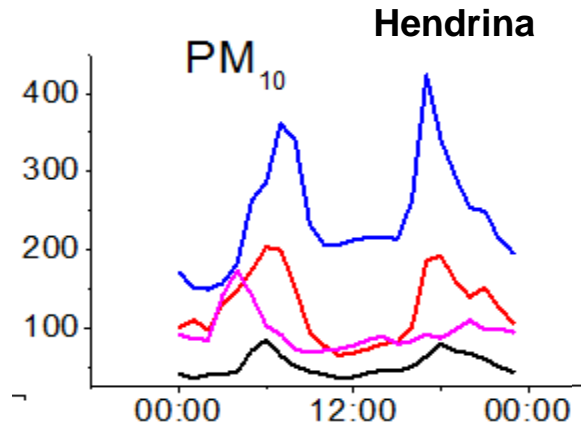
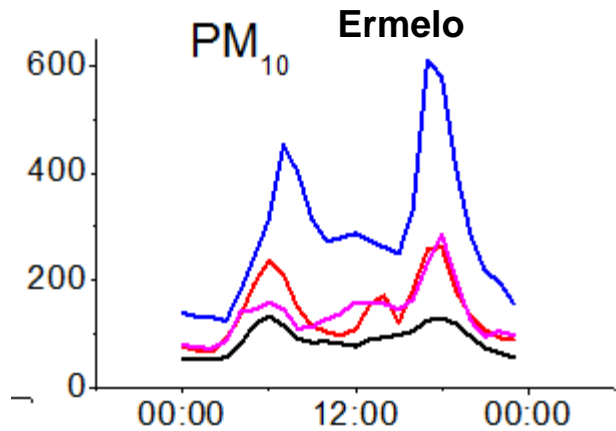
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# Secunda



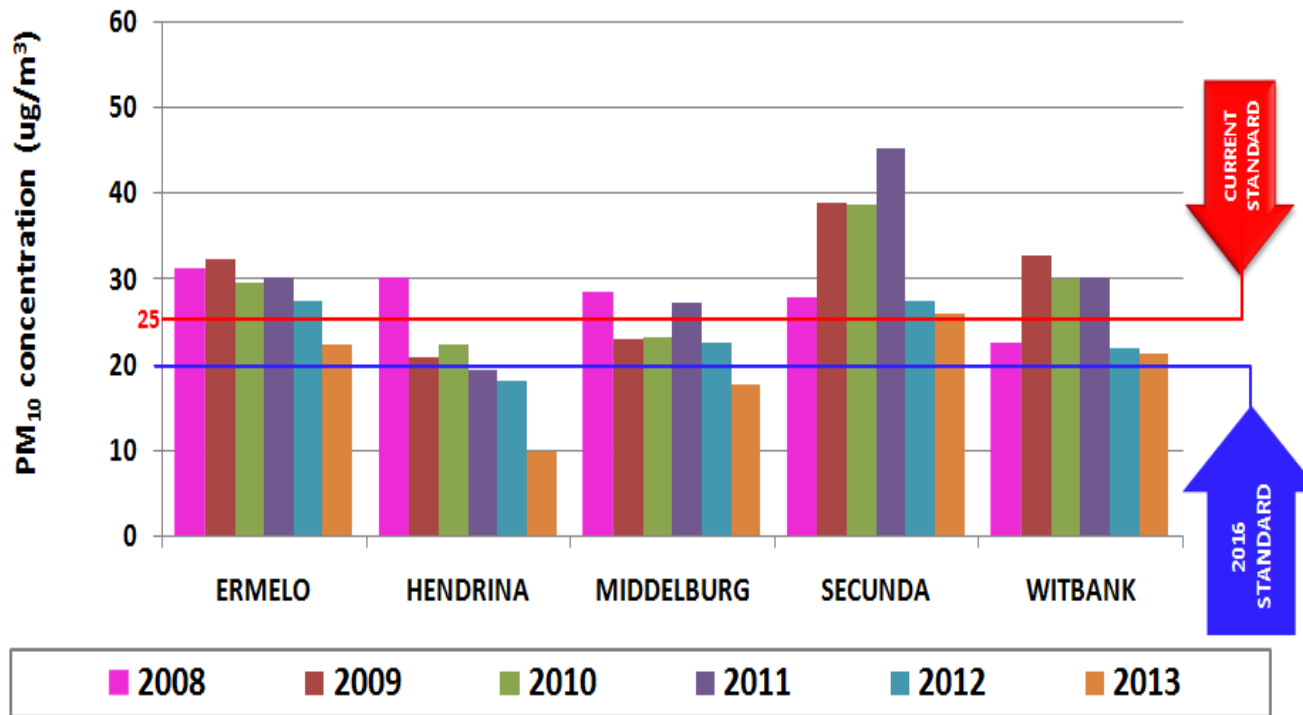


# HPA PM<sub>10</sub> seasonal variations



# Highveld Priority Area

## PM<sub>2.5</sub> - 6 YEAR TREND



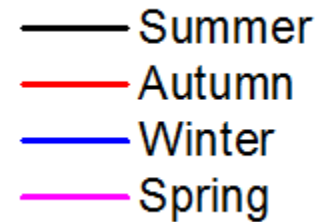
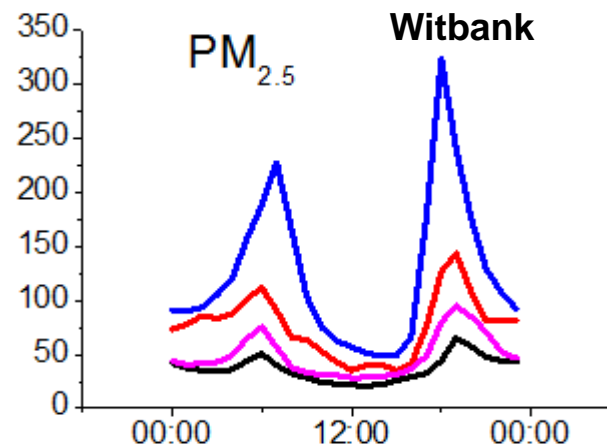
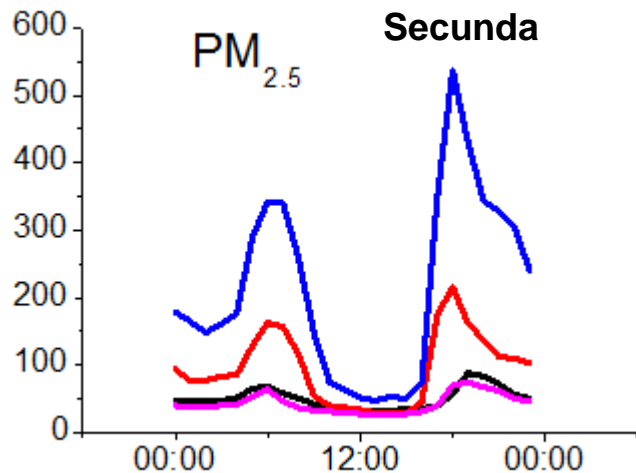
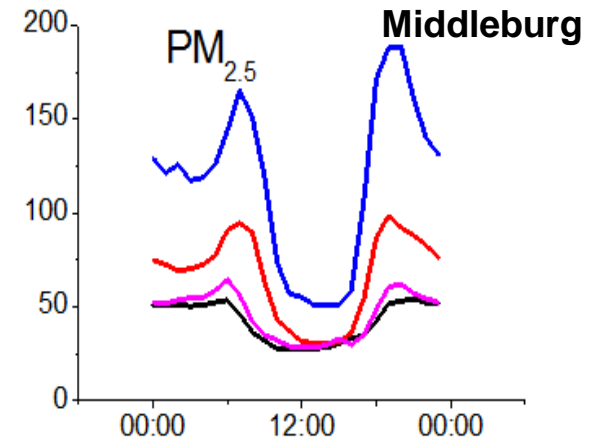
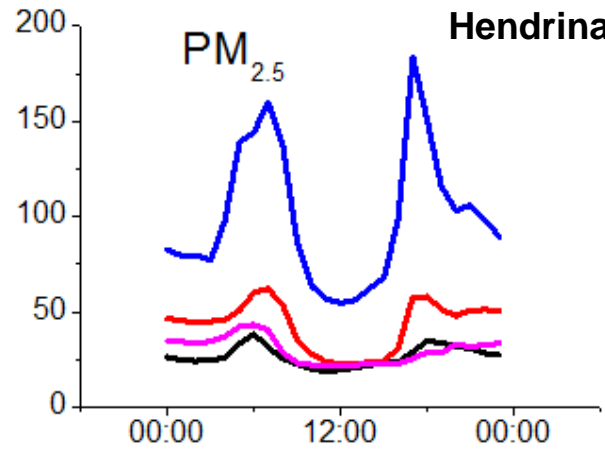
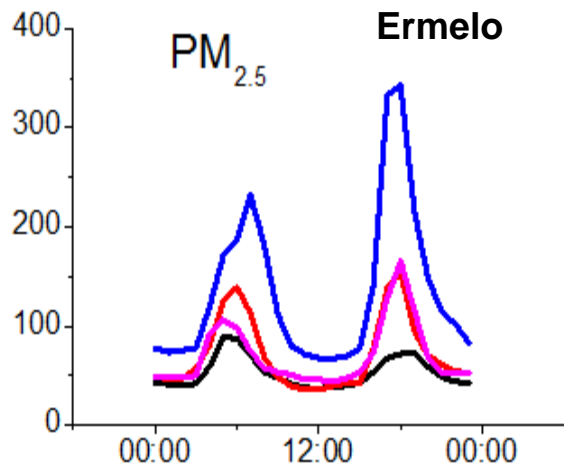
Based on the 2013 data PM<sub>2.5</sub> is below the current annual PM<sub>2.5</sub> NAAQS in four of the five stations in the HPA. The exception is Secunda.



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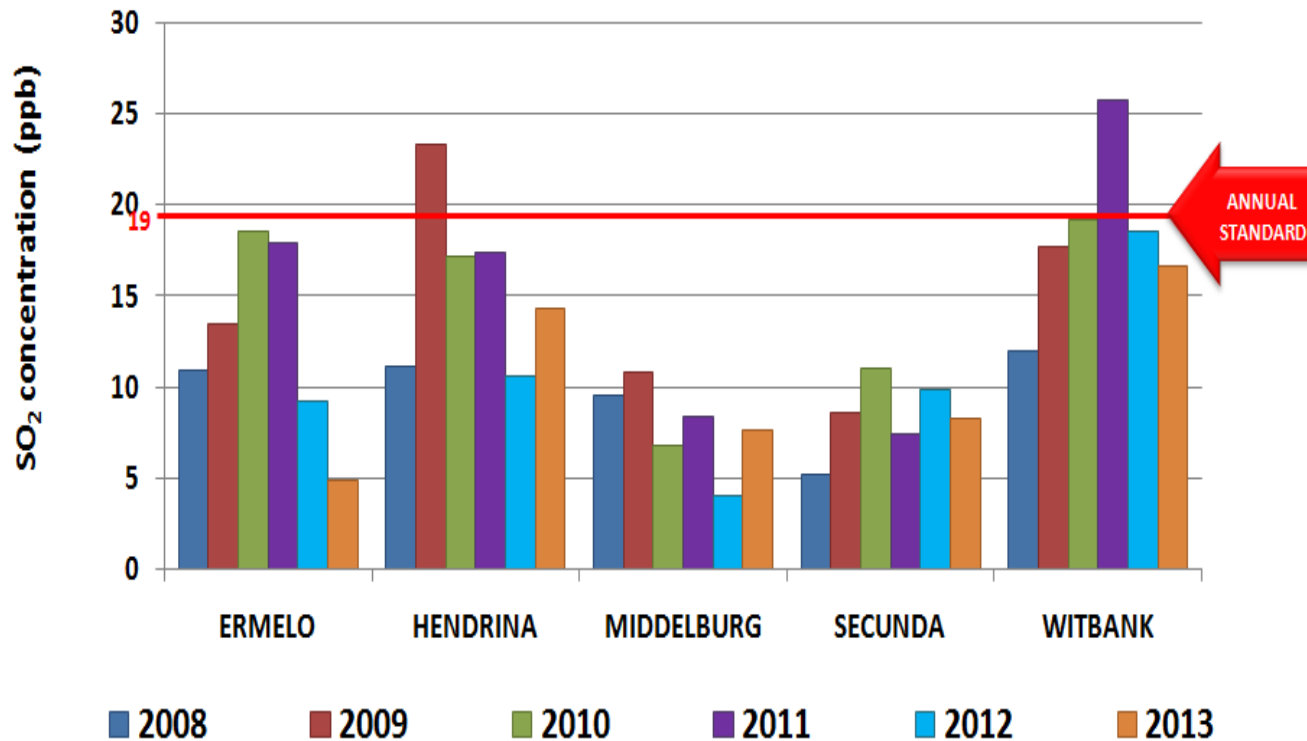
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# HPA PM<sub>2.5</sub> seasonal variations



# Highveld Priority Area

## SO<sub>2</sub>- 7 YEAR TREND



Based on the 2013 data SO<sub>2</sub> is below the annual NAAQS for all the stations in the HPA.

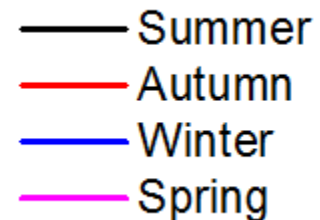
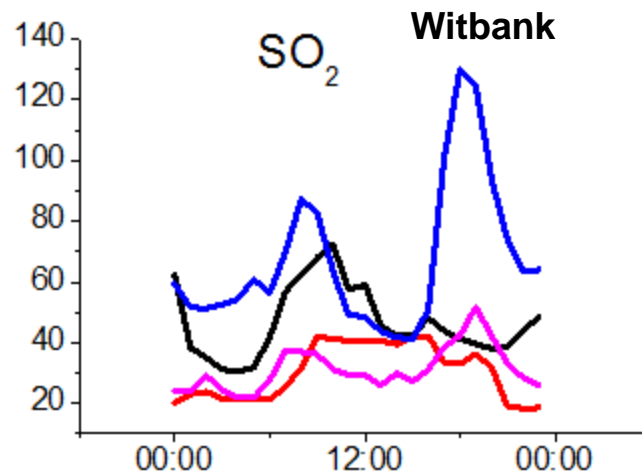
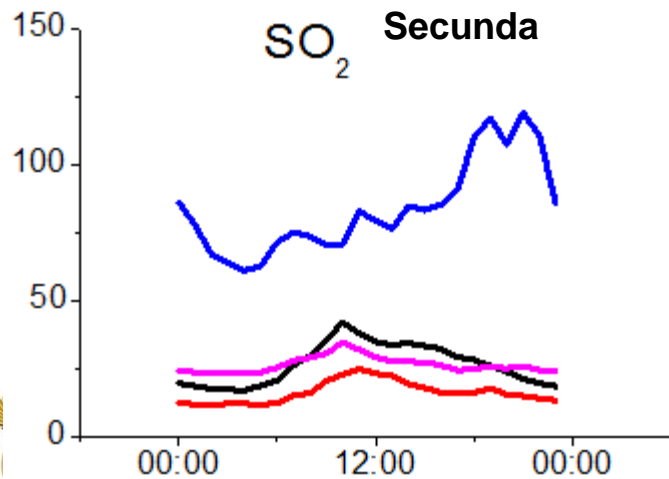
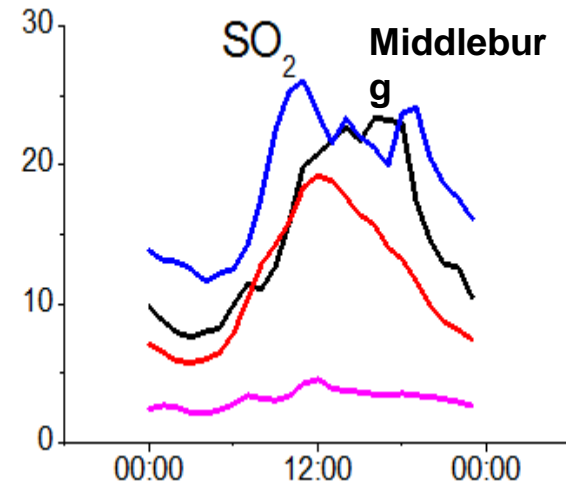
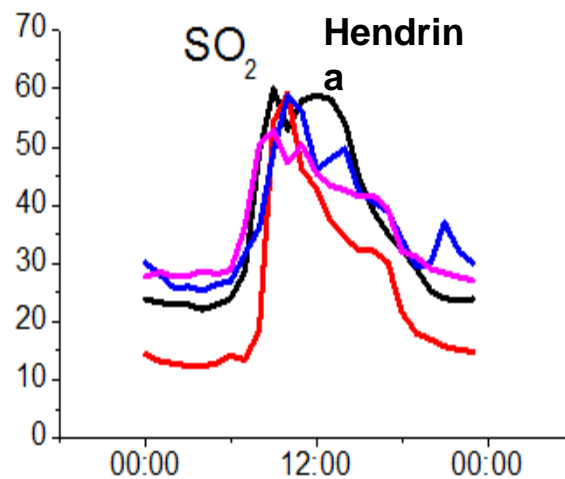
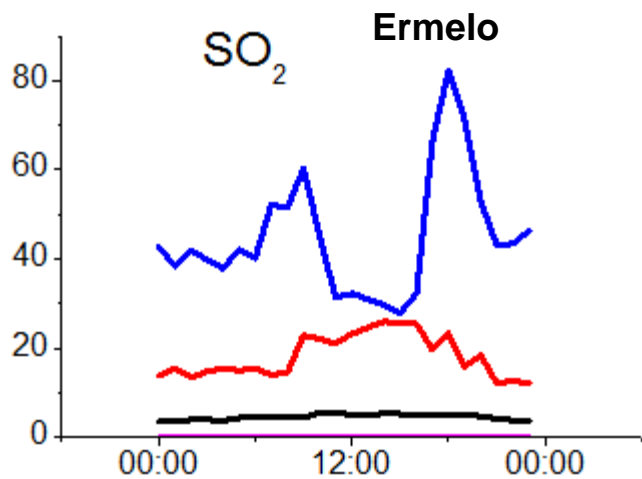
There has been improvements in all the areas, especially Hendrina and Secunda as this areas have previously exceeded the SO<sub>2</sub> NAAQS .



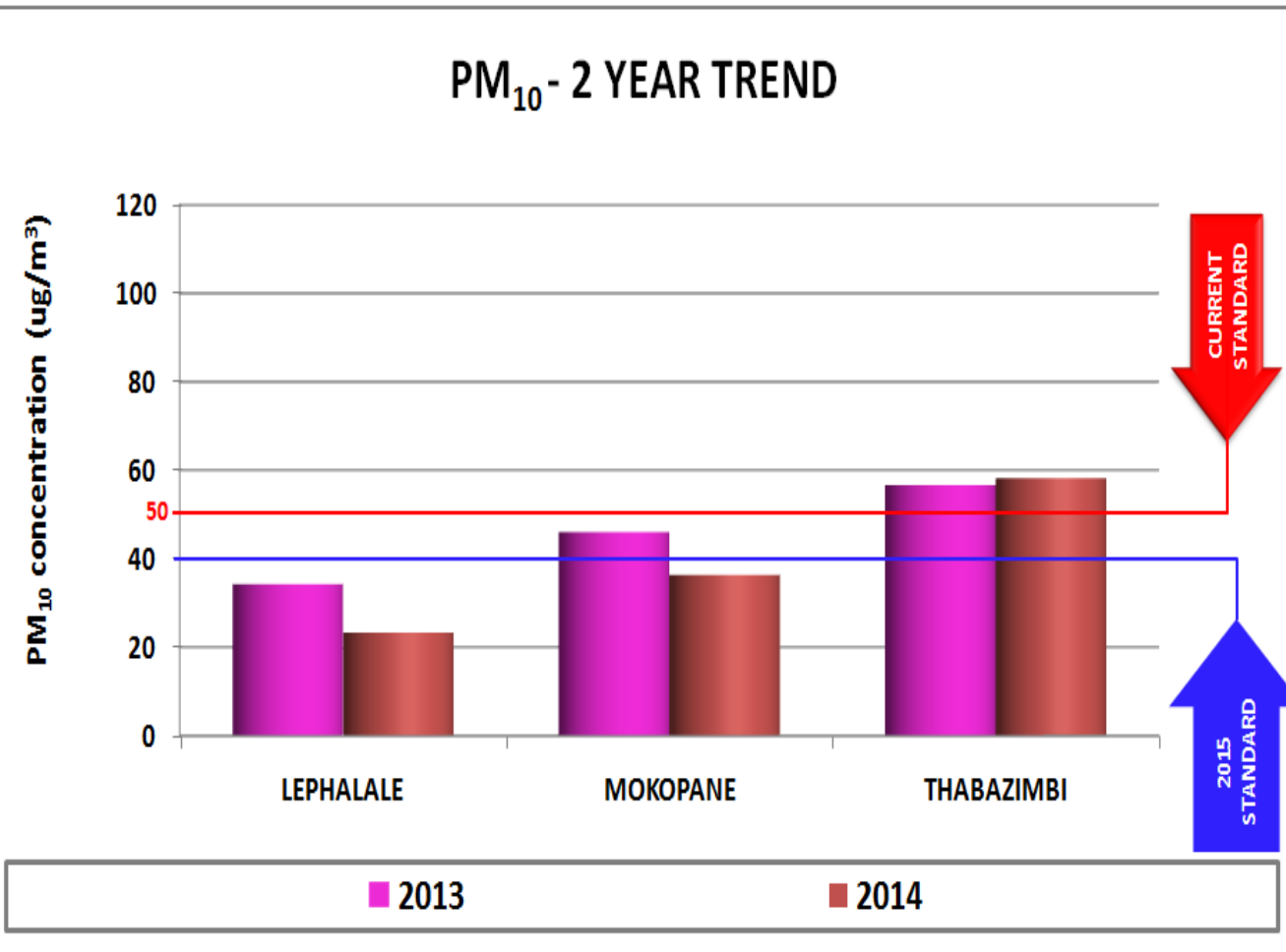
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# HPA SO<sub>2</sub> seasonal variations



# Waterberg-Bojanala Priority Area



From the current trend in the WPA, PM<sub>10</sub> is a major concern in Thabazimbi as the annual PM<sub>10</sub> NAAQS was exceeded both in 2013 and 2014. In Mokopane the standard was exceeded in 2013 only.

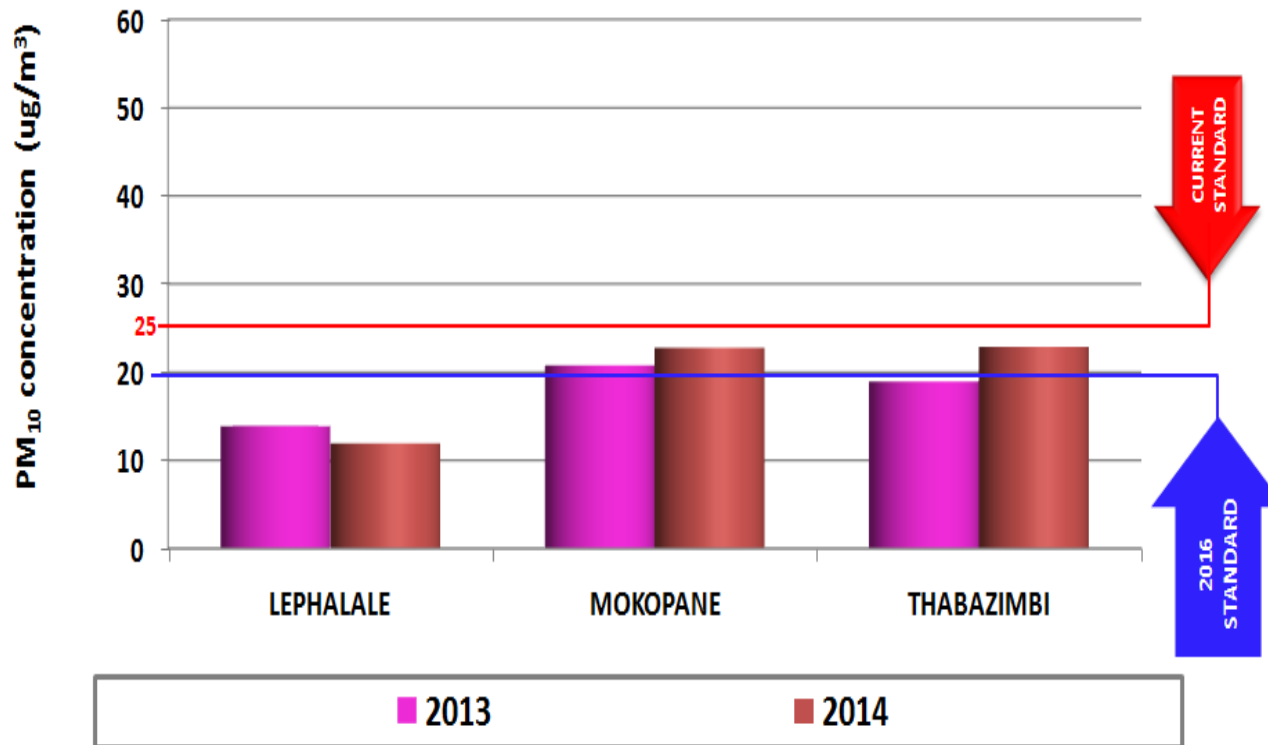


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# Waterberg-Bojanala Priority Area

PM<sub>2.5</sub> - 2 YEAR TREND



Based on 2013- 2014 data PM<sub>2.5</sub> is below the annual NAAQS for all the stations in the WPA.

This must be viewed with caution as Mokopane and Thabazimbi are likely to exceed 2016 NAAQS based on existing trend.

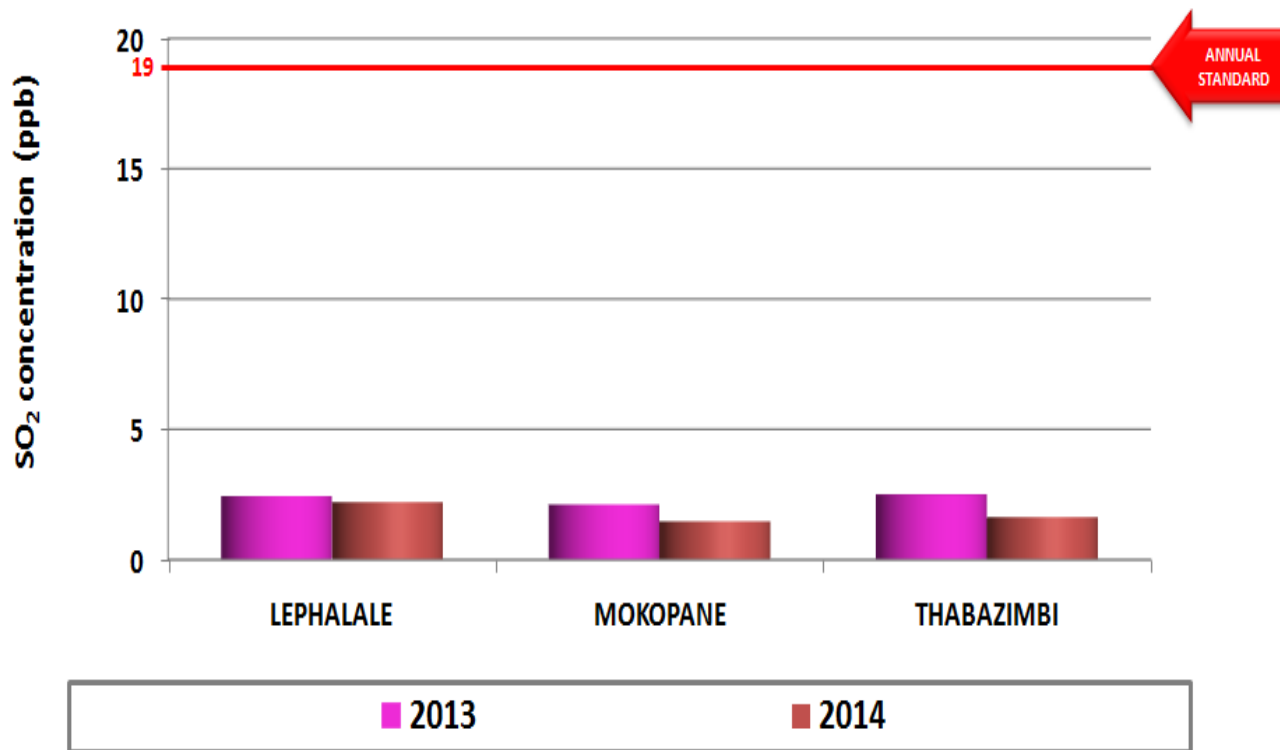


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# Waterberg-Bojanala Priority Area

SO<sub>2</sub>- 3 YEAR TREND



Based on 2013- 2014 data SO<sub>2</sub> is below the annual NAAQS for all the stations in the WPA.



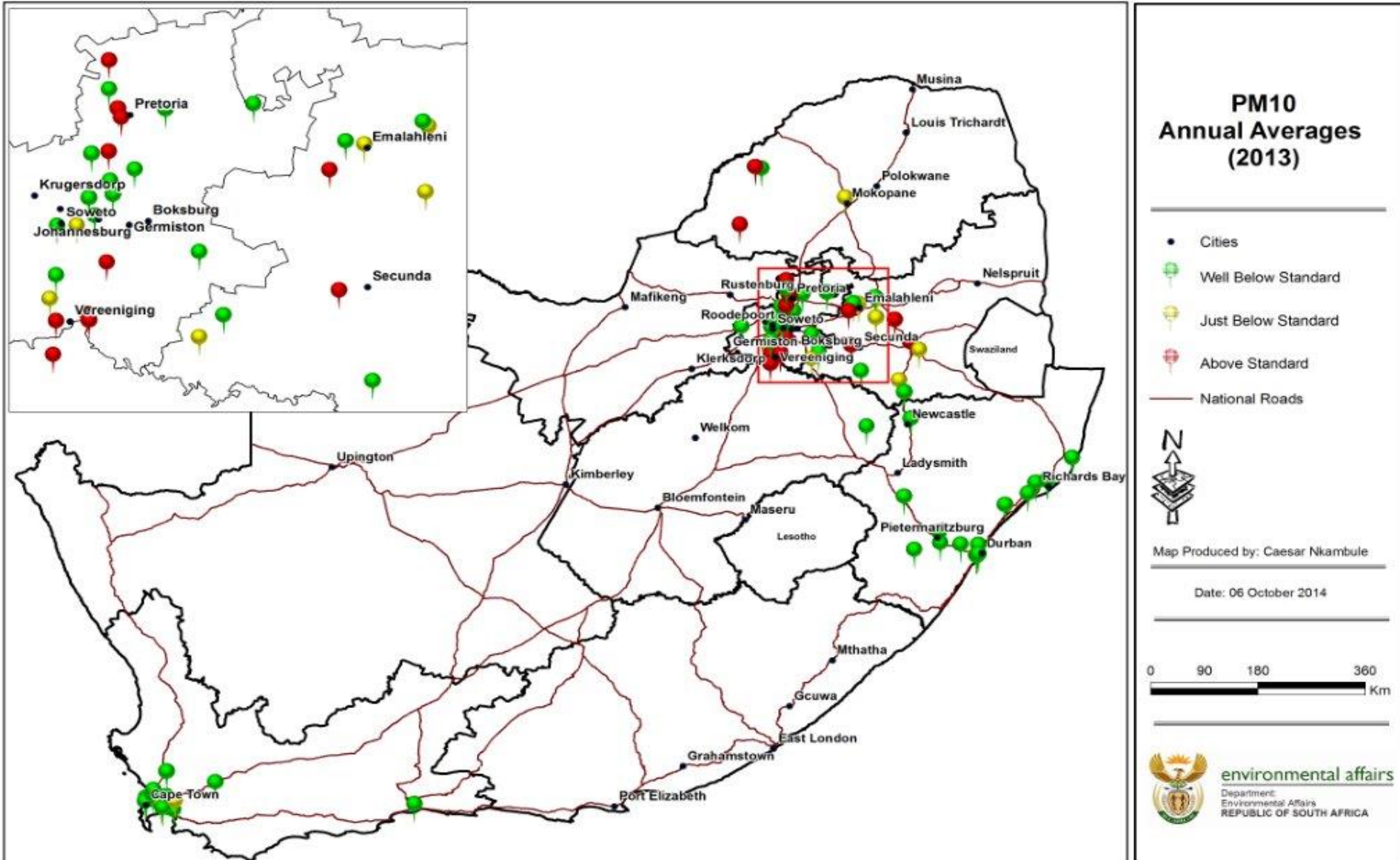
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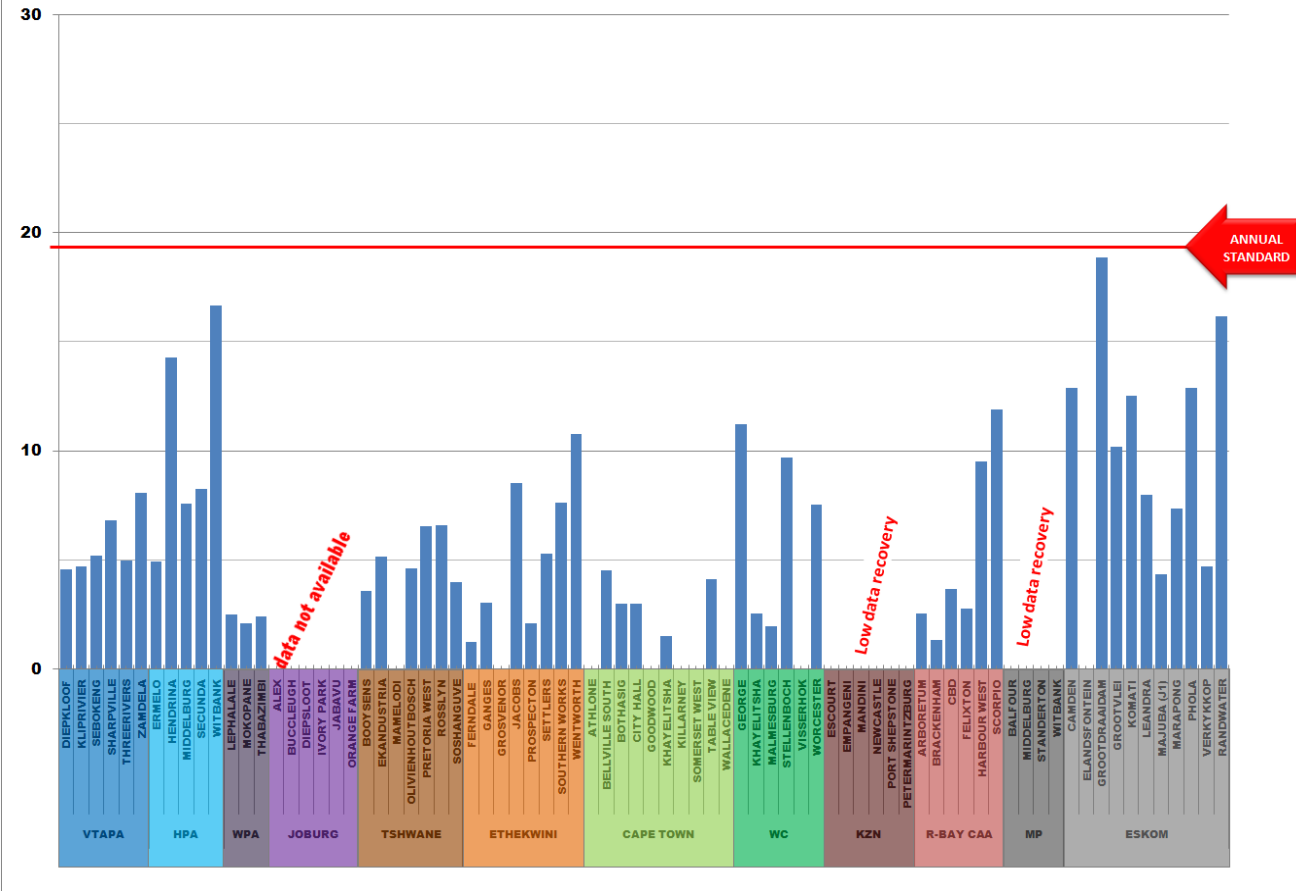


# 2013: PM<sub>10</sub> Annual Averages



# 2013: SO<sub>2</sub> Annual Averages

2013: SO<sub>2</sub> Annual Averages (ppb)



It appears that we are slowly but surely winning the battle against SO<sub>2</sub>. The map shows the summary of annual average concentration of SO<sub>2</sub> in the country for 2013.

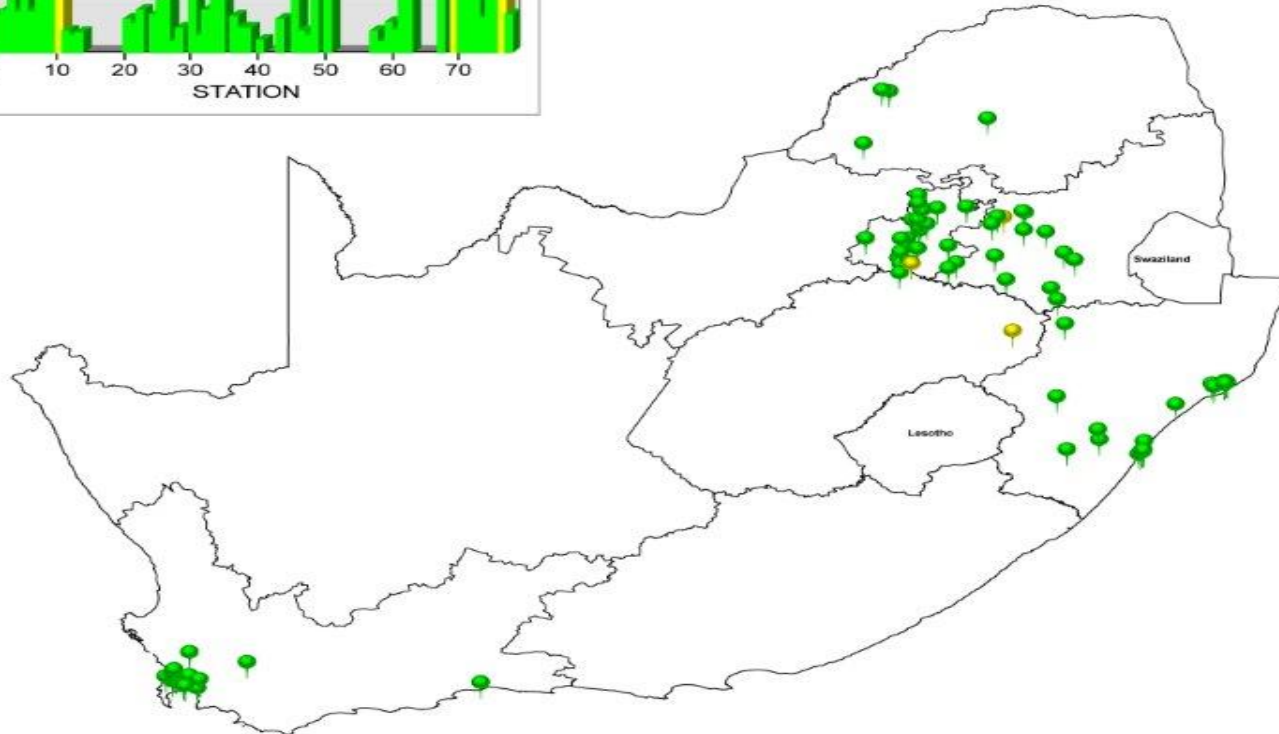
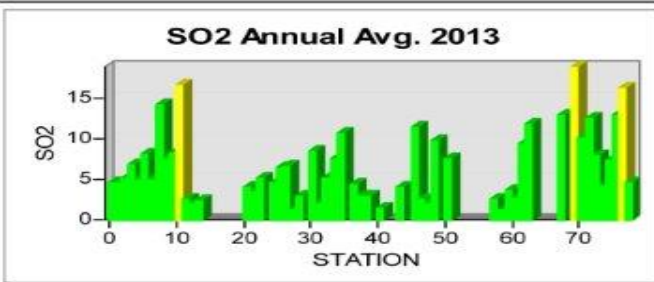
The station highlighted in red exceeded the annual SO<sub>2</sub> NAAQS of 19ppb. Stations highlighted in yellow are below the annual NAAQS, but in the range of 15 to 18ppb .



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# 2013: SO<sub>2</sub> Annual Averages



## SO<sub>2</sub> Annual Averages (2013)

- SO<sub>2</sub>
- Well Below Standards
  - Just Below Standards
  - Above Standards



Date: 29 September 2014

0 105 210 420 Km



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# National Air Quality Indicator



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# The National Air Quality Indicator (NAQI)

- Purpose:
  - To monitor the state and trend of air ambient quality in South Africa.
  - To monitor the efficacy of air quality interventions: policies, regulations, AQMPs...
- Principles:
  - Simple but not simplistic
  - Credibility
  - Transparency and complexity
  - Accuracy and reproducibility

– Sensitivity

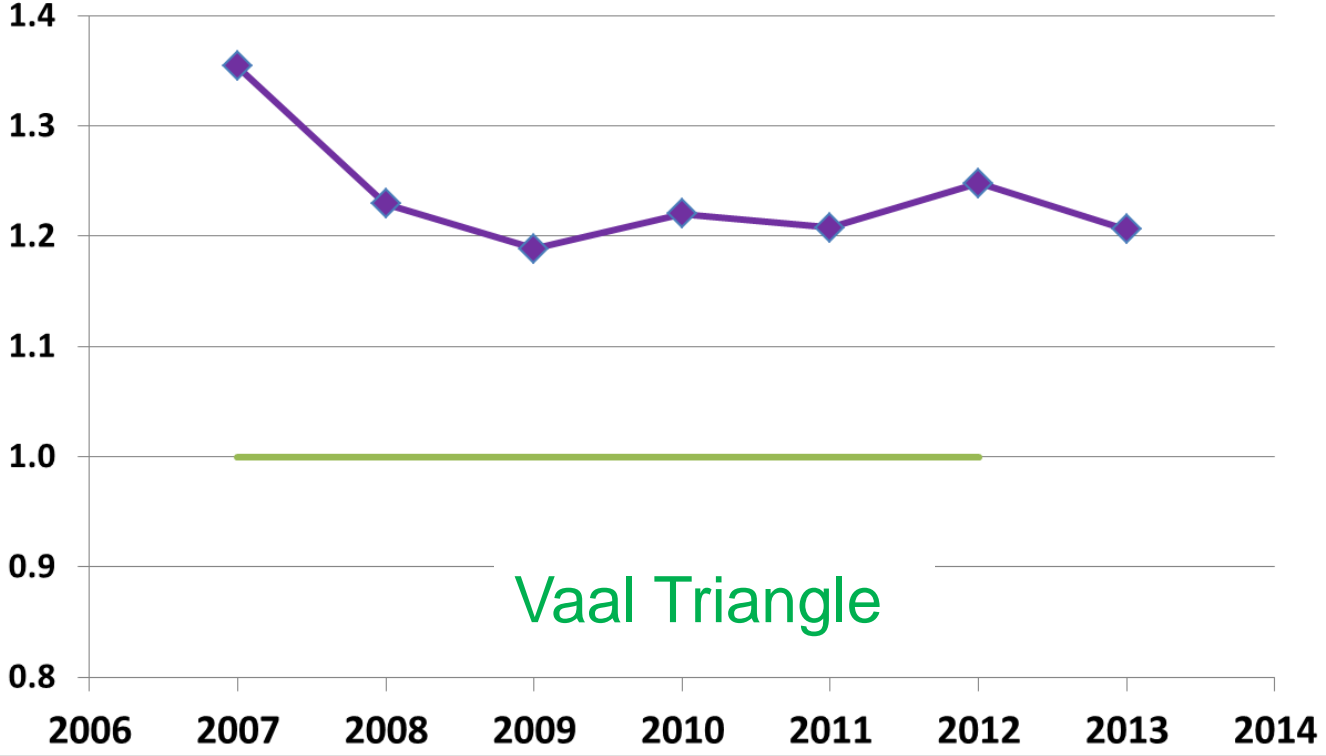


# NAQI – List of Reporting Monitoring Stations (2008-2014)

1. Alex
2. Jabavu
3. Orange Farm
4. Buccleugh
5. Ivory Park
6. Diepsloot
7. Hendrina
8. Middelburg
9. Secunda
10. Witbank
11. AJ Jacobs
12. Hospital
13. Leitrum
14. Southern Works
15. Settlers
16. Wentworth
17. Ferndale
18. Ganges
19. Grosvenor
20. Prospecton
21. Majuba 3
22. Club
23. Athlone
24. Bellville South
25. Goodwood
26. Bothasig
27. Table View
28. Wallacedene
29. Killarney
30. Somerset West
31. Elandsfontein
32. Marapong
33. Komati
34. Grootvlei
35. Phola
36. Leandra
37. Camden
38. Verkykkop
39. Diepkloof
40. Kliprivier
41. Sebokeng
42. Sharpville
43. Threerivers
44. Zamdela
45. Ermelo

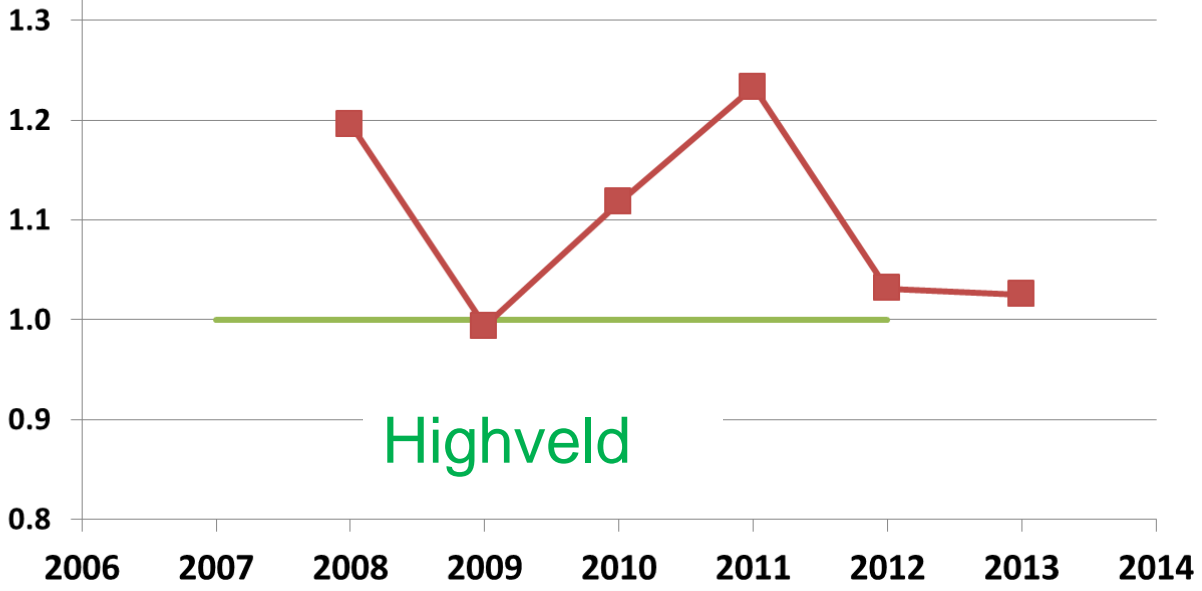


Priority Area Air Quality Indicator



Vaal Triangle

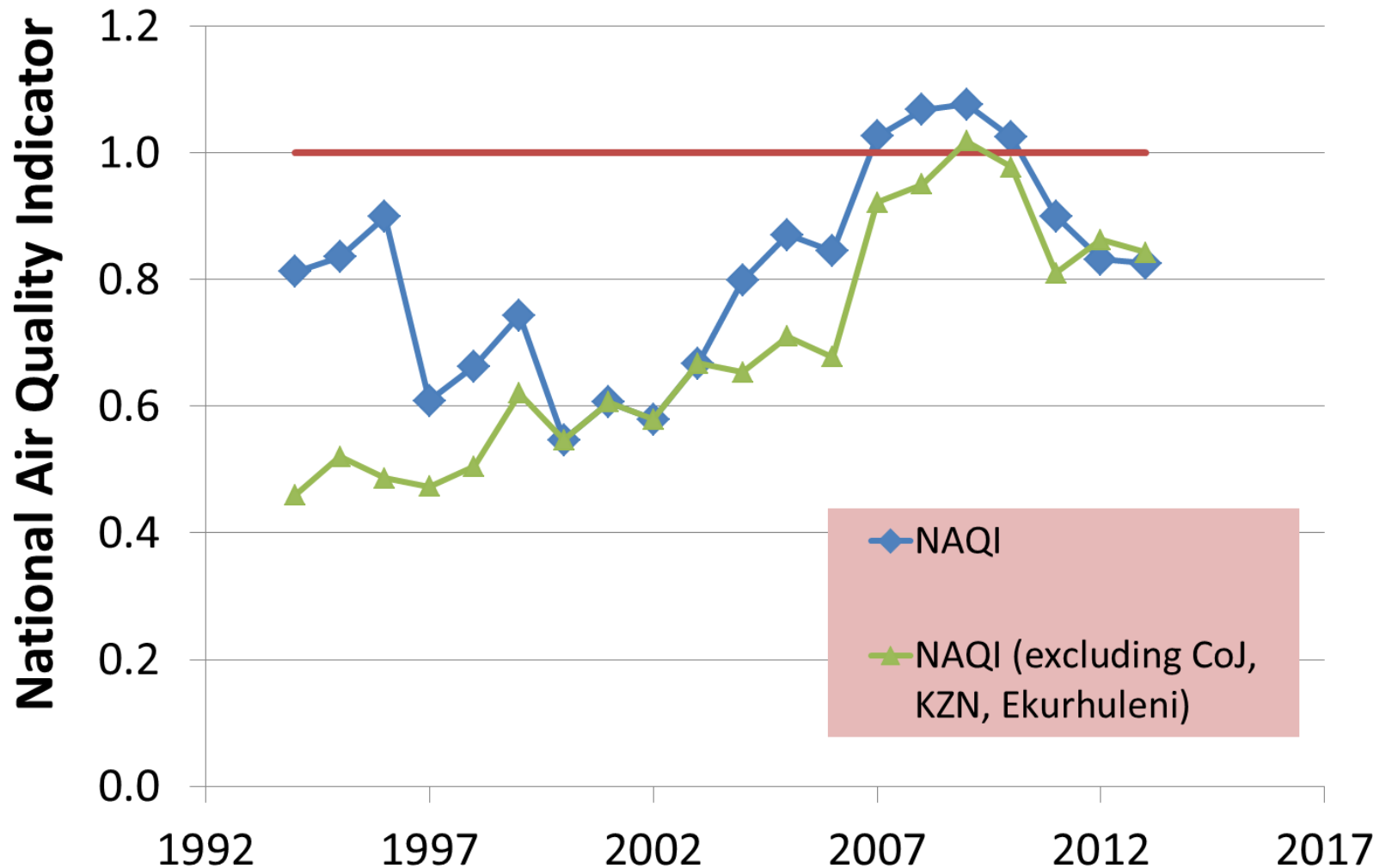
Priority Area Air Quality Indicator



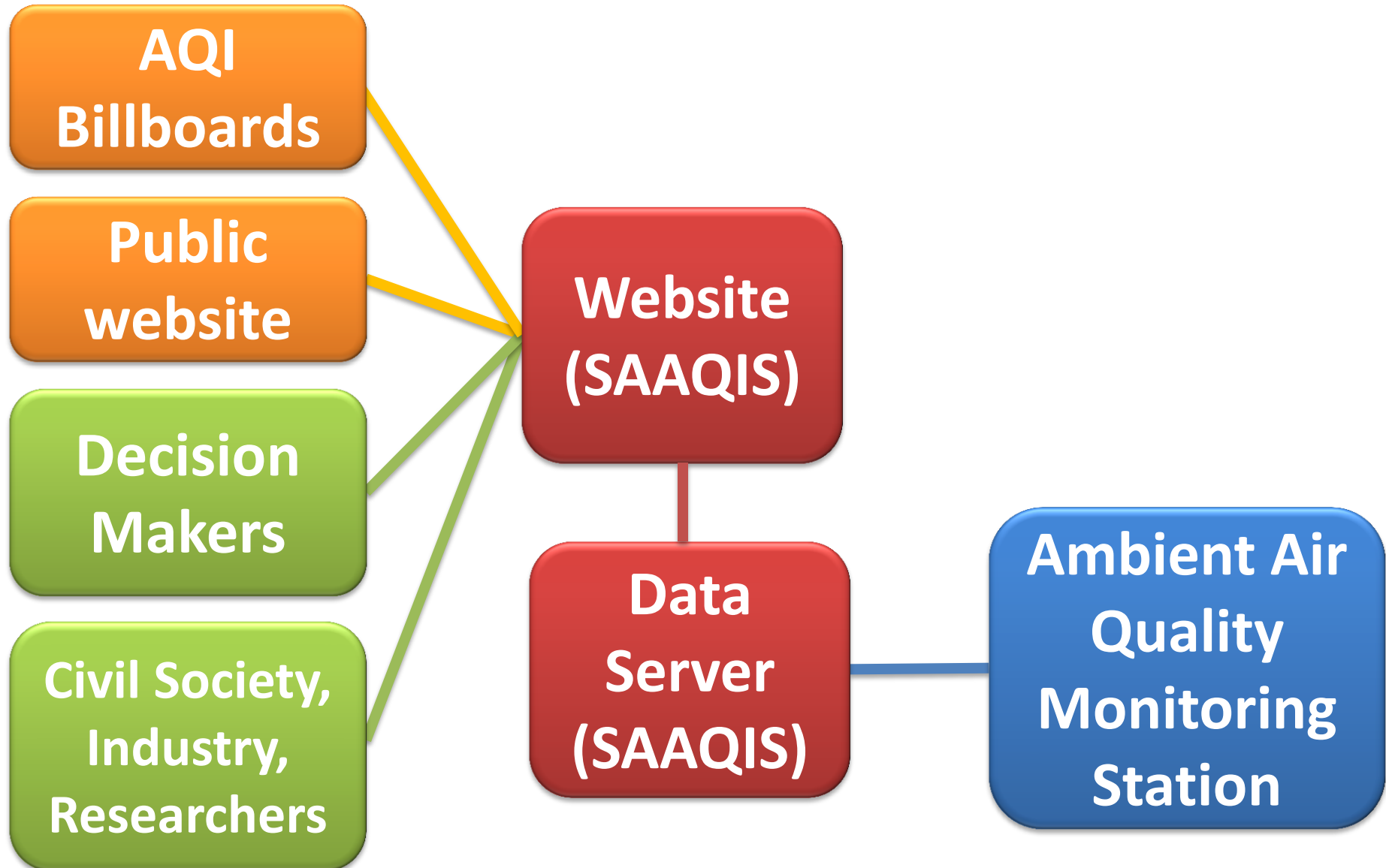
Highveld



# National Air Quality Indicator



# The Future of AQ Monitoring in SA



# Plans for the Future

- Continued implementation of the AQA and its National Framework
- Establishment of an asset management system to ensure efficiencies in air quality monitoring
- Live reporting of State of Air with health messages (Air Quality Index drafted) – **bill boards in highly populated areas**
- Emissions Offset Guidelines for Air Quality Management (**win-win solution**)





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