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T4 Air Quality Concerns

I. Coal Transport Pollution Omitted

II. AQ Modeling Underestimates Pollution from T4 Site

III. No Health Impact Assessment

IV. Problem of Dust Escaping T4 Site

Value of Clean Air

- Access to clean air is a public health necessity.
- Government effort should be towards protecting clean air and reducing existing pollution (NEPC, 2014).
- 2.3% of Australia's annual deaths caused by urban air pollution (Begg, 2007)
- Pollution health costs $11 - $24 billion per year, solely as a result of mortality (NEPC 2014)
- WHO now classifies air pollution as 'carcinogenic to humans' (IARC, 2013).

I. Pollution Impact of Coal transport to T4

- T4 Air Quality Assessment failed to consider pollution impacts on residents near coal rail corridor

- Potentially significant public health effects omitted from planning review process.

- Crucial that these effects are considered during the PAC.

Coal Corridor passes through numerous suburbs

Newcastle Port coal tonnage & daily train movements

	Daily loaded trains	Daily round trip pass-bys	Annual pass-bys
Current tonnage 150Mt	57.2	114.5	41,792
Current Approved 210Mt	79.8	159.6	58,254
Approved plus T4 280Mt	106.4	212.8	77,672
T4 only 70mt	(26.6)	(53.2)	(19,418)

I. Pollution Impact of Coal transport to T4

- One coal train pass-by every 6.7 minutes
- Coal trains take 2 or 3 minutes to pass by
- Result = near continuous rail traffic.
- Diesel loco coal train passage creates a plume of pollution
- Combining cancer causing diesel exhaust with harmful particulate matter (PM10 and PM2.5).
- No regulations limit loco diesel exhaust.

Sandgate Station 1:30pm Sunday 10/8/14

Coal Rail Corridor Pollution

From Newcastle Port to Rutherford

Within 500m of the coal corridor:

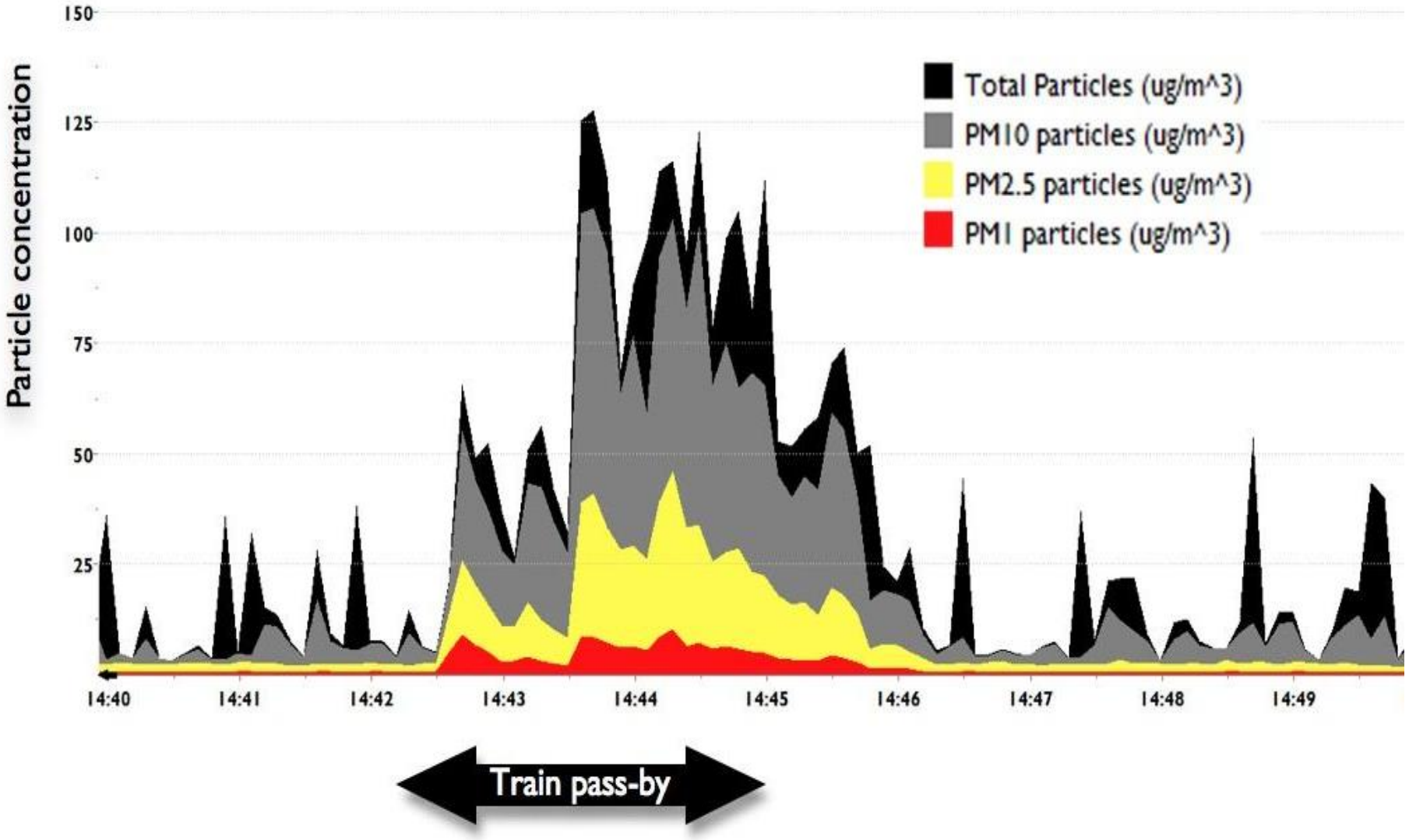
- 23,000 children attend school
- 32,000 residents

I. Pollution Impact of Coal transport to T4

Rail Pollution Health Risks Need Research

- ARTC & CTAG studies agree particulates increase with train pass-by
- CTAG train signature study show PM10 at least double, & up to 13 times larger vs background levels
- Mitigate rail pollution at planning stage, should not be deferred

Unloaded Coal Train passing Beresfield station, 15/7/13
3 locomotives, 98 wagons, 35km/h



Full and Empty Coal Trains near Sandgate 9/8/14

II. T4 Site AQ Modeling Underestimates Pollution

(1) 2010 poor choice as 'average':

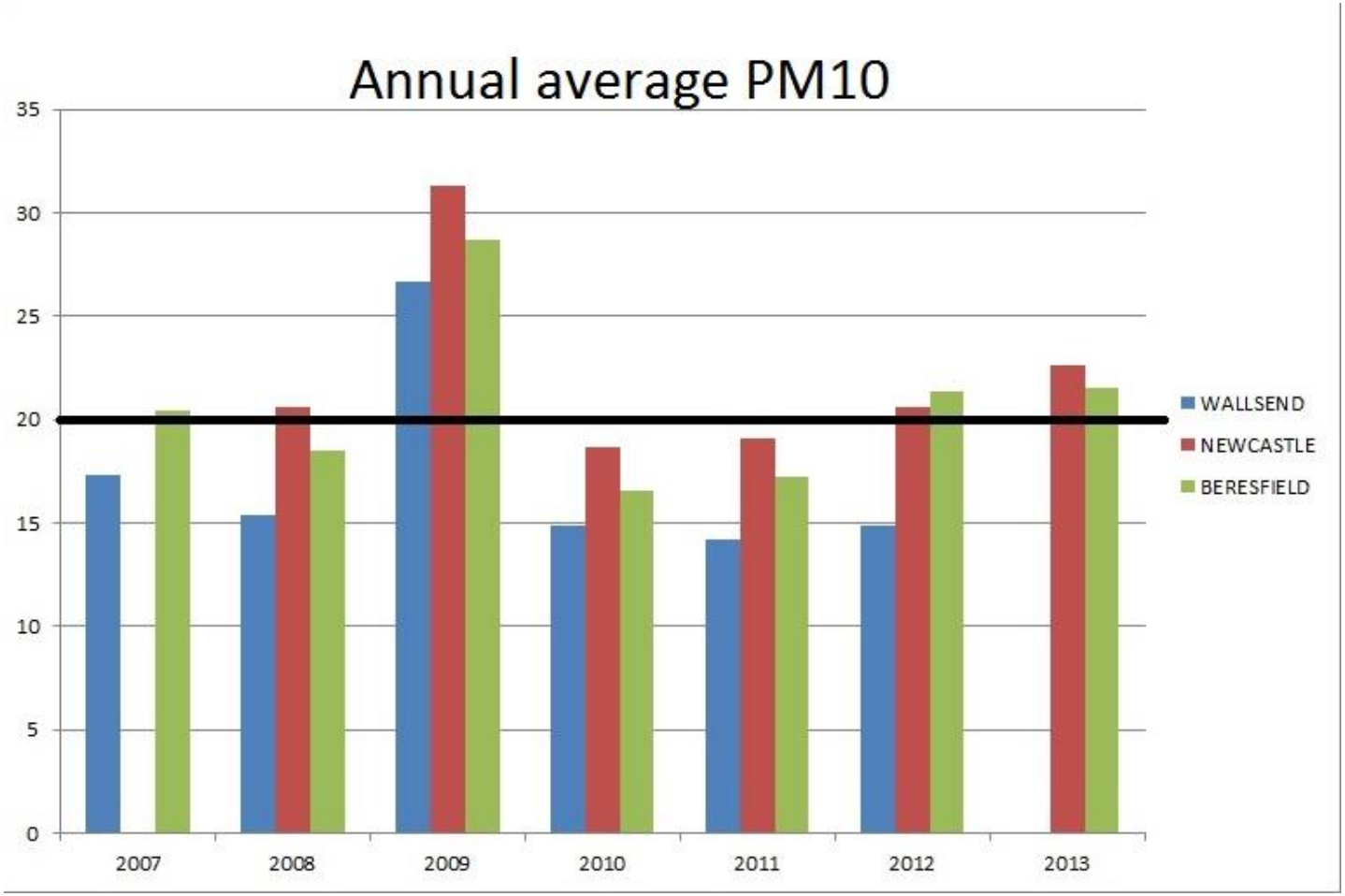
lowest PM10 in past 7 years

2012/13 PM10 levels for Newcastle & Beresfield already **above** predictions with T4 operating

Above WHO & NEPC annual guideline for PM10

Lower Hunter EPA air monitoring sites

(above 20*u*g/m³ WHO std 2012 - 2013)



II. T4 Site AQ Modeling Underestimates Pollution

(2) PM2.5 emissions underestimated by assuming only 2 locos per train

(3) T4 modeling assumes trains spend only 2 hrs on site.
2 hours = ideal time, for smooth run (40%)
Locomotive diesel engines run continuously

(4) Trains standing by at Hexham & Sandgate waiting to dump coal should be included

(5) Extreme weather events under climate change exacerbate fugitive emissions

III. Absence of Health Impact Assessment (HIA)

- HIA combines data: pollution + demographics + current health status + pollution health risk

- Vulnerable people = low income;
  chronic heart and lung disease;
  asthmatics;
  infants; children; elderly
  pregnant women

III. Absence of Health Impact Assessment (HIA)

- 2011 census – 25,680 residents adjacent to T4

- Compared to state average:
  lower household income
  higher rate unemployment

- 1/3rd children <14 yrs & elderly (>65 yrs)
- 24 schools, preschools & nursing homes

Health Status of Residents

- Rank highly in hospital emergency visits for respiratory illness and asthma
- Hunter residents generally have higher than state average death rate for all causes & CVD
- On average, greater days of life expectancy loss from pollution than people in Sydney

III. Absence of Health Impact Assessment (HIA)

- What is the health cost of T4?
  - Attributable deaths?
  - Years of Life Lost?
  - Days of lost productivity due to illness?

  - These project costs excluded & paid for by public
  - Public does not know T4's full impact

IV. Problem of Dust Escaping T4 Site

- T4 dust suppression techniques 25% - 85% efficiency
- 1 tonne TSP/dust daily, construction
- 0.55 tonne TSP/dust daily, operational 70Mtpa

- Wind erosion control of stockpile 50%
- Stockpile should be enclosed

IV. Problem of Dust Escaping T4 Site

- Human & machine error

- Increased frequency extreme weather under global warming scenarios
- El Nino-Southern Oscillation induced droughts more intense in future

- Dust containment always successful?
- PWCS fined for spills into Newcastle harbour

IV. Problem of Dust Escaping T4 Site

- NSW Planning requires AQ monitoring on site
- Fails to include PM2.5 monitoring

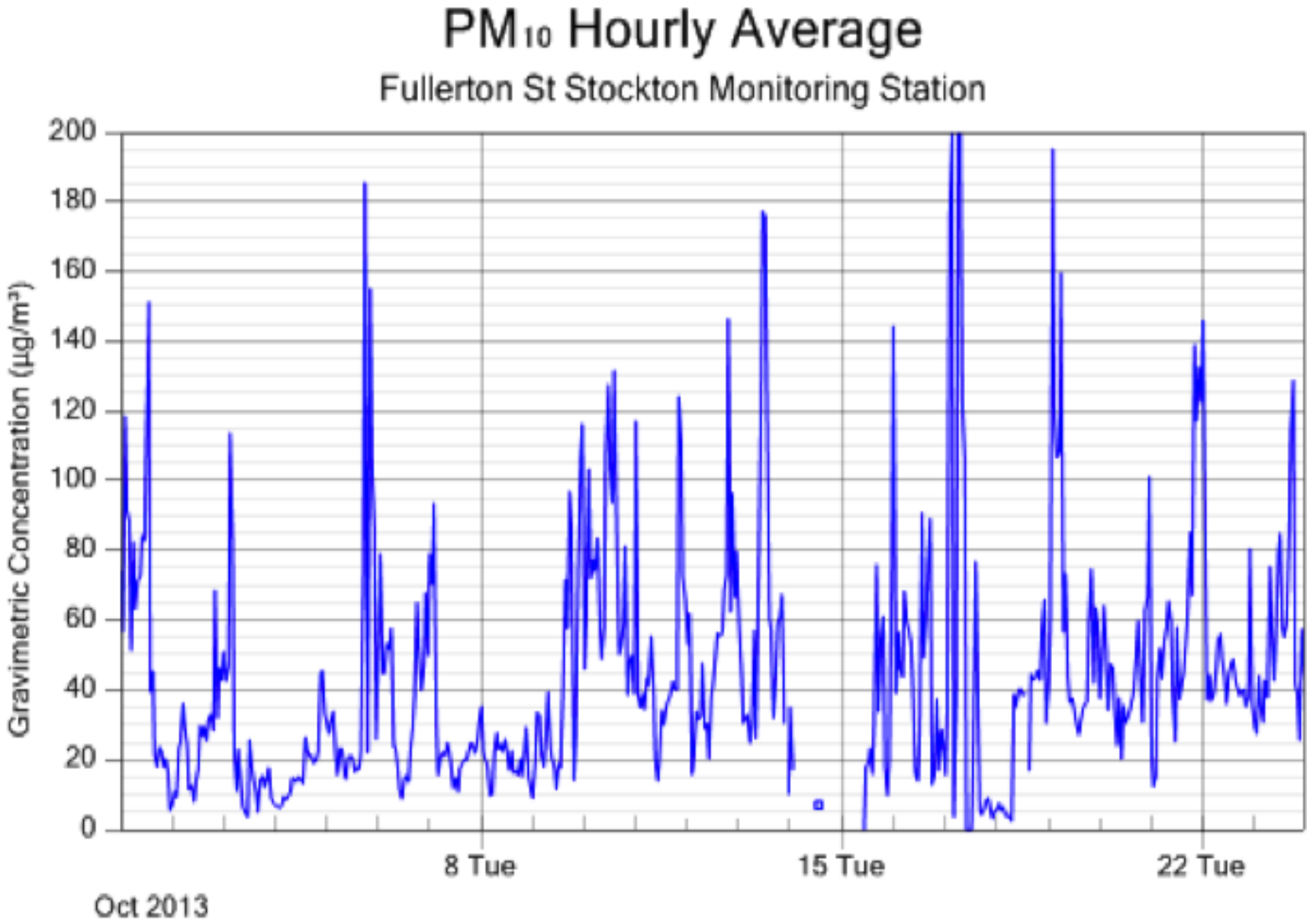
- Planning requires AQ Mgt Plan
- Does not mandate chemical suppressants when use of water fails

- No requirement to cease operations in high winds

IV. Problem of Dust Escaping T4 Site

Kooragang Island, Newcastle Coal Infrastructure Group,
17 October, 2013, 11am.

Stockton PM10 50% above Std. on 17 October



IV. Problem of Dust Escaping T4 Site

- NSW Planning: Dust should be minimized to the greatest extent ‘practicable’
- No quantitative criteria
- Given past failures, ‘predictive/reactive monitoring’ has not proven good enough to protect public health from T4 emissions

T4: Adding further pollution to Newcastle Port