



Airport Link / Northern Busway Project

Monthly Environmental Monitoring Report

May 2011

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1.0 Report Purpose and Scope

The report has been compiled to summarise the results of noise, air quality and vibration monitoring on the Airport Link and Northern Busway project. The report also compares those results with compliance thresholds for environmental harm, community nuisance and loss of amenity nominated by the Coordinator General (Change Report July 2008 and Woolloowin Worksite Report October 2009).

The monitoring data covered in this report is for the May 2011 reporting period, from 16th April 2011 to 15th May 2011.

2.0 Monitoring Locations

Several monitoring locations exist within the project area as described in Figures 1-5. Note that the aerial photograph overlays used in Figures 1-5 do not accurately portray the extent of the project's progress to March 2011, though do serve a useful purpose in relating the monitoring locations to existing structures and infrastructure.

Bowen Hills Monitoring Locations



Source Nearmap 2010

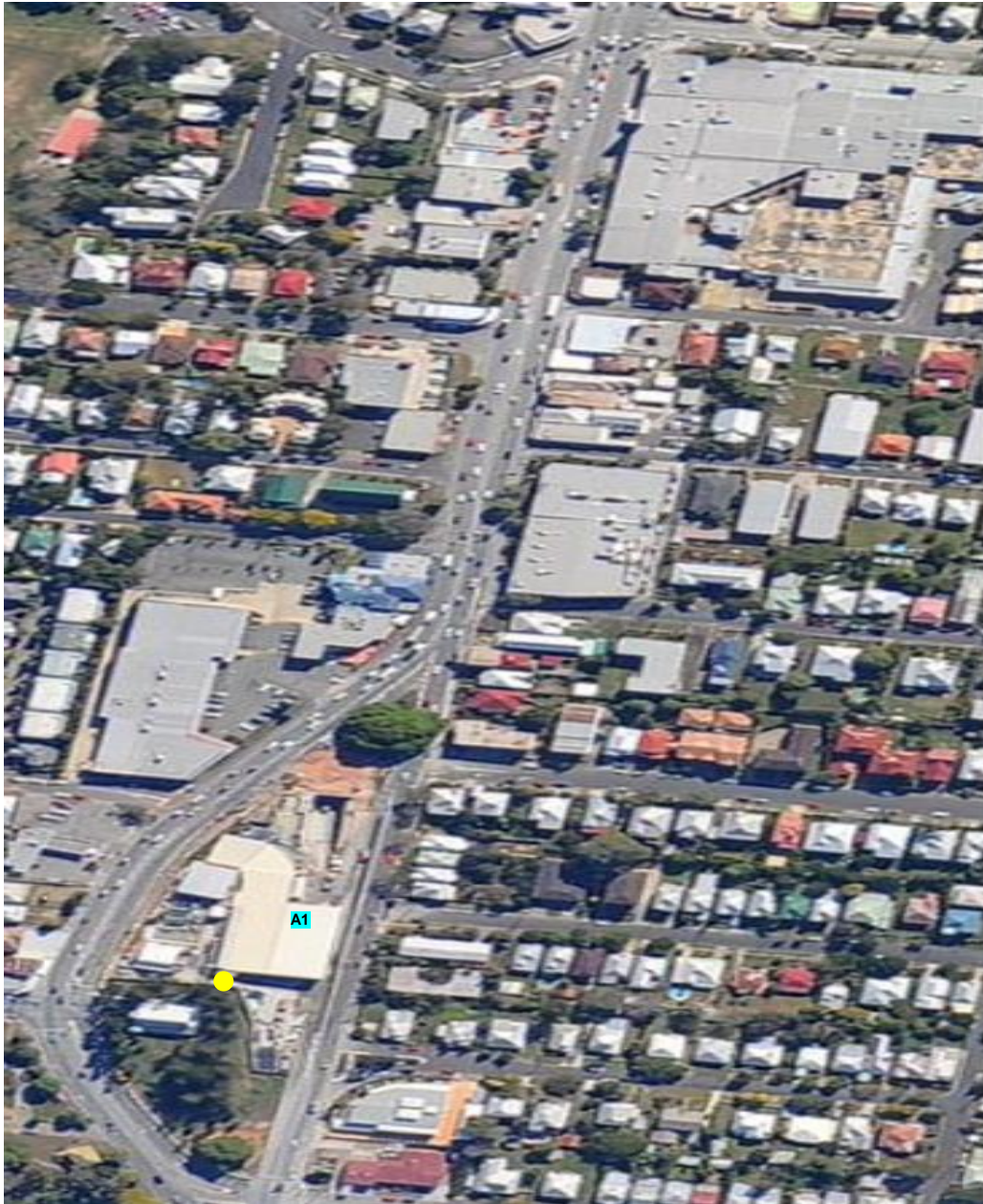
Figure 2.1 – Bowen Hills Monitoring Locations

Legend

- | | |
|--------------------------------|---------------------------|
| ● Noise (during construction) | ● Air (PM ₁₀) |
| ● Vibration | ● Air (Dust Deposition) |





Note: locations are indicative only

Truro Street Mid Tunnel Monitoring Locations



Source: NearMap 2010

Figure 2.2 – Truro Street Mid Tunnel Monitoring Locations
Legend

- | | |
|--|---|
|  Noise (during construction) |  Air (PM ₁₀) |
|  Vibration |  Air (Dust Deposition) |

Note: locations are indicative only

Northern Busway Monitoring Locations



Source: NearMap2010

Figure 2.3 – Northern Busway Monitoring Locations
Legend

- | | |
|--------------------------------|---------------------------|
| ● Noise (during construction) | ● Air (PM ₁₀) |
| ● Vibration | ● Air (Dust Deposition) |

Note: locations are indicative only

Kedron Monitoring Locations



Source: NearMap 2010

Figure 2.4 – Kedron Monitoring Locations

Legend

- | | |
|--------------------------------|---------------------------|
| ● Noise (during construction) | ● Air (PM ₁₀) |
| ● Vibration | ● Air (Dust Deposition) |

Note: locations are indicative only


Woolloowin Monitoring Locations



Source Nearmap 2010

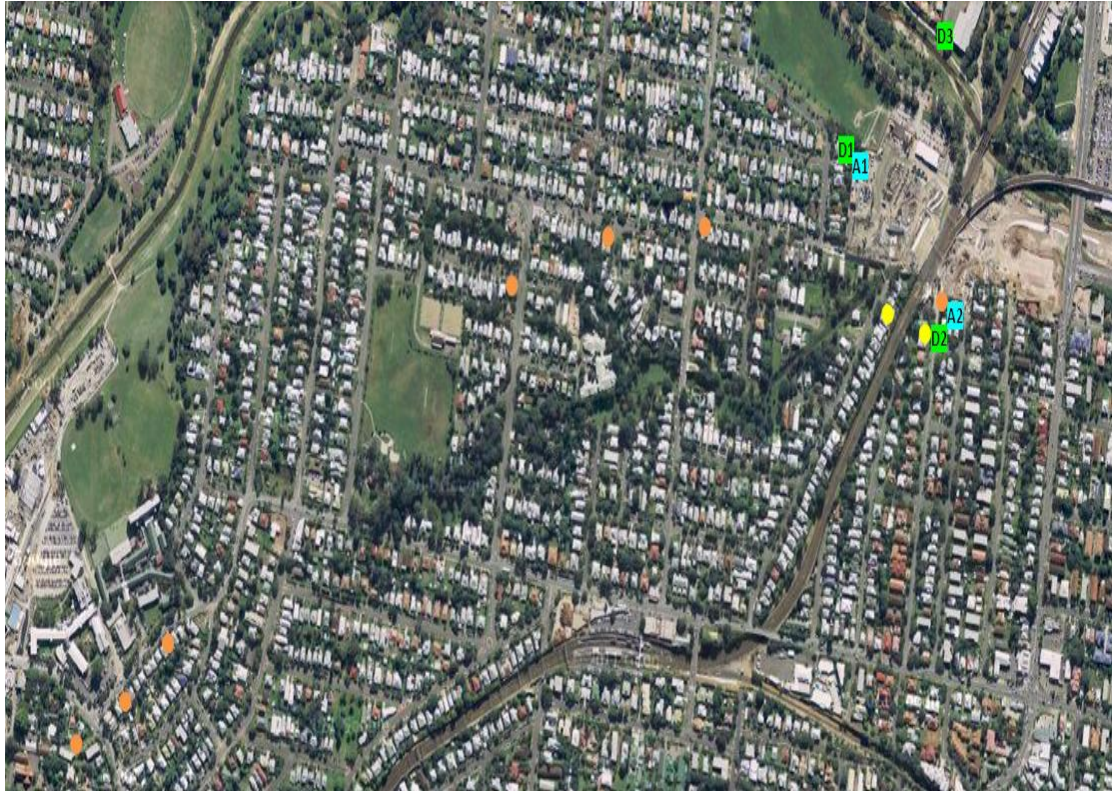
Figure 2.5 – Woolloowin Monitoring Locations

Legend

- | | |
|---|---|
|  Noise (during construction) |  Air (PM ₁₀ /TSP) |
|  Vibration |  Air (Dust Deposition) |
|  Air (CO and NO ₂) | |

Note: locations are indicative only

Toombul Monitoring Locations



Source: Google 2011

Figure 2.6 – Toombul Monitoring Locations

Legend

- Noise (during construction)
- Vibration

- Air (PM₁₀)
- Air (Dust Deposition)

Note: locations are indicative only

3.0 Noise Monitoring

TJH undertakes regular monitoring of noise levels at a variety of locations across the project to help measure impacts and assist the team plan works and appropriate mitigations if required. The type and timing of monitoring is influenced by the activities being undertaken and relevant Noise Goals (inside buildings and residents living areas where allowed at night and during the day)

Monitoring involves 'attended' monitoring (where a member of the TJH environment team is observing noise sources and durations whilst noise measurements are taken).

3.1 Overview of Noise Mitigation Measures

Generally the main strategies adopted in order to mitigate noise during construction works have included the following:

1. Undertake noise modelling for sections of works adjacent to sensitive receptors.
2. Reasonable and practical mitigation measures that have been implemented to date include the following:
 - a. Temporary noise barriers (precast concrete barrier and plywood):
 - i. Lutwyche Road (Lutwyche, Kedron)
 - ii. Gympie Road (Kedron)
 - iii. Truro Street on all sides of works (Lutwyche)
 - iv. Stafford Road (Kedron)
 - v. Rose St (Wooloowin)
 - vi. Kalinga Park (Toombul)
 - vii. KBB Worksite (Kedron)
 - b. Temporary noise barrier (shipping container) installations:
 - i. Perry Street, (Kedron)
 - ii. Kalinga Park (Toombul)
 - iii. Federation/Morris Street (Bowen Hills)
 - c. Acoustic shed has been built around the tunnel portals / shafts at:
 - i. Truro Street
 - ii. Wooloowin
 - iii. Kalinga Park (410 launch box)
 - d. Consultation with property owners prior to commencing works and during construction works
 - e. Installation of mitigation measures at affected residents on a case-by-case basis
 - f. Investigating the early installation of permanent noise barriers at early stages.
 - g. Acoustic shielding of various plant
 - h. Regular awareness, training and reinforcement of work behaviours of staff, subcontractors, spoil haulage drivers, and delivery drivers to prevent or minimise noise generation in work areas
 - i. Use of temporary acoustic treatment (e.g. sound curtains around onsite generators and access/ egress from sites)
 - j. Installation of directional reversing alarms (e.g. 'squawkers') on plant (especially those working out of normal working hours)

3.2 Noise Monitoring Results

The results of TJH monitoring efforts are summarised for each project area in Tables 3a-e.

Table 3a: Noise Monitoring Results – Bowen Hills Civil

Location	Monitoring Period	Average L _{Aeq} (15 min) (dBA)	CoG Goal L _{Aeq} (15 min) (dBA)	Average L _{A10} (15 min) (dBA)	CoG Goal L _{A10} (15 min) (dBA)	Comments
Mews Apartments, Campbell Street, Bowen Hills						
Apartment Building, Level 5	10/05/2011 2:34pm - 2:49pm	34.7	45	35.8	55	<p>Monitoring Type Attended. Internal. Windows and Doors closed</p> <p>Noise Sources Non-TJH noises were: air-conditioning, traffic, and aeroplane. TJH noise sounded like concrete crushing</p> <p>Discussion The dominant source of noise was traffic on the ICB Northbound exit to Lutwyche Rd. Construction noise that could be heard was concrete crushing from parapet work on BR111</p>

Table 3b: Noise Monitoring Results – Northern Busway

Location	Monitoring Period	Average L _{Aeq} (15 min) (dBA)	CoG Goal L _{Aeq} (15 min) (dBA)	Average L _{A10} (15 min) (dBA)	CoG Goal L _{A10} (15 min) (dBA)	Comments
11 Maygar Street, Windsor						
2 Storey Timber House (Living Room)	21/04/2011 7:57am - 8:11am	44.6	45	45.3	55	<p>Monitoring Type Attended. Internal. Windows and Doors closed</p> <p>Noise Sources The dominant noise source throughout the period was traffic moving along both Lutwyche Road and Maygar Street. TJH noise sources included a reverse squawker, flat drum roller and a street sweeper. Other noise sources included a pedestrian and internal noise</p> <p>Discussion Monitoring was to assess the level of impact being caused to residents adjacent to the Northern Busway section 3 worksite. TJH works were noted throughout the session. Results were within CoG goals</p> <p>Mitigation Mitigation was not required as results were within CoG goals</p>

Table 3c: Noise Monitoring Results - Kedron

Location	Monitoring Period	Average L _{Aeq} (15 min) (dBA)	CoG Goal L _{Aeq} (15 min) (dBA)	Average L _{A10} (15 min) (dBA)	CoG Goal L _{A10} (15 min) (dBA)	Comments
228 Gympie Road, Kedron						
Living Room (windows and door open)	04/05/2011 3:18pm – 3:33pm	58.2	45	51.0	55	<p>Monitoring Type Attended. Internal</p> <p>Noise Sources The dominant noise sources throughout the period were Gympie Road traffic and a smoke detector that needed new batteries. Other audible noise sources included horn (TJH), banging, workers talking, street sweeper, drilling/cutting, franna, squawkers, resident interference, birds and a plane</p> <p>Discussion Internal LAeq noise goals were exceeded as a result of the smoke detector that required new batteries. No noise complaints were received on this date</p> <p>Mitigation Measures This property is owned by DTMR.</p>
Living Room (windows and door closed)	04/05/2011 3:35pm – 3:50pm	55.4	45	42.5	55	<p>Monitoring Type Attended. Internal</p> <p>Noise Sources The dominant noise sources throughout the period were Gympie Road traffic, birds, a smoke detector that needed new batteries and drilling/cutting. Other audible noise sources included franna, squawkers, banging, horn (TJH) and street sweeper</p> <p>Discussion Internal LAeq noise goals were exceeded as a result of the smoke detector that required new batteries. No noise complaints were received on this date</p> <p>Mitigation Measures This property is owned by DTMR.</p>
Living Room (windows and door open)	11/05/2011 3:33pm – 3:48pm	56.3	45	49.8	55	<p>Monitoring Type Attended. Internal</p> <p>Noise Sources The dominant noise sources throughout the period were Gympie Road traffic and a smoke detector that required new batteries. Other audible noise sources included banging (TJH), resident interference and birds</p> <p>Discussion Internal LAeq noise goals were exceeded as a result of the smoke detector that required new batteries. No noise complaints were received on this date</p> <p>Mitigation Measures This property is owned by DTMR.</p>

Living Room (windows and door closed)	11/05/2011 3:53pm – 4:08pm	55.3	45	40.5	55	<p>Monitoring Type Attended. Internal</p> <p>Noise Sources The dominant noise sources throughout the period were Gympie Road traffic and a smoke detector that needed new batteries. Other audible noise sources included franna, bang, horn, workers talking, birds and a plane</p> <p>Discussion Internal LAeq noise goals were exceeded as a result of the smoke detector that required new batteries. No noise complaints were received on this date</p> <p>Mitigation Measures This property is owned by DTMR.</p>
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Table 3d: Noise Monitoring Results – Woolloowin

Location	Monitoring Period	Average L _{Aeq} (15 min) (dBA)	CoG Goal L _{Aeq} (15 min) (dBA)	Average L _{A10} (15 min) (dBA)	CoG Goal L _{A10} (15 min) (dBA)	Average L _{AMAX} (15 min) (dBA)	CoG Goal L _{AMAX} (15 min) (dBA)	Comments
71 Park Road, Woolloowin								
Single level brick flat (Dining Room)	6/05/2011 3:20pm – 3:36pm	43.3	45	41.1	55	-	-	<p>Monitoring Type Attended Noise Monitoring. Doors and Windows Closed</p> <p>Noise Sources Site noise included: Hum from fans and site, truck movement workers conversations. Other noise sources included: Traffic, pedestrians, barking dogs and birdlife.</p> <p>Discussion The shed is now sealed and air is neither sucked in nor blown out. The sound from the fans was constant throughout the monitoring session. Monitoring indicates that day time CoG goals were met.</p> <p>Mitigation Measures An acoustic shed and noise wall is in place around Woolloowin Site. 71 Park Road is owned by DMR and is used by TJH for monitoring purposes.</p>

Table 3e: Noise Monitoring Results – Toombul

Location	Monitoring Period	L _{Aeq} (15 min) (dBA)	CoG Goal L _{Aeq} (15 min) (dBA)	L _{A10} (15 min) (dBA)	CoG Goal L _{A10} (15 min) (dBA)	Comments
89 Jackson Street, Clayfield						
Double Storey Timber House (Front Bedroom)	05/05/2011 9:04am – 9:15am	41.4	45	38.6	55	<p>Monitoring Type Internal attended monitoring, windows and doors open</p> <p>Noise Sources TJH noise sources (site hum/conveyor, bang/drop, TJH horn, engine rev, hammering, drilling, TBM alarm, crane rev) plus non-TJH sources (birds, plane, dog, train, resident)</p> <p>Discussion Monitoring indicates that CoG goals are being met</p> <p>Mitigation Measures Include a 6m noise wall</p>
Double Storey Timber House (Front Bedroom)	05/05/2011 2:05pm – 2:19pm	34.9	45	34.5	55	<p>Monitoring Type Internal attended monitoring, windows and doors closed</p> <p>Noise Sources TJH noise sources (crane rev, TJH horn, conveyor, hammering, bang/drop, engine rev) plus non-TJH sources (birds, train, resident, plane, dogs, traffic)</p> <p>Discussion Monitoring indicates that CoG goals are being met</p> <p>Mitigation Measures Include a 6m noise wall</p>
Double Storey Timber House (Front Bedroom)	05/05/2011 2:23pm – 2:36pm	40.2	45	41.2	55	<p>Monitoring Type Internal attended monitoring, windows and doors open</p> <p>Noise Sources TJH noise sources (conveyor, crane lift, bang/drop, hammering, CC421 concrete chute, TJH horn) plus non-TJH sources (birds, resident, plane, train, traffic)</p> <p>Discussion Monitoring indicates that CoG goals are being met</p> <p>Mitigation Measures Include a 6m noise wall</p>

78 Elliott Street, Clayfield						
Double Storey Timber House (Living Room)	09/05/2011 4:11pm – 4:25pm	44.6	45	44.0	55	<p>Monitoring Type Internal attended monitoring, windows and doors closed</p> <p>Noise Sources TJH noise sources (concrete pour, TJH horn, crane rev) and non-TJH sources (residents, birds, trains, plane)</p> <p>Discussion Monitoring indicates that CoG goals are being met</p> <p>Mitigation Measures Include a 6m noise wall and double stack containers and air conditioning</p>
Double Storey Timber House (Living Room)	09/05/2011 4:26pm – 4:40pm	46.9	45	42.9	55	<p>Monitoring Type Internal attended monitoring, windows and doors closed</p> <p>Noise Sources TJH noise sources (concrete pour, TJH horn) and non-TJH sources (residents, birds, trains)</p> <p>Discussion Monitoring indicates elevated LAeq levels throughout session. It should be noted that the session was heavily influenced by non-TJH noise sources including residents' activities/speaking and trains. TJH specific LAeq levels could not be isolated from these external noise sources</p> <p>Mitigation Measures Include a 6m noise wall and double stack containers and air conditioning</p>

3.3 Compliance with Noise Goals

There are no exceedences of the Coordinator General's Noise Goals as a result of TJH construction activities during this monitoring period.

4.0 Air Quality Monitoring

TJH undertakes regular monitoring of air quality levels at a variety of locations across the project to help measure impacts and assist the team to plan works and appropriate mitigations if required.

Monitoring involves sampling of dust deposition (monthly), and real-time respiratory dust (PM10) at a number of locations nominated by the Coordinator General. Real-time monitoring of Total Suspended Particulates (TSP) and CO/NO₂ is also occurring at a location in the vicinity of the Woolwoon Worksite.

Results of monitoring are compared to Air Quality Goals nominated by the Coordinator General (Change Report July 2008 & Woolwoon Worksite Modification October 2009) for the Airport Link and Northern Busway projects.

4.1 Overview of Air Quality Mitigation Measures

The key strategies adopted to mitigate dust and air quality impacts during construction works have included the following:

1. Continual use of water carts
2. Covering of haul vehicles
3. Stabilisation of cleared areas with hardstand materials such as concrete and crushed rock
4. Hydro-mulching and laying geofab to batters
5. Reduction of cleared / exposed soils with concrete paving and geo-fabric installation
6. Road sweepers

4.2 Air Quality Monitoring Results – PM10/TSP

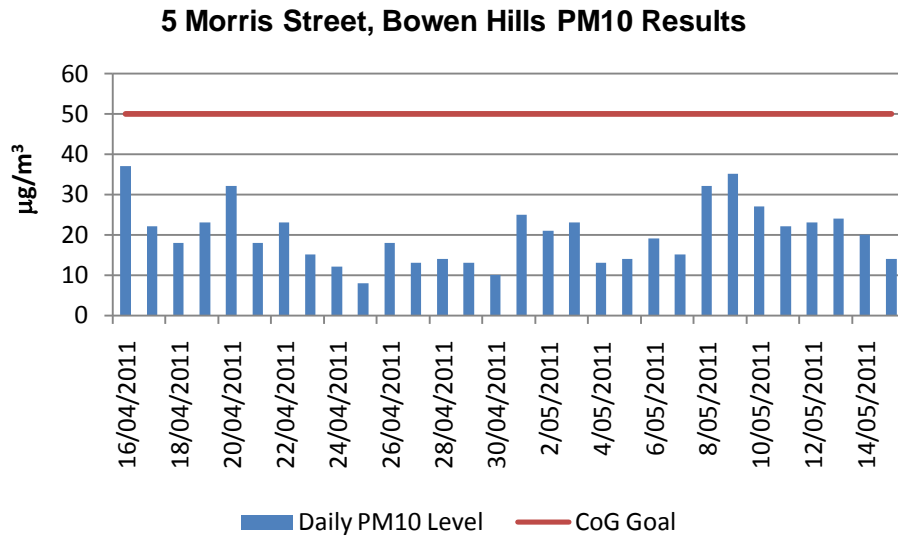


Figure 4.2.1: 5 Morris Street, Bowen Hills PM10 Results (for monitor location see figure 2.1 – A1)

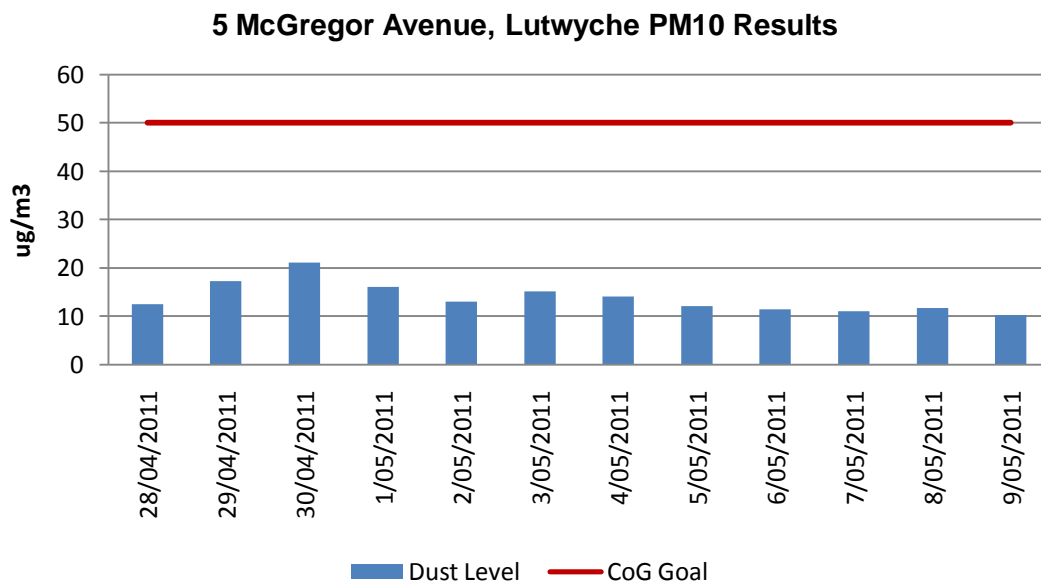


Figure 4.2.2: Northern Busway, 5 McGregor Avenue Lutwyche PM10 Results (for location see figure 2.3 – A2)

Erskine Avenue, Kedron, PM10 Results

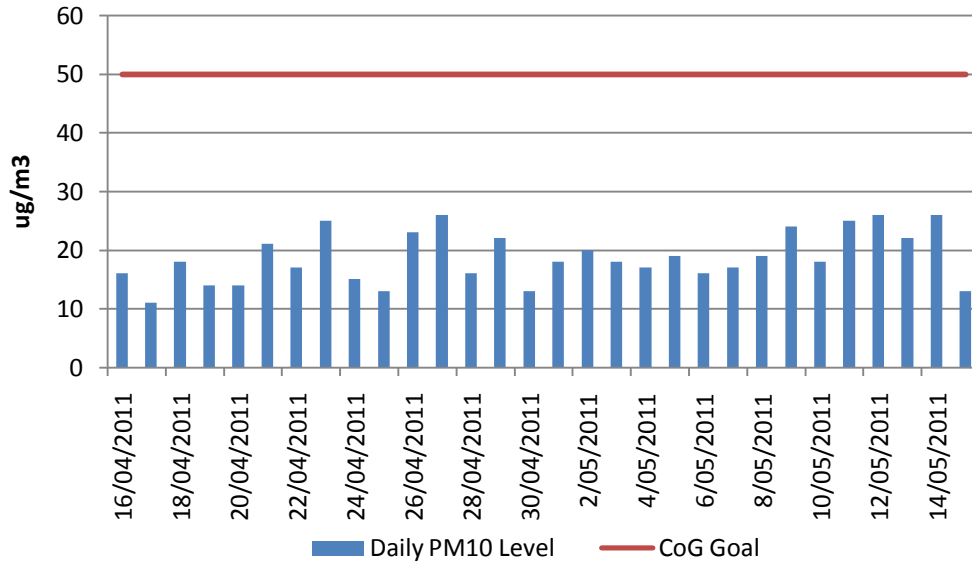


Figure 4.2.3: Erskine Avenue, Kedron PM10 Results (for monitor location see figure 2.4 – A1)

Kedron State High School, PM10 Results

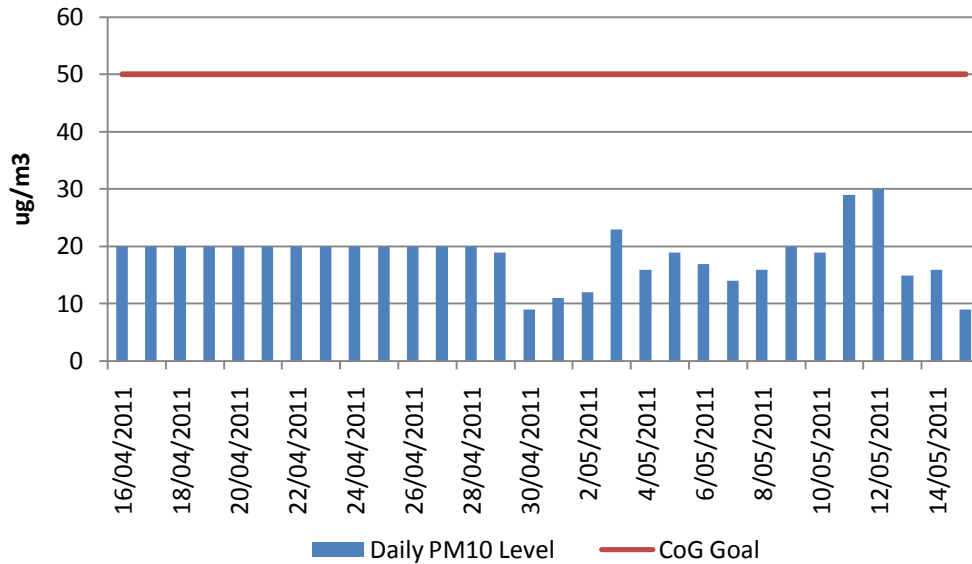


Figure 4.2.4: Kedron State High School (Adj), Kedron PM10 Results (for monitor location see figure 2.4 – A2)

Perry Street, Kedron, PM10 Results

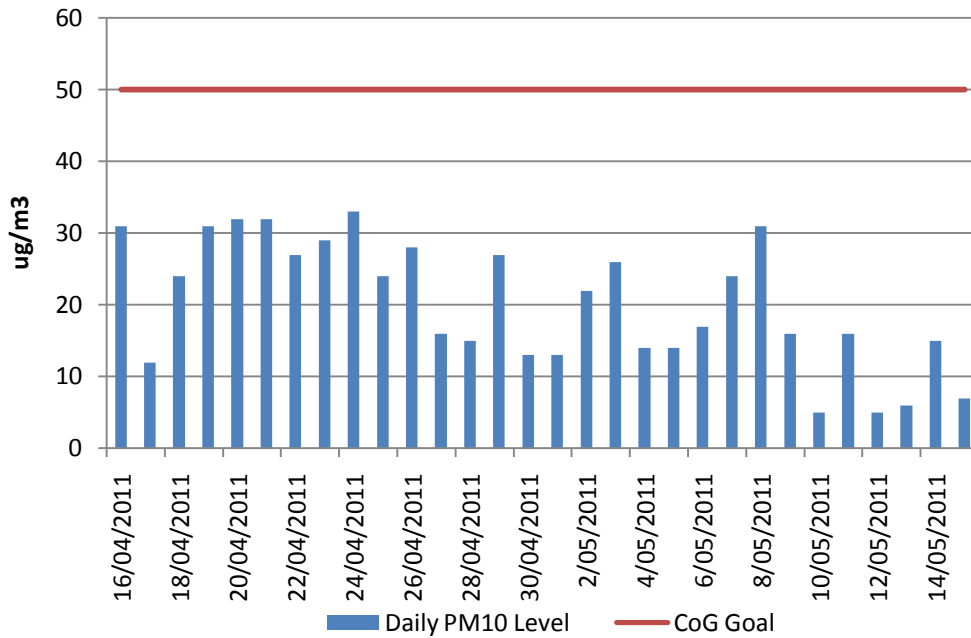


Figure 4.2.5: Perry Street, Lutwyche PM10 Results (for monitor location see figure 2.4 – A3)

Woolloowin State School, PM10 Results

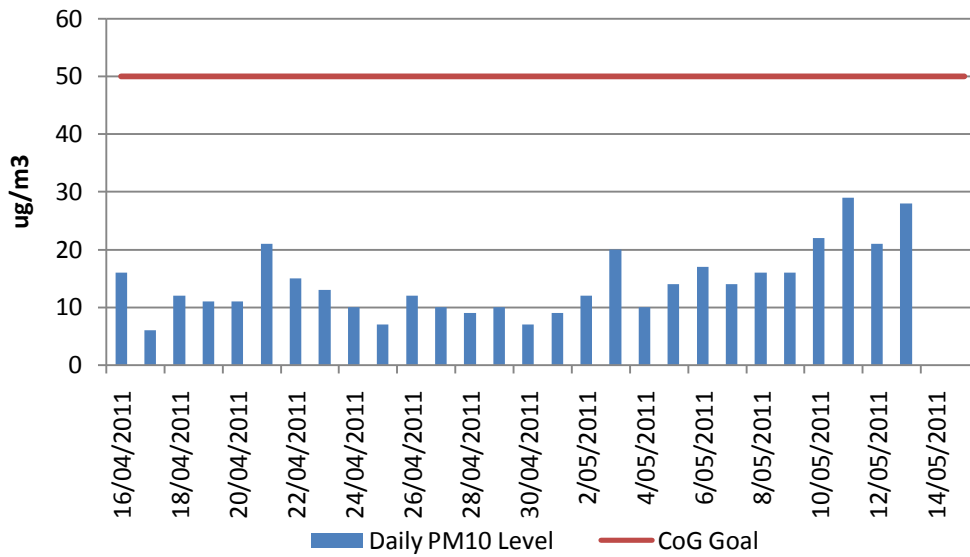


Figure 4.2.6: Woolloowin State School, Lutwyche PM10 Results (for monitor location see figure 2.4 – A4)

71 Park Road, Woolloowin, PM10 Results

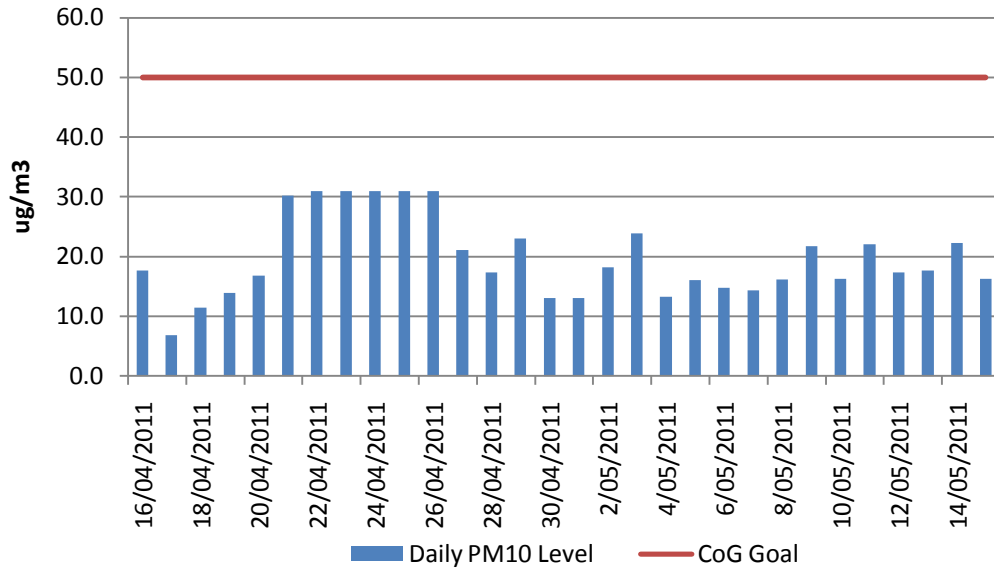


Figure 4.2.7: 71 Park Road, Woolloowin PM10 Results (for monitor location see figure 2.1 – A1)

71 Park Road, Woolloowin, PM2.5 Results

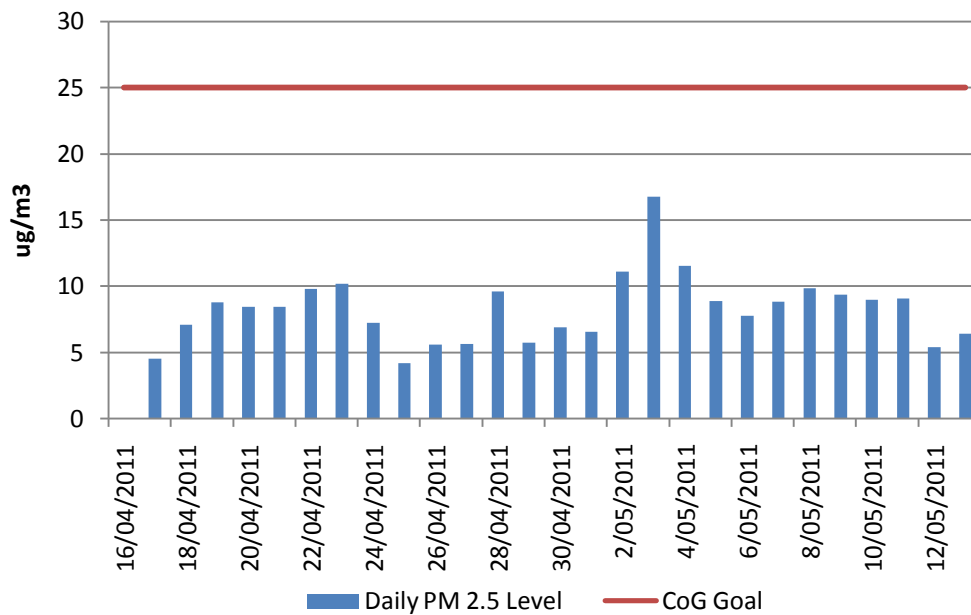


Figure 4.2.8: 71 Park Road, Woolloowin PM2.5 Results (for monitor location see figure 2.1 – A1)

56 Kalinga Street, Clayfield PM10 Results

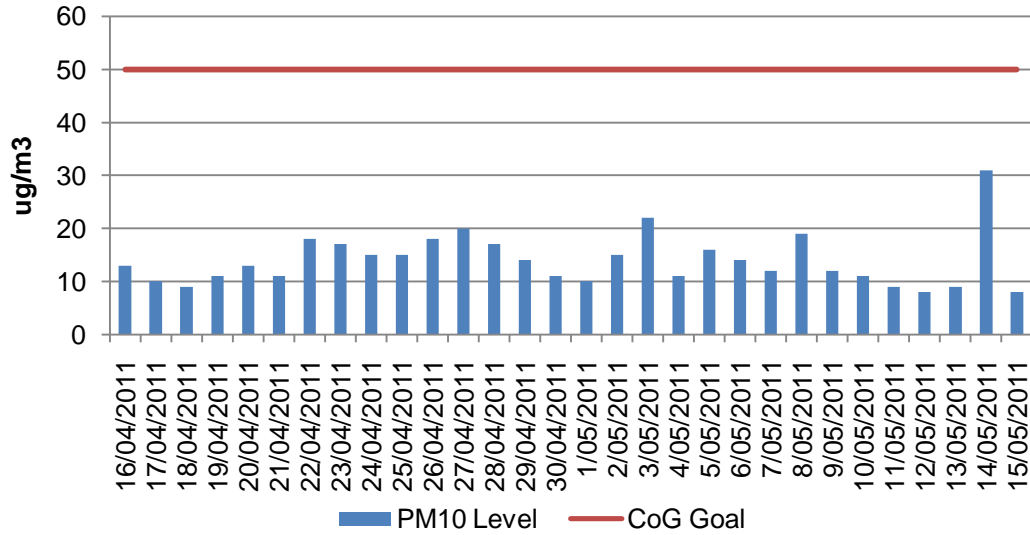


Figure 4.2.9: 56 Kalinga Street, Clayfield PM10 Results (for monitor location see Figure 2.6 – A1)

5 Mabel Street, Clayfield PM10 Results

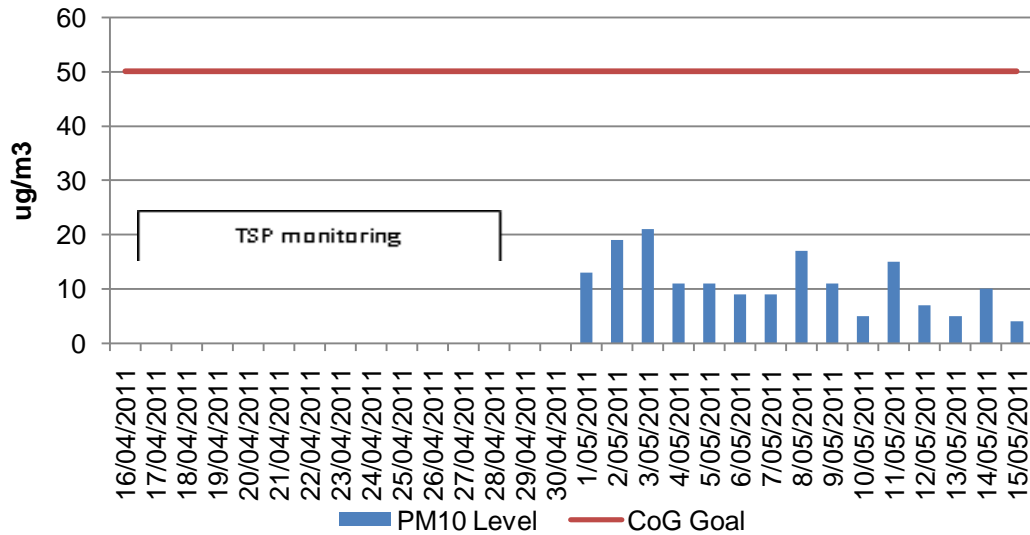


Figure 4.2.10: 5 Mabel Street, Clayfield PM10 Results (for monitor location see Figure 2.6- A2)

4.3 Air Quality Monitoring Results – Dust Deposition Results

Dust deposition monitoring is undertaken on a monthly basis using a bottle and funnel placed 2m ± 0.2m above ground level in accordance with Australian Standard AS 3580.10.1: 2003. It should be noted that in most locations the placement of the deposition gauges does not meet the standard due to location and security issues. Note: due to lab processing times and field placement some results are not available at time of report writing thus will be included in next month's report.

5 Morris Street, Bowen Hills Dust Fallout Dec 2010 - May 2011

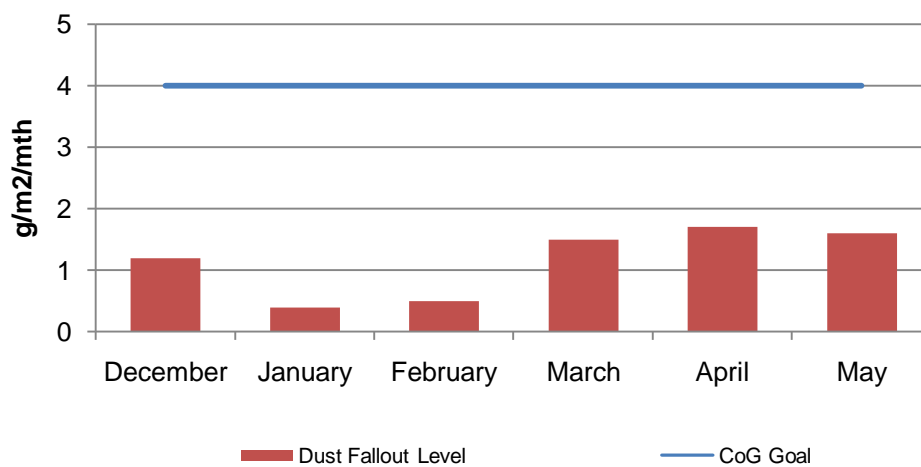


Figure 4.3.1: 5 Morris Street, Bowen Hills Dust Deposition Results (for monitor location refer to figure 2.1 – D1)

Site Office, Bowen Hills Dust Fallout Dec 2010- May 2011

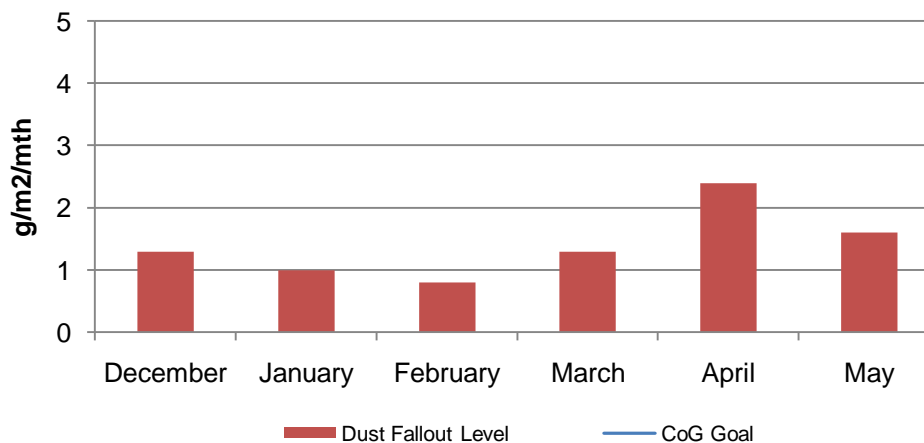


Figure 4.3.2: Site Office, Bowen Hills Dust Deposition Results (for monitor location refer to figure 2.1- D2)

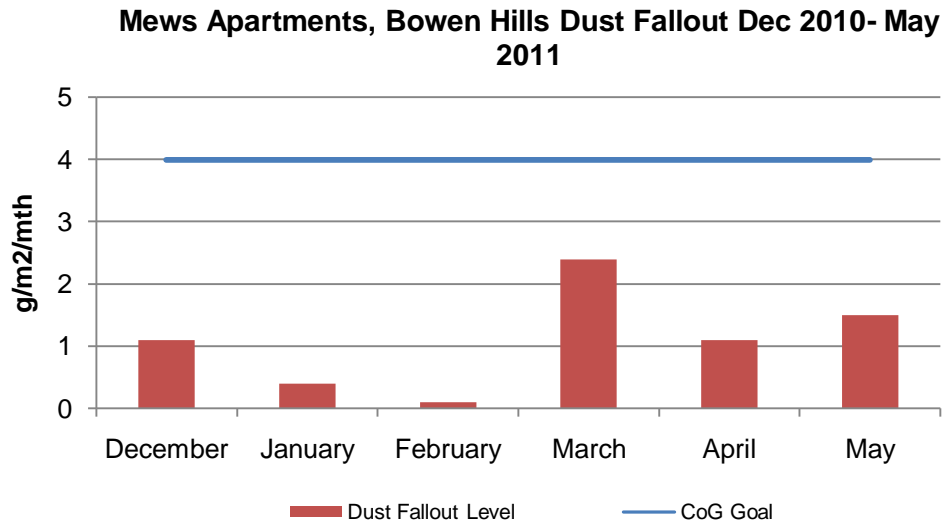


Figure 4.3.3: Mews Apartments, Bowen Hills Dust Deposition Results (for monitor location refer to figure 2.1- D3)

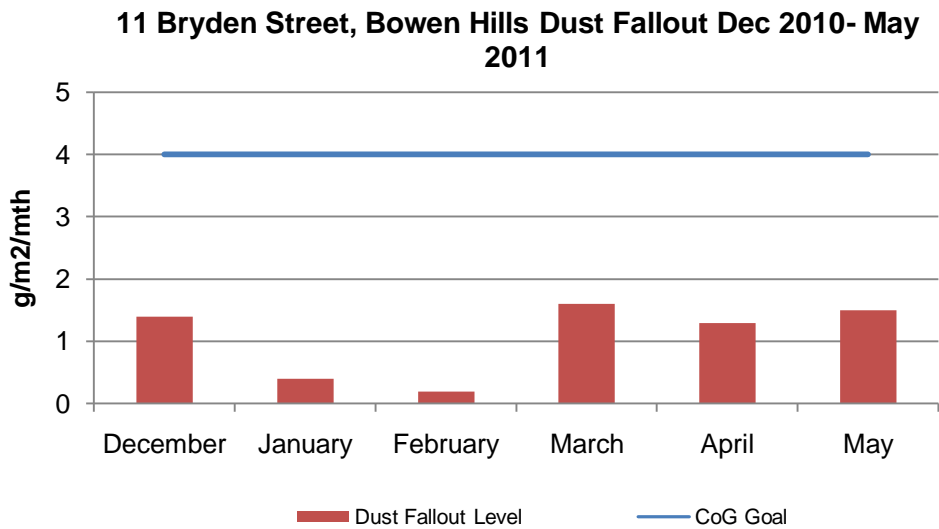


Figure 4.3.4: 11 Bryden Street, Bowen Hills Dust Deposition Results (for monitor location refer to figure 2.1- D4)

QLD Newspapers, Bowen Hills Dust Fallout Dec 2010 - May 2011

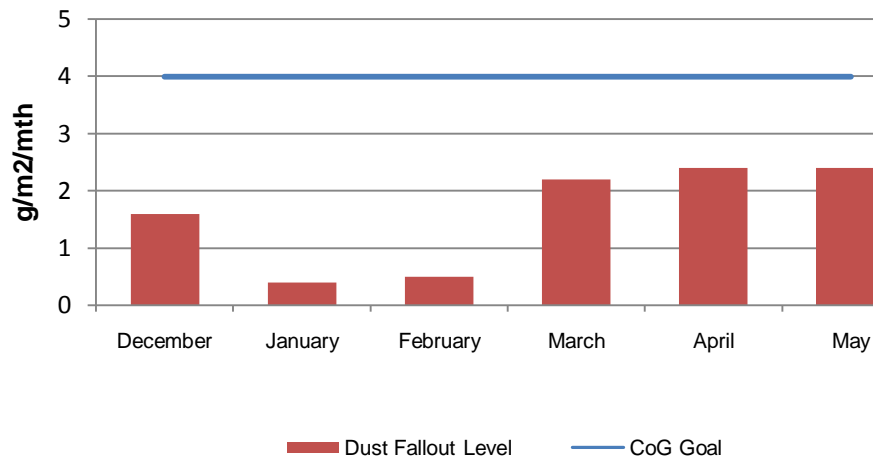


Figure 4.3.5: Queensland Newspapers, Bowen Hills Dust Deposition Results (for monitor location refer to figure 2.1- D5)

Cnr of Thistle & Lucas Street, Lutwyche Dust Fallout Dec 2010 - May 2011

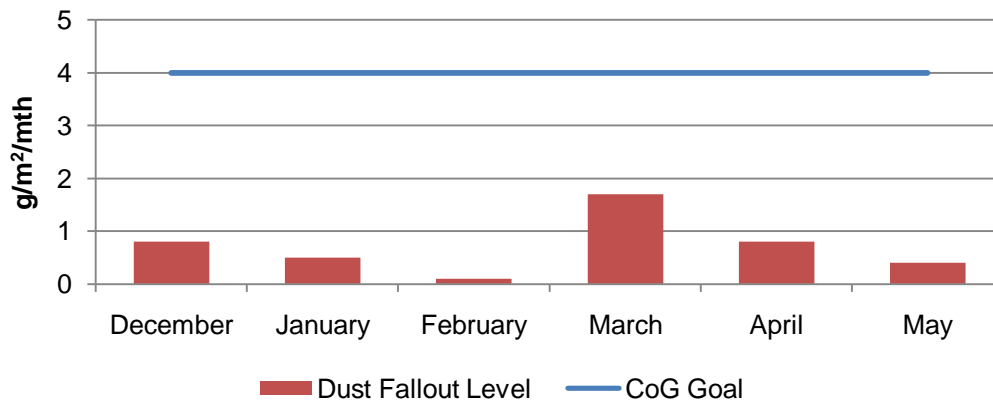


Figure 4.3.6: Cnr of Thistle & Lucas Street, Lutwyche Dust Fallout Results (location refer to figure 2.3 – D2)

Dust Fallout Erskine Avenue, Kedron, December 2010 - May 2011

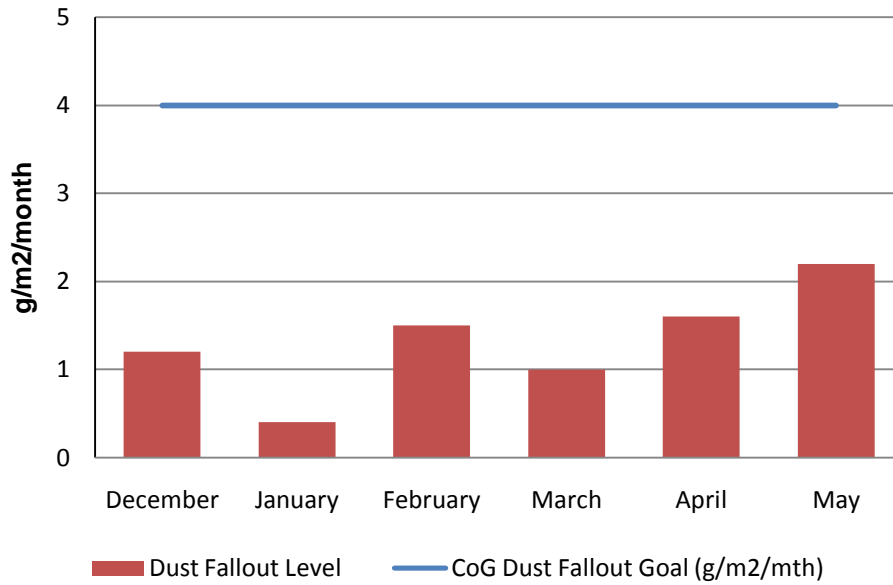


Figure 4.3.7 Erskine Avenue, Kedron Dust Fallout November 2010 – April 2011 (for monitor location see figure 2.4 – A1)

Dust Fallout Kedron State High School, Kedron, December 2010 - May 2011

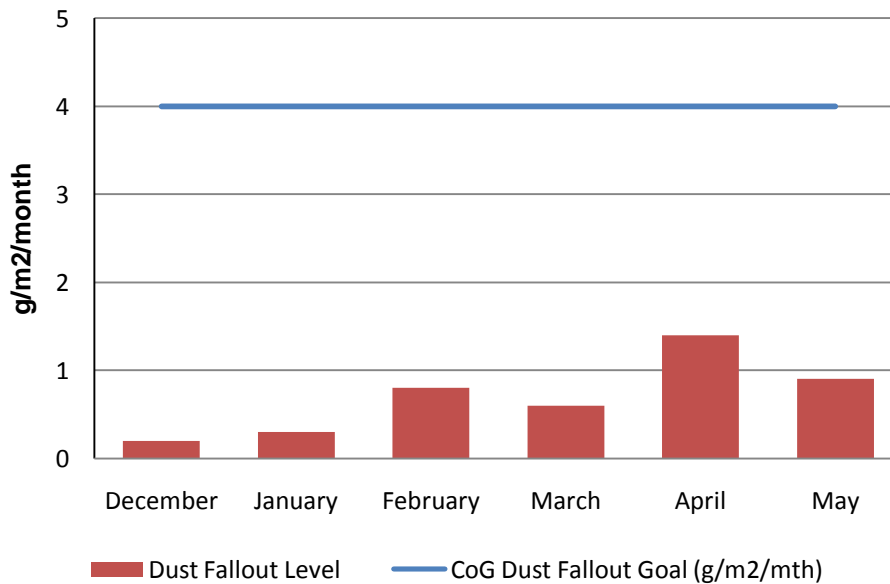


Figure 4.3.8 Kedron State High School, Dust Fallout November 2010 – April 2011 (for monitor location see figure 2.4 A2)

Dust Fallout Perry Street Lutwyche, December 2010 - May 2011

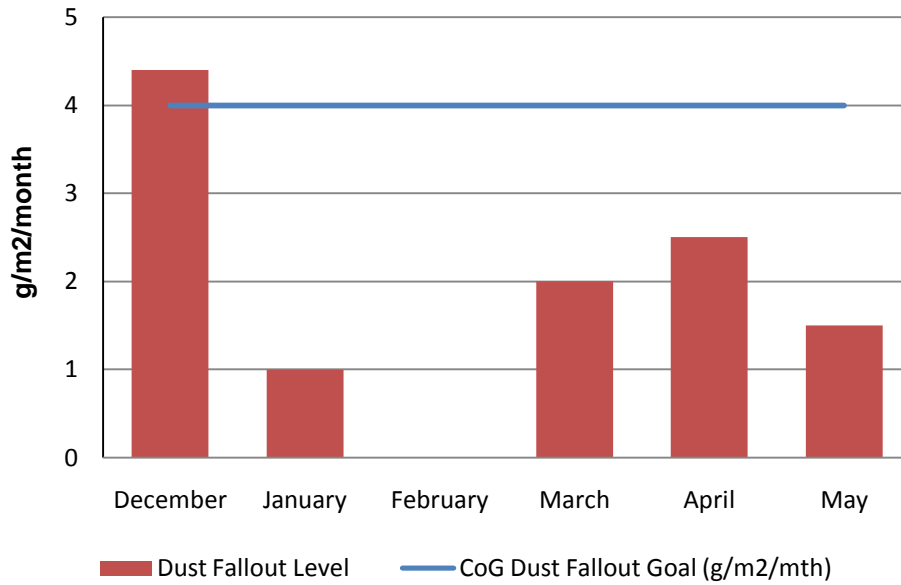


Figure 4.3.9 Perry Street, Lutwyche Dust Fallout November 2010 – April 2011 (for monitor location see figure 2.4 – A3)

Dust Fallout Woolloowin State School, Woolloowin, December 2010 - May 2011

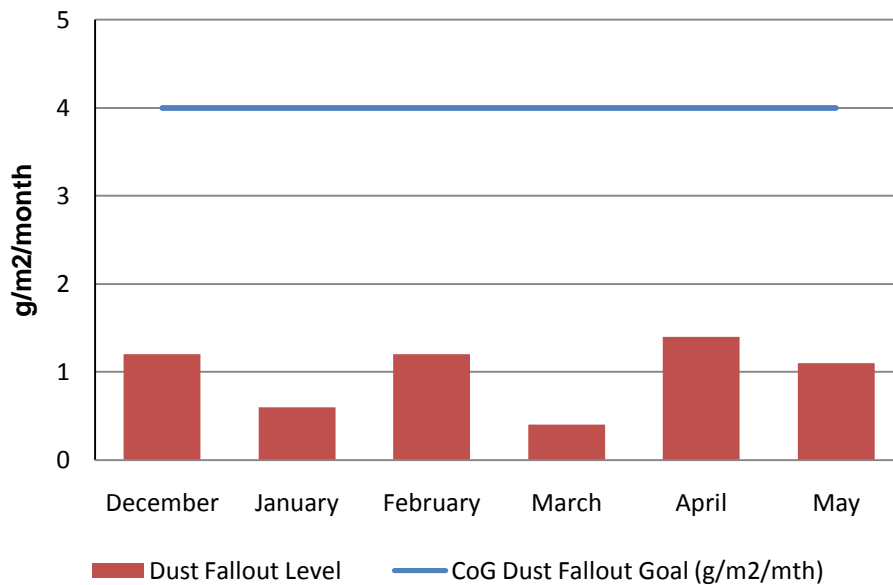


Figure 4.3.10 Woolloowin State School, Dust Fallout November 2010 – April 2011 (for monitor location see figure 2.4 – A4)

Dust Fallout 228 Gympie Rd, Kedron, December 2010 - May 2011

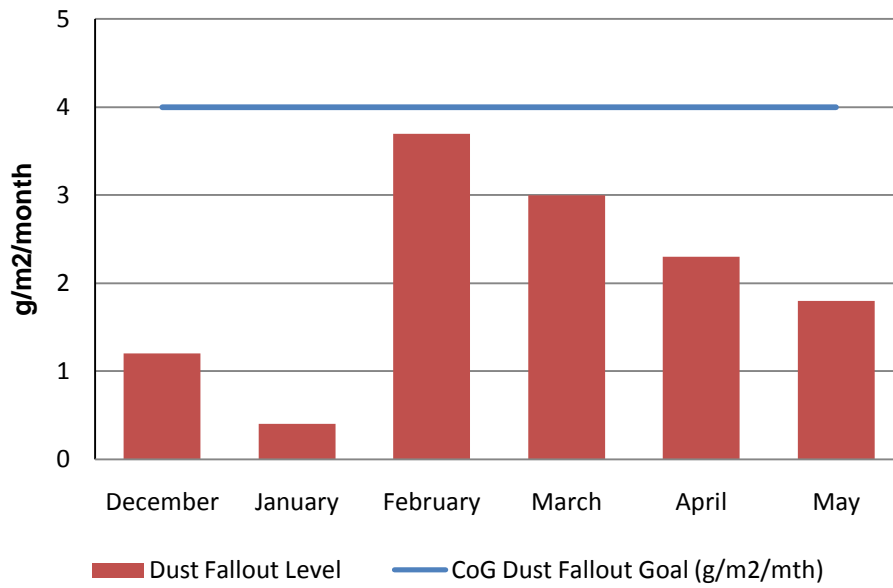


Figure 4.3.11 228 Gympie Rd, Kedron Dust Fallout November 2010 – April 2011 (for monitor location see figure 2.4)

68 Park Road, Woolloowin Dust Fallout December 2010 to May 2011

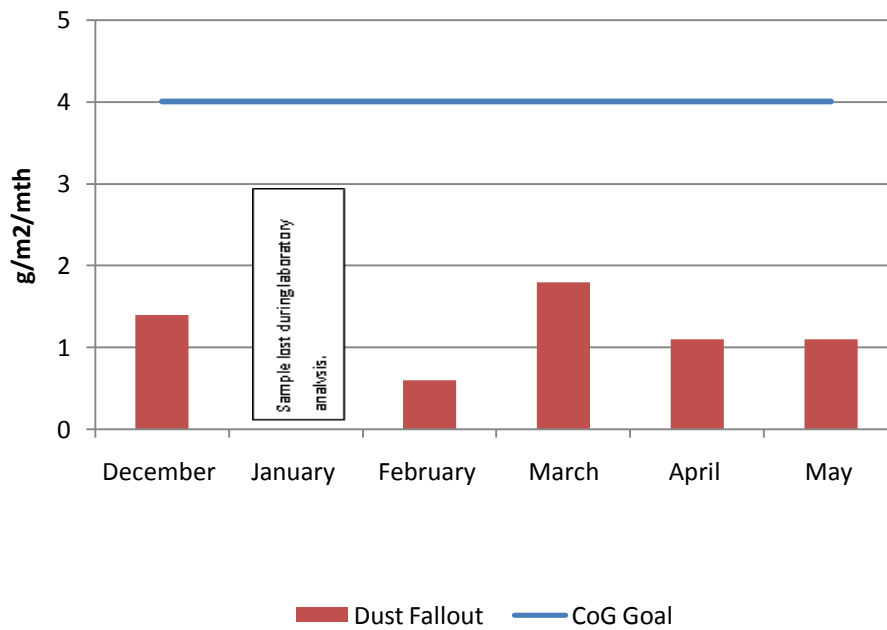


Figure 4.3.12: 68 Park Road, Woolloowin Dust Deposition Results (for monitor location refer to figure 2.1)

Kalinga Street, Toombul Dust Fallout Level December 2010 - May 2011

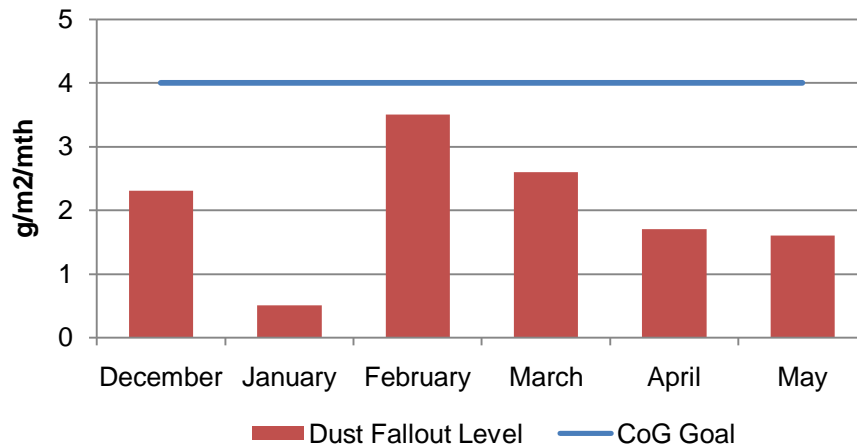


Figure 4.3.13 56 Kalinga Street Toombul, Dust Fallout (location refer to figure 2.6 – D1)

Mabel Street, Toombul Dust Fallout Level December 2010 - May 2011

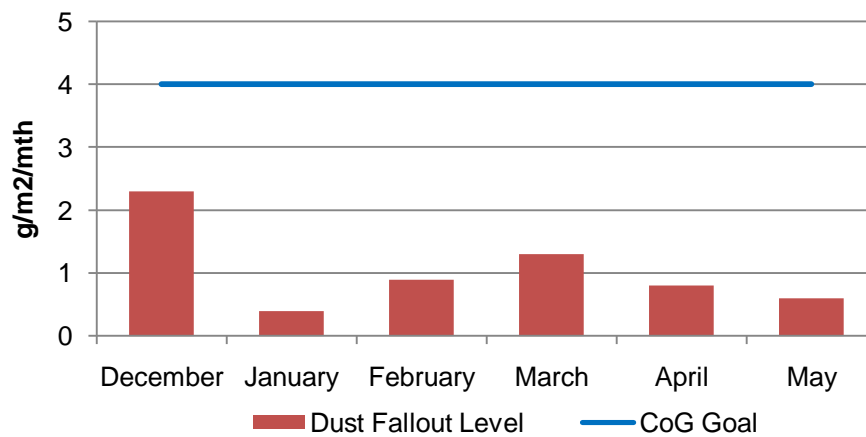


Figure 4.3.14 Mabel Street Toombul, Dust Fallout (location refer to figure 2.6 – D2)

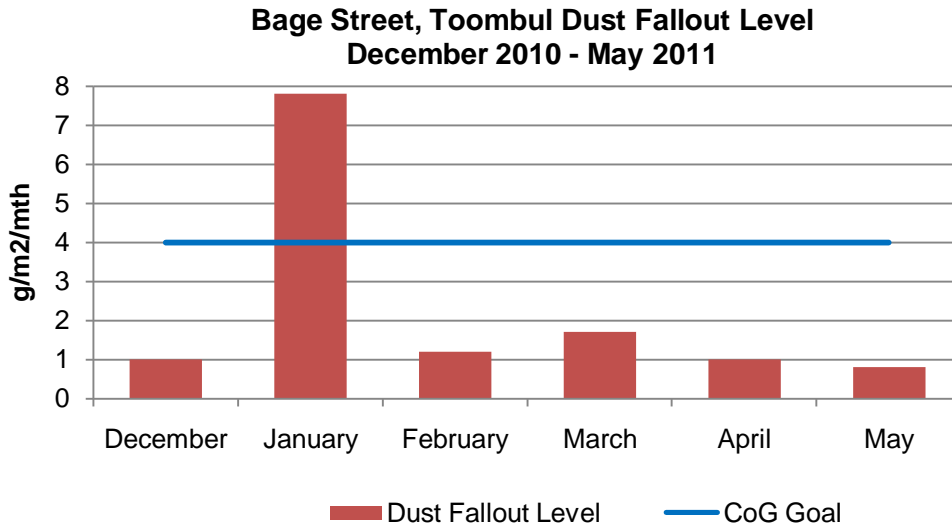


Figure 4.3.15 Bage Street Toombul, Dust Fallout (location refer to figure 2.6 – D3)

4.4 CO/NO₂ Monitoring – Woolloowin Worksite

TJH undertakes regular monitoring of CO/NO₂ in the vicinity of the Woolloowin Worksite. Monitoring involves real-time sampling and results of monitoring are compared to Air Quality Goals nominated by the Coordinator General in the Woolloowin Worksite Modification Change Report - October 2009.

Gas Monitor at 71 Park Road, Woolloowin					
Date	Peak Date and Time	CO (mg/m ³) Peak	CoG CO Limit (mg/m ³)	NO ₂ (mg/m ³) Peak	CoG NO ₂ Limit (mg/m ³)
16/04/2011 to 15/05/2011	15/05/2011 04:45	0.94	11	-	-
	10/05/2011 17:00	-	-	0.07	0.25

Note:

For Carbon monoxide (CO) an 8 hour averaging period is used

For Nitrogen dioxide (NO₂) a 1 hour averaging period is used

4.5 Compliance with Air Quality Goals

There were no exceedences of the Coordinator Generals Air Quality Conditions this reporting period.

5.0 Vibration Monitoring

TJH undertakes monitoring of vibration levels at a variety of locations across the project to help measure impacts and assist the team plan works and appropriate mitigations if required. Monitoring involves measuring peak particle velocity (mm/s) at a number of sensitive receptors.

Results of monitoring are compared to Vibration Goals adopted as listed by the Coordinator General (Change Report June 2008 & Woollowin Worksite Change Report October 2009) for the Airport Link and Northern Busway projects.

5.1 Overview of Vibration Mitigation Measures

The key strategies adopted during this monitoring period to mitigate vibration impacts during construction works have included:

1. Predictive modelling of anticipated risks and impacts.
2. Building condition surveys of properties which are likely to experience vibration levels in excess of the levels for minimal risk of cosmetic damage outlined in the CoG Report.
3. Selection of alternative construction equipment / methodology where possible
4. Review of monitoring data for the activities undertaken

5.2 Vibration Monitoring Results

Monitoring has been undertaken at a variety of sites along the Airport Link Project alignment this period. Results are detailed in Tables 5a-g.

Table 5a: Vibration Monitoring Results Summary – Toombul

Location	Monitoring Period	Peak Particle Velocity (mm/s)	CoG Goal (Continuous* or Transient^)(mm/s)	Comments
29 Park Road, Woollowin	16/04/2011 – 15/05/2011	0.35	5	Monitoring indicates that CoG goals are being met.
11 Park Road, Woollowin	15/04/2011 – 28/04/2011	0.37	5	Monitoring indicates that CoG goals are being met.
104 Kedron Park Road, Kedron	18/04/2011 – 13/05/2011	0.49	5	Monitoring indicates that CoG goals are being met.
79 Elliott Street, Clayfield	28/04/2011 – 30/04/2011	0.22	10	Monitoring indicates that CoG goals are being met.
1 Lewis Street, Clayfield	27/04/2011 – 04/05/2011	0.23	10	Monitoring indicates that CoG goals are being met.
38 Stewart Avenue, Woollowin	19/04/2011 – 24/04/2011	0.16	10	Monitoring indicates that CoG goals are being met.



29 Lydia Street, Woolloowin	05/05/2011 – 13/05/2011	0.127	10	Monitoring indicates that CoG goals are being met.
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*Continuous Vibration: Tunnel boring works classified as continuous vibration (5 mm/s peak particle velocity) under CoG Change Report Guidelines.

^Transient Vibration: Cross-passage excavation works classified as transient vibration (10 mm/s peak particle velocity) under CoG Change Report Guidelines.

Table 5b: Vibration Monitoring Results Summary – Bowen Hills Civils

Location	Monitoring Period	Peak Particle Velocity (mm/s)	CoG Vibration Goal (mm/s)	Comments
Queensland Newspapers	17/04/2011 9:19 – 9:20am	4.64	10.0	Results are within CoG goals
Queensland Newspapers	17/04/2011 9:33 – 9:34am	1.81	10.0	Results are within CoG goals

Table 5c: Blast Monitoring Results Summary – Truro Street Mid Tunnel

Location	Monitoring Period	Peak Particle Velocity (mm/s)	Vibration Goal (mm/s)	Comments
10 May 2011 (Northbound TBM Shaft)				
26 Bradshaw Rd	30 Seconds	5.38	25	Results are within CoG goals

5.3 Compliance with Vibration Goals

As a result of vibration monitoring across the project no exceedences were identified.

6.0 Community enquiries and complaints

A total of 178 community complaints were reported to the project between 16 April and 15 May 2011. Issues raised are outlined in the table below. For further details on how we are managing community issues, please refer to the [Community Enquiries and Complaints](#) page of the project website which is updated each month.

Complaints Raised: 16 April to 15 May 2011		
Issues	No.	No. of stakeholders
Parking	32	23
Site noise out-of-hours	26	22
Construction vehicle movements	20	13
Traffic Management	15	14
Worker Behaviour	13	13
Site noise	10	9
Truck noise	9	7

Complaints Raised: 16 April to 15 May 2011		
Issues	No.	No. of stakeholders
Pedestrian/Cyclists	8	8
Lane closure	8	8
Driver Behaviour	7	6
Haulage	7	7
Site dust	7	7
Spoil haulage routes and queuing	5	3
General Construction	5	5
Tunnelling	5	3
Mitigation	4	4
Road condition	4	4
Spill/Contamination	3	3
Monitoring	3	3
Property Access	3	2
Other	31	31
Total complaints	178	125

6.1 Top 10 issues Raised

