Airport Link / Northern Busway Project

Monthly Environmental Monitoring Report

November 2011

TABLE OF CONTENTS

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 in the Bowen Hills precinct. The report also compares monitoring results with compliance thresholds for environmental harm, community nuisance and loss of amenity nominated by the Coordinator General (Change Report July 2008).

The monitoring data covered in this report is for the November 2011 reporting period, from 16th October 2011 to 15th November 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 November 2011, though do serve a useful purpose in relating the monitoring locations to existing structures and infrastructure.

Figure 2.1: Bowen Hills Precinct Monitoring Locations

Legend

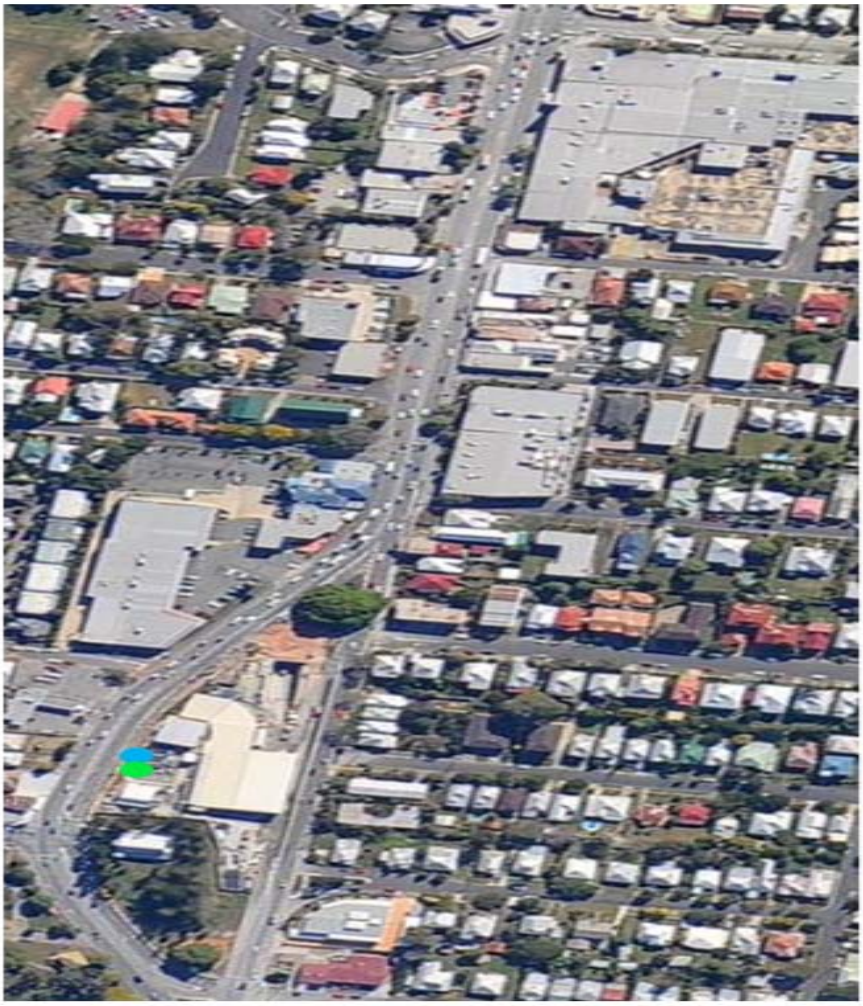
Vibration

Air (TSP/PM_{10})

Air (Dust Deposition)

Note: locations are indicative only

Figure 2.2: Truro Street Mid Tunnel Monitoring Locations



Legend

- Air (PM_{10})
- Air (Dust Deposition)

Note: locations are indicative only

Figure2.3: Northern Busway Monitoring Locations

Legend

- Noise (during construction)
- Vibration
- Air (PM_{10})
- Air (Dust Deposition)

Note: locations are indicative only

Figure 2.4 - Kedron Monitoring Locations

Legend

- Noise (during construction)
- Air (PM_{10})
- Air (Dust Deposition)

Note: locations are indicative only

2.5: Wooloowin Monitoring Locations

Legend

- Noise (during construction)
- Vibration
- Air (PM_{10}/TSP)
- Air (Dust Deposition)

Note: locations are indicative only

2.6: Toombul Monitoring Locations

Legend

- Noise (during construction)
- Air (Dust Deposition)
- Air (PM_{10})
- Vibration

Note: locations are indicative only

3.0 Noise Monitoring

TJH undertakes regular monitoring of noise levels at a variety of locations across the project in accordance with DERM's Noise Monitoring Manual (March 2000) and Australian Standard AS 1055:1997 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 were 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 barriers and plywood) in Federation and Morris Streets, Windsor.
    b. Temporary noise barriers (precast concrete barrier and plywood):
        i. Lutwyche Road (Lutwyche, Kedron)
        ii. Gympie Road (Kedron)
    c. Temporary noise barrier (shipping container) installations:
        i. Perry Street, (Kedron)
        ii. Haines Street, (Kedron)
    d. Temporary noise barrier (plywood):
        i. Lutwyche Road (Lutwyche)
    e. Temporary noise barriers (plywood):
        i. Kalinga Park (Toombul)
    f. Temporary noise barrier (shipping container) installations:
        i. Kalinga Park (Toombul)
        ii. Wongara Street worksite (Sandgate Road and East-West Arterial intersection)
    g. Temporary noise barriers (precast concrete barrier and plywood):
        i. Rose Street (Wooloowin)
    h. Permanent noise barriers (precast concrete barrier)
        I. Gympie Road (Kedron)
        II. Brookfield Road (Kedron)
    i. Acoustic shed has been built around the tunnel portals at:
        i. Kalinga Park (CC410 Launch Box)
    j. Acoustic shed has been built around the tunnel portals / shafts at:
        i. Wooloowin
    k. Consultation with property owners prior to commencing works and during construction works.
    l. Installation of mitigation measures at affected residents on a case-by-case basis.
    m. Acoustic shielding of various plant operation on site
    n. Regular awareness, training and reinforcement of work behaviours of staff, subcontractors, spoil haulage drivers to prevent or minimise noise generation in work areas and car parks.

o. Installation of directional reversing alarms ('squawkers') on plant and equipment.
p. Silencing of various plant including Favco tower crane.

3.2 Noise Monitoring Results

The results of TJH monitoring efforts are summarised for each project area in Tables 3a-c.
There was no internal noise monitoring sessions undertaken within this reporting period within the Bowen Hills precinct.

Table 3a: Noise Monitoring Results – Toombul

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
1 Mabel Street, Clayfield						
Double Storey Timber House (Living Room)	02/11/2011 1:44pm – 1:59pm	46.4	45	45.7	55	**Monitoring Type** Internal attended monitoring, windows and doors open **Atmospheric Conditions** Fine, light NNE breeze **Noise Sources** TJH noise sources (crane, horn, metal-on-metal bangs, hammering, drilling, squawker, bang, ventilation fans) plus non-TJH sources (resident, birds, gecko, plane, traffic, train, dogs, reverse beeper) **Discussion** Monitoring indicates elevated LAeq levels throughout the session. It should be noted that the LAeq level was heavily influenced by non-TJH noise sources including resident, traffic, planes, birds and dogs barking. TJH specific LAeq levels could not be isolated from these external noise sources **Mitigation Measures** Included 6m noise wall. Appropriate mitigation has been offered to the stakeholder.
Double Storey Timber House (Living Room)	02/11/2011 2:09pm – 2:24pm	34.3	45	34.9	55	**Monitoring Type** Internal attended monitoring, windows and doors closed **Atmospheric Conditions** Fine, light NNE breeze **Noise Sources** TJH noise sources (metal-on-metal bangs, crane, bang, ventilation fans) plus non-TJH sources (resident, train, traffic and birds) **Discussion** Monitoring indicates that CoG goals are being met **Mitigation Measures** Include a 6m noise wall

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
89 Jackson Street, Clayfield						
Double Storey Timber House (Front Bedroom)	03/11/2011 9:14am – 9:29am	42.5	45	42.8	55	**Monitoring Type** Internal attended monitoring, windows and doors open **Atmospheric Conditions** Fine, light SE breeze **Noise Sources** TJH noise sources (bang/drop, hammering, saw, TJH horn) plus non-TJH sources (train, lawn mower, birds, plane, resident, sirens) **Discussion** Monitoring indicates that CoG goals are being met **Mitigation Measures** Include a 6m noise wall
Double Storey Timber House (Front Bedroom)	03/11/2011 9:31am – 9:46am	34.7	45	36	55	**Monitoring Type** Internal attended monitoring, windows and doors closed **Atmospheric Conditions** Fine, light SE breeze **Noise Sources** TJH noise sources (site hum, bang/drop, TJH horn, crane rev, squawker, saw/grinder, drilling) plus non-TJH sources (birds, roof cracks, train, traffic, plane, resident) **Discussion** Monitoring indicates that CoG goals are being met **Mitigation Measures** Include a 6m noise wall
Double Storey Timber House (Front Bedroom)	03/11/2011 1:44pm – 1:59pm	39.4	45	40.1	55	**Monitoring Type** Internal attended monitoring, windows and doors closed **Atmospheric Conditions** Fine, E gusty wind **Noise Sources** TJH noise sources (site hum, grinder/saw, bang/drop, TJH horn, crane rev, hammering) plus non-TJH sources (birds, resident, train, plane, traffic) **Discussion** Monitoring indicates that CoG goals are being met **Mitigation Measures** Include a 6m noise wall

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
66 Kalinga Street, Clayfield						
Single Storey Timber House (Living Room)	08/11/2011 9:02am – 9:17am	41.2	45	40.3	55	**Monitoring Type** Internal attended monitoring, windows and doors closed, mitigation operating **Atmospheric Conditions** Fine, light N breeze **Noise Sources** TJH noise sources (gate 6 opening, crane movement, hammering) plus non-TJH sources (resident, train, plane, birds, mitigation operating, insects) **Discussion** Monitoring indicates that CoG goals are being met **Mitigation Measures** Include a 6m noise wall. Appropriate mitigation has been installed at the property in consultation with the stakeholder
Single Storey Timber House (Living Room)	08/11/2011 9:17am – 9:32am	47.5	45	37.8	55	**Monitoring Type** Internal attended monitoring, windows and doors closed, mitigation operating **Atmospheric Conditions** Fine, light N breeze **Noise Sources** TJH noise sources (hammering, bangs, drilling) plus non-TJH sources (mitigation operating, insects, phone ringing, resident, plane, train, birds) **Discussion** Monitoring indicates elevated LAeq levels throughout the session. It should be noted that the LAeq level was heavily influenced by non-TJH noise sources including resident, trains, phone ringing, mitigation operating and insects. TJH specific LAeq levels could not be isolated from these external noise sources **Mitigation Measures** Include a 6m noise wall. Appropriate mitigation has been installed at the property in consultation with the stakeholder

3b: 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)	Average $L_{AMAX\ (15\ min)}$ (dBA)	CoG Goal $L_{AMAX\ (15\ min)}$ (dBA)	Comments
8/20 Leckie Road								
Living Room (windows and doors open)	10/11/2011 10:07am –10:21am	67.8	45	69.1	55	-	-	**Monitoring Type** Attended. Internal **Atmospheric Conditions** Fine, light wind **Noise Sources** Audible noises from site included excavator, load alarm, trucks, metal on metal banging, squawkers and rock breaking. Non TJH sounds included Gympie Rd Traffic, BCC mower and brushcutter operating continuously throughout the session, birds outside residence window and the resident conducting a loud phone conversation **Discussion** Both LA10 and LAeq noise goals were exceeded. However, due to the number and volume of non-TJH noise sources detected during the monitoring session, noise from TJH sources cannot be separated from non-TJH noise. Therefore this is not considered an exceedance of the CoG noise goals **Mitigation Measures** Residence has been identified as being eligible for mitigation for operational phase, and residence owners were contacted in writing early October 2011. As yet, there has been no response from the owner regarding mitigation
3/6 Emerald Street								

Bedroom (windows and doors closed)	19/10/2011 9:45pm – 10:00pm	40.6	40	-	-	59	50	**Monitoring Type** Attended. Internal **Atmospheric Conditions** Clear, Still 17.7 Deg C **Noise Sources** Audible noises from site included works being under special circumstances (excavator, trucks, load alarm, metal on metal banging, squawkers and rock breaking), as well as trucks entering and exiting adjacent storage yard Non TJH sounds included traffic and noise from resident **Discussion** Both LA10 and LAeq noise goals were exceeded by trucks entering TJH storage yard adjacent to residence. These works were not deemed to be special circumstances. As such, and NCR was raised **Mitigation Measures** Storage area adjacent to residence is no longer assessable after hours

Table 3c: Noise Monitoring Results – Wooloowin

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, Wooloowin								
Single Level Brick Flat (Dining Room)	21/10/2011 9:42am – 9:57am	36.6	45	37.8	55	-	-	**Monitoring Type** Attended Noise Monitoring. Doors and Windows Closed **Atmospheric Conditions** Clear, 22.9 Dec C, Wind 9.5km/hr from ESE **Noise Sources** Dominant noise sources throughout the monitoring period was non-TJH traffic on adjacent roads and activities within the spoil shed **Discussion** TJH noise levels complied with CoG goals **Mitigation Measures** An acoustic shed and noise wall is in place around Wooloowin Site. No mitigation measures have been installed on the property as 71 Park Road is owned by DMR and is used by TJH for monitoring purposes
Single Level Brick Flat Dining Room	01/11/2011 2:08pm – 2:23pm	41.3	45	42.6	55	-	-	**Monitoring Type** Attended Noise Monitoring. Doors and Windows Closed **Atmospheric Conditions** Clear, 19.1 Dec C, Wind 4.5km/hr from ESE **Noise Sources**

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
								Dominant noise sources throughout the monitoring period was demobilisation activities within the spoil shed. **Discussion** TJH noise levels complied with CoG goals **Mitigation Measures** An acoustic shed and noise wall is in place around Wooloowin Site. No mitigation measures have been installed on the property as 71 Park Road is owned by DMR and is used by TJH for monitoring purposes.
Single Level Brick Flat Dining Room	08/11/2011 10:59am – 11:14am	48.8	45	46.7	55	-	-	**Monitoring Type** Attended Noise Monitoring. Doors and Windows Open **Atmospheric Conditions** Clear, 21.3 Deg C, Wind 6.5km/hr from N **Noise Sources** Dominant noise sources throughout the monitoring period was non-TJH traffic. Other non-TJH noises included aircraft and birdlife. TJH noise sources included Spoil Shed activity and concrete delivery vehicles. **Discussion** TJH noise levels complied with CoG goals **Mitigation Measures** An acoustic shed and noise wall is in place around Wooloowin Site. No mitigation measures have been installed on the property as 71 Park Road is owned by DMR and is used by TJH for monitoring purposes.

The following properties were requested for noise monitoring and access was denied:

Address of Monitoring Location	Date of Request	Time of Requested Monitoring	Construction Activity to be Monitored	Date Access Denied	Comments
38 Federation Street, Windsor	3/11/2011	15:00	Removal of noise wall	3/11/2011	Monitoring request withdrawn as noise is no longer an issue. Stakeholder will request monitoring again if noise issue recommences
38 Federation Street, Windsor	5/11/2011	12:05	Drainage works	5/11/2011	Monitoring request withdrawn as noise is no longer an issue. Stakeholder will request monitoring again if noise issue recommences
2/26 Bradshaw Street East, Lutwyche	13/10/2011	9:30AM	General construction	18/09/2011	Monitoring to be postponed until future date of convenience
2/37 Lamington Avenue, Lutwyche	18/10/2011	5:30PM	General construction	19/09/2011	Monitoring to be postponed until future date of convenience
5 Mabel Street, Clayfield	25/10/2011	-	General construction	25/10/2011	Monitoring to be postponed until future date of convenience
5/81 Alma Road, Clayfield	31/10/2011	-	General construction	31/10/2011	Stakeholder refused monitoring as noise is no longer an issue
89 Jackson Street, Clayfield	03/11/2011	14:00-14:30	General construction	03/11/2011	Second session with windows closed not undertaken due to lunch break on site at 14:00

3.3 Compliance with Noise Goals

Exceedances of the Coordinator General's Noise Goals have been found during this monitoring period at a number of locations, these include:

- Toombul
  - 1 Mabel Street, Clayfield
  - 66 Kalinga Street, Clayfield

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 (PM_{10}) at a number of locations nominated by the Coordinator General. Real-time monitoring of Total Suspended Particulates (TSP) is also occurring at a location in the vicinity of the Wooloowin Worksite.

Results of monitoring are compared to Air Quality Goals nominated by the Coordinator General (Change Report July 2008) 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 during the following activities:
    i. Bulk earthworks
    ii. Haul roads
    iii. Car parks and hardstands.
    iv. Clearing and grubbing (Airport Roundabout)
2. Covering of haul vehicle loads.
3. Stabilisation of cleared areas with hardstand materials such as concrete and crushed rock.
4. Hydro-mulching and laying geofabric to batters;
5. Removing deposited soils from haul roads and underpasses
6. Reduction of cleared / exposed soils with concrete paving and geo-fabric installation.
7. Turfing of footpaths where utility works are now complete (Bryden and Cedric Streets, Windsor).
8. Hydro-mulching and re-vegetation on sites nearing completion (sites on Lanham and Campbell Streets, Bowen Hills).
9. Road sweepers, sweeping of sealed concrete areas
10. Reducing traffic speed on sites

4.2 Air Quality Monitoring Results – PM_{10}

PM_{10} monitoring was undertaken across Airport link using an EBAM continuous sampler in accordance with Queensland Department of Environment and Resource Management's Air Sampling Manual. Results are summarised in Figure 4.2. below. It should be noted that the placement of the sampler unit does not strictly meet the siting standards described in AS 3580.1.1:2007 due to location and security restrictions. Efforts to comply with location standards have been made however as much as possible.

Dust deposition monitoring results for Kedron and Wooloowin areas were not available at the time of reporting. Monitoring results will be included in the December 2011 monitoring report.

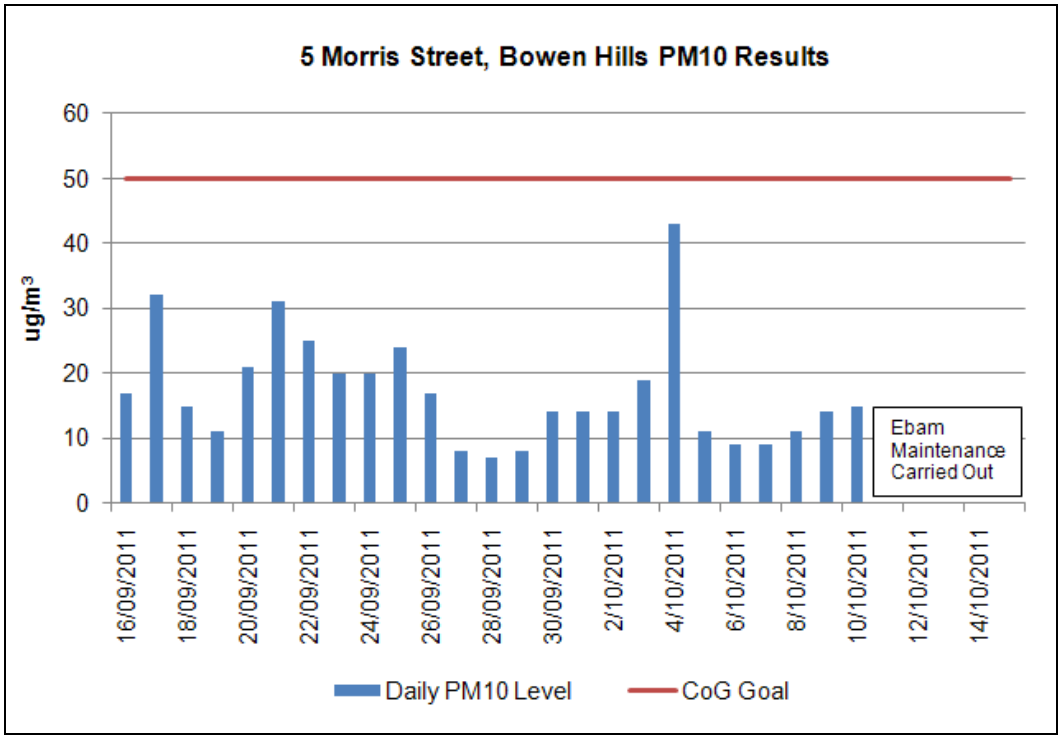


Figure 4.2.1: 5 Morris Street, Windsor PM_{10} Results (for monitor location see Figure 2.1 – A1)

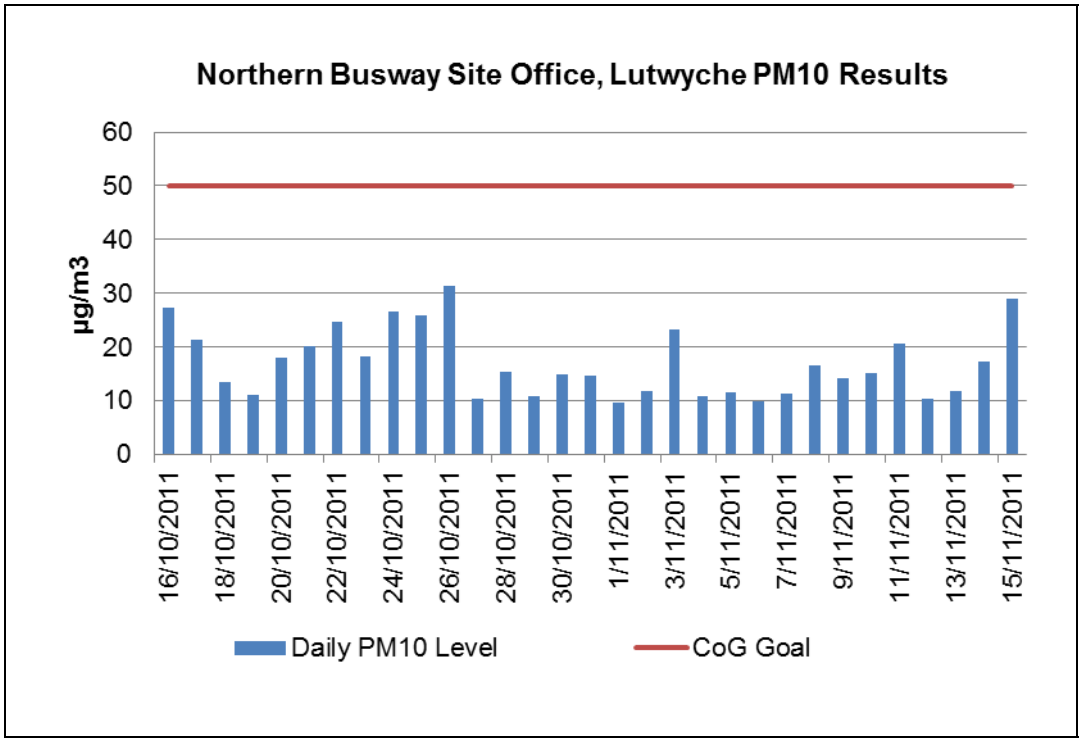


Figure 4.2.2: Northern Busway Site Office, Lutwyche PM10 Results (for location see figure 2.3 – A1)

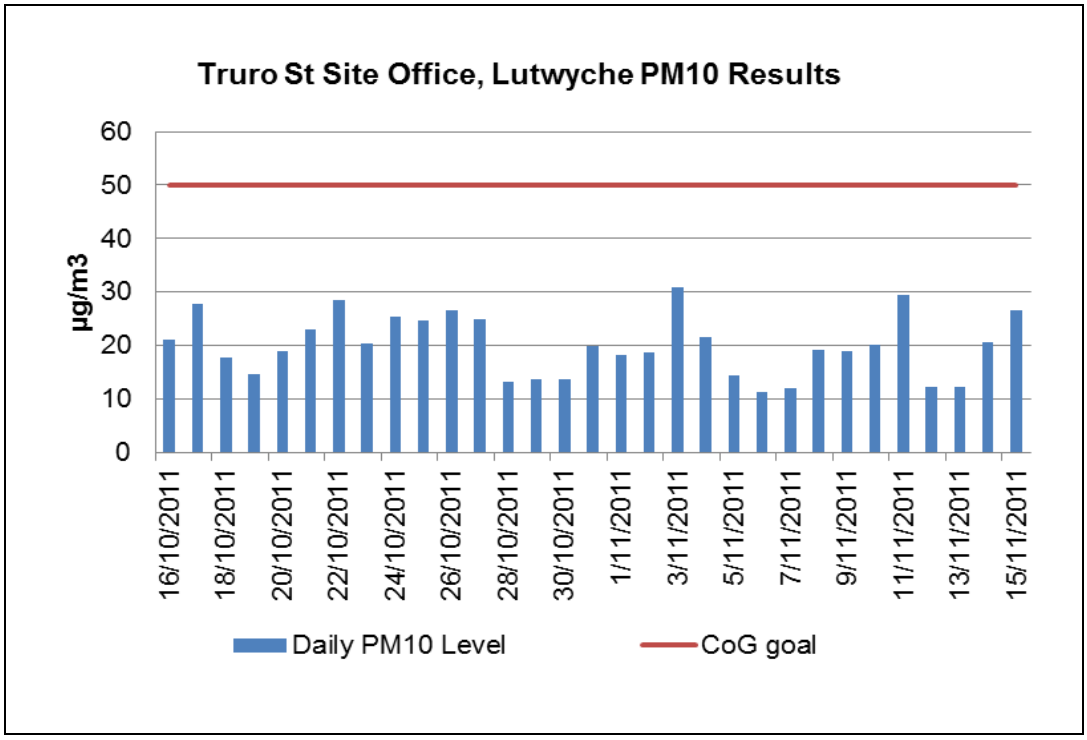


Figure 4.2.3: Truro Street Site Office, PM10 Results (for location see figure 2.2 – A1)

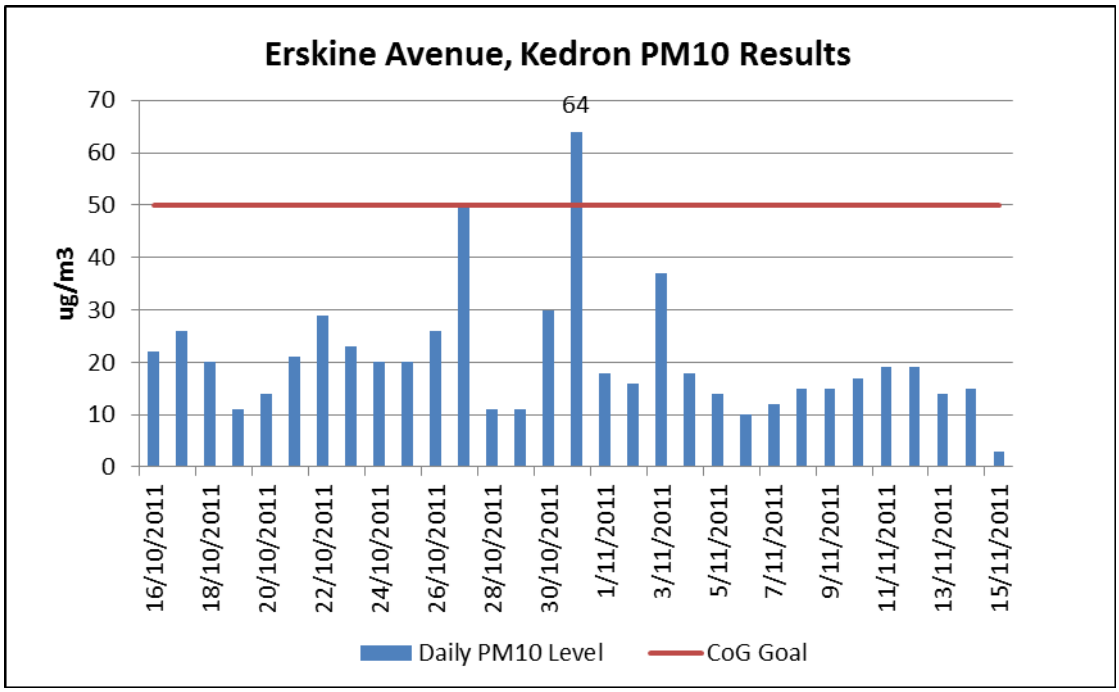


Figure 4.2.4: Erskine Avenue, Kedron PM10 Results (for monitor location see figure 2.4 – A1

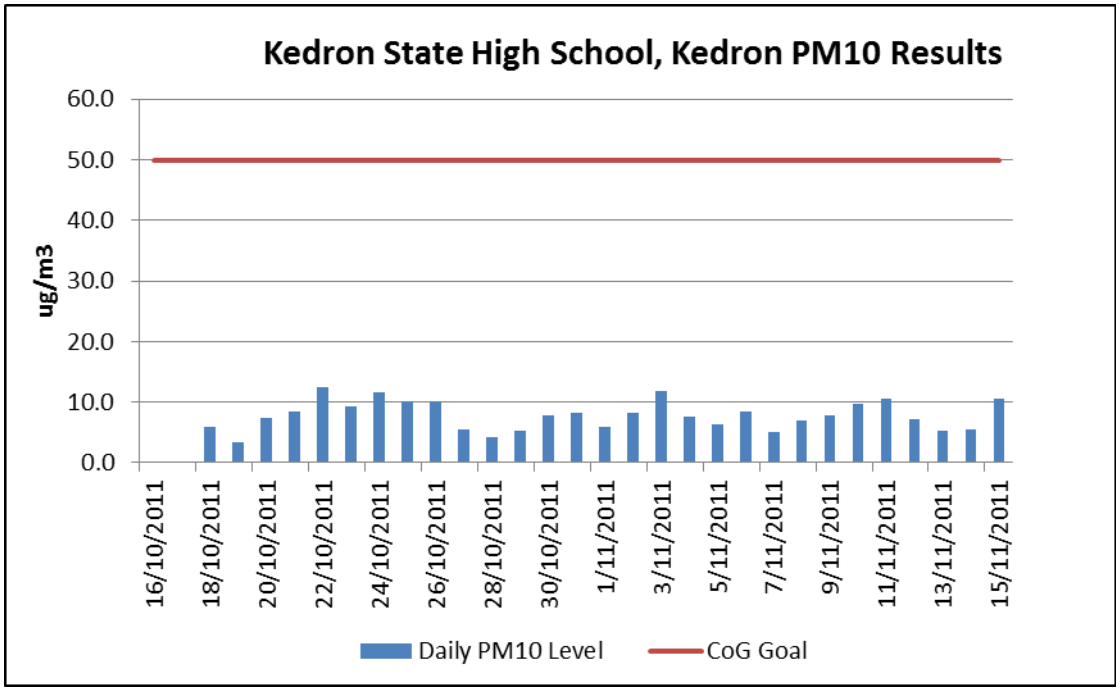


Figure 4.2.5: Kedron State High School, Kedron PM10 Results (for monitor location see figure 2.4 – A2)

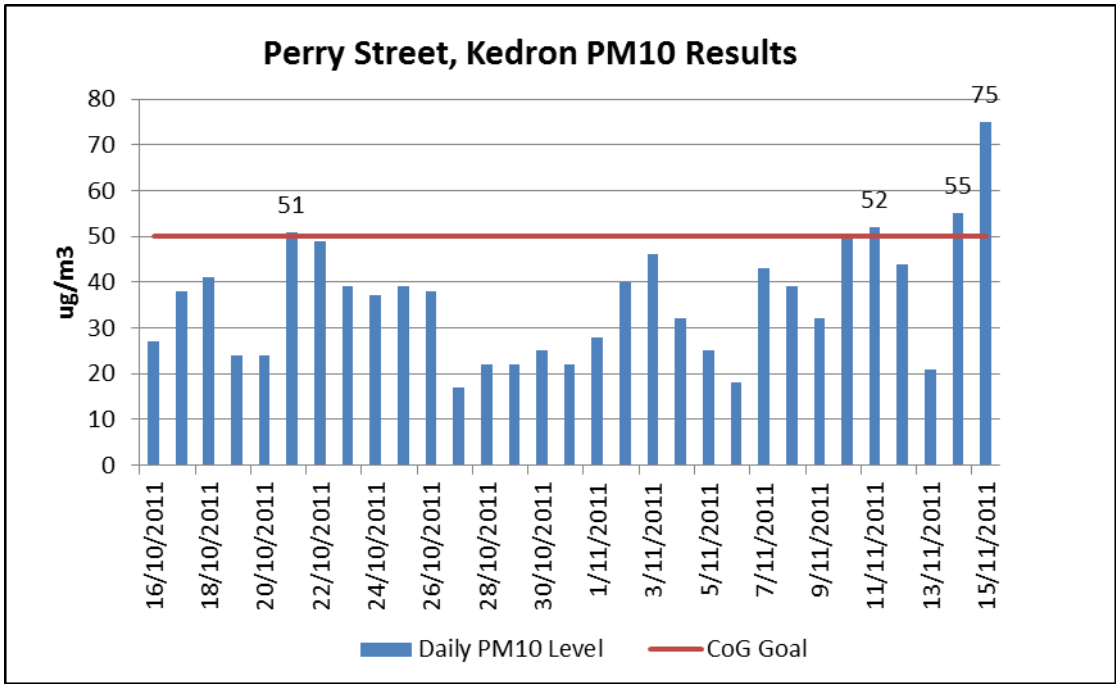


Figure 4.2.6: Perry Street, Lutwyche PM10 Results (for monitor location see figure 2.4 – A3)

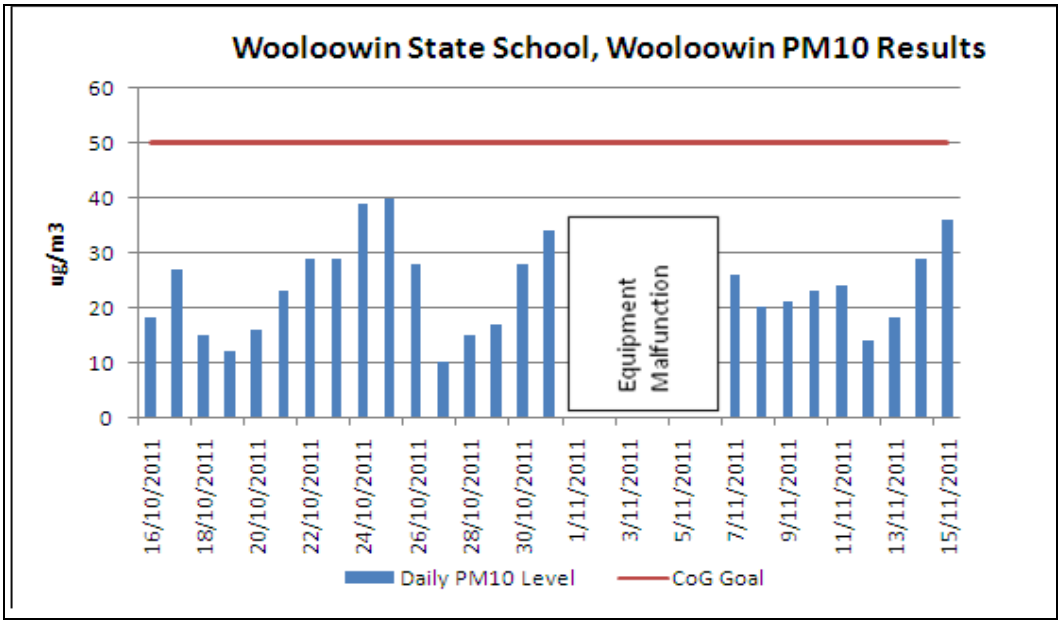


Figure 4..2.7: Wooloowin State School, Lutwyche PM10 Results (for monitor location see figure 2.4 – A4)

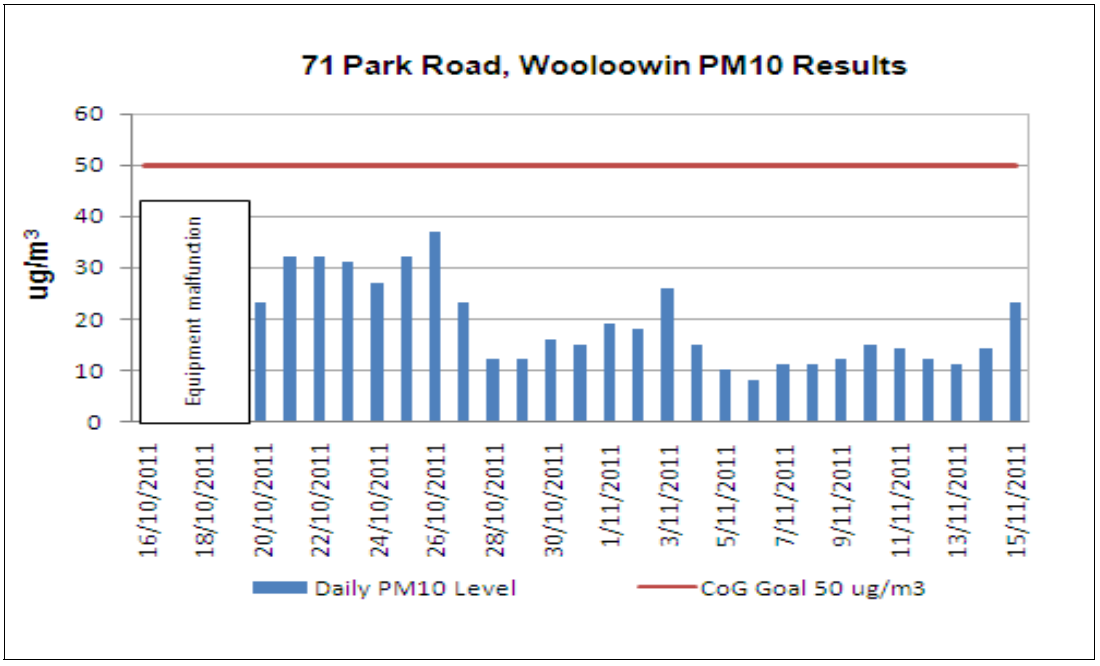


Figure 4.2.8: 71 Park Road, Wooloowin PM10 Results (for monitor location see figure 2.1 – A1)

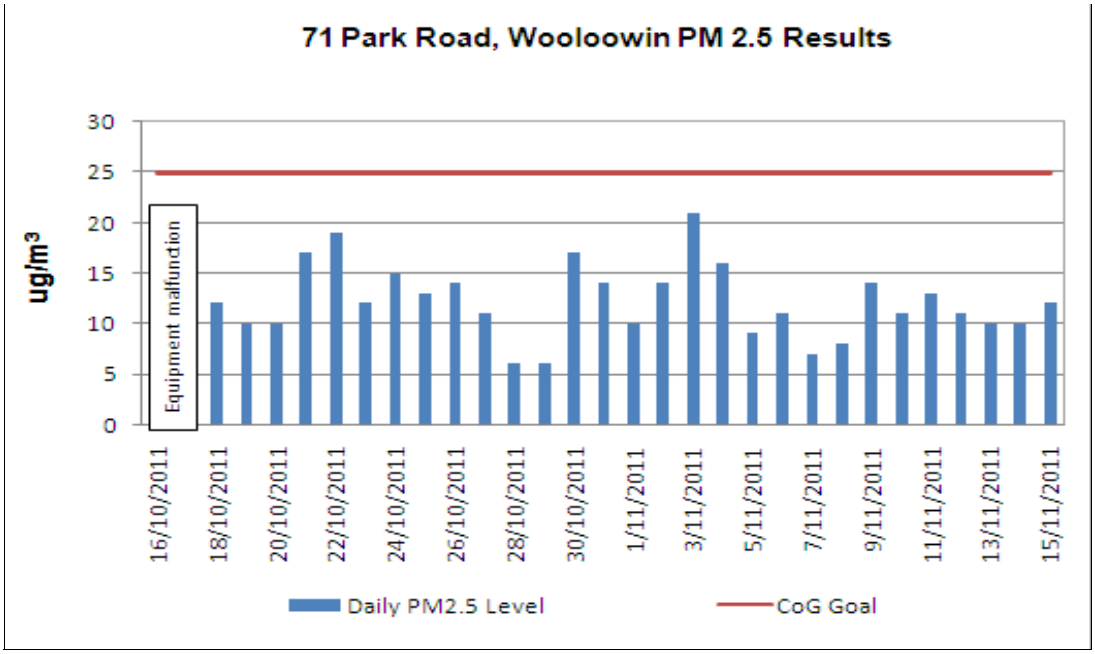


Figure 4.2.9: 71 Park Road, Wooloowin PM2.5 Results (for monitor location see figure 2.1 – A1)

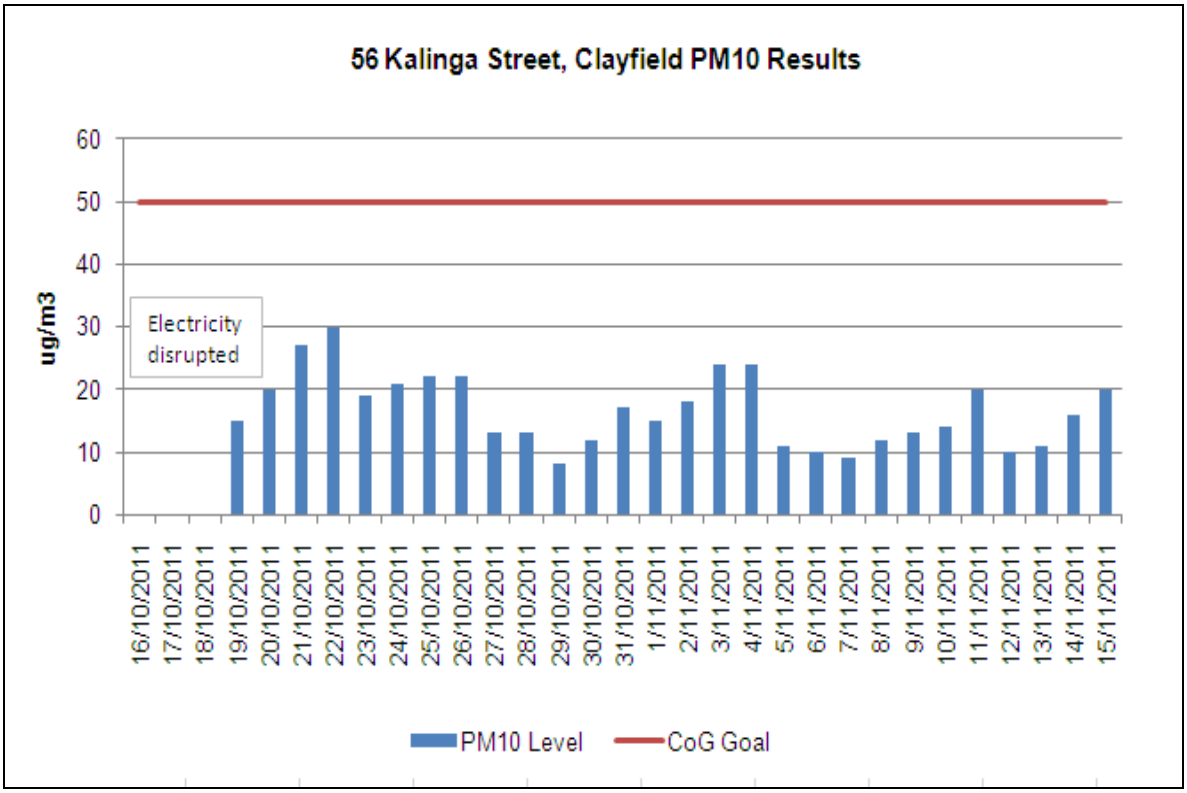


Figure 4.2.10: 56 Kalinga Street, Toombul PM10 Results (for monitor location see Figure 2.6 – A1)

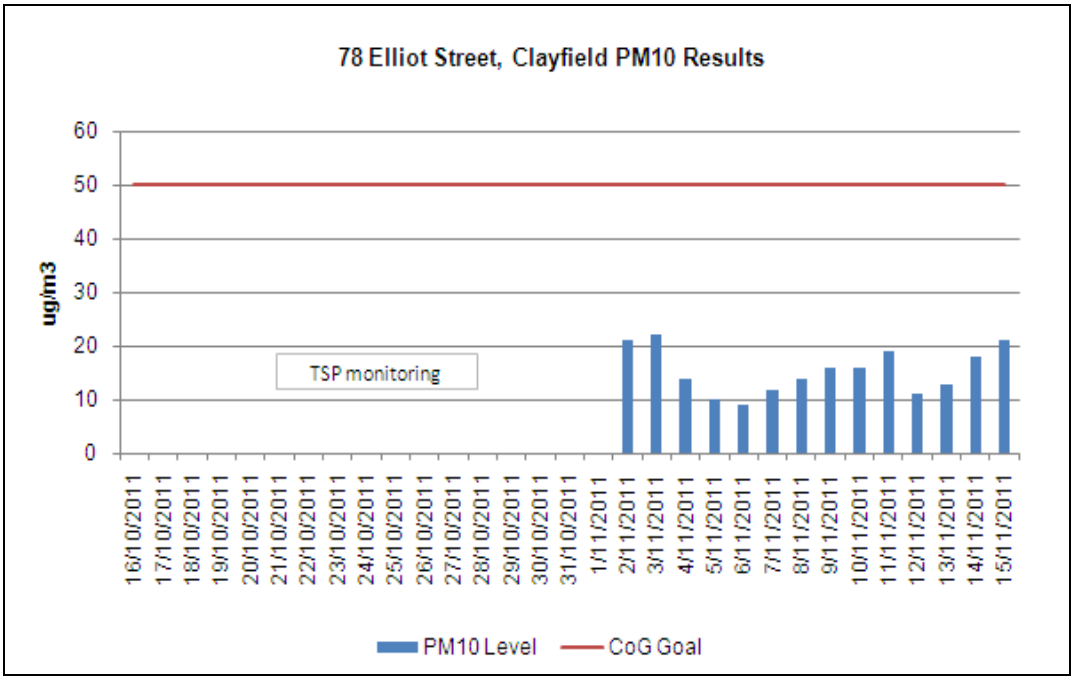


Figure 4.2.11: 78 Elliot Street, Toombul PM10 Results (for monitor location see Figure 2.6- A2)

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 all locations the placement of the deposition gauges does not strictly meet the standard due to location and security restrictions. Efforts to comply with location standards have been made however as much as possible.

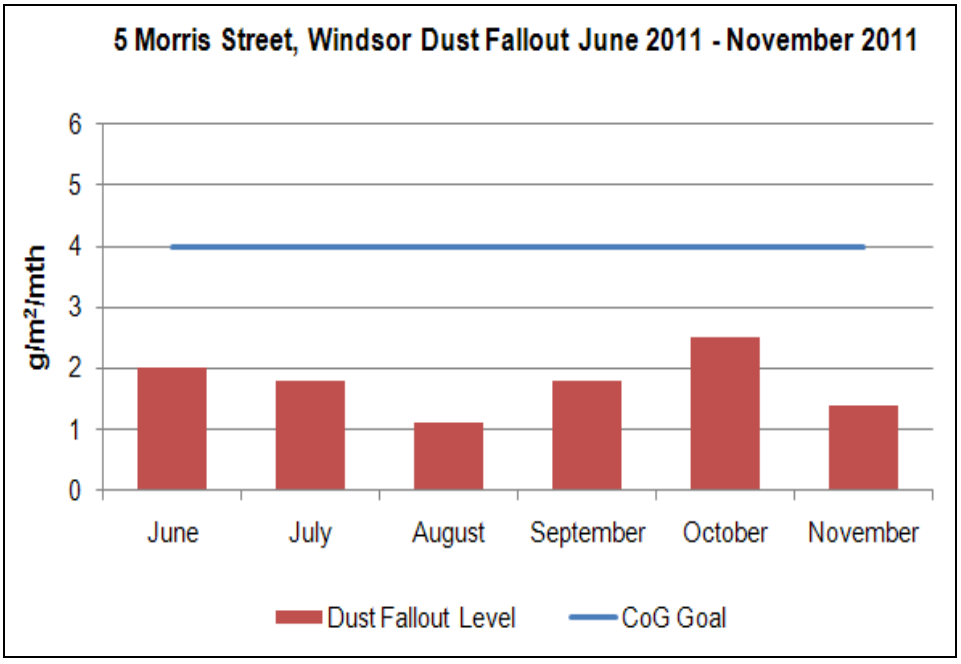


Figure 4.3.1: 5 Morris Street Windsor Dust Deposition Results (for monitor location refer to Figure 2.1 – D1)

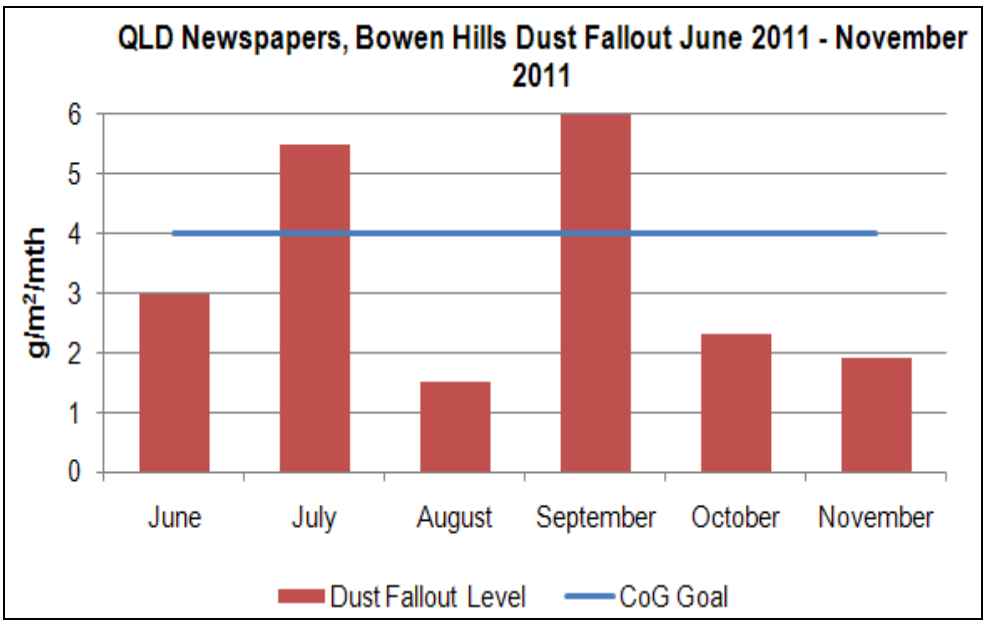


Figure 4.3.2: Queensland Newspapers, Bowen Hills Dust Deposition Results (for monitor location refer to Figure 2.1 – D2)

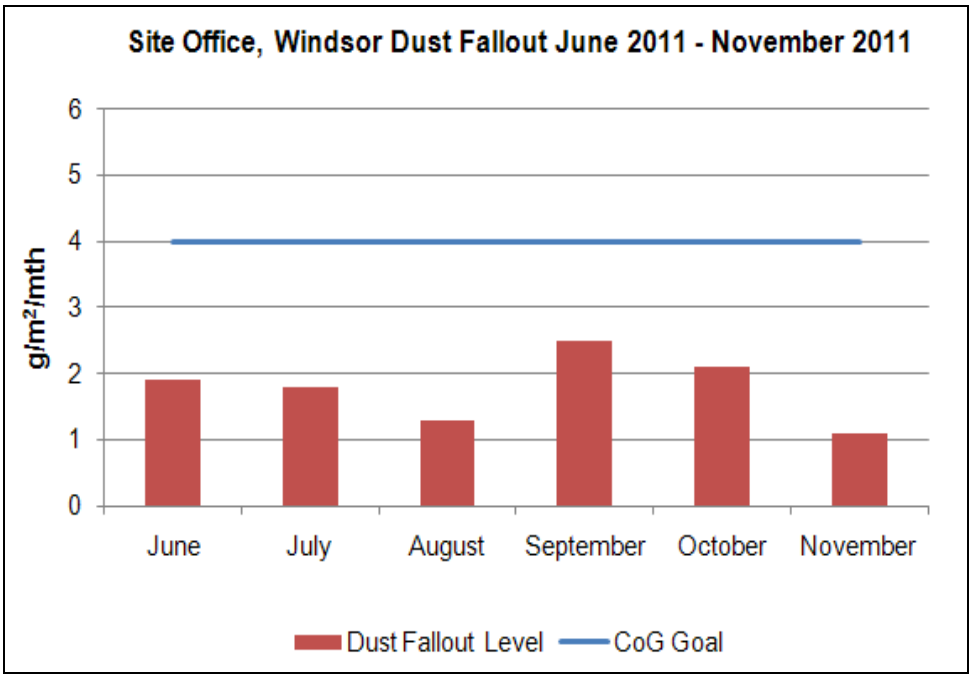


Figure 4.3.3: Site Office, Windsor Dust Deposition Results (for monitor location refer to Figure 2.1- D3)

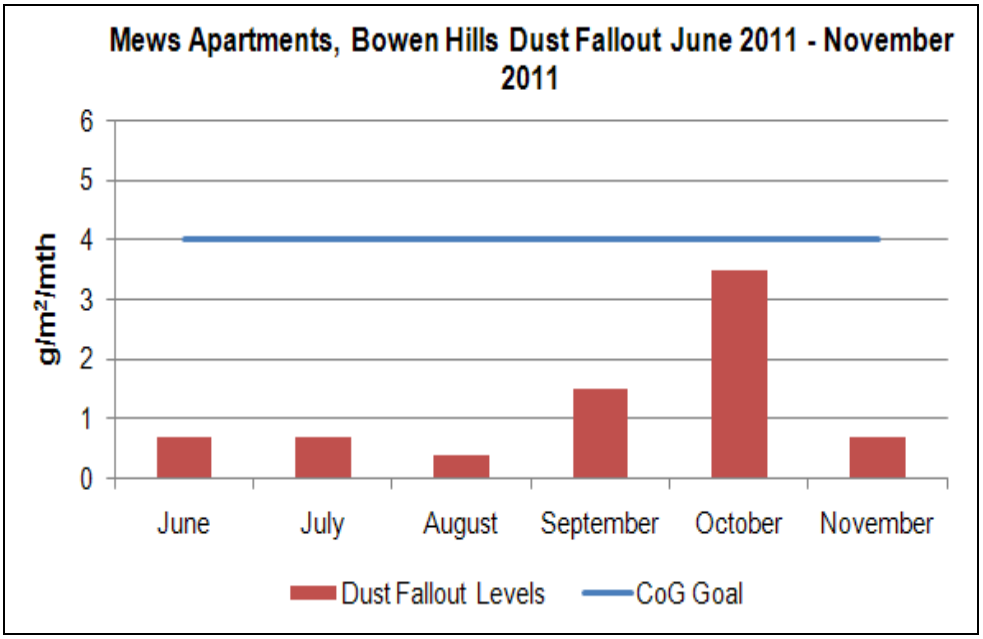


Figure 4.3.4: Mews Apartments, Bowen Hills Dust Deposition Results (for monitor location refer to Figure 2.1 – D4)

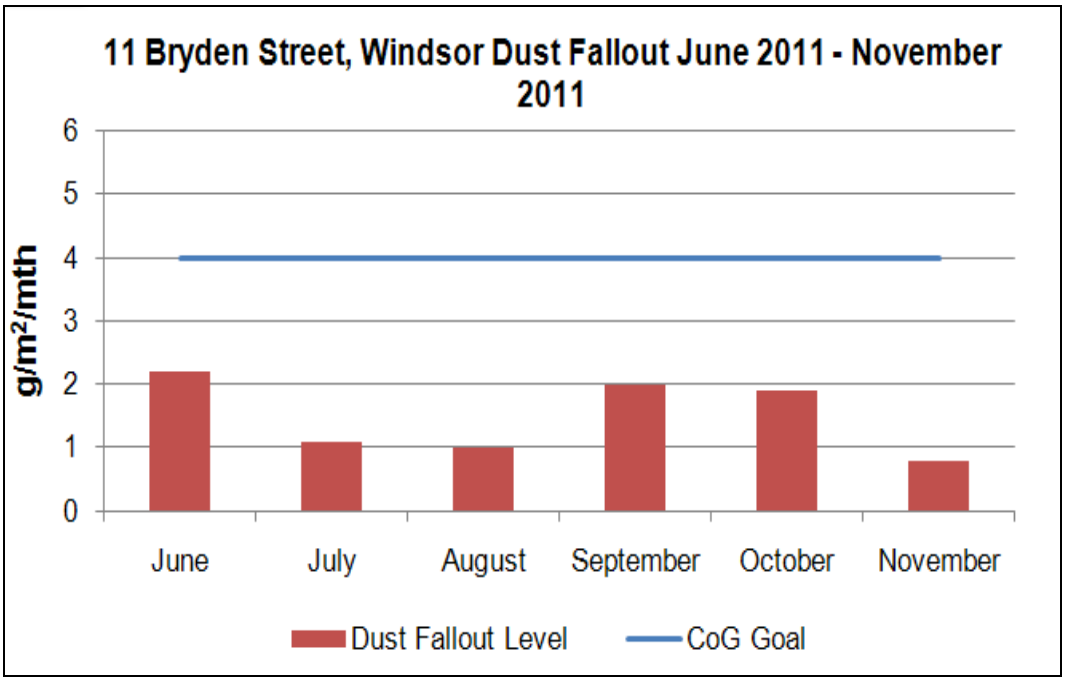


Figure 4.3.5: 11 Bryden Street, Windsor Dust Deposition Results (for monitor location refer to Figure 2.1 – D5)

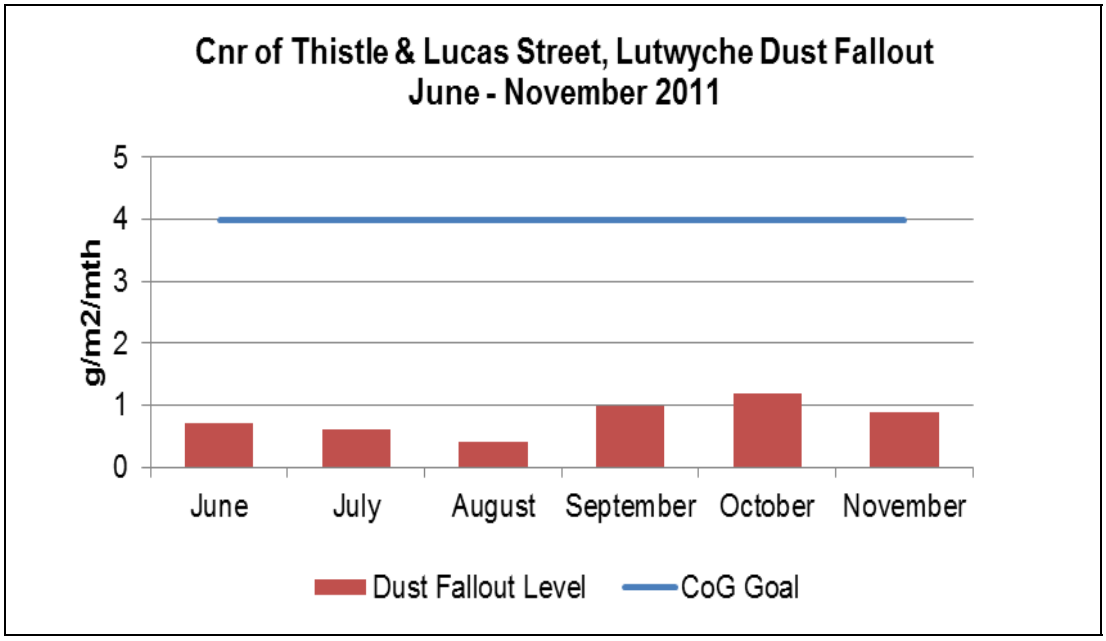


Figure 4.3.6: Cnr of Thistle & Lucas Street, Lutwyche Dust Fallout Results (location refer to figure 2.3 – D2)

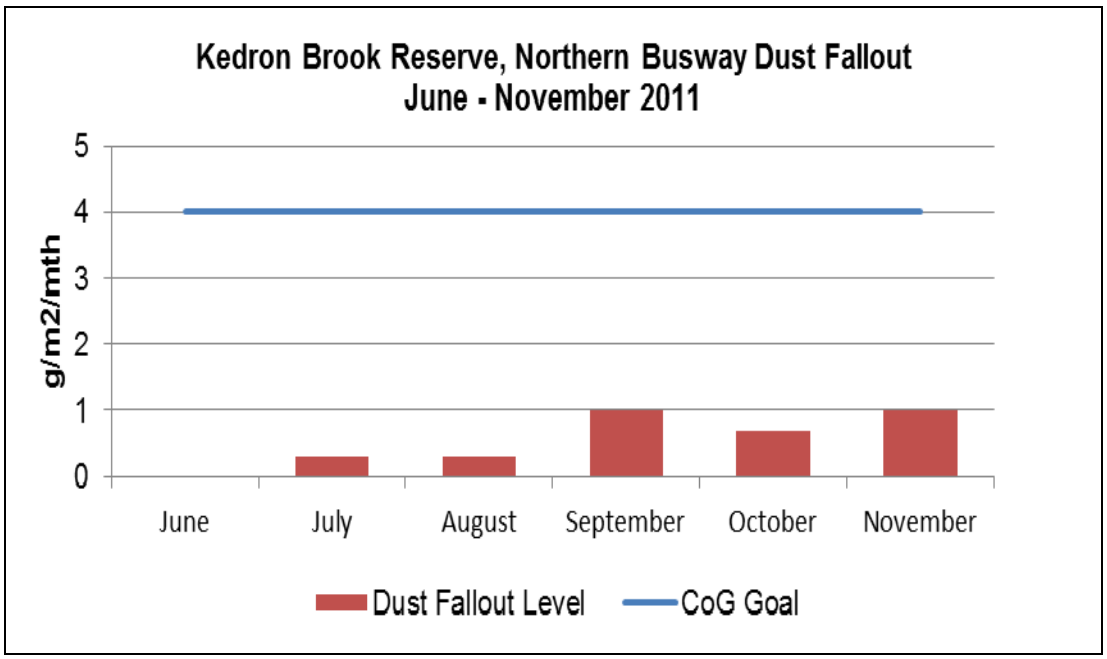


Figure 4.3.7: Kedron Brook Reserve, Northern Busway Dust Fallout Results (location refer to figure 2.3 – D1)

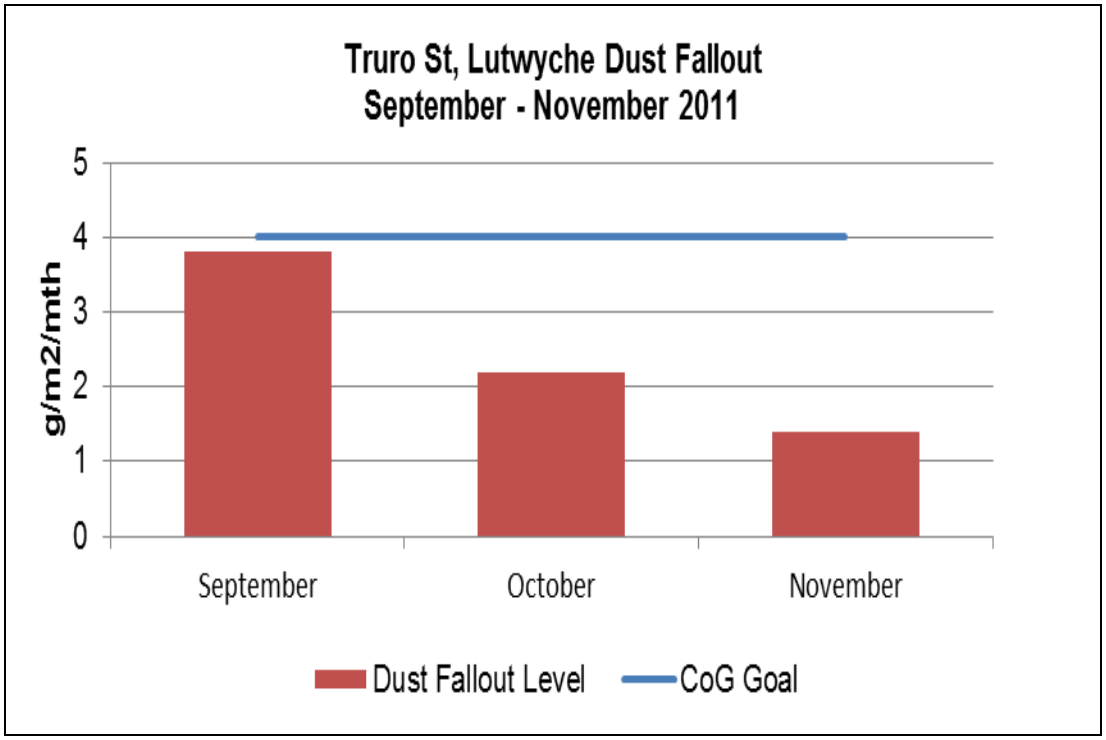


Figure 4.3.8: Truro Street, Lutwyche Fallout Results (location refer to figure 2.2)

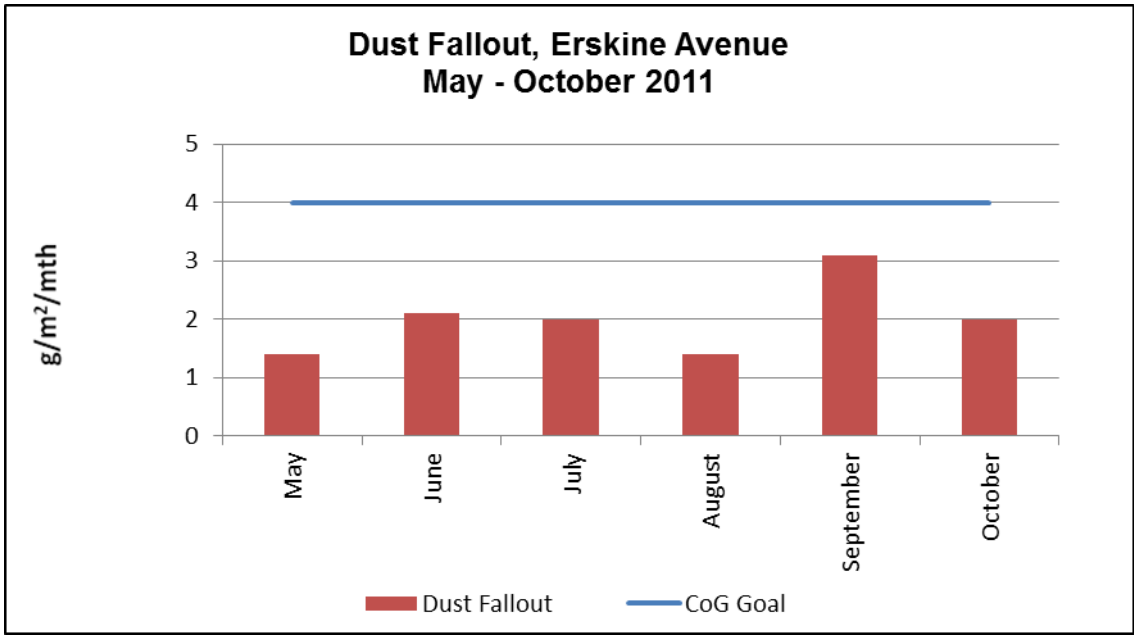


Figure 4.2.9: Erskine Avenue, Kedron Dust Fallout May – October 2011 (for monitor location see figure 2.4 – A1)

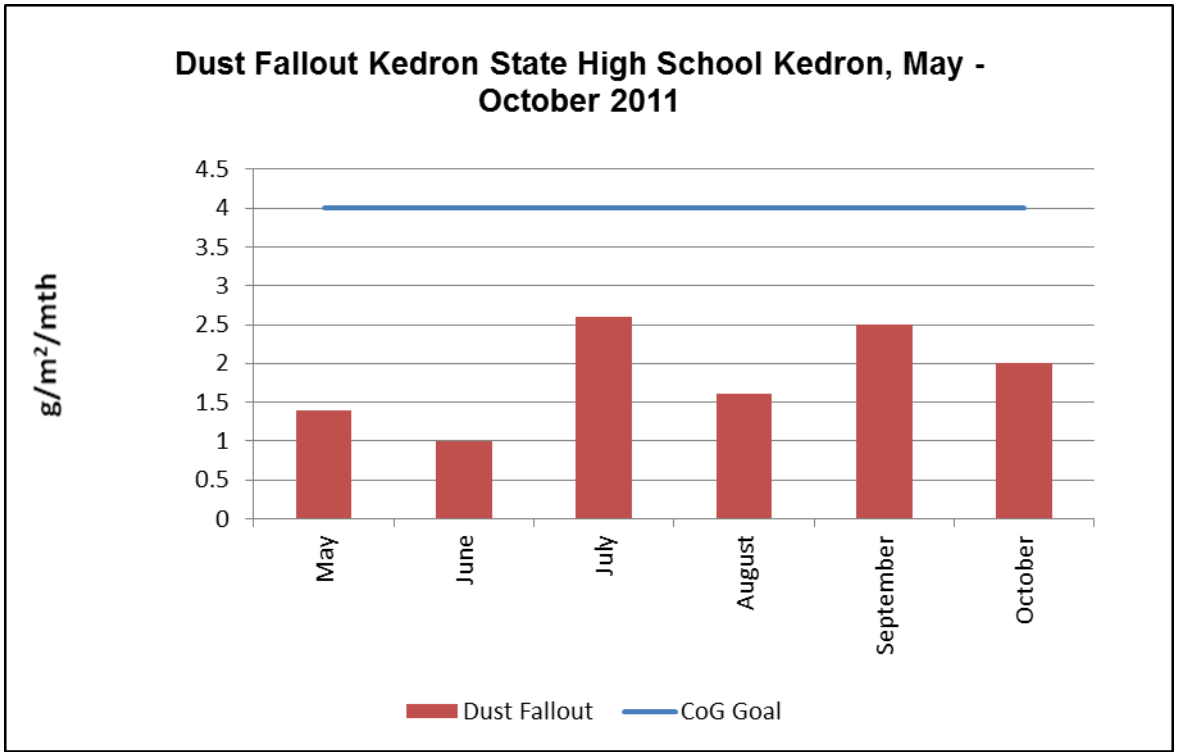


Figure 4.2.10: Kedron State High School, Dust Fallout May – October 2011 (for monitor location see figure 2.4 A2)

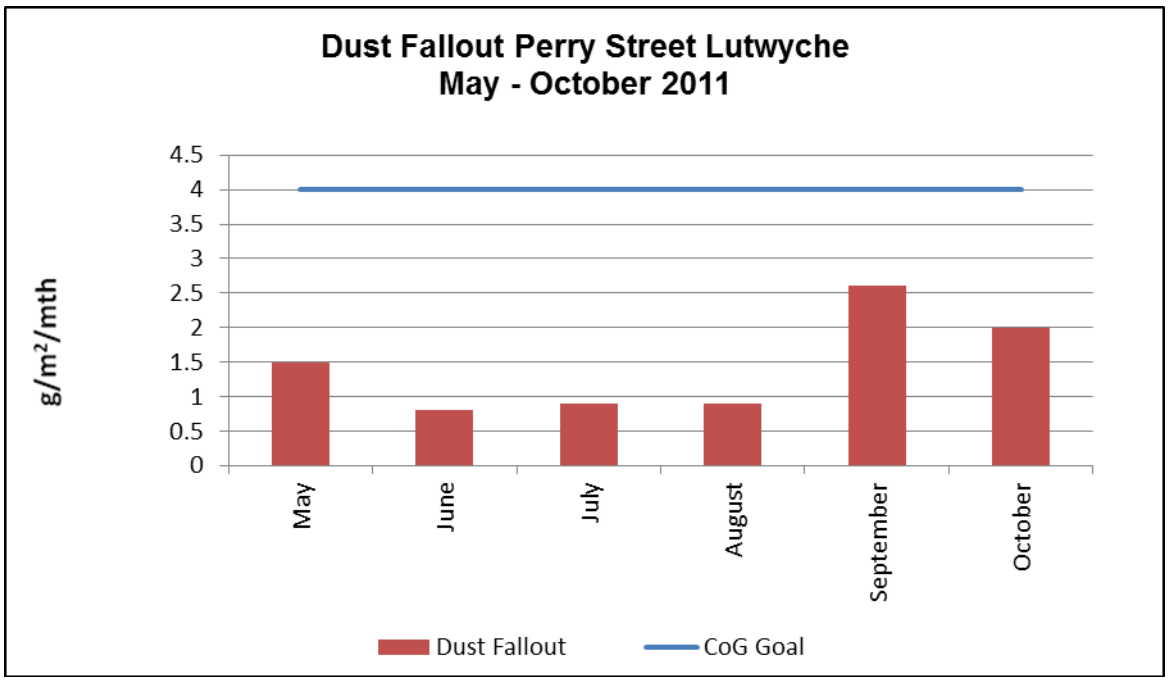


Figure 4.2.11: Perry Street, Lutwyche Dust Fallout May – October 2011 (for monitor location see figure 2.4 – A3)

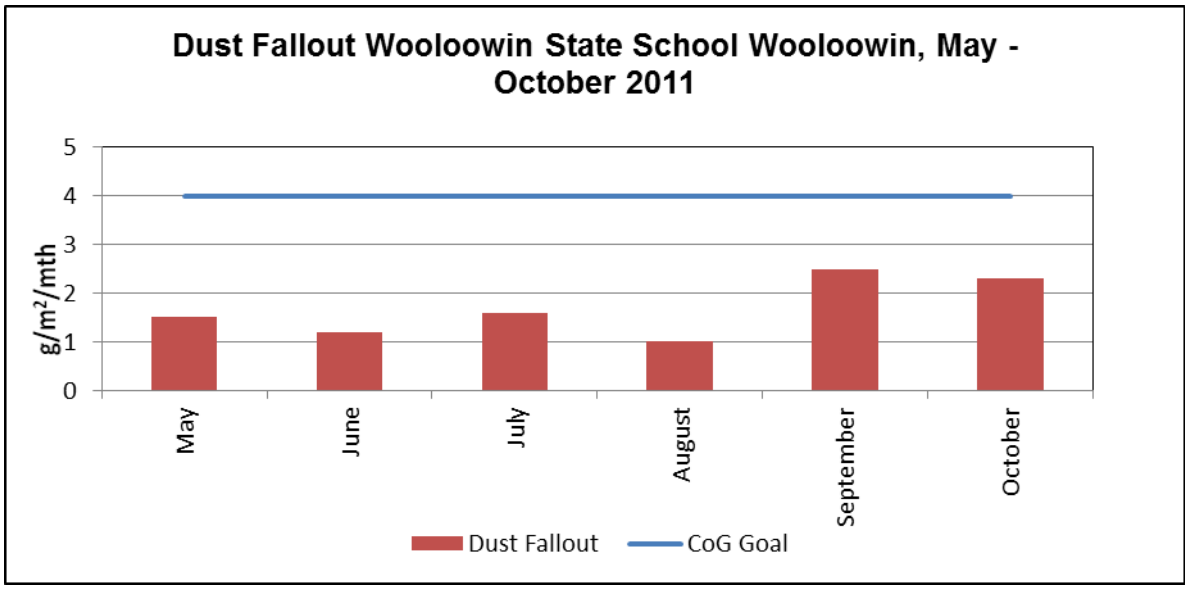


Figure 4.2.12: Wooloowin State School, Dust Fallout May – October 2011 (for monitor location see figure 2.4 – A4)

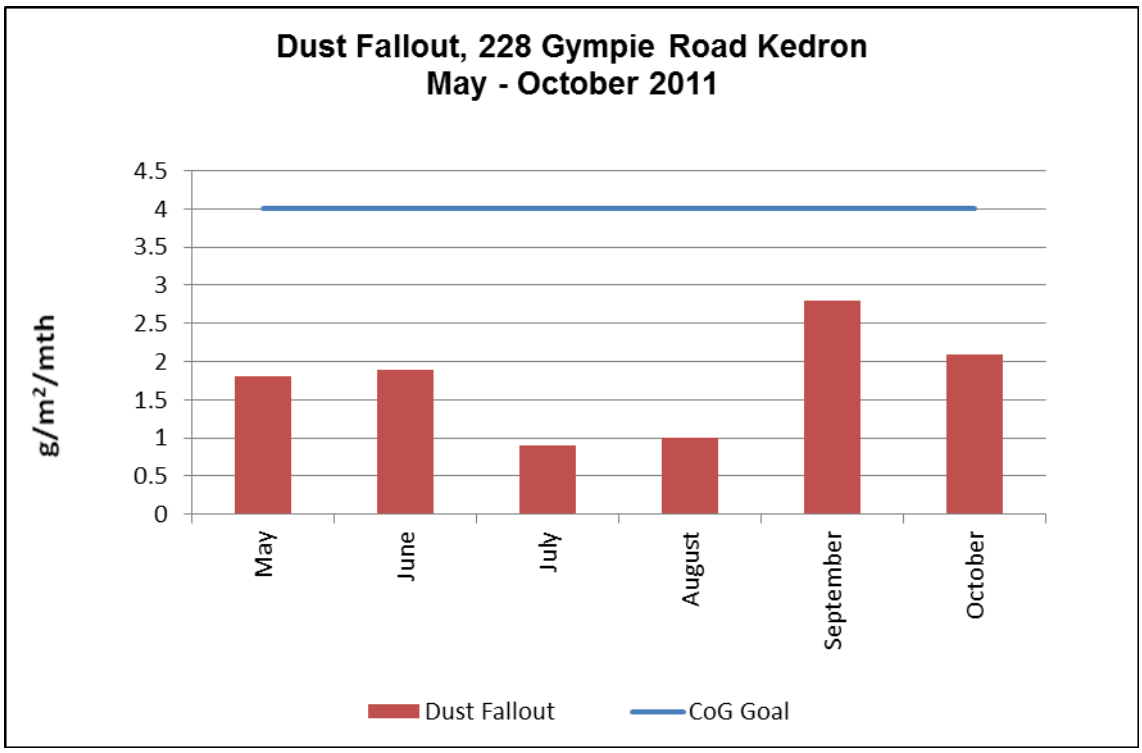


Figure 4.2.13: 228 Gympie Road, Kedron Dust Fallout May – October 2011 2011 (for monitor location see figure 2.4

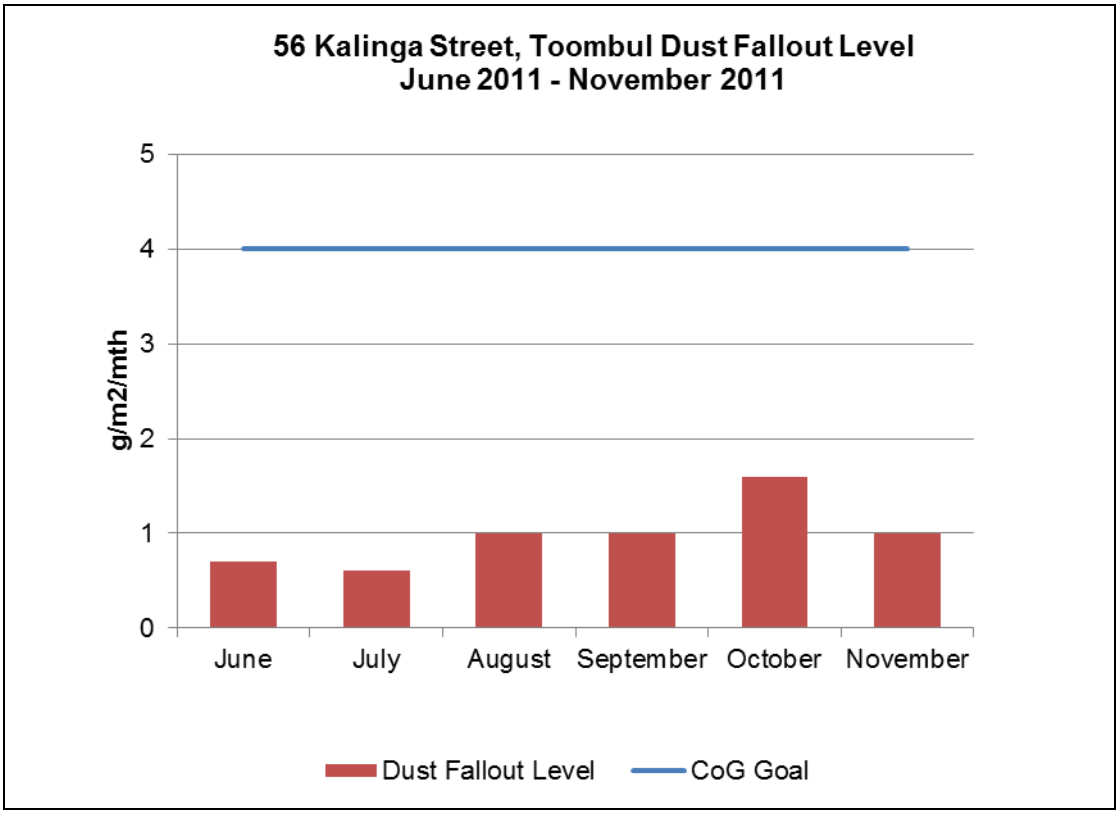


Figure 4.2.14: 56 Kalinga Street Toombul, Dust Fallout (location refer to figure 2.6 – D1)

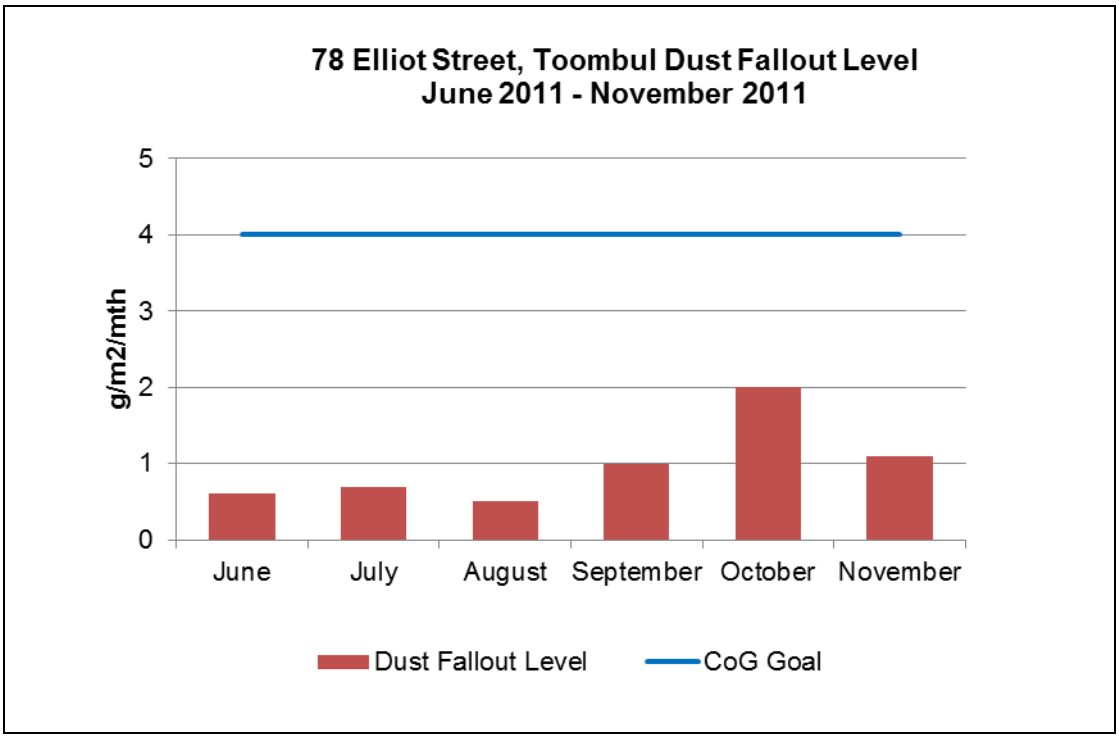


Figure 4.2.15: 78 Elliot Street Toombul, Dust Fallout (location refer to figure 2.6 – D2)

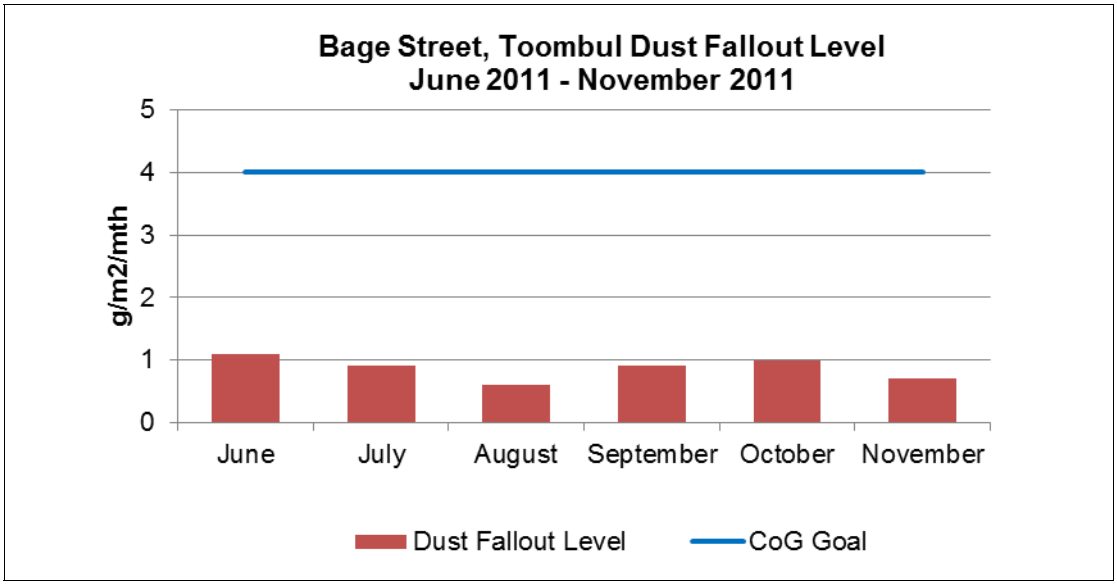


Figure 4.2.16: Bage Street Toombul, Dust Fallout (location refer to figure 2.6 – D3)

4.4 Compliance with Air Quality Goals

There were exceedances of the Coordinator Generals Air Quality Conditions in this reporting period. The exceedances were recorded at:

- Perry Street, Kedron
- Erskine Avenue, Kedron

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 sensitive receptors.

Results of monitoring are compared to Vibration Goals adopted as listed by the Coordinator General (Change Report June 2008) 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 Table 5a.

Table 5a: Vibration Monitoring Results Summary – Bowen Hills

Location	Monitoring Period	Event Peak Particle Velocity (mm/s)	CoG Vibration Goal (mm/s)	Comments
Queensland Newspapers	16/10/11 - 24/10/11	1.06	5	Results are within CoG goals.
	25/10/11 - 31/10/11	1.51	5	Results are within CoG goals.
	01/11/11 - 07/11/11	0.97	5	Results are within CoG goals.
	08/11/11 - 15/11/11	0.67	5	Results are within CoG goals.

Table 5b: Vibration Monitoring Results Summary – Northern Busway

Location	Monitoring Period	Event Peak Particle Velocity (mm/s)	CoG Vibration Goal (mm/s)	Comments
26 Bradshaw Street, Lutwyche	27/10/11-29/10/11	0.644	5	Results are within CoG goals.
	02/11/11-07/11/11	1.03	5	Results are within CoG goals.

Table 5c: Vibration Monitoring Results Summary – Toombul

Location	Monitoring Period	Peak Particle Velocity (mm/s)	DTMR Technical Standard (mm/s)	Comments
North Coast Railway Bridge (Northern abutment)	8/11/2011 9:22am – 12:22pm	0.8	5	Monitoring indicates that DTMR goals are being met
North Coast Railway Bridge (Southern abutment)	11/11/2011 9:35am – 1:10pm	0.6	5	Monitoring indicates that DTMR goals are being met
Air Train Pillar	11/11/2011 9:33am – 1:08pm	2.3	5	Monitoring indicates that DTMR goals are being met

Table 5d: Vibration Monitoring Results Summary – Wooloowin

Location	Monitoring Period	Peak Particle Velocity (mm/s)	CoG Vibration Goal (mm/s)	Comments
71 Park Road, Wooloowin	16/10/2011 To 28/11/2011	3.17	5	Results are within CoG goals

71 Park Road, Wooloowin	02/11/2011 To 15/11/2011	3.03	5	Results are within CoG goals

5.3: Compliance with Vibration Goals

There were no exceedances of the Coordinator Generals conditions for this reporting period for vibration.

6.0 Community enquiries and complaints

A total of 198 community complaints were reported to the project between 16 October and 15 November 2011. The top issues raised are outlined in the pie chart 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.

6.1 Top 10 issues raised