



Monthly Environmental Monitoring Report

March 2010

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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 Wooloowin Worksite Report October 2009).

The monitoring data covered in this report is for the March 2010 reporting period, from 15th February to 15th March 2010.

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 January 2010, though do serve a useful purpose in relating the monitoring locations to existing structures and infrastructure.

Bowen Hills Monitoring Locations



Figure 2.1 – Bowen Hills Monitoring Locations

Legend

- Noise (during construction)
- Vibration
- Air (PM₁₀)
- Air (Dust Deposition)

Note: QNP is not shown due to map extremities – physical location 41 Campbell St Bowen Hills

Truro Street Mid Tunnel Monitoring Locations



Figure 2.2 – Truro Street Mid Tunnel Monitoring Locations

Legend

- Noise (during construction)
- Vibration

- Air (PM₁₀)
- Air (Dust Deposition)

Note: locations are indicative only

Northern Busway Monitoring Locations



Figure 2.3 – Nthn Busway Monitoring Locations

Legend

- Noise (during construction)
- Vibration

- Air (PM₁₀)
- Air (Dust Deposition)

Note: locations are indicative only

Kedron Monitoring Locations

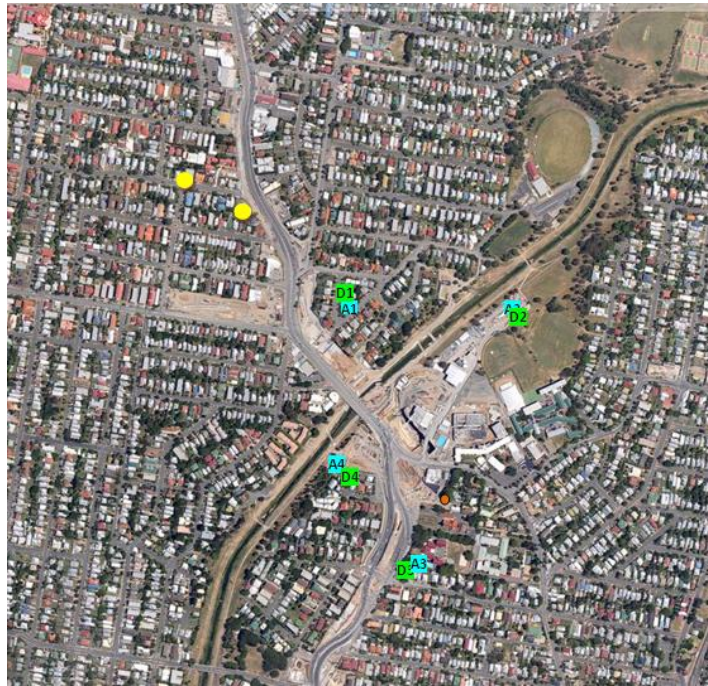


Figure 2.4 – Kedron Monitoring Locations

Legend

- Noise (during construction)
- Air (PM₁₀)
- Vibration
- Air (Dust Deposition)

Note: locations are indicative only

Woolloowin Monitoring Locations



Figure 2.5 – Woolloowin Monitoring Locations

Legend

- Noise (during construction)
- Air (PM₁₀)
- Vibration
- Air (Dust Deposition)

Note: locations are indicative only

Toombul Monitoring Locations

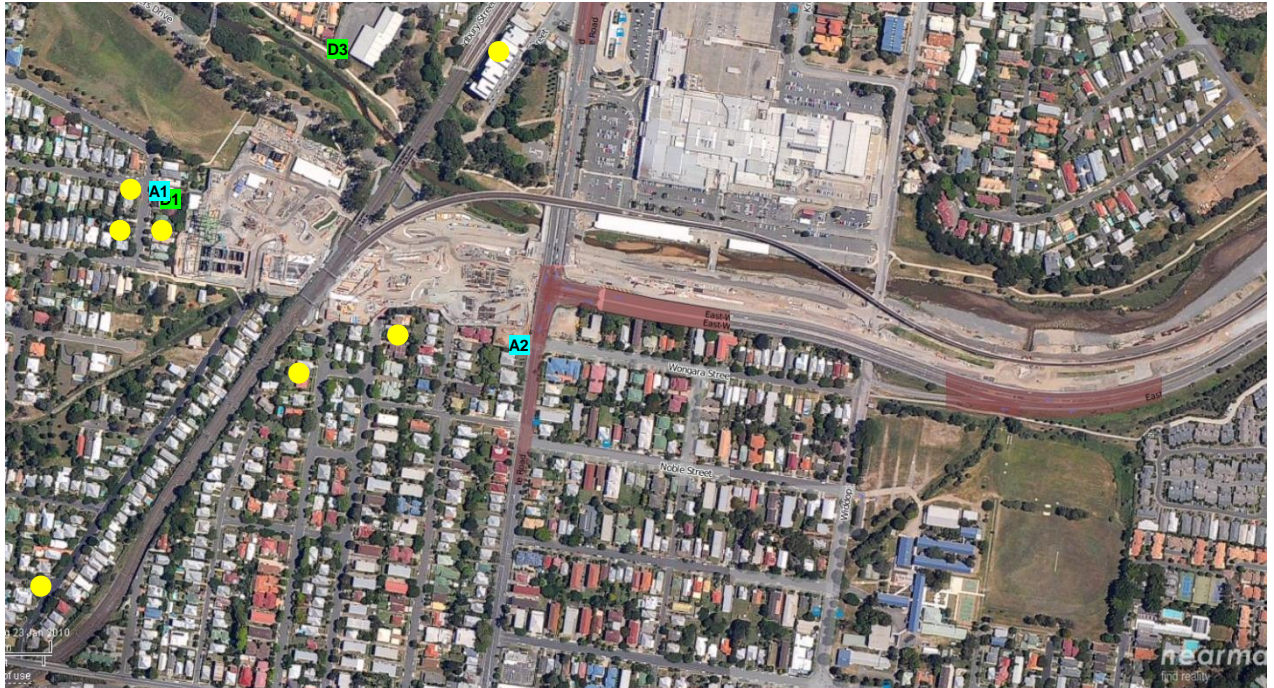


Figure 2.6 – Toombul Monitoring Locations

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). TJH have also undertaken external monitoring to better understand the pre-construction baseline and acoustic environment during works to assist TJH conduct risk assessments and nominate appropriate mitigation measures.

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. Truro Street on all sides of works
 - iii. Federation Street (Bowen Hills)
 - iv. Stafford Rd (Kedron)

- b. Temporary noise barrier (shipping container) installations:
 - i. Perry Street, (Kedron)
 - ii. Kalinga Park (Toombul)
- c. Acoustic shed has been built around the tunnel portals at:
 - i. Truro Street
 - ii. Bowen Hills
- 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

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
14 Gallway Street, Windsor								
Living Room	16/02/10 10.59am- 11.13am	55.3	45	55.1	55	-	-	<p>Monitoring Type Attended, internal monitoring with windows and doors open</p> <p>Noise Sources TJH rock hammering in site adjacent to monitoring location. (predominant noise source)</p> <p>Discussion Elevated levels resulted from rock hammering which was occurring in the TJH site adjacent to monitoring location. The CoG goals were exceeded as a result of TJH activities</p> <p>Mitigation Resident has been offered individual mitigation options</p>
Living Room	16/02/10 11.15am- 11.29am	51.3	45	52.1	55	-	-	<p>Monitoring Type Attended, internal monitoring with windows and doors closed</p> <p>Noise Sources Rock hammering in the property adjacent to monitoring location (predominant noise source)</p> <p>Discussion Elevated levels were a result of rock hammering which was occurring in the property adjacent to monitoring location. The CoG goals were exceeded as a result of TJH activities</p> <p>Mitigation Resident has been offered individual mitigation options</p>
5 Morris Street, Windsor								
2 nd Storey. Western side of building	18/02/2010 7.21pm-7.35pm	34.4	40	-	-	41.2	50	<p>Monitoring Type Attended, internal monitoring occurred in the living room with windows and doors closed</p> <p>Noise Sources The dominant noise source was traffic on Lutwyche Road</p> <p>Discussion No TJH activities were noted during this monitoring session. The results were within the CoG goals</p>
2 nd Storey Southern side of building	20/02/10 1.15am-1.30am	34.5	40	-	-	41.6	50	<p>Monitoring Type Attended, internal monitoring occurred in the bedroom with windows and doors closed</p> <p>Noise Sources The dominant noise source was traffic on Lutwyche Road and site from the concrete pour of BR107</p> <p>Discussion</p>

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
The results were within the CoG goals								
107 Victoria Street, Windsor								
2 nd Storey. Eastern side of building	23/02/2010 2.59pm-3.13pm	59.4	45	61.1	55	-	-	Monitoring Type Attended, internal monitoring occurred in the study with windows and doors open Noise Sources The dominant noise source was traffic on Lutwyche Road. TJH activities were not recorded during this monitoring session Discussion The elevated levels resulted from the traffic on Lutwyche Road. Exceedance of the goals were not caused by TJH activities
2 nd Storey. Eastern side of building	23/02/2010 3.15pm-3.30pm	41.4	45	42.7	55	-	-	Monitoring Type Attended internal monitoring occurred in the study with windows and doors closed Noise Sources The dominant noise source was traffic on Lutwyche Road TJH activities were not recorded during this monitoring session Discussion Results were within the CoG goals
Tunnels Site Office, Federation Street, Windsor								
South-western corner office	20/02/2010 2.15am-2.30am	41.8	40	-	-	64.7	50	Monitoring Type Attended, internal monitoring was carried out with windows and doors closed Noise Sources The dominant noise source resulted from concrete pour for BR107. Discussion The monitoring was undertaken to ground truth the noise modelling. Exceedance was a result of TJH construction activities (elevated bridge deck pour) Mitigation Residents on Federation and Morris Street were offered relocation for the night time concrete pour

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
Unit 3/26 Bradshaw Street, Lutwyche						
2 nd Floor Unit. Centre of Unit Complex	23/02/2010 10.46am-11.00am	63.2	45	65.2	55	<p>Monitoring Type Attended, internal monitoring was carried out in the living room with the windows and doors open</p> <p>Noise Sources The dominant noise source was an excavator working in the CC602 excavation, rock hammering in BR75 excavation and traffic on Lutwyche Road were also audible</p> <p>Discussion The elevated levels were a result of the rock hammering and excavator working in the area of site which is adjacent to the unit complex. Exceedance of the goals was as a result of TJH construction activities and arterial road traffic</p> <p>Mitigation The site is bounded by a 2m timber hoarding</p>
2 nd Floor Unit. Centre of Unit Complex	23/02/2010 11.01am-11.15am	45.7	45	47.2	55	<p>Monitoring Type Attended, internal monitoring was carried out in the living room with the windows and doors closed</p> <p>Noise Sources The dominant noise source was an excavator working in the CC602 excavation. Rock hammering in BR75 excavation and traffic on Lutwyche Road were also audible</p> <p>Discussion The elevated levels were a result of the rock hammering and excavator working in the area of site which is adjacent to the unit complex. Exceedance of the goals was as a result of TJH construction activities and arterial road traffic</p> <p>Mitigation The site is bounded by a 2m timber hoarding</p>

Table 3c: Noise Monitoring Results – Bowen Tunnels

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
5 Morris Street, Windsor								
2 nd Storey Living Room. Eastern side of building	18/02/2010 6.04pm-6.18pm	35.2	45	34.9	55	-	-	Monitoring Type Attended, internal monitoring was carried out in the living room with the windows and doors closed Noise Sources The dominant noise source was traffic on Lutwyche Road Discussion No TJH tunnelling activities were noted during this monitoring session. The results were within the CoG goals
2 nd Storey Living Room. Western side of building	18/02/2010 6.27pm-6.41pm	45.8	40	-	-	65.3	50	Monitoring Type Attended, internal monitoring was carried out in the living room with the windows and doors open Noise Sources The dominant noise source was traffic on Lutwyche Road. The scrubber/ fan in the Southbound Tunnel Portal were intermittently audible Discussion The elevated levels were a result of the traffic on Lutwyche Road
2 nd Storey Living Room. Western side of building	18/02/2010 6.55pm-7.09pm	45.3	40	-	-	67.6	50	Monitoring Type Attended, internal monitoring was carried out in the living room with the windows and doors open Noise Sources The dominant noise source was traffic on Lutwyche Road. The scrubber/ fan in the Southbound Tunnel Portal were intermittently audible Discussion The elevated levels were a result of the traffic on Lutwyche Road
2 nd Storey Living Room. Western side of building	18/02/2010 7.21pm-7.35pm	34.9	40	-	-	49.8	50	Monitoring Type Attended, internal monitoring was carried out in the living room with the windows and doors closed Noise Sources The dominant noise source was traffic on Lutwyche Road Discussion No TJH tunnelling activities were noted during this monitoring session. The results were within the CoG goals
2 nd Storey Living Room. Western side of building	18/02/2010 7.42pm-7.56pm	43.5	40	-	-	55.8	50	Monitoring Type Attended, internal monitoring was carried out in the living room with the windows and doors open Noise Sources The dominant noise source was traffic on Lutwyche Road. The scrubber/ fan in the

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
								Southbound Tunnel Portal were intermittently audible Discussion The elevated levels were a result of the traffic on Lutwyche Road
2 nd Storey Living Room. Western side of building	25/02/2010 3.02pm-3.16pm	52.6	45	54.1	55	-	-	Monitoring Type Attended, internal monitoring was carried out in the living room with the windows and doors open Noise Sources The dominant noise source was traffic on Lutwyche Road. The rock hammer in CC101 excavation was intermittently audible. No TJH tunnelling activities were noted Discussion The elevated levels resulted from the traffic on Lutwyche Road
2 nd Storey Living Room. Western side of building	25/02/2010 3.19pm-3.33pm	42.2	45	41.8	55	-	-	Monitoring Type Attended, internal monitoring was carried out in the living room with the windows and doors closed Noise Sources The dominant noise source was traffic on Lutwyche Road and the Gallway Street diversion. The rock hammer in CC101 excavation was intermittently audible. No TJH tunnelling activities were noted Discussion The results were within the CoG goals

Table 3d: Noise Monitoring Results – Kedron

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
28 Somerset Road, Kedron						
Bedroom	18/02/2010 9:15am-9:29am	45	45	45	55	Monitoring Type Internal , attended, windows open Noise Source Background noise – Somerset Road traffic Construction noise – Welding and construction activities at Farmers Joes compound Discussion Noise monitoring was undertaken to determine impacts on the stakeholder from piling and other construction activities on CC702. It should be noted that piling at CC702 had ceased at the time of monitoring. Audible noises during the monitoring session were

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
						predominately from Somerset Road traffic and the welding at the Farmers Joes compound. Levels were within CoG Goals Mitigation Measures Ongoing consultation with stakeholder for further monitoring
Bedroom	18/02/2010 9:32am-9:46am	37	45	35	55	Monitoring Type Internal, attended, windows closed Noise Source Background noise – Somerset Road traffic Construction noise – Welding and construction activities at Farmers Joes compound Discussion Noise monitoring was undertaken to determine impacts on the stakeholder from piling and other construction activities on CC702. It should be noted that piling at CC702 had ceased at the time of monitoring. Audible noises during the monitoring session were predominately from Somerset Road traffic and the welding at the Farmers Joes compound. Levels were within CoG Goals Mitigation Measures Ongoing consultation with stakeholder for further monitoring
223 Gympie Road, Kedron						
Living room	18/02/2010 4:33pm-4:47pm	43.7	45	44.5	55	Monitoring Type Internal attended windows and doors closed Noise Source Site establishment, bulk excavation and soil nails CC702 Discussion Noise sources were predominantly from bulk excavation works being carried out within the CC702 site. As bulk excavation continues into the cut and cover structure noise sources will be further below ground level, reducing the noise impacts. The levels recorded are within CoG goals Mitigation Measures This house is currently vacant and is used to gather noise data on the border of the construction footprint for CC702. Mitigation for the CC702 work includes bulk excavation to pile cut-off level and temporary hoarding around sensitive receptors.
Living room	18/02/2010 4:51pm-5:05pm	45.5	45	47.6	55	Monitoring Type Internal attended windows and doors closed. Noise Source Site establishment, bulk excavation and soil nails CC702 Discussion

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
						Noise sources were predominantly from bulk excavation works being carried out within the CC702 site. As bulk excavation continues into the cut and cover structure noise sources will be further below ground level, reducing the horizontal projection of noise sources. Exceedances were as a result TJH activities Mitigation Measures This house is currently vacant and is used to gather noise data on the border of the construction footprint for CC702. Mitigation for the CC702 work includes bulk excavation to pile cut-off level and temporary hoarding around sensitive receptors
Living room	19/02/2010 12:28pm-12:42pm	46.1	45	46.4	55	Monitoring Type Internal attended windows and doors closed. Noise Source Site establishment, bulk excavation and soil nails CC702 Discussion Noise sources were predominantly from bulk excavation works being carried out within the CC702 site. As bulk excavation continues into the cut and cover structure noise sources will be further below ground level, reducing the horizontal projection of noise sources. Exceedances were as a result TJH activities Mitigation Measures This house is currently vacant and is used to gather noise data on the border of the construction footprint for CC702. Mitigation for the CC702 work includes bulk excavation to pile cut-off level and temporary hoarding around sensitive receptors
Living room	19/02/2010 12:44pm-12:58pm	42.4	45	42.8	55	Monitoring Type Internal attended windows and doors closed. Noise Source Site establishment, bulk excavation and soil nails CC702 Discussion Noise sources were predominantly from bulk excavation works being carried out within the CC702 site. As bulk excavation continues into the cut and cover structure noise sources will be further below ground level, reducing the horizontal projection of noise sources. Results comply with the CoG goals Mitigation Measures This house is currently vacant and is used to gather noise data on the border of the construction footprint for CC702. Mitigation for the CC702 work includes bulk excavation to pile cut-off level and temporary hoarding around sensitive receptors

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
Living room	24/02/2010 2:25pm-2:39pm	43.5	45	44.5	55	<p>Monitoring Type Internal attended windows and doors closed</p> <p>Noise Source Site establishment, bulk excavation and soil nails CC702</p> <p>Discussion Noise sources were predominantly from bulk excavation works being carried out within the CC702 site. As bulk excavation continues into the cut and cover structure noise sources will be further below ground level, reducing the horizontal projection of noise sources. Results comply with the CoG goals</p> <p>Mitigation Measures This house is currently vacant and is used to gather noise data on the border of the construction footprint for CC702. Mitigation for the CC702 work includes bulk excavation to pile cut-off level and temporary hoarding around sensitive receptors</p>
Living room	24/02/2010 2:44pm-2:58pm	45.4	45	45.9	55	<p>Monitoring Type Internal attended windows and doors closed.</p> <p>Noise Source Site establishment, bulk excavation and soil nails CC702</p> <p>Discussion Noise sources were predominantly from bulk excavation works being carried out within the CC702 site. As bulk excavation continues into the cut and cover structure noise sources will be further below ground level, reducing the horizontal projection of noise sources. Exceedances were as a result TJH activities</p> <p>Mitigation Measures This house is currently vacant and is used to gather noise data on the border of the construction footprint for CC702. Mitigation for the CC702 work includes bulk excavation to pile cut-off level and temporary hoarding around sensitive receptors</p>
Living room	25/02/2010 11:40am-11:54am	44.3	45	44.4	55	<p>Monitoring Type Internal attended windows and doors closed.</p> <p>Noise Source Site establishment, bulk excavation and soil nails CC702</p> <p>Discussion Noise sources were predominantly from bulk excavation works being carried out within the CC702 site. As bulk excavation continues into the cut and cover structure noise sources will be further below ground level, reducing the horizontal projection of noise sources. Results comply with the CoG goals</p>

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
						Mitigation Measures This house is currently vacant and is used to gather noise data on the border of the construction footprint for CC702. Mitigation for the CC702 work includes bulk excavation to pile cut-off level and temporary hoarding around sensitive receptors

Table 3e – 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)	Comments
Shop 5, 85 Kent Road, Wooloowin						
Entrance Room	16/02/2010 10:55am – 11:09am	54.8	50	55.5	60	Monitoring Type Attended noise monitoring, front doors and windows closed Noise Sources Concreting and shaft excavation was barely audible above the traffic and internal noise. Internal noise sources were food preparation noises, music, walking about, fridge door opening/closing Discussion The dominant noise source was caused by traffic and internal noises. Exceedance of the CoG goal was a result of non-TJH activities Mitigation Measures A noise wall is in place around Rose Street Site
Entrance Room	16/02/2010 11:13am – 11:27am	54.9	50	55.6	60	Monitoring Type Attended noise monitoring front doors and windows closed Noise Sources Concreting and shaft excavation was barely audible above the traffic and internal noise. Internal noise sources were food preparation noises, music, walking about, fridge door opening/closing and fridge fan, water running and talking Discussion The dominant noise source was caused by traffic and internal noises. Exceedance of the CoG goal was a result of non-TJH activities Mitigation Measures A noise wall is in place around Rose Street Site

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
Dining Room	16/02/2010 11:38am – 11:52am	50.3	50	51.2	60	<p>Monitoring Type Attended noise monitoring front doors and windows closed</p> <p>Noise Sources Concreting and shaft excavation (TJH – Rose Street Site) was barely audible above the traffic and internal noise. Internal noise sources were food preparation noises (chopping, sizzling), music, walking about, fridge door opening/closing and fridge fan</p> <p>Discussion The dominant noise source was caused by traffic and internal noises. Exceedance of the CoG goal was a result of non-TJH activities</p> <p>Mitigation Measures A noise wall is in place around Rose Street Site</p>
Dining Room	16/02/2010 11:57am – 12:11pm	47.8	50	48.7	60	<p>Monitoring Type Attended noise monitoring front doors and windows closed</p> <p>Noise Sources Concreting and shaft excavation was barely audible above the traffic and internal noise. Internal noise sources were food preparation noises, talking, fridge door opening/closing and fridge fan, coffee maker and phone</p> <p>Discussion The dominant noise source was caused by traffic and internal noises. These results are within the CoG Goals</p> <p>Mitigation Measures A noise wall is in place around Rose Street Site</p>
104 Kent Road, Woollowin						
Downstairs Living Room	25/02/2010 11:01am – 11:15am	43	45	43.3	55	<p>Monitoring Type Attended noise monitoring doors and windows closed</p> <p>Noise Sources Shed erection (hammering beams into place and power tools) and site maintenance. Other internal noise sources included occupants moving about upstairs, floor creaking, voices and bar fridge</p> <p>Discussion These results are within the CoG Goals</p> <p>Mitigation Measures A noise wall is in place around Rose Street Site. This property has received individual property mitigation</p>
Downstairs Living Room	25/02/2010 11:22am – 11:36am	40.1	45	41.1	55	<p>Monitoring Type Attended noise monitoring doors and windows closed</p> <p>Noise Sources Shed erection (hammering beams into place and power tools) and site maintenance. Other noise sources included traffic, occupants moving about upstairs and food preparation</p>

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
						Discussion These results are within the CoG Goals Mitigation Measures A noise wall is in place around Rose Street Site. This property has received individual property mitigation
Upstairs Dining Area	25/02/2010 11:51am -12:05pm	41.6	45	42.1	55	Monitoring Type Attended noise monitoring doors and windows closed Noise Sources Shed erection (hammering beams into place and power tools) and site maintenance. Other noise sources included traffic, occupants walking around, house creaking and dog barking Discussion These results are within the CoG Goals Mitigation Measures A noise wall is in place around Rose Street Site. This property has received individual property mitigation
Upstairs Dining Area	25/02/2010 12:09 – 12:23pm	45.5	45	44.2	55	Monitoring Type Attended noise monitoring doors and windows closed Noise Sources Shed erection (hammering beams into place and power tools) and site maintenance. Other internal noise sources included traffic, something being dropped, occupants moving about, house creaking and television Discussion The dominant noise was from traffic and internal noises. CoG goals were not exceeded as a result of TJH construction activities Mitigation Measures A noise wall is in place around Rose Street Site. This property has received individual property mitigation
105 Kent Road, Wooloowin						
Rumpus / Living Room	25/02/2010 10:04am – 10:18am	40.8	45	41.4	55	Monitoring Type Attended noise monitoring doors and windows open Noise Sources Shed erection (hammering beams into place and power tools) and site maintenance. Other noise sources included traffic, occupants moving about and talking quietly in another room. Discussion The dominant noise source was traffic. These results are within the CoG Goals Mitigation Measures A noise wall is in place around Rose Street Site
Rumpus / Living Room	25/02/2010	35.3	45	35.5	55	Monitoring Type

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
	10:30am – 10:44am					<p>Attended noise monitoring doors and windows open</p> <p>Noise Sources Shed erection (hammering beams into place and power tools) and site maintenance. Other noise sources included traffic, occupants moving about and talking quietly in another room</p> <p>Discussion These results are within the CoG Goals</p> <p>Mitigation Measures A noise wall is in place around Rose Street Site</p>
1/64 Park Road, Wooloowin						
Lounge	15/03/2010 8:08am – 8:22am	56.2	45	56.8	55	<p>Monitoring Type Attended noise monitoring doors and windows open</p> <p>Noise Sources Construction noise included hammering beams into place (shed erection), reverse squawker and diesel engines. Other noise sources included traffic, occupants moving about on wooden floor, making coffee and talking quietly</p> <p>Discussion The noise exceedances were as a result of non-TJH activities</p> <p>Mitigation Measures A noise wall is in place around Rose Street Site</p>
Lounge	15/03/2010 8:27am – 8:41am	49.1	45	50.2	55	<p>Monitoring Type Attended Noise Monitoring doors and windows closed</p> <p>Noise Sources Construction noise included hammering beams into place (shed erection), horn and reverse squawker. Other noise sources included traffic, birds, plane, walking on wooden floor.</p> <p>Discussion The noise exceedances were as a result of non-TJH activities (traffic)</p> <p>Mitigation Measures A noise wall is in place around Rose Street Site</p>
2/64 Park Road, Wooloowin						
Lounge	15/03/2010 10:04am – 10:18am	41.2	45	41.9	55	<p>Monitoring Type Attended Noise Monitoring doors and windows open</p> <p>Noise Sources Shed erection – beam work, jack hammering, diesel engines. Other noise sources included traffic, birds, plane, neighbours moving about on the wooden floor and talking</p> <p>Discussion The dominant noise was traffic. These results are within the CoG Goals</p> <p>Mitigation Measures</p>

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
						A noise wall is in place around Rose Street Site
Lounge	15/03/2010 10:23am – 10:37am	35.7	45	36.0	55	Monitoring Type Attended Noise Monitoring doors and windows closed Noise Sources The TJH shed erection could not be heard. Noise sources included traffic, birds and a door banging Discussion These results are within the CoG Goals Mitigation Measures A noise wall is in place around Rose Street Site
3/64 Park Road, Wooloowin						
Lounge	15/03/2010 8:57am – 9:11am	54.5	45	55.4	55	Monitoring Type Attended Noise Monitoring doors and windows open Noise Sources Shed erection – working with beams, diesel engines, horn and reverse squawker. Other noise sources included traffic, birds and plane Discussion The noise exceedances were as a result of non-TJH activities (traffic) Mitigation Measures A noise wall is in place around Rose Street Site
Lounge	15/03/2010 9:27am – 9:41am	45.9	45	46.0	55	Monitoring Type Attended Noise Monitoring doors and windows closed Noise Sources Shed erection – working with beams and diesel engines. Other noise sources included traffic, birds and people moving about next door Discussion The noise exceedances were as a result of non-TJH activities (traffic) Mitigation Measures A noise wall is in place around Rose Street Site
Red Shop/64 Park Road, Wooloowin						
Entrance room	15/03/2010 10:57am – 11:11am	65.4	50	63.4	60	Monitoring Type Attended Noise Monitoring doors and windows open Noise Sources Shed erection – diesel engines, reverse squawker, power tools and beam work. Other noise sources included traffic, birds, plane and whipper-snipper and leaf blower Discussion The dominant source was traffic. These results are within the CoG Goals

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
						Mitigation Measures A noise wall is in place around Rose Street Site
Entrance room	15/03/2010 11:33am – 11:47am	45.3	50	45.2	60	Monitoring Type Attended Noise Monitoring doors and windows closed Noise Sources Shed erection – diesel engines, power tools and beam work. Other noise sources included traffic, birds and plane Discussion The dominant source was traffic. These results are within the CoG Goals Mitigation Measures A noise wall is in place around Rose Street Site
68 Park Road, Woolloowin						
Upstairs internal living area	26/02/2010 10:57am – 11:11am	41.9	45	42.4	55	Monitoring Type Attended noise monitoring doors and windows closed Noise Sources Shed erection – beam work. Other noise sources included traffic, birds, water running and house creaking Discussion The dominant source was traffic. These results are within the CoG Goals Mitigation Measures A noise wall is in place around Rose Street Site
Upstairs internal living area	26/02/2010 12:19pm – 12:33pm	44.7	45	39.2	55	Monitoring Type Attended noise monitoring doors and windows closed Noise Sources Construction noise could not be heard. Noise sources included traffic, house creaking, water running, voices, dog barking, birds and plane Discussion The dominant source was traffic. These results are within the CoG Goals Mitigation Measures A noise wall is in place around Rose Street Site
78 Park Road, Woolloowin						
Lounge	15/03/2010 12:41 – 12:55pm	46.4	45	46.2	55	Monitoring Type Attended noise monitoring doors and windows closed Noise Sources Shed erection – beam work, diesel engines and reverse squawker. Other noise sources included traffic, birds, dishes, water running, fridge, occupant walking around and washing machine. Discussion The dominant noise source was non-TJH traffic and internal noises. Exceedance of the goals was as a result of non TJH construction activities

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
						Mitigation Measures A noise wall is in place around Rose Street Site
Lounge	15/03/2010 1:05pm – 1:19pm	41.3	45	40.9	55	Monitoring Type Attended noise monitoring doors and windows closed Noise Sources Diesel engines and reverse squawker. Noise sources included traffic, birds, fridge, jug boiling, occupants moving about and telephone Discussion These results are within the CoG Goals Mitigation Measures A noise wall is in place around Rose Street Site

Table 3f: Noise Monitoring Results – Toombul (Daytime)

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
33 Kalinga Street, Clayfield						
Front Living Room 1 st Floor)	24/2/2010 8:35am – 8:49 am	48.1	45	49.0	55	Monitoring Type: Attended internal monitoring, windows and doors open Noise Sources: General construction (Crane, Banging, Franna, High Pitch Squeal, Reverse Beeping, Air Horn, GeoTech) plus non-TJH sources (Train, Plane, Birds) Discussion: Monitoring indicates that CoG goals are being exceeded. The exceedance is due to the construction of the TBM launch box shed. The TBM shed is above the 6m noise wall surrounding the site. Once constructed the shed will aid noise mitigation measures during operation of the TBMs Mitigation Measures: Include a 6m noise wall and double stack containers. The property was purchased by DMR prior to commencement of the project and is unoccupied
Front Living Room 1 st Floor	24/2/2010 8:54am – 9:08 am	41.1	45	41.5	55	Monitoring Type: Attended internal monitoring, windows and doors closed Noise Sources: General construction (Crane, Banging, Dropping Steel, Reverse Beep, Air Horn, Franna, GeoTech) plus non-TJH sources (Crickets, Birds, Train) Discussion: Monitoring indicates that CoG goals are being met

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
						Mitigation Measures: Include a 6m noise wall and double stack containers. The property was purchased by DMR prior to commencement of the project and is unoccupied
Front Living Room 1 st Floor	24/2/2010 1:36pm – 1:50 pm	49.2	45	49.6	55	Monitoring Type: Attended internal monitoring, windows and doors open Noise Sources: General construction (Rattle Gun, Engine, Banging, Unloading, Air Horn, Grinding, Franna, GeoTech, Reverse Beeping) plus non-TJH sources (Train, Wind, Birds, Plane) Discussion: Monitoring indicates that CoG goals are being exceeded. The exceedance is due to the construction of the TBM launch box shed. The TBM shed is above the 6m noise wall surrounding the site. Once constructed the shed will aid noise mitigation measures during operation of the TBMs Mitigation Measures: Include a 6m noise wall and double stack containers. The property was purchased by DMR prior to commencement of the project and is unoccupied
Front Living Room 1 st Floor	24/2/2010 1:54pm – 2:08 pm	40.8	45	41.8	55	Monitoring Type: Attended internal monitoring, windows and doors closed Noise Sources: General construction (Engines, Banging, Steel Dropping, Franna, Reverse Beeping, Air Horn, Hammering) plus non-TJH sources (Train, Wind, Birds, Plane) Discussion: Monitoring indicates that CoG goals are being met Mitigation Measures: Include a 6m noise wall and double stack containers. The property was purchased by DMR prior to commencement of the project and is unoccupied
Front Living Room 1 st Floor	4/03/2010 8:16am – 8:30 am	51.2	45	52.0	55	Monitoring Type: Attended internal monitoring, windows and doors open Noise Sources: General construction (Engines, Banging, Franna, Mobile Lifter, Steel Dropping, Rattle Gun, Air Horn) plus non-TJH sources (Bird, Plane, Train, Talking, Traffic, Yelling) Discussion: Monitoring indicates that CoG goals are being exceeded. The exceedance is due to the construction of the TBM launch box shed. The TBM shed is above the 6m noise wall surrounding the site. Once constructed the shed will aid noise mitigation measures during operation of the TBMs Mitigation Measures: Include a 6m noise wall and double stack containers. The property was purchased

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
						by DMR prior to commencement of the project and is unoccupied
Front Living Room 1 st Floor	4/03/2010 8:34am – 8:48 am	42.2	45	43.1	55	Monitoring Type: Attended internal monitoring, windows and doors closed Noise Sources: General construction (Engines, Banging, Steel Dropping, Rattle Gun, Franna, Mobile Lifter) plus non-TJH sources (Bird, Train, Next Door, Yelling) Discussion: Monitoring indicates that CoG goals are being met Mitigation Measures: Include a 6m noise wall and double stack containers. The property was purchased by DMR prior to commencement of the project and is unoccupied
Front Living Room 1 st Floor	4/03/2010 11:13am – 11:27 am	50.5	45	51.3	55	Monitoring Type: Attended internal monitoring, windows and doors open Noise Sources: General construction (Engine, Banging, Air Horn, Water Blasting, Rattle Gun, Reverse Beeping, Franna, Traffic) plus non-TJH sources (Train) Discussion: Monitoring indicates that CoG goals are being exceeded. The exceedance is due to the construction of the TBM launch box shed. The TBM shed is above the 6m noise wall surrounding the site. Once constructed the shed will aid noise mitigation measures during operation of the TBMs Mitigation Measures: Include a 6m noise wall and double stack containers. The property was purchased by DMR prior to commencement of the project and is unoccupied
Front Living Room 1 st Floor	4/03/2010 11:30am – 11:44 am	43.0	45	43.8	55	Monitoring Type: Attended internal monitoring, windows and doors closed Noise Sources: General construction (Engine, Reverse Beep, Franna, Banging, Air Horn, Rattle Gun) plus non-TJH sources (Train, Dog Barking, Bird, Traffic, Plane) Discussion: Monitoring indicates that CoG goals are being met Mitigation Measures: Include a 6m noise wall and double stack containers. The property was purchased by DMR prior to commencement of the project and is unoccupied
Front Living Room 1 st Floor	9/03/2010 10:11am – 10:25 am	47.5	45	47.5	55	Monitoring Type: Attended internal monitoring, windows and doors open Noise Sources: General construction (Rattle Gun, Banging, Engines, Gantry Horn, Dropping Steel, TJH Talking, TJH Traffic, Crane) plus non-TJH sources (Dog Barking, Crickets,

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
						Train) Discussion: Monitoring indicates that CoG goals are being exceeded. The exceedance is due to the construction of the TBM launch box shed. The TBM shed is above the 6m noise wall surrounding the site. Once constructed the shed will aid noise mitigation measures during operation of the TBMs Mitigation Measures: Include a 6m noise wall and double stack containers. The property was purchased by DMR prior to commencement of the project and is unoccupied
Front Living Room 1 st Floor	9/03/2010 10:29am – 10:43 am	38.2	45	36.1	55	Monitoring Type: Attended internal monitoring, windows and doors closed Noise Sources: General construction (Engines, Gantry Horn, Banging, Rattle Gun) plus non-TJH sources (Bird, Plane, Crickets, Train, Dog Barking, Traffic) Discussion: Monitoring indicates that CoG goals are being met Mitigation Measures Include a 6m noise wall and double stack containers. The property was purchased by DMR prior to commencement of the project and is unoccupied. DMR prior to commencement of the project and is unoccupied
Front Living Room 1 st Floor	9/03/2010 3:47pm – 4:01 pm	52.1	45	52.8	55	Monitoring Type: Attended internal monitoring, windows and doors open Noise Sources: General construction (Water Blasting, Boom Crane, Traffic, Banging, Engines, Rattle Gun, Air Horn) plus non-TJH sources (Train, Bird, Phone) Discussion: Monitoring indicates that CoG goals are being exceeded. The exceedance is due to the construction of the TBM launch box shed. The TBM shed is above the 6m noise wall surrounding the site. Once constructed the shed will aid noise mitigation measures during operation of the TBMs Mitigation Measures: Include a 6m noise wall and double stack containers. The property was purchased by DMR prior to commencement of the project and is unoccupied
Front Living Room 1 st Floor	9/03/2010 4:05pm – 4:19 pm	42.5	45	43.2	55	Monitoring Type: Attended internal monitoring, windows and doors closed Noise Sources: General construction (Engines, Banging, Water Blasting, Boom Crane) plus non-TJH sources (Birds, Train, Talking) Discussion: Monitoring indicates that CoG goals are being met

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
						Mitigation Measures: Include a 6m noise wall and double stack containers. The property was purchased by DMR prior to commencement of the project and is unoccupied
70 Kalinga Street, Toombul						
Back Room 1 st Floor	17/02/2010 7:59am – 8:13 am	42.6	45	42.1	55	Monitoring Type: Attended internal monitoring, windows open Noise Sources: General construction (Crane Engines, Banging, Jack Hammering, Air Horn, Reverse Beeping, TJH Car) plus non-TJH sources (Train, Birds, Plane, Local Traffic) Discussion: Monitoring indicates that CoG goals are being met Mitigation Measures: Include a 6m noise wall and double stack containers. The property was purchased by DMR prior to commencement of the project and is unoccupied
Back Room 1 st Floor	17/02/2010 8:17am – 8:31 am	31.4	45	32	55	Monitoring Type: Attended internal monitoring, windows closed Noise Sources: General construction (Crane Engines, Banging, Air Horn, TJH Traffic) plus non-TJH sources (Train, Birds, Plane) Discussion: Monitoring indicates that CoG goals are being met Mitigation Measures: Include a 6m noise wall and double stack containers. The property was purchased by DMR prior to commencement of the project and is unoccupied
Back Room 1 st Floor	17/02/2010 1:12pm – 1:26 pm	44.6	45	45.2	55	Monitoring Type: Attended internal monitoring, windows open. Noise Sources: General construction (Crane Engines, Jet Blasting, Banging, Air Horn, Reverse Beeping, Drilling) plus non-TJH sources (Crickets, Plane, Trains) Discussion: Monitoring indicates that CoG goals are being met Mitigation Measures: Include a 6m noise wall and double stack containers. The property was purchased by DMR prior to commencement of the project and is unoccupied
Back Room 1 st Floor	17/02/2010 1:29pm – 1:43 pm	36.2	45	36.1	55	Monitoring Type: Attended internal monitoring, windows closed Noise Sources: General construction (Crane Engines, Jet Blasting, Truck, Banging) plus non-TJH sources (Birds) Discussion:

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
						Monitoring indicates that CoG goals are being met Mitigation Measures: Include a 6m noise wall and double stack containers. The property was purchased by DMR prior to commencement of the project and is unoccupied
Back Room 1 st Floor	25/02/2010 8:18am – 8:32 am	45.3	45	45.8	55	Monitoring Type: Attended internal monitoring, windows open Noise Sources: General construction (Franna, Air Horn, Engines, Banging, Reverse Beeping, Rattle Gun, Horn, Grinder) plus non-TJH sources (Train) Discussion: Monitoring indicates that CoG Goals are being exceeded. The exceedance is due to the construction of the TBM launch box shed. The TBM shed is above the 6m noise wall surrounding the site. Once constructed the shed will aid noise mitigation measures during operation of the TBMs Mitigation Measures: Include a 6m noise wall and double stack containers. The property was purchased by DMR prior to commencement of the project and is unoccupied
Back Room 1 st Floor	25/02/2010 8:38am – 8:53 am	35.8	45	36.7	55	Monitoring Type: Attended internal monitoring, windows closed Noise Sources: General construction (Engine, Banging, Franna, Reverse Beeping, Air Horn) plus non-TJH sources (Plane, Train) Discussion: Monitoring indicates that CoG goals are being met Mitigation Measures: Include a 6m noise wall and double stack containers. The property was purchased by DMR prior to commencement of the project and is unoccupied
Back Room 1 st Floor	25/02/2010 2:22pm – 2:36pm	40.5	45	41.0	55	Monitoring Type: Attended internal monitoring, windows open Noise Sources: General construction (Engine, Rattle Gun, Banging, Franna, Reverse Beeping, GeoTech, Talking) plus non-TJH sources (Outside Noise, Train, Plane, Wind) Discussion: Monitoring indicates that CoG goals are being met Mitigation Measures: Include a 6m noise wall and double stack containers. The property was purchased by DMR prior to commencement of the project and is unoccupied
Back Room 1 st Floor	25/02/2010 2:41pm – 2:55pm	33.7	45	34.5	55	Monitoring Type: Attended internal monitoring, windows closed. Noise Sources:

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
						General construction (Engines, Franna, TJH Workers, Banging, GeoTech, Steel on Steel, Rattle Gun, Steel Dropping, Air Horn) plus non-TJH sources (Birds, Train) Discussion: Monitoring indicates that CoG goals are being met Mitigation Measures: Include a 6m noise wall and double stack containers. The property was purchased by DMR prior to commencement of the project and is unoccupied
Back Room 1 st Floor	8/03/2010 10:22am – 10:36 am	50.6	45	51.2	55	Monitoring Type: Attended internal monitoring, windows open Noise Sources: General construction (Boom Crane, Water Blasting, Banging, Grinding, Hammering) plus non-TJH sources (Train, Dog Barking, Train) Discussion: Monitoring indicates that CoG Goals are being exceeded. The exceedance is due to the construction of the TBM launch box shed. The TBM shed is above the 6m noise wall surrounding the site. Once constructed the shed will aid noise mitigation measures during operation of the TBMs Mitigation Measures: Include a 6m noise wall and double stack containers. The property was purchased by DMR prior to commencement of the project and is unoccupied
Back Room 1 st Floor	8/03/2010 10:39am – 10:53 am	41.0	45	41.5	55	Monitoring Type: Attended internal monitoring, windows closed. Noise Sources: General construction (Mobile Lifter, Banging, Grinder) plus non-TJH sources (Rain, Train) Discussion: Monitoring indicates that CoG goals are being met Mitigation Measures: Include a 6m noise wall and double stack containers. The property was purchased by DMR prior to commencement of the project and is unoccupied
Back Room 1 st Floor	8/03/2010 3:53pm – 4:07pm	48.3	45	47.5	55	Monitoring Type: Attended internal monitoring, windows open. Noise Sources: General construction (Boom Crane, Steel on Steel, Rattle Gun, Grinder, Engines, Banging, Water Blaster, Truck) plus non-TJH sources (Train) Discussion: Monitoring indicates that CoG Goals are being exceeded. The exceedance is due to the construction of the TBM launch box shed. The TBM shed is above the 6m noise wall surrounding the site. Once constructed the shed will aid noise mitigation measures during operation of the TBM

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
						Mitigation Measures: Include a 6m noise wall and double stack containers. The property was purchased by DMR prior to commencement of the project and is unoccupied
Back Room 1 st Floor	8/03/2010 4:11pm – 4:25pm	41.3	45	41.9	55	Monitoring Type: Attended internal monitoring, windows closed Noise Sources: General construction (Boom Crane, Rattle Gun, Water Blasting, Air Horn, Dropping Steel, Banging) plus non-TJH sources (Train) Discussion: Monitoring indicates that CoG goals are being met Mitigation Measures: Include a 6m noise wall and double stack containers. The property was purchased by DMR prior to commencement of the project and is unoccupied
83 Stuckey Street, Toombul						
Front Living Room 1 st Floor	8/03/2010 9:36am – 9:50 am	41.8	45	41.9	55	Monitoring Type Internal attended monitoring, windows and doors closed Noise Sources General construction (Engines, Steel Dropping, Air Horn, TJH Worker, TJH Traffic, Drilling, Banging) plus non-TJH sources (Train, Inside Noise, Crickets, Plane) Discussion Monitoring indicates that CoG goals are being met Mitigation Measures Include a 6m noise wall and double stack containers. This property has received individual property mitigation. At the time of monitoring, this air conditioner was in use
Front Living Room 1 st Floor	8/03/2010 9:53am – 10:07am	41.3	45	42.6	55	Monitoring Type Internal attended monitoring, windows and doors closed Noise Sources General construction (Engines) plus non-TJH sources (Train, Inside Noise, Plane) Discussion Monitoring indicates that CoG goals are being met Mitigation Measures Include a 6m noise wall and double stack containers. This property has received individual property mitigation. At the time of monitoring, this air conditioner was in use
Front Living Room 1 st Floor	8/03/2010 3:11pm – 3:25pm	38.1	45	38.7	55	Monitoring Type Internal attended monitoring, windows and doors closed Noise Sources General construction (Engines, Banging, TJH Workers, Gate, Grinder) plus non-TJH sources (Train, Next Door, Local Traffic, Inside Noise)

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
						<p>Discussion Monitoring indicates that CoG goals are being met</p> <p>Mitigation Measures Include a 6m noise wall and double stack containers. This property has received individual property mitigation. At the time of monitoring, this air conditioner was in use</p>
Front Living Room 1 st Floor	8/03/2010 3:28pm – 3:42pm	43.8	45	39.9	55	<p>Monitoring Type Internal attended monitoring, windows and doors closed</p> <p>Noise Sources General construction (Engines, Banging, Jack Hammering) plus non-TJH sources (Train, Inside Noise, Next Door, Door Slamming)</p> <p>Discussion Monitoring indicates that CoG goals are being met</p> <p>Mitigation Measures Include a 6m noise wall and double stack containers. This property has received individual property mitigation. At the time of monitoring, this air conditioner was in use</p>
Parkside Apartments – Level 3, Nundah						
Living Room	17/02/2010 11:08am – 11:22am	52.5	45	53.1	55	<p>Monitoring Type Internal attended monitoring, doors open</p> <p>Noise Sources General construction (Banging) plus non-TJH sources (Traffic, Next Door, Reverse Beep, Train, Air Conditioning – Background noise)</p> <p>Discussion Monitoring indicates that CoG Goals are being exceeded. The exceedance is due to traffic on Sandgate Road</p> <p>Mitigation Measures Predictive modelling indicates that no fixed mitigation is required for this site. Heavy traffic influence from Sandgate Road</p>
Living Room	17/02/2010 11:26am – 11:40am	36.9	45	37.8	55	<p>Monitoring Type Internal attended monitoring, doors closed. Air conditioning running</p> <p>Noise Sources General construction (Banging) plus non-TJH sources (Traffic, Next Door, Reverse Beep, Train, Air Conditioning – Background noise)</p> <p>Discussion Monitoring indicates that CoG goals are being met</p> <p>Mitigation Measures Predictive modelling indicates that no fixed mitigation is required for this site</p>
Living Room	9/03/2010 11:25am – 11:39am	52.1	45	53	55	<p>Monitoring Type Internal attended monitoring, doors open.</p>

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
						<p>Noise Sources General construction (Steel Dropping) plus non-TJH sources (Sandgate Road Traffic, Train, Plane, Car Alarm, Next Door Noise)</p> <p>Discussion Monitoring indicates that CoG Goals are being exceeded. Exceedances are due to traffic on Sandgate Road</p> <p>Mitigation Measures Predictive modelling indicates that no fixed mitigation is required for this site. Heavy traffic influence from Sandgate Road</p>
Living Room	9/03/2010 11:43 – 11:57am	35.9	45	36.9	55	<p>Monitoring Type Internal attended monitoring, doors closed. Air conditioning running</p> <p>Noise Sources General construction (Jack Hammering) plus non-TJH sources (Sandgate Road Traffic, Train, Next Door Noise)</p> <p>Discussion Monitoring indicates that CoG goals are being met</p> <p>Mitigation Measures Predictive modelling indicates that no fixed mitigation is required for this site. Heavy traffic influence from Sandgate Road</p>
78 Elliot Street, Clayfield						
Back Lounge Room	15/03/2010 12:36 – 12:50 pm	57.8	45	51.9	55	<p>Monitoring Type Internal attended monitoring, back doors open</p> <p>Noise Sources General Construction (no noise sources detected) plus non-TJH sources (Inside Noise, Plane, Crickets, Train)</p> <p>Discussion Monitoring indicates that COG Goals are being exceeded. Exceedances were caused by non-TJH noise sources</p> <p>Mitigation Measures Include a 6m noise wall and double stack containers. The resident has received external blinds from TJH.</p>
Back Lounge Room	15/03/2010 12:54 – 1:08 pm	49.6	45	49.9	55	<p>Monitoring Type Internal attended monitoring, back doors open</p> <p>Noise Sources General Construction (Banging) plus non-TJH sources (Inside Noise, Plane, Crickets, Train, Knocking)</p> <p>Discussion Monitoring indicates that COG Goals are being exceeded. Exceedances were caused by non-TJH noise sources</p> <p>Mitigation Measures</p>

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
						Include a 6m noise wall and double stack containers. The resident has received external blinds from TJH

Table 3g: Night Shift Noise Monitoring Results – Toombul

Location	Monitoring Period	L _{Aeq} (15 min) (dBA)	CoG Goal L _{Aeq} (15 min) (dBA)	L _{Amax} (15 min) (dBA)	CoG Goal L _{Amax} (15 min) (dBA)	Comments
33 Kalinga Street, Clayfield						
Front Bedroom 1 st Floor	17/02/2010 1:55am- 2:09am	27.6	40	42.8	50	<p>Monitoring Type: Attended internal monitoring, windows and doors closed</p> <p>Noise Sources: General construction (Generators/Engines, Cranes, Frannas, Banging) and non-TJH sources (Crickets)</p> <p>Discussion: Monitoring indicates that CoG goals are being met</p> <p>Mitigation Measures: Include a 6m noise wall and double stack containers. The property was purchased by DMR prior to commencement of the project and is unoccupied</p>
Front Bedroom 1 st Floor	17/02/2010 2:12am- 2:26am	38	40	46.1	50	<p>Monitoring Type: Attended internal monitoring, windows and doors open</p> <p>Noise Sources: General construction (Generators/Engines, Cranes, Frannas, Banging, Steel on Steel, Excavators/Loaders) and non-TJH sources (Bats/Birds, Crickets)</p> <p>Discussion: Monitoring indicates that CoG goals are being met</p> <p>Mitigation Measures: Include a 6m noise wall and double stack containers. The property was purchased by DMR prior to commencement of the project and is unoccupied</p>
Front Bedroom 1 st Floor	18/02/2010 1:29am- 1:43am	34.6	40	41.5	50	<p>Monitoring Type: Attended internal monitoring, windows and doors closed</p> <p>Noise Sources: General construction (Generators/Engines, Banging, Angle Grinder/Saw, Concrete Pump, Gravel in Mixer)</p> <p>Discussion: Monitoring indicates that CoG goals are being met</p> <p>Mitigation Measures: Include a 6m noise wall and double stack containers. The property was purchased</p>

Location	Monitoring Period	L _{Aeq} (15 min) (dBA)	CoG Goal L _{Aeq} (15 min) (dBA)	L _{Amax} (15 min) (dBA)	CoG Goal L _{Amax} (15 min) (dBA)	Comments
						by DMR prior to commencement of the project and is unoccupied
Front Bedroom 1 st Floor	18/02/2010 1:46am- 2:00am	45.5	40	52.4	50	<p>Monitoring Type: Attended internal monitoring, windows and doors open</p> <p>Noise Sources: General construction (Frannas, Steel on Steel, Concrete Pump).</p> <p>Discussion: Monitoring indicates that CoG goals are being exceeded The exceedances were due to the operation of concrete pumps during a large scale concrete pour</p> <p>Mitigation Measures: Include a 6m noise wall and double stack containers. The property was purchased by DMR prior to commencement of the project and is unoccupied</p>
Front Bedroom 1 st Floor	18/02/2010 9:46pm – 10:00 pm	42.4	40	57.4	50	<p>Monitoring Type: Attended internal monitoring, windows and doors open</p> <p>Noise Sources: General construction (Engines, Banging, Franna, Grinding, Reverse Beeping) and Non-TJH noise sources (Inside Noise, Gecko, Train, Local Traffic)</p> <p>Discussion: Monitoring indicates that COG goals are being exceeded. The over revving of frannas were targeted as the source of this exceedance. The supervisor was notified and instructed franna drivers that no unnecessary revving was undertaken and idle engines must be turned off</p> <p>Mitigation Measures: Include a 6m noise wall and double stack containers. The property was purchased by DMR prior to commencement of the project and is unoccupied</p>
Front Bedroom 1 st Floor	18/02/2010 10:05pm – 10:19 pm	31.7	40	45.2	50	<p>Monitoring Type: Attended internal monitoring, windows and doors closed</p> <p>Noise Sources: General construction (Engines, Banging, Franna, Reverse Beeping, Squawker) and Non-TJH noise sources (Train, House Creaking)</p> <p>Discussion: Monitoring indicates that CoG goals are being met</p> <p>Mitigation Measures: Include a 6m noise wall and double stack containers. The property was purchased by DMR prior to commencement of the project and is unoccupied</p>
Front Bedroom 1 st Floor	19/02/2010 9:00pm – 9:14pm	43.8	40	52.7	50	<p>Monitoring Type: Attended internal monitoring, windows and doors open</p> <p>Noise Sources: General construction (Crane, Banging, Franna, Pressure Cleaners, Reverse Beeping) and Non-TJH noise sources (Train, Traffic, Plane)</p>

Location	Monitoring Period	L _{Aeq} (15 min) (dBA)	CoG Goal L _{Aeq} (15 min) (dBA)	L _{Amax} (15 min) (dBA)	CoG Goal L _{Amax} (15 min) (dBA)	Comments
						<p>Discussion: Monitoring indicates that CoG goals are being exceeded. The over revving of frannas and steel on steel banging were targeted as the major source of this exceedance. The supervisor was notified and instructed franna drivers that no unnecessary revving was undertaken and idle engines must be turned off. The steel fixers were also instructed to avoid dropping steel reinforcement rods.</p> <p>Mitigation Measures: Include a 6m noise wall and double stack containers. The property was purchased by DMR prior to commencement of the project and is unoccupied.</p>
Front Bedroom 1 st Floor	19/02/2010 9:17pm – 9:31pm	33.3	40	56.8	50	<p>Monitoring Type: Attended internal monitoring, windows and doors closed</p> <p>Noise Sources: General construction (Franna, Pressure Cleaner, Hammering, Banging) and Non-TJH noise sources (Train, Yelling, Outside Banging, Traffic)</p> <p>Discussion: Monitoring indicates that CoG goals are being exceeded as a result of external to construction activity banging.</p> <p>Mitigation Measures: Include a 6m noise wall and double stack containers. The property was purchased by DMR prior to commencement of the project and is unoccupied.</p>
Front Bedroom 1 st Floor	21/02/2010 8:24pm- 8:38pm	42.9	40	65.3	50	<p>Monitoring Type: Attended internal monitoring, windows and doors open</p> <p>Noise Sources: General construction (Generators/Engines, Cranes, Frannas, Banging, Reversing Squaker, Steel on Steel, Hammering) and non-TJH sources (Train, Local Traffic, Geckos, Dog Barking)</p> <p>Discussion: Monitoring indicates that CoG goals are being exceeded. The exceedance was caused by generators/engines, cranes, frannas and hammering. The site supervisor was notified of exceedances and was asked to relocate hammering work to a more suitable area.</p> <p>Mitigation Measures: Include a 6m noise wall and double stack containers. The property was purchased by DMR prior to commencement of the project and is unoccupied.</p>
Front Bedroom 1 st Floor	21/02/2010 9:41pm- 9:55pm	31.9	40	45.8	50	<p>Monitoring Type: Attended internal monitoring, windows and doors closed</p> <p>Noise Sources: General construction (Generators/Engines, Cranes, Frannas, Banging, Hammering) and non-TJH sources (Train, Local Traffic, Dog Barking)</p> <p>Discussion:</p>

Location	Monitoring Period	L _{Aeq} (15 min) (dBA)	CoG Goal L _{Aeq} (15 min) (dBA)	L _{Amax} (15 min) (dBA)	CoG Goal L _{Amax} (15 min) (dBA)	Comments
						Monitoring indicates that CoG goals are being met Mitigation Measures: Include a 6m noise wall and double stack containers. The property was purchased by DMR prior to commencement of the project and is unoccupied
Front Bedroom 1 st Floor	27/02/2010 12:25am – 12:39am	52.5	40	59.1	50	Monitoring Type: Attended internal monitoring, windows and doors open Noise Sources: General construction (Concrete pumps, steel banging during concrete finishing) and non-TJH sources (Plane). Discussion: Monitoring indicates that CoG goals are being exceeded. The exceedances were due to a 2000m ³ /20hr concrete pour. The pour was required to be continuous for structural reasons and therefore had to be completed at night Mitigation Measures: Include a 6m noise wall and double stack containers. The property was purchased by DMR prior to commencement of the project and is unoccupied. Residents were notified of the pour and relocation was available to impacted residents.
Front Bedroom 1 st Floor	27/02/2010 12:43am – 12:57am	41.0	40	49.4	50	Monitoring Type: Attended internal monitoring, windows and doors closed Noise Sources: General construction (Concrete pumps, steel banging during concrete finishing and concrete pump horn). Discussion: Monitoring indicates that CoG goals are being exceeded. The exceedances were due to a 2000m ³ /20hr concrete pour. The pour was required to be continuous for structural reasons and therefore had to be completed at night Mitigation Measures: Include a 6m noise wall and double stack containers. The property was purchased by DMR prior to commencement of the project and is unoccupied. Residents were notified of the pour and relocation was available to impacted residents
Front Bedroom 1 st Floor	28/02/2010 9:26pm- 9:40pm	41.8	40	51.3	50	Monitoring Type: Attended internal monitoring, windows and doors open Noise Sources: General construction (Generators/Engines, Cranes, Banging, Steel on Steel, Angle Grinder/Saw, Hammering, BOOM Crane) and Non-TJH noise sources (Train, Plane, External Banging) Discussion: Monitoring indicates that CoG goals are being exceeded. The exceedance was due to the high level of background noise (due to crickets/cicadas, added about 5dBa to the noise levels)

Location	Monitoring Period	L _{Aeq} (15 min) (dBA)	CoG Goal L _{Aeq} (15 min) (dBA)	L _{Amax} (15 min) (dBA)	CoG Goal L _{Amax} (15 min) (dBA)	Comments
						Mitigation Measures: Include a 6m noise wall and double stack containers. The property was purchased by DMR prior to commencement of the project and is unoccupied
Front Bedroom 1 st Floor	28/02/2010 9:43pm- 9:57pm	31.6	40	44.8	50	Monitoring Type: Attended internal monitoring, windows and doors closed Noise Sources: General construction (Generators/Engines, Banging, Steel on Steel, BOOM Crane) and Non-TJH noise sources (Train, Geckos, Plane). Discussion: Monitoring indicates that CoG goals are being met Mitigation Measures: Include a 6m noise wall and double stack containers. The property was purchased by DMR prior to commencement of the project and is unoccupied
Front Bedroom 1 st Floor	06/03/2010 9:36pm- 9:50pm	40.8	40	52.9	50	Monitoring Type: Attended internal monitoring, windows and doors open Noise Sources: General construction (Generators/Engines, Cranes, Frannas, Banging, Steel on Steel, Angle Grinder/Saw, Jackhammer, Hammering) and Non-TJH noise sources (Train, Local Traffic, External Banging) Discussion: Monitoring indicates that CoG goals are being exceeded. The exceedance was due to frannas and a jackhammer. The site engineer was informed of the exceedance and modify work practices Mitigation Measures: Include a 6m noise wall and double stack containers. The property was purchased by DMR prior to commencement of the project and is unoccupied
Front Bedroom 1 st Floor	06/03/2010 9:53pm- 10:07pm	29.8	40	47.4	50	Monitoring Type: Attended internal monitoring, windows and doors closed Noise Sources: General construction (Generators/Engines, Cranes, Frannas, Banging, Steel on Steel, Hammering) and Non-TJH noise sources (Train) Discussion: Monitoring indicates that CoG goals are being met Mitigation Measures: Include a 6m noise wall and double stack containers. The property was purchased by DMR prior to commencement of the project and is unoccupied
Front Bedroom 1 st Floor	08/03/2010 8:57pm-9:11pm	41.1	40	57.7	50	Monitoring Type: Attended internal monitoring, windows and doors open Noise Sources: General construction (Cranes, Frannas, Banging, Steel on Steel, Angle Grinder/Saw,

Location	Monitoring Period	L _{Aeq} (15 min) (dBA)	CoG Goal L _{Aeq} (15 min) (dBA)	L _{Amax} (15 min) (dBA)	CoG Goal L _{Amax} (15 min) (dBA)	Comments
						Excavators/Loaders, BOOM Crane) and Non-TJH noise sources (Local Traffic) Discussion: Monitoring indicates that CoG goals are being exceeded. The exceedances were due to frannas and angle grinders. The site engineer was informed of exceedance and angle grinders were relocated to enclosed areas in order to provide source mitigation for this activity Mitigation Measures: Include a 6m noise wall and double stack containers. The property was purchased by DMR prior to commencement of the project and is unoccupied
Front Bedroom 1 st Floor	08/03/2010 9:14pm- 9:28pm	32.4	40	44.6	50	Monitoring Type: Attended internal monitoring, windows and doors closed Noise Sources: General construction (Generators/Engines, Cranes, Banging, Steel on Steel, BOOM Crane) and Non-TJH noise sources (Train, Local Traffic) Discussion: Monitoring indicates that CoG goals are being met Mitigation Measures: Include a 6m noise wall and double stack containers. The property was purchased by DMR prior to commencement of the project and is unoccupied
Front Bedroom 1 st Floor	10/03/2010 8:29pm- 8:43pm	44.1	40	67.8	50	Monitoring Type: Attended internal monitoring, windows and doors open Noise Sources: General construction (Generators/Engines, Cranes, Frannas, Banging, Reversing Squawker, Trucks, Steel on Steel, Hammering, Concrete Pump) and Non-TJH noise sources (Train, Local Traffic, Dog Barking). Discussion: Monitoring indicates that CoG goals are being exceeded. The exceedances were due to operation of the cranes Mitigation Measures: Include a 6m noise wall and double stack containers. The property was purchased by DMR prior to commencement of the project and is unoccupied
Front Bedroom 1 st Floor	10/03/2010 8:46pm- 9:00pm	32.3	40	41.9	50	Monitoring Type: Attended internal monitoring, windows and doors closed Noise Sources: General construction (Generators/Engines, Cranes, Frannas, Reversing Squawker, Steel on Steel, Hammering, Concrete Pumps) and Non-TJH noise sources (Train, Local Traffic, House Shifting) Discussion: Monitoring indicates that CoG goals are being met Mitigation Measures:

Location	Monitoring Period	L _{Aeq} (15 min) (dBA)	CoG Goal L _{Aeq} (15 min) (dBA)	L _{Amax} (15 min) (dBA)	CoG Goal L _{Amax} (15 min) (dBA)	Comments
						Include a 6m noise wall and double stack containers. The property was purchased by DMR prior to commencement of the project and is unoccupied
Front Bedroom 1 st Floor	11/03/2010 9:02 pm- 9:16 pm	58	40	59.1	50	<p>Monitoring Type: Attended internal monitoring, windows and doors open</p> <p>Noise Sources: General construction (Concrete pumps, steel banging) and non-TJH sources (train)</p> <p>Discussion: Monitoring indicates that CoG goals are being exceeded. The exceedances were due to a large concrete pour</p> <p>Mitigation Measures: Include a 6m noise wall and double stack containers. The property was purchased by DMR prior to commencement of the project and is unoccupied</p>
Front Bedroom 1 st Floor	11/03/2010 9:23pm- 9:37pm	32	40	44	50	<p>Monitoring Type: Attended internal monitoring, windows and doors closed</p> <p>Noise Sources: General construction (Concrete pumps, steel banging) and non-TJH sources (train)</p> <p>Discussion: Monitoring indicates that CoG goals are being met</p> <p>Mitigation Measures: Include a 6m noise wall and double stack containers. The property was purchased by DMR prior to commencement of the project and is unoccupied</p>
Front Bedroom 1 st Floor	12/03/2010 7:27 pm- 7:47 pm	48.5	40	62.4	50	<p>Monitoring Type: Attended internal monitoring, windows and doors open</p> <p>Noise Sources: General construction (Concrete pumps, steel banging) and non-TJH sources (train).</p> <p>Discussion: Monitoring indicates that CoG goals are being exceeded. The exceedances were due to a 1000m³ concrete pour. The project engineer was notified of the exceedance. One of the concrete pumps was louder in comparison to the other pumps. This pump will no longer be used onsite</p> <p>Mitigation Measures: Include a 6m noise wall and double stack containers. The property was purchased by DMR prior to commencement of the project and is unoccupied</p>
Front Bedroom 1 st Floor	12/03/2010 7:46pm- 8:00pm	39.1	40	49.5	50	<p>Monitoring Type: Attended internal monitoring, windows and doors closed</p> <p>Noise Sources: General construction (Concrete pumps, steel banging) and non-TJH sources (train).</p> <p>Discussion: Monitoring indicates that CoG goals are being met</p> <p>Mitigation Measures:</p>

Location	Monitoring Period	L _{Aeq} (15 min) (dBA)	CoG Goal L _{Aeq} (15 min) (dBA)	L _{Amax} (15 min) (dBA)	CoG Goal L _{Amax} (15 min) (dBA)	Comments
						Include a 6m noise wall and double stack containers. The property was purchased by DMR prior to commencement of the project and is unoccupied
70 Kalinga Street, Clayfield						
Bedroom 1 st Floor	16/02/2010 1:15am- 1:29am	26.7	40	43.4	50	<p>Monitoring Type: Attended internal monitoring, windows and doors closed</p> <p>Noise Sources: General construction (Generators/Engines, Cranes, Frannas, Banging, Steel on Steel, Bell/Mud Skip, Excavators/Loaders, Rattle Gun) and non-TJH sources (External Banging)</p> <p>Discussion: Monitoring indicates that CoG goals are being met</p> <p>Mitigation Measures: Include a 6m noise wall and double stack containers. The property was purchased by DMR prior to commencement of the project and is unoccupied</p>
Bedroom 1 st Floor	16/02/2010 1:31am- 1:45am	35.6	40	52.2	50	<p>Monitoring Type: Attended internal monitoring, windows and doors open</p> <p>Noise Sources: General construction (Generators/Engines, Cranes, Frannas, Banging, Steel on Steel, Angle Grinder/Saw, Hammering, Rattle Gun) and non-TJH sources (Bats/Birds)</p> <p>Discussion: Monitoring indicates that CoG goals are being exceeded The exceedance was caused by generators/engines and cranes</p> <p>Mitigation Measures: Include a 6m noise wall and double stack containers. The property was purchased by DMR prior to commencement of the project and is unoccupied</p>
Bedroom 1 st Floor	17/02/2010 9:16pm- 9:30pm	29.7	40	37.4	50	<p>Monitoring Type: Attended internal monitoring, windows and doors closed</p> <p>Noise Sources: General construction (Generators/Engines, Frannas, Banging, Angle Grinder/Saw, Steel on Steel, Hammering) and non-TJH sources (Train, Sirens)</p> <p>Discussion: Monitoring indicates that CoG goals are being met</p> <p>Mitigation Measures: Include a 6m noise wall and double stack containers. The property was purchased by DMR prior to commencement of the project and is unoccupied</p>
Bedroom 1 st Floor	17/02/2010 9:35pm- 9:49pm	38.3	40	45.6	50	<p>Monitoring Type: Attended internal monitoring, windows and doors open</p> <p>Noise Sources: General construction (Generators/Engines, Cranes, Frannas, Banging, Steel on</p>

Location	Monitoring Period	L _{Aeq} (15 min) (dBA)	CoG Goal L _{Aeq} (15 min) (dBA)	L _{Amax} (15 min) (dBA)	CoG Goal L _{Amax} (15 min) (dBA)	Comments
						Steel, Bell/Mud Skip, Angle Grinder/Saw, Steel on Steel, Hammering, Concrete Pump) and non-TJH sources (Train, Local Traffic) Discussion: Monitoring indicates that CoG goals are being met Mitigation Measures: Include a 6m noise wall and double stack containers. The property was purchased by DMR prior to commencement of the project and is unoccupied
Bedroom 1 st Floor	19/02/2010 1:11am – 1:25am	43.5	40	54.3	50	Monitoring Type: Attended internal monitoring, windows and doors open Noise Sources: General construction (Concrete Pump, Banging, Loud Suction Noise, Yelling) Discussion: Monitoring indicates that CoG goals are being exceeded as a result of construction activities Mitigation Measures: Include a 6m noise wall and double stack containers. The property was purchased by DMR prior to commencement of the project and is unoccupied
Bedroom 1 st Floor	19/02/2010 1:29am – 1:43am	35.2	40	49.9	50	Monitoring Type: Attended internal monitoring, windows and doors closed Noise Sources: General construction (Concrete Pump, Truck, Water Blasting, Banging) Discussion: Monitoring indicates that COG goals are being met Mitigation Measures: Include a 6m noise wall and double stack containers. The property was purchased by DMR prior to commencement of the project and is unoccupied
Bedroom 1 st Floor	20/02/2010 12:37am – 12:51am	38.9	40	65.9	50	Monitoring Type: Attended internal monitoring, windows and doors open Noise Sources: General construction (Generator, Franna, Dropping Steel, Hammering) and non-TJH noise sources (Train). Discussion: Monitoring indicates that COG goals are being exceeded. The exceedance was due to Franna cranes revving Mitigation Measures: Include a 6m noise wall and double stack containers. The property was purchased by DMR prior to commencement of the project and is unoccupied
Bedroom 1 st Floor	20/02/2010 12:55am – 1:09am	32.0	40	41	50	Monitoring Type: Attended internal monitoring, windows and doors closed Noise Sources:

Location	Monitoring Period	L _{Aeq} (15 min) (dBA)	CoG Goal L _{Aeq} (15 min) (dBA)	L _{Amax} (15 min) (dBA)	CoG Goal L _{Amax} (15 min) (dBA)	Comments
						General construction (Generator, Franna, Steel Dropping, Humming, Crane, Hammering) and Non-TJH noise sources (Train) Discussion: Monitoring indicates that CoG goals are being met Mitigation Measures: Include a 6m noise wall and double stack containers. The property was purchased by DMR prior to commencement of the project and is unoccupied
Bedroom 1 st Floor	22/02/2010 12:17am- 12:31am	36.7	40	54.8	50	Monitoring Type: Attended internal monitoring, windows and doors open Noise Sources: General construction (Generators/Engines, Cranes, Frannas, Banging, Steel on Steel, Angle Grinder/Saw, Excavators/Loaders, BOOM Crane) and non-TJH noise sources (Local Traffic) Discussion: Monitoring indicates that COG goals are being exceeded. The exceedance was caused by the generators/engines and a banging noise Mitigation Measures: Include a 6m noise wall and double stack containers. The property was purchased by DMR prior to commencement of the project and is unoccupied
Bedroom 1 st Floor	22/02/2010 12:34am- 12:48am	26.2	40	35.7	50	Monitoring Type: Attended internal monitoring, windows and doors closed Noise Sources: General construction (Generators/Engines, Cranes, Banging, Steel on Steel, Hammering, BOOM Crane) Discussion: Monitoring indicates that CoG goals are being met Mitigation Measures: Include a 6m noise wall and double stack containers. The property was purchased by DMR prior to commencement of the project and is unoccupied
Bedroom 1 st Floor	22/02/2010 10:02pm- 10:16pm	37.4	40	45.2	50	Monitoring Type: Attended internal monitoring, windows and doors open Noise Sources: General construction (Generators/Engines, Cranes, Banging, Steel on Steel, Hammering) and non-TJH noise sources (Train, Local Traffic) Discussion: Monitoring indicates that CoG goals are being met Mitigation Measures: Include a 6m noise wall and double stack containers. The property was purchased by DMR prior to commencement of the project and is unoccupied

Location	Monitoring Period	L _{Aeq} (15 min) (dBA)	CoG Goal L _{Aeq} (15 min) (dBA)	L _{Amax} (15 min) (dBA)	CoG Goal L _{Amax} (15 min) (dBA)	Comments
Bedroom 1 st Floor	22/02/2010 10:18pm- 10:32pm	27.7	40	42.3	50	<p>Monitoring Type: Attended internal monitoring, windows and doors closed</p> <p>Noise Sources: General construction (Generators/Engines, Cranes, Banging, Steel on Steel, BOOM Crane) and non- TJH noise Sources (Train)</p> <p>Discussion: Monitoring indicates that CoG goals are being met</p> <p>Mitigation Measures: Include a 6m noise wall and double stack containers. The property was purchased by DMR prior to commencement of the project and is unoccupied</p>
Bedroom 1 st Floor	24/02/2010 1:10am- 1:24am	36.7	40	49.9	50	<p>Monitoring Type: Attended internal monitoring, windows and doors open</p> <p>Noise Sources: General construction (Generators/Engines, Cranes, Frannas, Banging, Steel on Steel, Angle Grinder/Saw, BOOM Crane)</p> <p>Discussion: Monitoring indicates that CoG goals are being met</p> <p>Mitigation Measures: Include a 6m noise wall and double stack containers. The property was purchased by DMR prior to commencement of the project and is unoccupied</p>
Bedroom 1 st Floor	24/02/2010 1:26am- 1:40am	25.7	40	34.5	50	<p>Monitoring Type: Attended internal monitoring, windows and doors closed</p> <p>Noise Sources: General construction (Generators/Engines, Cranes, Banging, Steel on Steel)</p> <p>Discussion: Monitoring indicates that CoG goals are being met</p> <p>Mitigation Measures: Include a 6m noise wall and double stack containers. The property was purchased by DMR prior to commencement of the project and is unoccupied</p>
Bedroom 1 st Floor	25/02/2010 12:26am- 12:40am	37.5	40	48.3	50	<p>Monitoring Type: Attended internal monitoring, windows and doors open</p> <p>Noise Sources: General construction (Generators/Engines, Cranes, Frannas, Banging, Steel on Steel, Angle Grinder/Saw, External Banging) and non-TJH noise sources (Train).</p> <p>Discussion: Monitoring indicates that CoG goals are being met</p> <p>Mitigation Measures: Include a 6m noise wall and double stack containers. The property was purchased by DMR prior to commencement of the project and is unoccupied</p>

Location	Monitoring Period	L _{Aeq} (15 min) (dBA)	CoG Goal L _{Aeq} (15 min) (dBA)	L _{Amax} (15 min) (dBA)	CoG Goal L _{Amax} (15 min) (dBA)	Comments
Bedroom 1 st Floor	25/02/2010 12:44am- 12:58am	26.8	40	38.4	50	<p>Monitoring Type: Attended internal monitoring, windows and doors closed</p> <p>Noise Sources: General construction (Generators/Engines, Cranes, Banging, Angle Grinder/Saw)</p> <p>Discussion: Monitoring indicates that CoG goals are being met</p> <p>Mitigation Measures: Include a 6m noise wall and double stack containers. The property was purchased by DMR prior to commencement of the project and is unoccupied</p>
Bedroom 1 st Floor	25/02/2010 7:40pm – 7:54pm	37.4	40	60.9	50	<p>Monitoring Type: Attended internal monitoring, windows and doors open</p> <p>Noise Sources: General construction (Drilling, crane revving, banging, steel on steel) and non-TJH sources (plane, bird, train horn, train, dog barking)</p> <p>Discussion: Monitoring indicates that CoG goals are being exceeded as a result of TJH construction activities</p> <p>Mitigation Measures: Include a 6m noise wall and double stack containers. The property was purchased by DMR prior to commencement of the project and is unoccupied</p>
Bedroom 1 st Floor	25/02/2010 7:58pm – 8:12pm	29.7	40	43.4	50	<p>Monitoring Type: Attended internal monitoring, windows and doors closed</p> <p>Noise Sources: General construction (cranes revving, steel on steel, frannas, squeaking) and non-TJH sources (train)</p> <p>Discussion: Monitoring indicates that CoG goals are being met</p> <p>Mitigation Measures: Include a 6m noise wall and double stack containers. The property was purchased by DMR prior to commencement of the project and is unoccupied</p>
Bedroom 1 st Floor	28/02/2010 1:24am- 1:38am	40.7	40	46.7	50	<p>Monitoring Type: Attended internal monitoring, windows and doors open</p> <p>Noise Sources: General construction (Banging, Steel on Steel, Compressor/Pump, BOOM Crane) and non- TJH Noise (Train)</p> <p>Discussion: Monitoring indicates that CoG goals are being exceeded. The exceedance was due to a compressor/pump and the BOOM Crane from TJH construction activities</p> <p>Mitigation Measures: Include a 6m noise wall and double stack containers. The property was purchased</p>

Location	Monitoring Period	L _{Aeq} (15 min) (dBA)	CoG Goal L _{Aeq} (15 min) (dBA)	L _{Amax} (15 min) (dBA)	CoG Goal L _{Amax} (15 min) (dBA)	Comments
						by DMR prior to commencement of the project and is unoccupied
Bedroom 1 st Floor	28/02/2010 1:40am- 1:54am	28.2	40	41.4	50	Monitoring Type: Attended internal monitoring, windows and doors closed Noise Sources: General construction (Steel on Steel, Compressor/Pump, BOOM Crane) and non-TJH Noise (Train). Discussion: Monitoring indicates that CoG goals are being met Mitigation Measures: Include a 6m noise wall and double stack containers. The property was purchased by DMR prior to commencement of the project and is unoccupied
Bedroom 1 st Floor	04/03/2010 12:48am- 1:02am	35.3	40	42.7	50	Monitoring Type: Attended internal monitoring, windows and doors open Noise Sources: General construction (Generators/Engines, Cranes, Frannas, Banging, Steel on Steel, Hammering, Compressor/Pump) Discussion: Monitoring indicates that CoG goals are being met Mitigation Measures: Include a 6m noise wall and double stack containers. The property was purchased by DMR prior to commencement of the project and is unoccupied
Bedroom 1 st Floor	04/03/2010 1:04am- 1:18am	28.6	40	40.7	50	Monitoring Type: Attended internal monitoring, windows and doors closed Noise Sources: General construction (Generators/Engines, Cranes, Banging, Steel on Steel, Hammering, BOOM Crane) and non-TJH Noise (External Banging) Discussion: Monitoring indicates that CoG goals are being met Mitigation Measures: Include a 6m noise wall and double stack containers. The property was purchased by DMR prior to commencement of the project and is unoccupied
Bedroom 1 st Floor	04/03/2010 7:29pm – 7:43pm	32.5	40	37.7	50	Monitoring Type: Attended internal monitoring, windows and doors open Noise Sources: General construction (Generators/Engines, Roof creaking, Trains, Local traffic, Heavy rain, Steel banging). Discussion: Monitoring indicates that CoG goals are being met Mitigation Measures:

Location	Monitoring Period	L _{Aeq} (15 min) (dBA)	CoG Goal L _{Aeq} (15 min) (dBA)	L _{Amax} (15 min) (dBA)	CoG Goal L _{Amax} (15 min) (dBA)	Comments
						Include a 6m noise wall and double stack containers. The property was purchased by DMR prior to commencement of the project and is unoccupied
Bedroom 1 st Floor	04/03/2010 7:49pm – 8:03pm	39.3	40	48.8	50	<p>Monitoring Type: Attended internal monitoring, windows and doors closed</p> <p>Noise Sources: General construction, Generators/Engines, Roof creaking, Trains, Local traffic, Grinder, Steel banging, Gecko)</p> <p>Discussion: Monitoring indicates that CoG goals are being met</p> <p>Mitigation Measures: Include a 6m noise wall and double stack containers. The property was purchased by DMR prior to commencement of the project and is unoccupied</p>
Bedroom 1 st Floor	05/03/2010 7:29pm – 7:43pm	32.5	40	37.7	50	<p>Monitoring Type: Attended internal monitoring, windows and doors open</p> <p>Noise Sources: General construction (Generators/Engines, Roof creaking, Trains, Local traffic, Heavy rain, Steel banging)</p> <p>Discussion: Monitoring indicates that CoG goals are being met</p> <p>Mitigation Measures: Include a 6m noise wall and double stack containers. The property was purchased by DMR prior to commencement of the project and is unoccupied</p>
Bedroom 1 st Floor	05/03/2010 7:49pm – 8:03pm	39.3	40	48.8	50	<p>Monitoring Type: Attended internal monitoring, windows and doors closed</p> <p>Noise Sources: General construction, Generators/Engines, Roof creaking, Trains, Local traffic, Grinder, Steel banging, Geckos)</p> <p>Discussion: Monitoring indicates that CoG goals are being met</p> <p>Mitigation Measures: Include a 6m noise wall and double stack containers. The property was purchased by DMR prior to commencement of the project and is unoccupied</p>
Bedroom 1 st Floor	08/03/2010 12:56am-1:10am	34.4	40	47	50	<p>Monitoring Type: Attended internal monitoring, windows and doors closed</p> <p>Noise Sources: General construction (Generators/Engines, Banging, Steel on Steel, Angle Grinder/Saw, Hammering) and Non-TJH noise sources (Local Traffic)</p> <p>Discussion: Monitoring indicates that CoG goals are being met</p> <p>Mitigation Measures:</p>

Location	Monitoring Period	L _{Aeq} (15 min) (dBA)	CoG Goal L _{Aeq} (15 min) (dBA)	L _{Amax} (15 min) (dBA)	CoG Goal L _{Amax} (15 min) (dBA)	Comments
						Include a 6m noise wall and double stack containers. The property was purchased by DMR prior to commencement of the project and is unoccupied
Bedroom 1 st Floor	08/03/2010 1:12am- 1:26am	28.9	40	42.7	50	Monitoring Type: Attended internal monitoring, windows and doors closed Noise Sources: General construction (Generators/Engines, Cranes, Frannas, Steel on Steel, Hammering) Discussion: Monitoring indicates that CoG goals are being met Mitigation Measures: Include a 6m noise wall and double stack containers. The property was purchased by DMR prior to commencement of the project and is unoccupied
Bedroom 1 st Floor	10/03/2010 1:17am- 1:31am	43.2	40	54.5	50	Monitoring Type: Attended internal monitoring, windows and doors open Noise Sources: General construction (Cranes, Banging, Steel on Steel, Angle Grinder/Saw, Concrete Pump). Discussion: Monitoring indicates that CoG goals are being exceeded. The exceedances were due to the use of concrete pumps Mitigation Measures: Include a 6m noise wall and double stack containers. The property was purchased by DMR prior to commencement of the project and is unoccupied
Bedroom 1 st Floor	10/03/2010 1:34am- 1:48am	34.4	40	47.4	50	Monitoring Type: Attended internal monitoring, windows and doors closed Noise Sources: General construction (Generators/Engines, Banging, Concrete Pump) Discussion: Monitoring indicates that CoG goals are being met Mitigation Measures: Include a 6m noise wall and double stack containers. The property was purchased by DMR prior to commencement of the project and is unoccupied
19 Jackson Street, Clayfield						
Master Bedroom	18/2/2010 8:10 – 8:24 pm	40.7	40	68.1	50	Monitoring Type: Attended internal monitoring, windows and doors open Noise Sources: Non-TJH sources (Traffic, Train, Inside Noise, Gecko, Next Door Noise, Dog Barking) Discussion: Monitoring indicates that COG goals are not being met as a result of external to TJH

Location	Monitoring Period	L _{Aeq} (15 min) (dBA)	CoG Goal L _{Aeq} (15 min) (dBA)	L _{Amax} (15 min) (dBA)	CoG Goal L _{Amax} (15 min) (dBA)	Comments
						construction activities Mitigation Measures: Include a 6m noise wall and double stack containers
Master Bedroom	18/2/2010 8:29 – 8:43 pm	32.7	40	52.9	50	Monitoring Type: Attended internal monitoring, windows and doors closed Noise Sources: Non-TJH sources (Inside Noise, Traffic, Wind Charm, Train, Gecko, Plane) Discussion: Monitoring indicates that CoG goals are not being met. Exceedances were as a result of non-TJH activities Mitigation Measures: Include a 6m noise wall and double stack containers
36 McGregor Street, Clayfield						
Master Bedroom 2 nd Floor	18/02/2010 3:16am- 3:30am	36.5	40	42.5	50	Monitoring Type: Attended internal monitoring, windows and doors open Noise Sources: General construction (Cranes, Frannas, Banging, Steel on Steel, Concrete Pump) and non-TJH sources (Trucks). Discussion: Monitoring indicates that CoG goals are being met Mitigation Measures: Include a 6m noise wall and double stack containers
Master Bedroom 2 nd Floor	18/02/2010 3:34am- 3:48am	34.1	40	51.7	50	Monitoring Type: Attended internal monitoring, windows and doors closed Noise Sources: General construction (Banging, Steel on Steel, Concrete Pump) and non-TJH sources (Local Traffic, Resident Interference) Discussion: Monitoring indicates that CoG goals are being exceeded. The L _{Amax} exceedance was due to interference from the resident Mitigation Measures: Include a 6m noise wall and double stack containers

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:

- Northern Busway
 - Unit 3/ 26 Bradshaw Road, Lutwyche
- Bowen Hills
 - 14 Gallway Street, Windsor
 - Construction Site Offices (sample monitoring location)
- Kedron
 - 223 Gympie Road, Kedron
- Toombul
 - 33 Kalinga Street, Clayfield
 - 70 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 (PM10) 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 Woolloowin Worksite.

Results of monitoring are compared to Air Quality Goals nominated by the Coordinator General (Change Report July 2008 & Woolloowin 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 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 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 – Respirable Dust (PM10)

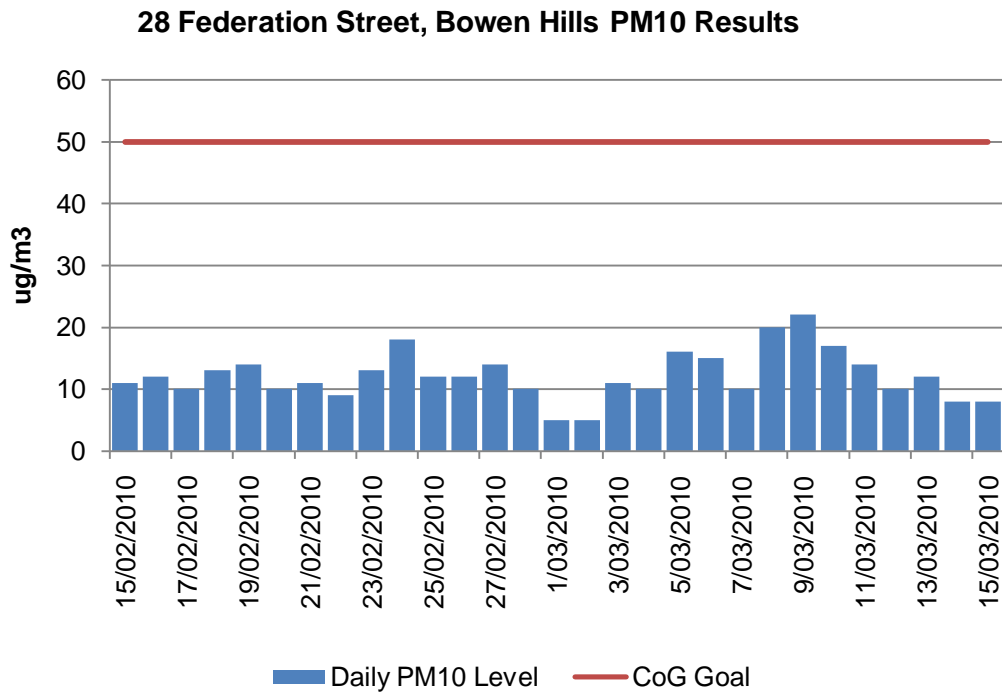


Figure 4.1 28 Federation St, Bowen Hills PM10 Results (for monitor location refer to figure 2.1 – A1)

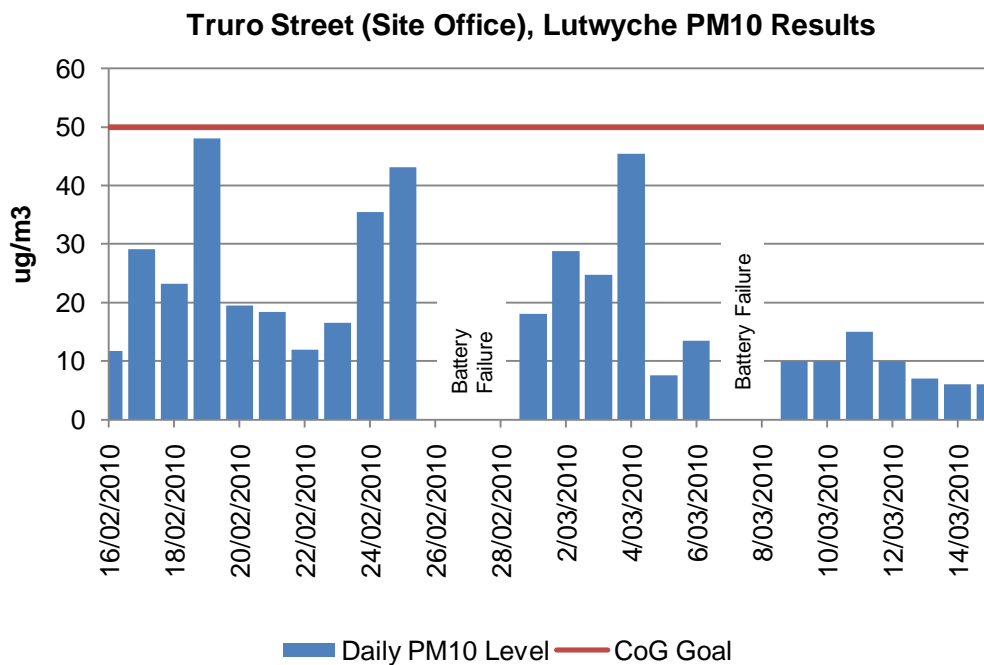


Figure 4.2 Site Office, Truro St PM10 Results (for monitor location refer to figure 2.2- A1)

Northern Busway (Site Office), Lutwyche PM10 Results

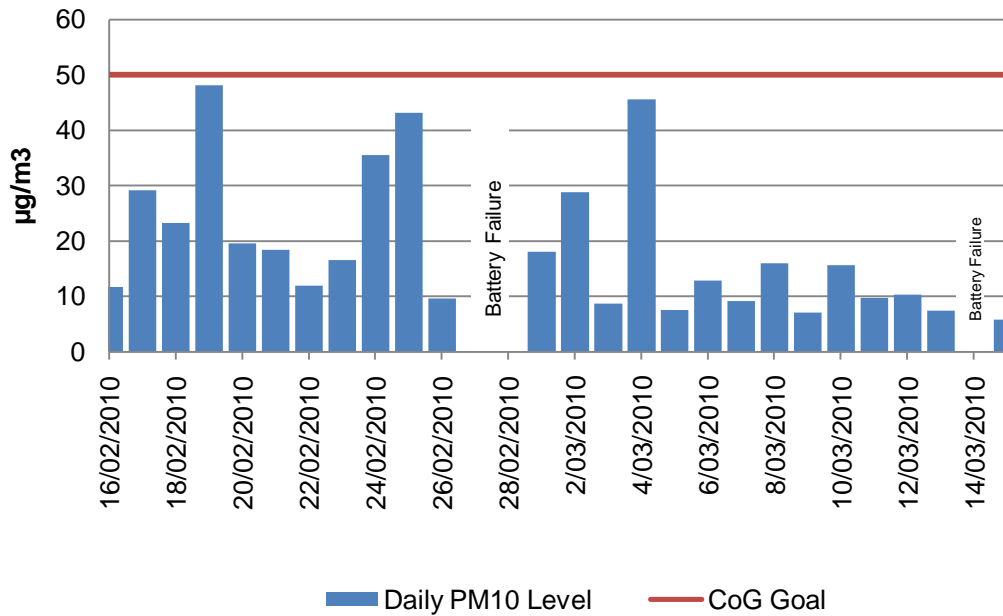


Figure 4.3 Site Office, Northern Busway PM10 Results (for monitor location see figure 2.3 – A1)

Wooloowin State School, Kedron PM10 Results

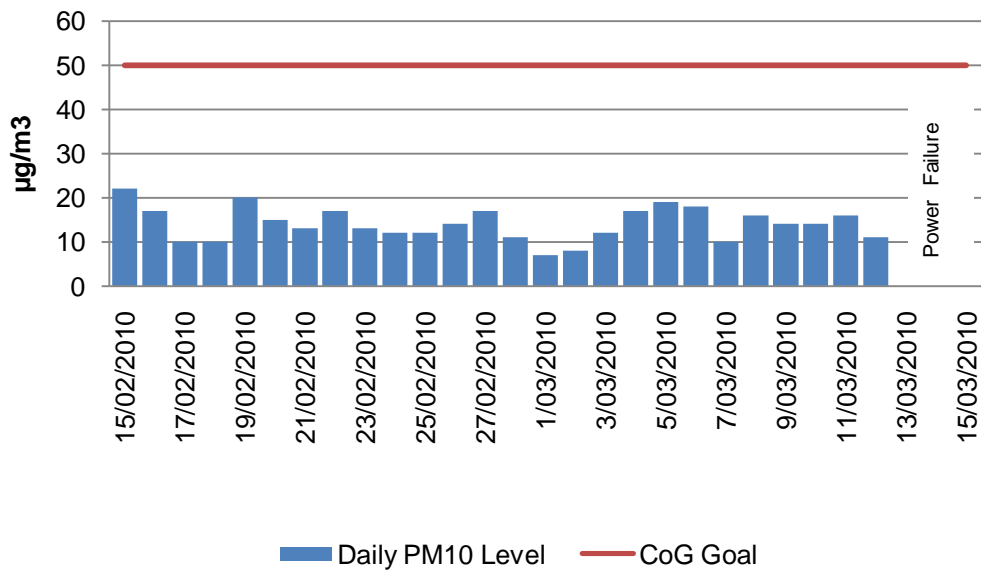


Figure 4.4 Wooloowin State School, Kedron PM10 Results (for monitor location see figure 2.4 – A4)

Perry Street, Kedron PM10 Results

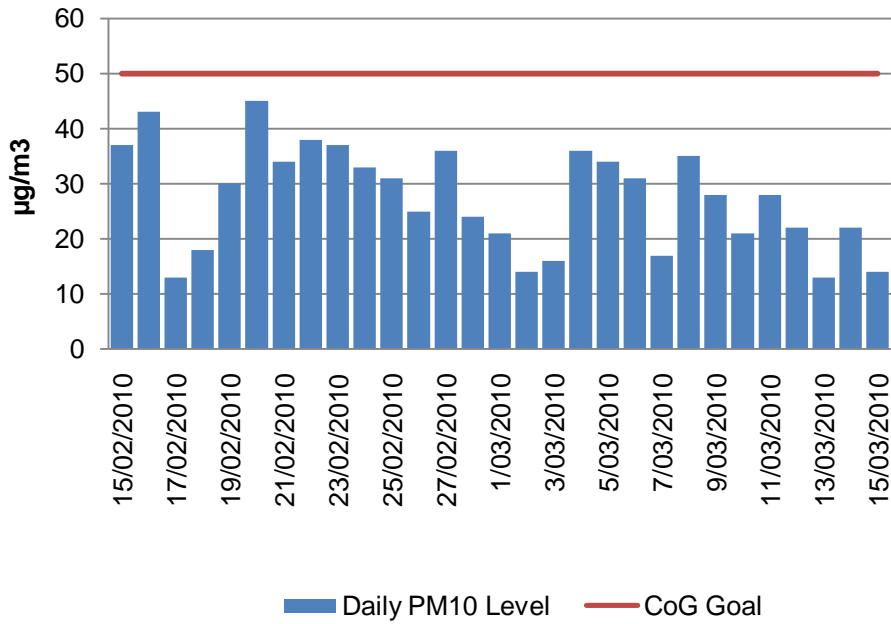


Figure 4.5 Perry Street, Kedron PM10 Results (for monitor location see figure 2.4 – A3)

Kedron State High School (Adj), Kedron PM10 Results

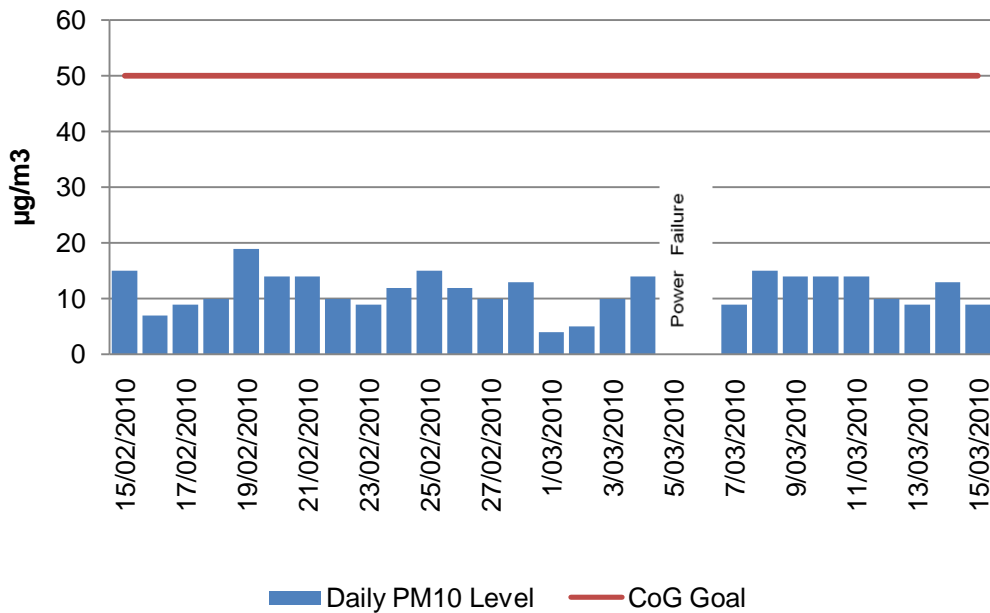


Figure 4.6 Kedron State High School (Adj), Kedron PM10 Results (for monitor location see figure 2.4 – A2)

Erskine Avenue, Kedron PM10 Results

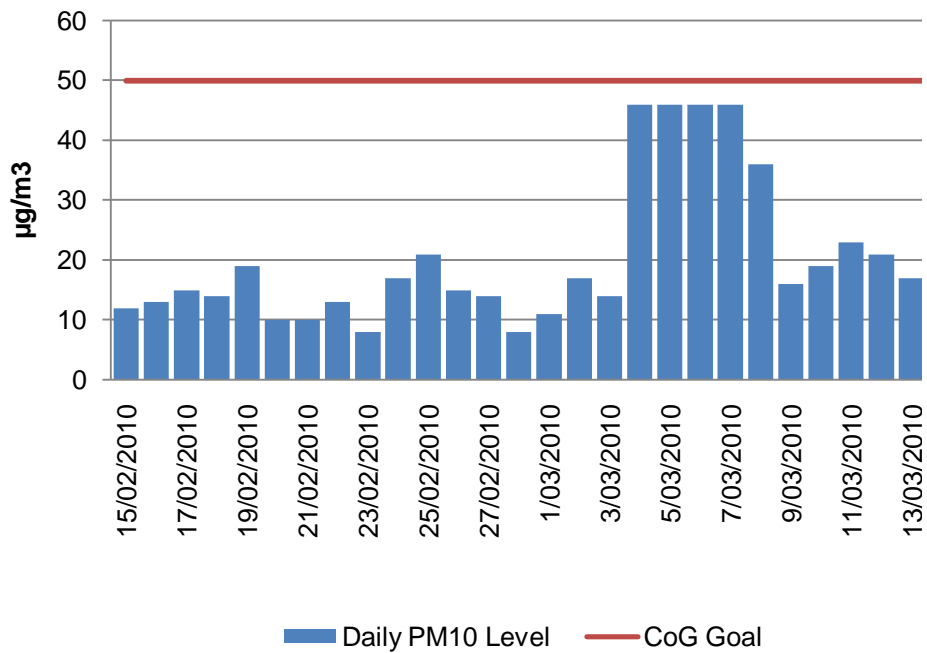


Figure 4.7 Erskine Avenue, Kedron PM10 Results (for monitor location see figure 2.4 – A1)

73 Park Road, Woollowin PM10 Results

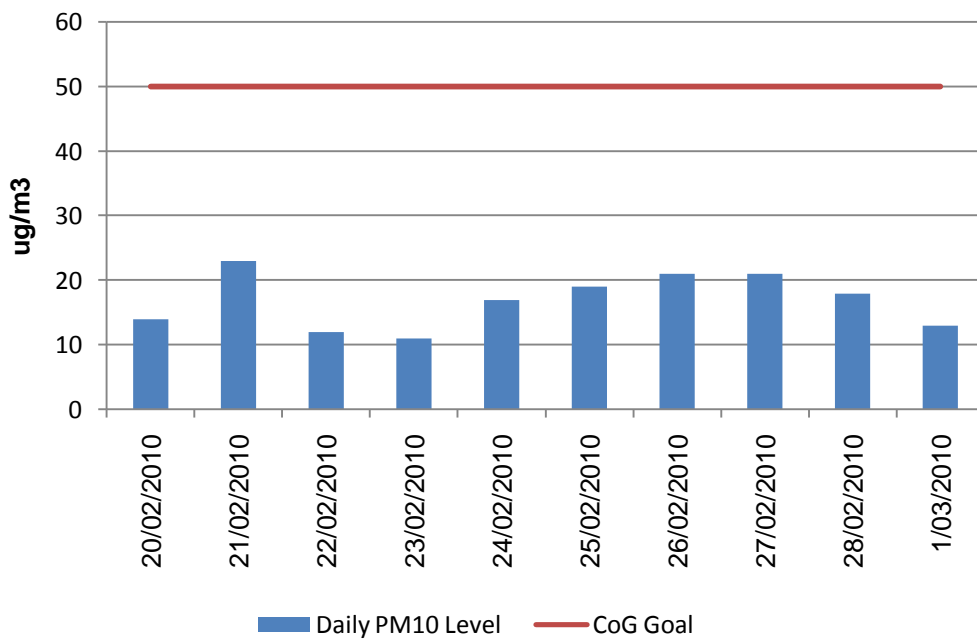


Figure 4.8 73 Park Road, Woollowin PM10 Results (for monitor location see figure 2.5 – A1)

73 Park Rd, Wooloowin TSP Results

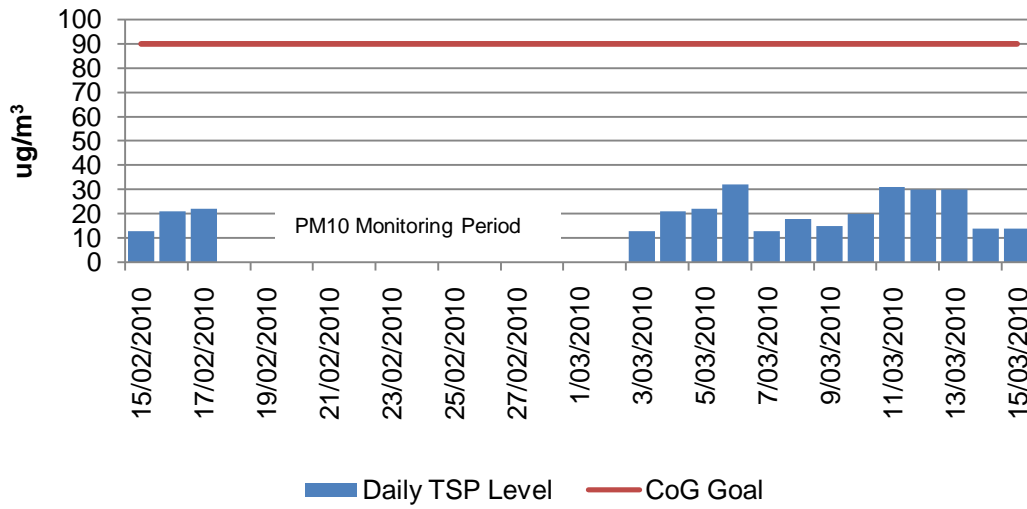


Figure 4.9 73 Park Road, Wooloowin TSP Results (for monitor location see figure 2.5 – A1)

56 Kalinga Street, Toombul PM10 Results

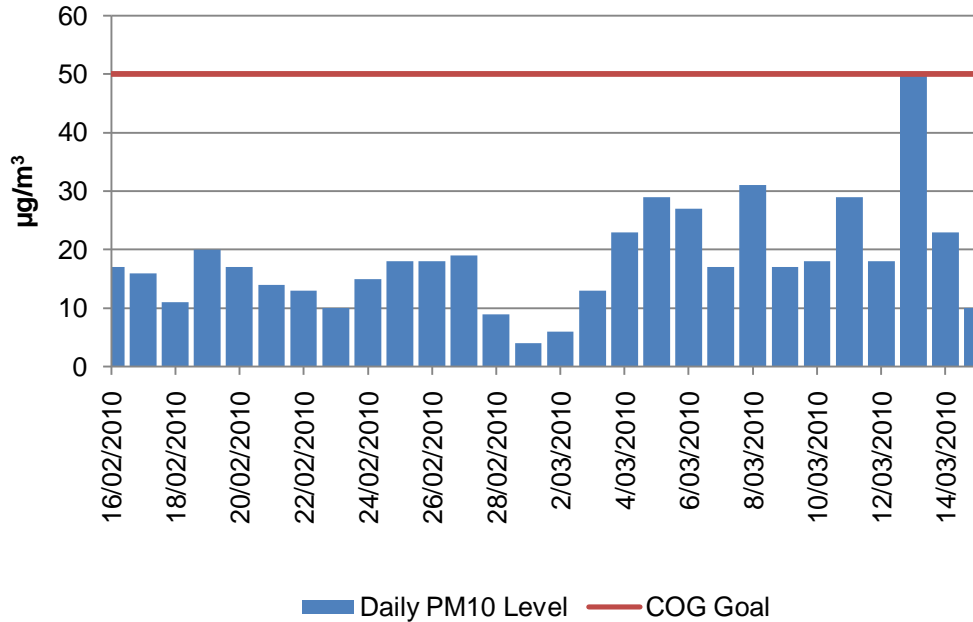


Figure 4.10 56 Kalinga Street, Toombul PM10 Results (for monitor location see figure 2.6 – A1)

Kalinga Park Adj Alma Rd, Toombul PM10 Results

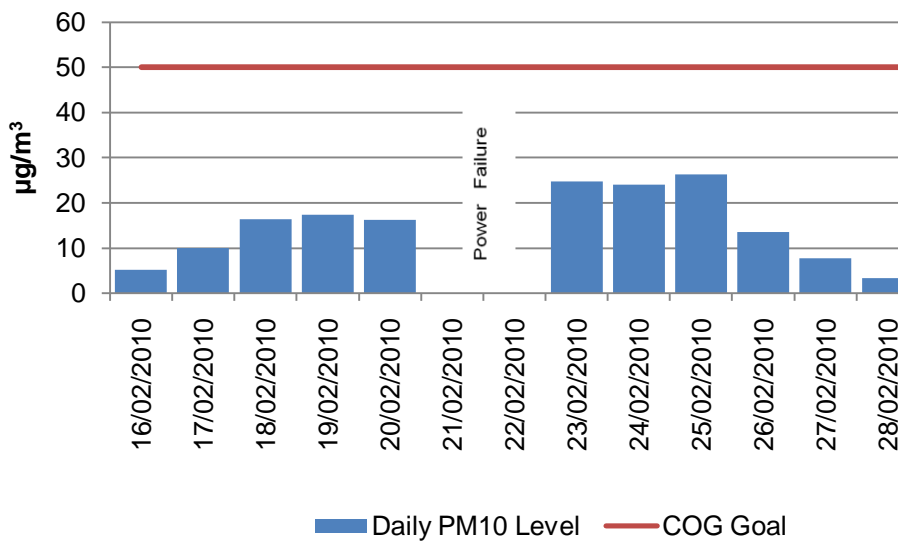


Figure 4.11 Kalinga Park Adj Alma Road, Toombul PM10 Results (for monitor location see figure 2.6- A2)

4.3 Air Quality Monitoring Results – Dust Deposition

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

5 Morris Street, Bowen Hills Dust Fallout Oct 2009 - Mar 2010

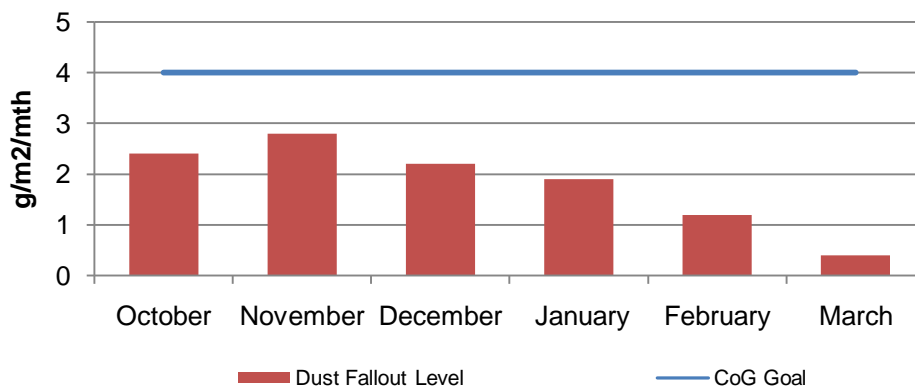


Figure 4.12 5 Morris Street, Bowen Hills Dust Fallout October 2009 – March 2010 (location refer to figure 2.1 – D1)

Site Office, Bowen Hills Dust Fallout Oct 2009 - Mar 2010

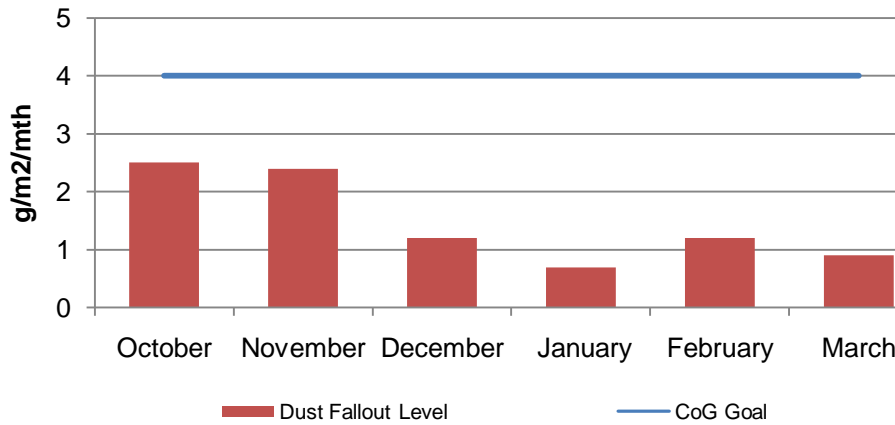


Figure 4.13 Site Office, Bowen Hills Dust Fallout October 2009 – March 2010 (location refer to figure 2.1 – D2)

QLD Newspapers, Bowen Hills Dust Fallout Nov 2009 - Mar 2010

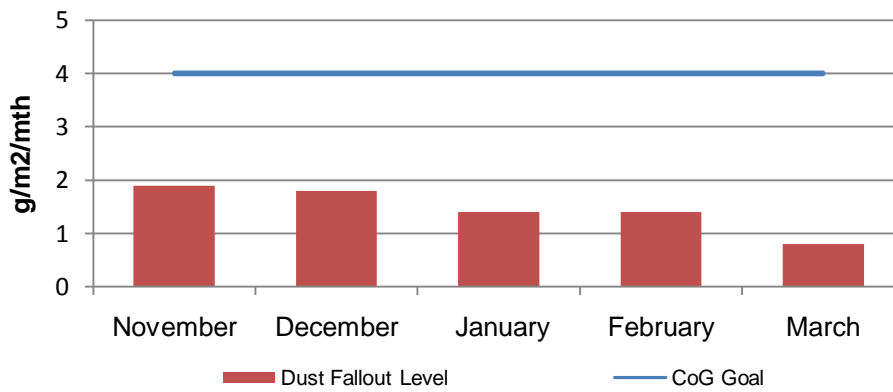


Figure 4.14 QLD Newspapers, Bowen Hills Dust Fallout November 2009 – March 2010 (location refer to figure 2.1)

Cnr of Thistle & Lucas Street, Lutwyche Dust Fallout Jan - Mar 2010

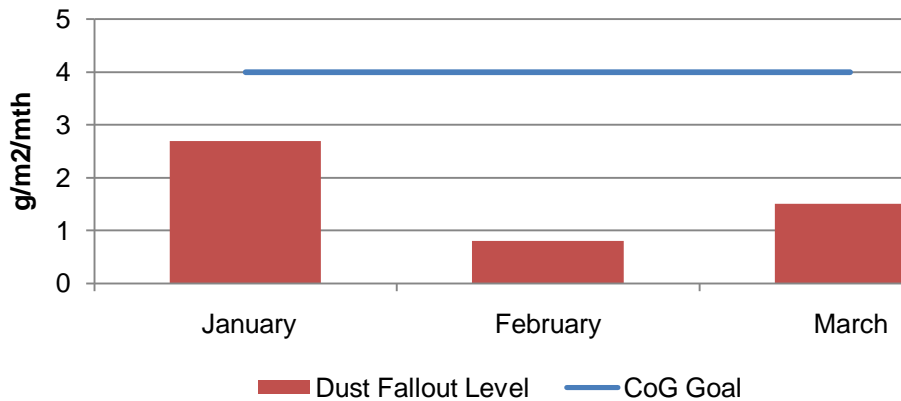


Figure 4.15 Cnr of Thistle & Lucas Street, Lutwyche Dust Fallout Jan – Mar 2010 (location refer to figure 2.3 – D1)

Kedron Brook Reserve, Northern Busway Dust Fallout January - March 2010

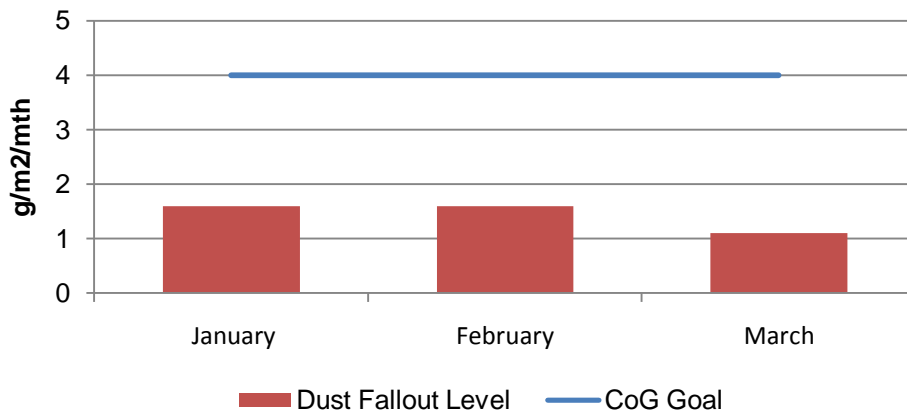


Figure 4.16 Kedron Brook Reserve, Northern Busway Dust Fallout January – March 2010 (location refer to figure 2.3 – D2)

Perry Street, Kedron Dust Fallout Oct 2009- Mar 2010

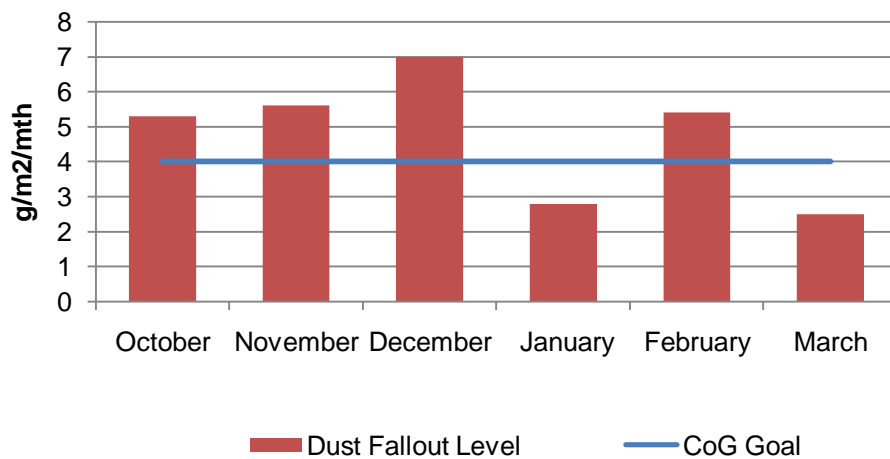


Figure 4.17 Perry Street, Kedron Dust Fallout October 2009 – March 2010 (location refer to figure 2.4 – A3)

Erskine Avenue, Kedron Dust Fallout Oct 2009 - Mar 2010

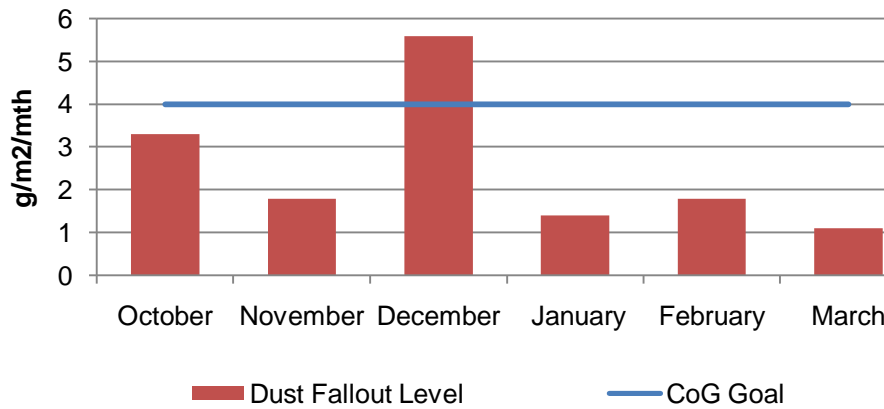


Figure 4.18 Erskine Avenue, Kedron Dust Fallout October 2009 – March 2010 (location refer to figure 2.4 – A1)

Woolloowin State School, Kedron Dust Fallout Oct 2009 - Mar 2010

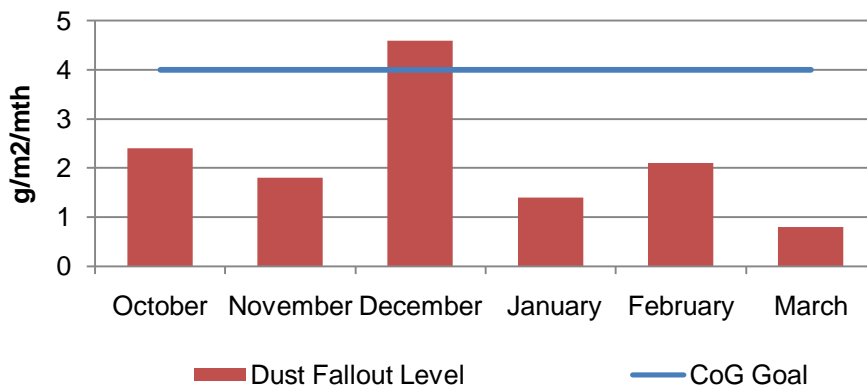


Figure 4.19 Woolloowin State School, Dust Fallout October 2009 – March 2010 (location refer to figure 2.4 – A4)

Kedron High School (Adj), Kedron Dust Fallout Oct 2009 - Mar 2010

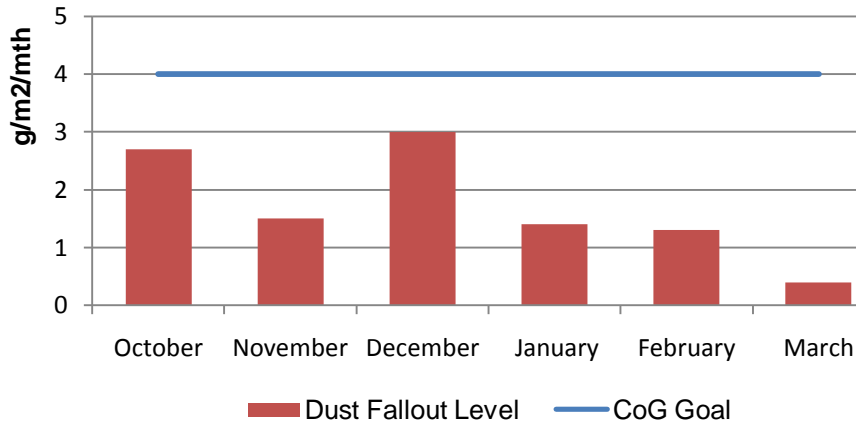


Figure 4.20 Kedron State High School (Adj), Dust Fallout October 2009 – March 2010 (location refer to figure 2.4 – A2)

68 Park Road, Woolloowin Dust Fallout Jan - Mar 2010

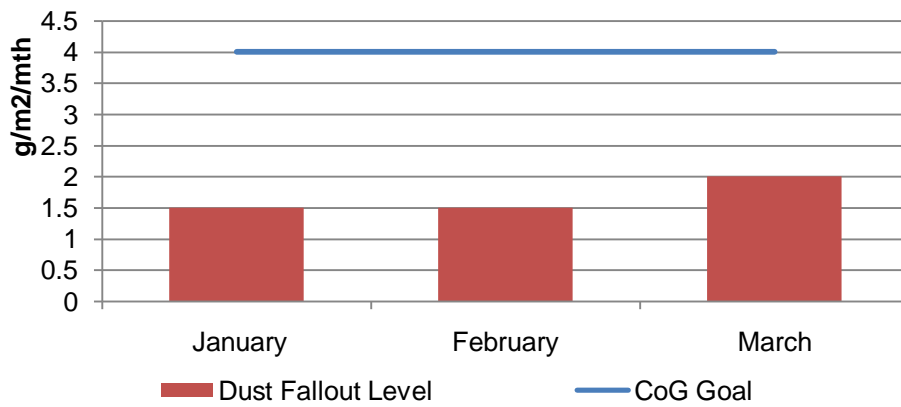


Figure 4.21 68 Park Road Woolloowin, Dust Fallout October 2009 – March 2010 (location refer to figure 2.5 - D1)

56 Kalinga Street, Toombul Dust Fallout Jan - Mar 2010

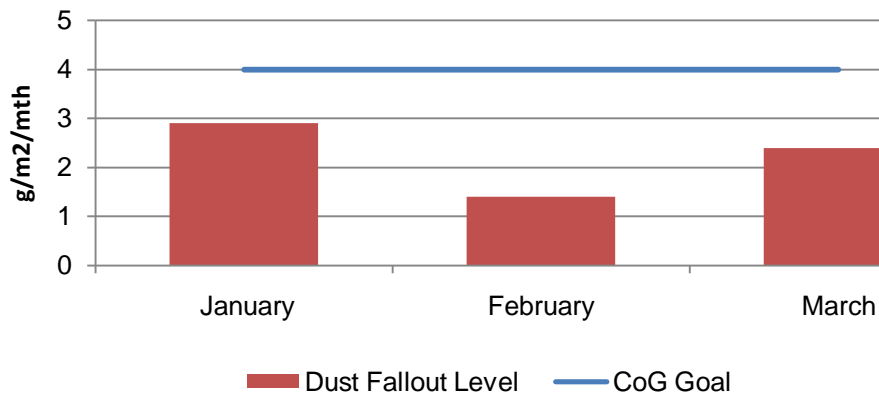


Figure 4.22 56 Kalinga Street Toombul, Dust Fallout October 2009 – March 2010 (location refer to figure 2.6 – D1)

Bage Street, Toombul Dust Fallout Oct 2009 - Mar 2010

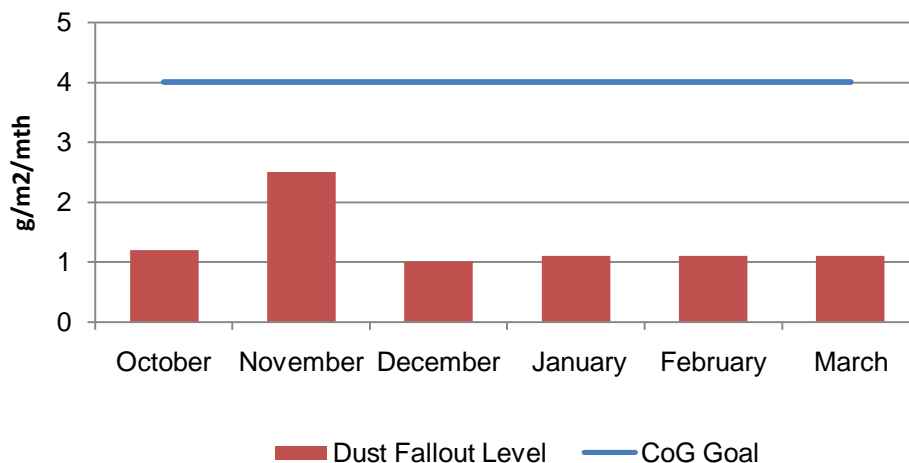


Figure 4.23 Bage Street Toombul, Dust Fallout October 2009 – March 2010 (location refer to fig 2.6 – D3)

4.4 Compliance with Air Quality Goals

There were no exceedances 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 nominated by the Coordinator General (Change Report October 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 Tables 5a-g.

Table 5a: Vibration Monitoring Results Summary – Bowen Hills

Location	Monitoring Period	Peak Particle Velocity* (mm/s)	CoG Vibration Goal (mm/s)	Comments
14 Gallway Street	15/02/10-15/03/10	3.98	5mm/s (Continuous Cosmetic Damage Goal)	Results are within CoG goals
11 Bryden Street	15/02/10-15/03/10	1.685	5mm/s (Continuous Cosmetic Damage Goal)	Results are within CoG goals

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

Location	Monitoring Period	Peak Particle Velocity (mm/s)	CoG Vibration Goal (mm/s)	Comments
Sorrento Bomboniere	05/03/10-15/03/10	0.9	5	Results are within CoG goals
Empire Business Furniture	15/02/10-23/02/10	2.3	5	Results are within CoG goals

Table 5c: Vibration Monitoring Results Summary – Northern Busway (Wallace Park)

Location	Monitoring Period	Peak Particle Velocity (mm/s)	CoG Vibration Goal (mm/s)	Comments
Wallace Park (Heritage listed bomb shelter)	15/02/10-15/03/10	1.24	2	Results are within CoG goals

Table 5d: Vibration Monitoring Results Summary – Roadheader Mid Tunnel

Location	Monitoring Period	Peak Particle Velocity (mm/s)	CoG Vibration Goal (mm/s)	Comments
Windsor Memorial Park	15/02/10-15/03/10	0.76	2	Results are within CoG goals
Windsor Council Heritage Building	15/02/10-23/02/10	0.78	2	Results are within CoG goals

Table 5e: Blast Monitoring Results Summary – Bowen Hills Tunnels XP3 and XP4

Location	Monitoring Period	Peak Particle Velocity (mm/s)	Vibration Goal (mm/s)	Comments
24th February (Cross Passages 3 and 4)				
Skilmorlie	24/02/2010	4.38	25	Results within Goals
15 Bryden Street	24/02/2010	10.0	25	Results within Goals
11 Bryden Street	24/02/2010	7.62	25	Results within Goals
Rosemount (QSMA)	24/02/2010	8.0	25	Results within Goals
Rosemount (Arthritis Qld)	24/02/2010	12.37	25	Results within Goals
195 Lutwyche Road (AAMI Building)	24/02/2010	2.33	25	Results within Goals
26th February (Cross Passages 3 and 4)				
Skilmorlie	26/02/2010	7.27	25	Results within Goals
15 Bryden Street	26/02/2010	21.6	25	Results within Goals
11 Bryden Street	26/02/2010	10.5	25	Results within Goals
Rosemount (QSMA)	26/02/2010	11.4	25	Results within Goals
Rosemount (Arthritis Qld)	26/02/2010	14.0	25	Results within Goals
195 Lutwyche Road (AAMI Building)	26/02/2010	3.75	25	Results within Goals
1st March (Cross Passages 3 and 4)				
Skilmorlie	01/03/2010	9.91	25	Results within Goals
15 Bryden Street	01/03/2010	18.1	25	Results within Goals
11 Bryden Street	01/03/2010	8.89	25	Results within Goals

Location	Monitoring Period	Peak Particle Velocity (mm/s)	Vibration Goal (mm/s)	Comments
Rosemount (QSMA)	01/03/2010	13.5	25	Results within Goals
Rosemount (Arthritis Qld)	01/03/2010	15.5	25	Results within Goals
195 Lutwyche Road (AAMI Building)	01/03/2010	3.71	25	Results within Goals
2nd March (Cross Passages 3 and 4)				
Skilmorlie	02/03/2010	12.1	25	Results within Goals
15 Bryden Street	02/03/2010	21.2	25	Results within Goals
11 Bryden Street	02/03/2010	14.0	25	Results within Goals
Rosemount (QSMA)	02/03/2010	5.76	25	Results within Goals
Rosemount (Arthritis Qld)	02/03/2010	9.64	25	Results within Goals
195 Lutwyche Road (AAMI Building)	02/03/2010	<1.5	25	Monitor trigger level set at 1.5mm/s. Monitor not triggered by blast.
3rd March (Cross Passage 4)				
Skilmorlie	03/03/2010	4.44	25	Results within Goals
Rosemount (QSMA)	03/03/2010	12.2	25	Results within Goals
Rosemount (Arthritis Qld)	03/03/2010	13.4	25	Results within Goals
195 Lutwyche Road (AAMI Building)	03/03/2010	3.83	25	Results within Goals
4th March (Cross Passage 3)				
Skilmorlie	04/03/2010	19.5	25	Results within Goals
15 Bryden Street	04/03/2010	10.4	25	Results within Goals
11 Bryden Street	04/03/2010	14.0	25	Results within Goals
Rosemount (QSMA)	04/03/2010	5.54	25	Results within Goals
Rosemount (Arthritis Qld)	04/03/2010	8.06	25	Results within Goals
5th March (Cross Passages 3 and 4)				
Skilmorlie	05/03/2010	11.2	25	Results within Goals
15 Bryden Street	05/03/2010	9.02	25	Results within Goals
11 Bryden Street	05/03/2010	18.2	25	Results within Goals

Location	Monitoring Period	Peak Particle Velocity (mm/s)	Vibration Goal (mm/s)	Comments
Rosemount (QSMA)	05/03/2010	15.1	25	Results within Goals
Rosemount (Arthritis Qld)	05/03/2010	14.4	25	Results within Goals
195 Lutwyche Road (AAMI Building)	05/03/2010	2.95	25	Results within Goals
8th March (Cross Passages 3 and 4)				
Skilmorlie	08/03/2010	13.7	25	Results within Goals
15 Bryden Street	08/03/2010	23.8	25	Results within Goals
11 Bryden Street	08/03/2010	10.2	25	Results within Goals
Rosemount (QSMA)	08/03/2010	18.0	25	Results within Goals
Rosemount (Arthritis Qld)	08/03/2010	9.72	25	Results within Goals
195 Lutwyche Road (AAMI Building)	08/03/2010	5.27	25	Results within Goals
9th March (Cross Passages 3 and 4)				
Skilmorlie	09/03/2010	13.5	25	Results within Goals
15 Bryden Street	09/03/2010	18.6	25	Results within Goals
11 Bryden Street	09/03/2010	9.40	25	Results within Goals
Rosemount (QSMA)	09/03/2010	16.8	25	Results within Goals
Rosemount (Arthritis Qld)	09/03/2010	10.1	25	Results within Goals
195 Lutwyche Road (AAMI Building)	09/03/2010	7.75	25	Results within Goals
10th March (Cross Passages 3 and 4)				
Skilmorlie	10/03/2010	17.4	25	Results within Goals
15 Bryden Street	10/03/2010	22.0	25	Results within Goals
11 Bryden Street	10/03/2010	11.3	25	Results within Goals
Rosemount (QSMA)	10/03/2010	18.3	25	Results within Goals
Rosemount (Arthritis Qld)	10/03/2010	15.6	25	Results within Goals
195 Lutwyche Road (AAMI Building)	10/03/2010	5.19	25	Results within Goals
11th March (Cross Passage 3)				

Location	Monitoring Period	Peak Particle Velocity (mm/s)	Vibration Goal (mm/s)	Comments
Skilmorlie	11/03/2010	13.2	25	Results within Goals
15 Bryden Street	11/03/2010	16.6	25	Results within Goals
11 Bryden Street	11/03/2010	8.89	25	Results within Goals
Rosemount (QSMA)	11/03/2010	4.95	25	Results within Goals
Rosemount (Arthritis Qld)	11/03/2010	8.05	25	Results within Goals
12th March (Cross Passages 3 and 4)				
Skilmorlie	12/03/2010	14.0	25	Results within Goals
15 Bryden Street	12/03/2010	23.2	25	Results within Goals
11 Bryden Street	12/03/2010	8.89	25	Results within Goals
Rosemount (QSMA)	12/03/2010	22.8	25	Results within Goals
Rosemount (Arthritis Qld)	12/03/2010	17.2	25	Results within Goals
13th March (Cross Passage 3)				
Skilmorlie	13/03/2010	13.4	25	Results within Goals
15 Bryden Street	13/03/2010	20.4	25	Results within Goals
11 Bryden Street	13/03/2010	10.2	25	Results within Goals
Rosemount (QSMA)	13/03/2010	5.25	25	Results within Goals
Rosemount (Arthritis Qld)	13/03/2010	7.45	25	Results within Goals
15th March (Cross Passage 4)				
Skilmorlie	15/03/2010	9.64	25	Results within Goals
Rosemount (QSMA)	15/03/2010	22.7	25	Results within Goals
Rosemount (Arthritis Qld)	15/03/2010	13.4	25	Results within Goals
195 Lutwyche Road (AAMI Building)	15/03/2010	8.46	25	Results within Goals

Table 5f: Vibration Monitoring Results Summary - Kedron

Location	Monitoring Period	Event Peak Particle Velocity Day time (mm/s)	CoG Vibration Goal Day time (mm/s)	Event Peak Particle Velocity Day time (mm/s)	CoG Vibration Goal Night time (mm/s)	Comments
134 Kedron Park rd - Tramway Sub-Station No8	15/02/2010-15/03/2010	0.46	2	0.46	0.5	Monitoring the Roadheader (day and night)

Table 5g: Vibration Monitoring Results Summary - Woolloowin

Location	Monitoring Period	Peak Particle Velocity (mm/s)	CoG Vibration Goal (mm/s)	Comments
Woolloowin Animal Hospital	23/02/2010 to 2/03/2010	2.83	5	Results are within CoG goals. This is considered pre-construction data collection

5.3 Compliance with Vibration Goals

The monthly averages shown in Tables 5a-g do not identify any exceedances with Vibration Goals.

6.0 Community Enquiries and Complaints

A total of 297 community complaints were reported to the project between 15 February and 15 March 2010. 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: 15 Feb 2010 - 15 Mar 2010		
Issue	No.	No. of stakeholders
Site noise	88	51
Site out-of-hours	63	37
Parking	53	32
PUPs noise	33	31
PUPs out-of-hours	29	26
Construction vehicle movements	23	15
Traffic Management	18	17
Driver Behaviour	14	14
Worker Behaviour	13	13
General Construction	11	11
Spoil haulage routes and queuing	10	7
Pedestrian/Cyclists	10	9
Truck noise	9	7
Site lighting	7	5
Site dust	6	6

Complaints Raised: 15 Feb 2010 - 15 Mar 2010		
Issue	No.	No. of stakeholders
Site vibration	6	6
PUPs reinstatement	6	6
Safety	4	4
Mitigation	4	4
PUPs service outage	4	4
PUPs worker behaviour	4	4
Vehicle Damage	3	3
Water/Flooding	3	3
Piling out-of-hours	3	3
PUPs un-notified work	3	3
Total complaints	297	180

Top 5 issues raised:

