



# **Airport Link and Northern Busway (Windsor to Kedron) Project**

## **Monthly Environmental Monitoring Report**

August 08 to February 09

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## 1.0 Monitoring Overview

This document reports on performance against the project's Environmental Management Plan and the monitoring data provided includes all monitoring conducted to date on the project.

Subsequent reports will detail monitoring conducted for that subsequent month only.

This monitoring report contains the following monitoring data:

- Noise
- Air quality
- Vibration

The seven locations below are currently being established for monitoring of noise and air quality during construction (PM10 and TSP):

- Woolloowin State School – Air quality operational /noise to be installed
- Kalinga Street – Air quality operational /noise to be installed
- Federation Street – Air quality operational /noise to be installed
- Alma Road – Air quality and noise to be installed
- Kedron DES – Air quality equipment installed (power to be supplied) /noise to be installed
- Colton Avenue – Air quality installed (awaiting power) /noise installed
- Erskine Avenue - Air quality installed (awaiting power) /noise to be installed

The above locations will be permanent locations and fully operational by the end of February 2009.

A number of roving monitors for noise, air quality and vibration will be in operation during the construction phase for complaint based and general management monitoring.

## 2.0 Noise Monitoring

### 2.1 Bowen Hills Area

Location	Date	LAeq (ave)	Goal LAeq	LA10 (ave)	Goal LA10
22 Federation St	17/12/2008	52.61	45	50.45	55
22 Federation St	18/12/2008	48.25	45	49.33	55
22 Federation St	19/12/2008	48.30	45	48.17	55
22 Federation St	5/01/2009	51.21	45	51.63	55
22 Federation St	6/01/2009	49.69	45	50.53	55
22 Federation St	7/01/2009	52.03	45	51.08	55
22 Federation St	8/01/2009	50.51	45	51.68	55
22 Federation St	9/01/2009	52.14	45	54.01	55
22 Federation St	10/01/2009	45.50	45	45.35	55
22 Federation St	11/01/2009	40.71	45	39.19	55

22 Federation St	12/01/2009	49.96	45	50.76	55
22 Federation St	13/01/2009	50.82	45	52.26	55
22 Federation St	14/01/2009	49.95	45	48.29	55
22 Federation St	15/01/2009	47.48	45	48.94	55
22 Federation St	16/01/2009	50.06	45	51.59	55
22 Federation St	17/01/2009	49.99	45	48.24	55
22 Federation St	18/01/2009	37.10	45	37.96	55
22 Federation St	19/01/2009	51.51	45	52.63	55
22 Federation St	20/01/2009	52.88	45	54.72	55
22 Federation St	21/01/2009	54.14	45	54.65	55
22 Federation St	22/01/2009	52.14	45	52.63	55
22 Federation St	23/01/2009	47.00	45	43.88	55
22 Federation St	24/01/2009	35.33	45	36.19	55
22 Federation St	25/01/2009	37.40	45	36.48	55
22 Federation St	26/01/2009	35.89	45	36.29	55
22 Federation St	27/01/2009	52.03	45	52.92	55
22 Federation St	28/01/2009	50.17	45	52.09	55
30 Federation St	6/11/08 to 28/11/08	60.0	45	56.8	55
Earle St	5/09/08 to 8/09/08	52.7	45	52.8	55
20 Gallway St	24/10/08 to 31/10/08	50.6	45	51.6	55
20 Gallway St	1/11/08 to 30/11/08	52.0	45	53.2	55
20 Gallway St	8/12/08 to 31/12/08	52.1	45	53.9	55
20 Gallway St	1/01/09 to 28/01/09	53.3	45	55.1	55

NB: Goal criteria taken to be major road

## 2.2 Truro Area

Location	Date	LAeq (ave)	Goal LAeq	LA10 (ave)	Goal LA10
Truro Site – preconstruction	15/10/08	71.3	45	71.3	55
Truro Site – preconstruction	16/10/08	71.8	45	74.9	55
Truro Site – preconstruction	17/10/08	71.9	45	74.7	55
Truro Site - preconstruction	31/10/08	63.1	45	65.0	55
Truro Site – preconstruction	1/11/08	62.7	45	64.4	55
Truro Site – preconstruction	2/11/08	71.7	45	73.8	55
Truro Site – preconstruction	3/11/08	71.8	45	74.5	55
Truro Site – preconstruction	4/11/08	71.2	45	73.6	55
Truro Site – preconstruction	5/11/08	72.0	45	74.0	55
Truro Site – preconstruction	6/11/08	69.6	45	71.8	55
Truro Site – preconstruction	7/11/08	68.6	45	70.8	55
Truro - Construction	4/12/08	65.1	45	66.9	55
Truro – Construction	5/12/08	65.2	45	67.2	55
Truro – Construction	6/12/08	63.8	45	65.5	55
Truro – Construction	8/12/08	65.0	45	67.4	55
Truro – Construction	9/12/08	66.9	45	69.2	55
Truro – Construction	10/12/08	65.8	45	68.1	55
Truro – Construction	11/12/08	66.4	45	68.3	55
Truro – Construction	12/12/08	66.3	45	68.5	55
Truro – Construction	13/12/08	63.9	45	65.8	55
Truro – Construction	15/12/08	64.9	45	67.1	55
Truro – Construction	16/12/08	67.0	45	69.8	55
Truro – Construction	17/12/08	66.3	45	68.3	55
Truro – Construction	18/12/08	65.9	45	67.8	55
39 Truro Street	6/02/09 to 18/02/09	58.2	45	55.0	55

NB: Goal criteria taken to be major road

## 2.3 Kedron Area

Location	Date	LAeq (ave)	Goal LAeq	LA10 (ave)	Goal LA10
18 Colton Ave	5/11/08 to 12/11/08	57.3	45	59.1	55
18 Colton Ave	12/11/08 to 15/11/08	60.2	45	62.4	55
18 Colton Ave	15/12/08 to 20/12/08	54.9	45	55.1	55
29 Colton Ave	31/10/08 to 7/11/08	69.0	45	71.2	55
29 Colton Ave	11/12/08 to 16/12/08	54.8	45	52.0	55
30 Colton Ave	25/11/08 to 28/11/08	61.4	45	63.1	55
Corner of Perry St and Colton Ave	18/02/09	54.7	45	56.1	55
131 Gympie Road – Preconstruction (internal)	1/12/08 to 3/12/08	65.5	45	68.9	55
141 Gympie Road – Preconstruction (internal)	1/12/08 to 4/12/08	50.7	45	53.1	55
181 Gympie Road – Preconstruction (internal)	21/01/09 to 29/01/09	51.6	45	54.2	55
199 Gympie Road - Preconstruction (internal)	7/01/09 to 14/01/09	46.3	45	48.9	55
Cnr Park Tce and Gympie Road - Preconstruction (external)	13/10/08 to 13/10/08	64.8	45	67.4	55
Woollowin SS - Preconstruction (external)	15/09/08 to 22/09/08	67.2	45	69.6	55
5/11 Lasseter Street	06/02/09 to 11/02/09	57.9	45	57	55

NB: Goal criteria taken to be major road

## 2.4 Toombul Area

Location	Date	LAeq (ave)	Goal LAeq	LA10 (ave)	Goal LA10
66 Wongara Street - Preconstruction (external)	2/10/08 to 11/10/08	51.3	40	52.5	50
68 Kalinga Street (external)	15/12/08 to 23/12/08	61.5	40	62.66	50
68 Kalinga Street -	20/01/09 to 2/02/09	48.5	40	47.7	50
68 Kalinga Street -	4/02/09 to 11/02/09	48.2	40	47.5	50
70 Kalinga Street – (external)	17/10/08 to 27/10/08	56.3	40	56.8	50
84 Alma Road	1/10/08 to 11/10/08	63.8	40	66.2	50
84 Alma Road	11/11/08 to 17/11/08	64.4	40	65.0	50
Toombul Sports Complex	2/11/08 to 9/11/08	60.7	40	58.8	50

NB: Goal criteria taken to be minor road

### 3.0 Air Quality Monitoring

#### 3.1 TSP (Dust Deposition)

##### 3.1.1 Bowen Hills Area

Location	Month	TSP g/m <sup>2</sup> /mth	Limit g/m <sup>2</sup> /mth
22 Federation Street	January 09	3.1	4

Levels within CoG and legislative requirements

##### 3.1.2 Kedron Area

Location	Month	TSP g/m <sup>2</sup> /mth	Limit g/m <sup>2</sup> /mth
Wooloowin State School	December 08	1.3	4
DES	December 08	0.8	4
Wooloowin State School	January 09	1.2	4

Levels within CoG and legislative requirements

##### 3.1.3 Toombul Area

Location	Month	TSP g/m <sup>2</sup> /mth	Limit g/m <sup>2</sup> /mth
68 Kalinga Street	January 09	2.0	4

Levels within CoG and legislative requirements

### 3.2 PM10

#### 3.2.1 Bowen Hills Area

Location	Date	PM10 ug/m <sup>3</sup> (24hr)	Limit ug/m <sup>3</sup> (24hr)
22 Federation Street	28/11/2008	2.63	50
22 Federation Street	29/11/2008	3.92	50
22 Federation Street	30/11/2008	5.21	50
22 Federation Street	2/12/2008	12.22	50
22 Federation Street	3/12/2008	13.17	50
22 Federation Street	4/12/2008	25.00	50

22 Federation Street	5/12/2008	34.58	50
22 Federation Street	6/12/2008	19.11	50
22 Federation Street	7/12/2008	15.31	50
22 Federation Street	8/12/2008	15.61	50
22 Federation Street	9/12/2008	16.71	50
22 Federation Street	10/12/2008	16.36	50
22 Federation Street	11/12/2008	23.40	50
22 Federation Street	12/12/2008	11.60	50
22 Federation Street	13/12/2008	22.90	50
22 Federation Street	14/12/2008	8.78	50
22 Federation Street	15/12/2008	28.14	50
22 Federation Street	16/12/2008	15.99	50
22 Federation Street	17/12/2008	13.74	50
22 Federation Street	22/12/2008	3.97	50
22 Federation Street	23/12/2008	5.67	50
22 Federation Street	24/12/2008	8.38	50
22 Federation Street	25/12/2008	10.42	50
22 Federation Street	26/12/2008	7.55	50
22 Federation Street	27/12/2008	6.38	50
22 Federation Street	28/12/2008	8.97	50
22 Federation Street	29/12/2008	14.06	50
22 Federation Street	30/12/2008	15.51	50
22 Federation Street	31/12/2008	13.95	50
22 Federation Street	1/01/2009	17.85	50
22 Federation Street	2/01/2009	10.40	50
22 Federation Street	5/01/2009	14.36	50
22 Federation Street	6/01/2009	15.76	50
22 Federation Street	7/01/2009	24.66	50
22 Federation Street	8/01/2009	19.58	50
22 Federation Street	12/01/2009	11.48	50
22 Federation Street	13/01/2009	15.58	50

22 Federation Street	16/01/2009	14.86	50
22 Federation Street	17/01/2009	18.22	50
22 Federation Street	19/01/2009	10.01	50
22 Federation Street	20/01/2009	13.24	50
22 Federation Street	21/01/2009	11.68	50
22 Federation Street	22/01/2009	15.46	50
22 Federation Street	23/01/2009	10.33	50
22 Federation Street	24/01/2009	6.60	50

Monitoring at Bowen Hills indicates levels within the CoG and legislative requirements

### 3.2.2 Truro / Northern Busway Areas

Location	Date	PM10 ug/m3 (24hr)	Limit ug/m3 (24hr)
Truro Site	1/11/08	16.8	50
Truro Site	2/11/08	18.3	50
Truro Site	3/11/08	19.3	50
Truro Site	4/11/08	28.1	50
Truro Site	5/11/08	20.4	50
Truro Site	6/11/08	20.4	50
39 Truro St	7/02/09	9.90	50
39 Truro St	10/02/09	17.20	50
39 Truro St	11/02/09	14.76	50
39 Truro St	13/02/09	8.94	50
39 Truro St	14/02/09	2.38	50
39 Truro St	15/02/09	0.00	50
39 Truro St	16/02/09	8.18	50
39 Truro St	17/02/09	9.79	50
39 Truro St	18/02/09	7.82	50

Monitoring at Truro Street / Northern Busway indicates levels within the CoG and legislative requirements.

### 3.2.3 Kedron Area

Location	Date	PM10 ug/m3 (24hr)	Limit ug/m3 (24hr)
12 Colton Ave	18/08/08	8.8	50
12 Colton Ave	19/08/08	7.0	50
12 Colton Ave	20/08/08	21.4	50
12 Colton Ave	24/08/08	8.6	50
Wooloowin State School	15/09/08	13.5	50
Wooloowin State School	16/09/08	20.5	50
Wooloowin State School	17/09/08	13.7	50
Wooloowin State School	18/09/08	13.4	50
Wooloowin State School	19/09/08	20.5	50
Wooloowin State School	20/09/08	27.4	50
4 Perry Street	2/12/08	10.9	50
4 Perry Street	3/12/08	19.6	50
4 Perry Street	4/12/08	20.3	50
Cnr of Colton and Perry	24/11/08	14.1	50
Cnr of Colton and Perry	25/11/08	18.6	50
Cnr of Colton and Perry	20/12/08	17.3	50
Cnr of Colton and Perry	21/12/08	11.0	50
Cnr of Colton and Perry	22/12/08	28.1	50
Cnr of Colton and Perry	23/12/08	10.5	50
Cnr of Colton and Perry	6/01/09	18.6	50
Cnr of Colton and Perry	7/01/09	24.0	50
Cnr of Colton and Perry	9/01/09	21.4	50
Cnr of Colton and Perry	10/01/09	17.0	50
Cnr of Colton and Perry	11/01/09	14.3	50
Cnr of Colton and Perry	12/01/09	17.0	50
Cnr of Colton and Perry	13/01/09	17.6	50
Cnr of Colton and Perry	14/01/09	19.5	50
Cnr of Colton and Perry	15/01/09	21.6	50

Cnr of Colton and Perry	21/01/09	26.7	50
Cnr of Colton and Perry	22/01/09	33.8	50
3 Perry Street	23/08/08	8.3	50
3 Perry Street	24/08/08	8.6	50
Cnr Perry Street & Colton Avenue	21/01/09	33	50
Cnr Perry Street & Colton Avenue	5/2/09 – 10/2/09	30	50
3 Perry Street	25/08/08	13.4	50
3 Perry Street	26/08/08	39.1	50
3 Perry Street	27/08/08	39.3	50
3 Perry Street	28/08/08	14.9	50
3 Perry Street	29/08/08	13.6	50
3 Perry Street	30/08/08	12.8	50
3 Perry Street	31/08/08	12.6	50
3 Perry Street	1/09/08	5.1	50
3 Perry Street	2/09/08	20.5	50
3 Perry Street	20/12/08	17.3	50
3 Perry Street	21/12/08	11.0	50
3 Perry Street	22/12/08	21.7	50
3 Perry Street	23/12/08	10.5	50
3 Perry Street	5/02/09	29.4	50
3 Perry Street	6/02/09	30.6	50
3 Perry Street	7/02/09	25.9	50
3 Perry Street	8/02/09	22.2	50
3 Perry Street	9/02/09	38.2	50
3 Perry Street	10/02/09	39.6	50

Monitoring at Kedron indicates levels within the CoG and legislative requirements

### 3.2.4 Toombul Area

Location	Date	PM10 ug/m3 (24hr)	Limit ug/m3 (24hr)
70 Kalinga Street	28/10/08	18.82	50
70 Kalinga Street	29/10/08	24.07	50
70 Kalinga Street	30/10/08	21.8	50
70 Kalinga Street	31/10/08	23.6	50
70 Kalinga Street	1/11/08	31.4	50
68 Kalinga Street	20/01/09	14.8	50
68 Kalinga Street	22/01/09	20.6	50
76 Jackson Street	20/01/09	12.4	50
76 Jackson Street	21/01/09	14.5	50
76 Jackson Street	22/01/09	14.1	50
76 Jackson Street	23/01/09	5.2	50
76 Jackson Street	24/01/09	2.8	50
84 Alma Road	5/10/08	19.1	50
84 Alma Road	6/10/08	17.4	50
84 Alma Road	7/10/08	12.1	50
84 Alma Road	8/10/08	18.1	50
84 Alma Road	9/10/08	13.6	50
84 Alma Road	10/10/08	13.7	50
84 Alma Road	11/10/08	13.8	50

Monitoring at Toombul indicates levels within the CoG and legislative requirement

#### 4.0 Vibration Monitoring

Vibration monitoring of blasting activities at Bowen Hills has been carried out since December 2008. The following monitoring table indicates the monitoring locations and peak levels associated with vibration during blasting at Bowen Hills.

Location	Peak Vibration mm/sec	Date
40 Federation St	15.0	6/01/09
22 Federation St	20.4	16/12/08
132 Lutwyche Road	11.9	17/12/08
Formula 1 Hotel	17.0	18/12/08
43 Gallway St	4.1	9/12/08

All vibration levels were within CoG and legislative requirements for the project.

#### 5.0 Community Enquiries and Complaints

The following tables outline the total number of enquiries and complaints received each month via the 24-hour hotline, written correspondence or in person. The tables list the number and nature of the enquiries and complaints according to each project precinct (ie. cluster of suburbs).

Complaints and issues are assumed to be of equal importance, and are grouped together in terms of response standards.

##### February 2009

	Noise and Vibration	General Construction Issues	Property and Business impacts	Traffic	Environment and Culture	Dust	Haulage	*Other	PRECINCT TOTAL FEBRUARY
Bowen Hills	4	3	2	3	0	1	0	3	16
Lutwyche /Windsor	7	19	5	10	0	5	0	3	49
Kedron	7	0	4	3	0	0	0	6	20
Toombul/ARU	7	15	10	7	1	3	9	6	58
Project Wide	0	1	0	1	1	0	0	2	5
<b>TOTAL</b>	<b>25</b>	<b>38</b>	<b>21</b>	<b>24</b>	<b>2</b>	<b>9</b>	<b>9</b>	<b>20</b>	<b>148</b>

- \* Breakdown of "other" category:  
 Bowen Hills – Operational issues (drill and blast), project design  
 Lutwyche/Windsor – Operational issues, project design  
 Kedron – Operational issues  
 Toombul – Site office enquiry, operational issues  
 Project Wide – Operational issues, project design

## January 2009

	Noise and Vibration	General Construction Issues	Property and Business impacts	Traffic	Environment and Culture	Dust	Haulage	*Other	PRECINCT TOTAL JANUARY
Bowen Hills	2	3	0	0	2	5	0	2	14
Lutwyche /Windsor	2	16	5	4	0	0	1	8	36
Kedron	8	4	3	4	2	7	0	10	38
Toombul/ARU	11	34	8	14	2	8	1	9	87
Project Wide	0	1	0	0	0	0	0	4	5
<b>TOTAL</b>	<b>23</b>	<b>58</b>	<b>16</b>	<b>22</b>	<b>6</b>	<b>20</b>	<b>2</b>	<b>33</b>	<b>180</b>

- \* Breakdown of "other" category:  
 Bowen Hills – Operational Issues (Drill and Blast), Project Design  
 Lutwyche/Windsor – Operational Issues, Project Design  
 Kedron – Operational Issues  
 Toombul – Meeting Enquiry, Bike Path Query, Site Office Enquiry  
 Project Wide – Operational Issues, Project Design

## December 2008

	Noise and Vibration	General Construction Issues	Property and Business impacts	Traffic	Environment and Culture	*Other	PRECINCT DECEMBER	TOTAL
Bowen Hills	0	1	0	0	0	3	4	4
Lutwyche /Windsor	0	8	6	0	2	2	18	18
Kedron	2	15	3	6	4	13	43	43
Toombul/ARU	0	5	5	6	6	3	25	25
Project Wide	0	1	0	1	0	4	6	6
<b>TOTAL</b>	<b>2</b>	<b>30</b>	<b>14</b>	<b>13</b>	<b>12</b>	<b>25</b>	<b>96</b>	<b>96</b>

- \* Breakdown of "other" category:  
 Bowen Hills – CLG, Operational Issues (Drill and Blast)  
 Lutwyche/Windsor – Recruitment, Heritage  
 Kedron – 3x Air Quality, Survey Work, 3x Northern Busway, Urban Design  
 Toombul – 2 x Air Quality, Meeting Enquiry  
 Project Wide – 5 x Contact Details, Safety

## November 2008

	Noise and Vibration	General Construction Issues	Property and Business impacts	Traffic	Environment and Culture	*Other	PRECINCT NOVEMBER	TOTAL
Bowen Hills	0	2	0	2	1	2	7	
Lutwyche /Windsor	1	6	3	6	1	7	24	
Kedron	3	8	1	4	0	6	22	
Toombul/ARU	3	22	4	10	5	8	52	
Project Wide	0	4	0	3	0	17	24	
<b>TOTAL</b>	<b>7</b>	<b>42</b>	<b>8</b>	<b>25</b>	<b>7</b>	<b>40</b>	<b>129</b>	

- \* Breakdown of 'other' category:  
 Bowen Hills – Consultation 1, Contact Detail Change 1  
 Lutwyche/Windsor – Consultation 2, Heritage 1, Busway 2, Project Design 1, Urban Design 1  
 Kedron – Utility Services 3, Project Design 3  
 Toombul – Consultation 2, Use of Diggers' Drive 1, Design 3, Air Quality 2  
 Project Wide – Consultation 1, Busway 2, Employment & Shares 13, Utility Services 1

## October 2008

	Noise and Vibration	General Construction Issues	Property and Business impacts	Traffic	Environment and Culture	Other	PRECINCT TOTALS OCTOBER	
Bowen Hills	3	8	4	1	0	6	22	
Lutwyche /Windsor	1	4	0	4	0	7	16	
Kedron	4	11	7	3	1	12	38	
Toombul/ARU	2	27	5	1	0	5	40	
Project Wide	1	3	1	1	0	5	11	
<b>TOTAL</b>	<b>11</b>	<b>53</b>	<b>17</b>	<b>10</b>	<b>1</b>	<b>35</b>	<b>127</b>	

### **September 2008**

170 enquiries were directed to the project during the month of September.

The top five key topics were:

- Noise and Vibration – 14%
- General Construction Issues – 8%
- Property and Business Impacts – 26%
- Traffic – 21%
- Environment and Culture – 12%
- Other – 19%

### **August 2008**

157 enquiries were directed to the project during the month of August.

The top five key topics were:

- Community Liaison Groups - 26%
- General - 15%
- Construction Impacts - 11%
- Site Investigations – 7%
- Design / Alignment – 7%