

## **NSBT Project Construction EMP October EMP Report**

This document reports on performance against the construction environmental management plan (“CEMP”) for the NSBT project in October 2009. This report also considers complaints received and how those complaints have been addressed. LBB manages the receipt and tracking of complaints/issues using a formal computer based tracking system. A 24-hour toll-free contact telephone number operates to respond to complaints, concerns or enquiries from the general public. A verbal response is provided within two hours unless the person requests otherwise. Some complaints are received via the community relations email address, in which case, if no telephone or mailing address details are provided, responses are provided electronically.

This report comprises four sections:

- 1.0 Noise Monitoring;
- 2.0 Air Quality Monitoring;
- 3.0 Complaints.

## 1. NOISE MONITORING

The target for daytime noise level measured externally to a building is the greater of the preconstruction (2006) traffic noise in the area or 60 dB(A) after applying a 5 dB(A) correction to the 55 dB(A) goal which is based on measuring internal to a building.

LBB has established a continuous noise monitoring station near each of the four NSBT main work sites. These stations are located external to buildings at the addresses in the table below which also shows the average noise levels during normal surface hours (6:30am to 6:30pm Mondays to Saturdays) recorded in October at each location.

<b>Worksite</b>	<b>Location of Monitoring</b>	<b>Average Levels in October 2009 (L<sub>A10(15min)</sub> dBA)</b>
Shafston Avenue	40 Connor Street	67
O'Connell Terrace	Mews Apartments	58
Pacific Motorway	71 Abingdon Street	58
Gibbon Street	19 Gibbon Street	56

The target for daytime noise level measured externally to a building is the greater of the preconstruction (2006) traffic noise in the area or 60 dB(A) after applying a 5 dB(A) correction to the EMP goal of 55 dB(A) which is based on measuring internal to a building. All sites were below the target except for Shafston Avenue. Removal of the Shafston Avenue concrete pavements and tunnel enclosure building foundations was undertaken in October, requiring the use of a rock hammer to remove the concrete structures. The Shafston Avenue noise logging location is immediately adjacent to the tunnel enclosure building site resulting in the temporarily increased noise levels at this location. The works were undertaken during normal surface hours behind 3m high perimeter noise walls with commencement of hammering restricted to after 7am to minimise impact.

The main strategies implemented (or continued) to mitigate noise are detailed below:

- Gibbon Street tunnel enclosure building was reconfigured to allow extraction of both TBM's to be completed with completion of concrete smoke duct and tunnel roof slabs ongoing within the shed;
- installation of final noise walls along Pacific Motorway and Lutwyche Road completed.

## 2. AIR QUALITY MONITORING

The primary measure of air quality is the quantity of dust deposited locally in a given area over a given period. Dust deposition monitoring is carried out in accordance with AS 3580.10.1 (1991) at 12 permanent measuring stations set up across the project at the locations designated on the maps enclosed behind this report to provide representative samples.

This form of measuring captures a sample over a nominal 30 day period and the sample is then laboratory tested which provides a measurement in the unit of grams per square metre per month commonly abbreviated to g/m<sup>2</sup>/mth. Note that the nominal 30 day dust deposition monitoring period is closed mid month to allow for laboratory analysis and reporting to be completed. The goal for residential locations is 4 g/m<sup>2</sup>/mth and the results at each station for the actual period between 18 September and 19 October are shown below.

D2	ICB	3.4
D3	Tufton St	2.5
D4	Quinton St	4.8
D5	Hawthorne St	2.8
D6	Armstrong Holden	3.4
D7	Ross St	4.0
D9	Regent St	3.1
D10	Bris Strikers	2.4
D11	Park -Dibley	2.8
D13	Mews	3.2
D14	Jurgen St	3.3
D15	Faversham St	2.2

Severe regional dust storms affected the east coast of Australia including Brisbane during the first half of the dust deposition monitoring period. In particular severe dust storms occurred on 23 September with subsequent dust storms on 26 and 27 September. These dust storms were recorded on EPA air quality monitoring stations across south east Queensland and reported widely in the media. These dust storms caused increased dust deposition during the monitoring period contributing the exceedence of the 4 g/m<sup>2</sup>/mth goal measured at D4 - Quinton Street. Note that Quinton Street has not previously exceeded the dust deposition goal since the commencement of monitoring in November 2006.

A secondary management tool applied to air quality is to measure the composition of the air adjacent to active worksites which provides an indicative trend over the life of the project going from the pre-existing condition to an active worksite and then reducing over time as the job completes and conditions become permanently stabilised. This measure of the particulates in the air is more widely used as an indicator of air quality in very large regions over quite a long period of time however it does have some value as a supplement to the primary dust deposition measure as an indicator of the local trends in air composition.

Measurement of the regional composition of air is done in accordance with AS 2922 of the total suspended particulate (referred to as TSP monitoring) and particulate matter less than 10µm (referred to as PM10 monitoring). Because these measurements are targeted at long term overall air quality in a region generally over a period of several years they require a reasonable history of readings to determine compliance with the annual average goals of 90 µg/m<sup>3</sup> for TSP monitoring and 50 µg/m<sup>3</sup> for PM10 monitoring. In addition the CEMP requires that short term measurements of PM10 taken over a minimum 24hour period be less than 150 µg/m<sup>3</sup>.

Measurements of air composition were carried out in October in the vicinity of the three (3) locations indicated on the maps enclosed at the back of this report and the results are shown in the table below. 24 hour measures of PM10 were generally less than 150 µg/m<sup>3</sup> goal. Exceptions were 14 October where regionally high PM10 results were recorded associated with increased regional dust levels. There was also increased PM10 dust recorded at Connor Street on 4 days in October. These were associated with removal of the concrete slabs of the former tunnel enclosure building. Rock hammers were used for this operation with dust control by water sprays, however when operating at the closest points (within 10m of the monitor) some exceedences of the 150µg/m<sup>3</sup> goal were recorded. This activity will be completed in early November after which the site will be stabilised in preparation for handover.

The air quality goals for PM10 and TSP are based on an annual average. Rolling averages have been determined as below (as at 31 October 2009) for the Shafston Avenue and Bowen Hills work sites for each of PM10 and TSP:

<b>Construction Zone</b>	<b>PM10 (µg/m<sup>3</sup>)</b>	<b>TSP (µg/m<sup>3</sup>)</b>
Bowen Hills	31	49
Shafston Avenue	45	73

The rolling averages to 31 October 2009 for each construction zone are within the air quality goals for PM<sub>10</sub> and TSP. It is important to also note in relation to the foregoing measurements/rolling averages that:

- air monitoring stations are generally located within or immediately adjacent to the work sites and the results therefore represent the highest levels of local particulate generation caused by the project and;
- particulate levels experienced in surrounding areas will be less than those recorded at the monitoring stations due to the decrease in particulate concentrations as the distance from the work sites increases and;
- more permanent form of stabilisation has occurred progressively during 2009 by increasing paved areas and completion of final landscaping all of which results in reduced dust generation.

Date	Mews		Queensland Newspapers		Connor Street	
	PM10 ( $\mu\text{g}/\text{m}^3$ )	TSP ( $\mu\text{g}/\text{m}^3$ )	PM10 ( $\mu\text{g}/\text{m}^3$ )	TSP ( $\mu\text{g}/\text{m}^3$ )	PM10 ( $\mu\text{g}/\text{m}^3$ )	TSP ( $\mu\text{g}/\text{m}^3$ )
1/10/2009	36.58	66.23	31.31	48.03	64.29	106.38
2/10/2009	39.11	67.52	26.97	42.57	94.74	154.50
3/10/2009	35.94	59.21	31.19	47.81	64.64	106.83
4/10/2009	137.66	238.6	27.15	42.90	94.51	154.04
5/10/2009	29.57	41.86	31.07	47.53	64.97	107.27
6/10/2009	18.83	31.62	27.64	44.00	94.33	153.68
7/10/2009	20.75	35.54	30.70	46.69	65.33	107.79
8/10/2009	30.80	51.99	28.30	45.67	94.16	153.35
9/10/2009	19.06	37.01	30.02	45.01	65.69	108.31
10/10/2009	25.38	42.28	28.56	46.23	94.04	153.09
11/10/2009	20.22	33.26	29.72	44.41	66.05	108.83
12/10/2009	12.72	18.49	28.66	46.37	93.86	152.67
13/10/2009	25.53	41.1	29.58	44.21	66.47	109.45
14/10/2009	212.00*	380.07	229.50*	414.39	326.41*	611.74
15/10/2009	74.49	129.25	67.65	115.56	112.52	203.84
16/10/2009	41.93	74.46	47.90	87.46	79.93	149.99
17/10/2009	22.78	38.32	18.73	28.24	57.15	97.73
18/10/2009	16.83	24.51	13.99	18.62	25.70	40.98
19/10/2009	22.98	38.17	15.25	20.83	154.61**	263.84
20/10/2009	21.90	37.38	14.98	22.09	113.81	202.11
21/10/2009	21.28	37.84	13.57	20.82	90.45	158.59
22/10/2009	20.91	39.10	13.44	21.63	119.06	207.63
23/10/2009	22.62	41.17	13.21	20.85	165.33**	248.91
24/10/2009	21.19	34.98	14.88	21.71	154.88**	231.71
25/10/2009	24.02	34.13	20.31	25.87	39.17	58.23
26/10/2009	25.69	38.98	19.00	24.90	201.65**	336.65
27/10/2009	25.92	39.57	20.23	27.44	51.05	85.35
28/10/2009	28.34	42.69	20.79	27.20	45.75	72.37
29/10/2009	19.33	31.17	13.18	18.28	32.65	54.88
30/10/2009	17.04	28.79	11.55	16.84	28.46	48.48
31/10/2009	14.51	23.78	10.26	14.65	28.25	50.56

Notes:

\* Regionally high PM10 results associated with increased regional dust levels

\*\* Locally increased PM10 dust associated with removal of the concrete slabs of the former Shafston Avenue tunnel enclosure building by rock hammer within 10m of the monitor. Water sprays were used to minimise dust from this operation.

Key mitigation measures implemented (or continued) to reduce dust generation are detailed below:

- reduce exposed surfaces by permanent works and completion of final landscaping;
- water sprays used to minimise dust from rock hammering;
- continued use of trailer mounted water tanks and water carts;
- continued use of dust suppressants in water carts;
- covering of trucks hauling on public roads;
- property treatments to frontline properties with high exposure to the worksite where physical mitigation measures may not be totally effective are considered on their merits on a case by case basis.

### 3. COMPLAINTS

In October a total of 12 complaint events were received. Nine complaints were received via the 1800 number, two via email and one complaint via Council. The following table shows the number and nature of the complaints/issues (more than one issue can be raised as part of a complaint event) at each worksite.

Key mitigation measures implemented to respond to noise or dust issues are described in Sections 1.0 and 3.0 of this report.

Nature of Complaint	Pacific M'way/ Ipswich Road	Gibbon Street	Shafston Avenue/ Kangaroo Point	O'Connell Terrace/ Lutwyche Road	Other (Abbotsford Rd / ICB)	Total
Dust						
Noise	4		4			8
Traffic			1			1
Vibration						
Property (access, security, damage)	1			1		2
Other	1					1
<b>Total</b>	<b>6</b>		<b>5</b>	<b>1</b>		<b>12</b>

*(more than one issue can be raised as part of a complaint event)*

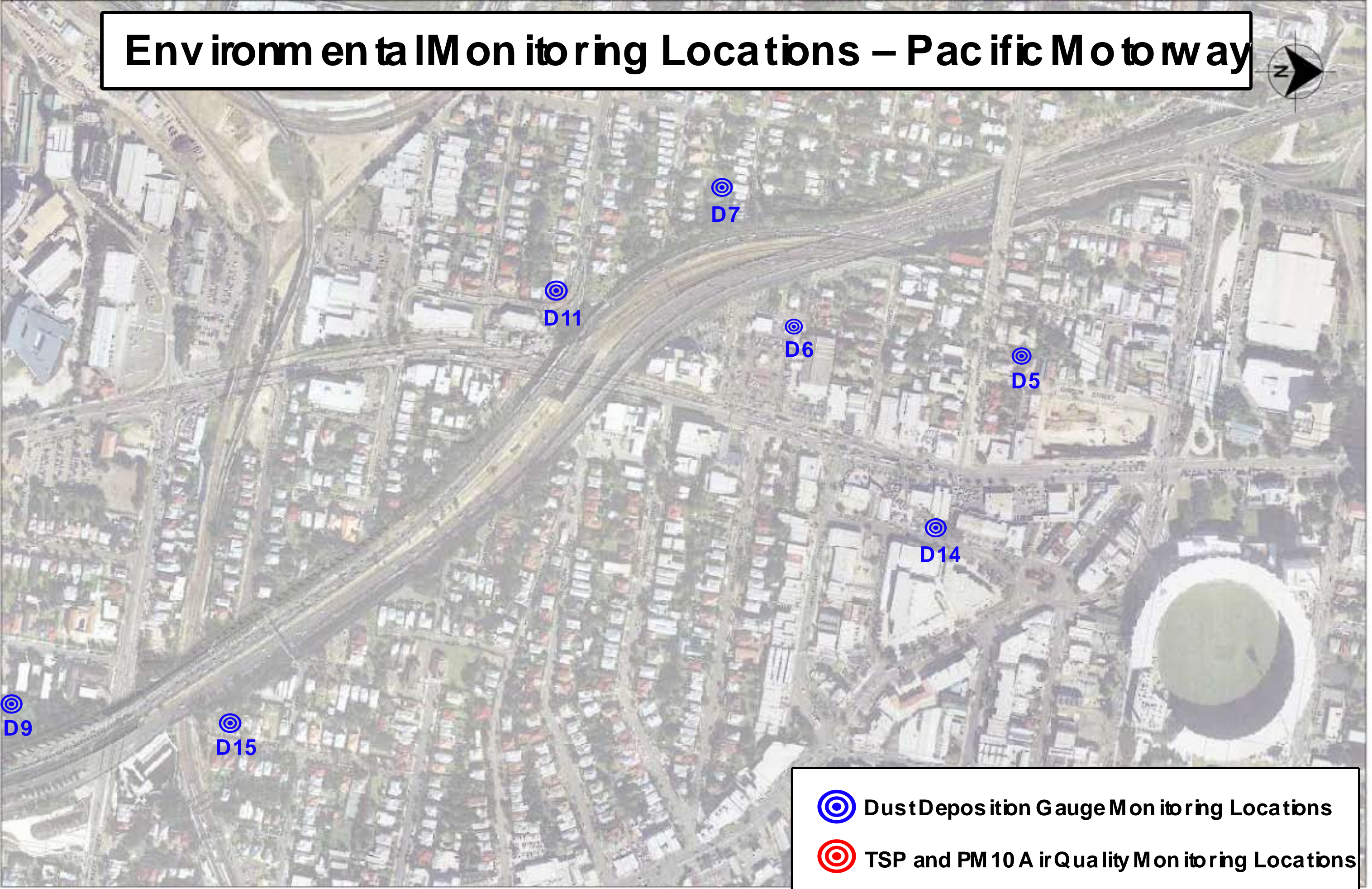
# Environmental Monitoring Locations – Bowen Hills





- Dust Deposition Gauge Monitoring Locations
- TSP and PM10 Air Quality Monitoring Locations

D10 - 95 Abbotsford Rd (not to scale)

# Environmental Monitoring Locations – Pacific Motorway



-  Dust Deposition Gauge Monitoring Locations
-  TSP and PM 10 Air Quality Monitoring Locations

