PACIFIC HIGHWAY UPGRADE TINTENBAR TO EWINGSDALE

Final design operational noise management report

MAY 2014

Pacific Highway Upgrade

Tinterbar to Ewingsdale

Operational Noise Management Report

6 March 2014

PACIFIC HIGHWAY UPGRADE

TINTENBAR TO EWINGSDALE DESIGN REPORT

RMS PLAN REGISTRATION No. – DS2012/000308 100% Final Detailed Design

G00 - Global Zone G00-NW01-RPT-0135-G

DESIGN LOT – NW01 - Operational Noise Management Report 6 March 2014

DOCUMENT CONTROL

General Description:	Final Design Operational Noise Management Report			
Document Path:	S:\Hyder\F-Reports\FB - Design Lots\G00-Global\NW01_Noise Wall\FDD\FDD\Rev G\G00-NW01-RPT-0135-G.docx			
Design Lots/ Disciplines	**G00-NW01 - Operational Noise Management Report**			
	Name	Position	Signed/Approved	Date
Originator(s)	Tristan Gribble	Acoustic Engineer		
Review	Evan Milton	Senior Acoustic Engineer		
Approval	David Watson	Design Manager		

DOCUMENT REVISIONS

Rev No	Date	Issue/Description	Approved
A	19/10/2012	85% Operational Noise Management Report	D. Watson
B	17/12/2012	100% Operational Noise Management Report	D. Watson
C	07/02/2013	Final Design Operational Noise Management Report	D. Watson
D	25/02/2013	Final Design Operational Noise Management Report	D. Watson
E	09/05/2013	Final Design Operational Noise Management Report	D. Watson
F	02/08/2013	Final Design Operational Noise Management Report	D. Watson
G	06/03/2014	Final Design Operational Noise Management Report	

APPENDICES

Acronyms and Glossary

dB(A)	Decibel (A weighted)
DEC	Department of Environment and Conservation (NSW)
DECC	Department of Environment and Climate Change (NSW)
DECCW	Department of Environment, Climate Change and Water (NSW)
DGEAR	Director-General's Environmental Assessment Report (DoP)
DPI	Department of Planning and Infrastructure(NSW)
EA	Tintenbar to Ewingsdale Environmental Assessment (RTA 2008)
ECRTN	Environmental Criteria for Road Traffic Noise (EPA 1999)
ENMM	Environmental Noise Management Manual (RTA, 2001)
EPA	Environment Protection Authority
HV	Heavy vehicle
LAeq(period)	Equivalent sound pressure level over a specified period of time, that would produce the same energy equivalence as the fluctuating sound level actually occurring
LA90(period)	The sound pressure level exceeded for 90% of the measurement period
LA1(period)	The sound pressure level exceeded for 1% of the measurement period
LAmax	The maximum sound level recorded during the measurement period
LAeq(15hr)	The LAeq noise level for the period 7 am to 10 pm
LAeq(9hr)	The LAeq noise level for the period 10 pm to 7 am
LAeq(1hr)	The highest hourly LAeq noise level during the day and night periods
OEH	NSW Office of Environment and Heritage
ONMR	Operational Noise Management Report
RBL	The rating background level which is the overall single-figure background level representing each assessment period (day/evening/night) over the whole monitoring period.
RMS	Roads and Maritime Services
T2E	Tintenbar to Ewingsdale

1 INTRODUCTION

The Tintenbar to Ewingsdale Project (the Project) involves the upgrade of 16.3 km of Pacific Highway to Class M status. The Project consists of a 434 m long tunnel through St. Helena hill, three interchanges with the local road network at Ross Lane, Bangalow and Ewingsdale, six twin bridges over creeks and existing roads, three local road underpasses and two overbridges.

This Operational Noise Management Report (ONMR) provides a noise study of the road design for the Project. This report has been prepared to meet the requirements of Schedule 2 of the Minister's Condition of Approval (MCoA) for the Project. In line with the Project requirements, this report has been prepared with consideration to the NSW Environmental Criteria for Road Traffic Noise (ECRTN) (EPA, 1999) and the Roads and Maritime Services Environmental Noise Management Manual (ENMM) (2001).

This report details the methodology used in assessing operational noise from the Project, including the operational design noise criteria, noise model predictions, impact assessment and design of noise mitigation measures.

1.1 The Approved Project

The upgrade of the Pacific Highway between Tintenbar and Ewingsdale is part of the Pacific Highway Upgrade Program, being implemented by NSW Roads and Maritime Services (RMS). The upgrade is an important part of the Pacific Highway Upgrade Program as on its completion, the Pacific Highway will be dual carriageway from Ballina to the Queensland border. The Project will deliver safer driving conditions and improve the Pacific Highway's capacity to move people and freight between capital cities.

The Project site is located approximately 10 km to the north of Ballina. The Project involves the construction of approximately 16.3 km of highway from Ross Lane at Tintenbar and extends north to the existing Ewingsdale interchange, near Ewingsdale. At Ross Lane, the upgrade alignment will connect to the northern end of the recently completed Ballina bypass. Generally, the alignment will be in close proximity to the existing highway corridor from Ross Lane to the Bangalow bypass. The existing highway will be maintained for local and regional traffic.

From Bangalow, the upgrade alignment will diverge to the northeast through Tinderbox Creek valley. From there, the upgrade alignment will avoid the steep grades of St Helena Hill by way of a tunnel approximately 434 m long and 45 m below the ridge line. North of the tunnel, the alignment will be located immediately to the east of the existing highway before tying into the Ewingsdale interchange.

Key components of the approved Project include:

- Four-lane divided carriageways (two lanes each way), with a wide median allowing for the future addition of a third lane in each direction.
- Connection to the northern end of the completed Ballina bypass at the Ross Lane interchange. A new northbound on-ramp and a new southbound off-ramp would be provided. The remainder of this interchange has been constructed as part of the Ballina bypass project.
- Upgrading of the existing Ewingsdale interchange to provide full access between the modified local and regional road network and the highway.
- A half interchange at Bangalow. South-facing ramps would provide access between the local road network, including to Bangalow and Lismore, and the proposed upgrade to the south. This arrangement would replicate the arrangement with the existing Bangalow bypass which also has south-facing ramps only.

- A number of twin bridges, two local road underpasses and two overbridges. These would include twin bridges above Byron, Emigrant and Skinners creeks and the existing Casino-Murwillumbah railway on the northern side of Byron Creek.
- Twin parallel tunnels under St Helena ridge (one tunnel for each carriageway). The tunnels would each be about 434 m long and about 45 m below St Helena Road.
- Retention of the existing highway as a continuous road for local and regional traffic.
- Installation of signage providing clear directions for traffic on approach to and at the Ross Lane, Bangalow and Ewingsdale interchanges.
- Relocation of a number of public utilities and services.

Figure 1 and Figure 2 provide an overview of the Project location.

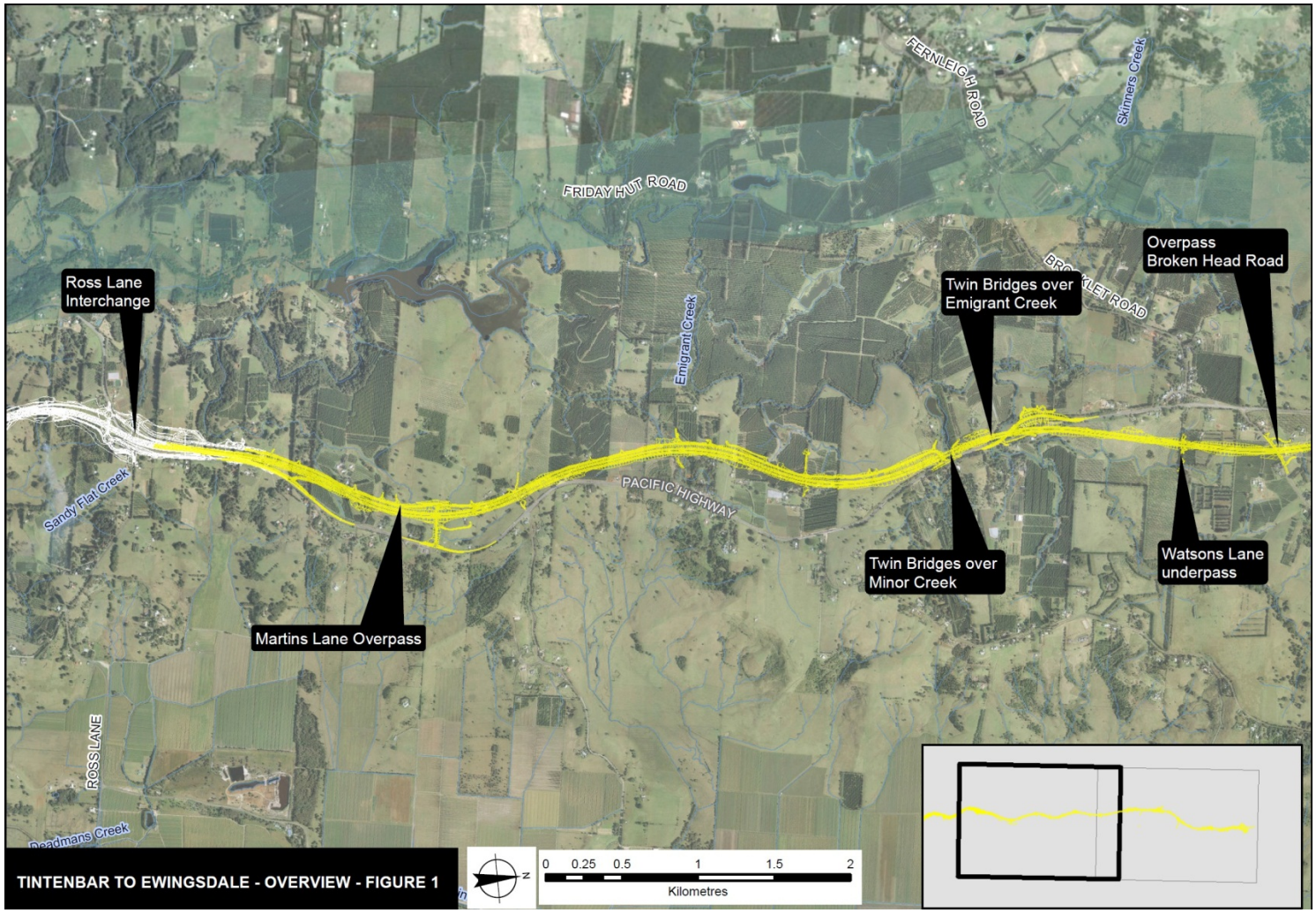


Figure 1 Project overview

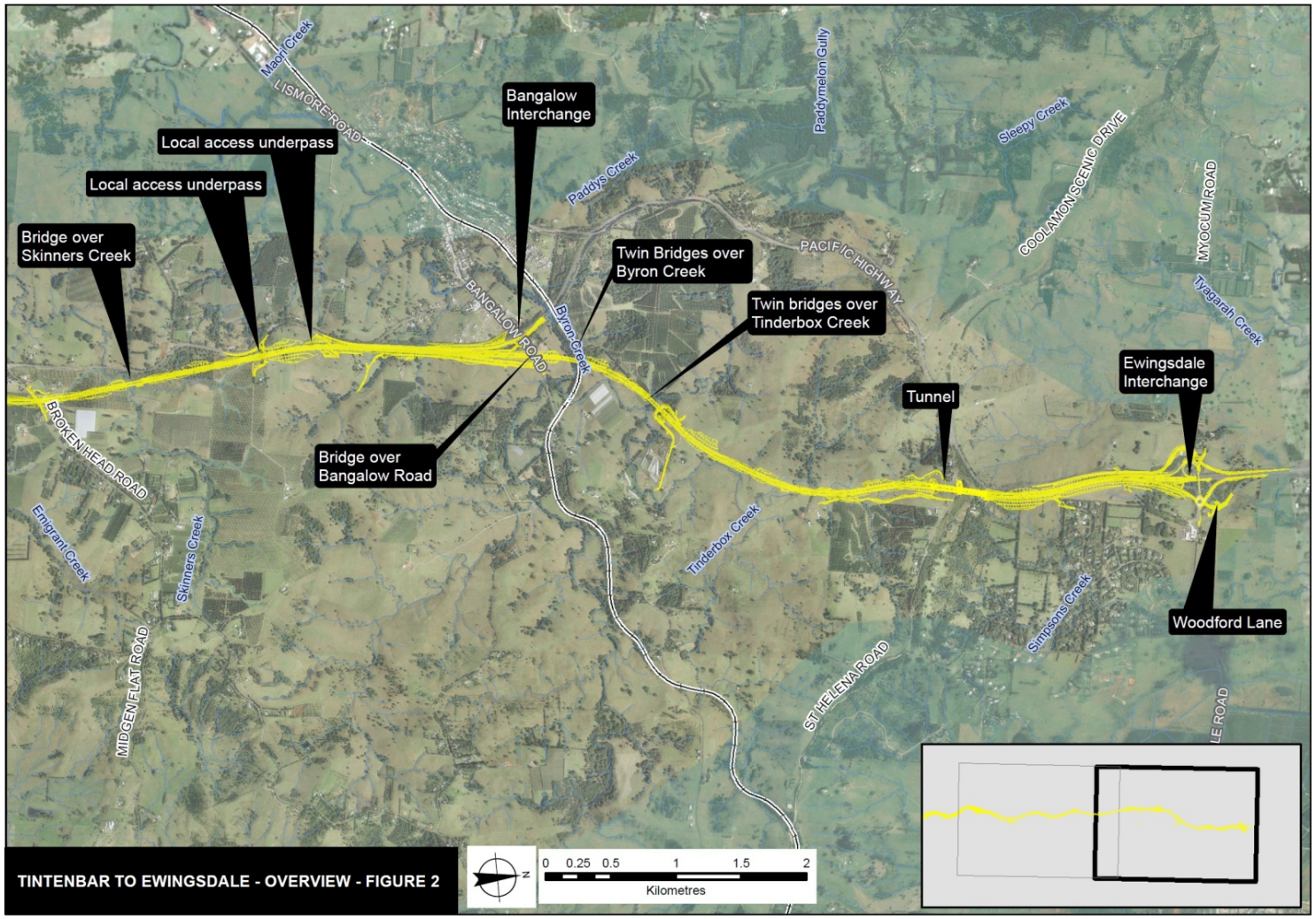


Figure 2 Project overview (continued)

1.2 Background

Investigations relevant to this ONMR are outlined in Table 1.

Table 1 Investigations Relevant to the ONMR Undertaken for the Project to Date

Investigation / report	Timing	Related MCoA requirement?	Prepared by
Tintenbar to Ewingsdale Pacific Highway Upgrade Environmental Assessment – Working Paper 8: Noise and Vibration Assessment.	June 2008	N/A	Arup Pty Ltd
Site Noise Monitoring	March 2012 August 2012	N/A	GHD Pty Ltd

1.3 Purpose of this Document

This ONMR has been prepared to ensure that operational noise mitigation measures have been implemented for the Project in response to the MCoA that relate to operational noise (see Section 2.1.3).

The objective of this ONMR is to manage operational road traffic noise from the Project and ensure appropriate operational noise mitigation measures are designed and installed to minimise noise impacts on the community.

The purpose of this ONMR is to:

- Provide a description of the existing road traffic noise environment in the Project area.
- Confirm the road traffic noise targets for the Project in order to manage operational noise impacts on identified sensitive receivers.
- Describe the noise mitigation measures implemented into the Project design.
- Provide an assessment of the operational road traffic noise for the Project Opening (year 2014) and for 10 years after opening (year 2024).
- Identify any additional noise mitigation requirements.
- Provide an outline of post-construction operational noise monitoring and reporting requirements.

This Final Design ONMR has been based on the latest Detailed Design alignment at the time of reporting.

2 PLANNING

2.1 Legal and Other Requirements

2.1.1 Guidelines

In addition to the Project Deed and other Environmental Documents, this ONMR has been prepared based upon the following documents:

- Austroads: An Approach to the Validation of Road Traffic Noise Models (2002).
- Australian Standard AS 2702 - Acoustic Methods of Measurement of Road Traffic Noise.
- Environmental Criteria for Road Traffic Noise (ECRTN) (EPA, 1999).
- Environmental Noise Management Manual (ENMM) (RTA, 2001).
- Noise Wall Design Guidelines (RTA, 2007).

2.1.2 EA, Submissions Report and Statement of Commitments

Requirements relating to this ONMR as identified in the Environmental Assessment (EA), Submissions Report and Statement of Commitments (SoC) are included in Table 2. The table also references relevant sections of this ONMR where these requirements are addressed.

Table 2EA, Submissions Report and SoC requirements

No.	Original Reference	Relevant Requirement	ONMR Reference
1	SoC	Operational noise mitigation measures will be designed and implemented to achieve applicable road traffic noise criteria where reasonable and feasible.	Section 5.4
2	SoC	The design and operation of operational noise mitigation measures will be undertaken in consultation with potentially affected residents.	Section 5.6
3	SoC	Monitoring of operational noise will be undertaken within one year of the opening of the proposed upgrade. Should the monitoring indicate that traffic noise levels exceed those predicted for the upgrade additional measures will be investigated and implemented where reasonable and feasible.	Will be completed within one year of Project opening.

2.1.3 Minister's Conditions of Approval

Requirements relating to the ONMR in the MCoA are included in Table 3. The table also references relevant sections of the ONMR where these requirements are addressed.

Table 3 McoA requirements

No.	Original Reference	Relevant Requirement	ONMR Reference
1	Schedule 2 – 2.19	Operational noise Unless otherwise agreed to by the Director General, the Proponent shall submit for the approval of the Director General a review of proposed operational noise mitigation measures identified in the documents listed under condition 1.1 within six months of commencing construction. The review shall take into account the detailed design of the project and, where feasible and reasonable, refine the proposed measures with the objective of meeting the criteria outlined in the Environmental Criteria for Road Traffic Noise (EPA, 1999). The review shall be undertaken in consultation with the DECCW.	Section 5.4 Section 5.6
2	Schedule 2 – 3.3	Noise Auditing No later than one year after commencement of operation of the project, or as otherwise agreed by the Director General, the Proponent shall undertake operational noise monitoring to compare actual noise performance of the project against noise performance predicted in the review of noise mitigation measures required by condition 2.19 and prepare an Operational Noise Report. The Report shall include, but not necessarily be limited to: (a) noise monitoring to assess compliance with the operational noise levels predicted in the review of operational noise mitigation measures required under condition 2.19 and documents specified under condition 1.1 of this approval;	Will be completed within one year of Project opening.
		(b) a review of the operational noise levels in terms of criteria and noise goals established in the Environmental Criteria for Road Traffic Noise (EPA, 1999); (c) methodology, location and frequency of noise monitoring undertaken, including monitoring sites at which project noise levels are ascertained, with specific reference to locations indicative of impacts on sensitive receivers;	
		(d) details of any complaints and enquiries received in relation to operational noise generated by the project between the date of commencement of operation and the date the report was prepared; (e) any required recalibrations of the noise model taking into consideration factors such as noise monitoring undertaken and actual traffic numbers and proportions; and (f) an assessment of the performance and effectiveness of applied noise mitigation measures together with a review and if necessary, reassessment of all reasonable and feasible mitigation measures; and (g) any additional feasible and reasonable measures to those identified in the review of noise mitigation measures required by condition 2.19, that would be implemented with the objective of meeting the criteria outlined in the Environmental Criteria for Road Traffic Noise (EPA, 1999), when these measures would be implemented and how their effectiveness would be measured and reported to the Director General and the DECCW. The Proponent shall provide the Director General and the DECCW with a copy of the Operational Noise Report within 60 days of completing the operational noise monitoring referred to in (a) above, or as otherwise	

No.	Original Reference	Relevant Requirement	ONMR Reference
		agreed by the Director General.	

3 EXISTING AMBIENT NOISE ENVIRONMENT

3.1 Identification of Sensitive Receivers

The Project route is located in a primarily rural area, featuring scattered dwellings, pockets of built-up residential areas and a number of plantation farms.

3.1.1 Residential Receivers

Residential receivers form the vast majority of sensitive receivers along the Project route. These are identified on maps in Appendix A and listed in Appendix B.

3.1.2 Educational Facilities

Newrybar Public School is located at the corner of the existing Pacific Highway and Broken Head Road in Newrybar and is identified in Appendix A. The school's sportsgrounds are adjacent to the Project work area and the school buildings are within 100 meters from the edge of the works.

There is no other educational facility in the vicinity of the Project.

3.1.3 Health Care Facilities

Feros Village Bangalow is located at the corner of Ballina Road and Bangalow Road in Bangalow and is identified in Appendix A. The facility provides long-term and short-term care to seniors needing 24-hour nursing, personal and dementia support. The facility is capable of supporting 64 residents. The facility is located approximately 250 west meters from the edge of the works (Bangalow Interchange northbound off-ramp).

There is no other health care facility in the vicinity of the Project.

3.1.4 Places of Worship

The Church of Columbia is located off Old Pacific Highway in Ewingsdale and is shown in Appendix A. The site is approximately 120 meters from the edge of the works (Ewingsdale Interchange on-ramp).

There is no other place of worship in the vicinity of the Project.

3.1.5 Active Recreation Areas

Active recreation areas are characterised by sporting activities and activities which generate their own noise or focus for participants, making them less sensitive to external noise intrusion. Along the Project route, the following active recreation areas have been identified:

- Bangalow Oval and Sports Fields, off Bangalow Road, Bangalow.

3.1.6 Passive Recreation Areas and School Playgrounds

Passive recreation areas are characterised by contemplative activities that generate little noise and where benefits are compromised by external noise intrusion, for example, reading and meditation.

Newrybar Public School grounds and the recreation area of Macadamia Castle have been identified as fitting into this receiver category.

3.1.7 Community Centres

Ewingsdale Community Hall is located off Old Pacific Highway in Ewingsdale. The site is approximately 120 meters from the edge of the works (Ewingsdale Interchange on-ramp).

Newrybar Community Hall is located off Old Pacific Highway in the village of Newrybar.

These community centres are shown in Appendix A.

3.2 Noise Monitoring Methodology

Road traffic noise monitoring was undertaken at 14 locations along the Project work area during March 2012.

Noise monitoring was undertaken for a period of 10 days to obtain useable data for at least one week from 6 March to 15 March 2012 at the 14 locations shown in Table 4. The locations of the noise monitoring are also identified in the Appendix A maps. Each location was exposed to road traffic noise from the existing Pacific Highway. Road traffic noise monitoring was undertaken with consideration to Australian Standard AS 2702 *Acoustic Methods of measurement of Road Traffic Noise*.

Noise monitoring was previously undertaken at 14 residential locations along the existing Pacific Highway as part of the Environmental Assessment for the Project during March 2011.

Where possible, noise monitoring was undertaken at the same locations during March 2012 in order to supplement this previous data. The monitoring locations were chosen to be as close as possible to the March 2011 locations. These locations were selected as they were exposed to existing levels of road traffic noise. They also provided safe and secure locations for the noise monitoring equipment.

Noise monitoring was undertaken using Rion NL-21 and Acoustic Research Laboratories (ARL) Pty Ltd EL-315 environmental noise loggers that were within calibration. The instruments were programmed to accumulate road traffic noise data continuously over sampling periods of 15 minutes for the entire monitoring period.

Field calibration checks were undertaken immediately before and after the monitoring period using a Rion NC-73 acoustic calibrator. All instruments were found to be within calibration following the monitoring period.

Measured noise data was reviewed and filtered to exclude any anomalous data and data potentially affected by adverse weather conditions during the monitoring period. Meteorological data for the monitoring period was sourced from two weather stations operated by RMS along the Project. Weather data from these weather stations were

downloaded from the NSW RMS Environmental Monitoring Portal[1]. Weather data was formatted to provide 15-minute averages of wind speed, wind direction, total rainfall, temperature and humidity to coincide with the noise monitoring interval. Charts of daily weather data and excluded data for each monitoring location have been provided in Appendix C to Appendix P. L_{A1} noise levels have been adopted as a surrogate for L_{Amax} noise levels in the monitoring charts.

Noise monitoring data was filtered to remove invalid data, such as data recorded during high winds (>5 m/s) or when rainfall occurred. With consideration to Section 7 of the ENMM, noise from sources other than road traffic (e.g. insect or bird noise) was excluded where possible. An example of this can be seen in a spike in noise levels between 7:30 pm and 8:00 pm at a number of monitoring locations. This time period did not coincide with peak hour traffic flows and is expected to be from insect or bird noise at dusk. Therefore, as this spike in noise level is not likely due to road traffic noise, the data was excluded before analysis.

Table 4 Road Traffic Noise Monitoring Locations

Location Number	Street Address	Description of Monitoring Location
L1	61 Myocum Road, Ewingsdale	Logger located 1 m from the eastern façade of the dwelling, closest to the Pacific Highway. Dwelling located approximately 230 m from the Pacific Highway.
L2	66 Plantation Drive, Ewingsdale	Logger located in the free field, approximately 20 m from the rear of the dwelling in the direction of the Pacific Highway. Dwelling located approximately 190 m from the Pacific Highway.
L3	26 Plantation Drive, Ewingsdale	Logger located in the free field, approximately 10 m from the dwelling in the direction of the Pacific Highway. Dwelling located approximately 190 m from the Pacific Highway.
L4	18 St Helena Road, McLeods Shoot	Logger located in the free field, approximately 9 m from the dwelling in the direction of the Pacific Highway. Dwelling located approximately 80 m from the Pacific Highway.
L5	17 Blackwood Crescent, Bangalow	Logger located in the free field, approximately 10 m from the rear of the dwelling in the direction of the Pacific Highway. Dwelling located approximately 30 m from the Pacific Highway.
L6	230 Pacific Highway, Bangalow	Logger located in the free field, approximately 4 m from the rear of the dwelling. Dwelling located approximately 130 m from the Pacific Highway.
L7	2095 Pacific Highway, Newrybar	Logger located in the free field, approximately 7 m from the rear of the dwelling in the direction of the Pacific Highway. Dwelling located approximately 50 m from the Pacific Highway.

[1] http://www.weatherdata.com.au/

Location Number	Street Address	Description of Monitoring Location
L8	13 Broken Head Road, Newrybar	Logger located 1 m from the western façade of the dwelling, closest to the Pacific Highway. Dwelling located approximately 65 m from the Pacific Highway.
L9[1]	16 Old Pacific Highway, Newrybar	Logger located 1 m from the eastern façade of the dwelling, closest to the Pacific Highway. Logger was elevated 3.5 m above ground level. Dwelling located approximately 55 m from the Pacific Highway.
L10	18 Hambly Lane, Newrybar	Logger located in the free field, approximately 15 m from the dwelling in the direction of the Pacific Highway. Dwelling located approximately 130 m from the Pacific Highway.
L11	1711 Pacific Highway, Knockrow	Logger located 1 m from the dwelling, in the direction of the Pacific Highway. Dwelling located approximately 530 m from the Pacific Highway.
L12	19 Ivy Lane, Knockrow	Logger located 1 m from the dwelling, in the direction of the Pacific Highway. Dwelling located approximately 180 m from the Pacific Highway.
L13[1]	44 Martins Lane West, Knockrow	Logger located in the free field, approximately 6 m from the dwelling in the direction of the Pacific Highway. Dwelling located approximately 160 m from the Pacific Highway.
L14[1]	1374 Pacific Highway, Knockrow	Logger located in the free field, approximately 6 m from the dwelling at the same distance of the front façade to the Pacific Highway. Dwelling located approximately 30 m from the Pacific Highway.

Note 1: L9, L13 and L14 were located in slightly different locations to the monitoring conducted by RMS in 2011.

3.3 Background Noise Levels

The rating background noise levels from each logging location are presented in Table 5.

Table 5 Background Noise Monitoring Data, dB(A)

Logger location ID	Rating background level LA90 dB(A)		
	Day (7am to 6pm)	Evening (6pm to 10 pm)	Night (10pm to 7am)
L1	45	46	37
L2	39	43	39
L3	38	39	39
L4	49	46	35
L5	42	38	30

Logger location ID	Rating background level LA90 dB(A)		
	Day (7am to 6pm)	Evening (6pm to 10 pm)	Night (10pm to 7am)
L6	48	49	47
L7	47	45	39
L8	51	48	36
L9	50	44	38
L10	47	45	40
L11	37	43	38
L12	49	51	44
L13	50	48	39
L14	48	47	41

3.4 Road Traffic Noise Monitoring Results

Table 6 provides a summary of the results of the road traffic noise monitoring at each of the 14 locations. Complete details of daily noise levels, weather data and excluded data for each monitoring location have been provided in charts in Appendix C to Appendix P.

Table 6 Road Traffic Noise Monitoring Summary Results, dB(A)

Monitoring Location	Day LAeq (15hr)	Night LAeq (9hr)	Day LAeq (1hr)	Night LAeq (1hr)	Day LA10 (1hr)	Night LA10 (1hr)
L01	58	56	61	54	63	59
L02	50	47	50	47	52	51
L03	51	51	54	53	55	54
L04	57	55	59	57	61	57
L05	56	53	58	54	61	59
L06	59	57	60	59	64	62
L07	60	59	61	60	64	63
L08	62	58	63	60	66	64
L09	64	61	66	62	70	66
L10	57	55	58	56	62	60
L11	49	51	52	53	54	56
L12	61	59	63	61	66	65
L13	60	58	61	60	65	64
L14	65	64	66	65	70	68

3.5 Attended Observations

Attended observations were made of the acoustic environment during fieldworks at each of the noise monitoring locations. Table 7 summarises the observations made.

Road traffic noise from the existing Pacific Highway was the primary noise source at the majority of the monitoring locations. Insect and wildlife noise, such as bird calls were also audible at times at most locations.

Table 7 Daytime Observations of Acoustic Environment

Monitoring Location	Daytime Observations of Acoustic Environment
L01	• Highway noise constant and controlling • Highway not visible due to property fence and intervening ground • Truck passbys: 55-60 dB • Car passbys: 53-57 dB • Wind noise in nearby trees audible intermittently • Occasional bird calls
L02	• Highway noise constant and controlling • Highway view shielded by existing earth mound and noise wall • Traffic passbys: 50-53 dB • Occasional insect noise and wind noise in nearby vegetation
L03	• Highway noise constant and controlling • Highway view shielded by local topography and noise wall • Traffic passbys: 46-50 dB • Occasional insect noise and wind noise in nearby vegetation
L04	• Highway noise constant and controlling • Vehicles travelling up St Helena Hill – engine and exhaust noise • Truck passbys: 60-63 dB • Car passbys: 57-61 dB • Highway view mostly shielded by local topography • Location exposed to winds on top of St Helena hill
L05	• Highway noise constant and controlling • Property backs on to highway, separated by existing earth mound • Truck passbys: 60-67 dB • Car passbys: 52-59 dB • Dog barking occasionally in neighbouring property
L06	• Highway noise controlling • Line of sight to highway partially blocked by vegetation • Truck passbys: 60-64 dB • Car passbys: 52-58 dB

Monitoring Location	Daytime Observations of Acoustic Environment
	• Occasional local insect or bird noise • Wind noise audible intermittently in nearby trees
L07	• Highway noise constant and controlling • Property fronts on to highway. Flat intervening ground. • Dense vegetation on yard mostly blocking line of sight to vehicles • Truck passbys: 65-70 dB • Car passbys: 55-60 dB
L08	• Highway noise constant and controlling • Property fronts on to highway. House is raised above highway. • Truck passbys: 61-68 dB • Car passbys: 52-57 dB • Insect and bird noise occasionally.
L09	• Noise logger located at back of commercial shop, adjacent to residential dwelling • Highway noise constant and controlling • Occasional local traffic noise in Newrybar – car passbys and vehicles parking/doors opening and closing. • Property backs on to highway. House is raised above highway. Intervening vegetation and small sheds in backyard. • Truck passbys: 64-67 dB • Car passbys: 60-65 dB
L10	• Highway noise constant and controlling • Truck passbys: 61-64 dB • Car passbys: 54-59 dB • Occasional wind noise in local trees • Occasional insect or bird noise
L11	• Highway noise audible to barely audible depending on noise of other sources such as wind/insects • Occasional farm equipment audible operating at distance • Estimate of traffic passbys: 47-52 dB
L12	• Highway noise constant and controlling • Occasional insect or bird noise • Truck passbys: 61-64 dB • Car passbys: 52-60 dB
L13	• Highway noise constant and controlling • View of highway across small gully. Parts of highway partially shielded

Monitoring Location	Daytime Observations of Acoustic Environment
	by earth mounds • Insect noise intermittent in background • Truck passbys: 60-68 dB • Car passbys: 56-62 dB
L14	• Highway noise constant and controlling • Property fronts on to highway. House slightly lower than highway • Truck passbys: 68-72 dB • Car passbys: 59-64 dB

3.6 Summary of Simultaneous Traffic Counts

Simultaneous traffic data was recorded by Northern Transport Planning and Engineering Pty Ltd during the noise monitoring period. Traffic monitoring locations were selected to be between all major intersections along the existing Pacific Highway. Traffic volumes, composition and speeds were recorded at five monitoring locations with hourly averages provided throughout the monitoring period. A summary of the traffic monitoring locations and results are provided below in Table 8 and Table 9.

The average of the weekday traffic data has been used in this assessment. Complete traffic count reports have been provided in Appendix Q.

Table 8 Traffic Count Locations and Description

Site	Location	Traffic Direction	Lane No	Week Beginning
1 N	Pacific Hwy 200 m north of Macadamia Castle	North	1	8/03/2012
1 S	Pacific Hwy 200 m north of Macadamia Castle	South	1	8/03/2012
2 N	Pacific Hwy 30 m north of Hambly Lane	North	1	8/03/2012
2 S	Pacific Hwy 30 m north of Hambly Lane	South	1	8/03/2012
3 N	Pacific Hwy 200 m north of Broken Head Road	North	1	8/03/2012
3 S	Pacific Hwy 200 m north of Broken Head Road	South	1	8/03/2012
4 N	Pacific Hwy 500 m north of Byron Creek Bridge	North	1 & 2	8/03/2012
4 S	Pacific Hwy 500 m north of Byron Creek Bridge	South	1	8/03/2012
5 N	Pacific Hwy 500 m north of St Helena Road	North	1	8/03/2012
5 S	Pacific Hwy 300 m north of St Helena Road.	South	1	8/03/2012

Table 9 Weekday Traffic Count Summary

Site	Average vehicles per hour, Day (15 hour)		Average vehicles per hour, Night (9 hour)		Mean vehicle speed		85%ile vehicle speed		Sign-posted speed limit
	Light Vehicles	Heavy Vehicles	Light Vehicles	Heavy Vehicles	Day	Night	Day	Night	

Site	Average vehicles per hour, Day (15 hour)		Average vehicles per hour, Night (9 hour)		Mean vehicle speed		85%ile vehicle speed		Sign-posted speed limit
	Light Vehicles	Heavy Vehicles	Light Vehicles	Heavy Vehicles	Day	Night	Day	Night	
1N	348	56	51	53	86	88	92	94	90
1S	348	34	116	27	85	87	91	93	90
2N	341	30	99	52	88	90	95	98	90
2S	347	37	114	26	85	87	92	94	90
3N	355	30	93	52	86	88	92	94	90
3S	361	35	115	27	82	84	88	90	90
4N	274	24	91	50	87	84	98	95	100
4S	286	31	121	29	94	95	101	102	100
5N	509	44	139	61	54	55	59	59	60
5S	517	53	151	35	61	61	68	69	60

4 OPERATIONAL NOISE CRITERIA

4.1 Residential Receivers Noise Criteria

4.1.1 NSW Environmental Criteria for Road Traffic Noise

The ECRTN outlines the NSW Government's guidelines for road traffic noise assessment. The objectives of the criteria are to define acceptable road traffic noise levels, establish methods for assessing and measuring road traffic noise impacts and to identify the strategies that can be adopted to reduce road traffic noise.

In applying the road traffic noise criteria, the guideline considers a number of factors, including:

- Whether there is an existing road corridor and whether the road project is intended to increase traffic-carrying capacity substantially, or whether the mix of traffic would be substantially changed.
- Whether or not substantial changes to the alignment of a road are proposed, or whether the road is on a 'new' corridor.
- Whether the design/profile of a proposed road is to be altered substantially. In these cases there is an opportunity to consider noise reduction options in the design phase (for example, using tunnels, different pavement types or other at-road treatment options).
- Whether the criteria are being applied in relation to any redevelopment occurring adjacent to an established road.
- Whether the area affected is in an urban or rural environment, where the existing noise levels and response to additional noise will vary.

With consideration to the ECRTN, the Project is classed as a freeway or arterial road as it is a road handling through-traffic, with characteristically heavy and continuous traffic flows during peak periods.

'New' roads are defined in the ECRTN as roads on new road corridors, or corridors not previously used for the same category of road, and existing roads that are being substantially realigned.

'Redevelopments' are defined in the ECRTN as works "where it is proposed to increase traffic-carrying capacity, change the traffic mix or change the road alignment through design or engineering changes".

The ECRTN and ENMM's Practice Note (i) were used to determine the classification of 'new road' or 'road redevelopment' for each receiver location. The entire Project was classed as a 'new' road, with the exception of a small section south of the Clover Hill area, between approximate chainages 23000 and 23900, which was classed as a road 'redevelopment'. This classification of the Project for each receiver is consistent with the Environmental Assessment for the Project.

Table 10 provides the ECRTN road traffic noise target levels for residential receivers near new roads and redevelopment of existing roads. The target noise levels are applicable at 1 m from the most affected building façade and should aim to be achieved 10 years after Project opening.

It should be noted that the road traffic noise criteria are provided as target levels that are sought to be met where it is reasonable and feasible to do so with consideration to the ENMM.

Table 10 ECRTN Road Traffic Noise Criteria, dB(A)

Type of Development	Criteria		
	Day (7 am to 10 pm)	Night (10 pm to 7 am)	Where criteria are already exceeded
1. New freeway or arterial road corridor	LAeq (15hr) 55	LAeq (9hr) 50	The new road should be designed so as not to increase existing noise levels by more than 0.5 dB. Where feasible and reasonable, noise levels from existing roads should be reduced to meet the noise criteria. In some instances this may be achievable only through long-term strategies such as improved planning, design and construction of adjoining land use developments; reduced vehicle emission levels through new vehicle standards and regulation of in-service vehicles; greater use of public transport; and alternative methods of freight haulage.
2. Redevelopment of existing freeway / arterial road	LAeq (15hr) 60	LAeq (9hr) 55	In all cases, the redevelopment should be designed so as not to increase existing noise levels by more than 2 dB. Where feasible and reasonable, noise levels from existing roads should be reduced to meet the noise criteria. In some instances this may be achievable only through long-term strategies such as improved planning, design and construction of adjoining land use developments; reduced vehicle emission levels through new vehicle standards and regulation of in-service vehicles; greater use of public transport; and alternative

Type of Development	Criteria		
	Day (7 am to 10 pm)	Night (10 pm to 7 am)	Where criteria are already exceeded
			methods of freight haulage.

4.1.2 Acute Noise Levels

Consideration has been given to mitigation requirements for sensitive receivers exposed to 'acute' noise levels for the year 2024.

Acute noise levels are defined in the ENMM as being greater than or equal to 65 dB(A) LAeq (15hr) (day) and 60 dB(A) LAeq (9hr) (night).

4.1.3 Maximum Noise Levels

The ECRTN provides guidance in assessment of sleep arousal due to traffic noise impacts at residential receivers. The ECRTN recognises that sleep disturbance impacts are dependent on the following:

- The maximum noise level of an event.
- The number of occurrences.
- The duration of the event.
- The level above background or ambient noise levels.

The ECRTN identifies these issues but does not define how maximum noise events are to be determined or assessed. The ECRTN states that because "the relationship between noise, sleep disturbance and health is not fully understood at this stage, it is not possible to define fully how the different noise characteristics of road traffic should be measured to best estimate effects on sleep." The ECRTN acknowledges that the continuation of research into sleep disturbance and its assessment is important.

A review of international research in the ECRTN identifies that:

- Maximum internal noise levels below 50 – 55 dB(A) are unlikely to cause awakening reactions.
- One or two noise events per night with maximum internal noise levels of 65 – 70 dB(A) are not likely to significantly affect health and wellbeing.

Further guidance on the assessment of maximum noise levels are provided in the ENMM. For continuous rather than intermittent traffic flow, the ENMM suggests that the LAeq (9hr) (night) target noise level should sufficiently account for sleep disturbance impacts. The ENMM also recommends maximum noise pass-by events should not exceed the ambient LAeq noise levels by more than 15 dB(A), where the maximum noise level is greater than 65 dB(A).

An assessment of maximum noise pass-by levels has been undertaken as part of this assessment against the ENMM recommended level, and is detailed in Section 5.5.2.

4.2 Other Noise Sensitive Land Uses

The ECRTN provides traffic noise target levels for other sensitive land uses as shown in Table 11.

Table 11 ECRTN Road Traffic Noise Criteria at Noise Sensitive Land Uses, dB(A)

Sensitive	Criteria

land use	Day (7 am to 10 pm)	Night (10 pm to 7 am)	Where criteria are already exceeded
Existing school classrooms	45 LAeq (1hr) (internal)	-	To achieve the internal noise criteria in the short term the most practical mitigation measures are often related to building or façade treatments. Where existing levels of traffic noise exceed the criteria, all feasible and reasonable noise control measures should be evaluated and applied. Where this has been done and the internal or external criteria (as appropriate) cannot be achieved, the proposed road or land use development should be designed so as not to increase existing traffic noise levels by more than 0.5 dB(A) for new roads and 2 dB(A) for redeveloped roads.
Hospital wards	35 LAeq (1hr) (internal)	35 LAeq (1hr) (internal)	
Place of worship	40 LAeq (1hr) (internal)	40 LAeq (1hr) (internal)	
Active recreation	60 LAeq (15hr) (when in use)	-	
Passive recreation and school playgrounds	55 LAeq (15hr) (when in use)	-	
Commercial receivers	No noise criteria		N/A

5 OPERATIONAL NOISE IMPACT ASSESSMENT

5.1 Process for the Operational Noise Assessment

The methodology used in preparing this ONMR is summarised below:

Step 1: Identification of all noise sensitive receivers within the Project study area

Sensitive receivers have been identified with consideration to the ECRTN and are consistent with those identified in the Environmental Assessment for the Project.

Step 2: Measure existing (2012) noise levels with concurrent traffic counts

Noise monitoring of existing road traffic noise was undertaken in March and August 2012 at 14 locations along the existing Pacific Highway in the Project area to determine existing noise levels. Traffic count data was simultaneously recorded at five locations corresponding to the noise monitoring locations.

Step 3: Modelling of existing noise levels (2012)

Existing (2012) traffic conditions were modelled, using the traffic count data obtained during monitoring. Road traffic noise levels were then predicted at each of the 14 noise monitoring locations. The modelled results were compared with the measured noise monitoring data. This process was used to verify the noise model predictions for local conditions.

Step 4: Modelling of Future Existing noise levels (2014) to determine the applicable noise criteria

Future Existing (2014) traffic conditions were modelled on the existing Pacific Highway using projected traffic volume data supplied by RMS. Future Existing road traffic noise levels were predicted at each receiver and the relevant noise criteria selected for the Project with consideration to the ECRTN.

Step 5: Modelling of Future Development noise levels (2014 and 2024)

Year 2014 and 2024 development noise levels were modelled using projected traffic volume data and the Project detailed design. The predicted noise levels were assessed against the ECRTN and ENMM.

Step 6: Identify all options to mitigate road traffic noise (where required)

The results of Step 5 highlight any noise receivers that are predicted to exceed the ECRTN noise criteria. All options for noise mitigation measures that are available for these receivers were investigated with consideration to the ENMM. Acoustic treatment includes the use of road grades, low noise bridge joints, low noise pavements, noise barriers/mounds and architectural treatment of individual dwellings.

5.2 Operational Noise Modelling Methodology

Road traffic noise predictions were undertaken using the United Kingdom Department of Transport 'Calculation of Road Traffic Noise' (CoRTN) algorithm. CoRTN is recognised and accepted by OEH (formally DECCW) and adapted to Australian conditions through research undertaken by the Australian Road Research Board (ARRB). The CoRTN algorithm is implemented in SoundPlan noise modelling software V7.2 to predict noise levels for free-flowing traffic.

Noise predictions were undertaken for the following cases:

- Year 2014 Future Existing (Traffic flow on the existing alignment for year opening).
- Year 2014 Development (Developed road for year opening).
- Year 2024 Development (Developed road for 10 years after opening).

5.2.1 Noise Modelling Inputs

The traffic volumes for the Project were provided by RMS and are shown in Table 12. The traffic volumes for the future existing scenario were provided by RMS and are shown in Table 13.

The noise model inputs and assumptions are presented in Table 14.

Table 12 Development Traffic Volumes

Road Section	Traffic speed (km/h)	Development year 2014				Development year 2024			
		Day 15hr		Night 9hr		Day 15hr		Night 9hr	
		Hourly average	% HV	Hourly average	% HV	Hourly average	% HV	Hourly average	% HV
Main Carriageway – North of Bangalow Interchange (2way)	115 (day)	820	14	180	44	1010	13	220	42
Main Carriageway – South of Bangalow Interchange (2way)	120 (night)	900	13	200	41	1160	13	255	40
Ross Lane On Ramp – Northbound	80	120	4	20	7	140	4	20	0
Ross Lane Off Ramp – Southbound	80	80	4	10	0	100	4	15	0
Bangalow interchange Off Ramp – Northbound	80	60	8	10	13	75	7	10	10
Bangalow interchange On Ramp – Southbound	80	60	8	10	13	75	7	10	10
Bangalow Ramp Road	40	120	8	20	13	150	7	20	10
Ewingsdale – On Ramp – Northbound	80	510	8	105	8	625	8	130	8
Ewingsdale – Off Ramp – Northbound	80	105	8	20	11	125	8	30	9
Ewingsdale – On Ramp – Southbound	80	105	8	20	11	130	8	30	9
Ewingsdale – Off Ramp – Southbound	80	510	8	105	8	580	8	158	7
Ewingsdale – Pacific Highway Overpass	80	855	8	175	8	1040	8	215	8
Service Road – North of Bangalow	80	625	7	80	19	775	7	95	19
Service Road – South of Bangalow	80	125	6	15	17	160	6	20	18
Broken Head Road	80	55	4	10	0	65	4	10	0
Ross Lane	60	315	4	47	5	383	4	56	4

Table 13 Future Existing Traffic Volumes

Road Section	Traffic Speed (km/h)	Future Existing Year 2014			
		Day 15hr		Night 9hr	
		Hourly Average	% HV	Hourly Average	% HV
Existing highway South of Bangalow	Ross Lane to Ch 21500: 90 km/hr Ch 21500 to Dual Carriageway in Bangalow: 80 km/hr Dual Carriageway through Bangalow: 100 km/hr	1,371	10	325	29
Existing highway North of Bangalow	Bangalow to Coolamon Scenic Drive: 90 km/hr St Helena Hill (north side): 60 km/hr North of Ewingsdale on/off ramps: 100 km/hr	927	12	213	37
Ross Lane	60 km/hr	323	4	47	5
Broken Head Road	80 km/hr	81	4	11	0

Table 14 Noise Model Inputs and Assumptions

Input / Assumption	Data Incorporated into Noise Model
Verification model traffic speeds	Obtained from traffic count data
Noise model	SoundPlan Version 7.2
Prediction algorithm	CoRTN
Angle increment	1.0 degree
Reflection depth	0
Number of reflections	0
Maximum search radius	2500
Contour grid spacing	20
Contour height above ground	1.5 m
Grid interpolation field size	9 x 9
Grid interpolation min / max	2 dB(A)
Grid interpolation difference	0.1 dB(A)
Calibration adjustments	+0.4 Day and +0.0 Night as per Section 5.3.1
Risk allowance	+2.0 Day and +2.3 Night as per Section 5.3.2
Road surface	• Concrete pavement correction: +3 dB(A) (Main carriageway except where Stone mastic asphalt (SMA))

Input / Assumption	Data Incorporated into Noise Model
	• Dense grade asphalt pavement correction: +0 dB(A) (service roads and local roads) • Stone Mastic Asphalt pavement correction: – 2 dB(A)
Australian Road Research Board correction	• -1.7 dB(A) for 'façade' • -0.7 dB(A) for 'free-field'
Road gradient	Taken into account based on the design model
Façade correction	+2.5 dB(A) to account for noise reflected from the façade of a dwelling
Source height	• Cars: 0.5 m • Truck engines: 1.5 m • Truck exhausts: 3.6 m (Exhaust modelled as 8 dB(A) quieter than the truck engine source)
Receiver heights	• Ground floor – 1.5 m above building ground level • First floor – 4.5 m above building ground level
Ground absorption	• G = 0.6 (all areas except over water) • G = 0.0 (over water)
CoRTN conversion factors	CoRTN predicts LA10 (1hr) noise levels which is converted to the LAeq (1hr) descriptor with a -3 dB(A) correction factor. Since hourly average traffic data was input for the day (15hr) and night (9hr) in the model, the LAeq (1hr) is then equal to the LAeq (15hr) or LAeq (9hr), respectively.
Design alignment terrain	100% design alignment
Surrounding terrain outside of design alignment	As per the concept design surveys
Buildings	Obtained from aerial photography and field observations

5.3 Noise Model Verification

The CoRTN algorithm and noise modelling process was verified using the long-term road traffic noise monitoring data and simultaneous traffic counts undertaken for the Project in March 2012 and August 2012.

Road traffic noise levels were modelled using the measured traffic data for the existing (2012) conditions. The results of this modelling were then compared against the measured noise levels at each of the 14 noise monitoring locations. A statistical analysis of the results was then conducted to determine the mean difference between measured and predicted results, as well as the standard deviation, which indicates the degree of spread in the results. This was undertaken for both day and night periods.

The 85th percentile measured traffic speed was used for noise model verification.

A comparison of the modelled and measured results is shown in Table 15.

Table 15 Noise Model Verification – March 2012, dB(A)

Receiver	Day LAeq (15hr)	Night LAeq (9hr)

	Measured	Modelled	Predicted Difference	Measured	Modelled	Predicted Difference
L1	58.0	56.4	-1.6	55.6	54.8	-0.8
L2	50.2	49.6	-0.6	46.7	47.9	1.2
L3	51.4	50.3	-1.1	51.1	48.4	-2.7
L4	57.0	54.3	-2.7	55.1	52.0	-3.1
L5	56.3	56.8	0.5	52.5	55.4	2.9
L6	58.8	57.5	-1.3	57.3	55.6	-1.7
L7	60.1	62.1	2.0	58.5	60.5	2.0
L8	61.5	61.5	0.0	58.2	59.8	1.6
L9	64.4	63.0	-1.4	60.7	61.5	0.8
L10	57.3	56.2	-1.1	55.2	54.6	-0.6
L11	49.0	51.0	2.0	50.9	48.5	-2.4
L12	61.3	57.1	-4.2	59.0	54.7	-4.3
L13	60.2	57.8	-2.4	58.0	55.3	-2.7
L14	64.7	66.7	2.0	63.8	64.4	0.6
Mean difference			-0.7			-0.7
Standard deviation (Risk allowance)			1.8			2.1

Note 1: A positive correction factor is applied (i.e. Calibration adjustment = - mean difference)

Note 2: Modelled results include a -3 dB(A) CORTN conversion factor for all receiver locations (see Table 14).-

The nature of environmental noise monitoring means that there will be variability in the noise monitoring results which are influenced by environmental factors (such as meteorological conditions, the ambient noise environment and local wildlife) other than road traffic noise.

Analysis of Table 15 indicates that the difference between measured and modelled results vary more than others at location L12. In addition, the measured noise levels at location L11 during the March monitoring period were believed to be affected by local wind and insect noise, particularly at night time, which is likely to have raised the measured noise levels, meaning they may not be representative of road traffic noise. With consideration to Austroads *An Approach to the Validation of Road traffic Noise Models*, 2002 (Austroads), if a data point does not appear to fit within a normal distribution, a number of options are available, including:

- Further measurement and prediction data can be collected for these locations and included in the data set.
- Data could be removed from the set of predicted differences, leaving a set that appears to be more normally distributed.

Additional road traffic noise monitoring was undertaken at locations L05, L11 and L12 during August 2012 to supplement the March 2012 noise monitoring results. Road traffic count data and weather data was also recorded during this monitoring period. Data obtained during this monitoring period was then substituted into the noise model verification results. A summary of the noise monitoring data and traffic count results are provided below in Table 16, Table 17 and Table 18. The monitoring equipment and methodology used for model verification were

consistent with the March 2012 monitoring. The noise loggers were found to be within calibration before and after the monitoring period.

Table 16 Road Traffic Noise Monitoring Summary Results – August 2012, dB(A)

Monitoring Location	Day LAeq (15hr)	Night LAeq (9hr)
L05	58	54
L11	47	43
L12	60	57

Table 17 Traffic Count Locations and Description

Site	Location	Traffic Direction	Lane No	Monitoring Period
1 N	Pacific Hwy near Bangalow Road	North	1 & 2	06/08/12 – 20/08/12
1 S	Pacific Hwy near Bangalow Road	South	1	
2 N	Pacific Hwy near Macadamia Castle	North	1	
2 S	Pacific Hwy near Macadamia Castle	South	1	

Table 18 Weekday Traffic Count Summary

Site	Average vehicles per hour Day (15 hour)		Average vehicles per hour Night (9 hour)		Mean vehicle speed		85%ile vehicle speed		Sign-posted speed limit
	Light Vehicles	Heavy Vehicles	Light Vehicles	Heavy Vehicles	Day	Night	Day	Night	
1N	232	53	38	46	88	90	100	93	100
1S	269	63	55	22	94	95	101	106	100
2N	308	47	61	49	83	86	90	97	90
2S	320	65	53	21	84	85	91	98	90

Table 19 displays the supplemented noise verification results. Monitoring and modelling results for L5, L11 and L12 have been replaced with August 2012 monitoring data.

Table 19 Noise Model Verification – Supplemented, dB(A)

Receiver	Day LAeq (15hr)			Night LAeq (9hr)		
	Measured	Modelled	Predicted Difference	Measured	Modelled	Predicted Difference
L01	58.0	56.4	-1.6	55.6	54.8	-0.8
L02	50.2	49.6	-0.6	46.7	47.9	1.2
L03	51.4	50.3	-1.1	51.1	48.4	-2.7
L04	57.0	54.3	-2.7	55.1	52.0	-3.1
L05	58.3	57.9	-0.4	54.2	54.1	-0.1

Receiver	Day LAeq (15hr)			Night LAeq (9hr)		
	Measured	Modelled	Predicted Difference	Measured	Modelled	Predicted Difference
L06	58.8	57.5	-1.3	57.3	55.6	-1.7
L07	60.1	62.1	2.0	58.5	60.5	2.0
L08	61.5	61.5	0.0	58.2	59.8	1.6
L09	64.4	63.0	-1.4	60.7	61.5	0.8
L10	57.3	56.2	-1.1	55.2	54.6	-0.6
L11	47.2	52.0	4.8	42.9	49.1	6.2
L12	59.7	58.2	-1.5	56.7	55.4	-1.3
L13	60.2	57.8	-2.4	58.0	55.3	-2.7
L14	64.7	66.7	2.0	63.8	64.4	0.6
Mean difference			-0.4			0.0
Standard deviation (Risk allowance)			2.0			2.3

Note 1: A positive correction factor is applied (i.e. Cal bration adjustment = - mean difference)

Note 2: Modelled results include a -3 dB(A) CORTN conversion factor for all receiver locations (see Table 14).

With consideration to Austroads, the verification results are within the desired accuracy for the number of monitoring locations. Austroads provides a desired accuracy of the mean predicted difference (PD) of approximately +/-1.4 dB(A) for 14 monitoring locations. Therefore the mean PD of -0.4 (day) and 0.0 (night) are considered satisfactory. The standard deviations of 2.0 (day) and 2.3 (night) also compare favourably with the Austroads recommended maximum standard deviation of 2.5. Based on the above analysis, the predicted results and measured results have an acceptable variance.

5.3.1 Calibration Adjustment

Calibration adjustments have been determined based on the modelling verification process. The following calibration adjustments have been applied to all modelling scenarios:

- Day +0.4 dB(A)
- Night +0.0 dB(A)

5.3.2 Risk Allowance

A risk allowance of one standard deviation has been included to reduce design operational risks and improve modelling confidence limits. The following risk allowance corrections have been applied to all modelling scenarios:

- Day +2.0 dB(A)
- Night +2.3 dB(A)

With the calibration adjustment and risk allowance included in the modelling predictions, the results provide a high level of confidence in the accuracy of the noise model used for predicting traffic noise levels for the Project.

5.4 Design Noise Mitigation Treatments

5.4.1 Noise Mounds and Barriers

Minimum length and height of noise walls and noise mounds are as follows:

- Noise barrier, Ewingsdale:
- North of the tunnel on the east side of the southbound carriageway and merges in with the noise mound (described below).
- 4.5 m high and 580 m in length
- Transparent to retain landscape views of Cape Byron with trees, shrubs and grasses planted on the lower slopes
- Noise mound, Ewingsdale:
- Merges in with the noise wall on the edge of the southbound carriageway.
- 8 m high and 945 m in length
- Designed to be integrated with the natural landscape, densely vegetated on both sides to provide a visual buffer to Ewingsdale and to retain the dominance of the scenic landscape.
- The initial 280 m portion of the existing transparent noise wall running parallel to the northbound lanes of the Pacific Highway from St Helena Hill to Ewingsdale is to be reinstated as part of the Project Design. At the time of writing this report, the design for this wall is yet to be finalised.
- Noise mound, Clover Hill (Bangalow):
- 5.5 m high increasing to 11 m high then dropping down to 2.5 m high
- 515 m in length running parallel to the existing Pacific Highway
- Designed to be concealed by landscape planting on both sides
- Noise mound, Newrybar:
- 4.5 m high and 405 m in length running along the northbound carriageway
- Designed to integrate with the natural landform and vegetation pattern

5.4.2 SMA Pavement Surfaces

SMA low noise pavement wearing surfaces have been provided on the Main Carriageways and Ramps from:

- Chainage 18450 (southern approach slab of twin bridges over Minor Creek) to Chainage 21600 (northern approach slab of twin bridges over Skinners Creek).
- Chainage 23000 (dual carriageway overpass south of Bangalow) to Chainage 25700 (northern approach slab of bridge over Tinderbox Road) (through Bangalow area).
- Front face of the northern portal of St Helena Tunnel to the northern extent of the Project (Ewingsdale area).

5.4.3 Architectural Treatments

Architectural treatments have been provided by RMS to a number of residences along the Project.

5.5 Predicted Design Noise Levels (based on road design model)

5.5.1 Residential Receivers Assessed Against ECRTN and ENMM

Future development road traffic noise levels for the years of Project opening (2014) and 10 years after Project opening (2024) have been predicted using the verified road traffic noise model and input data detailed in Sections 5.2, 5.3 and 5.4.

The predicted day and night-time road traffic noise levels for all sensitive receivers are shown in Appendix R, along with an assessment against the ECRTN criteria. Appendix R provides a comparison of the existing, project opening and future road traffic noise levels. Appendix R also identifies those receivers that are predicted to exceed the ECRTN base criteria or allowance criteria (i.e. increase by more than 0.5 dB(A)) as well as any receivers predicted to exceed the 'acute' noise criteria.

From Appendix R, for the Project Year 2024, 40 residences were predicted to exceed the acute noise criteria and 93 residences were predicted to exceed the ECRTN base or allowance criteria. Of these receivers predicted to exceed the acute noise criteria or ECRTN, all have received at-residence acoustic treatment, except for fourteen properties. These receivers are listed below in Table 20.

Day and night-time noise contour plots for the Year 2014 and 2024 Design are shown in Appendix S. Traffic noise contours are provided at 1.5 metres (ground floor level). All noise levels include the corrections detailed in Table 14 as well as the calibration adjustment and risk allowance.

Table 20 Summary of Receivers Predicted to Exceed ECRTN

Receiver ID	Address	Approx. Project Chainage	Increase from Future Existing at 2024 dB(A)	Level of Exceedance from ECRTN dB(A)	Preferred Treatment (ENMM)
T7	289 Friday Hut Road	14000	4.0	0.5	Marginal exceedance at 10-year horizon. No additional treatment at this stage. Compliance noise monitoring recommended.
T10	249 Friday Hut Road	13700	4.0	0.5	Marginal exceedance at 10-year horizon. No additional treatment at this stage. Compliance noise monitoring recommended.
T13	245 Friday Hut Road	13600	3.5	0.5	Marginal exceedance at 10-year horizon. No additional treatment at this stage. Compliance noise monitoring recommended.
72-HO1	21 McLeish Road, Tintenbar	13000	1.5	1.0	RMS has begun negotiations with property owners to undertake architectural acoustic treatments.
80-HO1	15 McLeish Road, Tintenbar	13000	1.5	1.0	RMS has begun negotiations with property owners to undertake architectural acoustic treatments.
109-HO1	49 Ross Lane, Tintenbar	13100	1.0	0.5	RMS has begun negotiations with property owners to undertake architectural acoustic treatments.
894-HO3	5 Marblewood Place, Bangalow	24000	1.0	0.5	Marginal exceedance. Noise mound and low noise pavement provided. No additional treatment at this stage. Compliance noise monitoring recommended.
897-HO6	3 Marblewood Place, Bangalow	24000	1.0	0.5	Marginal exceedance. Noise mound and low noise pavement provided. No additional treatment at this stage. Compliance noise monitoring recommended.
897-HO8	9 Marblewood Place, Bangalow	24000	1.0	0.5	Marginal exceedance. Noise mound and low noise pavement provided. No additional treatment at this stage. Compliance noise monitoring recommended.
897-HO9	11 Marblewood	24000	1.0	0.5	Marginal exceedance. Noise mound and low noise pavement provided. No

Receiver ID	Address	Approx. Project Chainage	Increase from Future Existing at 2024 dB(A)	Level of Exceedance from ECRTN dB(A)	Preferred Treatment (ENMM)
	Place, Bangalow				additional treatment at this stage. Compliance noise monitoring recommended.
898-HO1	13 Marblewood Place, Bangalow	24000	1.0	0.5	Marginal exceedance. Noise mound and low noise pavement provided. No additional treatment at this stage. Compliance noise monitoring recommended.
898-HO5	24 Blackwood Crescent, Bangalow	24000	1.5	1.0	Marginal exceedance. Noise mound and low noise pavement provided. No additional treatment at this stage. Compliance noise monitoring recommended.
1314-HO1	Myocum Road, Ewingsdale	Beyond Project	1.5	1.0	RMS has begun negotiations with property owners to undertake architectural acoustic treatments.
1314-HO2	Myocum Road, Ewingsdale	Beyond Project	2.5	2.0	RMS has begun negotiations with property owners to undertake architectural acoustic treatments.

Additional discussion regarding the six receivers (894-HO3, 897-HO6, 897-HO8, 897-HO9, 898-HO1 and 898-HO5) within Bangalow that are predicted to exceed the ECRTN is provided below.

An initial investigation into additional noise barrier/mound requirements to meet the ECRTN at these six receivers was undertaken with consideration to Practice Note (iv) of the ENMM. This investigation revealed that an increase in the height of the design Clover Hill noise mound did little to reduce the Design noise levels at some of these receivers. This result indicates that the traffic noise affecting these receivers is primarily coming from south of the noise mound.

Considering the natural topography in the area south of the Clover Hill noise mound, an additional barrier would need to be a substantial height to intersect the line-of-sight and be effective at reducing noise levels. Investigations reveal that a noise barrier of up to 100m in length and between 2m - 4m in height would be required to meet the ECRTN targets at these six affected receivers. It is estimated that the costs associated with a noise barrier of this size would be in the order of $1M.

Furthermore, with consideration to the ENMM, the six affected receivers are a relatively small group. In this situation, the recommended approach for additional treatment would be in the form of architectural treatment, since it is likely to be more cost effective than a noise barrier. It is estimated that the cost per residence for architectural treatment would be in the order of $20,000 per residence, far less than the cost of the required noise barrier.

Based on the above cost analysis and considering the required reduction in 2024 Design noise levels is in the order of 0.5 - 1.0 dB(A), architectural treatment would be the more reasonable approach in this case, with consideration to the ENMM.

Due to the marginal predicted exceedances for the 2024 Design noise levels, which are well within the noise model risk allowance, negotiations for architectural treatment at these six receivers will not be commenced at this stage. Compliance noise monitoring will be undertaken at these locations to assess the adequacy of the traffic noise modelling and mitigation measures implemented as part of the Project in the first instance. Should exceedances be identified, further mitigation measures would then be considered.

5.5.2 Maximum Noise Level Assessment

A maximum noise level assessment has been undertaken to assess the potential for night-time sleep disturbance events from road traffic noise.

The ECRTN does not provide specific criteria relating to sleep disturbance events, however does recommend that an assessment of maximum noise levels from road traffic be undertaken where impacts may occur during the night.

The ECRTN provides a literature review of international sleep disturbance research, which indicates that:

- Maximum internal noise levels below 50-55 dB(A) are unlikely to cause awakening reactions, and
- One or two noise events per night with maximum internal noise levels of 65-70 dB(A) are not likely to significantly affect health and well-being.

Practice Note (iii) of the ENMM states:

At locations where road traffic is continuous rather than intermittent, the $L_{eq(9hr)}$ (night) target noise levels should sufficiently account for sleep disturbance impacts.

However, where the emergences of L_{max} over the ambient L_{eq} is equal to or greater than 15 dB(A), the $L_{eq(9hr)}$ criteria may not sufficiently account for sleep disturbance impacts.

A “maximum noise event” can therefore be defined as any pass-by for which

$L_{max} – L_{eq(1hr)} \geq 15$ dB(A)

Sleep disturbance impacts are likely to be dependent on the following:

- Maximum noise level of an event.
- Number of occurrences.
- Duration of the event.
- Level above background or ambient noise levels.

The Project has been designed to minimise gradients along the Project length, allowing vehicles to maintain a constant speed. As a consequence, the use of engine braking on heavy vehicles and frequency of gear changing is likely to be significantly reduced compared to the existing highway. In addition, the Project is likely to reduce the maximum noise levels due to the following:

- An improved road surface which is likely to reduce road irregularities and associated maximum noise level events.
- The use of low-noise pavements along sections of the alignment (Section 5.4.2).
- The use of low-noise bridge joints.
- Minimised road gradients and large radii corners allowing vehicles to maintain more constant speeds.
- Proposed mitigation design such as earth mounds and noise walls (Section 5.4.1).
- A number of residences in close proximity to the design alignment have received acoustic treatment (Section 5.4.3).

Furthermore, the design of at-road and at-residence noise mitigation, by RMS, has been based on the predicted night-time LAeq (9hr) noise levels and therefore, with consideration to the ECRTN and ENMM should adequately address the impact of heavy vehicles.

Notwithstanding the above, an assessment of maximum noise levels has been completed as part of this ONMR.

Maximum noise levels from the Project were predicted using the SoundPlan V7.2 noise modelling software. The sound level used to predict the maximum noise level, L_{max}, is based on noise measurement results from four monitoring locations within close proximity to the existing highway and where occurrences of heavy vehicle engine braking were observed. A 95th percentile maximum noise level was derived from monitoring data at these locations and was used to represent a typical maximum noise level event. Based on monitoring data, a noise source with a sound power of 122 dB(A) was modelled as a moving point source along the Project design as well as the remaining service road (existing Pacific Highway) to represent a maximum noise level event.

The L_{max} noise levels at the four monitoring locations were predicted and compared against the 95th percentile measured results, as shown in Table 21. The results of the verification found that modelled L_{max} noise levels from the existing Pacific Highway were within 2 dB(A) of the measured L_{max} noise levels. The above variance is considered acceptable and verifies the noise model predictions.

Table 21 Maximum Noise Level Model Verification, dB(A)

Monitoring Location	Measured 95th Percentile L_{max}	Modelled L_{max}	Difference
L07	80	**79**	**-1**
L08	76	**75**	**-1**
L09	81	**79**	**-2**
L14	84	**86**	**+2**

Predictions of future Project maximum noise levels were then made at all sensitive receivers. The results are detailed for each receiver in Appendix R. It is important to note that the predicted maximum noise level of an individual truck passby will not change from Project opening (2014) to 10 years after Project opening (2024), however, based on the projected traffic volume increases, the number of maximum noise level events per night will increase.

An analysis of the projected hourly traffic volumes supplied for the Project indicates that there will be approximately 100 heavy vehicle passbys per hour during the night time period on the main carriageway for the year 2024. Assuming 30% of heavy vehicles use engine braking and reach the adopted maximum noise level, this equates to approximately 30 events per night reaching the predicted maximum noise levels.

A comparison of heavy vehicle volumes on the existing Pacific Highway and the projected volumes for this road after the Project development (where it will become a service road) indicates a reduction of approximately 77% in the number of heavy vehicle passbys for areas north of Bangalow and a reduction of approximately 96% for areas south of Bangalow. That is, sensitive receivers located within proximity to the existing Pacific Highway will experience a significant decrease in the number of maximum noise level events per night as a result of the Project.

The results of modelling, including the at-road noise mitigation requirements of the Project design, indicate that approximately 70% of receivers are expected to experience maximum noise levels of less than 65 dB(A). Of the receivers that are predicted to exceed 65 dB(A) L_{max}, a large proportion of these are located adjacent to the existing Pacific Highway in areas where the Project will move traffic further away and also reduce heavy vehicle traffic on this road, resulting in a significant decrease in the magnitude and/or number of maximum noise level events per night.

There are also predicted to be a number of receivers that will be exposed to significant increases in maximum noise levels from the Project which exceed the LAeq(9hr) road traffic noise level by more than 15 dB(A). All of these receivers have received acoustic treatment in the form of architectural treatment to the dwelling or noise mounds/walls located adjacent to the Project in this area.

5.5.3 Other Sensitive Land Uses Assessed Against ECRTN and ENMM

A discussion of each sensitive land use is provided below:

- The noise levels at the Newrybar Public School and the Newrybar Public School sporting grounds are predicted to reduce as a result of the Project. Acoustic treatment has been provided in this area in the form of a noise mound adjacent to the northbound carriageway. Additional mitigation measures are not required.
- The noise levels at the Macadamia Castle are predicted to reduce. Modelling of existing road traffic noise levels indicate that the ECRTN passive recreation criterion of 55 dB(A) LAeq(15hr) is currently exceeded in the recreational area of the Macadamia Castle premise. Noise levels in the western part of the recreational area will increase as a result of the new alignment being located closer than the existing one. However, in the central and eastern parts of the site traffic noise levels are not predicted to change significantly as a result of the new alignment at Project opening (2014). Mitigation measures are not required at commercial premises.
- The noise levels at the Feros Village Bangalow are predicted to reduce therefore mitigation measures are not required.
- The noise levels at the Ewingsdale Community Hall and The Church of Columbia are predicted to increase and exceed the ECRTN noise criteria. Acoustic treatments of upgraded windows have been provided by the RMS.

5.6 Traffic Noise Mitigation Measures

In the design of a new road, traffic noise mitigation options typically include:

- Minimising road gradients (treatment at the source).
- Low-noise pavement surfaces (treatment at the source).
- Low noise bridge joints (treatment at the source).
- Earth mounds and/or noise walls at the roadway edge (treatment in the pathway).
- Architectural treatment of individual houses (treatment at the receiver).

The RMS carried out extensive investigations into noise impacts of the Project as part of the Environmental Assessment at Concept Design stage. These mitigation measures included minimum location, length and heights of noise mounds and noise walls and the use of low-noise pavement along specific sections of the Project. These noise mitigation measures have been incorporated into the detailed design and included in this ONMR. The RMS has also carried out at-residence acoustic treatment at nominated receivers along the Project alignment.

5.6.1 Stakeholder Consultation

Community consultation was undertaken throughout the design stage of the Project with regards to operational noise mitigation:

- RMS conducted extensive consultation with affected residents throughout the design stage to determine at-residence acoustic treatments, having regards to the predicted impacts, the specifics of each dwelling and the landowners' preferences.
- RMS and Baulderstone jointly presented a review of operational noise management on the Project. The presentation was given to both separate landowner groups and the broader community between the 19 March and 26 March 2013 to gather the community's views and opinions. The presentation included a review of operational noise mitigation measures, including the improvement in road gradients, low pavement sections, noise walls and mounds. A copy of the meeting notes is provided in Appendix T.

The ONMR was forwarded to the NSW Environment Protection Authority (EPA) for comments on 11 March 2013, which is within 6 months of construction commencement with consideration to MCoA 2.19. EPA advised on 02 May 2013 that, from its point of view, this ONMR appropriately addresses operational noise issues.

Further discussion of noise mitigation options, as detailed in the ENMM, is provided in the following sections.

5.6.2 Low-Noise Pavements

In areas with posted traffic speeds of 70 km/hr or more, for all vehicles in a reasonable state of maintenance, the dominant source of road traffic noise is in the interaction between the road pavement and the tyres. Therefore, the reduction of road tyre noise can be a useful noise reduction treatment.

The type of road surface can have a significant impact on the level of traffic noise generated by the pavement and tyre interaction, as indicated in Table 3.1 of the ENMM, detailed below.

Table 22 Road Surface Noise Corrections, Relative to Dense Graded Asphaltic Concrete (Source: ENMM)

Surface Type	Noise level variation, dB(A)	
	Traffic Noise	Individual vehicles pass-by noise

		Cars	Trucks
14 mm chip seal	+ 4.0	+ 4.0	+ 4.0
Portland cement concrete: tyned and dragged	0 to + 3.0	+ 1.0 to + 3.5	- 1.0 to + 1.0
Cold overlay	+ 2.0	+ 2.0	+ 2.0
Portland cement concrete: exposed aggregate	- 0.5 to - 3.0	- 0.1	- 6.7
Stone mastic asphalt	- 2.0 to - 3.5	- 2.2	- 4.3
Open graded asphaltic concrete	0 to - 4.5	- 0.2 to - 4.2	- 4.9

It should be noted that open graded asphalt has a limited life with respect to traffic noise reduction, because of the clogging of air voids over time. This in turn reduces the effectiveness of noise reduction.

Stone mastic asphalt (SMA) pavement will be used throughout a significant portion of the Project, as detailed in Section 5.4.2. Other areas of the main carriageway will use concrete with transverse tyning and longitudinal hessian drag. The service road and other local roads will remain as dense graded asphaltic concrete. Table 14 details the corrections applied for each road surface.

5.6.3 Minimising Road Gradients

Reducing the road gradient can minimise road traffic noise levels through creating smoother traffic flows and reducing acceleration noise and engine/exhaust brake noise. The ENMM states that a "*5% reduction in road gradient will reduce Leq traffic noise levels by about 1.5 dB(A)*".

The Project design has minimised road gradients as much as possible, particularly in areas such as St Helena hill and significantly reduces the road gradients when compared to the existing Pacific Highway.

5.6.4 Low-Noise Bridge Joints

The Project has six twin bridges and two overbridges. Bridge joints have been designed and selected to reduce vehicle noise impacts.

Standard bridge joints have been designed in accordance with RMS Bridge Technical Direction BTD 2008/10, which considers the noise impacts of joints. The joints have been designed to be flat and provide a smooth transition from the bridge deck to the approach slabs.

Further details are provided below:

- Finger plate expansion joints are provided at the abutments to accommodate the movement of the twin bridges. A fingerplate joint type is selected due to the skew angle, as this joint type can be easily manufactured to suit the skew, without gaps occurring between the fingers. The rigid fixing of the joint to the deck and abutment, combined with the single steel contact surface means that the vibrations due to vehicular use are minimal and the noise emitted is limited.
- Strip seal joints are used where justified by the movement range and skew of the bridge. The effect of racking of the gland due to the skew has been discussed with the joint manufacturer and is not detrimental to the performance of the joint. The rigid fixing of the joint to the deck and abutment, combined with the single steel contact surface means that the vibrations due to vehicular use are minimal and the noise emitted is limited.

5.6.5 Roadside Noise Mounds and Noise Walls

Acoustic barriers and noise mounds provide immediate reductions in road traffic at the shielded properties. To gain maximum effectiveness the noise wall or noise mound must intersect the line-of-sight between the traffic noise sources and sensitive receiver. The closer its location to the noise source or receiver, the greater the attenuation provided.

With consideration to Practice Note (iv) of the ENMM, earth mounds and noise walls should generally only be considered as reasonable and feasible when a group of 3 or more affected sensitive receivers exist. In addition, earth mounds and noise walls are most effective when the receiver is close (e.g. within 100 meters) to the traffic noise source and are subject to adequate space within the corridor and access to fill material. For an individual receiver, architectural treatment would generally be the recommended option.

The design of noise walls and mounds were provided in the detailed design of the Project, as detailed in Section 5.4.1, which includes the use of earth mounds and/or noise walls at Ewingsdale, Bangalow and Newrybar. These noise mitigation measures have been included in the noise model and predictions of future Project noise levels.

All noise walls and earth mounds shall be constructed as soon as possible during the construction phase.

5.6.6 At-Residence Treatment

Individual house treatments can be provided where the external road traffic noise criteria (as prescribed in the ECRTN) will be exceeded and other mitigation measures are impractical or not cost-effective. Architectural treatments may also be required in conjunction with other mitigation measures such as low-noise pavements or noise barriers if reasonable and feasible.

With consideration to the ENMM, “mitigation measures should be designed to achieve the internal noise levels that would have prevailed had the external traffic noise criteria been able to be achieved. Most buildings will achieve an internal noise level 10 dB(A) below the external noise level with the windows open, without providing additional treatment.”

Approaches to the acoustic treatment of buildings include:

- Improved window glazing and door construction in the facades exposed to the road.
- The installation of fresh air ventilation systems, which allows windows and doors to be closed.
- The installation of courtyard walls.

The RMS has identified a number of residences as requiring architectural treatment and has carried out negotiations with the community. Theses residences are generally isolated and have not benefited substantially from at-road noise mitigation. A list of the treated residences is provided in Appendix R.

5.7 Delayed Opening

This report is based on the Project opening in 2014. Should the opening occur in 2015, traffic volumes may differ from those adopted in this assessment. On the basis of a traffic volume increase by 3% between 2014 and 2015 (which can generally be associated with developing areas), the increase in noise levels compared to those predicted in this report would be in the order of 0.1 dB(A). This is considered insignificant and would not affect the findings of this report.

6 POST CONSTRUCTION NOISE MONITORING

Schedule 2 – 3.3 of the MCoA specifies that:

“No later than one year after commencement of operation of the project, or as otherwise agreed by the Director General, the Proponent shall undertake operational noise monitoring to compare actual noise performance of the project against noise performance predicted in the review of noise mitigation measures required by condition 2.19 and prepare an Operational Noise Report.”

Monitoring of operational noise shall be undertaken with consideration to the ENMM and Australian Standard AS 2702 *Acoustic Methods of measurement of Road Traffic Noise*. Classified traffic monitoring shall be conducted simultaneously with the noise monitoring to identify traffic flows and mixes.

The primary aim of the monitoring will be to assess the adequacy of the traffic noise mitigation measures implemented as part of the Project. Where the operational noise monitoring indicates that actual noise levels exceed the predicted Project noise levels for opening year (2014), the adequacy of noise mitigation measures will be reviewed in accordance with the ENMM. Additional noise treatments may be required to achieve the design noise levels, where this is feasible and reasonable.

Noise monitoring locations should be selected to provide a reasonable distribution along the Project length and be focused on the potentially most affected noise receivers. Noise monitoring locations will be selected through consultation with RMS.

An operational noise monitoring report will be prepared within 60 days following the noise monitoring, which will meet the requirements of Schedule 2 – 3.3 of the MCoA (as detailed in Item 2 of Table 3).

7 CONCLUSIONS

An assessment of the operational noise impacts has been undertaken for the Tintenbar to Ewingsdale Pacific Highway Upgrade Project.

This report is provided as a Final Design Operational Noise Management Report. Noise modelling and predictions have been based on the current Detailed Design of the alignment.

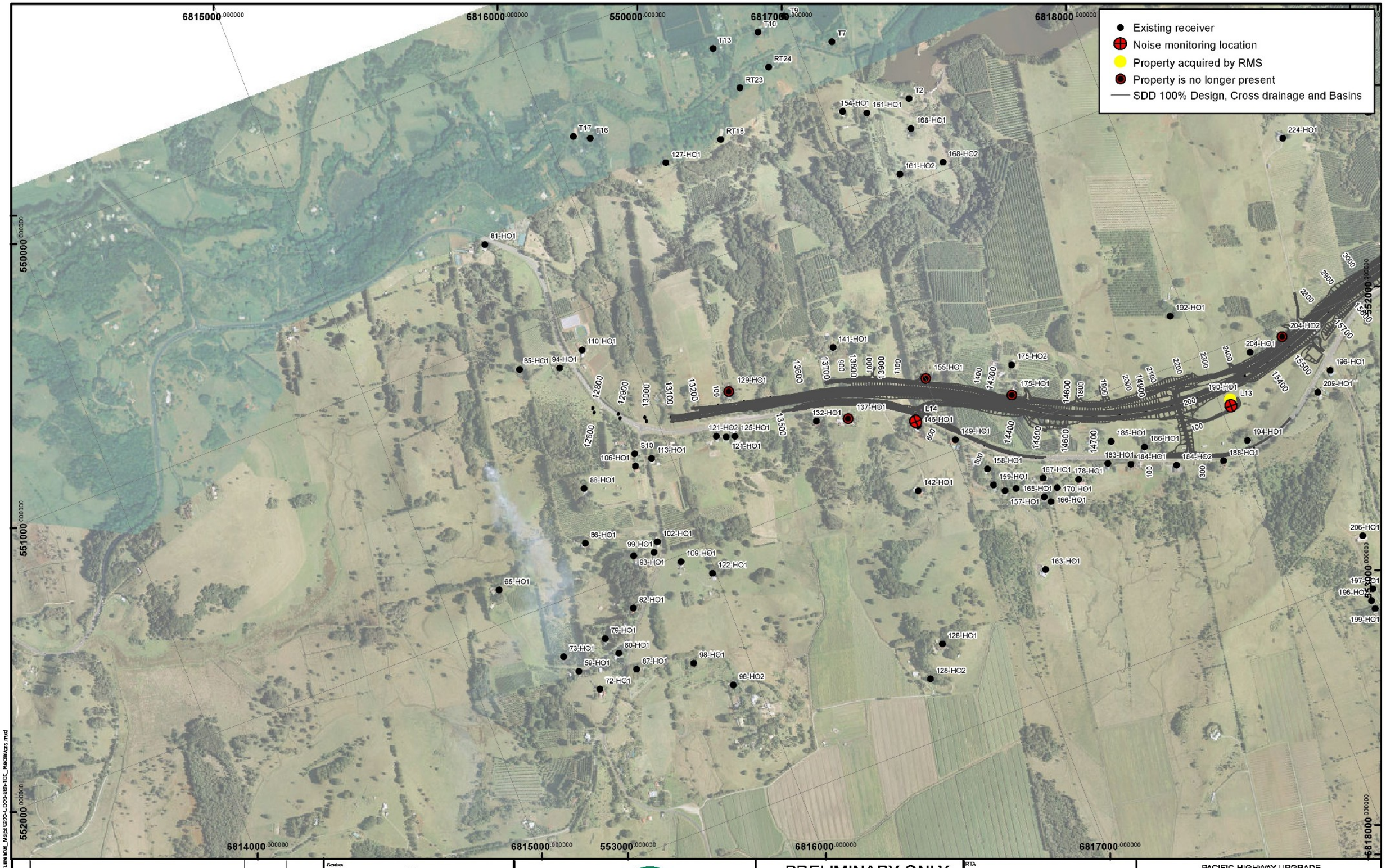
The following points summarise the results of the assessment:

- An assessment of the Project noise levels against the ECRTN identified a number of receivers that are predicted to exceed the ECRTN base or allowance noise criteria. All of these receivers have received at-residence treatment, except for fourteen receivers, as listed and discussed in Table 20 and Section 5.5.1.
- A maximum noise level assessment identified a number of receivers that would be exposed to maximum noise level events. All of these receivers have been provided with acoustic treatment in the form or at-residence treatment of noise mounds/walls within the design corridor.
- A discussion on noise mitigation measures provided as part of the Project is provided in Section 5.6.

8 REFERENCES

- Austroads: An Approach to the Validation of Road traffic Noise Models, 2002
- Australian Standard AS 2702 Acoustic Methods of measurement of Road Traffic Noise
- Environmental Criteria for Road Traffic Noise 1999 (EPA 1999)
- Environmental Noise Management Manual (RTA 2001)
- Tintenbar to Ewingsdale Pacific Highway Upgrade Environmental Assessment – Working Paper 8: Noise and Vibration Assessment (RTA 2008).

Appendix A – Receiver Maps



Issue	Description	Date	Approved
F2	100% DESIGN	05.03.14	EM

50mm on Original

Scales

Metres

0 50 100 200 300 400 500

1:13000

Hyder

müller + horoth

BAULDERSTONE

GHD

CM+

PRELIMINARY ONLY

NOT TO BE USED FOR CONSTRUCTION

Original Size	A3	Drawn	SW
Coordinate System	MGA ZONE 56	Designed	TG
Height Datum	AHD	Date Printed	5/03/2014 -3:22:02 PM

Filename: G00-UD00-SKH-100_Recievers.mxd

RTA Reg'n no:

NSW GOVERNMENT Transport Roads & Maritime Services

PACIFIC HIGHWAY UPGRADE
TINTENBAR TO EWINGSDALE

OPERATION NOISE MANAGEMENT REPORT

Noise Receiver and Monitoring Locations

Zone	Lot Code	Doc Code	Drawing No.	Issue
S02	UD00	SKH	900	A

G:\21\00888\GIS\STDE_GIS_2012\A_Current\B_Maps\S22-L-D00-SKH-100_Redevers.mxd

Issue	Description	Date	Approved
F2	100% DESIGN	05.03.14	EM

Scales
Metres
0 50 100 200 300 400 500
1:13000

50mm on Original

Hyder
müller + hareth
BAULDERSTONE
GHD
CM+

PRELIMINARY ONLY
NOT TO BE USED FOR CONSTRUCTION

Original Size	A3	Drawn	SW
Coordinate System	MGA ZONE 56	Designed	TG
Height Datum	AHD	Date Printed	5/03/2014 -3:22:19 PM

Filename: G00-UD00-SKH-100_Recievers.mxd

RTA Reg'n no:

NSW GOVERNMENT Transport Roads & Maritime Services

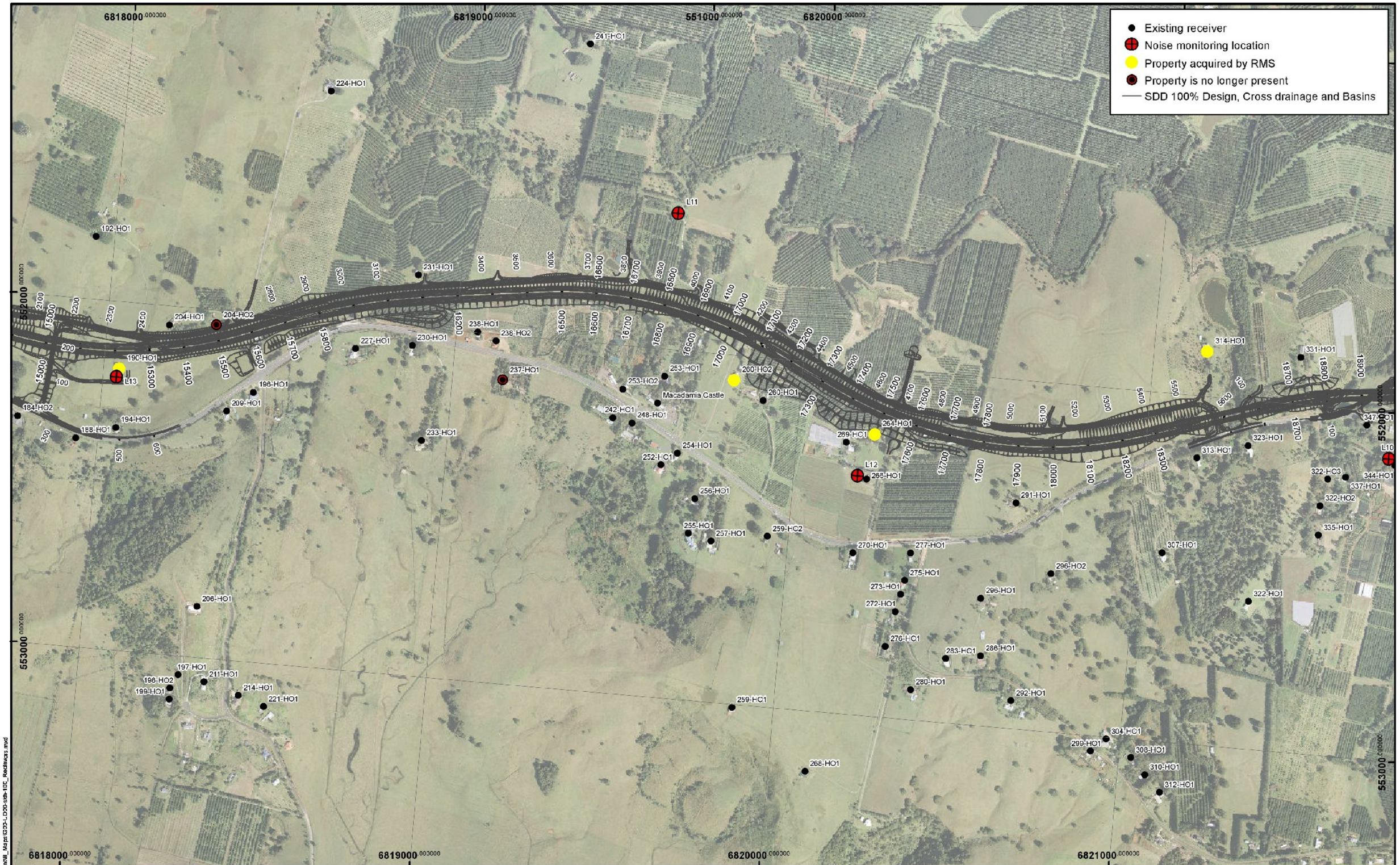
PACIFIC HIGHWAY UPGRADE
TINTENBAR TO EWINGSDALE

OPERATION NOISE MANAGEMENT REPORT

Noise Receiver and Monitoring Locations

Zone	Lot Code	Doc Code	Drawing No.	Issue
S02	UD00	SKH	901	A

G:\21\20898\GIS\TDS_GIS_2012\A_Current_Maps\S22_UD00-skh-100_Recievers.mxd



Issue	Description	Date	Approved
F2	100% DESIGN	05.03.14	EM

50mm on Original

Scales: Metres 0 50 100 200 300 400 500 — 1:10000

Hyder | müller + hareth | BAULDERSTONE | GHD | CM+

PRELIMINARY ONLY
NOT TO BE USED FOR CONSTRUCTION

Original Size	A3	Drawn	SW
Coordinate System	MGA ZONE 56	Designed	TG
Height Datum	AHD	Date Printed	5/03/2014 -3:22:56 PM

Filename: G00-UD00-SKH-100_Recievers.mxd

RTA Reg'n no:

NSW GOVERNMENT Transport Roads & Maritime Services

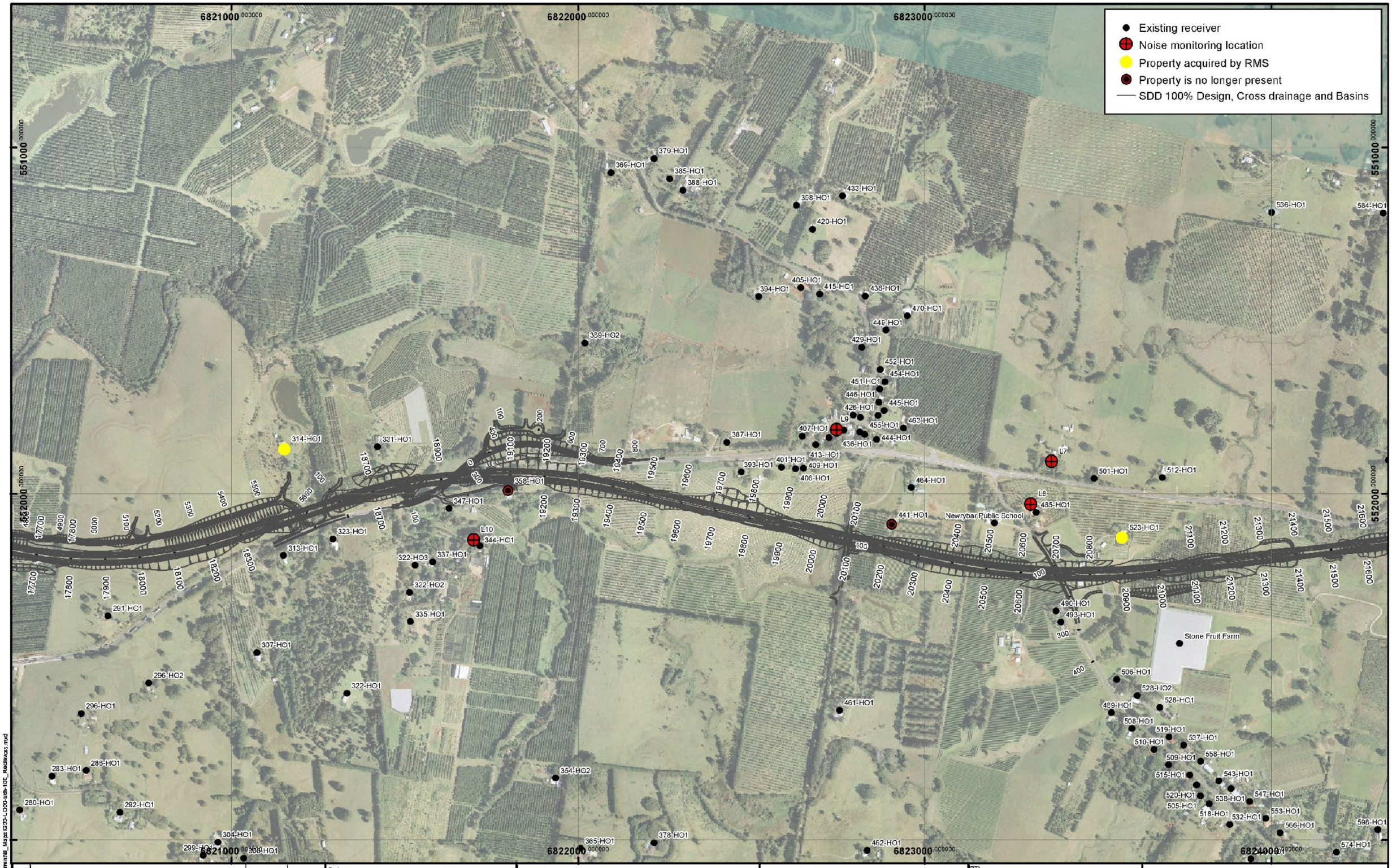
PACIFIC HIGHWAY UPGRADE
TINTENBAR TO EWINGSDALE

OPERATION NOISE MANAGEMENT REPORT

Noise Receiver and Monitoring Locations

Zone	Lot Code	Doc Code	Drawing No.	Issue
S02	UD00	SKH	902	A

G:\21\20898\GIS\DS_GIS_2012\A_Current\B_Maps\S220-L_D00-skh-100_Recievers.mxd



Issue	Description	Date	Approved
F2	100% DESIGN	05.03.14	EM

Scales: Metres 0 50 100 200 300 400 500 — 1:10000

50mm on Original

Hyder | müller + hörth | BAULDERSTONE | GHD | CM+

PRELIMINARY ONLY
NOT TO BE USED FOR CONSTRUCTION

Original Size	A3	Drawn	SW
Coordinate System	MGA ZONE 56	Designed	TG
Height Datum	AHD	Date Printed	5/03/2014 -3:23:24 PM

Filename: G00-UD00-SKH-100_Recievers.mxd

RTA Reg'n no:

NSW GOVERNMENT Transport Roads & Maritime Services

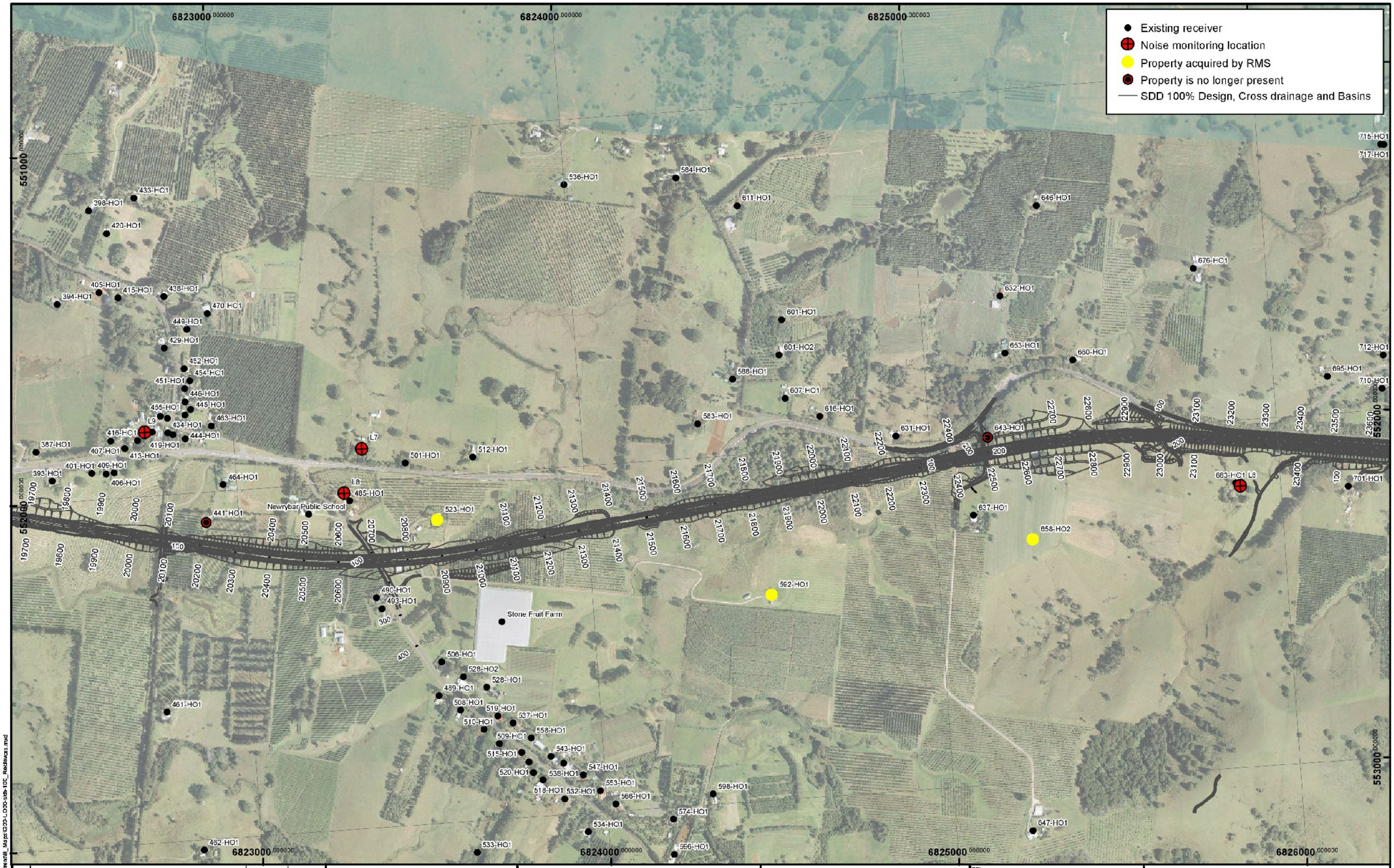
PACIFIC HIGHWAY UPGRADE
TINTENBAR TO EWINGSDALE

OPERATION NOISE MANAGEMENT REPORT

Noise Receiver and Monitoring Locations

Zone	Lot Code	Doc Code	Drawing No.	Issue
S02	UD00	SKH	903	A

G:\21\20688\GIS\TCM_GIS_2012A_CurrentB_Maps\G00-UD00-skh-100_Recievers.mxd



Issue	Description	Date	Approved
F2	100% DESIGN	05.03.14	EM

50mm on Original

Scales: Metres 0 50 100 200 300 400 500 — 1:10000

Hyder | müller + hoeth | BAULDERSTONE | GHD | CM+

PRELIMINARY ONLY
NOT TO BE USED FOR CONSTRUCTION

Original Size	A3	Drawn	SW
Coordinate System	MGA ZONE 56	Designed	TG
Height Datum	AHD	Date Printed	5/03/2014 -3:23:49 PM

Filename: G00-UD00-SKH-100_Recievers.mxd

RTA Reg'n no:

NSW GOVERNMENT Transport Roads & Maritime Services

PACIFIC HIGHWAY UPGRADE
TINTENBAR TO EWINGSDALE

OPERATION NOISE MANAGEMENT REPORT

Noise Receiver and Monitoring Locations

Zone	Lot Code	Doc Code	Drawing No.	Issue
C03	UD00	SKH	904	A

G:\21\20688\GIS\TZ_GIS_2012A_CurrentB_Maps\G00-UD00-skh-100_Recievers.mxd

Issue	Description	Date	Approved
F2	100% DESIGN	05.03.14	EM

50mm on Original

Scales: Metres 0 50 100 200 300 400 500

1:10000

Hyder | müller + horath | BAULDERSTONE | GHD | CM+

PRELIMINARY ONLY
NOT TO BE USED FOR CONSTRUCTION

Original Size	A3	Drawn	SW
Coordinate System	MGA ZONE 56	Designed	TG
Height Datum	AHD	Date Printed	5/03/2014 -3:24:19 PM

Filename: G00-UD00-SKH-100_Recievers.mxd

RTA Reg'n no:

NSW GOVERNMENT Transport Roads & Maritime Services

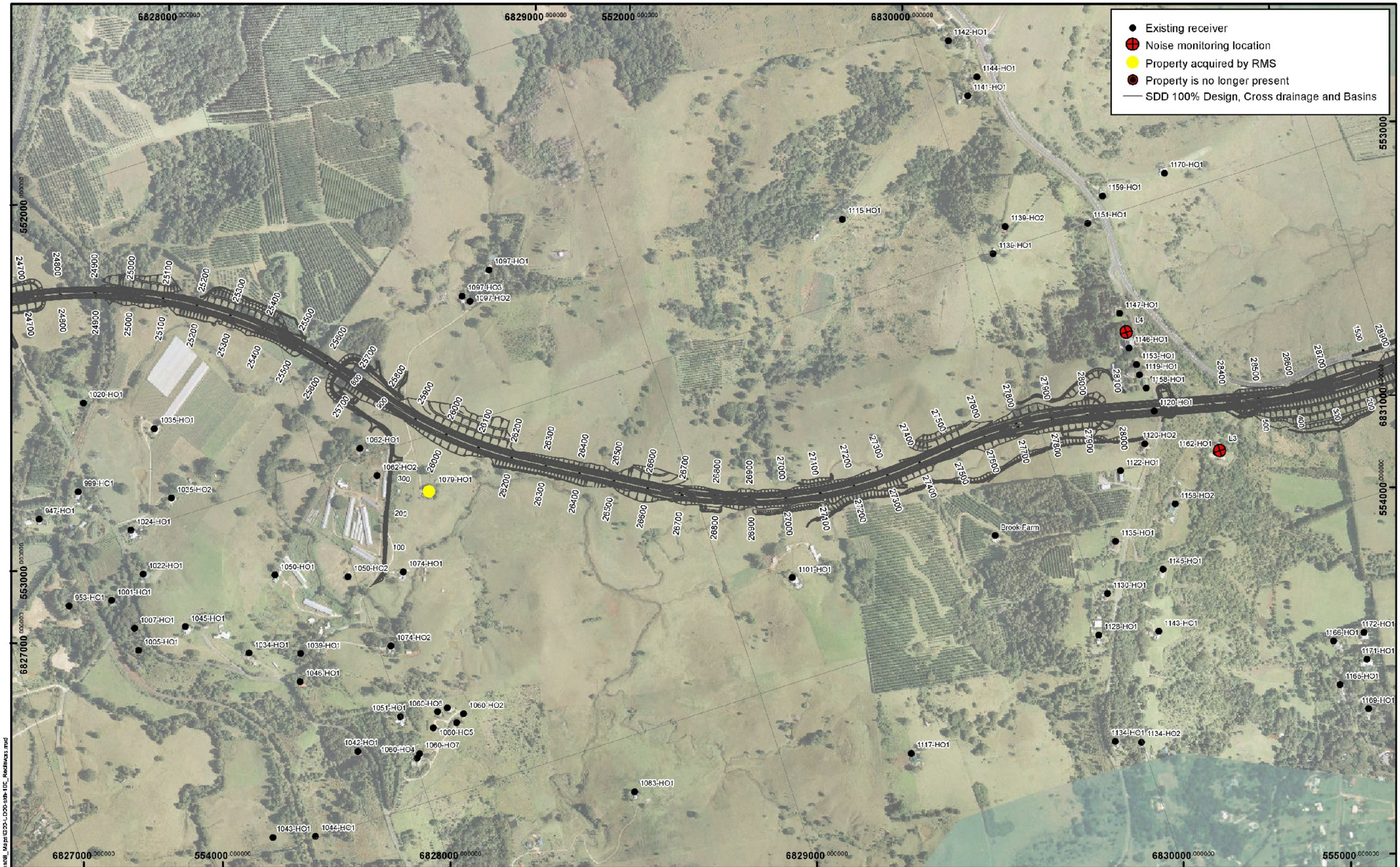
PACIFIC HIGHWAY UPGRADE
TINTENBAR TO EWINGSDALE

OPERATION NOISE MANAGEMENT REPORT

Noise Receiver and Monitoring Locations

Zone	Lot Code	Doc Code	Drawing No.	Issue
C03	UD00	SKH	905	A

G:\21\20688\GIS\TCB_GIS_2012A_CurrentB_Maps\G20-UD00-skh-100_Recievers.mxd



Issue	Description	Date	Approved
F2	100% DESIGN	05.03.14	EM

Scales: Metres 0 50 100 200 300 400 500 — 1:10000

50mm on Original

Hyder | müller + horoth | BAULDERSTONE | GHD | CM+

PRELIMINARY ONLY
NOT TO BE USED FOR CONSTRUCTION

Original Size	A3	Drawn	SW
Coordinate System	MGA ZONE 56	Designed	TG
Height Datum	AHD	Date Printed	5/03/2014 -3:25:00 PM

Filename: G00-UD00-SKH-100_Recievers.mxd

RTA Reg'n no:

NSW GOVERNMENT Transport Roads & Maritime Services

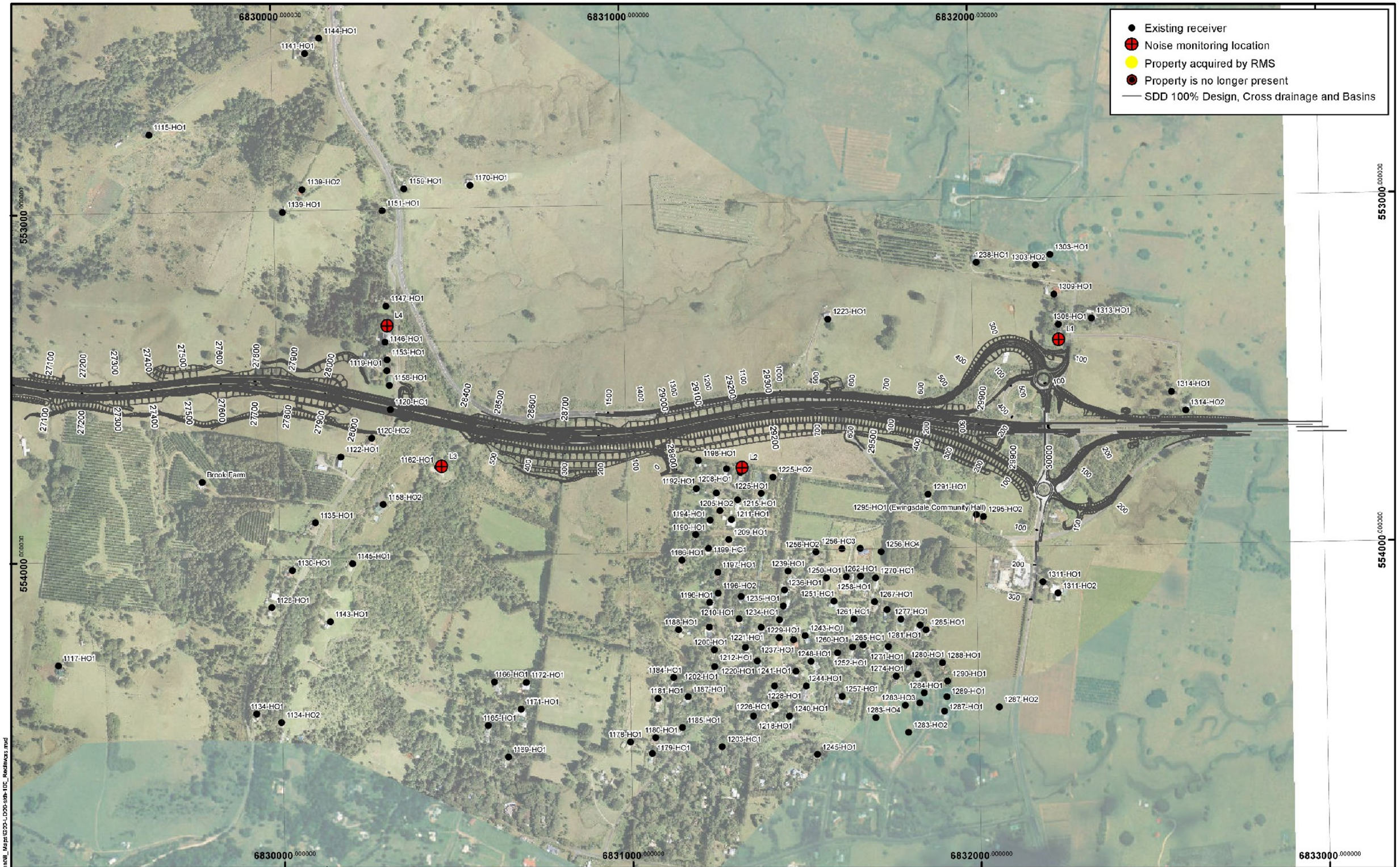
PACIFIC HIGHWAY UPGRADE
TINTENBAR TO EWINGSDALE

OPERATION NOISE MANAGEMENT REPORT

Noise Receiver and Monitoring Locations

Zone	Lot Code	Doc Code	Drawing No.	Issue
N04	UD00	SKH	906	A

G:\21\20898\GIS\TDE_GIS_2012\A_Current\8_Maps\322-L_D00-skh-100_Recievers.mxd



F2	100% DESIGN	05.03.14	EM
Issue	Description	Date	Approved

50mm on Original

Scales: Metres 0 50 100 200 300 400 500

1:10000

Hyder

müller + horoth

BAULDERSTONE

GHD

CM+

PRELIMINARY ONLY
NOT TO BE USED FOR CONSTRUCTION

Original Size	A3	Drawn	SW
Coordinate System	MGA ZONE 56	Designed	TG
Height Datum	AHD	Date Printed	5/03/2014 -3:25:32 PM

Filename: G00-UD00-SKH-100_Recievers.mxd

RTA Reg'n no:

NSW GOVERNMENT Transport Roads & Maritime Services

PACIFIC HIGHWAY UPGRADE
TINTENBAR TO EWINGSDALE

OPERATION NOISE MANAGEMENT REPORT

Noise Receiver and Monitoring Locations

Zone	Lot Code	Doc Code	Drawing No.	Issue
N04	UD00	SKH	907	A

G:\21\20898\GIS\TDE_GIS_2012\A_Current\8_Maps\322-L-D00-skh-100_Recievers.mxd

Appendix B – Receiver Table

Receiver ID	Lot Address	Township	DP/Lot No	Easting	Northing
RT18	236 FRIDAY HUT ROAD	TINTENBAR NSW	Unknown	550590	6816602
RT23	250 FRIDAY HUT ROAD	TINTENBAR NSW	Unknown	550434	6816739
RT24	276 FRIDAY HUT ROAD	TINTENBAR NSW	Unknown	550400	6816868
T2	25 KILLEN FALLS DRIVE	TINTENBAR NSW	Unknown	550701	6817320
T7	289 FRIDAY HUT ROAD	TINTENBAR NSW	Unknown	550396	6817126
T9	277 FRIDAY HUT ROAD	TINTENBAR NSW	Unknown	550241	6816992
T10	249 FRIDAY HUT ROAD	TINTENBAR NSW	Unknown	550263	6816879
T13	245 FRIDAY HUT ROAD	TINTENBAR NSW	Unknown	550259	6816698
T16	188 FRIDAY HUT ROAD	TINTENBAR NSW	Unknown	550410	6816144
T17	168 FRIDAY HUT ROAD	TINTENBAR NSW	Unknown	550380	6816087
S10	8 ROSS LANE	TINTENBAR NSW	Unknown	551580	6815875
59-HO1	25 MCLEISH ROAD	TINTENBAR NSW	251148/1	552271	6815384
65-HO1	36 MCLEISH ROAD	TINTENBAR NSW	251148/2	551876	6815213
72-HO1	21 MCLEISH ROAD	TINTENBAR NSW	531233/1	552362	6815435
73-HO1	30 MCLEISH ROAD	TINTENBAR NSW	251148/3	552199	6815350
79-HO1	4 MCLEISH ROAD	TINTENBAR NSW	540904/1	552192	6815521
80-HO1	15 MCLEISH ROAD	TINTENBAR NSW	553504/3	552262	6815549
81-HO1	1198 PACIFIC HWY	TINTENBAR NSW	774062/6	550642	6815630
82-HO1	70 ROSS LANE	TINTENBAR NSW	247535/5	552121	6815662
85-HO1	PACIFIC HWY	TINTENBAR NSW	1017364/101	551128	6815584
86-HO1	40 ROSS LANE	TINTENBAR NSW	247535/2	551829	6815579
87-HO1	99 ROSS LANE	TINTENBAR NSW	248286/3	552342	6815590
88-HO1	28 ROSS LANE	TINTENBAR NSW	611793/7	551634	6815649
93-HO1	64 ROSS LANE	TINTENBAR NSW	247535/4	551939	6815733
94-HO1	PACIFIC HWY	TINTENBAR NSW	596786/2	551177	6815726
98-HO1	28 GLENROSS DRIVE	TINTENBAR NSW	255992/6	552398	6815800
98-HO2	48 GLENROSS DRIVE	TINTENBAR NSW	255992/5	552527	6815909
99-HO1	ROSS LANE	TINTENBAR NSW	Unknown	551954	6815810
102-HO1	42 ROSS LANE	TINTENBAR NSW	247535/3	551921	6815836
106-HO1	14 ROSS LANE	TINTENBAR NSW	234956/2	551625	6815860
109-HO1	49 ROSS LANE	TINTENBAR NSW	703232/1	552023	6815892

Receiver ID	Lot Address	Township	DP/Lot No	Easting	Northing
110-HO1	PACIFIC HWY	TINTENBAR NSW	597344/2	551143	6815830
113-HO1	11 ROSS LANE	TINTENBAR NSW	1017603/1	551619	6815928
121-HO2	PACIFIC HWY	NEWRYBAR NSW	1017613/1	551629	6816186
121-HO1	PACIFIC HWY	NEWRYBAR NSW	1017613/1	551644	6816220
122-HO1	ROSS LANE	TINTENBAR NSW	703232/2	552106	6815987
125-HO1	PACIFIC HWY	NEWRYBAR NSW	1017626/8	551654	6816252
127-HO1	192 FRIDAY HUT ROAD	TINTENBAR NSW	604237/3	550598	6816377
128-HO1	171 ROSS LANE	TINTENBAR NSW	1032658/1	552666	6816701
128-HO2	171 ROSS LANE	TINTENBAR NSW	1032658/1	552773	6816612
129-HO1	PACIFIC HWY	TINTENBAR NSW	581364/2	551487	6816291
132-HO1	1364 PACIFIC HWY	KNOCKROW NSW	1017632/6	551711	6816558
137-HO1	1374 PACIFIC HWY	KNOCKROW NSW	126725/1	551745	6816675
141-HO1	1373-1375 PACIFIC HWY	KNOCKROW NSW	1017713/5	551474	6816716
142-HO1	PACIFIC HWY	KNOCKROW NSW	244408/2	552093	6816822
146-HO1	PACIFIC HWY	KNOCKROW NSW	1017730/1	551864	6816901
149-HO1	PACIFIC HWY	KNOCKROW NSW	1017733/2	551964	6817022
154-HO1	8 KILLEN FALLS DRIVE	TINTENBAR NSW	580193/1	550657	6817069
155-HO1	PACIFIC HWY	KNOCKROW NSW	529759/1	551708	6817001
156-HO1	22 CARNEY PLACE	KNOCKROW NSW	1028025/23	552218	6817170
157-HO1	16 CARNEY PLACE	KNOCKROW NSW	602232/2	552211	6817127
158-HO1	8 CARNEY PLACE	KNOCKROW NSW	616066/4	552110	6817096
159-HO1	4 CARNEY PLACE	KNOCKROW NSW	773988/20	552175	6817047
161-HO1	8 KILLEN FALLS DRIVE	TINTENBAR NSW	580193/1	550694	6817153
161-HO2	10 KILLEN FALLS DRIVE	TINTENBAR NSW	251994/5	550954	6817186
163-HO1	22 CARNEY PLACE	KNOCKROW NSW	1028025/23	552543	6817164
165-HO1	32 CARNEY PLACE	KNOCKROW NSW	602816/3	552286	6817259
166-HO1	34 CARNEY PLACE	KNOCKROW NSW	778747/5	552311	6817276
167-HO1	27 CARNEY PLACE	KNOCKROW NSW	614600/1	552217	6817279
168-HO2	38 KILLEN FALLS DRIVE	TINTENBAR NSW	251994/2	550970	6817354
168-HO1	20 KILLEN FALLS DRIVE	TINTENBAR NSW	635047/9	550809	6817286

Receiver ID	Lot Address	Township	DP/Lot No	Easting	Northing
170-HO1	36 CARNEY PLACE	KNOCKROW NSW	598178/1	552270	6817316
175-HO1	PACIFIC HWY	KNOCKROW NSW	614600/2	551862	6817288
175-HO2	PACIFIC HWY	KNOCKROW NSW	614600/2	551776	6817322
178-HO1	46 CARNEY PLACE	KNOCKROW NSW	1028025/22	552270	6817403
183-HO1	54 CARNEY PLACE	KNOCKROW NSW	598178/4	552254	6817528
184-HO2	1506 PACIFIC HWY	KNOCKROW NSW	598178/3	552352	6817767
184-HO1	1506 PACIFIC HWY	KNOCKROW NSW	598178/3	552288	6817607
185-HO1	PACIFIC HWY	NEWRYBAR NSW	1017762/5	552181	6817569
186-HO1	PACIFIC HWY	KNOCKROW NSW	321626/1	552245	6817678
188-HO1	PACIFIC HWY	KNOCKROW NSW	607404/1	552401	6817938
190-HO1	44 MARTINS LANE (W)	KNOCKROW NSW	658020/1	552193	6818045
192-HO1	42 MARTINS LANE (W)	KNOCKROW NSW	227899/4	551819	6817946
194-HO1	PACIFIC HWY	KNOCKROW NSW	128693/1	552361	6818050
196-HO1	MARTINS LANE	KNOCKROW NSW	1062423/8	552226	6818435
196-HO2	17 EDWARD PLACE	KNOCKROW NSW	1062423/7	553093	6818270
197-HO1	17 EDWARD PLACE	KNOCKROW NSW	1062423/7	553053	6818290
199-HO1	15 EDWARD PLACE	KNOCKROW NSW	871975/6	553125	6818271
204-HO2	12-14 MARTINS LANE (W)	KNOCKROW NSW	827355/2	552043	6818312
204-HO1	12-14 MARTINS LANE (W)	KNOCKROW NSW	827355/2	552054	6818178
206-HO1	16 EDWARD PLACE	KNOCKROW NSW	1015101/11	552853	6818327
209-HO1	PACIFIC HWY	KNOCKROW NSW	866444/4	552286	6818363
211-HO1	12 EDWARD PLACE	KNOCKROW NSW	871975/9	553067	6818366
214-HO1	91 MARTINS LANE	KNOCKROW NSW	878311/10	553097	6818467
221-HO1	109 MARTINS LANE	KNOCKROW NSW	235287/1	553123	6818542
224-HO1	10 MARTINS LANE (WEST)	KNOCKROW NSW	737318/2	551345	6818582
227-HO1	1630 PACIFIC HWY	KNOCKROW NSW	710404/3	552076	6818716
230-HO1	1632 PACIFIC HWY	KNOCKROW NSW	710404/2	552052	6818878
231-HO1	PACIFIC HWY	KNOCKROW NSW	123780/2	551849	6818878
233-HO1	115 MARTINS LANE	KNOCKROW NSW	739865/5	552322	6818928
237-HO1	1685 PACIFIC HWY	KNOCKROW NSW	710404/1	552129	6819144

Receiver ID	Lot Address	Township	DP/Lot No	Easting	Northing
238-HO2	1649 PACIFIC HWY	KNOCKROW NSW	123780/1	552019	6819116
238-HO1	1649 PACIFIC HWY	KNOCKROW NSW	123780/1	551997	6819061
241-HO1	80 EMIGRANT CROSSING	KNOCKROW NSW	755725/144	551145	6819311
242-HO1	PACIFIC HWY	KNOCKROW NSW	703898/3	552209	6819469
248-HO1	NEW NEWRYBAR DIP PACIFIC HWY	KNOCKROW NSW	739865/4	552219	6819525
249-HO1	1711 PACIFIC HWY	KNOCKROW NSW	599359/4	551609	6819609
252-HO1	PACIFIC HWY	KNOCKROW NSW	703898/2	552331	6819618
253-HO1	1709 PACIFIC HWY	KNOCKROW NSW	785372/1	552077	6819608
253-HO2	1699 PACIFIC HWY	KNOCKROW NSW	Unknown	552124	6819491
254-HO1	PACIFIC HWY	KNOCKROW NSW	703898/1	552294	6819663
255-HO1	1724 PACIFIC HWY	KNOCKROW NSW	1004813/1	552521	6819714
256-HO1	1722 PACIFIC HWY	KNOCKROW NSW	1004813/2	552420	6819724
257-HO1	MANCHESTER HOUSE 1730 PACIFIC HWY	KNOCKROW NSW	1014416/7	552537	6819780
259-HO2	PACIFIC HWY	NEWRYBAR NSW	1014416/8	552509	6819940
259-HO1	PACIFIC HWY	NEWRYBAR NSW	1014416/8	553008	6819883
260-HO1	PACIFIC HWY	KNOCKROW NSW	595811/3	552122	6819895
260-HO2	PACIFIC HWY	KNOCKROW NSW	Unknown	552071	6819807
264-HO1	27 IVY LANE	KNOCKROW NSW	595811/4	552192	6820222
266-HO1	19 IVY LANE	KNOCKROW NSW	595811/1	552321	6820210
266-HO2	19a IVY LANE	KNOCKROW NSW	Unknown	552320	6820188
268-HO1	30 OLD BYRON BAY ROAD	NEWRYBAR NSW	361700/1	553173	6820107
269-HO1	21 IVY LANE	KNOCKROW NSW	595811/2	552221	6820143
270-HO1	PACIFIC HWY	NEWRYBAR NSW	589094/1	552535	6820189
272-HO1	22 OLD BYRON BAY ROAD	NEWRYBAR NSW	787215/4	552693	6820326
273-HO1	16 OLD BYRON BAY ROAD	NEWRYBAR NSW	621041/3	552642	6820337
275-HO1	12 OLD BYRON BAY ROAD	NEWRYBAR NSW	621041/2	552602	6820345
276-HO1	26 OLD BYRON BAY ROAD	NEWRYBAR NSW	880055/5	552795	6820306

Receiver ID	Lot Address	Township	DP/Lot No	Easting	Northing
277-HO1	4 OLD BYRON BAY ROAD	NEWRYBAR NSW	301163/1	552521	6820354
280-HO1	36 OLD BYRON BAY ROAD	NEWRYBAR NSW	587400/1	552912	6820389
283-HO1	45 OLD BYRON BAY ROAD	NEWRYBAR NSW	559874/2	552815	6820482
286-HO1	51 OLD BYRON BAY ROAD	NEWRYBAR NSW	579038/7	552798	6820581
291-HO1	1815 PACIFIC HWY	NEWRYBAR NSW	789426/6	552352	6820644
292-HO1	72 OLD BYRON BAY ROAD	NEWRYBAR NSW	589334/2	552919	6820678
296-HO2	1832 PACIFIC HWY	NEWRYBAR NSW	618560/11	552546	6820762
296-HO1	1832 PACIFIC HWY	NEWRYBAR NSW	618560/11	552634	6820566
299-HO1	96 OLD BYRON BAY ROAD	NEWRYBAR NSW	963124/1	553043	6820918
304-HO1	99 OLD BYRON BAY ROAD	NEWRYBAR NSW	618560/10	553005	6820961
307-HO1	PACIFIC HWY	NEWRYBAR NSW	960359/1	552458	6821074
308-HO1	103 OLD BYRON BAY ROAD	NEWRYBAR NSW	596871/9	553052	6821035
310-HO1	107 OLD BYRON BAY ROAD	NEWRYBAR NSW	561701/5	553097	6821080
312-HO1	117 OLD BYRON BAY ROAD	NEWRYBAR NSW	560424/3	553144	6821126
313-HO1	PACIFIC HWY	NEWRYBAR NSW	1018006/5	552178	6821150
314-HO1	PACIFIC HWY	NEWRYBAR NSW	618462/4	551871	6821152
322-HO1	14 HAMBLY LANE	NEWRYBAR NSW	593376/7	552575	6821333
322-HO2	14 HAMBLY LANE	NEWRYBAR NSW	593376/7	552284	6821514
322-HO3	15 HAMBLY LANE	NEWRYBAR NSW	Unknown	552205	6821529
323-HO1	PACIFIC HWY	NEWRYBAR NSW	563255/2	552130	6821293
331-HO1	PACIFIC HWY	NEWRYBAR NSW	572072/3	551864	6821422
335-HO1	16 HAMBLY LANE	NEWRYBAR NSW	840469/9	552368	6821516
337-HO1	14 HAMBLY LANE	NEWRYBAR NSW	593376/7	552196	6821580
344-HO1	18 HAMBLY LANE	NEWRYBAR NSW	840469/8	552149	6821717
347-HO1	PACIFIC HWY	NEWRYBAR NSW	244296/5	552042	6821628
354-HO2	179 OLD BYRON BAY ROAD	NEWRYBAR NSW	602873/2	552820	6821935

Receiver ID	Lot Address	Township	DP/Lot No	Easting	Northing
355-HO1	195 OLD BYRON BAY ROAD	NEWRYBAR NSW	244296/2	553166	6821852
358-HO1	PACIFIC HWY	NEWRYBAR NSW	848186/20	551991	6821798
361-HO1	205 OLD BYRON BAY ROAD	NEWRYBAR NSW	244296/3	553162	6821889
363-HO1	207 OLD BYRON BAY ROAD	NEWRYBAR NSW	587996/1	553164	6821920
365-HO1	211 OLD BYRON BAY ROAD	NEWRYBAR NSW	613829/4	553023	6822007
369-HO1	125 BROOKLET ROAD	NEWRYBAR NSW	586484/3	551072	6822095
369-HO2	125 BROOKLET ROAD	NEWRYBAR NSW	586484/3	551564	6822020
378-HO1	219 OLD BYRON BAY ROAD	NEWRYBAR NSW	613829/5	553007	6822219
379-HO1	116 BROOKLET ROAD	NEWRYBAR NSW	253857/2	551032	6822219
385-HO1	108 BROOKLET ROAD	NEWRYBAR NSW	253857/1	551090	6822265
387-HO1	2001-2003 PACIFIC HWY	NEWRYBAR NSW	1029800/6	551851	6822430
388-HO1	1 JOHNSTON ROAD	NEWRYBAR NSW	606566/5	551123	6822302
393-HO1	2018 PACIFIC HWY	NEWRYBAR NSW	586484/4	551937	6822471
394-HO1	73 BROOKLET ROAD	NEWRYBAR NSW	1029800/5	551430	6822521
398-HO1	21 BOORMANS ROAD	NEWRYBAR NSW	244148/2	551166	6822630
401-HO1	PACIFIC HWY	NEWRYBAR NSW	303855/1	551923	6822587
405-HO1	55 BROOKLET ROAD	NEWRYBAR NSW	1029800/4	551404	6822643
406-HO1	PACIFIC HWY	NEWRYBAR NSW	123292/1	551924	6822630
407-HO1	5 OLD PACIFIC HWY	NEWRYBAR NSW	879998/1	551833	6822647
409-HO1	PACIFIC HWY	NEWRYBAR NSW	575688/2	551922	6822654
413-HO1	2 OLD PACIFIC HWY	NEWRYBAR NSW	575688/1	551858	6822686
415-HO1	49 BROOKLET ROAD	NEWRYBAR NSW	569455/2	551423	6822697
416-HO1	10 OLD PACIFIC HWY	NEWRYBAR NSW	776207/2	551838	6822723
419-HO1	12 OLD PACIFIC HWY	NEWRYBAR NSW	776207/1	551825	6822746
420-HO1	14 BOORMANS ROAD	NEWRYBAR NSW	244148/1	551235	6822676
423-HO1	14 OLD PACIFIC HWY	NEWRYBAR NSW	1040699/4	551815	6822751
424-HO1	16 OLD PACIFIC HWY	NEWRYBAR NSW	1040699/3	551816	6822767
426-HO1	19 OLD PACIFIC HIGHWAY	NEWRYBAR NSW	569455/3	551772	6822794

Receiver ID	Lot Address	Township	DP/Lot No	Easting	Northing
429-HO1	15 BROOKLET ROAD	NEWRYBAR NSW	1036323/1	551577	6822819
431-HO1	22 OLD PACIFIC HWY	NEWRYBAR NSW	1055157/5	551821	6822813
433-HO1	24 BOORMANS ROAD	NEWRYBAR NSW	244148/4	551140	6822763
434-HO1	21 OLD PACIFIC HWY	NEWRYBAR NSW	507039/2	551779	6822815
436-HO1	24 OLD PACIFIC HWY	NEWRYBAR NSW	233782/15	551828	6822827
438-HO1	38 BROOKLET ROAD	NEWRYBAR NSW	584324/13	551428	6822829
441-HO1	21 WATSONS LANE	NEWRYBAR NSW	628565/2	552088	6822905
444-HO1	26 OLD PACIFIC HWY	NEWRYBAR NSW	233782/22	551842	6822861
445-HO1	2 BROOKLET ROAD	NEWRYBAR NSW	920291/1	551759	6822883
446-HO1	8 BROOKLET ROAD	NEWRYBAR NSW	4881/4	551735	6822868
449-HO1	18 BROOKLET ROAD	NEWRYBAR NSW	541314/1	551527	6822888
451-HO1	12 BROOKLET ROAD	NEWRYBAR NSW	4881/7	551697	6822870
452-HO1	16 BROOKLET ROAD	NEWRYBAR NSW	500784/1	551640	6822872
454-HO1	12 BROOKLET ROAD	NEWRYBAR NSW	5280/9	551675	6822886
455-HO1	2 BROOKLET ROAD	NEWRYBAR NSW	920291/1	551773	6822866
461-HO1	73 WATSONS LANE	NEWRYBAR NSW	628565/3	552624	6822754
462-HO1	WATSONS LANE OLD DIP 119 WATSONS LANE	NEWRYBAR NSW	780394/1	553029	6822834
463-HO1	35 OLD PACIFIC HWY	NEWRYBAR NSW	584324/10	551810	6822939
464-HO1	17 WATSONS LANE	NEWRYBAR NSW	558436/1	551981	6822962
470-HO1	36 BROOKLET ROAD	NEWRYBAR NSW	603097/14	551486	6822950
485-HO1	13 BROKEN HEAD ROAD	NEWRYBAR NSW	635112/1	552053	6823321
489-HO1	82 BROKEN HEAD ROAD	NEWRYBAR NSW	883184/7	552631	6823539
490-HO1	46 BROKEN HEAD ROAD	NEWRYBAR NSW	612299/3	552337	6823379
493-HO1	54 BROKEN HEAD ROAD	NEWRYBAR NSW	550119/1	552370	6823393
501-HO1	LAWLERS LANE	BANGALOW NSW	1022871/6	551955	6823489
501-HO2	LAWLERS LANE	BANGALOW NSW	1022871/6	551901	6823368
505-HO1	112 BROKEN HEAD ROAD	NEWRYBAR NSW	1074398/18	552872	6823795
506-HO1	71 BROKEN HEAD ROAD	NEWRYBAR NSW	801186/15	552535	6823554

Receiver ID	Lot Address	Township	DP/Lot No	Easting	Northing
508-HO1	84 BROKEN HEAD ROAD	NEWRYBAR NSW	558288/1	552677	6823598
509-HO1	100 BROKEN HEAD ROAD	NEWRYBAR NSW	245432/3	552782	6823703
510-HO1	92 BROKEN HEAD ROAD	NEWRYBAR NSW	245432/2	552738	6823662
512-HO1	PACIFIC HWY	NEWRYBAR NSW	1046448/1	551952	6823685
515-HO1	106 BROKEN HEAD ROAD	NEWRYBAR NSW	605916/14	552811	6823765
518-HO1	118 BROKEN HEAD ROAD	NEWRYBAR NSW	1074398/17	552895	6823821
519-HO1	95 BROKEN HEAD ROAD	NEWRYBAR NSW	610106/13	552707	6823718
520-HO1	110 BROKEN HEAD ROAD	NEWRYBAR NSW	616028/15	552841	6823785
523-HO1	39-41 BROKEN HEAD ROAD	NEWRYBAR NSW	1019917/2	552126	6823568
528-HO1	RT BYRON SHIRE 89 BROKEN HEAD ROAD	NEWRYBAR NSW	801186/14	552623	6823696
528-HO2	RT BYRON SHIRE 89 BROKEN HEAD ROAD	NEWRYBAR NSW	801186/14	552582	6823613
532-HO1	122 BROKEN HEAD ROAD	NEWRYBAR NSW	586688/3	552954	6823880
533-HO1	112 BROKEN HEAD ROAD	NEWRYBAR NSW	1074398/18	553090	6823617
534-HO1	134 BROKEN HEAD ROAD	NEWRYBAR NSW	586688/2	553053	6823941
536-HO1	119 LAWLERS LANE	BANGALOW NSW	629528/2	551187	6824001
537-HO1	101 BROKEN HEAD ROAD	NEWRYBAR NSW	245432/5	552732	6823762
538-HO1	119 BROKEN HEAD ROAD	NEWRYBAR NSW	587602/11	552851	6823892
542-HO1	162 BROKEN HEAD ROAD	NEWRYBAR NSW	578902/14	553186	6824089
543-HO1	115 BROKEN HEAD ROAD	NEWRYBAR NSW	785220/12	552832	6823860
543-HO1	109 BROKEN HEAD	NEWRYBAR NSW	825707/16	552832	6823860
547-HO1	125 BROKEN HEAD ROAD	NEWRYBAR NSW	825707/15	552888	6823938

Receiver ID	Lot Address	Township	DP/Lot No	Easting	Northing
553-HO1	131 BROKEN HEAD ROAD	NEWRYBAR NSW	855554/14	552937	6823984
558-HO1	109 BROKEN HEAD	NEWRYBAR NSW	825707/16	552787	6823824
566-HO1	137 BROKEN HEAD ROAD	NEWRYBAR NSW	855554/13	552978	6824026
574-HO1	159 BROKEN HEAD ROAD	NEWRYBAR NSW	600819/2	553034	6824188
579-HO1	167 BROKEN HEAD ROAD	NEWRYBAR NSW	626006/5	553225	6824345
583-HO1	LAWLERS LANE	BANGALOW NSW	1007622/3	551902	6824338
584-HO1	83 LAWLERS LANE	BANGALOW NSW	261662/1	551189	6824324
588-HO1	19 LAWLERS LANE	BANGALOW NSW	1007622/1	551781	6824446
592-HO1	LAWLERS LANE	BANGALOW NSW	1019917/1	552409	6824514
596-HO1	PART IN BYRON SHIRE 161 BROKEN HEAD ROAD	NEWRYBAR NSW	600819/1	553135	6824184
598-HO1	T BYRON SHIRE 163 BROKEN HEAD	NEWRYBAR NSW	626006/7	552969	6824307
601-HO1	26 LAWLERS LANE	BANGALOW NSW	792328/11	551619	6824600
601-HO2	26 LAWLERS LANE	BANGALOW NSW	792328/11	551720	6824585
607-HO1	2 LAWLERS LANE	BANGALOW NSW	613127/2	551846	6824594
611-HO1	68 LAWLERS LANE	BANGALOW NSW	792328/12	551282	6824495
616-HO1	LAWLERS LANE	BANGALOW NSW	613127/1	551905	6824690
631-HO1	PACIFIC HIGHWAY	BANGALOW NSW	571044/1	551976	6824904
632-HO1	PACIFIC HIGHWAY	BANGALOW NSW	702880/2	551594	6825232
637-HO1	2282 PACIFIC HIGHWAY	BANGALOW NSW	582602/4	552220	6825112
643-HO1	2278 PACIFIC HIGHWAY	BANGALOW NSW	582602/2	551989	6825166
646-HO1	PACIFIC HIGHWAY	BANGALOW NSW	846899/102	551342	6825355
647-HO1	2276 PACIFIC HIGHWAY	BANGALOW NSW	879546/2	553139	6825219
653-HO1	PACIFIC HIGHWAY	BANGALOW NSW	846899/101	551760	6825234
658-HO2	PACIFIC HIGHWAY	BANGALOW NSW	129126/3	552302	6825277
660-HO1	PACIFIC HIGHWAY	BANGALOW NSW	577910/4	551793	6825428
676-HO1	PACIFIC HIGHWAY	BANGALOW NSW	731492/2	551554	6825793

Receiver ID	Lot Address	Township	DP/Lot No	Easting	Northing
683-HO1	PACIFIC HIGHWAY	BANGALOW NSW	807867/6	552180	6825872
695-HO1	BALLINA ROAD	BANGALOW NSW	614715/1	551891	6826157
701-HO1	PACIFIC HIGHWAY	BANGALOW NSW	837112/1	552212	6826195
710-HO1	15 BALLINA ROAD	BANGALOW NSW	1086364/1	551937	6826312
712-HO1	BALLINA ROAD	BANGALOW NSW	931195/1	551841	6826322
713-HO1	10 BALLINA ROAD	BANGALOW NSW	974496/1	551836	6826370
714-HO1	BALLINA ROAD	BANGALOW NSW	613935/1	551908	6826353
715-HO1	23 CHARLOTTE STREET	BANGALOW NSW	4302/7	551235	6826357
717-HO1	21 CHARLOTTE STREET	BANGALOW NSW	4302/6	551236	6826366
719-HO1	BALLINA ROAD	BANGALOW NSW	961064/1	551897	6826369
722-HO1	BALLINA ROAD	BANGALOW NSW	233797/1	551893	6826390
725-HO1	8 BALLINA ROAD	BANGALOW NSW	371410/1	551819	6826403
731-HO1	BALLINA ROAD	BANGALOW NSW	313475/2	551883	6826417
735-HO2	4 BALLINA ROAD	BANGALOW NSW	6478/25	551786	6826502
735-HO1	6 BALLINA ROAD	BANGALOW NSW	301392/1	551799	6826463
736-HO2	BALLINA ROAD	BANGALOW NSW	1070522/23	551833	6826514
736-HO1	BALLINA ROAD	BANGALOW NSW	1069720/1	551841	6826474
751-HO1	4 BALLINA ROAD	BANGALOW NSW	6478/25	551791	6826520
751-HO2	BALLINA ROAD	BANGALOW NSW	6478/24	551778	6826542
759-HO1	ASHTON STREET	BANGALOW NSW	747876/2	551569	6826542
768-HO1	ASHTON STREET	BANGALOW NSW	747876/2	551583	6826574
769-HO1	BALLINA ROAD	BANGALOW NSW	1070522/22	552030	6826648
776-HO1	3 DEACON STREET	BANGALOW NSW	358535/A	551347	6826589
777-HO1	5 DEACON STREET	BANGALOW NSW	4974/7	551373	6826564
780-HO1	1 DEACON STREET	BANGALOW NSW	832005/1	551313	6826579
792-HO1	ASHTON STREET	BANGALOW NSW	747876/1	551588	6826621
799-HO1	42 BYRON STREET	BANGALOW NSW	4358/1	551292	6826615
800-HO1	BALLINA ROAD	BANGALOW NSW	883614/1	551766	6826645
801-HO1	44 BYRON STREET	BANGALOW NSW	4358/2	551300	6826624
802-HO1	17 BYRON CREEK ROAD	COOPERS SHOOT NSW	806760/101	552866	6826799

Receiver ID	Lot Address	Township	DP/Lot No	Easting	Northing
803-HO1	46 BYRON STREET	BANGALOW NSW	814480/1	551321	6826622
806-HO1	50 BYRON STREET	BANGALOW NSW	4358/6	551342	6826625
808-HO1	56 BYRON STREET	BANGALOW NSW	4358/8	551358	6826640
810-HO1	ASHTON STREET	BANGALOW NSW	833363/1	551644	6826645
811-HO2	64 BYRON STREET	BANGALOW NSW	4358/11	551387	6826659
811-HO1	62 BYRON STREET	BANGALOW NSW	4358/10	551379	6826632
815-HO1	68 BYRON STREET	BANGALOW NSW	4358/13	551406	6826643
818-HO1	70-72 BYRON STREET	BANGALOW NSW	1081884/72	551438	6826642
819-HO1	74 BYRON STREET	BANGALOW NSW	566125/1	551452	6826653
820-HO1	76 BYRON STREET	BANGALOW NSW	566125/2	551467	6826658
821-HO1	ASHTON STREET	BANGALOW NSW	4974/6	551640	6826662
822-HO1	78 BYRON STREET	BANGALOW NSW	4596/20	551484	6826664
823-HO1	BALLINA ROAD	BANGALOW NSW	233810/4	551840	6826666
826-HO1	82 BYRON STREET	BANGALOW NSW	4596/22	551499	6826681
827-HO1	86 BYRON STREET	BANGALOW NSW	4596/24	551518	6826665
830-HO1	88 BYRON STREET	BANGALOW NSW	4596/25	551533	6826669
831-HO1	90 BYRON STREET	BANGALOW NSW	4596/26	551544	6826669
832-HO1	92 BYRON STREET	BANGALOW NSW	4974/27	551553	6826674
834-HO1	94 BYRON STREET	BANGALOW NSW	4974/28	551564	6826676
835-HO1	43 BYRON STREET	BANGALOW NSW	802893/1	551314	6826679
836-HO1	96 BYRON STREET	BANGALOW NSW	4974/29	551572	6826682
837-HO1	96 BYRON STREET	BANGALOW NSW	4974/30	551581	6826689
839-HO1	BYRON STREET	BANGALOW NSW	4974/4	551631	6826707
846-HO1	19 STATION STREET	BANGALOW NSW	4596/6	551300	6826710
847-HO1	75 BYRON STREET	BANGALOW NSW	4358/2	551448	6826723
848-HO1	75 BYRON STREET	BANGALOW NSW	4358/2	551458	6826701
849-HO1	77 BYRON STREET	BANGALOW NSW	4358/3	551468	6826702
853-HO2	81 BYRON STREET	BANGALOW NSW	4358/6	551499	6826707
853-HO1	79 BYRON STREET	BANGALOW NSW	4358/5	551484	6826705
855-HO1	85 BYRON STREET	BANGALOW NSW	4358/8	551519	6826712
857-HO1	17 STATION STREET	BANGALOW NSW	828062/20	551292	6826738
859-HO3	45-71 BYRON STREET	BANGALOW NSW	782555/1	551391	6826796

Receiver ID	Lot Address	Township	DP/Lot No	Easting	Northing
859-HO2	45-71 BYRON STREET	BANGALOW NSW	782555/1	551409	6826699
859-HO4	45-71 BYRON STREET	BANGALOW NSW	782555/1	551344	6826788
859-HO5	45-71 BYRON STREET	BANGALOW NSW	782555/1	551318	6826782
859-HO1	45-71 BYRON STREET	BANGALOW NSW	782555/1	551404	6826755
860-HO3	87 BYRON STREET	BANGALOW NSW	808373/1	551527	6826765
860-HO1	87 BYRON STREET	BANGALOW NSW	808373/1	551533	6826725
860-HO2	93 BYRON STREET	BANGALOW NSW	808373/2	551536	6826742
861-HO1	2 GEORGE STREET	BANGALOW NSW	629994/18	551442	6826745
865-HO1	4-6 GEORGE STREET	BANGALOW NSW	1046239/1	551461	6826760
866-HO1	13 STATION STREET	BANGALOW NSW	4596/10	551279	6826749
867-HO1	8 GEORGE STREET	BANGALOW NSW	4358/14	551480	6826765
869-HO1	10 GEORGE STREET	BANGALOW NSW	4358/12	551498	6826769
874-HO1	99 BYRON STREET	BANGALOW NSW	4358/10	551603	6826758
875-HO1	11 STATION STREET	BANGALOW NSW	4596/12	551279	6826765
876-HO1	9 STATION STREET	BANGALOW NSW	327228/B	551274	6826777
877-HO1	1 MARKET STREET	BANGALOW NSW	716393/1	551428	6826800
878-HO1	10 MARBLEWOOD PLACE	BANGALOW NSW	837699/281	551985	6826776
880-HO1	9 STATION STREET	BANGALOW NSW	755695/334	551285	6826797
884-HO1	5 GEORGE STREET	BANGALOW NSW	810867/101	551457	6826785
885-HO1	5 GEORGE STREET	BANGALOW NSW	810867/102	551469	6826790
888-HO2	11 GEORGE STREET	BANGALOW NSW	4358/9	551511	6826807
888-HO1	9 GEORGE STREET	BANGALOW NSW	4358/7	551493	6826795
894-HO8	7 PAPERBARK PLACE	BANGALOW NSW	1061460/5	551980	6826966
894-HO9	5 PAPERBARK PLACE	BANGALOW NSW	1061460/4	551966	6826960
894-HO1	29 BLACKWOOD CRESCENT	BANGALOW NSW	1061460/29	552095	6826658
894-HO3	5 MARBLEWOOD PLACE	BANGALOW NSW	1061460/32	551994	6826712
894-HO7	BYRON BAY ROAD	BANGALOW NSW	1061460/62	552001	6826985
894-HO2	1 MARBLEWOOD PLACE	BANGALOW NSW	1061460/30	552034	6826701
894-HO5	4 BLACKWOOD CRESCENT	BANGALOW NSW	1061460/58	551910	6826898

Receiver ID	Lot Address	Township	DP/Lot No	Easting	Northing
894-HO6	10 WATTLE PLACE	BANGALOW NSW	1061460/53	551861	6826876
894-HO4	2 WATTLE PLACE	BANGALOW NSW	1061460/57	551931	6826881
895-HO1	3 PAPERBARK PLACE	BANGALOW NSW	1061460/3	551953	6826947
895-HO5	5 BLACKWOOD CRESCENT	BANGALOW NSW	1061460/10	551967	6826898
895-HO4	4 PAPERBARK PLACE	BANGALOW NSW	1061460/9	551989	6826913
895-HO6	7 BLACKWOOD CRESCENT	BANGALOW NSW	1061460/11	551984	6826884
895-HO2	8 PAPERBARK PLACE	BANGALOW NSW	1061460/7	552029	6826935
895-HO7	3 GUMTREE PLACE	BANGALOW NSW	1061460/13	552013	6826886
895-HO8	5 GUMTREE PLACE	BANGALOW NSW	1061460/14	552028	6826895
895-HO9	7 GUMTREE PLACE	BANGALOW NSW	1061460/15	552045	6826911
895-HO3	6 PAPERBARK PLACE	BANGALOW NSW	1061460/8	552008	6826924
896-HO1	STATION STREET	BANGALOW NSW	366810/1	551274	6826862
896-HO2	8 GUMTREE PLACE	BANGALOW NSW	1061460/17	552083	6826866
896-HO4	4 GUMTREE PLACE	BANGALOW NSW	1061460/19	552048	6826850
896-HO7	10 GUMTREE PLACE	BANGALOW NSW	1061460/16	552084	6826833
896-HO8	15 BLACKWOOD CRESCENT	BANGALOW NSW	1061460/22	552071	6826802
896-HO6	13 BLACKWOOD CRESCENT	BANGALOW NSW	1061460/21	552065	6826822
896-HO9	17 BLACKWOOD CRESCENT	BANGALOW NSW	1061460/23	552083	6826785
896-HO3	6 GUMTREE PLACE	BANGALOW NSW	1061460/18	552065	6826856
896-HO5	2 GUMTREE PLACE	BANGALOW NSW	1061460/20	552037	6826836
897-HO6	3 MARBLEWOOD PLACE	BANGALOW NSW	1061460/31	552010	6826697
897-HO9	11 MARBLEWOOD PLACE	BANGALOW NSW	1061460/35	551928	6826729
897-HO1	19 BLACKWOOD CRESCENT	BANGALOW NSW	1061460/24	552087	6826765
897-HO7	7 MARBLEWOOD PLACE	BANGALOW NSW	1061460/33	551970	6826710
897-HO8	9 MARBLEWOOD PLACE	BANGALOW NSW	1061460/34	551949	6826719
897-HO5	27 BLACKWOOD CRESCENT	BANGALOW NSW	1061460/28	552082	6826688

Receiver ID	Lot Address	Township	DP/Lot No	Easting	Northing
897-HO4	25 BLACKWOOD CRESCENT	BANGALOW NSW	1061460/27	552083	6826706
897-HO2	21 BLACKWOOD CRESCENT	BANGALOW NSW	1061460/25	552086	6826741
897-HO3	23 BLACKWOOD CRESCENT	BANGALOW NSW	1061460/26	552085	6826722
898-HO4	4 MARBLEWOOD PLACE	BANGALOW NSW	1061460/39	552011	6826746
898-HO3	6 MARBLEWOOD PLACE	BANGALOW NSW	1061460/38	551995	6826751
898-HO2	8 MARBLEWOOD PLACE	BANGALOW NSW	1061460/37	551969	6826760
898-HO6	22 BLACKWOOD CRESCENT	BANGALOW NSW	1061460/41	552039	6826756
898-HO1	13 MARBLEWOOD PLACE	BANGALOW NSW	1061460/36	551918	6826744
898-HO5	24 BLACKWOOD CRESCENT	BANGALOW NSW	1061460/40	552037	6826737
898-HO9	16 BLACKWOOD CRESCENT	BANGALOW NSW	1061460/44	552015	6826802
898-HO8	18 BLACKWOOD CRESCENT	BANGALOW NSW	1061460/43	552026	6826790
898-HO7	20 BLACKWOOD CRESCENT	BANGALOW NSW	1061460/42	552029	6826771
899-HO2	12 BLACKWOOD CRESCENT	BANGALOW NSW	1061460/46	551983	6826823
899-HO8	9 WATTLE PLACE	BANGALOW NSW	1061460/52	551885	6826815
899-HO4	8 BLACKWOOD CRESCENT	BANGALOW NSW	1061460/48	551953	6826845
899-HO9	6 WATTLE PLACE	BANGALOW NSW	1061460/55	551891	6826859
899-HO3	10 BLACKWOOD CRESCENT	BANGALOW NSW	1061460/47	551970	6826835
899-HO5	3 WATTLE PLACE	BANGALOW NSW	1061460/49	551938	6826826
899-HO6	5 WATTLE PLACE	BANGALOW NSW	1061460/50	551919	6826816
899-HO7	7 WATTLE PLACE	BANGALOW NSW	1061460/51	551903	6826813
899-HO1	14 BLACKWOOD CRESCENT	BANGALOW NSW	1061460/45	552000	6826812
900-HO1	4 WATTLE PLACE	BANGALOW NSW	1061460/56	551909	6826859
900-HO2	8 WATTLE PLACE	BANGALOW NSW	1061460/54	551874	6826873

Receiver ID	Lot Address	Township	DP/Lot No	Easting	Northing
902-HO1	20 BYRON CREEK ROAD	COOPERS SHOOT NSW	806760/100	553055	6826836
904-HO1	BANGALOW ROAD	BANGALOW NSW	6478/7	551775	6826876
905-HO1	BANGALOW ROAD	BANGALOW NSW	6478/6	551786	6826888
906-HO1	11 BYRON BAY ROAD	BANGALOW NSW	6478/5	551802	6826900
907-HO1	BANGALOW ROAD	BANGALOW NSW	6478/4	551816	6826907
908-HO4	STATION STREET	BANGALOW NSW	359227/1	551352	6826991
908-HO3	STATION STREET	BANGALOW NSW	359227/1	551281	6826898
908-HO2	STATION STREET	BANGALOW NSW	359227/1	551285	6826809
908-HO1	STATION STREET	BANGALOW NSW	359227/1	551510	6826851
908-HO5	BANGALOW ROAD	BANGALOW NSW	585465/1	551565	6827043
909-HO1	BANGALOW ROAD	BANGALOW NSW	6478/3	551831	6826926
910-HO1	BANGALOW ROAD	BANGALOW NSW	6478/2	551850	6826936
911-HO1	BANGALOW ROAD	BANGALOW NSW	748524/12	551868	6826950
912-HO2	1 BLACKWOOD CRESCENT	BANGALOW NSW	1061460/1	551928	6826941
912-HO1	BANGALOW ROAD	BANGALOW NSW	748524/11	551880	6826956
912-HO3	3 BLACKWOOD CRESCENT	BANGALOW NSW	1061460/2	551940	6826923
914-HO1	16 RANKIN DRIVE	BANGALOW NSW	853050/31	551283	6827005
917-HO1	18 RANKIN DRIVE	BANGALOW NSW	853050/30	551301	6827017
918-HO1	20 RANKIN DRIVE	BANGALOW NSW	853050/29	551313	6827033
922-HO1	24 RANKIN DRIVE	BANGALOW NSW	853050/27	551347	6827052
924-HO1	26 RANKIN DRIVE	BANGALOW NSW	853050/26	551369	6827061
926-HO1	BANGALOW ROAD	BANGALOW NSW	620841/1	552016	6827074
929-HO1	28 RANKIN DRIVE	BANGALOW NSW	883263/54	551378	6827072
930-HO1	30 RANKIN DRIVE	BANGALOW NSW	883263/55	551393	6827084
932-HO2	4 HANLON COURT	BANGALOW NSW	853050/24	551319	6827120
932-HO1	2 HANLON COURT	BANGALOW NSW	853050/25	551325	6827092
933-HO1	32 RANKIN DRIVE	BANGALOW NSW	883263/56	551409	6827095
934-HO1	34 RANKIN DRIVE	BANGALOW NSW	883263/57	551424	6827104
937-HO1	25 RANKIN DRIVE	BANGALOW NSW	883263/42	551346	6827110
938-HO1	36 RANKIN DRIVE	BANGALOW NSW	883263/58	551438	6827116

Receiver ID	Lot Address	Township	DP/Lot No	Easting	Northing
939-HO1	27 RANKIN DRIVE	BANGALOW NSW	883263/43	551361	6827120
941-HO1	6 HANLON COURT	BANGALOW NSW	853050/23	551301	6827134
942-HO1	38 RANKIN DRIVE	BANGALOW NSW	1011009/59	551458	6827128
943-HO1	29 RANKIN DRIVE	BANGALOW NSW	883263/44	551381	6827137
944-HO1	40 RANKIN DRIVE	BANGALOW NSW	1011009/60	551473	6827140
945-HO1	8 HANLON COURT	BANGALOW NSW	853050/20	551341	6827165
946-HO1	853 BANGALOW ROAD	TALOFA NSW	605938/4	552829	6827105
947-HO1	851 BANGALOW ROAD	TALOFA NSW	605938/3	552883	6827189
948-HO1	1 FERGUSON COURT	BANGALOW NSW	883263/45	551398	6827149
949-HO1	42 RANKIN DRIVE	BANGALOW NSW	1011009/61	551492	6827161
950-HO1	44 RANKIN DRIVE	BANGALOW NSW	1011009/62	551503	6827174
951-HO1	3 FERGUSON COURT	BANGALOW NSW	883263/46	551376	6827182
952-HO1	10 HANLON COURT	BANGALOW NSW	853050/21	551308	6827183
953-HO1	689 COOPERS SHOOT ROAD	TALOFA NSW	259624/2	553146	6827193
954-HO2	2 FERGUSON COURT	BANGALOW NSW	883263/52	551424	6827192
954-HO1	2 FERGUSON COURT	BANGALOW NSW	883263/52	551432	6827171
955-HO1	46 RANKIN DRIVE	BANGALOW NSW	1011009/63	551524	6827174
957-HO1	5 FERGUSON COURT	BANGALOW NSW	883263/47	551354	6827193
959-HO1	35 RANKIN DRIVE	BANGALOW NSW	883263/53	551445	6827183
960-HO1	48 RANKIN DRIVE	BANGALOW NSW	1011009/64	551544	6827200
961-HO1	37 RANKIN DRIVE	BANGALOW NSW	1011009/94	551464	6827195
962-HO1	7 FERGUSON COURT	BANGALOW NSW	883263/48	551342	6827213
962-HO2	9 FERGUSON COURT	BANGALOW NSW	1011009/96	551326	6827228
963-HO1	4 FERGUSON COURT	BANGALOW NSW	883263/51	551413	6827207
964-HO1	1 BARBY CRESCENT	BANGALOW NSW	1011009/93	551482	6827210
965-HO1	RANKIN DRIVE	BANGALOW NSW	1011009/97	551585	6827224
968-HO1	6 FERGUSON COURT	BANGALOW NSW	883263/50	551400	6827221
969-HO1	55 GRANUAILLE ROAD	BANGALOW NSW	556714/2	551257	6827260
970-HO1	3 BARBY CRESCENT	BANGALOW NSW	1011009/92	551451	6827231
971-HO1	2 BARBY CRESCENT	BANGALOW NSW	1011009/81	551513	6827240
971-HO2	43 RANKIN DRIVE	BANGALOW NSW	1011009/80	551517	6827255
972-HO1	5 BARBY CRESCENT	BANGALOW NSW	1011009/91	551438	6827248

Receiver ID	Lot Address	Township	DP/Lot No	Easting	Northing
973-HO1	8 FERGUSON COURT	BANGALOW NSW	883263/49	551401	6827244
974-HO2	900 BANGALOW ROAD	BANGALOW NSW	811921/1	552188	6827292
974-HO1	900 BANGALOW ROAD	BANGALOW NSW	811921/1	552148	6827216
975-HO1	4 CORLIS CRESCENT	BANGALOW NSW	1011009/66	551590	6827250
976-HO1	52 RANKIN DRIVE	BANGALOW NSW	1011009/65	551573	6827250
979-HO1	7 BARBY CRESCENT	BANGALOW NSW	1054034/902	551431	6827262
980-HO1	4 BARBY CRESCENT	BANGALOW NSW	1011009/82	551490	6827267
981-HO1	8 BARBY CRESCENT	BANGALOW NSW	1011009/84	551472	6827294
982-HO1	57 GRANUAILLE ROAD	BANGALOW NSW	556714/1	551281	6827261
983-HO1	45 RANKIN DRIVE	BANGALOW NSW	1011009/79	551531	6827267
984-HO1	6 BARBY CRESCENT	BANGALOW NSW	1011009/83	551482	6827278
985-HO1	9 BARBY CRESCENT	BANGALOW NSW	1054034/901	551425	6827283
986-HO1	GRANUAILLE ROAD	BANGALOW NSW	29127/1	551290	6827285
991-HO1	11 BARBY CRESCENT	BANGALOW NSW	1011009/88	551409	6827307
994-HO1	10 BARBY CRESCENT	BANGALOW NSW	1011009/85	551504	6827299
995-HO1	1 CORLIS CRESCENT	BANGALOW NSW	1011009/67	551585	6827293
996-HO2	47 RANKIN DRIVE	BANGALOW NSW	1011009/78	551535	6827290
996-HO1	49 RANKIN DRIVE	BANGALOW NSW	1011009/77	551537	6827311
997-HO1	56 RANKIN DRIVE	BANGALOW NSW	1011009/68	551586	6827318
998-HO1	GRANUAILLE CRESCENT	BANGALOW NSW	801442/23	551367	6827321
999-HO1	829 BANGALOW ROAD	TALOFA NSW	859552/1	552843	6827319
1001-HO1	805 BANGALOW ROAD	TALOFA NSW	791109/11	553169	6827313
1002-HO1	51 RANKIN DRIVE	BANGALOW NSW	1011009/76	551528	6827333
1004-HO1	14 BARBY CRESCENT	BANGALOW NSW	1011009/87	551465	6827346
1005-HO1	BANGALOW ROAD	TALOFA NSW	259010/4	553330	6827343
1006-HO1	12 BARBY CRESCENT	BANGALOW NSW	1011009/86	551479	6827361
1007-HO1	724 COOPERS SHOOT ROAD	TALOFA NSW	259010/1	553266	6827351
1010-HO1	58 RANKIN DRIVE	BANGALOW NSW	1011009/69	551587	6827337
1010-HO2	60 RANKIN DRIVE	BANGALOW NSW	1011009/70	551580	6827358
1011-HO2	STATION STREET	BANGALOW NSW	359227/1	551305	6826941
1012-HO1	62 RANKIN DRIVE	BANGALOW NSW	1011009/71	551569	6827372

Receiver ID	Lot Address	Township	DP/Lot No	Easting	Northing
1013-HO1	55 RANKIN DRIVE	BANGALOW NSW	1011009/74	551503	6827376
1017-HO1	64 RANKIN DRIVE	BANGALOW NSW	1011009/72	551569	6827392
1019-HO1	66 RANKIN DRIVE	BANGALOW NSW	1011009/73	551544	6827408
1020-HO1	856 BANGALOW ROAD	TALOFA NSW	859552/2	552605	6827412
1022-HO1	810 BANGALOW ROAD	TALOFA NSW	259624/3	553125	6827423
1024-HO1	816 BANGALOW ROAD	TALOFA NSW	259624/4	552995	6827429
1026-HO1	GRANUAILLE CRESCENT	BANGALOW NSW	302903/1	551373	6827511
1030-HO1	3 GRANUAILLE ROAD	BANGALOW NSW	755695/348	551416	6827578
1033-HO2	GRANUAILLE ROAD	BANGALOW NSW	803839/4	551235	6827474
1033-HO1	GRANUAILLE ROAD	BANGALOW NSW	803839/4	551248	6827369
1034-HO1	744 BANGALOW ROAD	TALOFA NSW	575719/2	553435	6827642
1035-HO1	820 BANGALOW ROAD	TALOFA NSW	259624/5	552738	6827583
1035-HO2	820 BANGALOW ROAD	TALOFA NSW	259624/5	552942	6827568
1039-HO1	7 TINDERBOX ROAD	TALOFA NSW	575719/3	553482	6827782
1042-HO1	BANGALOW ROAD	TALOFA NSW	259010/3	553799	6827852
1043-HO1	711 BANGALOW ROAD	TALOFA NSW	869547/2	553959	6827543
1044-HO1	711 BANGALOW ROAD	TALOFA NSW	869547/2	553994	6827661
1045-HO1	752 BANGALOW ROAD	TALOFA NSW	259010/5	553306	6827491
1046-HO1	2 TINDERBOX ROAD	TALOFA NSW	1001743/22	553558	6827756
1048-HO1	GRANUAILLE CRESCENT	BANGALOW NSW	615602/2	551372	6827853
1050-HO2	35 TINDERBOX ROAD	TALOFA NSW	713964/5	553314	6827980
1050-HO1	35 TINDERBOX ROAD	TALOFA NSW	713964/5	553250	6827777
1051-HO1	686 BANGALOW ROAD	TALOFA NSW	620049/2	553742	6827998
1055-HO2	GRANUAILLE CRESCENT	BANGALOW NSW	615602/1	551470	6828060
1055-HO1	GRANUAILLE CRESCENT	BANGALOW NSW	615602/1	551431	6827947
1060-HO4	684 BANGALOW ROAD	TALOFA NSW	812810/1	553870	6828008
1060-HO2	684 BANGALOW ROAD	TALOFA NSW	812810/1	553791	6828173
1060-HO6	684 BANGALOW ROAD	TALOFA NSW	812810/1	553762	6828104
1060-HO3	684 BANGALOW ROAD	TALOFA NSW	812810/1	553808	6828147
1060-HO5	684 BANGALOW ROAD	TALOFA NSW	812810/1	553802	6828079

Receiver ID	Lot Address	Township	DP/Lot No	Easting	Northing
1060-HO7	685 BANGALOW ROAD	TALOFA NSW	Unknown	553860	6828018
1060-HO1	684 BANGALOW ROAD	TALOFA NSW	812810/1	553760	6828134
1062-HO1	49 TINDERBOX ROAD	TALOFA NSW	713964/6	552974	6828126
1062-HO2	49 TINDERBOX ROAD	TALOFA NSW	713964/6	553064	6828148
1074-HO1	46 TINDERBOX ROAD	TALOFA NSW	1001743/21	553350	6828134
1074-HO2	46 TINDERBOX ROAD	TALOFA NSW	1001743/21	553541	6828035
1076-HO1	PACIFIC HIGHWAY	BANGALOW NSW	963614/1	551208	6828240
1079-HO1	48 TINDERBOX ROAD	TALOFA NSW	755695/344	553153	6828276
1083-HO1	656 BANGALOW ROAD	TALOFA NSW	856180/1	554155	6828571
1084-HO1	PACIFIC HIGHWAY	BANGALOW NSW	1077265/1	551323	6828349
1097-HO2	TINDERBOX ROAD	BANGALOW NSW	5130/20	552669	6828557
1097-HO3	TINDERBOX ROAD	BANGALOW NSW	Unknown	552648	6828540
1097-HO1	TINDERBOX ROAD	BANGALOW NSW	5130/20	552581	6828644
1099-HO1	SUNNYCREST LANE	BANGALOW NSW	264449/3	551324	6828893
1100-HO1	PACIFIC HIGHWAY	BANGALOW NSW	719871/6	551610	6829055
1101-HO1	58 ST HELENA ROAD	MCLEODS SHOOT NSW	856180/2	553710	6829191
1102-HO1	PACIFIC HIGHWAY	BANGALOW NSW	719871/5	551815	6828924
1104-HO1	PACIFIC HIGHWAY	BANGALOW NSW	703851/6	551419	6829024
1106-HO1	SUNNYCREST LANE	BANGALOW NSW	264449/1	551238	6828941
1109-HO1	18 SUNNYCREST LANE	BANGALOW NSW	703851/7	551323	6828984
1112-HO1	SUNNYCREST LANE	BANGALOW NSW	264449/5	551165	6828931
1113-HO2	PACIFIC HIGHWAY	BANGALOW NSW	631250/5	551681	6829430
1113-HO1	PACIFIC HIGHWAY	BANGALOW NSW	631250/5	551660	6829339
1115-HO1	80 BROWNS CRESCENT	MCLEODS SHOOT NSW	245439/5	552776	6829646
1117-HO1	200 ST HELENA ROAD	MCLEODS SHOOT NSW	129554/21	554295	6829359
1119-HO1	38 ST HELENA ROAD	MCLEODS SHOOT NSW	584078/6	553464	6830317
1120-HO2	58 ST HELENA ROAD	MCLEODS SHOOT NSW	755695/23	553657	6830270
1120-HO1	58 ST HELENA ROAD	MCLEODS SHOOT NSW	755695/23	553576	6830325
1122-HO1	80 ST HELENA ROAD	MCLEODS SHOOT NSW	594645/5	553709	6830181
1124-HO1	25 FOWLERS LANE	BANGALOW NSW	606438/2	551593	6830020
1125-HO1	FOWLERS LANE	BANGALOW NSW	700055/1	551752	6829950
1126-HO1	PACIFIC HIGHWAY	BANGALOW NSW	124404/1	552091	6829962

Receiver ID	Lot Address	Township	DP/Lot No	Easting	Northing
1128-HO1	120 ST HELENA ROAD	MCLEODS SHOOT NSW	594645/4	554139	6829975
1130-HO1	104 ST HELENA ROAD	MCLEODS SHOOT NSW	565482/2	554033	6830037
1134-HO1	153 ST HELENA ROAD	MCLEODS SHOOT NSW	809869/23	554443	6829926
1134-HO2	153 ST HELENA ROAD	MCLEODS SHOOT NSW	809869/23	554469	6829997
1135-HO1	88 ST HELENA ROAD	MCLEODS SHOOT NSW	565482/3	553897	6830104
1136-HO1	16 FOWLERS LANE	BANGALOW NSW	606438/1	551710	6830056
1139-HO1	PACIFIC HIGHWAY	MCLEODS SHOOT NSW	701705/4	553004	6830026
1139-HO2	PACIFIC HIGHWAY	MCLEODS SHOOT NSW	Unknown	552940	6830083
1141-HO1	BROWNS CRESCENT	MCLEODS SHOOT NSW	248805/3	552549	6830097
1142-HO1	BROWNS CRESCENT	MCLEODS SHOOT NSW	248805/1	552382	6830092
1143-HO1	95 ST HELENA ROAD	MCLEODS SHOOT NSW	778346/2	554182	6830143
1144-HO1	2 BROWNS CRESCENT	MCLEODS SHOOT NSW	1083796/1	552506	6830138
1145-HO1	95 ST HELENA ROAD	MCLEODS SHOOT NSW	809895/24	554016	6830209
1146-HO1	20 ST HELENA ROAD	MCLEODS SHOOT NSW	568110/1	553382	6830313
1147-HO1	10 ST HELENA ROAD	MCLEODS SHOOT NSW	701705/6	553279	6830318
1150-HO1	FOWLERS LANE	BANGALOW NSW	1003768/1	551575	6830146
1150-HO2	FOWLERS LANE	BANGALOW NSW	1003768/1	551806	6829998
1151-HO1	PACIFIC HIGHWAY	MCLEODS SHOOT NSW	701705/5	553004	6830311
1153-HO1	30 ST HELENA ROAD	MCLEODS SHOOT NSW	584078/5	553433	6830318
1158-HO2	83 STREET HELENA ROAD	MCLEODS SHOOT NSW	1069577/28	553848	6830300
1158-HO1	38 ST HELENA ROAD	MCLEODS SHOOT NSW	584078/6	553506	6830324
1159-HO1	PACIFIC HIGHWAY	MCLEODS SHOOT NSW	1072670/11	552942	6830376
1162-HO1	PACIFIC HIGHWAY	MCLEODS SHOOT NSW	870122/26	553743	6830458
1165-HO1	19 TAYLORS LANE	EWINGSDALE NSW	853798/2	554492	6830585
1166-HO1	21 TAYLORS LANE	EWINGSDALE NSW	853798/3	554363	6830611
1169-HO1	18 TAYLORS LANE	EWINGSDALE NSW	853798/1	554579	6830647
1170-HO1	PACIFIC HIGHWAY	MCLEODS SHOOT NSW	1072670/12	552936	6830565
1171-HO1	20 TAYLORS LANE	EWINGSDALE NSW	853798/5	554442	6830686
1172-HO1	22 TAYLORS LANE	EWINGSDALE NSW	853798/4	554366	6830701
1173-HO1	28 COOLAMON SCENIC DRIVE	COORABELL NSW	786983/12	552278	6830393
1178-HO1	156 PARKWAY DRIVE	EWINGSDALE NSW	792532/1	554542	6830998

Receiver ID	Lot Address	Township	DP/Lot No	Easting	Northing
1179-HO1	142 PARKWAY DRIVE	EWINGSDALE NSW	786291/28	554577	6831060
1180-HO1	3 FIGTREE COURT	EWINGSDALE NSW	786291/29	554531	6831071
1181-HO1	11 FIGTREE COURT	EWINGSDALE NSW	786291/30	554419	6831079
1184-HO1	14 FIGTREE COURT	EWINGSDALE NSW	873419/102	554359	6831125
1185-HO1	FIGTREE COURT	EWINGSDALE NSW	738059/9	554504	6831148
1186-HO1	15 VALLEY COURT	EWINGSDALE NSW	738059/22	554023	6831155
1187-HO1	12 FIGTREE COURT	EWINGSDALE NSW	738059/10	554415	6831166
1188-HO1	19 PLANTATION DRIVE	EWINGSDALE NSW	738059/19	554222	6831142
1190-HO1	14 VALLEY COURT	EWINGSDALE NSW	786291/31	553950	6831196
1192-HO1	71 PLANTATION DRIVE	EWINGSDALE NSW	786291/33	553818	6831200
1194-HO1	10 VALLEY COURT	EWINGSDALE NSW	786291/32	553909	6831238
1195-HO1	15 PLANTATION DRIVE	EWINGSDALE NSW	738059/18	554216	6831230
1196-HO2	21 PLANTATION DRIVE	EWINGSDALE NSW	738059/20	554119	6831257
1196-HO1	21 PLANTATION DRIVE	EWINGSDALE NSW	738059/20	554146	6831232
1197-HO1	PLANTATION DRIVE	EWINGSDALE NSW	738059/21	554059	6831257
1198-HO1	70 PLANTATION DRIVE	EWINGSDALE NSW	786291/38	553738	6831207
1199-HO1	13 VALLEY COURT	EWINGSDALE NSW	738059/23	553990	6831232
1200-HO1	9 PLANTATION DRIVE	EWINGSDALE NSW	873419/100	554282	6831243
1202-HO1	1 PLANTATION DRIVE	EWINGSDALE NSW	873419/101	554330	6831243
1203-HO1	9 BROOKVIEW COURT	EWINGSDALE NSW	738059/1	554561	6831261
1205-HO1	69 PLANTATION DRIVE	EWINGSDALE NSW	786291/34	553831	6831257
1205-HO2	69 PLANTATION DRIVE	EWINGSDALE NSW	786291/34	553883	6831266
1208-HO1	68 PLANTATION DRIVE	EWINGSDALE NSW	850870/2	553763	6831287
1209-HO1	9 VALLEY COURT	EWINGSDALE NSW	738059/24	553966	6831291
1210-HO1	16 PLANTATION DRIVE	EWINGSDALE NSW	738059/16	554194	6831316
1211-HO1	8 VALLEY COURT	EWINGSDALE NSW	738059/25	553908	6831298
1212-HO1	10 PLANTATION DRIVE	EWINGSDALE NSW	738059/15	554276	6831333
1213-HO1	22 PLANTATION DRIVE	EWINGSDALE NSW	739402/1	554130	6831323
1214-HO1	66 PLANTATION DRIVE	EWINGSDALE NSW	850870/1	553773	6831326
1214-HO1	50 PLANTATION DRIVE	EWINGSDALE NSW	747394/2	553991	6831403
1215-HO1	61 PLANTATION DRIVE	EWINGSDALE NSW	786291/35	553852	6831318
1218-HO1	111 PARKWAY DRIVE	EWINGSDALE NSW	786291/27	554474	6831353

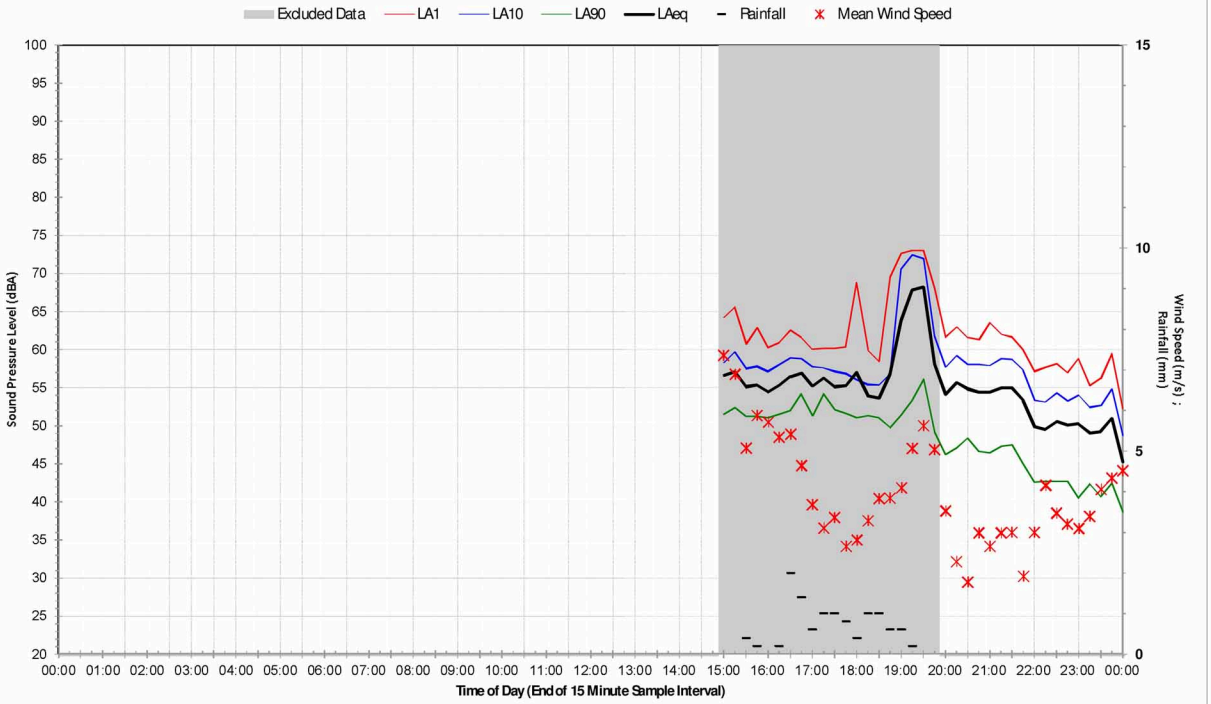
Receiver ID	Lot Address	Township	DP/Lot No	Easting	Northing
1220-HO1	PARKWAY DRIVE	EWINGSDALE NSW	738059/14	554316	6831367
1221-HO1	12 PLANTATION DRIVE	EWINGSDALE NSW	738059/13	554219	6831379
1223-HO1	PACIFIC HIGHWAY	EWINGSDALE NSW	877915/22	553337	6831586
1225-HO2	58 PLANTATION DRIVE	EWINGSDALE NSW	786291/36	553789	6831420
1225-HO1	58 PLANTATION DRIVE	EWINGSDALE NSW	786291/36	553835	6831385
1226-HO1	6 TASHA CLOSE	EWINGSDALE NSW	738352/3	554443	6831414
1228-HO1	TASHA CLOSE	EWINGSDALE NSW	738352/2	554388	6831414
1229-HO1	98 PARKWAY DRIVE	EWINGSDALE NSW	738352/1	554250	6831430
1234-HO1	11 AVOCADO CRESCENT	EWINGSDALE NSW	806200/19	554199	6831432
1235-HO1	15 AVOCADO CRESCENT	EWINGSDALE NSW	806200/20	554159	6831443
1236-HO1	17 AVOCADO CRESCENT	EWINGSDALE NSW	806200/21	554114	6831448
1237-HO1	96 PARKWAY DRIVE	EWINGSDALE NSW	785708/9	554256	6831471
1238-HO1	73 MYOCUM ROAD	EWINGSDALE NSW	621993/4	553182	6832014
1239-HO1	19 AVOCADO CRESCENT	EWINGSDALE NSW	826128/28	554059	6831459
1240-HO1	9 TASHA CLOSE	EWINGSDALE NSW	738352/4	554475	6831456
1241-HO1	1 TASHA CLOSE	EWINGSDALE NSW	738352/5	554347	6831476
1243-HO1	3 AVOCADO CRESCENT	EWINGSDALE NSW	785708/13	554245	6831505
1244-HO1	5 TASHA CLOSE	EWINGSDALE NSW	738352/6	554390	6831505
1245-HO1	19 TAHRA CRESCENT	EWINGSDALE NSW	705543/15	554588	6831534
1248-HO1	91 PARKWAY DRIVE	EWINGSDALE NSW	785708/10	554319	6831520
1250-HO1	22 AVOCADO CRESCENT	EWINGSDALE NSW	806200/23	554081	6831569
1251-HO1	6 AVOCADO CRESCENT	EWINGSDALE NSW	831110/123	554148	6831589
1252-HO1	81 PARKWAY DRIVE	EWINGSDALE NSW	790776/17	554297	6831597
1256-HO2	29 AVOCADO CRESCENT	EWINGSDALE NSW	1064508/29	554005	6831540
1256-HO4	AVOCADO CRESCENT	EWINGSDALE NSW	1064508/32	554008	6831727
1256-HO1	AVOCADO CRESCENT	EWINGSDALE NSW	1064508/31	553997	6831667
1256-HO3	AVOCADO CRESCENT	EWINGSDALE NSW	1064508/30	553997	6831615
1257-HO1	85 PARKWAY DRIVE	EWINGSDALE NSW	790776/18	554421	6831608

Receiver ID	Lot Address	Township	DP/Lot No	Easting	Northing
1258-HO1	30 AVOCADO CRESCENT	EWINGSDALE NSW	806200/24	554078	6831626
1260-HO1	77 PARKWAY DRIVE	EWINGSDALE NSW	790776/16	554281	6831640
1261-HO1	PARKWAY DRIVE	EWINGSDALE NSW	831110/122	554200	6831646
1262-HO1	38 AVOCADO CRESCENT	EWINGSDALE NSW	806200/25	554077	6831667
1265-HO1	73 PARKWAY DRIVE	EWINGSDALE NSW	790776/15	554276	6831671
1267-HO1	74 PARKWAY DRIVE	EWINGSDALE NSW	811376/120	554151	6831706
1270-HO1	40 AVOCADO CRESCENT	EWINGSDALE NSW	806200/26	554084	6831710
1271-HO1	71 PARKWAY DRIVE	EWINGSDALE NSW	806855/5	554281	6831743
1272-HO1	68 PARKWAY DRIVE	EWINGSDALE NSW	806855/1	554175	6831741
1274-HO1	MAGNOLIA PLACE	EWINGSDALE NSW	1028278/3	554366	6831764
1277-HO1	66 PARKWAY DRIVE	EWINGSDALE NSW	806855/2	554203	6831780
1280-HO1	55 PARKWAY DRIVE	EWINGSDALE NSW	806855/7	554327	6831800
1281-HO1	60 PARKWAY DRIVE	EWINGSDALE NSW	806855/3	554221	6831835
1282-HO1	55 PARKWAY DRIVE	EWINGSDALE NSW	806855/7	554363	6831826
1283-HO2	12 MAGNOLIA PLACE	EWINGSDALE NSW	1028278/1	554529	6831797
1283-HO1	39 PARKWAY DRIVE	EWINGSDALE NSW	816451/16	554444	6831830
1283-HO3	14 MAGNOLIA PLACE	EWINGSDALE NSW	1028278/2	554450	6831788
1283-HO4	15 MAGNOLIA PLACE	EWINGSDALE NSW	1028278/4	554484	6831704
1284-HO1	45 PARKWAY DRIVE	EWINGSDALE NSW	816451/15	554416	6831844
1285-HO1	58 PARKWAY DRIVE	EWINGSDALE NSW	806855/4	554235	6831852
1287-HO1	40 PARKWAY DRIVE	EWINGSDALE NSW	816451/12	554470	6831901
1287-HO2	EWINGSDALE ROAD	EWINGSDALE NSW	816451/17	554460	6832059
1288-HO1	50 PARKWAY DRIVE	EWINGSDALE NSW	816451/9	554330	6831897
1289-HO1	42 PARKWAY DRIVE	EWINGSDALE NSW	816451/11	554428	6831908
1290-HO1	48 PARKWAY DRIVE	EWINGSDALE NSW	816451/10	554383	6831911
1291-HO1	WILLIAM FLICK LANE	EWINGSDALE NSW	47409/377	553845	6831865
1303-HO2	81 MYOCUM ROAD	EWINGSDALE NSW	621993/1	553193	6832184
1307-HO1	61 MYOCUM ROAD	EWINGSDALE NSW	605236/14	553405	6832245
1308-HO1	65 MYOCUM ROAD	EWINGSDALE NSW	579860/12	553364	6832247
1309-HO1	69 MYOCUM ROAD	EWINGSDALE NSW	579860/11	553277	6832236

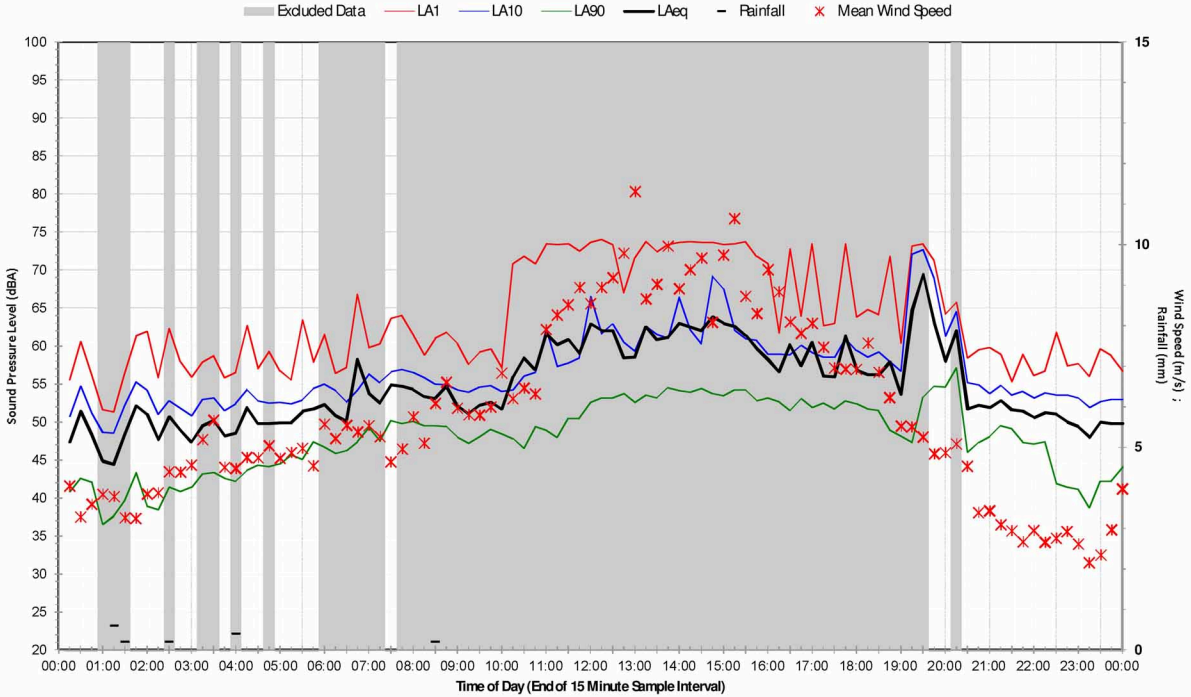
Receiver ID	Lot Address	Township	DP/Lot No	Easting	Northing
1311-HO1	11 EWINGSDALE ROAD	EWINGSDALE NSW	848222/5	554103	6832191
1311-HO2	11 EWINGSDALE ROAD	EWINGSDALE NSW	Unknown	554135	6832233
1313-HO1	64 MYOCUM ROAD	EWINGSDALE NSW	623351/16	553347	6832342
1314-HO1	MYOCUM ROAD	EWINGSDALE NSW	Unknown	553562	6832569
1314-HO2	MYOCUM ROAD	EWINGSDALE NSW	Unknown	553616	6832608
Brook Farm	80 ST HELENA ROAD	MCLEODS SHOOT NSW	594645/5	553785	6829779
Ewingsdale Community Hall and Church	WILLIAM FLICK LANE	EWINGSDALE NSW	134548/1	553907	6832003
Feros Village Bangalow	BYRON BAY ROAD	POTTSVILLE NSW	859960/2	551813	6826807
Macadamia Castle	1697-1699 PACIFIC HWY	KNOCKROW NSW	785372/2	552156	6819594
Newrybar Public School	NEWRYBAR PRIMARY 10 BROKEN HEAD ROAD	NEWRYBAR NSW	123300/1	552049	6823177
Stone Fruit Farm	RT BYRON SHIRE 89 BROKEN HEAD ROAD	NEWRYBAR NSW	801186/14	552432	6823735

Appendix C – Noise Monitoring Charts – Noise monitoring location L01

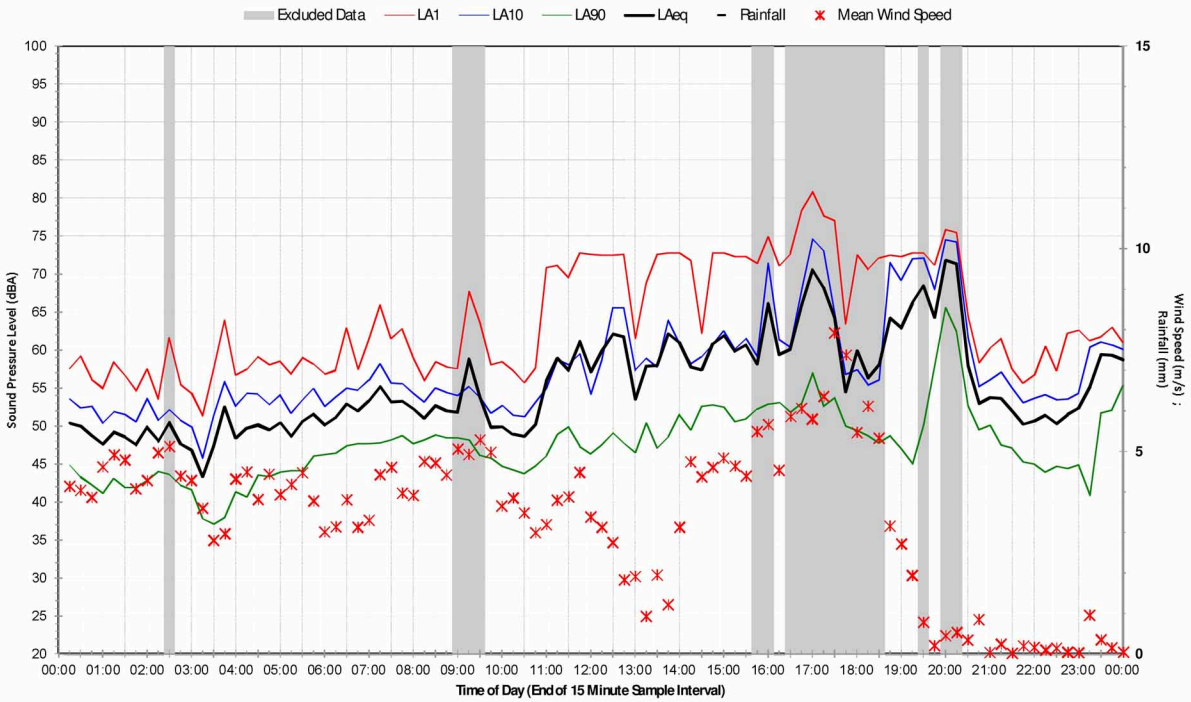
Statistical Ambient Noise Levels
Monitoring location 1 - Tuesday 6 March 2012



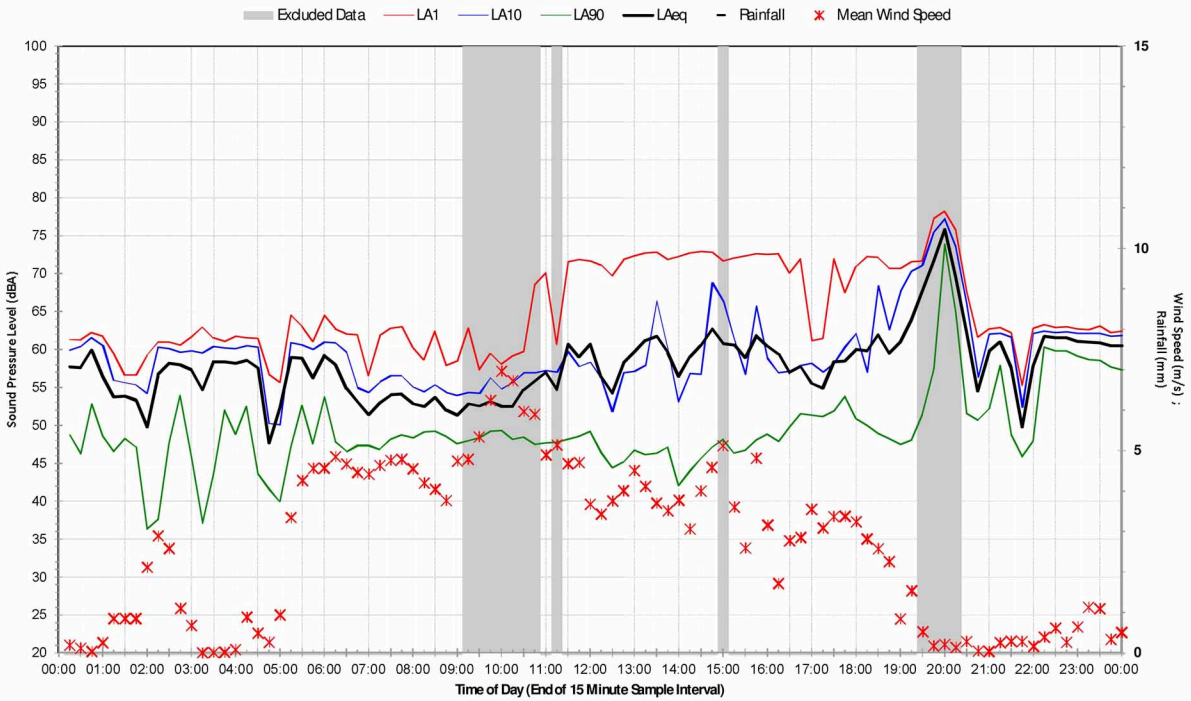
Statistical Ambient Noise Levels
Monitoring location 1 - Wednesday 7 March 2012



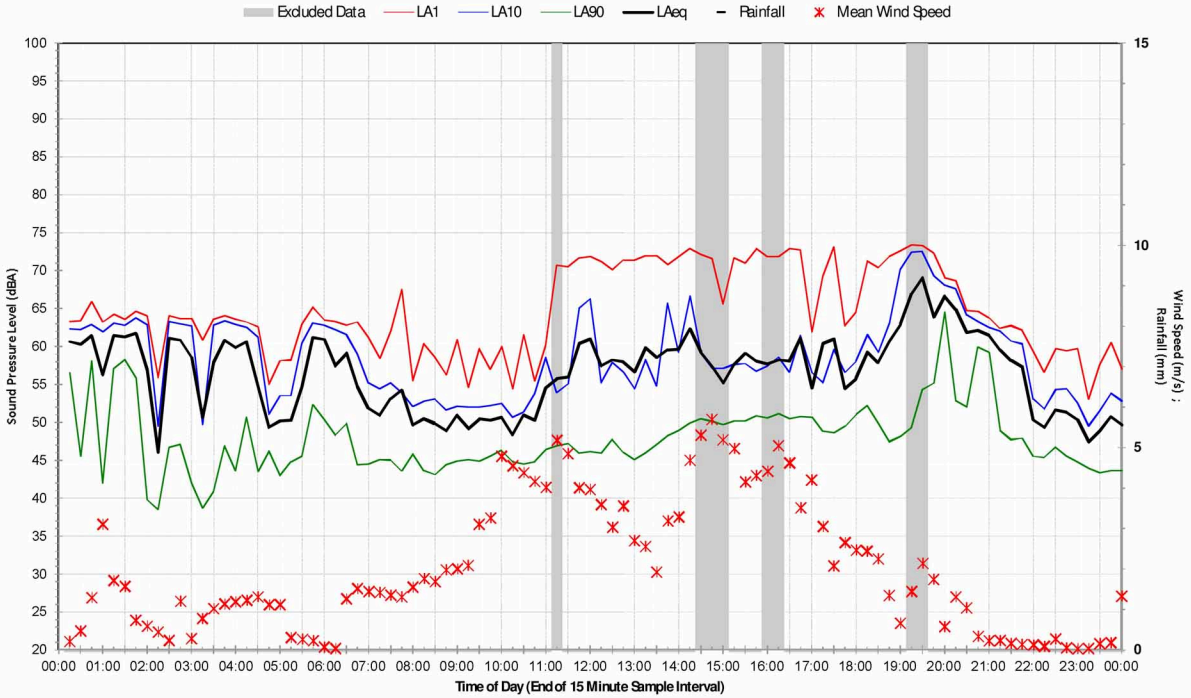
Statistical Ambient Noise Levels
Monitoring location 1 - Thursday 8 March 2012



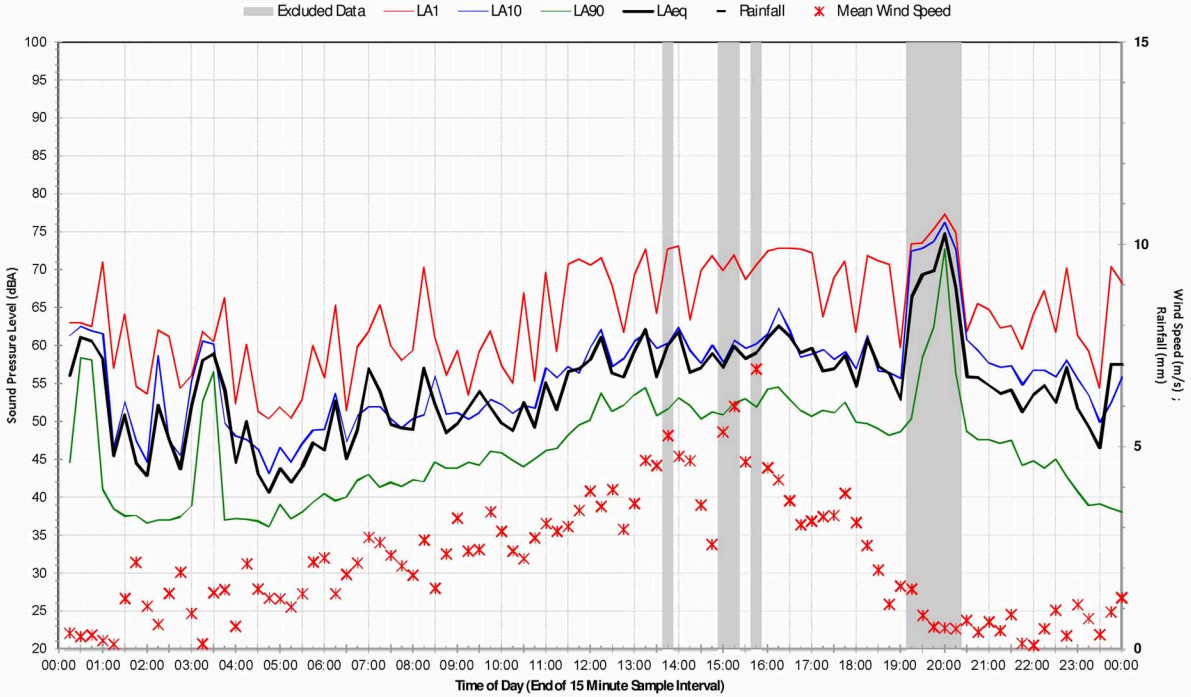
Statistical Ambient Noise Levels
Monitoring location 1 - Friday 9 March 2012



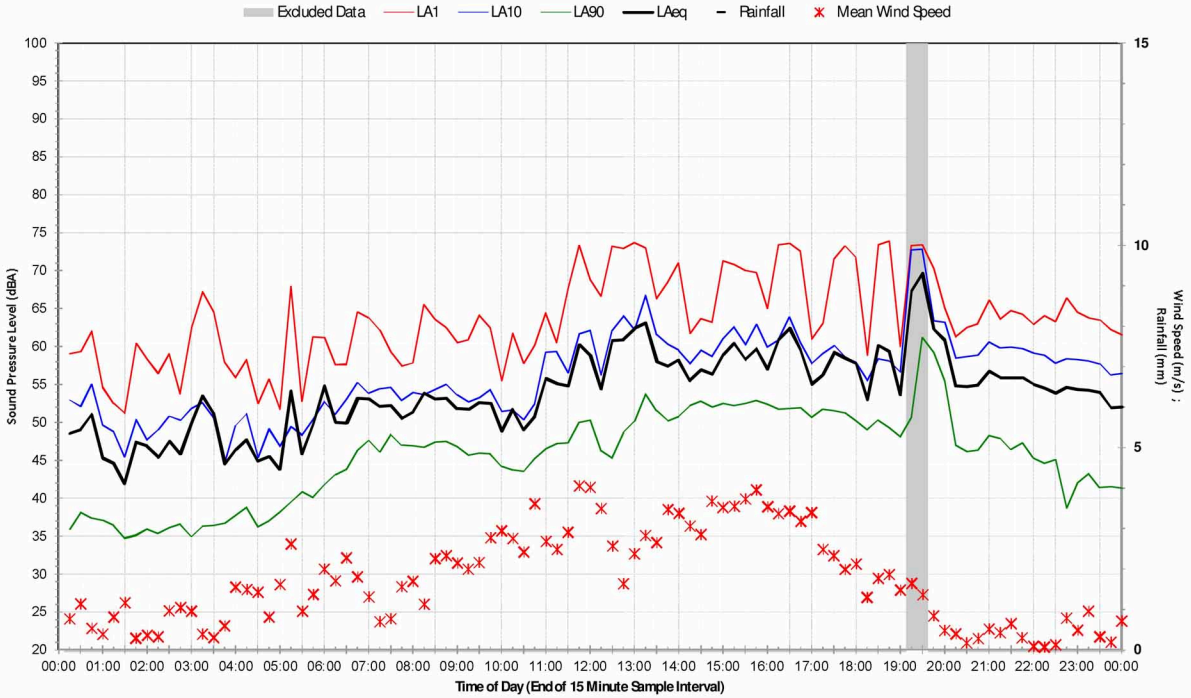
Statistical Ambient Noise Levels
Monitoring location 1 - Saturday 10 March 2012



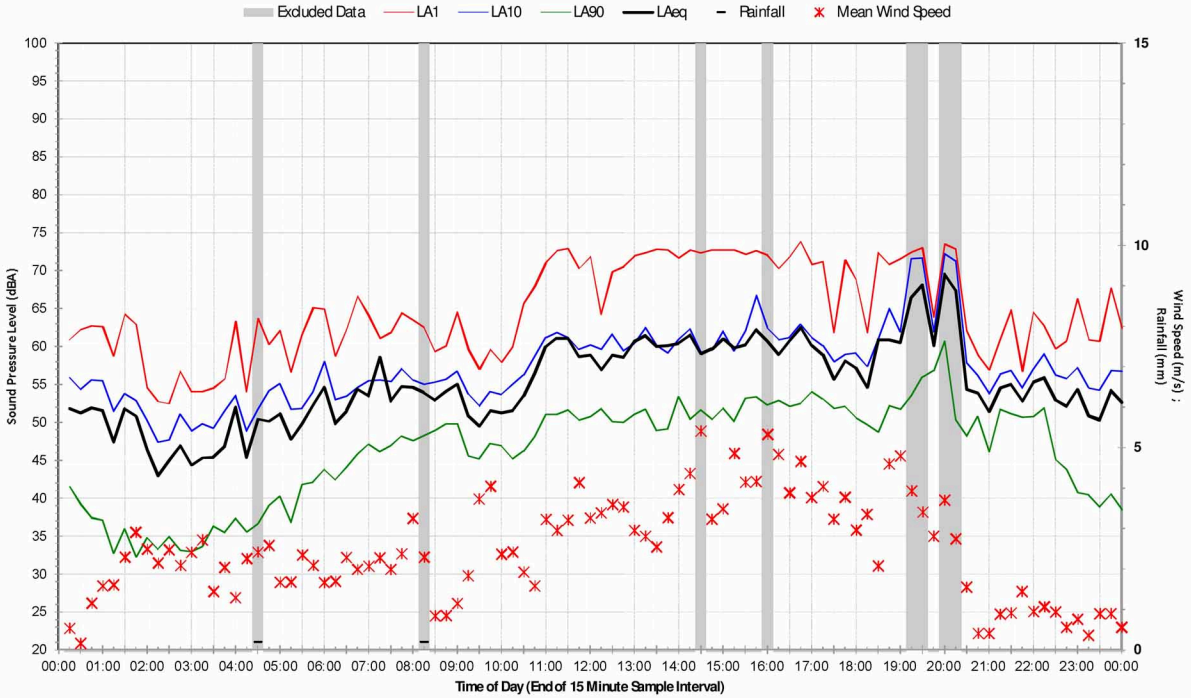
Statistical Ambient Noise Levels
Monitoring location 1 - Sunday 11 March 2012



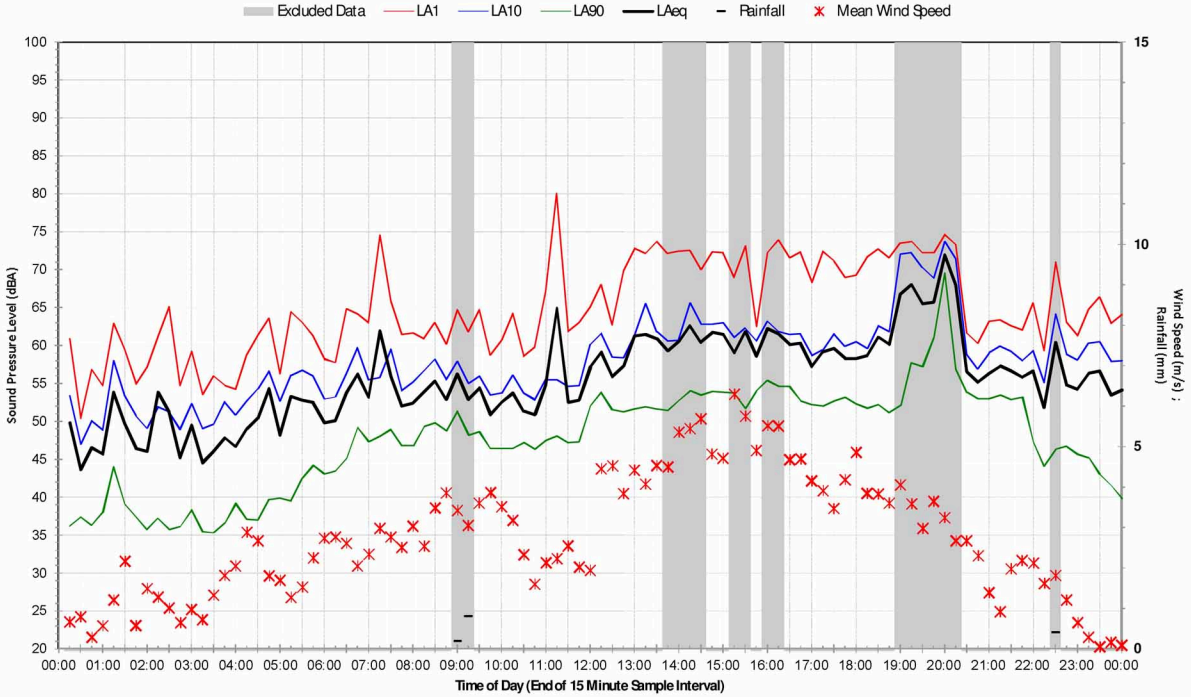
Statistical Ambient Noise Levels
Monitoring location 1 - Monday 12 March 2012



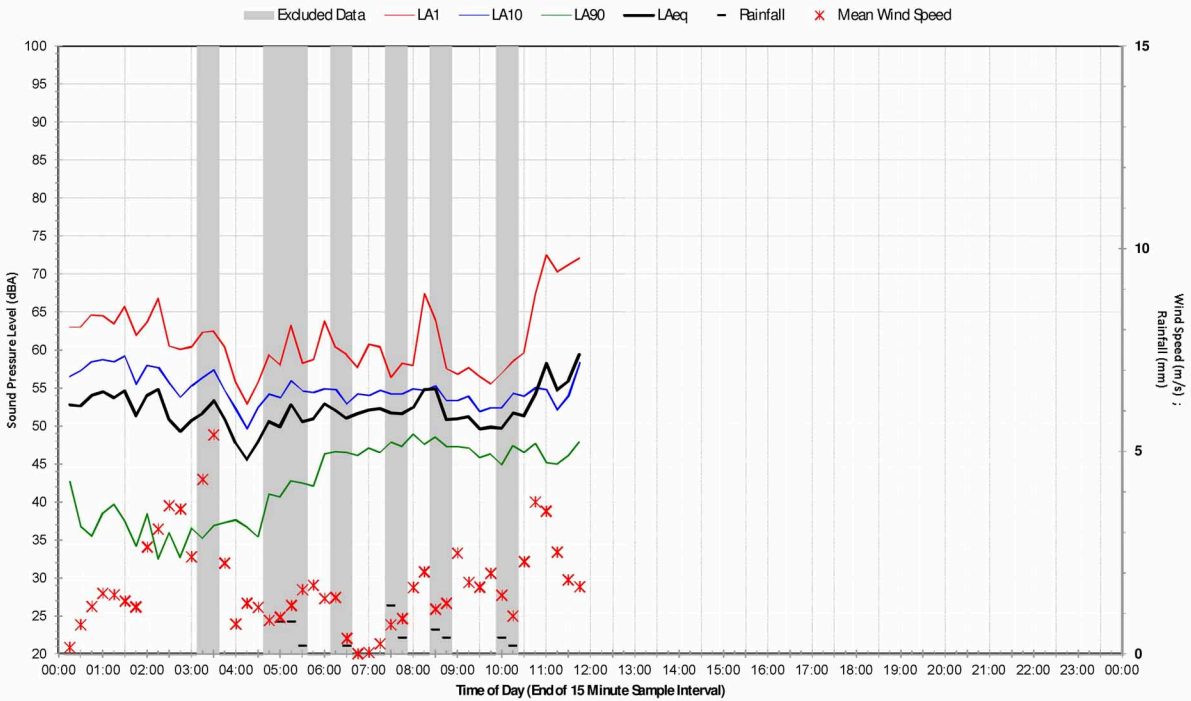
Statistical Ambient Noise Levels
Monitoring location 1 - Tuesday 13 March 2012



Statistical Ambient Noise Levels
Monitoring location 1 - Wednesday 14 March 2012

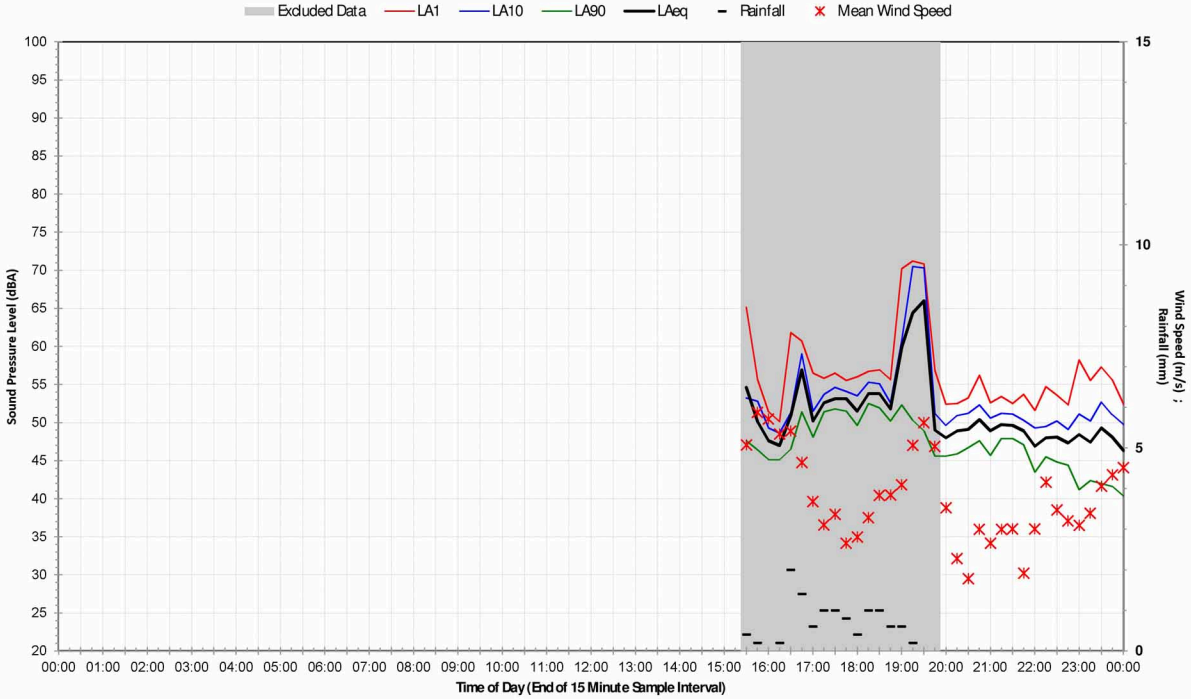


Statistical Ambient Noise Levels
Monitoring location 1 - Thursday 15 March 2012

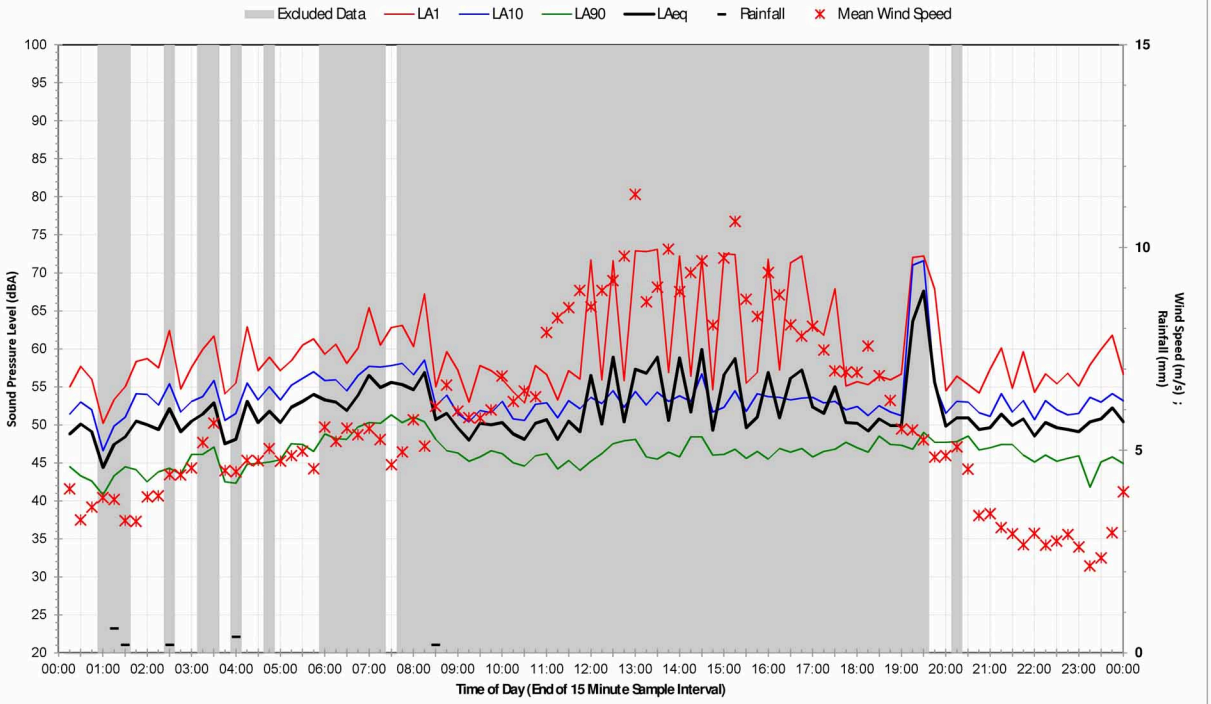


Appendix D – Noise Monitoring Charts – Noise monitoring location L02

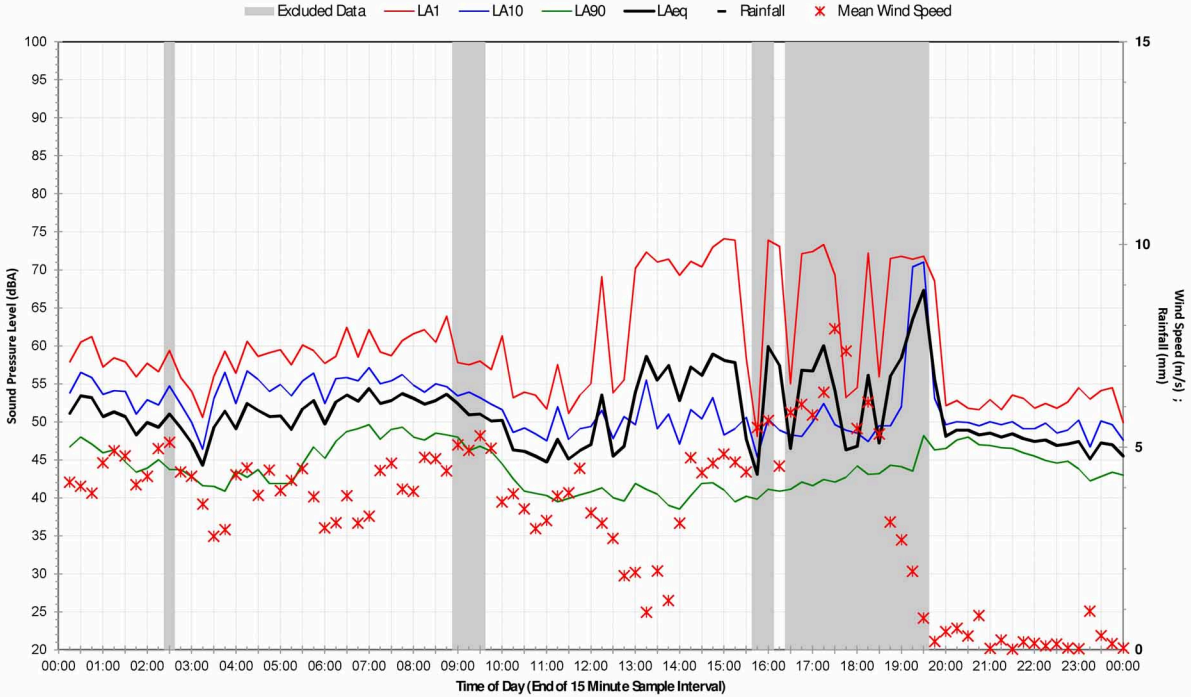
Statistical Ambient Noise Levels
Monitoring Location 2 - Tuesday 6 March 2012



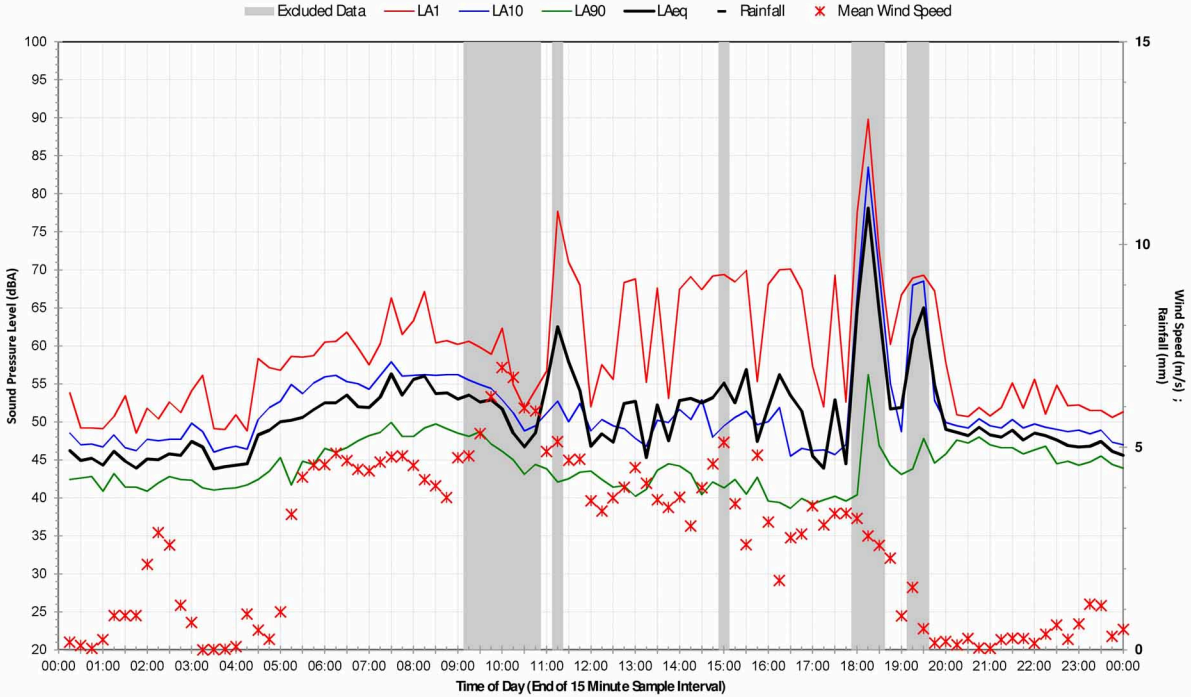
Statistical Ambient Noise Levels
Monitoring Location 2 - Wednesday 7 March 2012



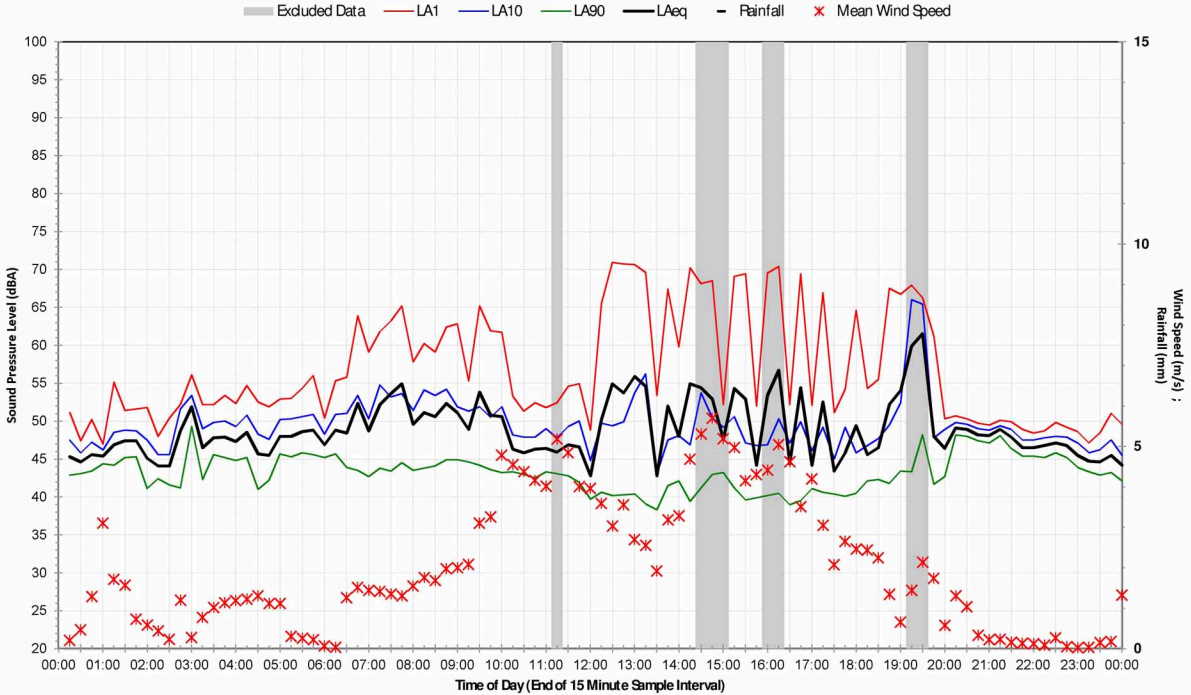
Statistical Ambient Noise Levels
Monitoring Location 2 - Thursday 8 March 2012



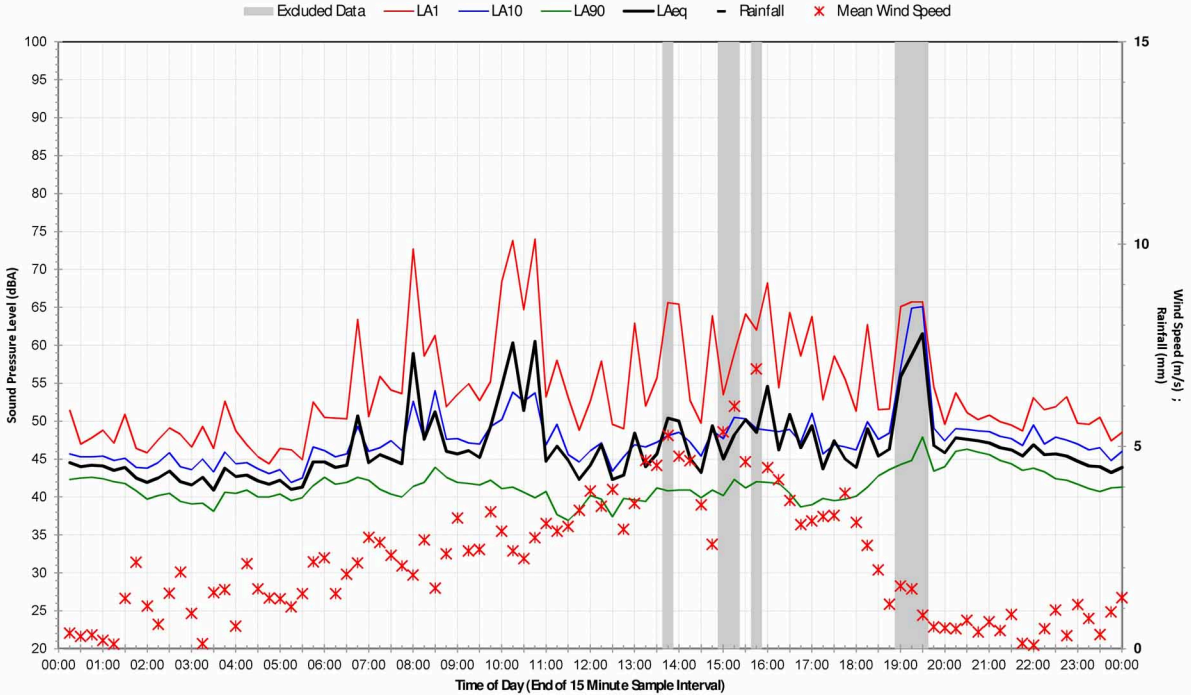
Statistical Ambient Noise Levels
Monitoring Location 2 - Friday 9 March 2012



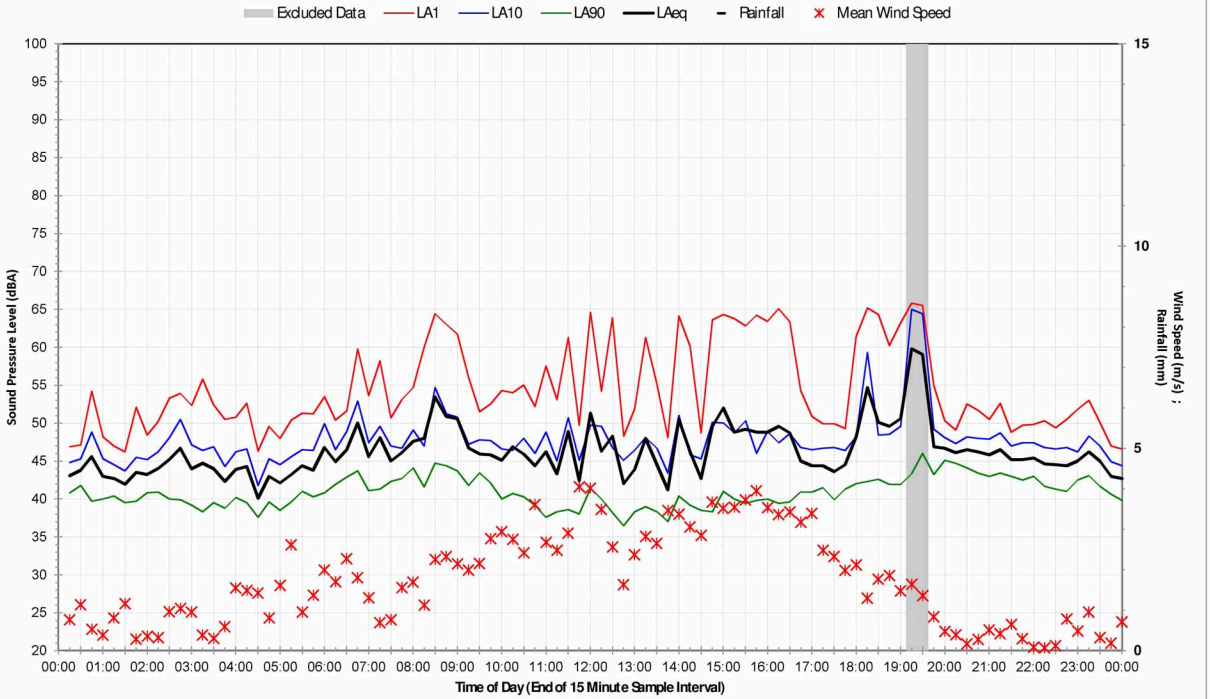
Statistical Ambient Noise Levels
Monitoring Location 2 - Saturday 10 March 2012



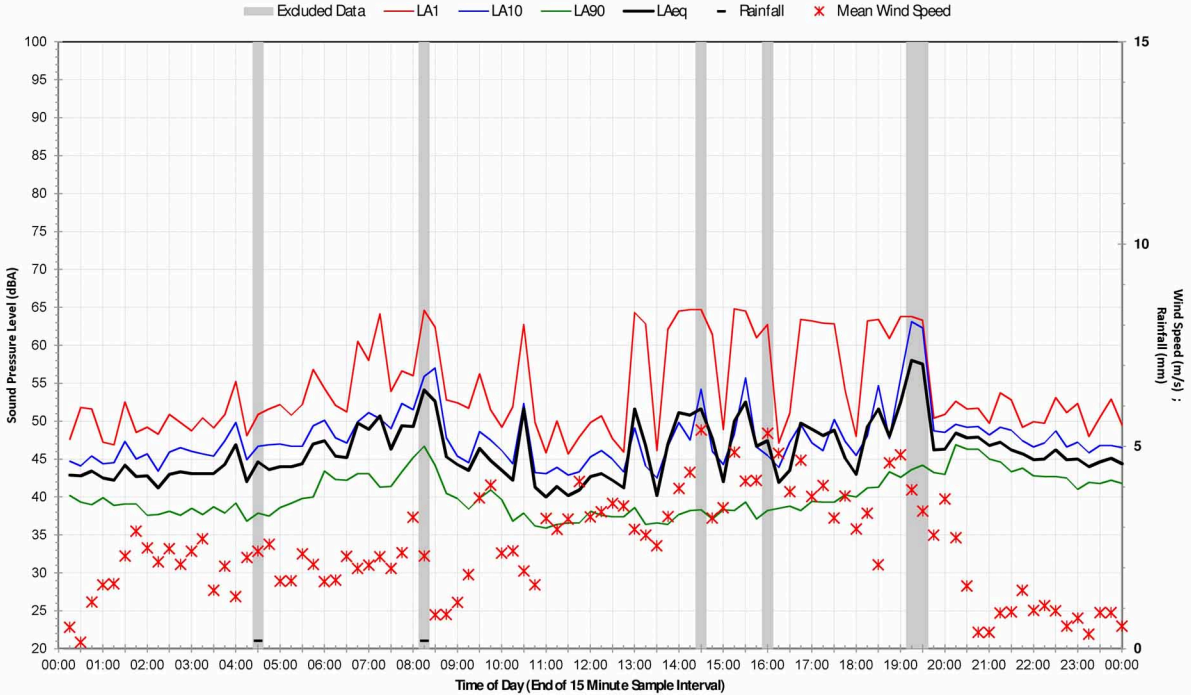
Statistical Ambient Noise Levels
Monitoring Location 2 - Sunday 11 March 2012



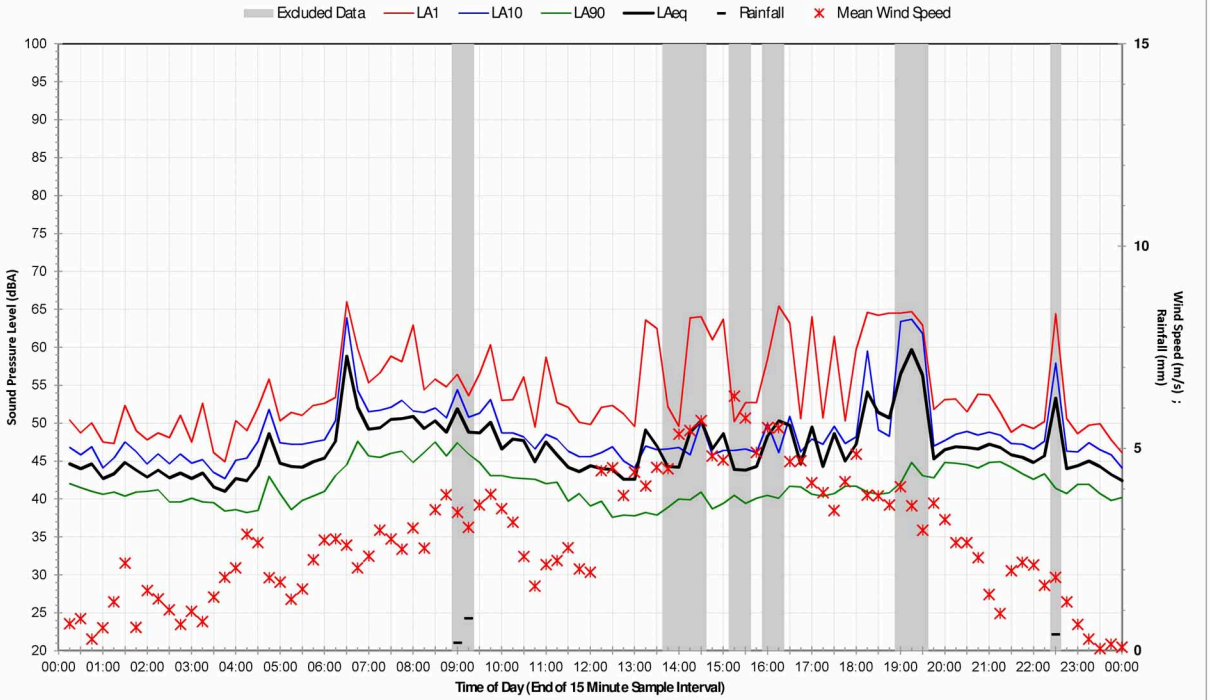
Statistical Ambient Noise Levels
Monitoring Location 2 - Monday 12 March 2012



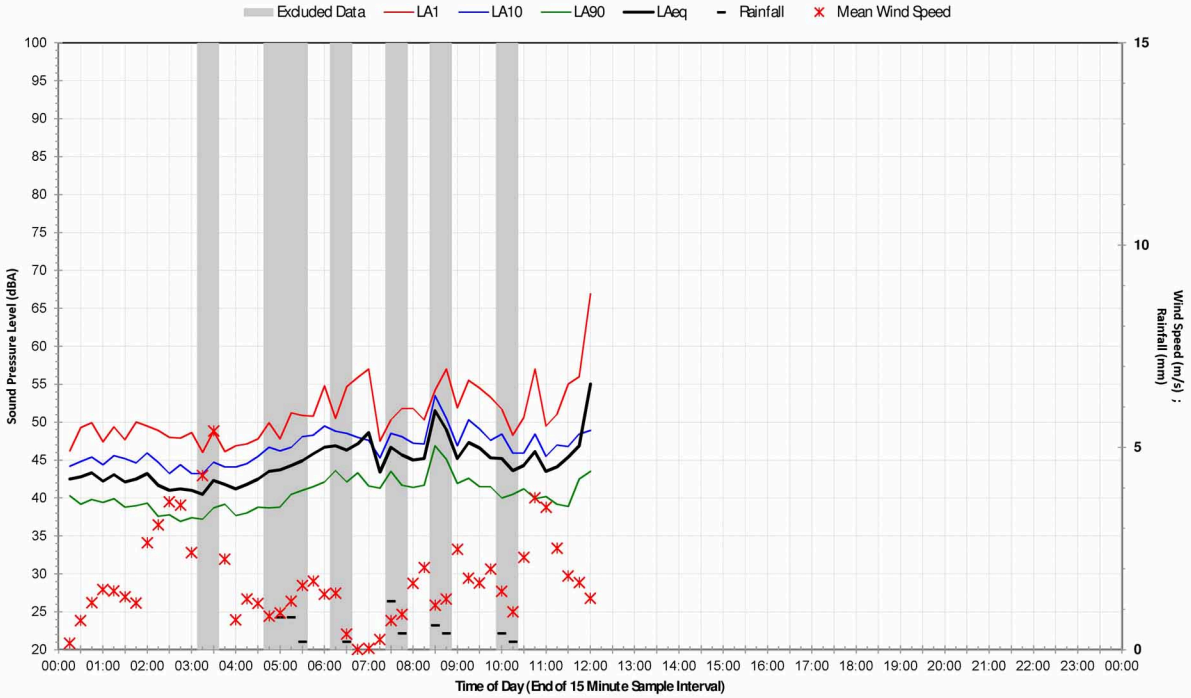
Statistical Ambient Noise Levels
Monitoring Location 2 - Tuesday 13 March 2012



Statistical Ambient Noise Levels
Monitoring Location 2 - Wednesday 14 March 2012

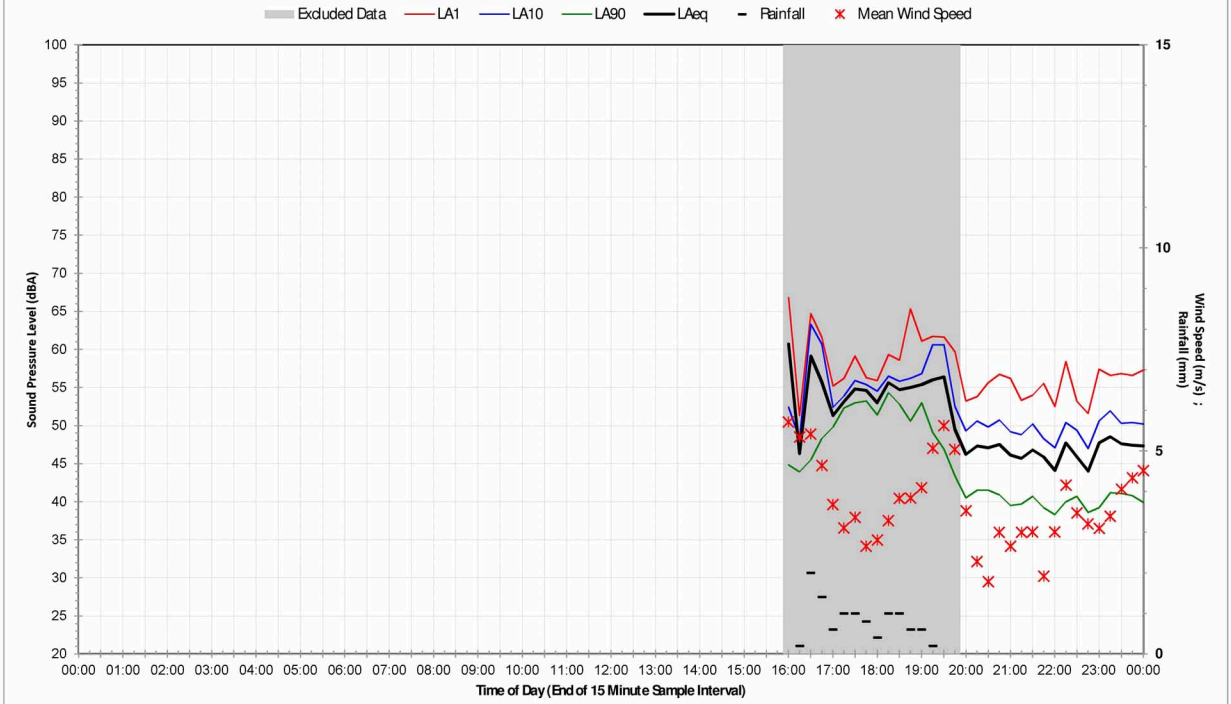


Statistical Ambient Noise Levels
Monitoring Location 2 - Thursday 15 March 2012

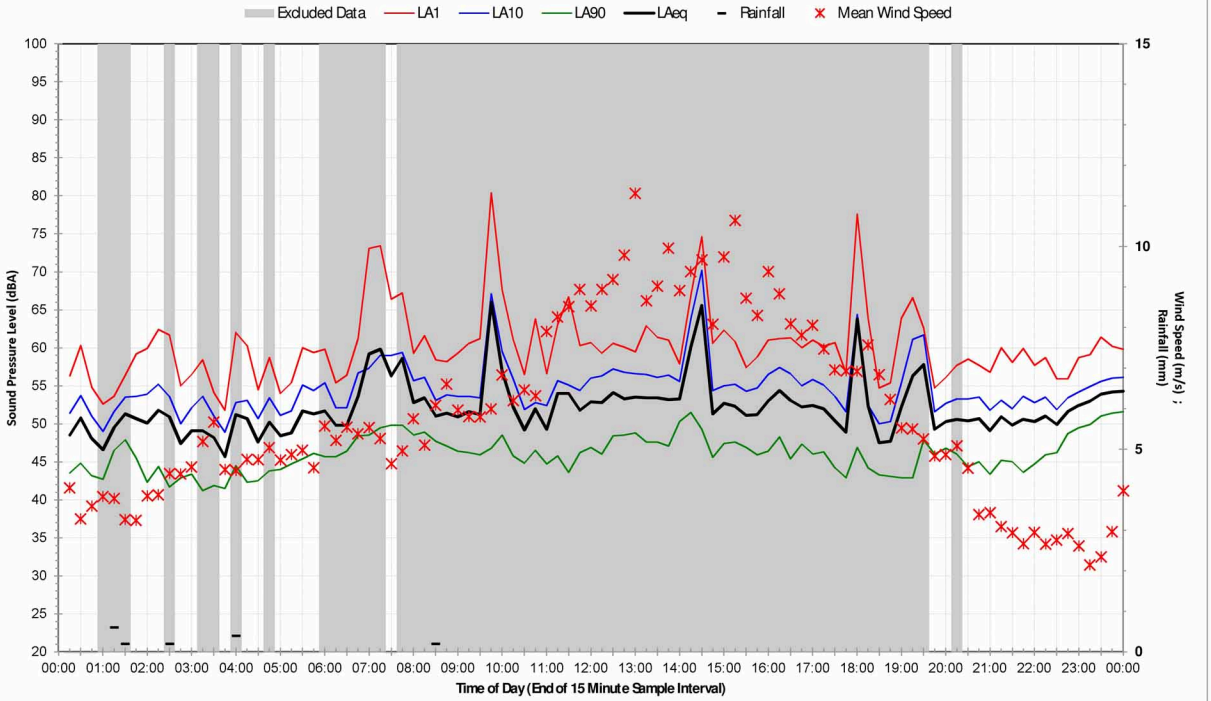


Appendix E – Noise Monitoring Charts – Noise monitoring location L03

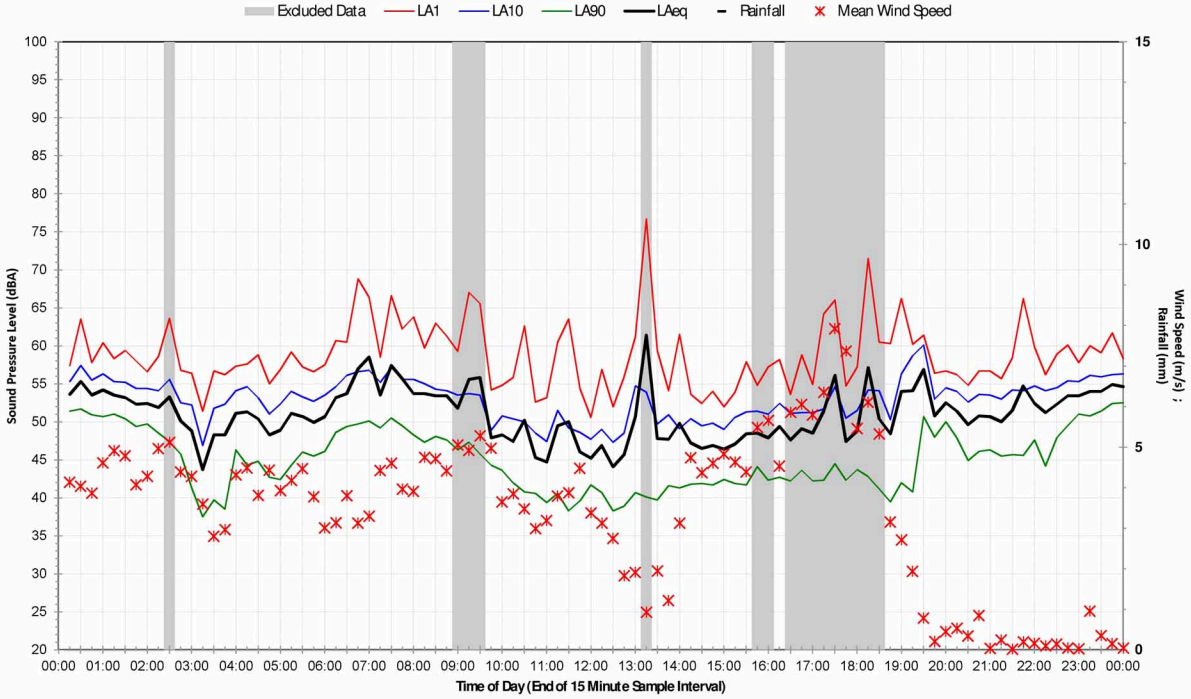
Statistical Ambient Noise Levels
Monitoring Location 3 - Tuesday 6 March 2012



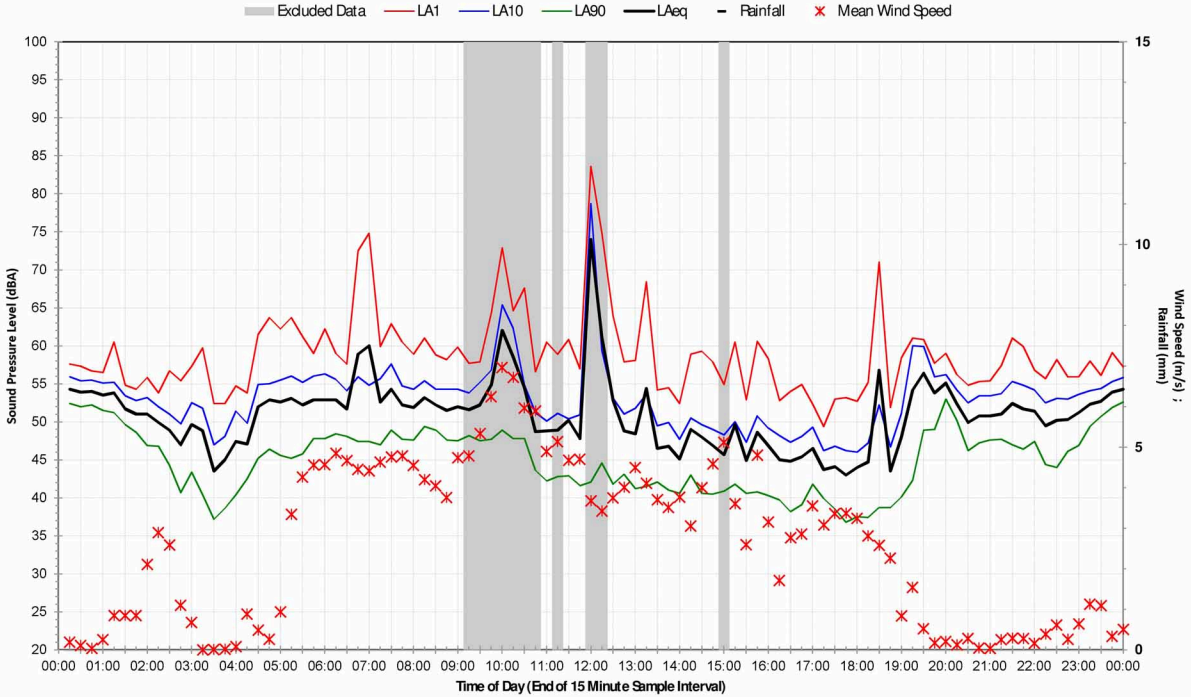
Statistical Ambient Noise Levels
Monitoring Location 3 - Wednesday 7 March 2012



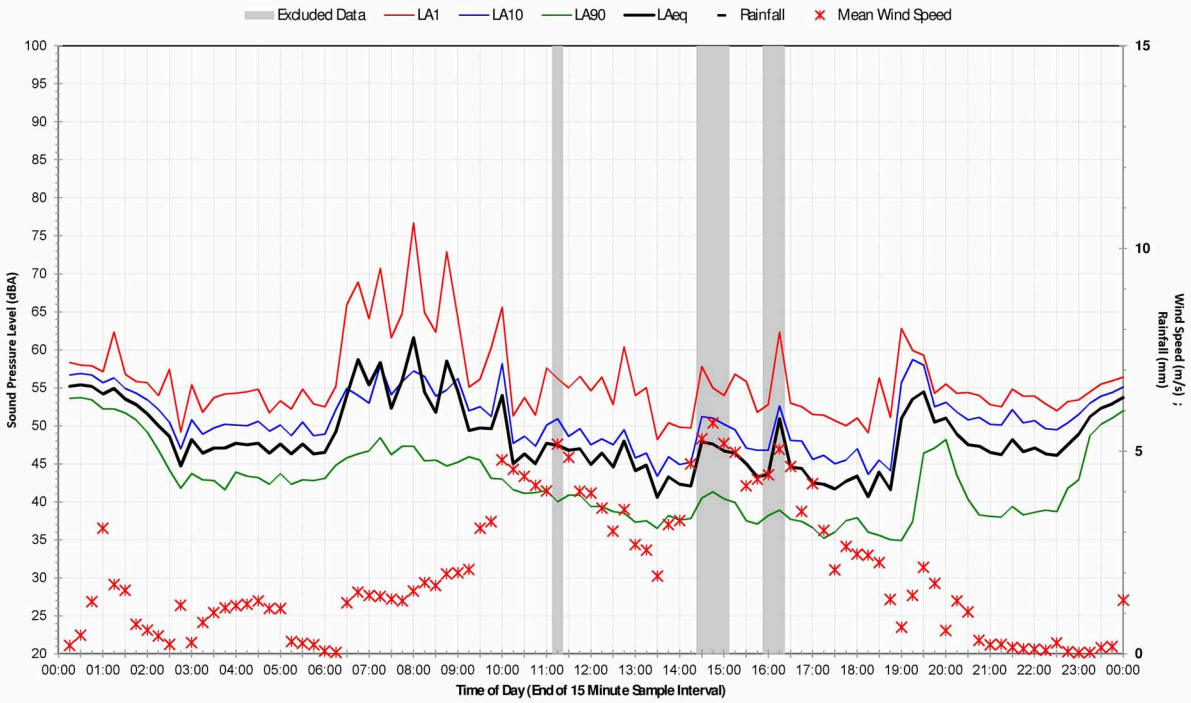
Statistical Ambient Noise Levels
Monitoring Location 3 - Thursday 8 March 2012



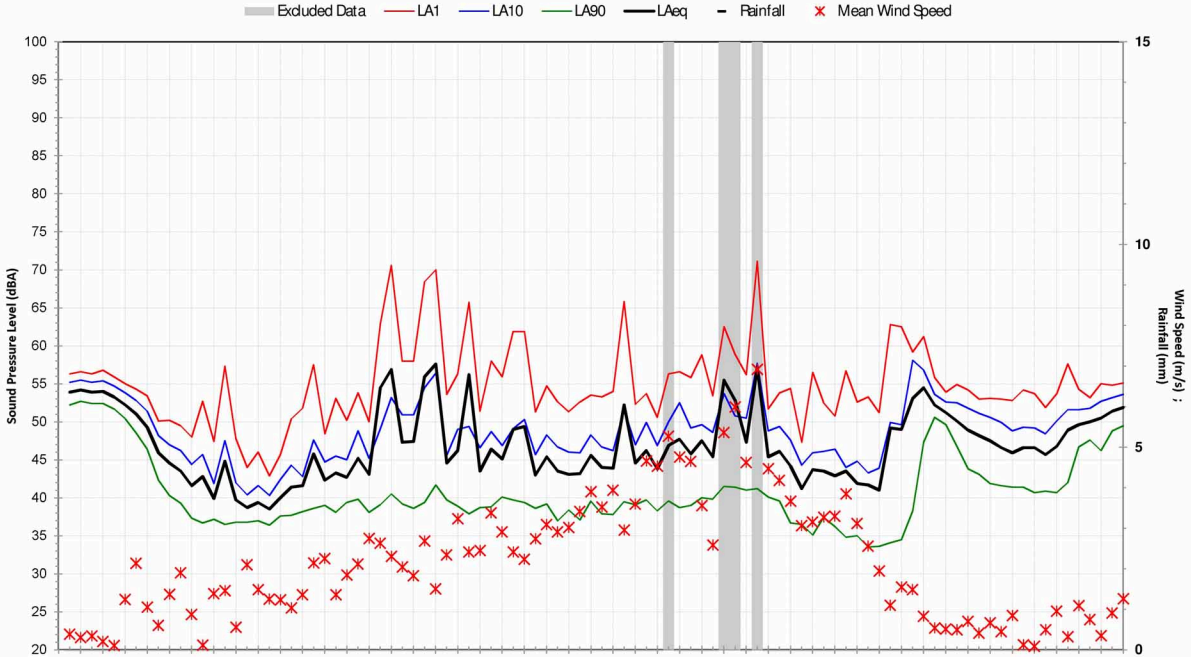
Statistical Ambient Noise Levels
Monitoring Location 3 - Friday 9 March 2012



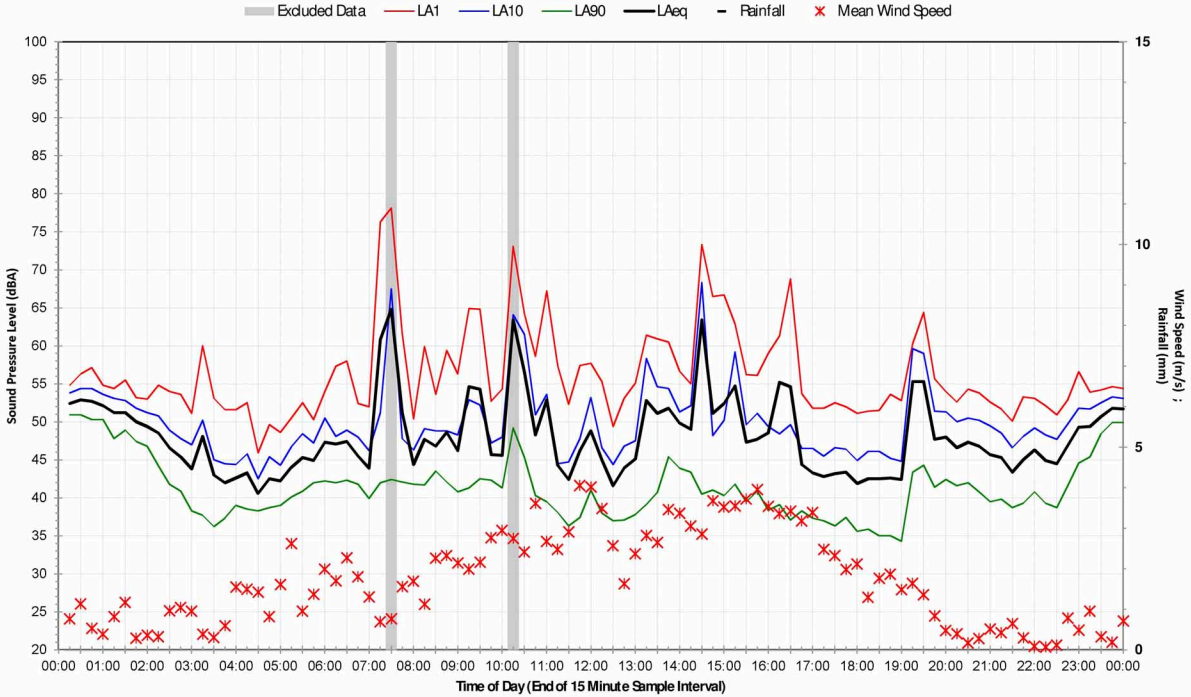
Statistical Ambient Noise Levels
Monitoring Location 3 - Saturday 10 March 2012



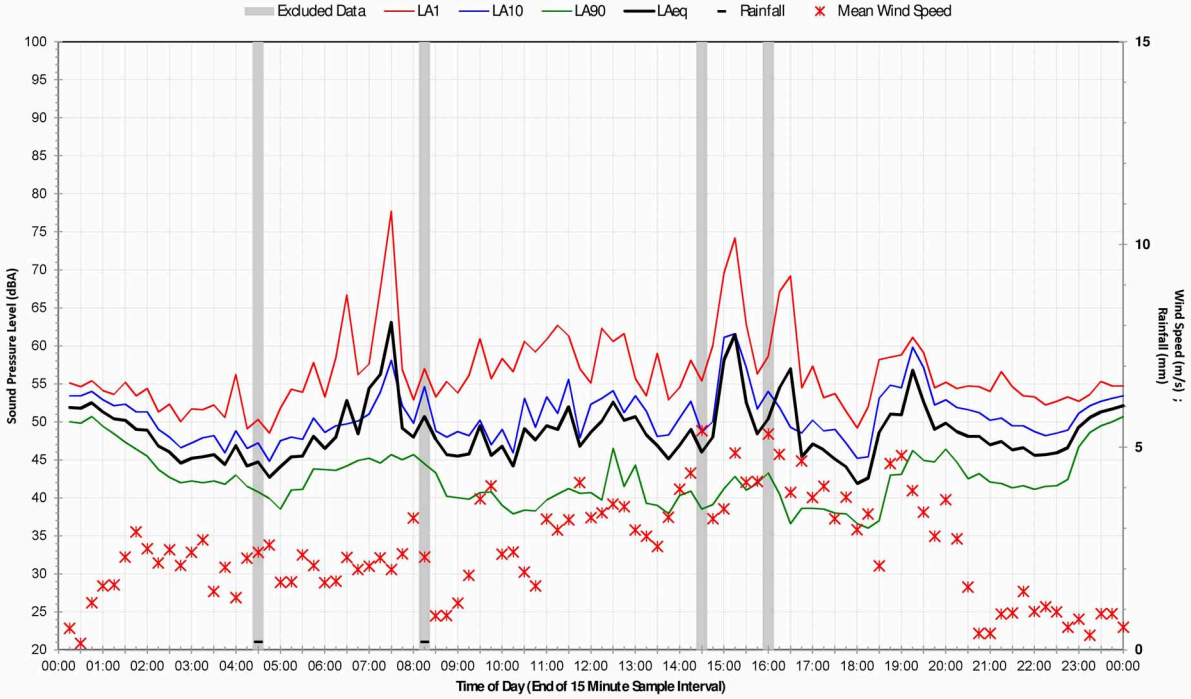
Statistical Ambient Noise Levels
Monitoring Location 3 - Sunday 11 March 2012



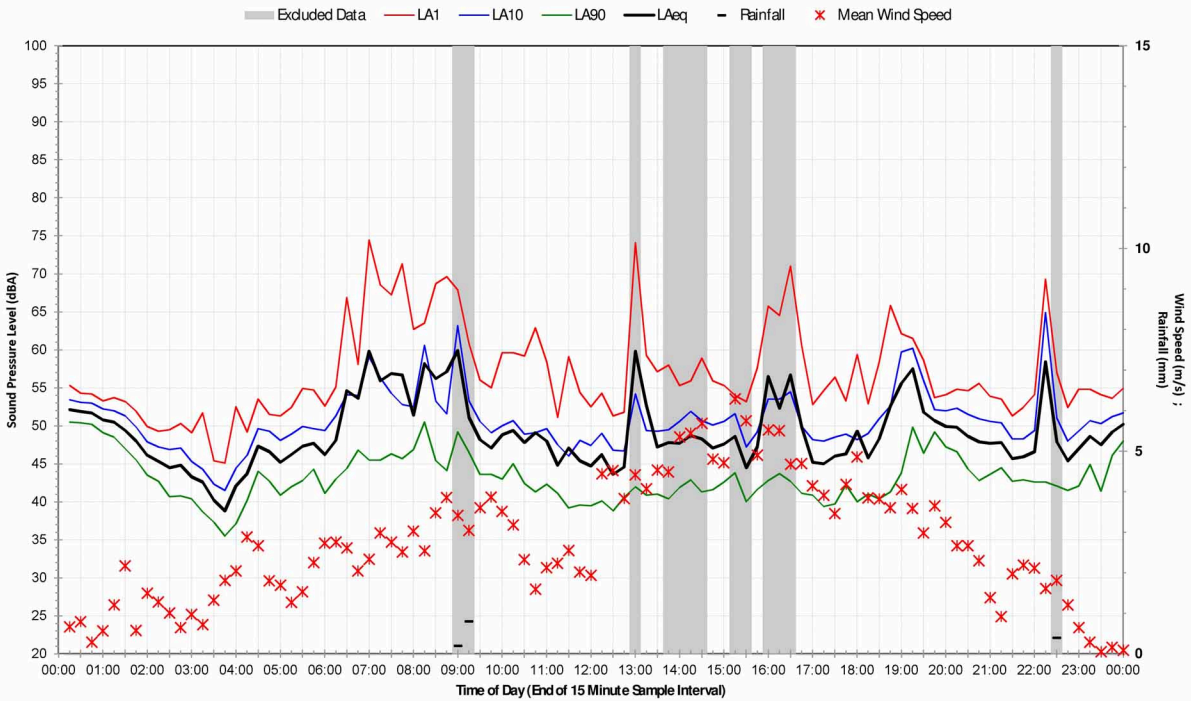
Statistical Ambient Noise Levels
Monitoring Location 3 - Monday 12 March 2012



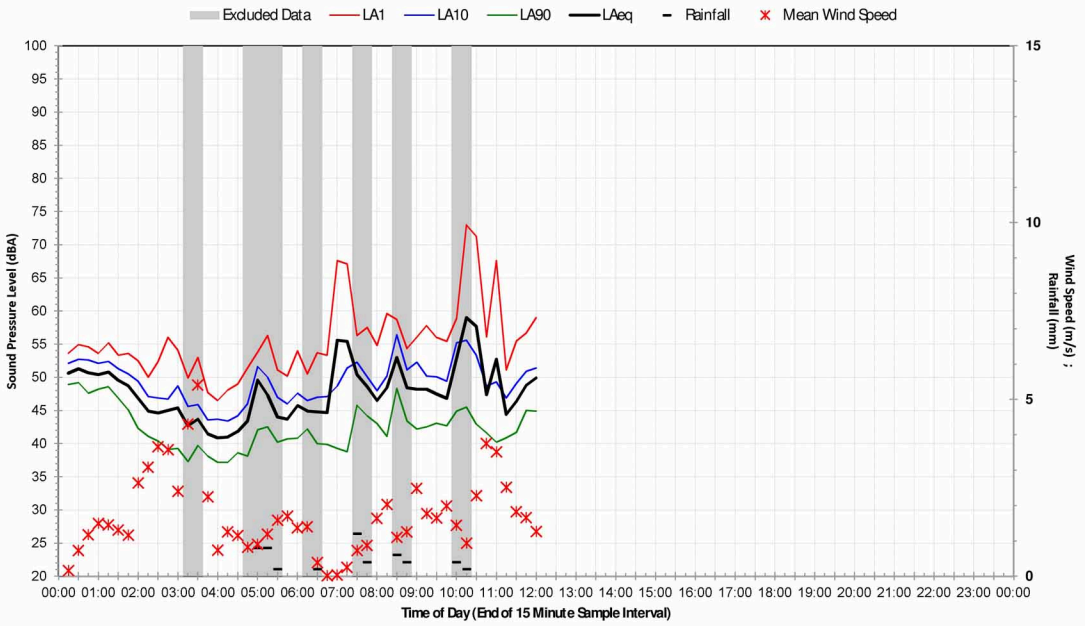
Statistical Ambient Noise Levels
Monitoring Location 3 - Tuesday 13 March 2012



Statistical Ambient Noise Levels
Monitoring Location 3 - Wednesday 14 March 2012

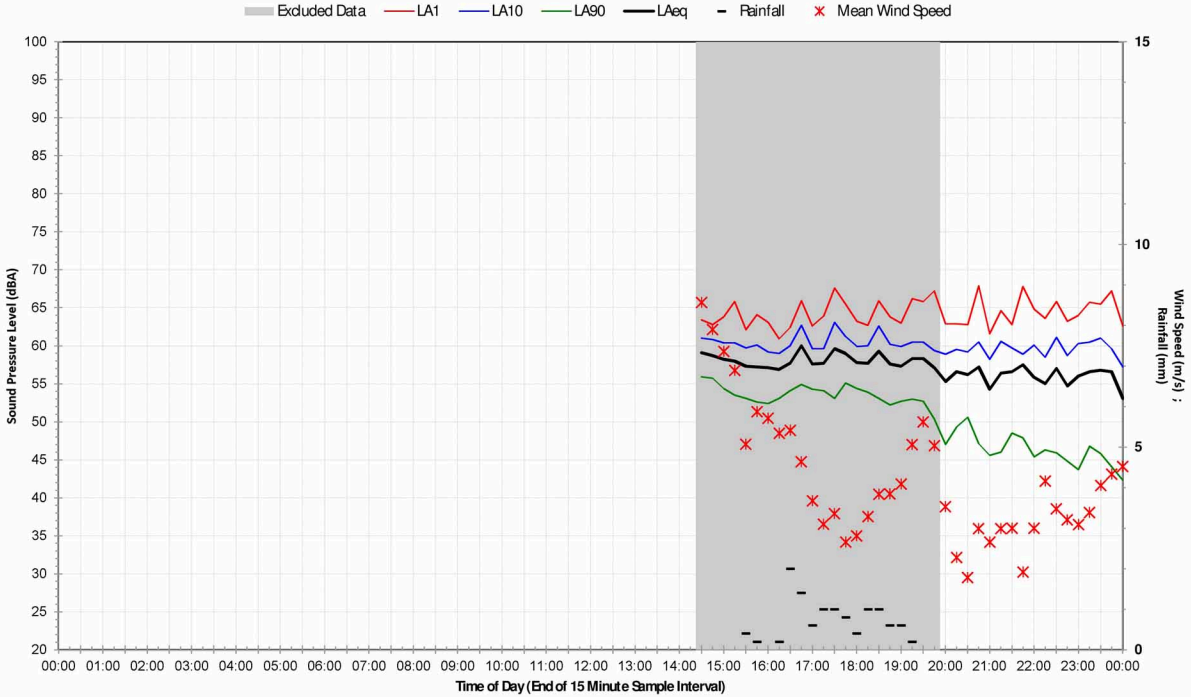


Statistical Ambient Noise Levels
Monitoring Location 3 - Thursday 15 March 2012

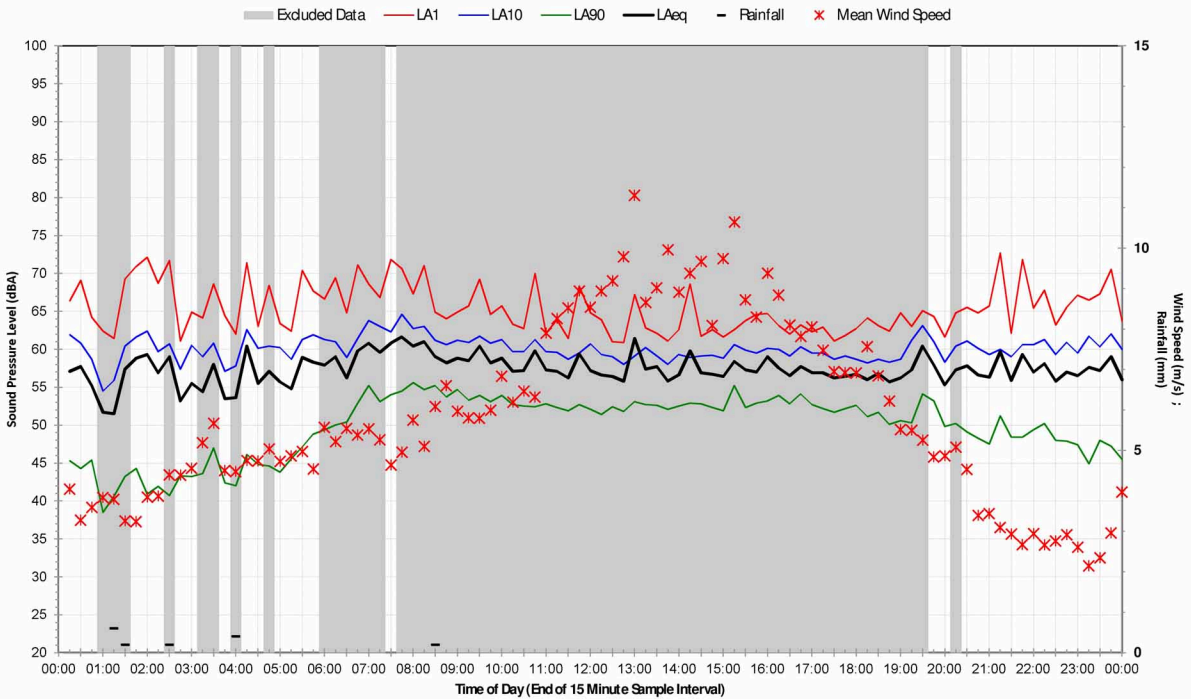


Appendix F – Noise Monitoring Charts – Noise monitoring location L04

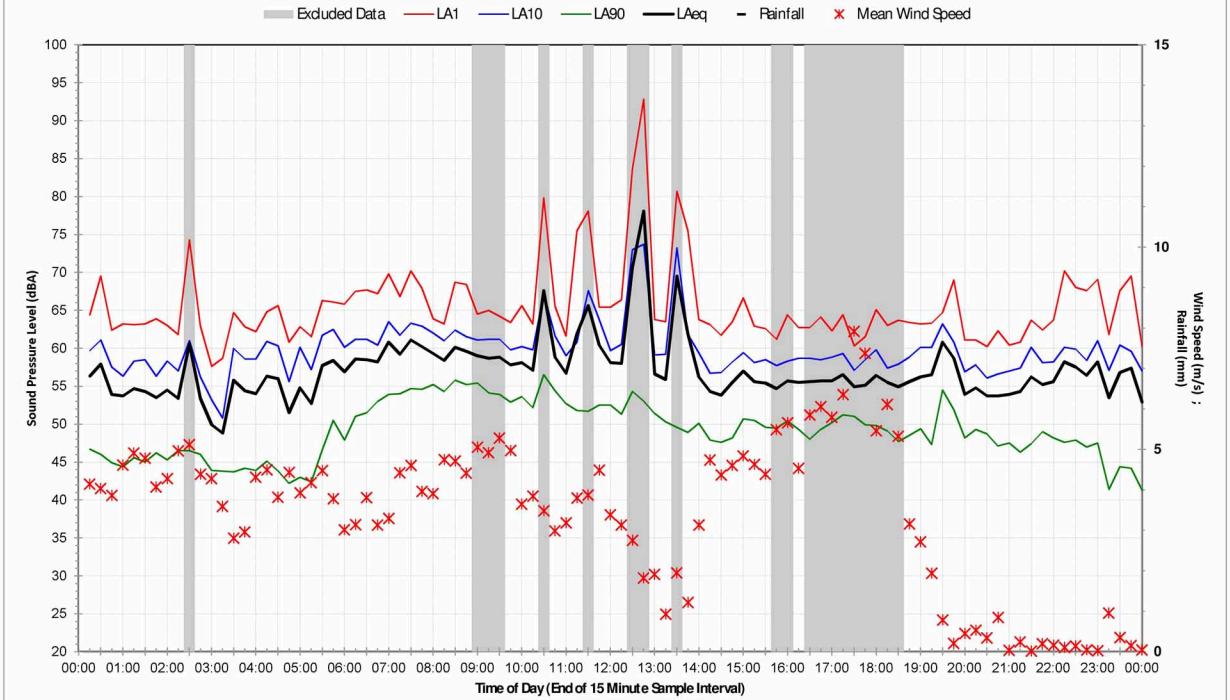
Statistical Ambient Noise Levels
Monitoring Location 4 - Tuesday 6 March 2012



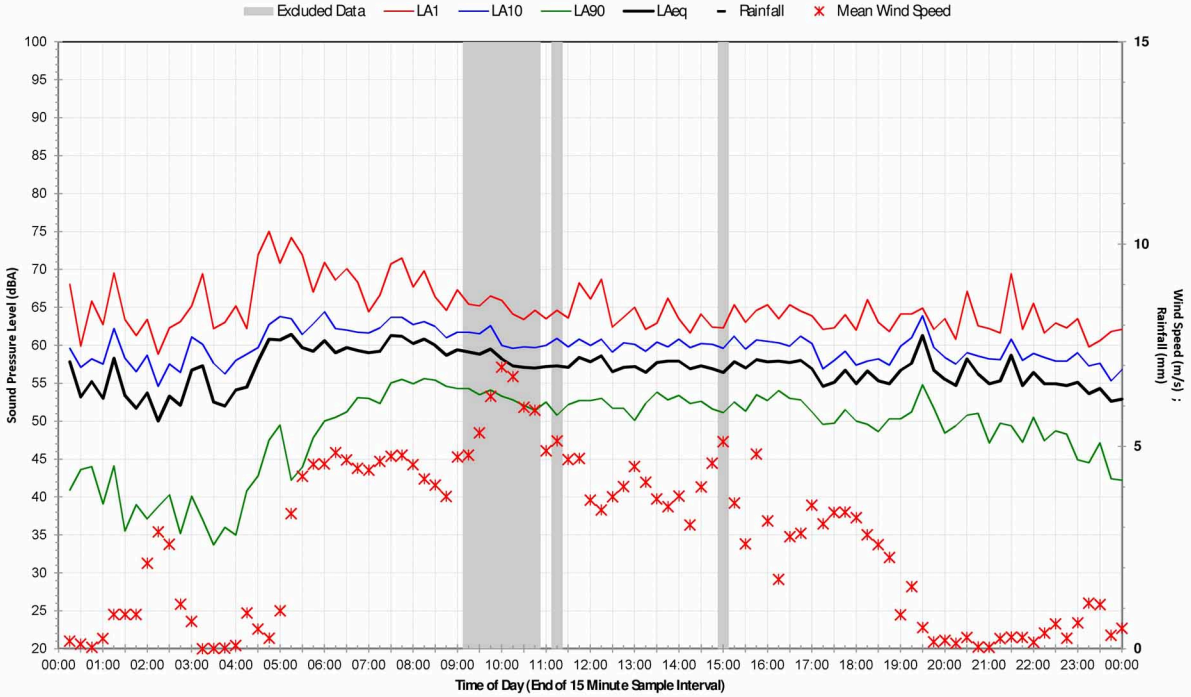
Statistical Ambient Noise Levels
Monitoring Location 4 - Wednesday 7 March 2012



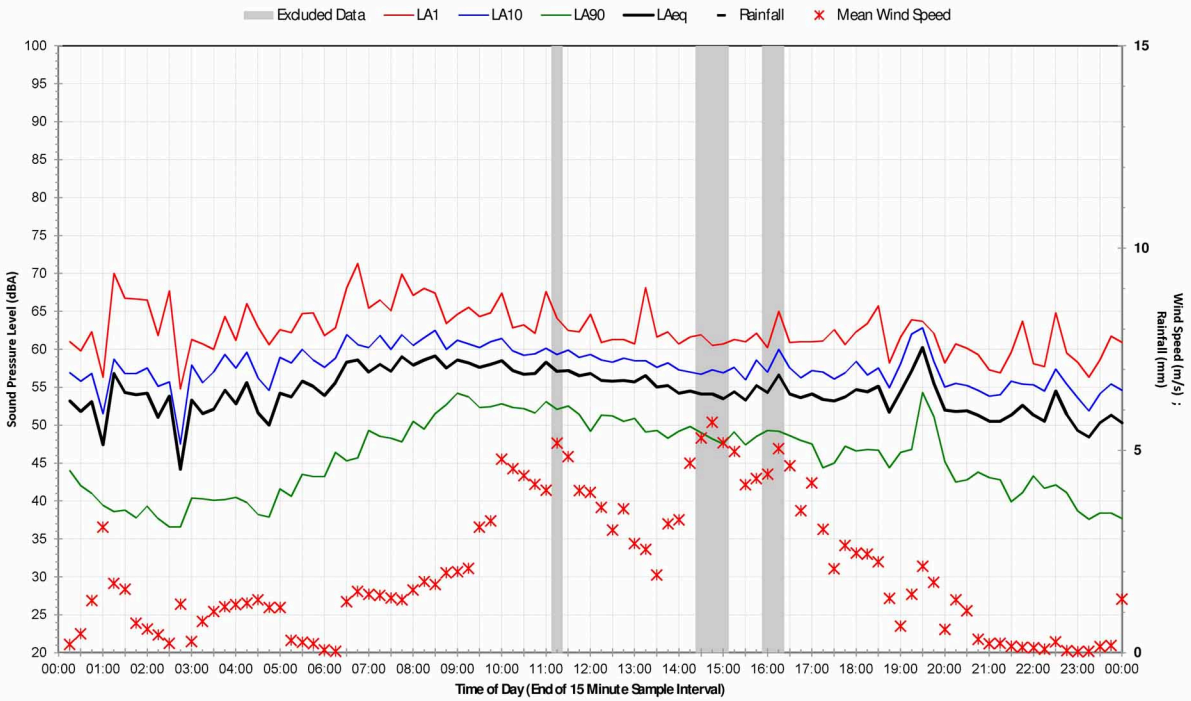
Statistical Ambient Noise Levels
Monitoring Location 4 - Thursday 8 March 2012



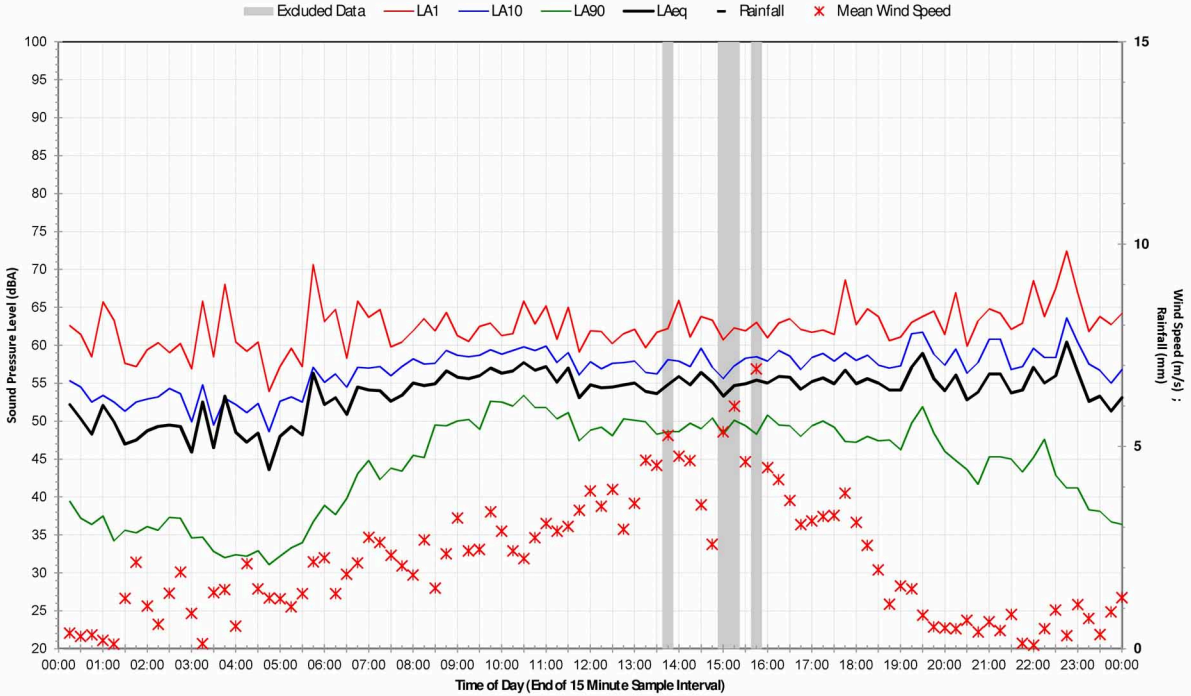
Statistical Ambient Noise Levels
Monitoring Location 4 - Friday 9 March 2012



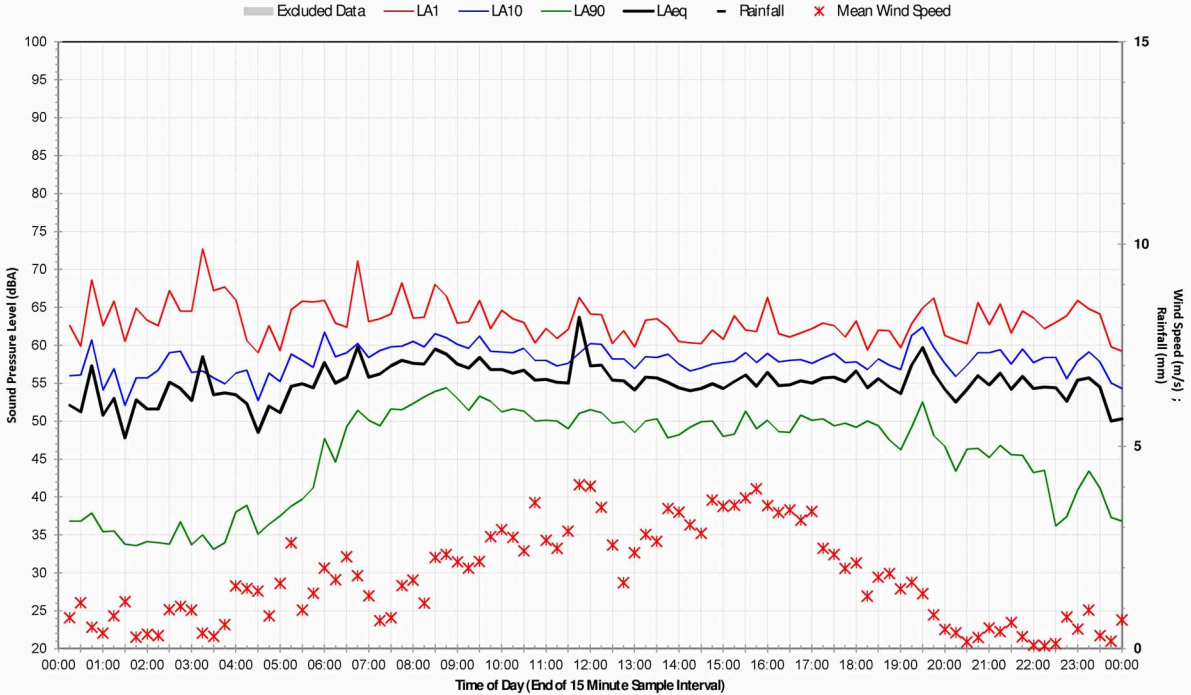
Statistical Ambient Noise Levels
Monitoring Location 4 - Saturday 10 March 2012



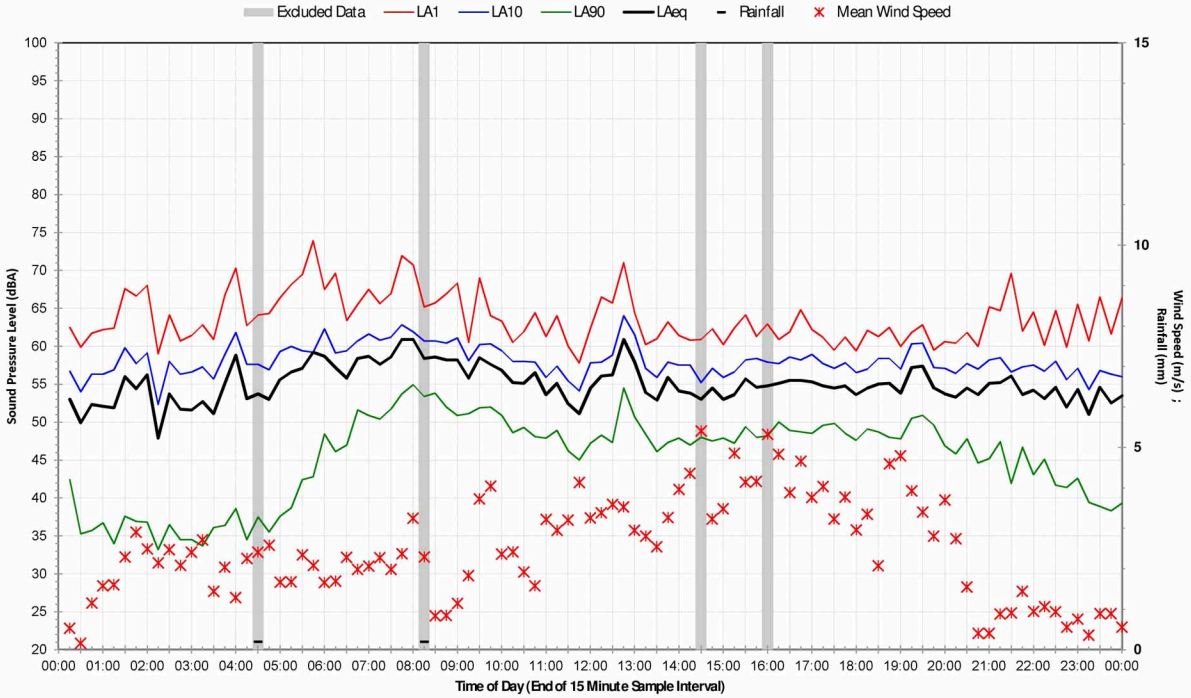
Statistical Ambient Noise Levels
Monitoring Location 4 - Sunday 11 March 2012



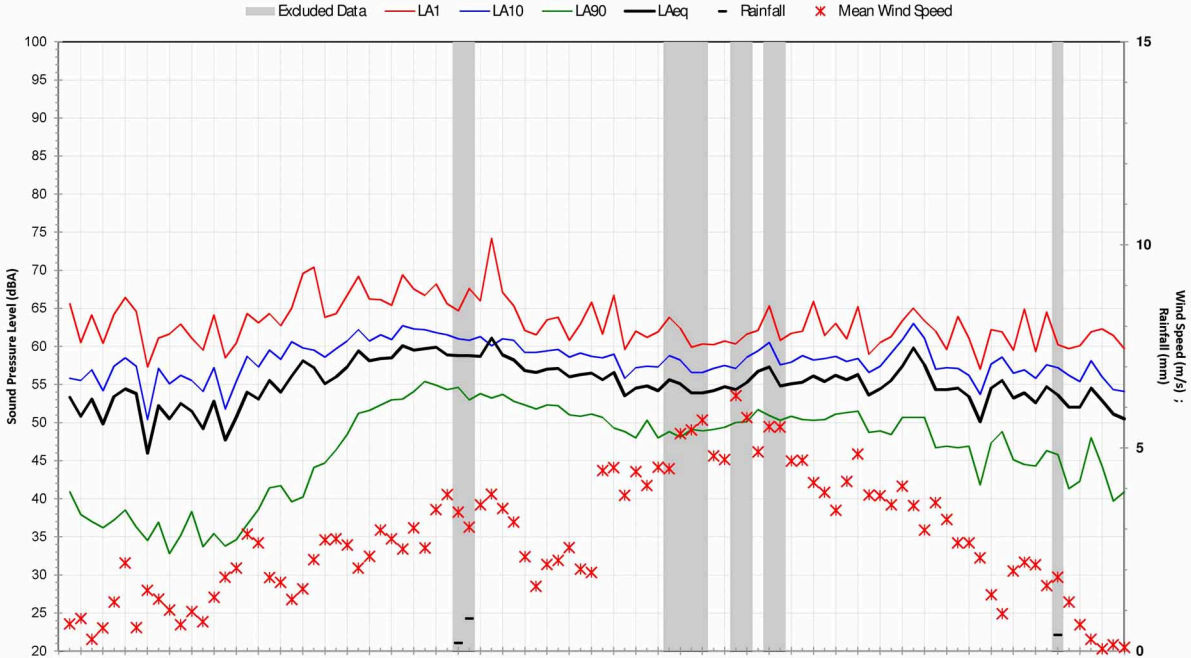
Statistical Ambient Noise Levels
Monitoring Location 4 - Monday 12 March 2012



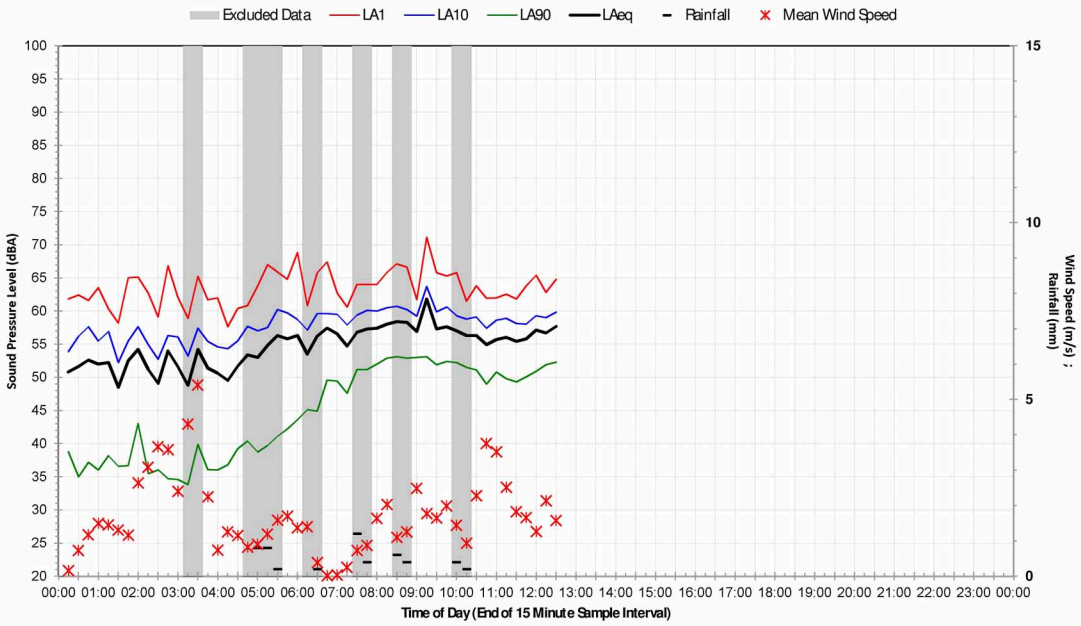
Statistical Ambient Noise Levels
Monitoring Location 4 - Tuesday 13 March 2012



Statistical Ambient Noise Levels
Monitoring Location 4 - Wednesday 14 March 2012

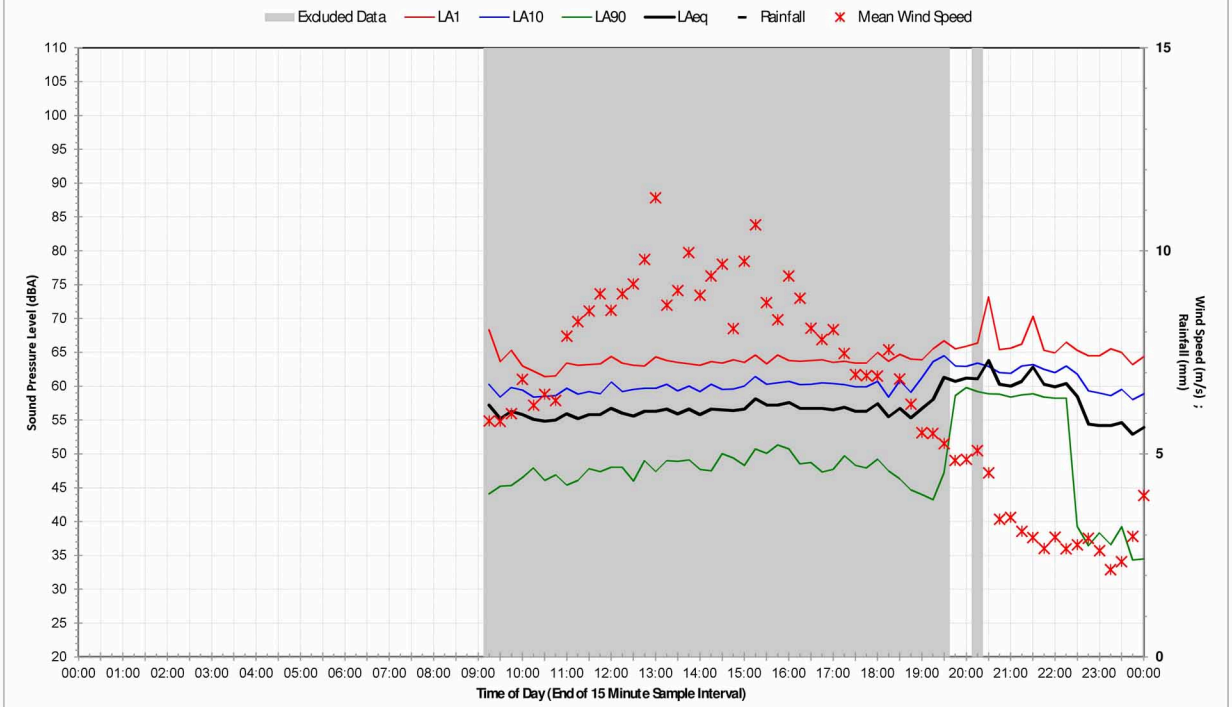


Statistical Ambient Noise Levels
Monitoring Location 4 - Thursday 15 March 2012

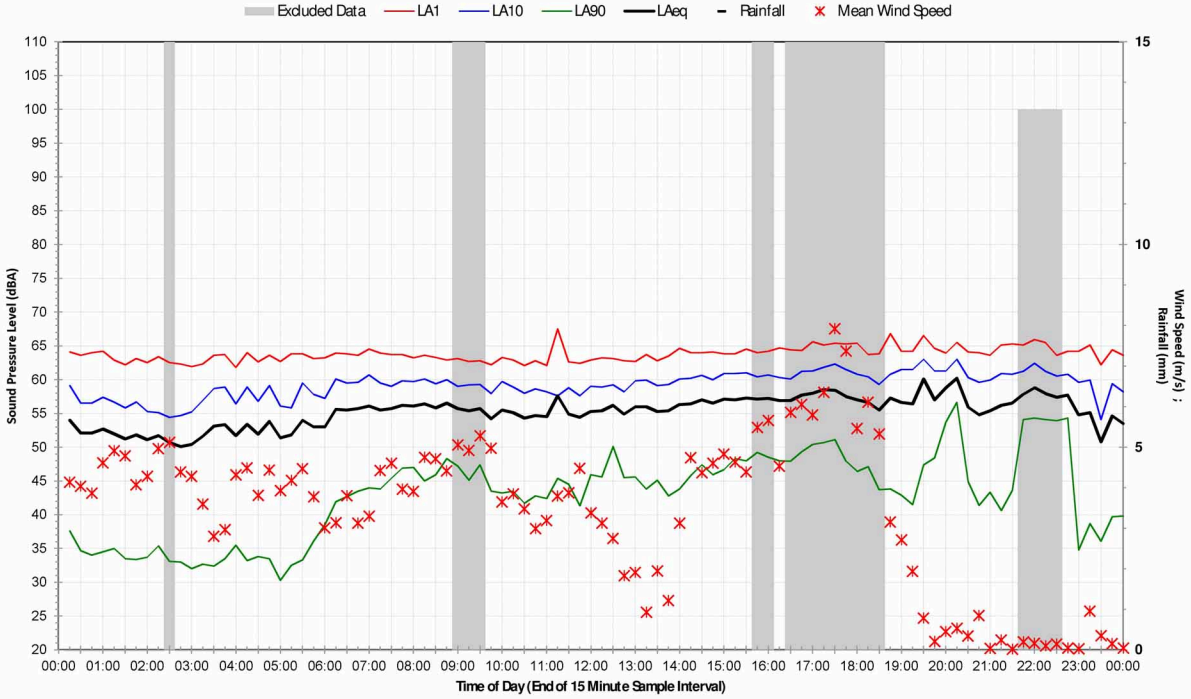


Appendix G – Noise Monitoring Charts – Noise monitoring location L05

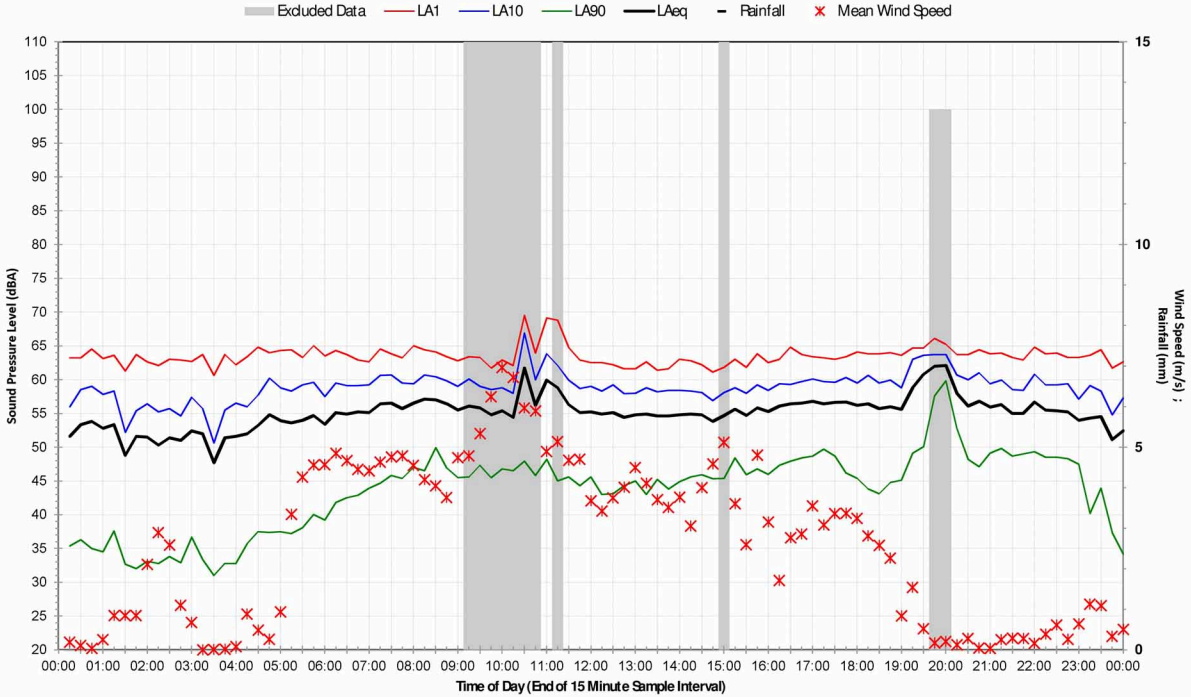
Statistical Ambient Noise Levels
Monitoring Location 5 - Wednesday 7 March 2012



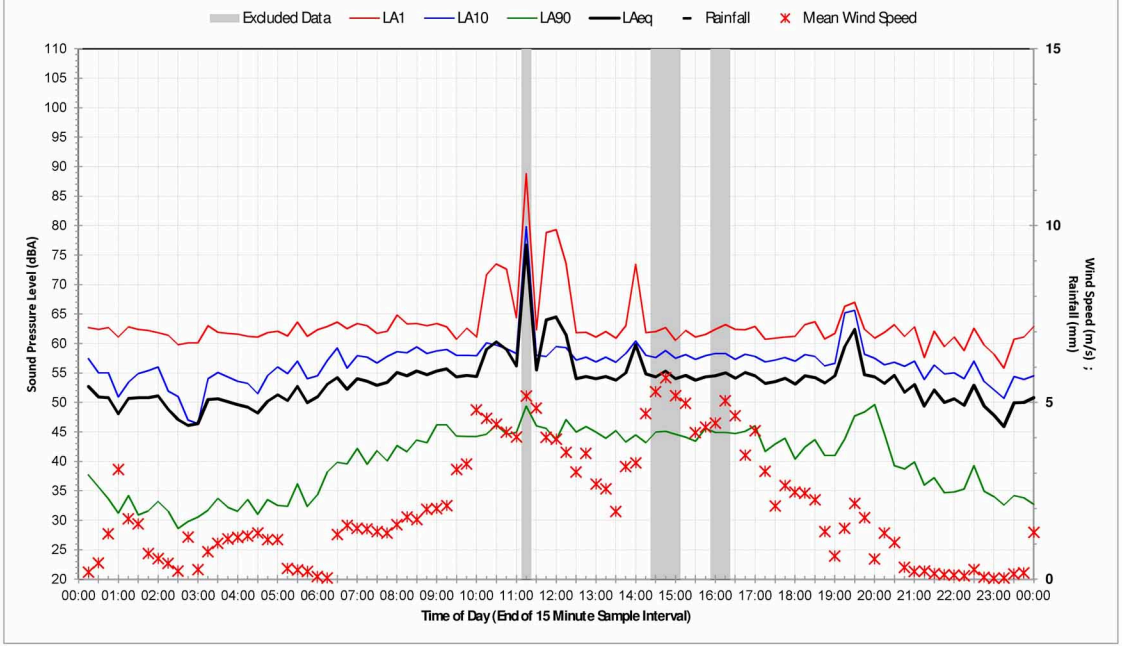
Statistical Ambient Noise Levels
Monitoring Location 5 - Thursday 8 March 2012



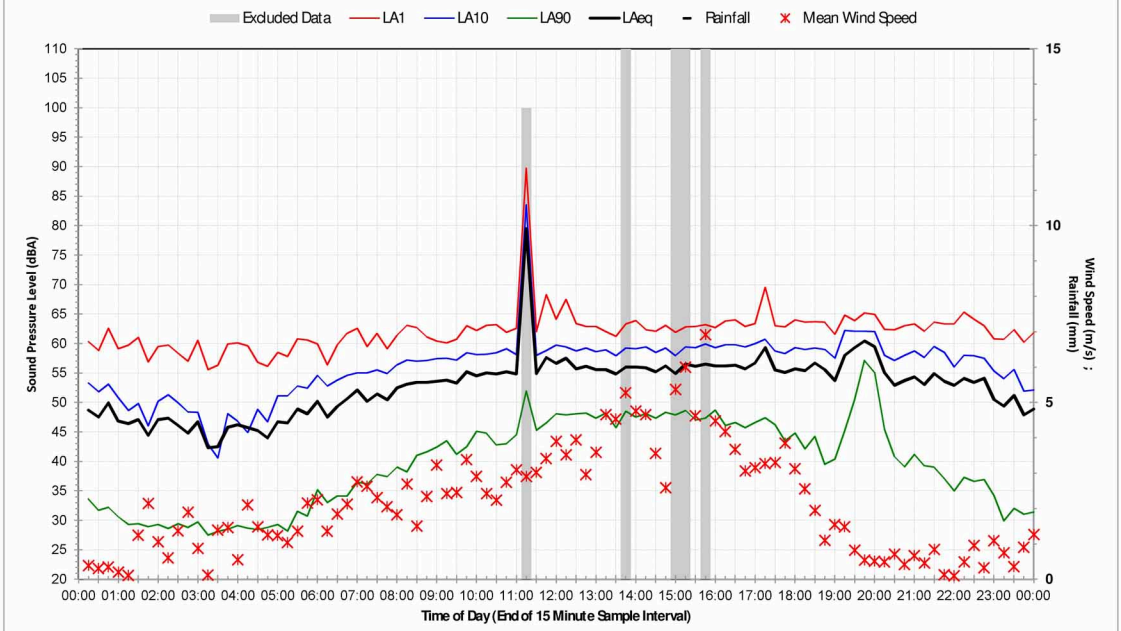
Statistical Ambient Noise Levels
Monitoring Location 5 - Friday 9 March 2012



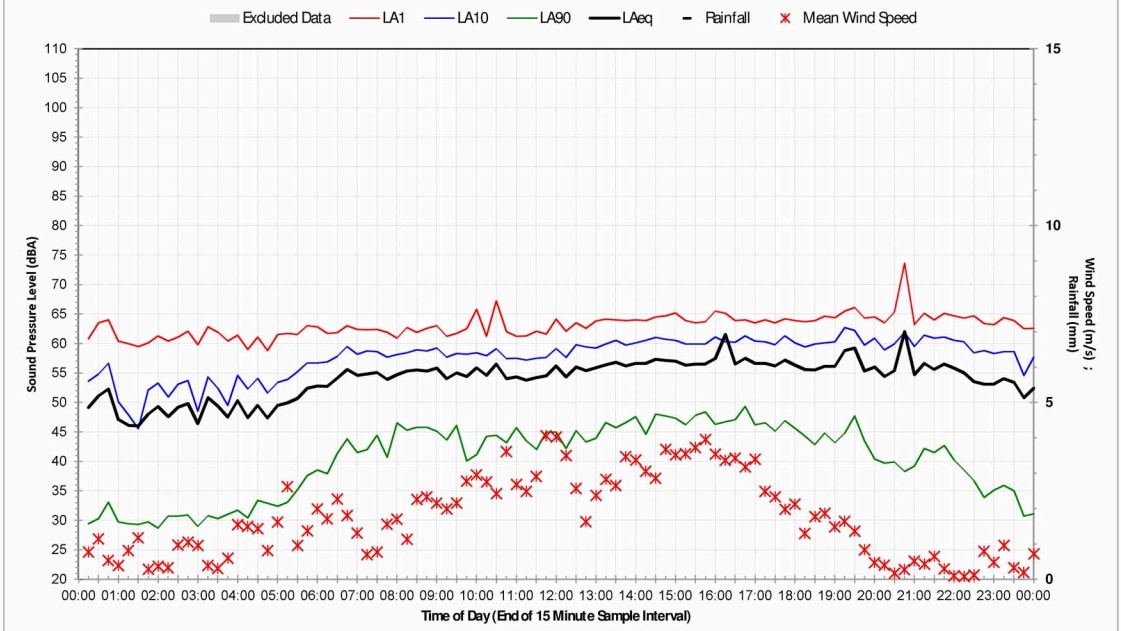
Statistical Ambient Noise Levels
Monitoring Location 5 - Saturday 10 March 2012



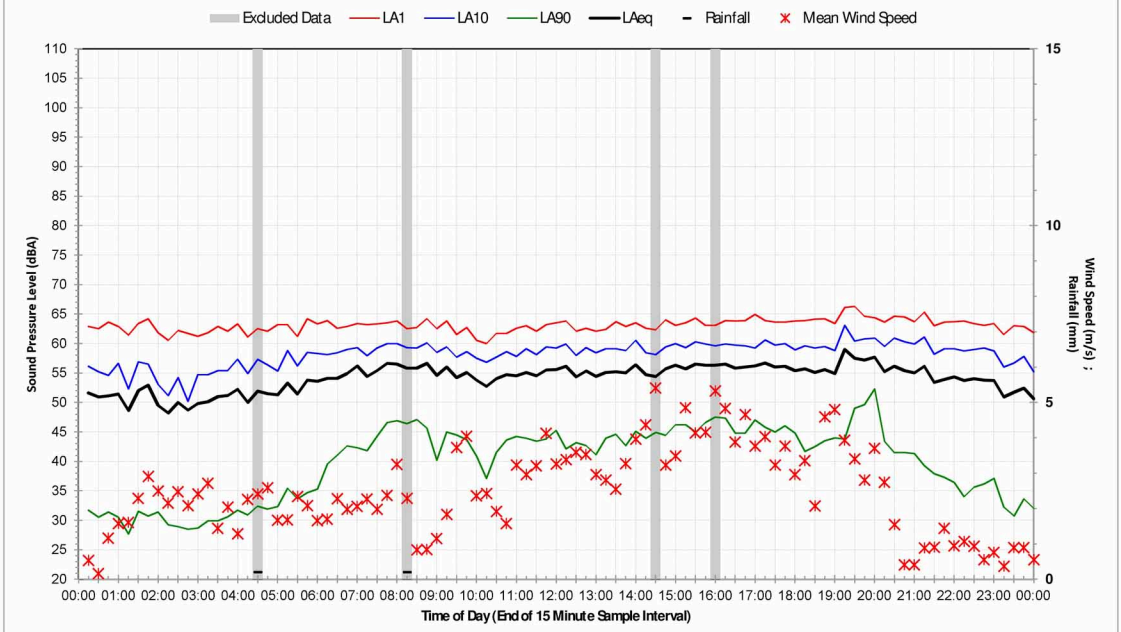
Statistical Ambient Noise Levels
Monitoring Location 5 - Sunday 11 March 2012



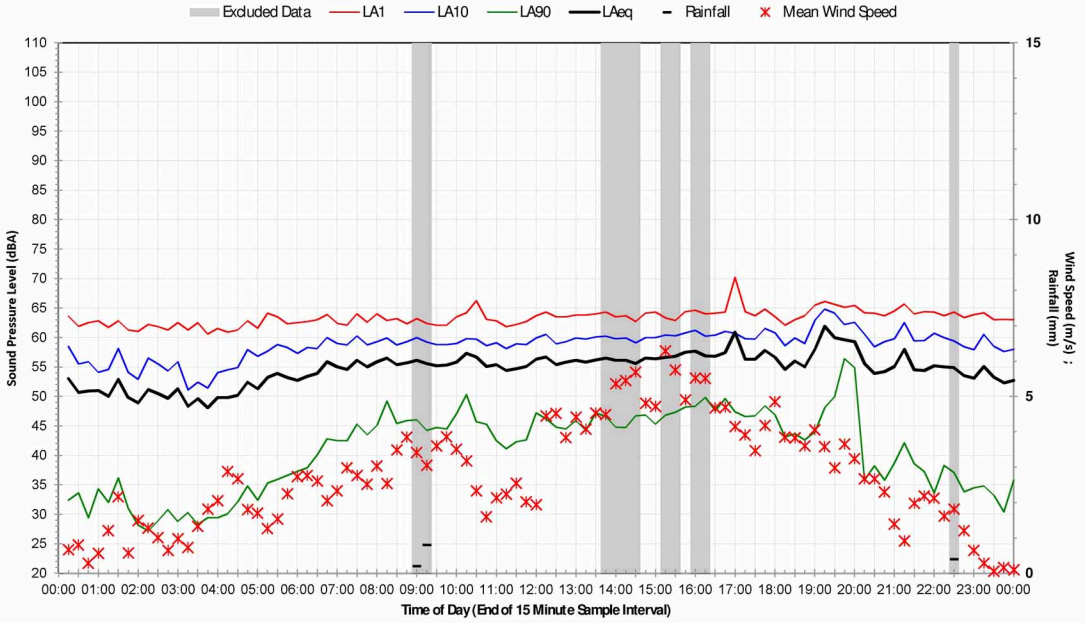
Statistical Ambient Noise Levels
Monitoring Location 5 - Monday 12 March 2012



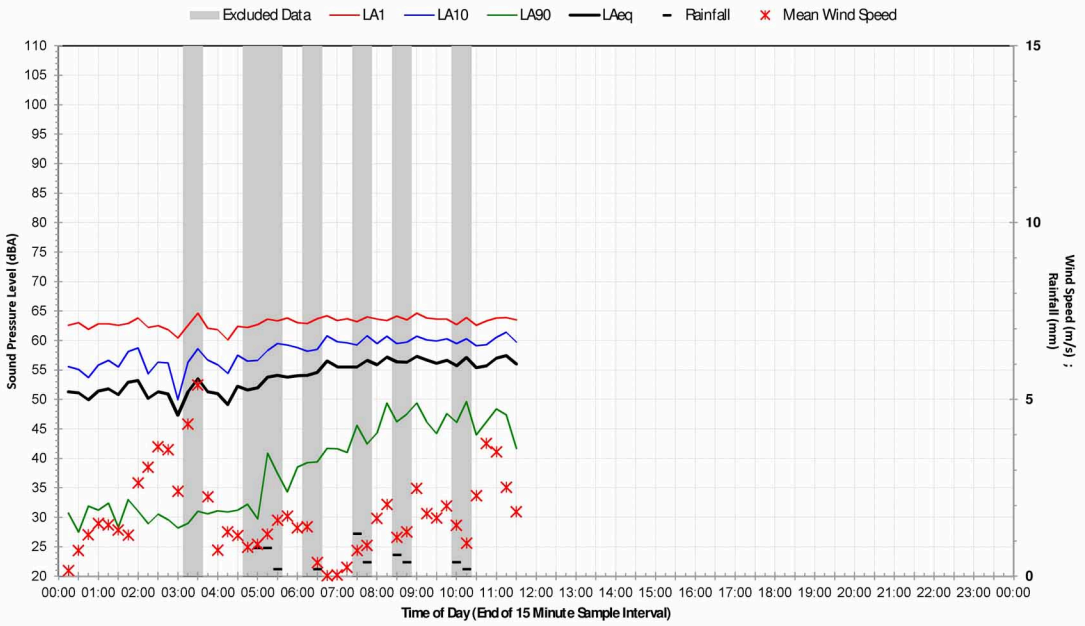
Statistical Ambient Noise Levels
Monitoring Location 5 - Tuesday 13 March 2012



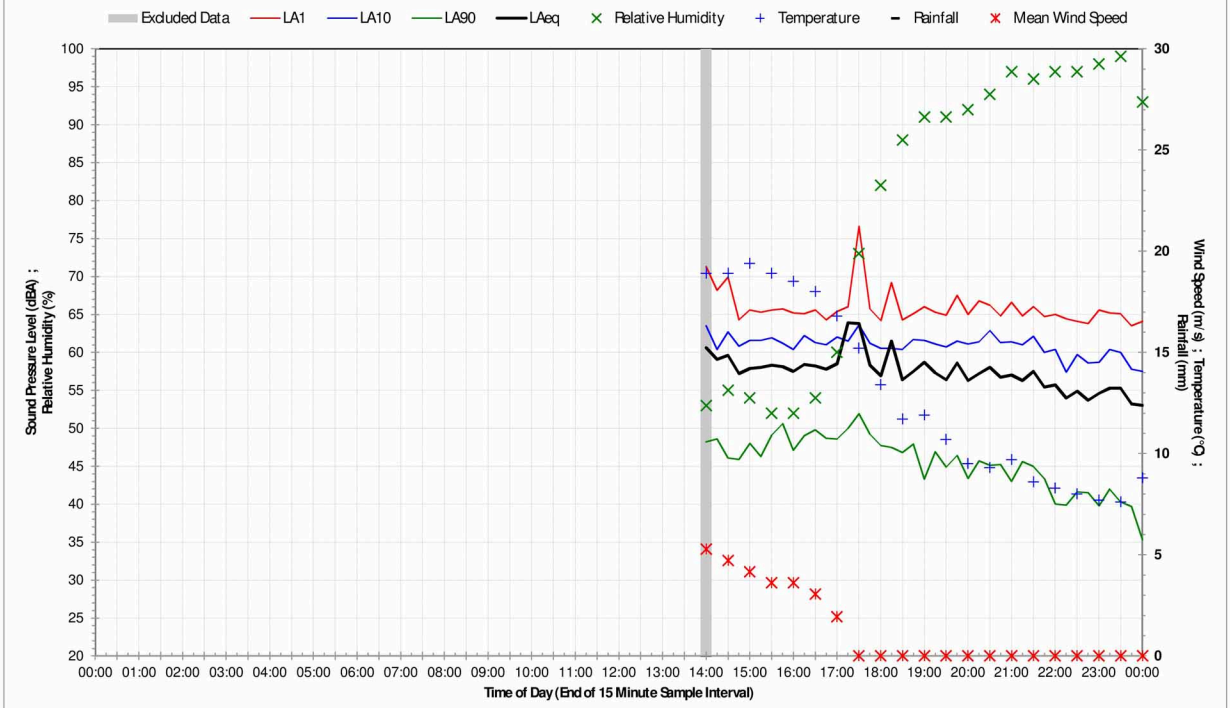
Statistical Ambient Noise Levels
Monitoring Location 5 - Wednesday 14 March 2012



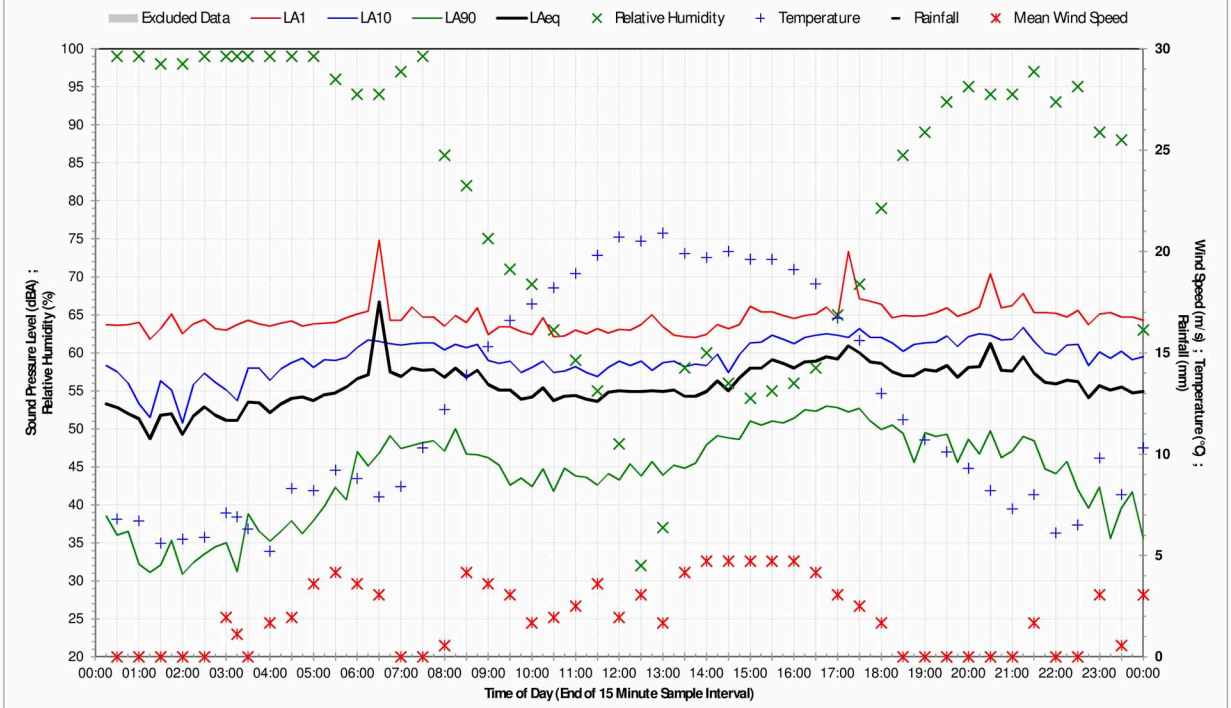
Statistical Ambient Noise Levels
Monitoring Location 5 - Thursday 15 March 2012



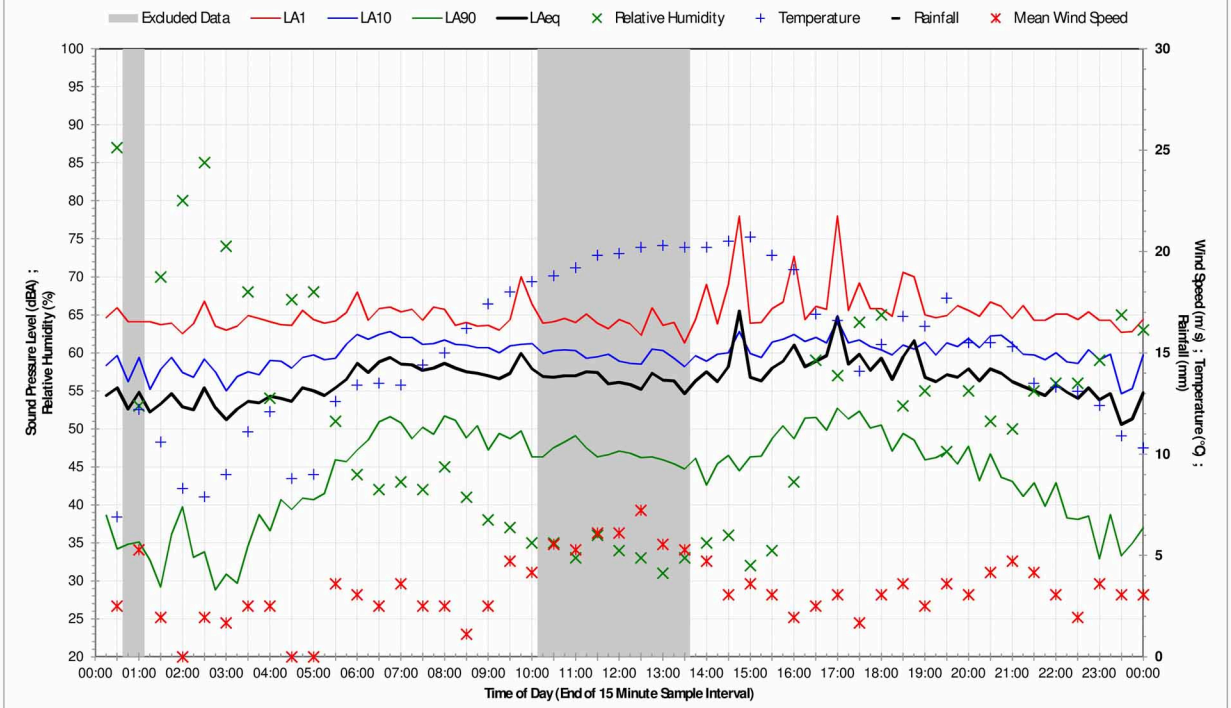
Statistical Ambient Noise Levels
Location 5 - Tuesday 7 August 2012



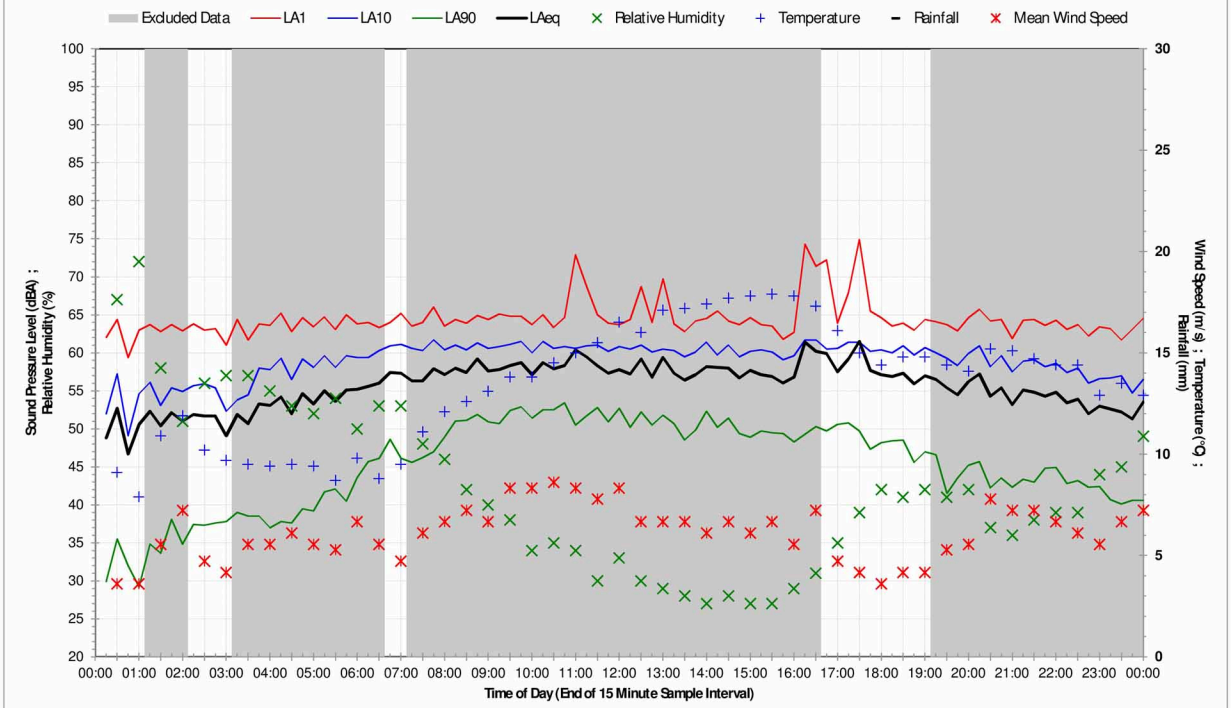
Statistical Ambient Noise Levels
Location 5 - Wednesday 8 August 2012



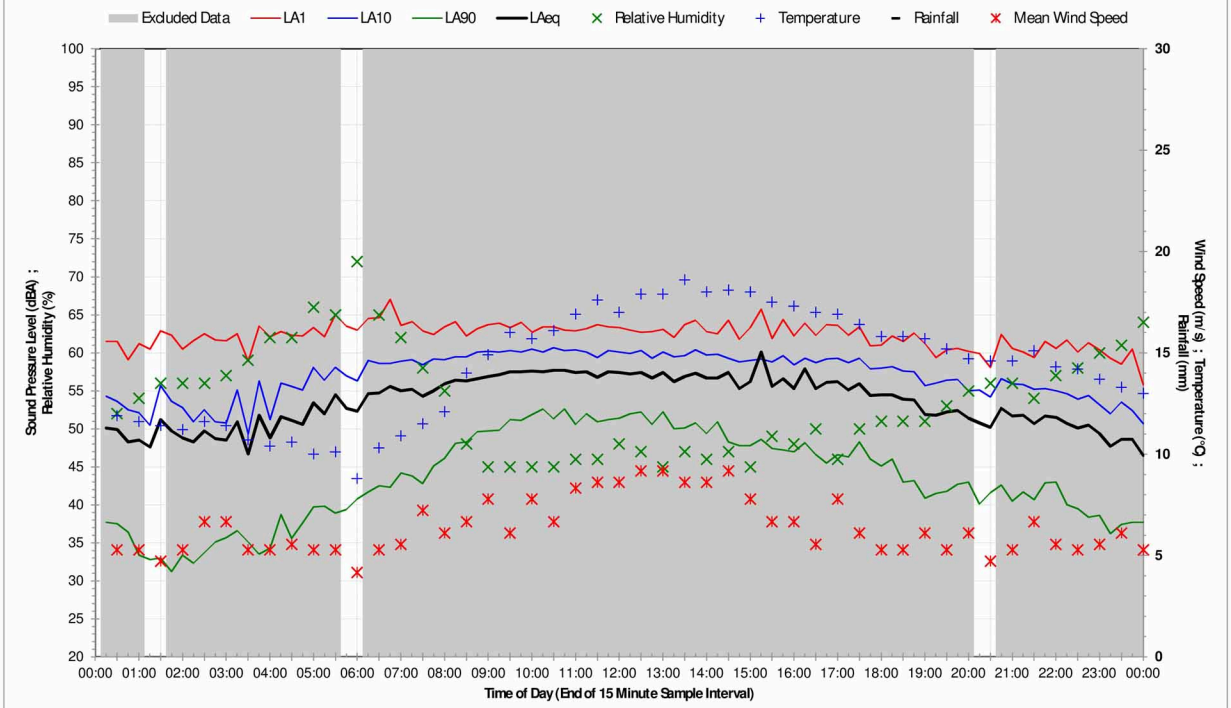
Statistical Ambient Noise Levels
Location 5 - Thursday 9 August 2012



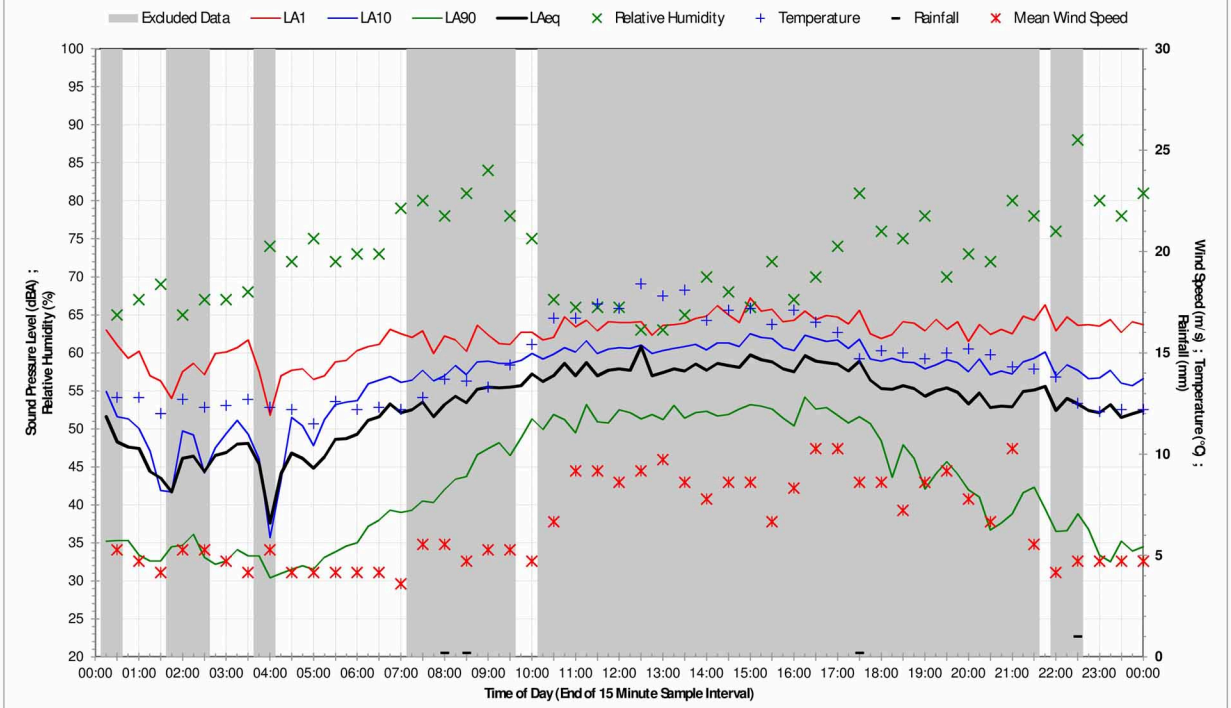
Statistical Ambient Noise Levels
Location 5 - Friday 10 August 2012



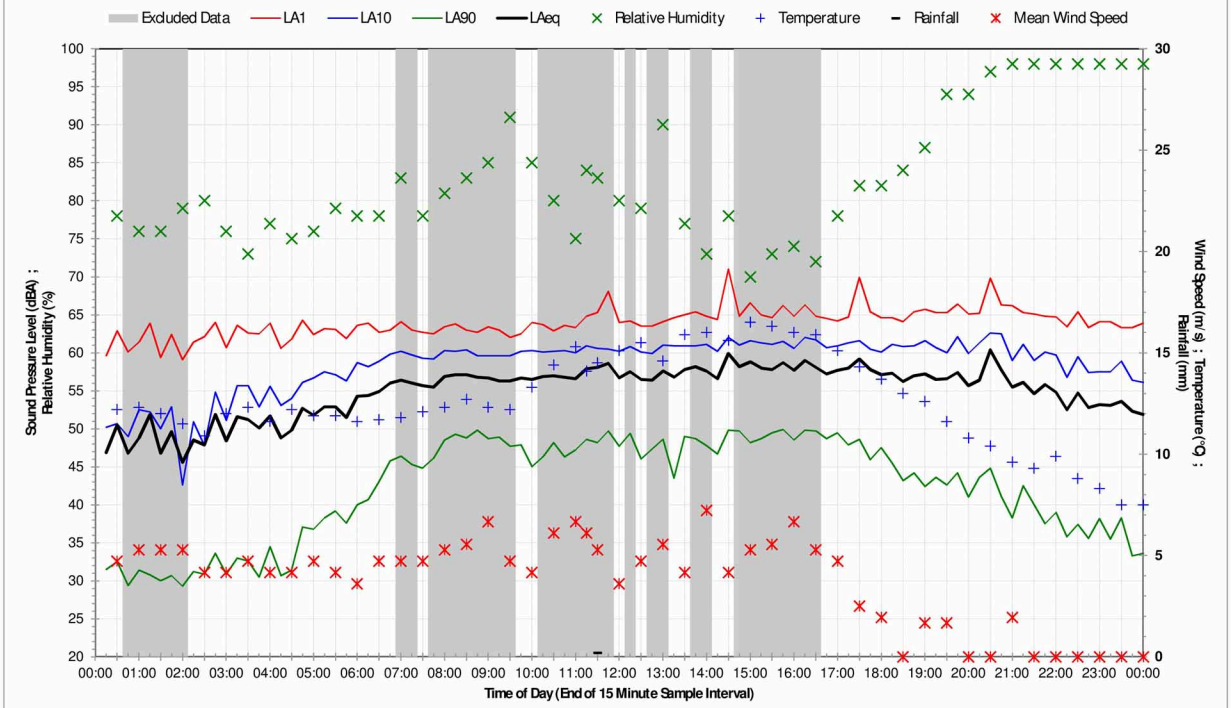
Statistical Ambient Noise Levels
Location 5 - Saturday 11 August 2012



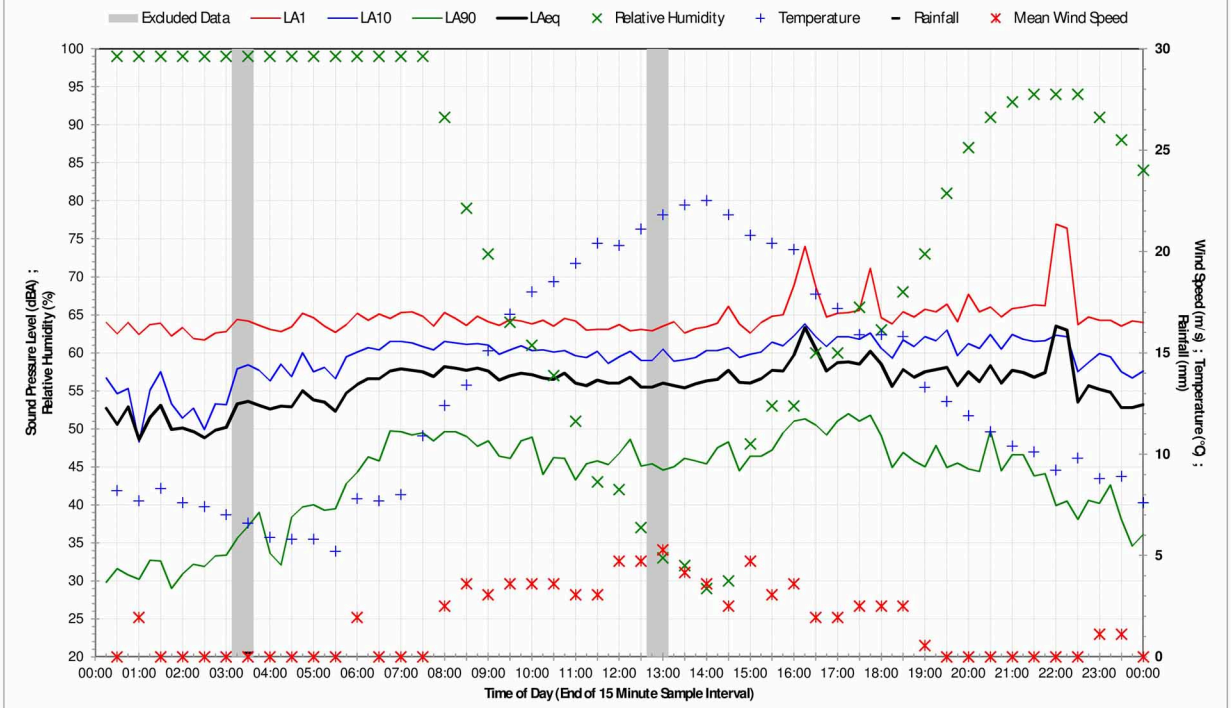
Statistical Ambient Noise Levels
Location 5 - Sunday 12 August 2012



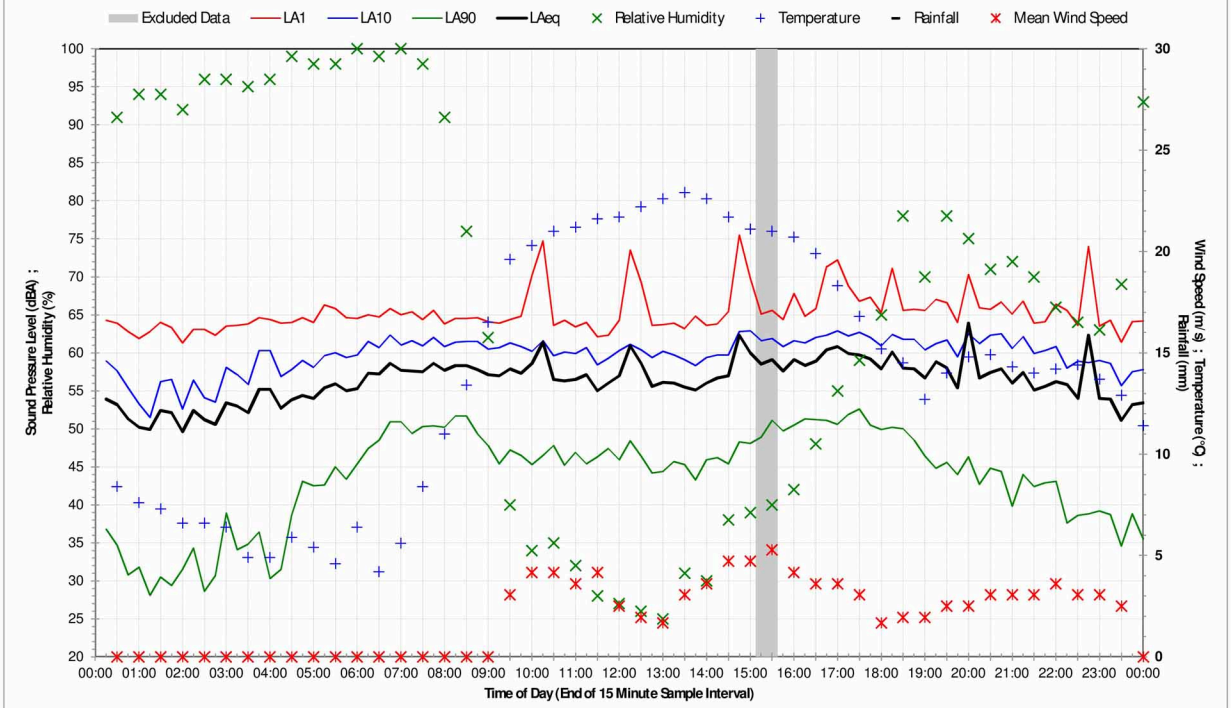
Statistical Ambient Noise Levels
Location 5 - Monday 13 August 2012



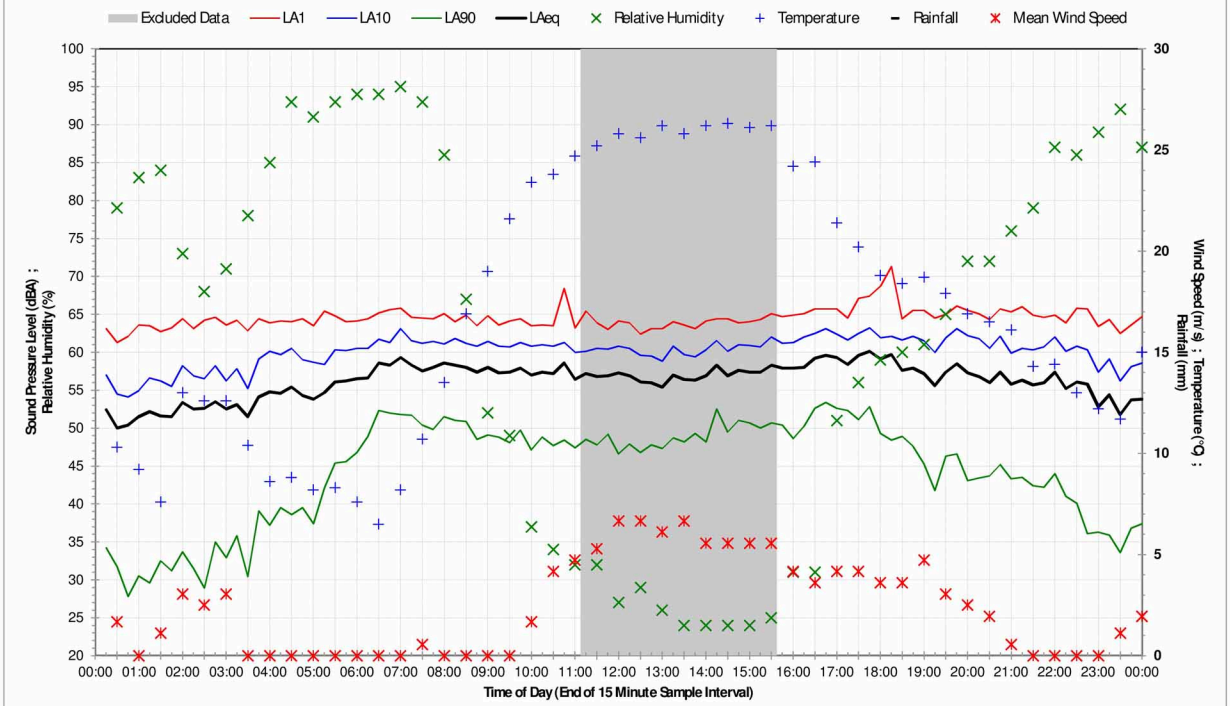
Statistical Ambient Noise Levels
Location 5 - Tuesday 14 August 2012



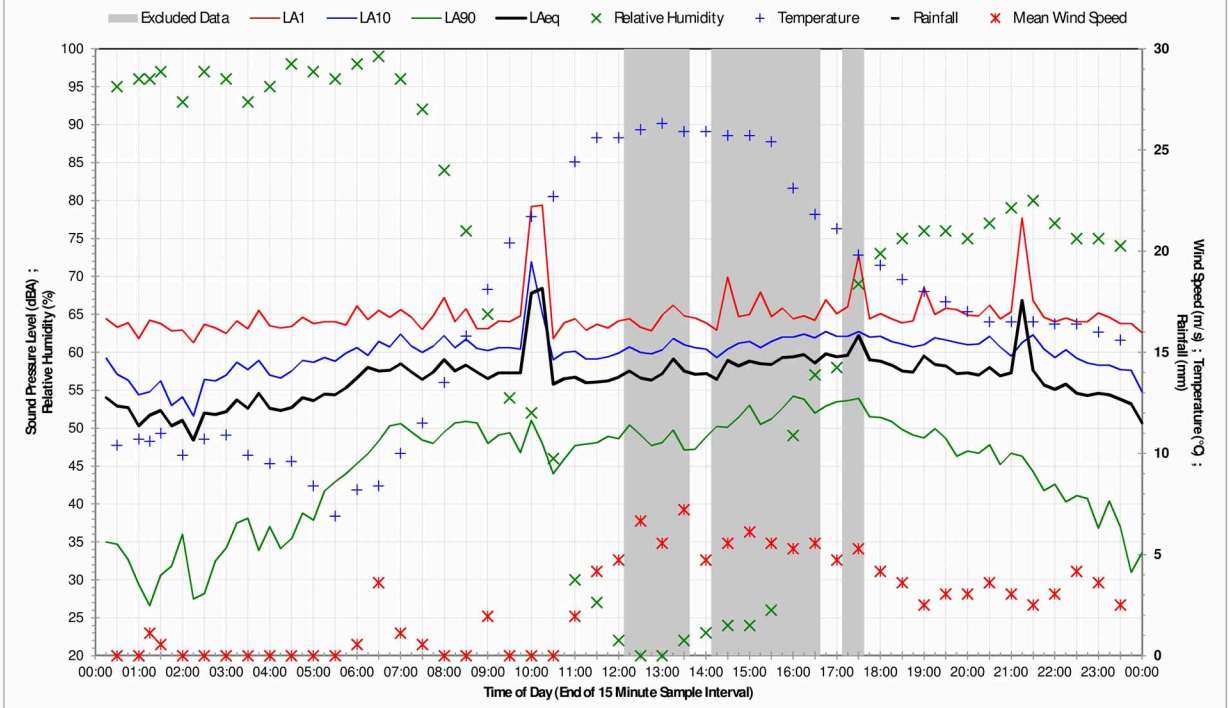
Statistical Ambient Noise Levels
Location 5 - Wednesday 15 August 2012



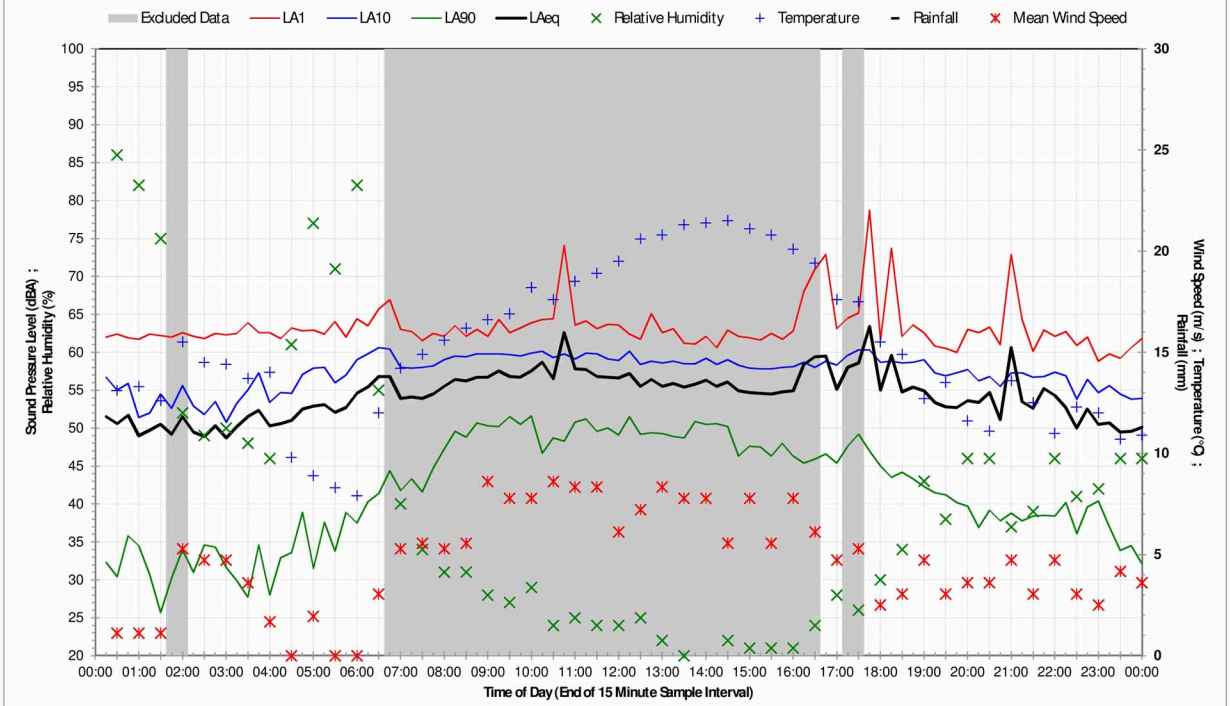
Statistical Ambient Noise Levels
Location 5 - Thursday 16 August 2012



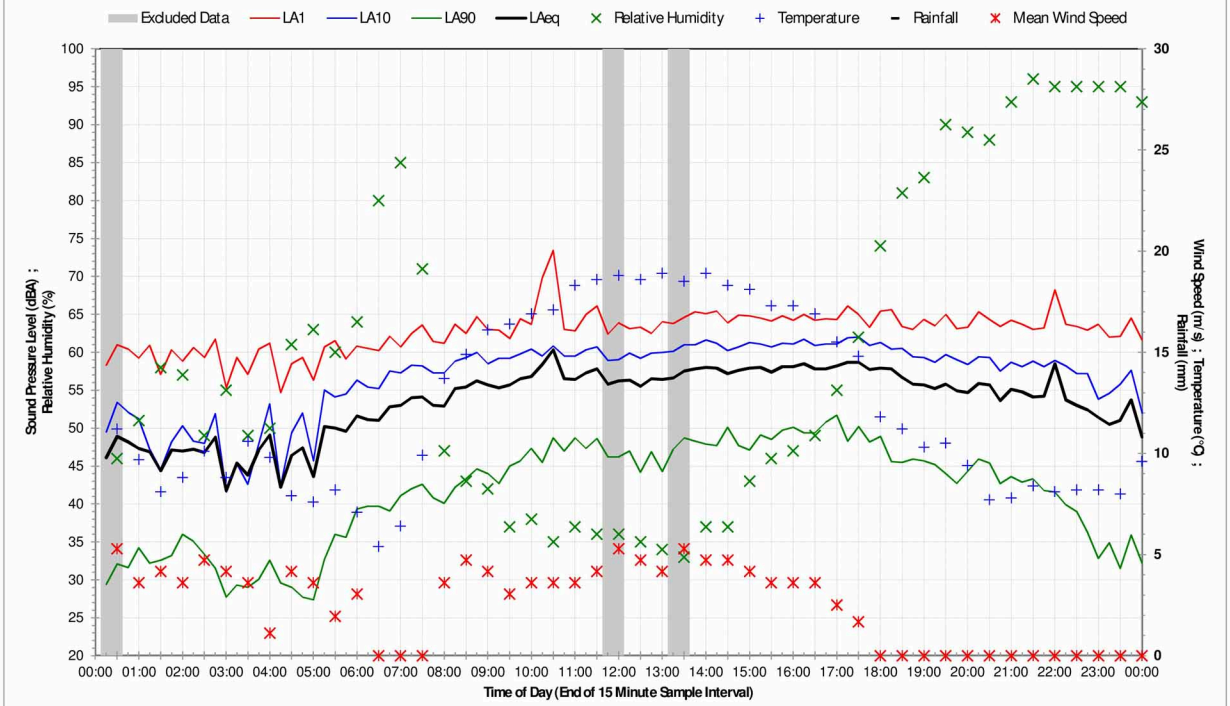
Statistical Ambient Noise Levels
Location 5 - Friday 17 August 2012



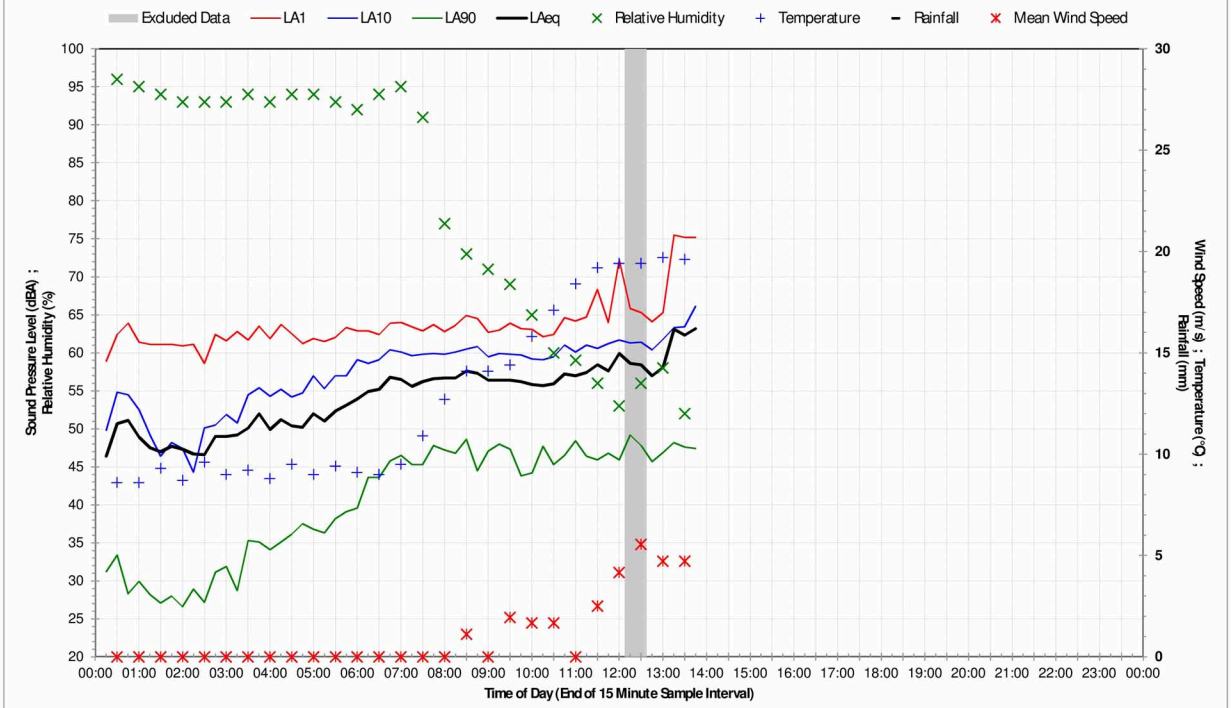
Statistical Ambient Noise Levels
Location 5 - Saturday 18 August 2012



Statistical Ambient Noise Levels
Location 5 - Sunday 19 August 2012

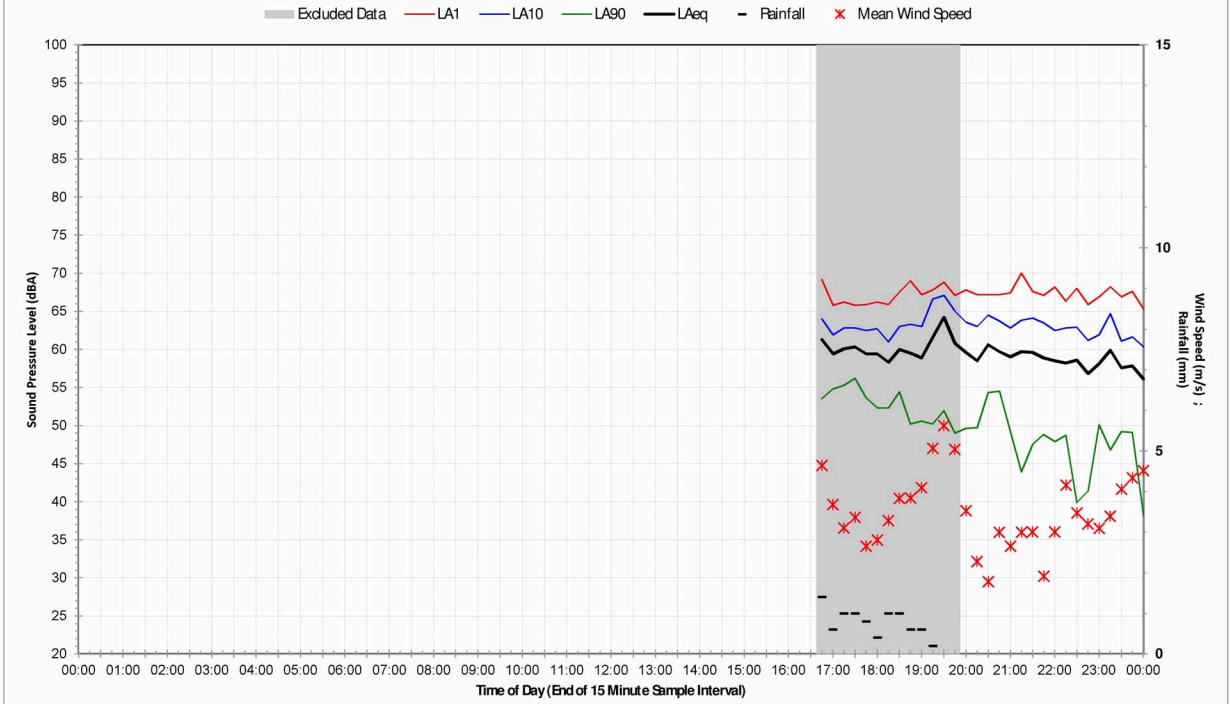


Statistical Ambient Noise Levels
Location 5 - Monday 20 August 2012

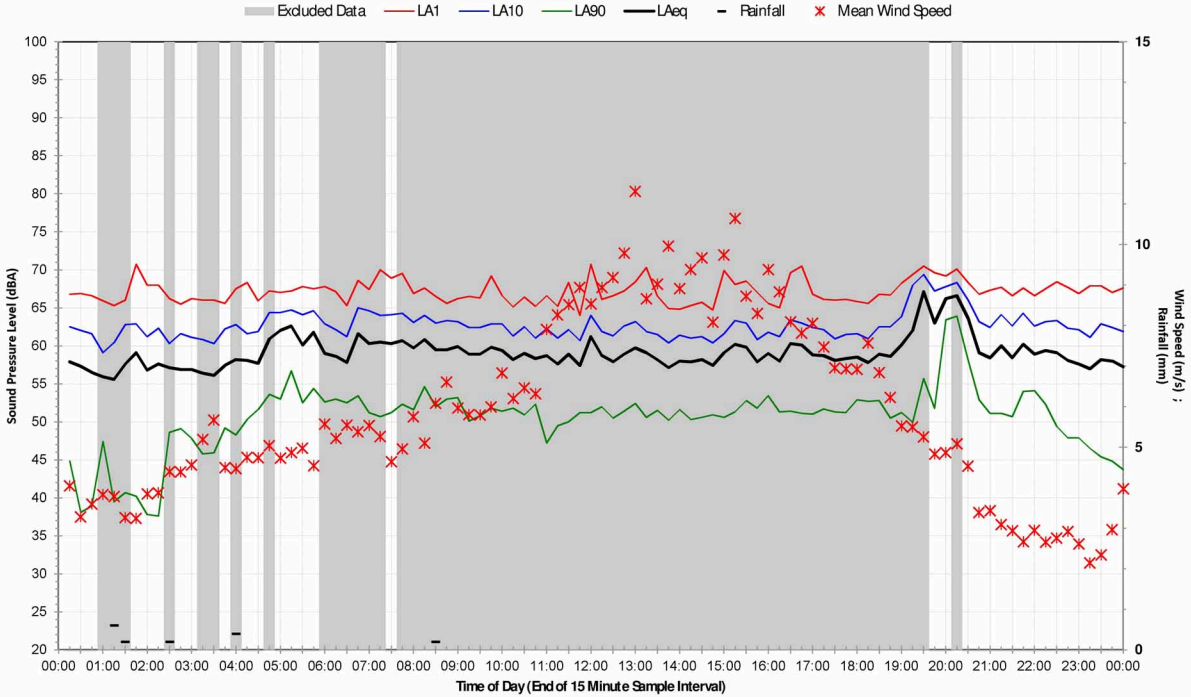


Appendix H – Noise Monitoring Charts – Noise monitoring location L06

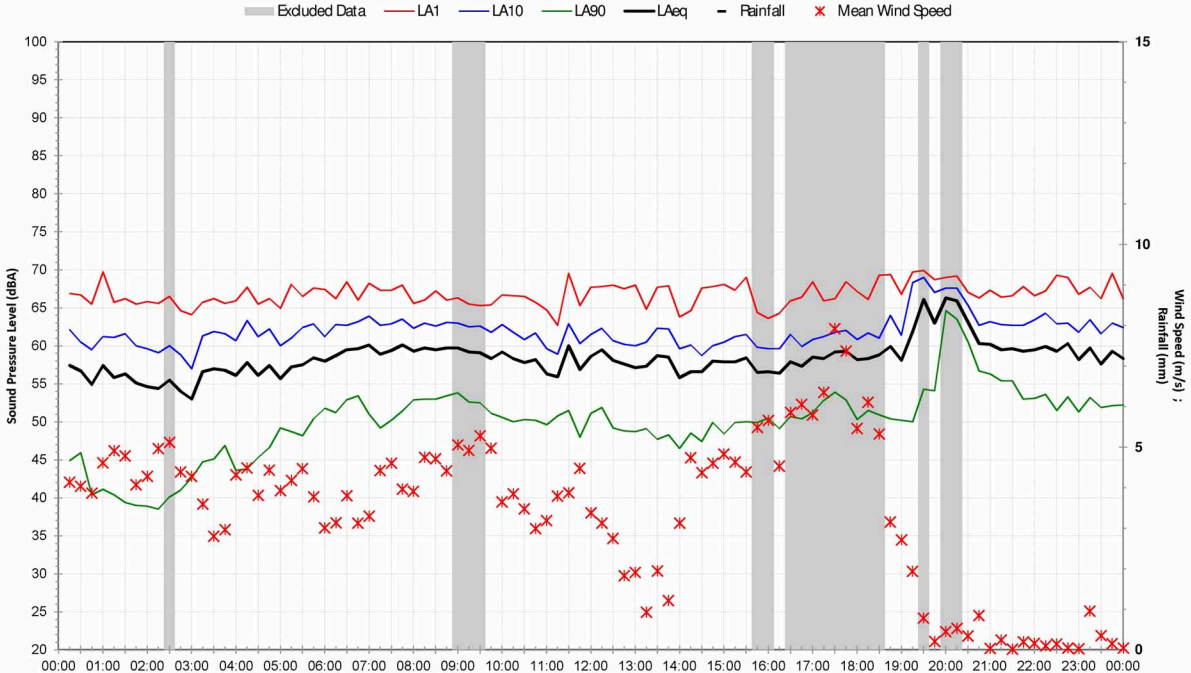
Statistical Ambient Noise Levels
Monitoring Location 6 - Tuesday 6 March 2012



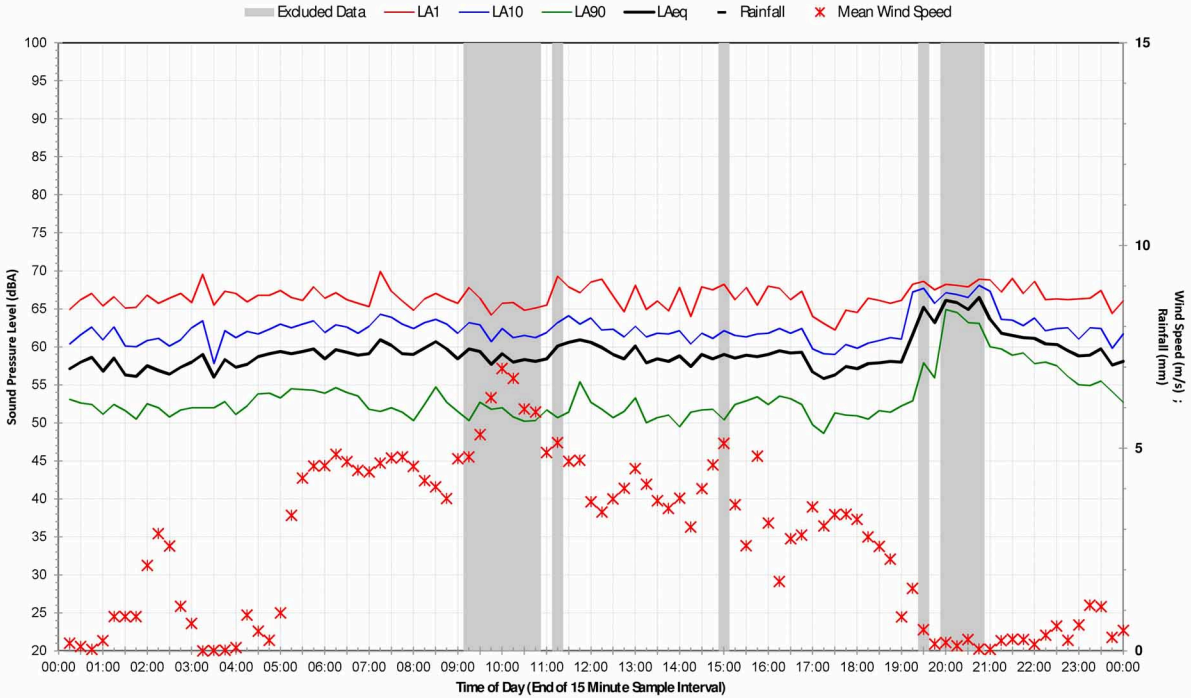
Statistical Ambient Noise Levels
Monitoring Location 6 - Wednesday 7 March 2012



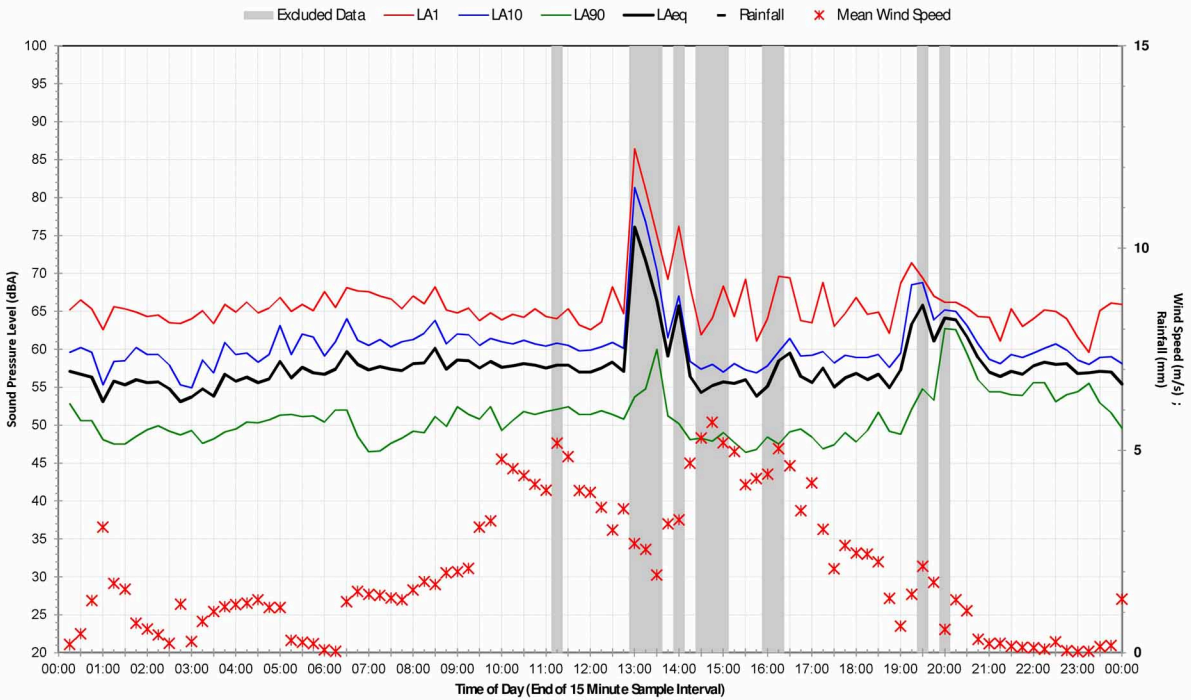
Statistical Ambient Noise Levels
Monitoring Location 6 - Thursday 8 March 2012



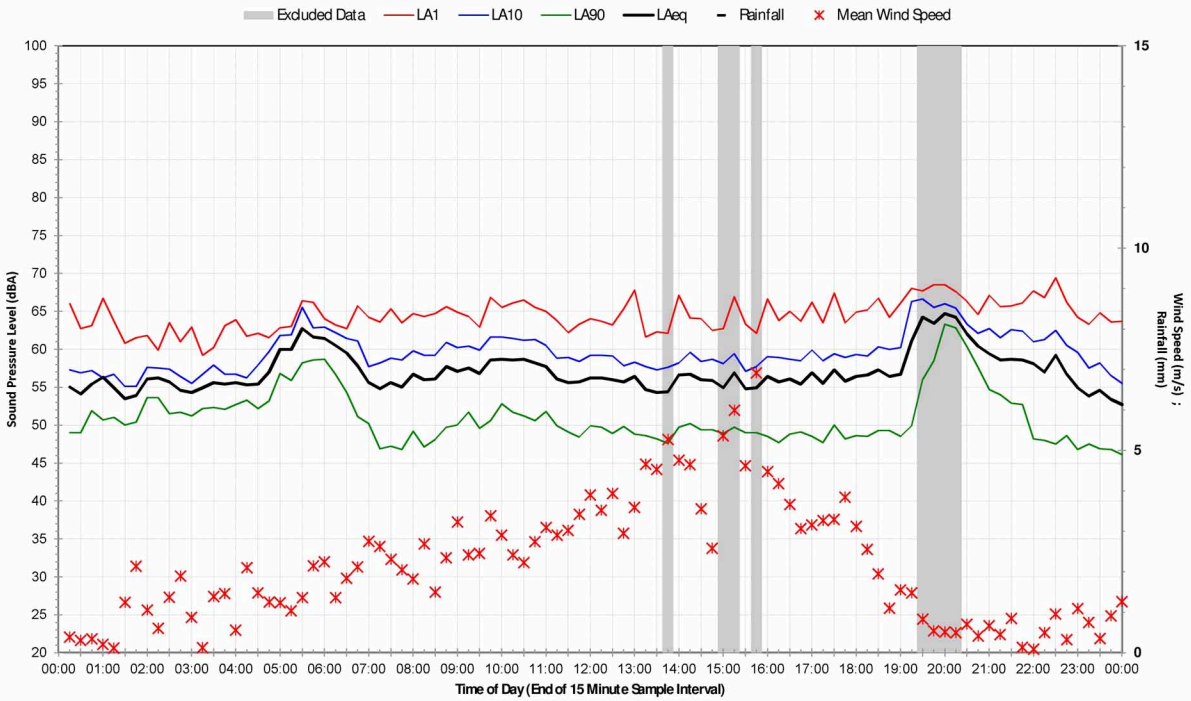
Statistical Ambient Noise Levels
Monitoring Location 6 - Friday 9 March 2012



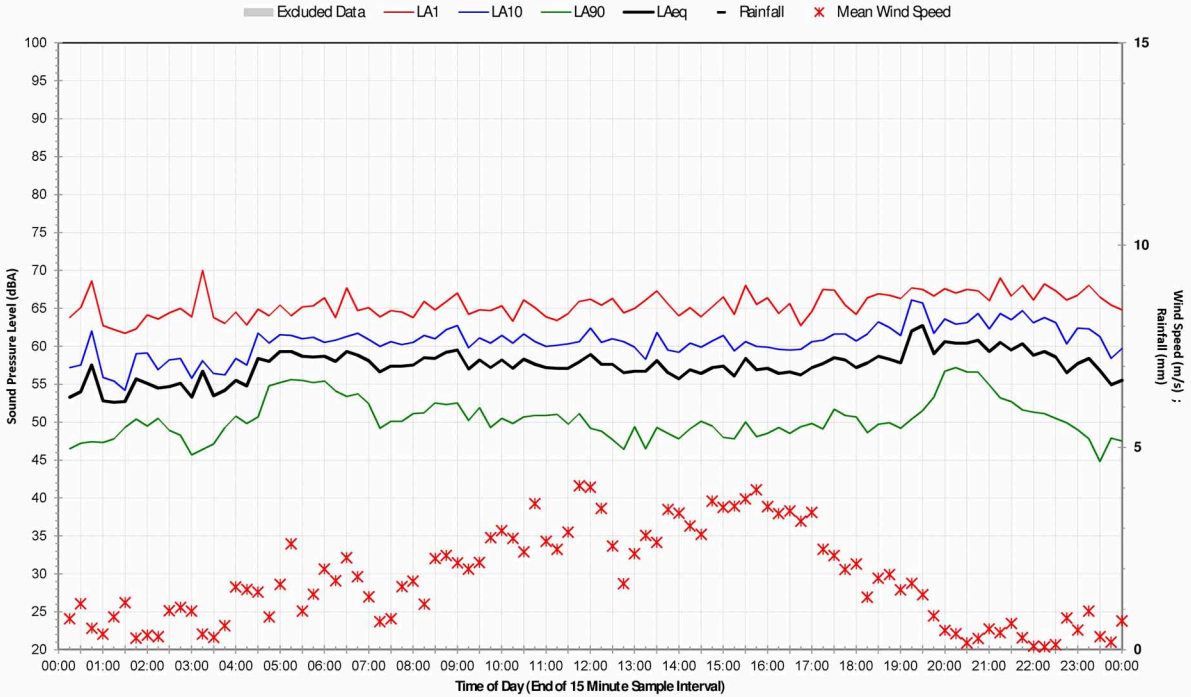
Statistical Ambient Noise Levels
Monitoring Location 6 - Saturday 10 March 2012



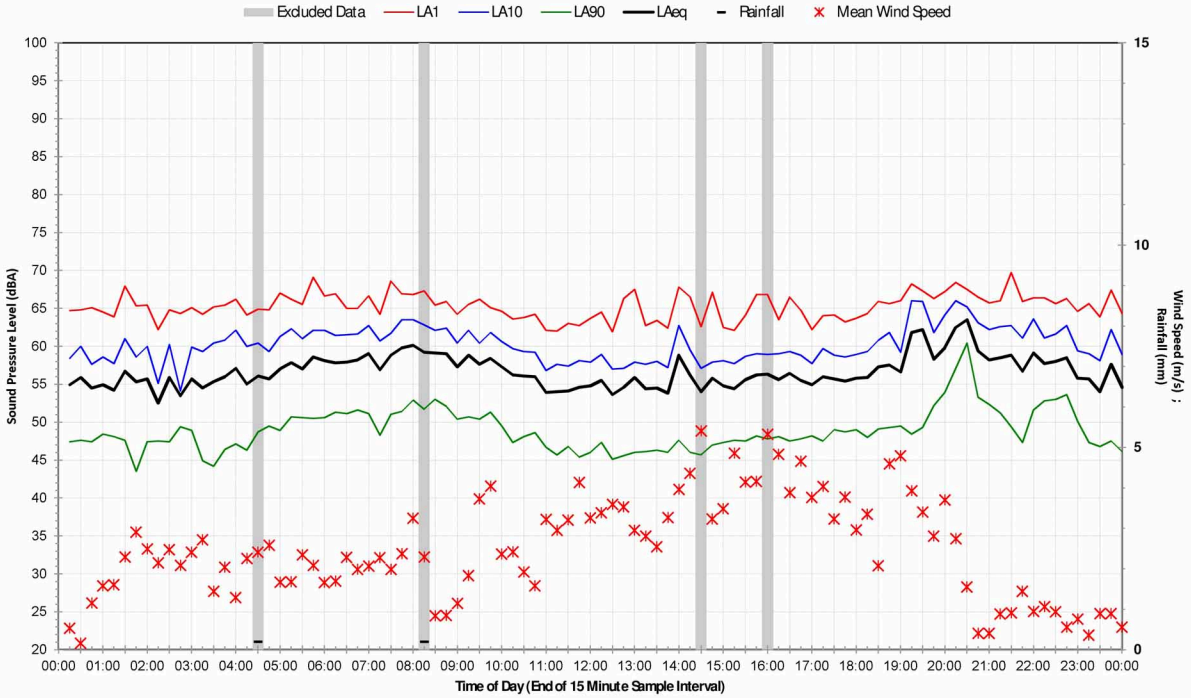
Statistical Ambient Noise Levels
Monitoring Location 6 - Sunday 11 March 2012



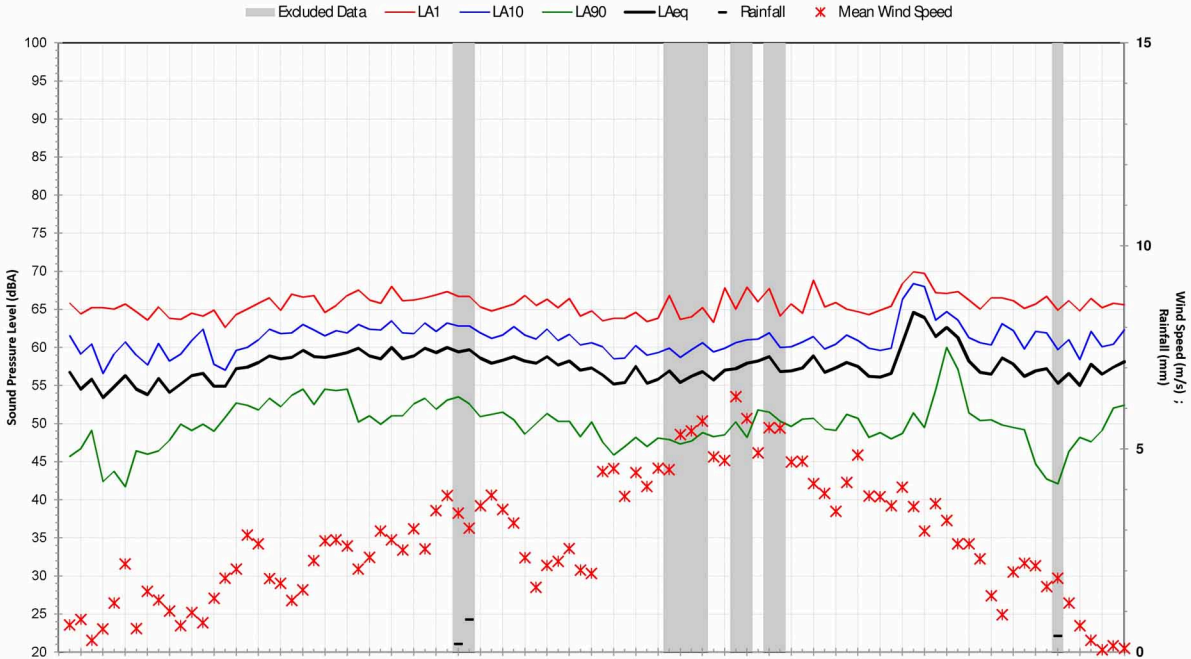
Statistical Ambient Noise Levels
Monitoring Location 6 - Monday 12 March 2012



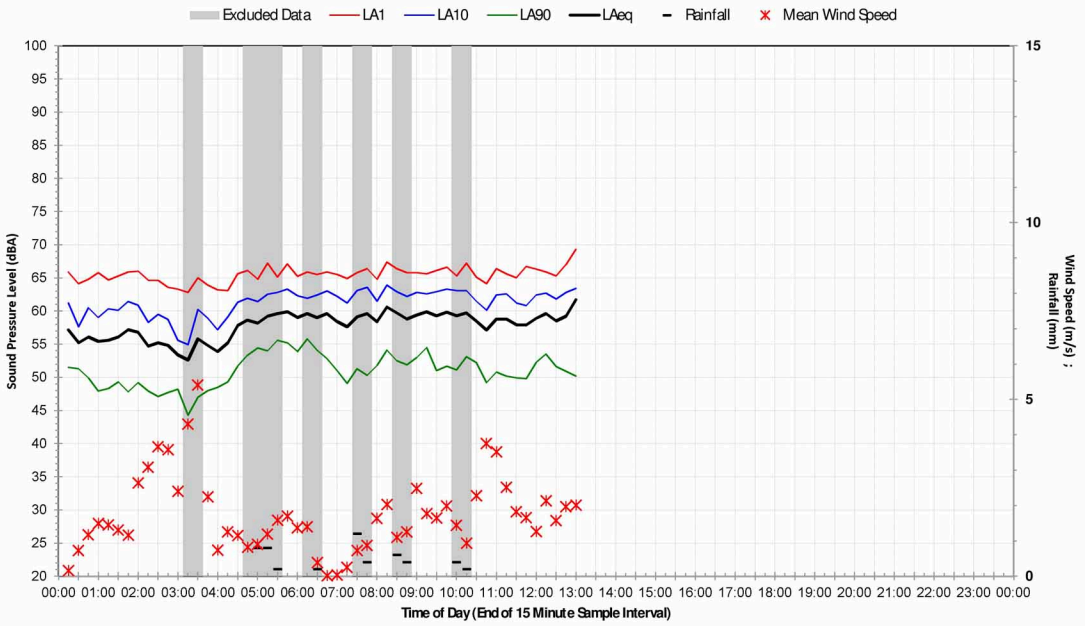
Statistical Ambient Noise Levels
Monitoring Location 6 - Tuesday 13 March 2012



Statistical Ambient Noise Levels
Monitoring Location 6 - Wednesday 14 March 2012

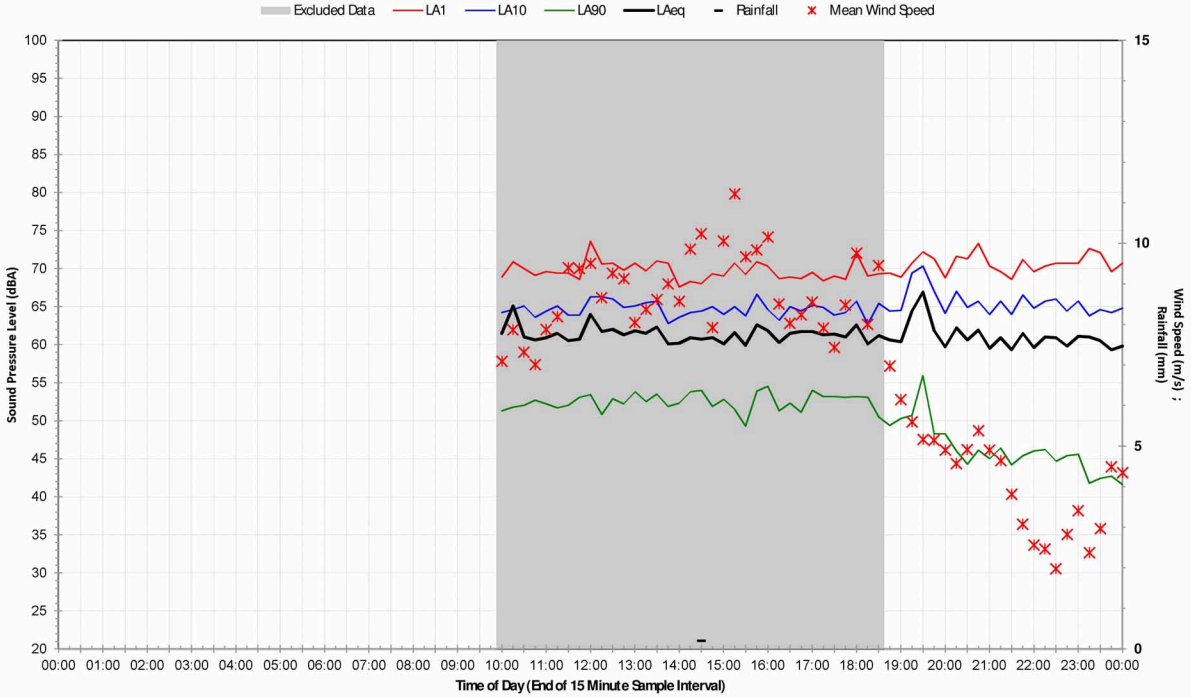


Statistical Ambient Noise Levels
Monitoring Location 6 - Thursday 15 March 2012

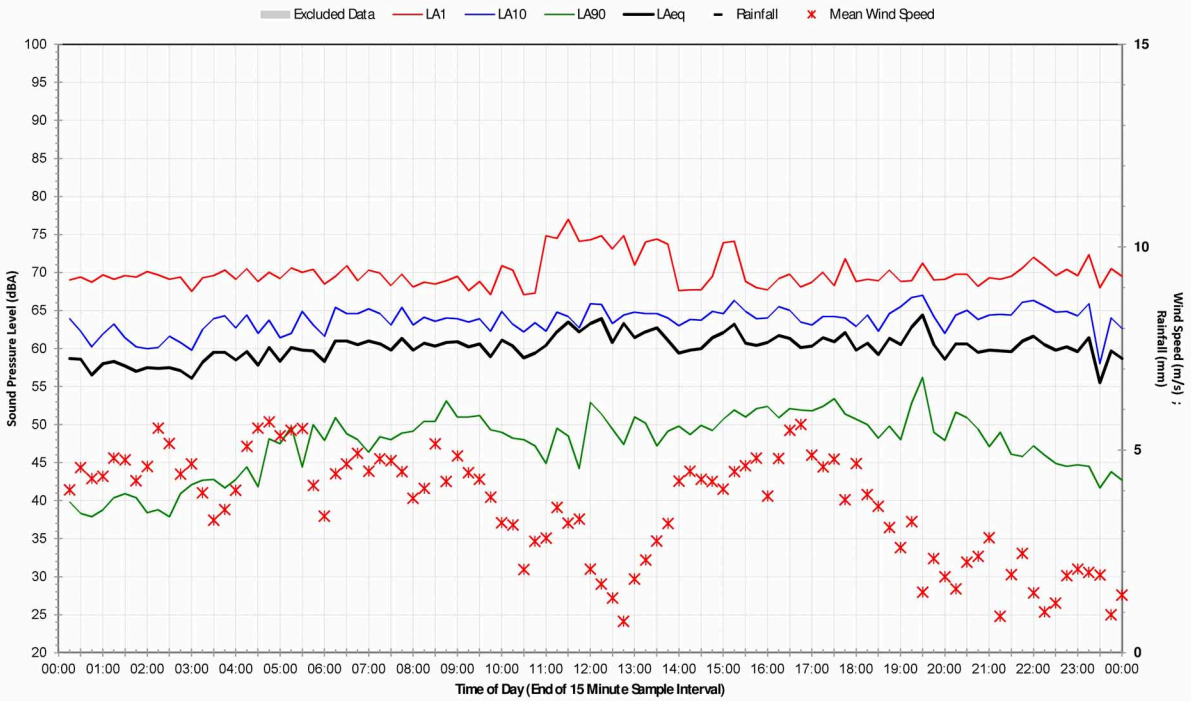


Appendix I – Noise Monitoring Charts – Noise monitoring location L07

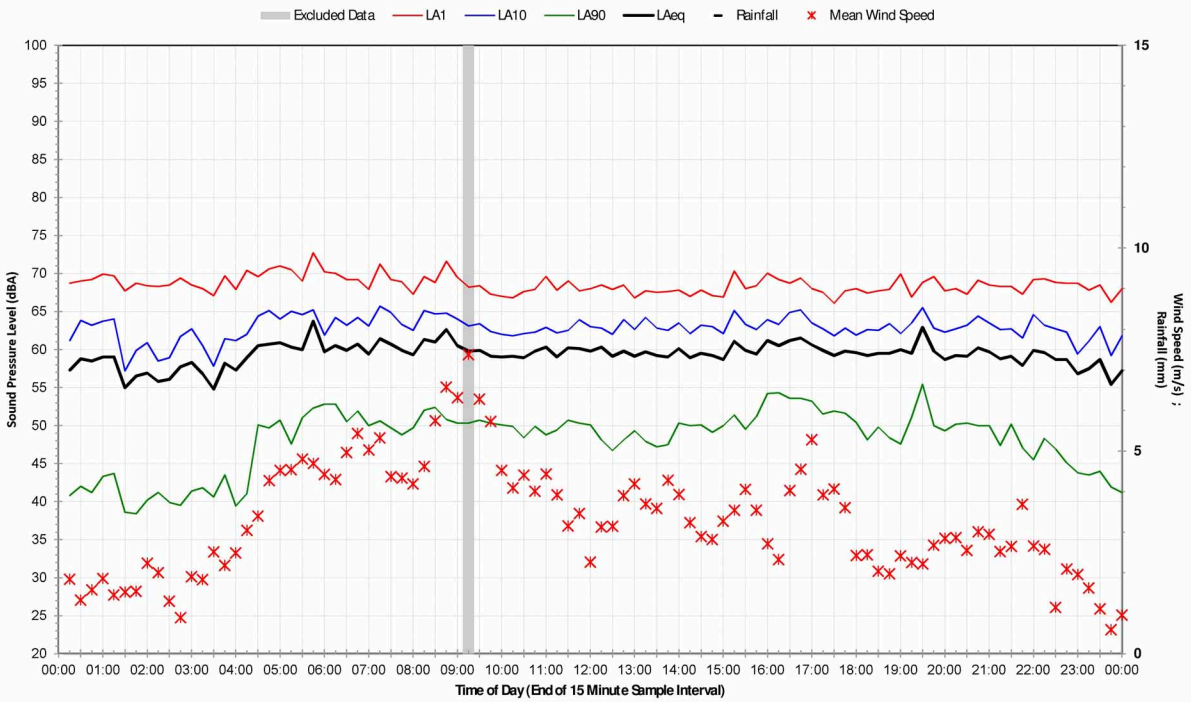
Statistical Ambient Noise Levels
Monitoring Location 7 - Wednesday 7 March 2012



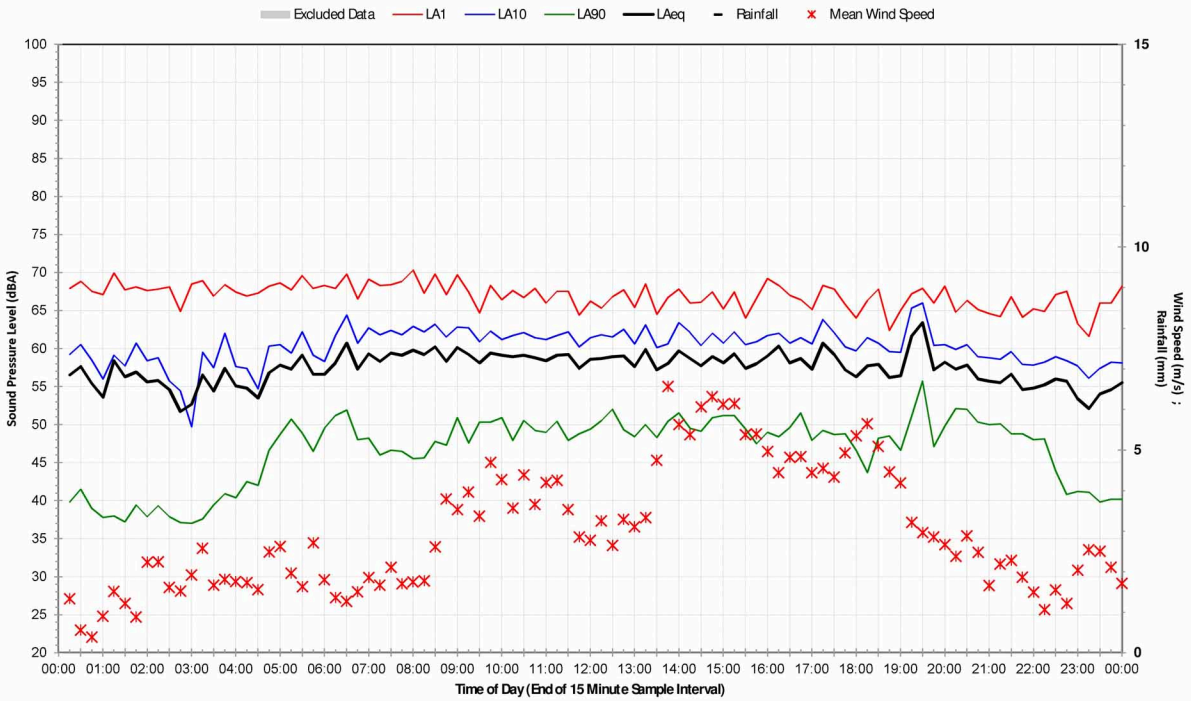
Statistical Ambient Noise Levels
Monitoring Location 7 - Thursday 8 March 2012



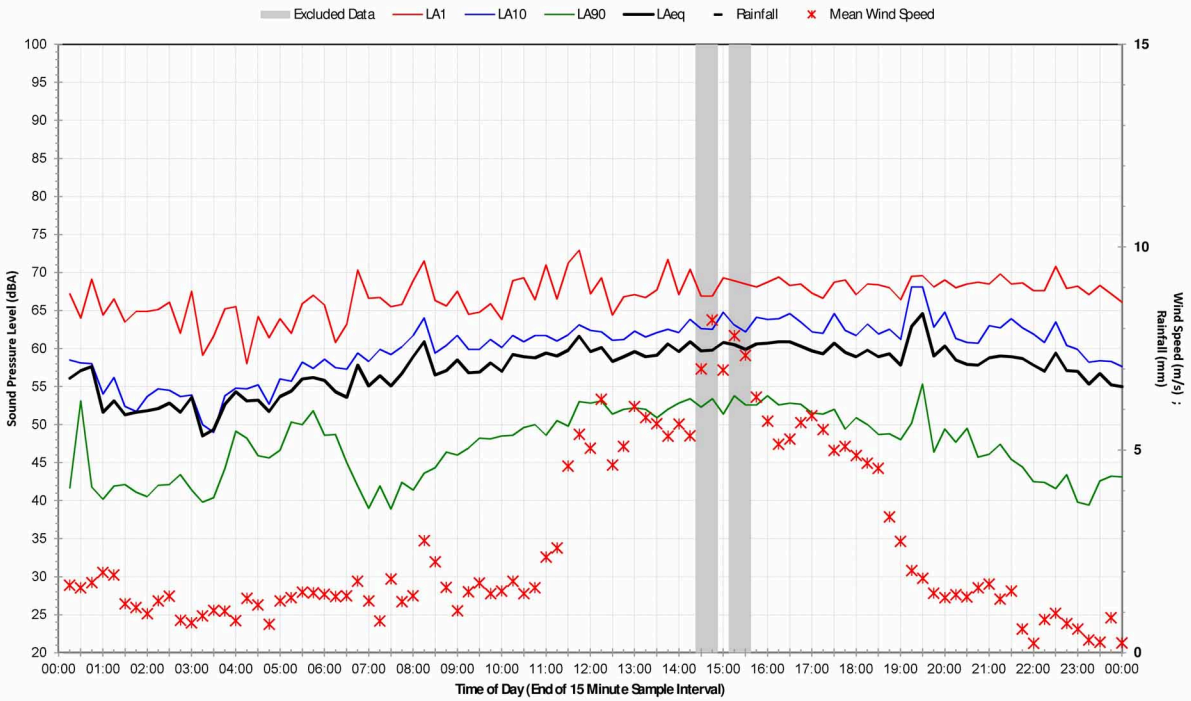
Statistical Ambient Noise Levels
Monitoring Location 7 - Friday 9 March 2012



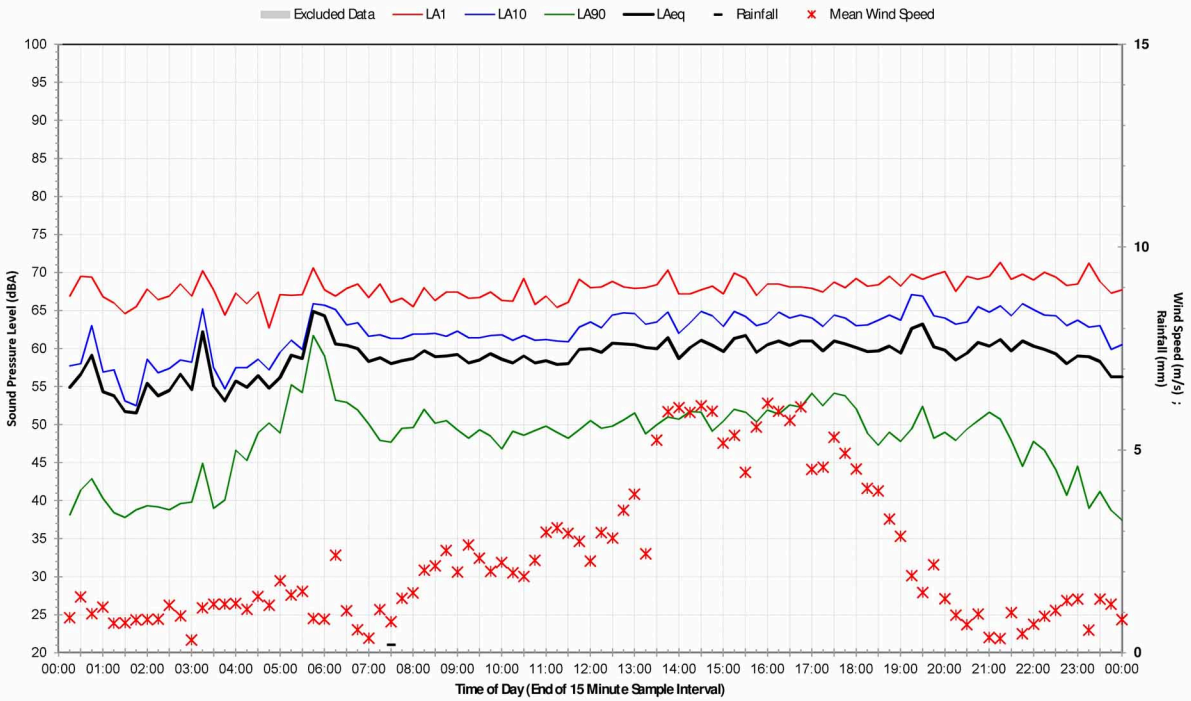
Statistical Ambient Noise Levels
Monitoring Location 7 - Saturday 10 March 2012



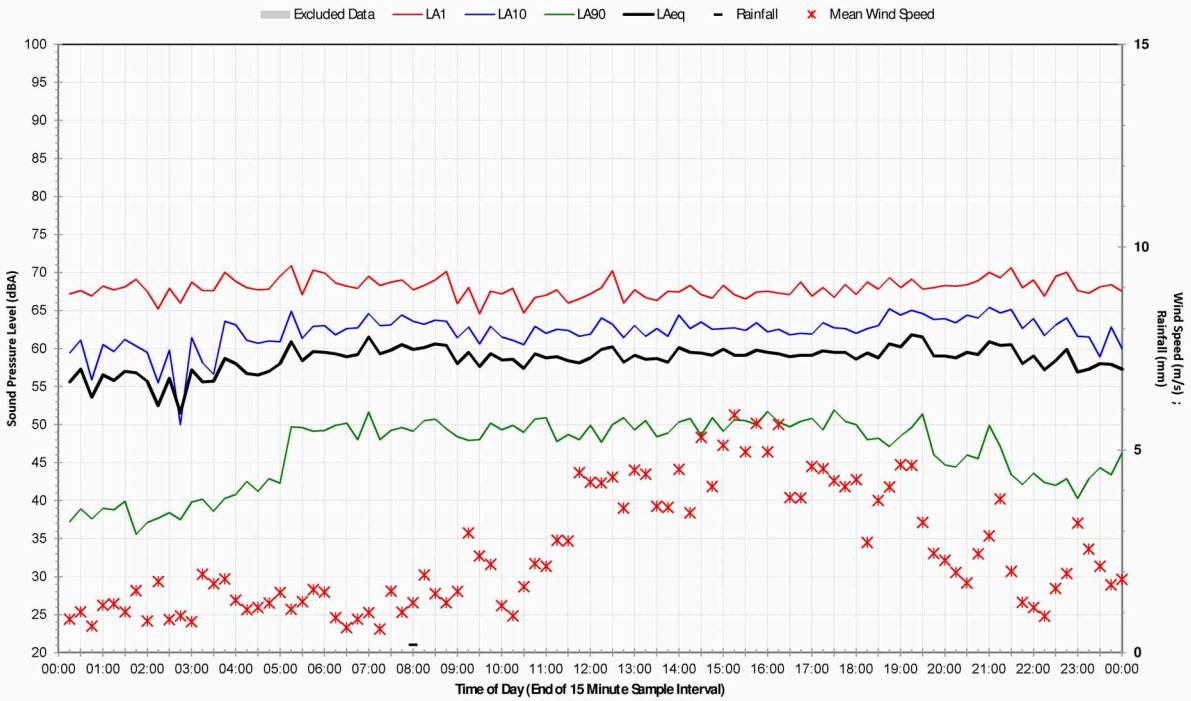
Statistical Ambient Noise Levels
Monitoring Location 7 - Sunday 11 March 2012



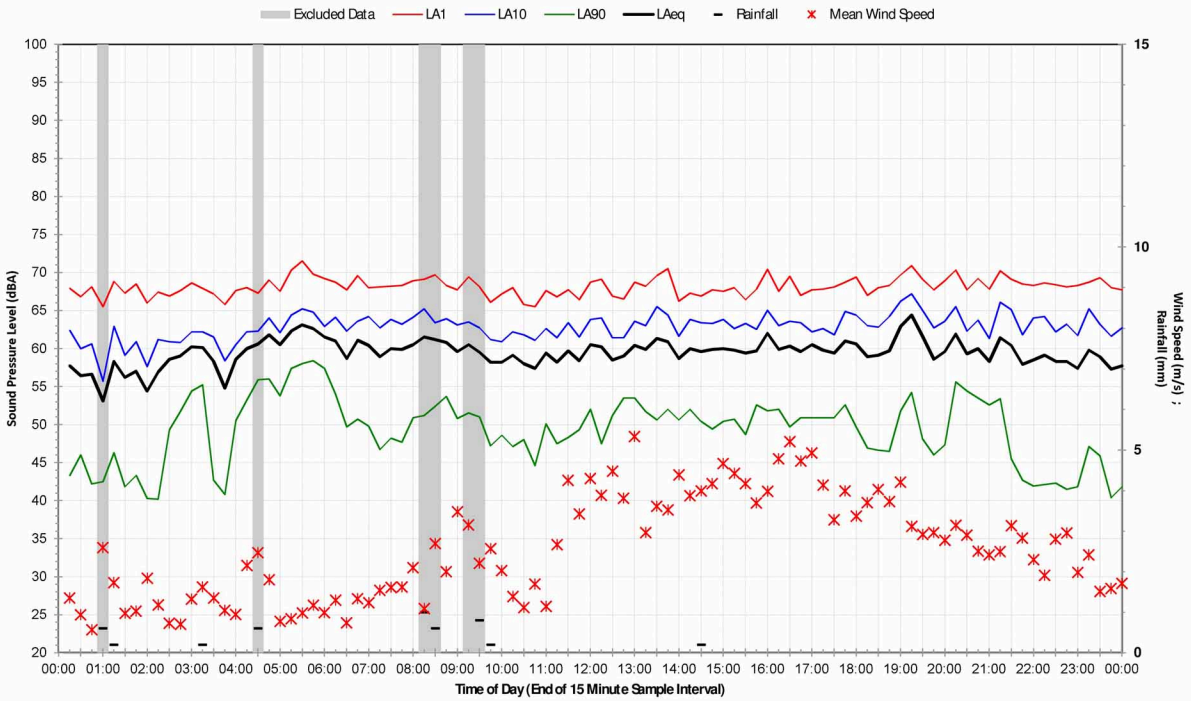
Statistical Ambient Noise Levels
Monitoring Location 7 - Monday 12 March 2012



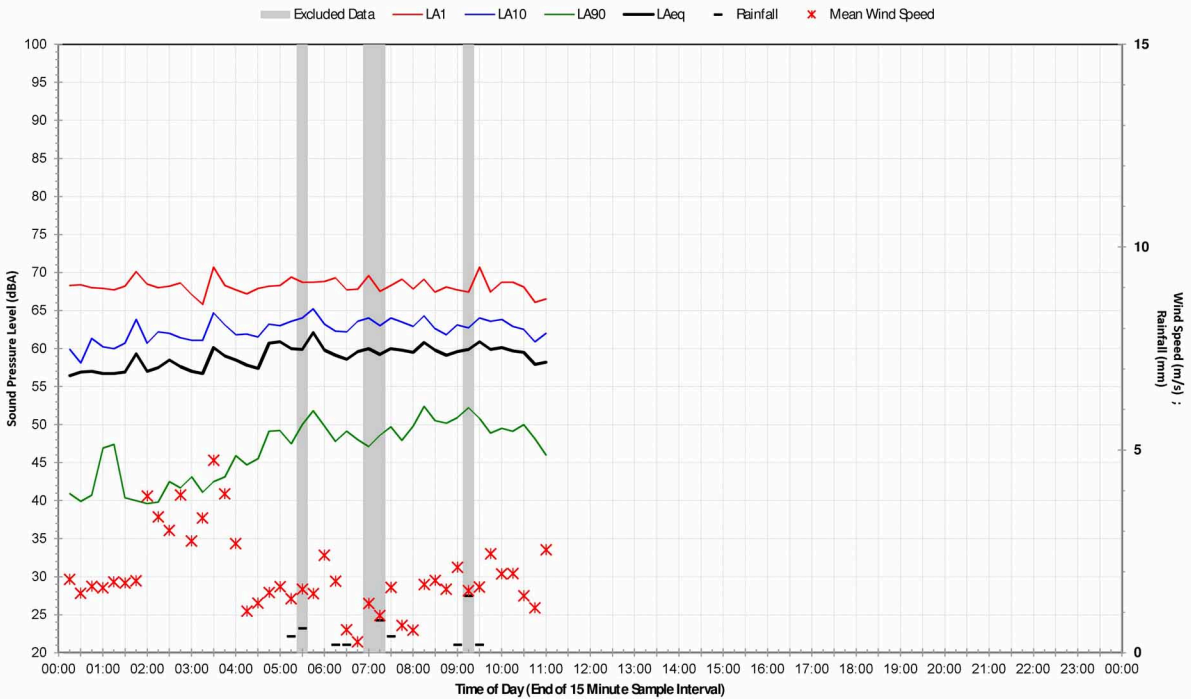
Statistical Ambient Noise Levels
Monitoring Location 7 - Tuesday 13 March 2012



Statistical Ambient Noise Levels
Monitoring Location 7 - Wednesday 14 March 2012

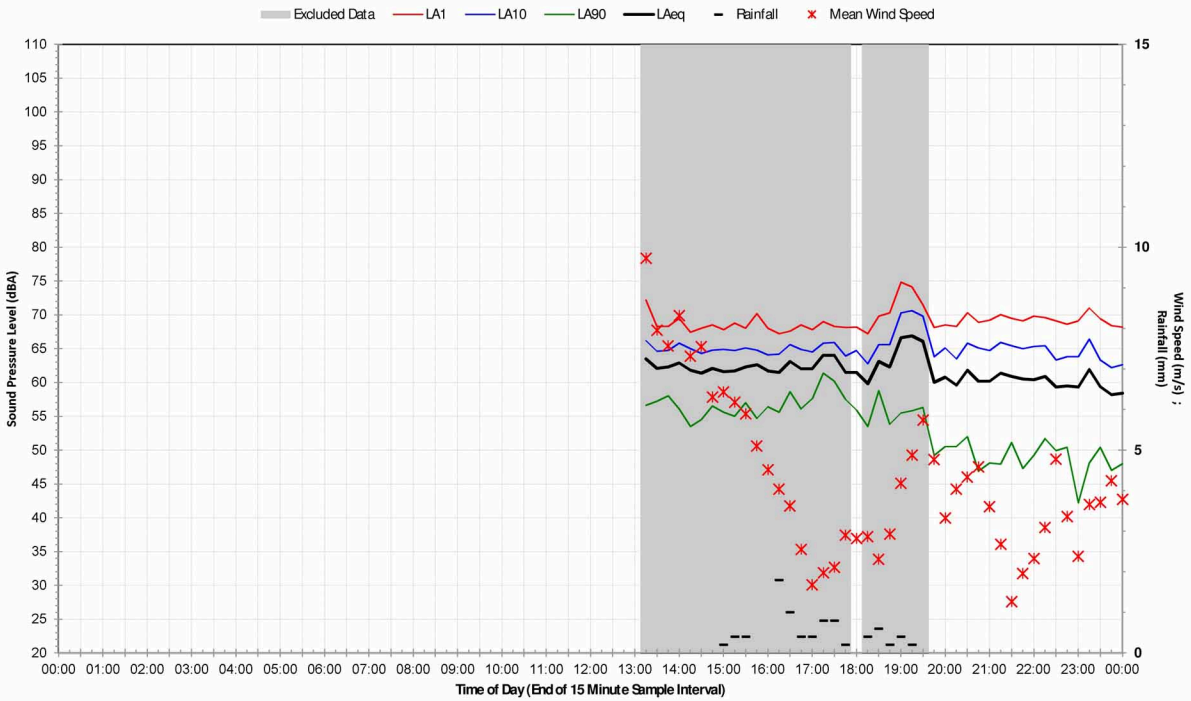


Statistical Ambient Noise Levels
Monitoring Location 7 - Thursday 15 March 2012

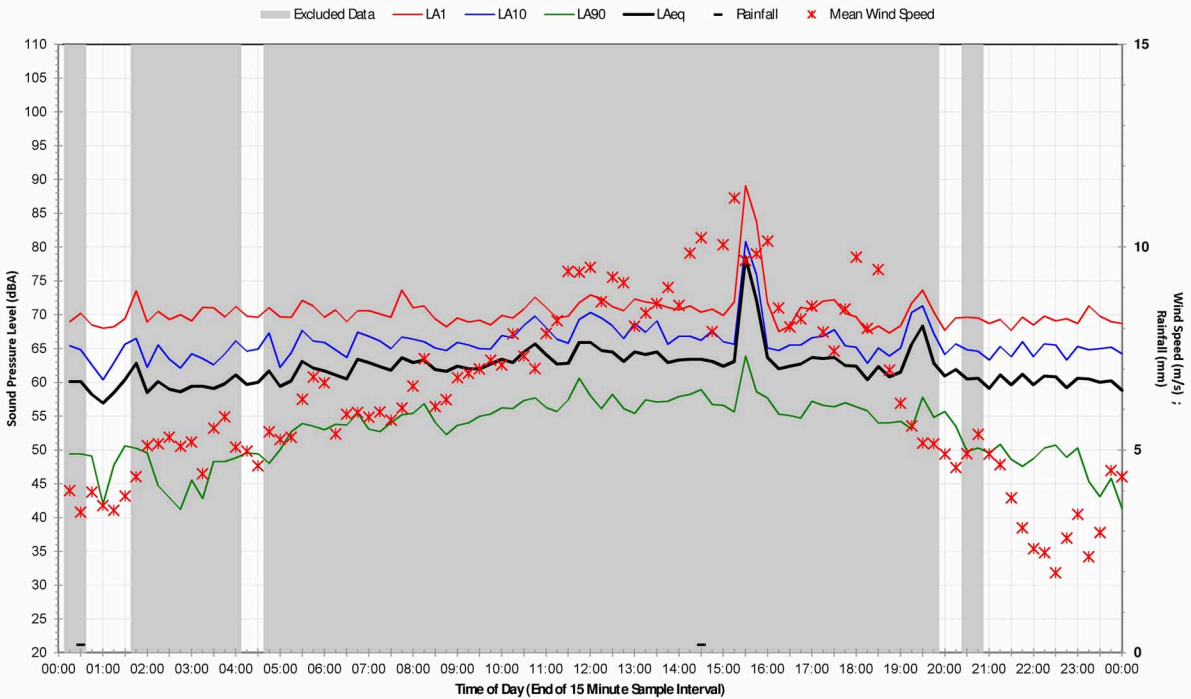


Appendix J – Noise Monitoring Charts – Noise monitoring location L08

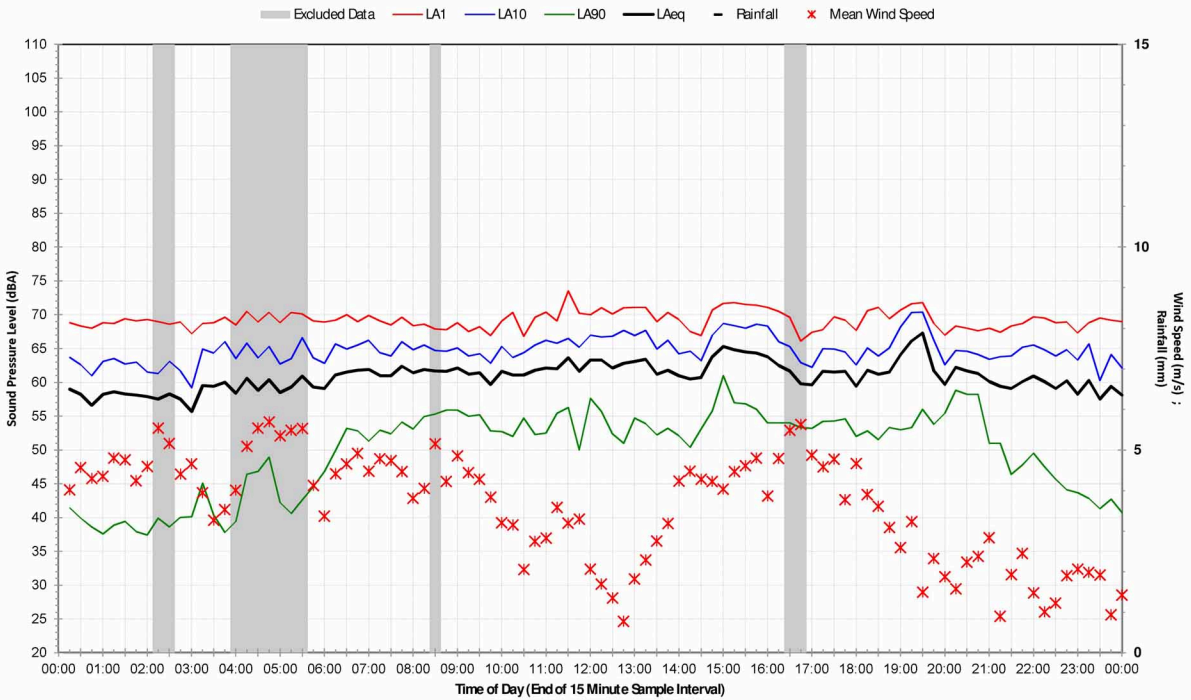
Statistical Ambient Noise Levels
Monitoring Location 8 - Tuesday 6 March 2012



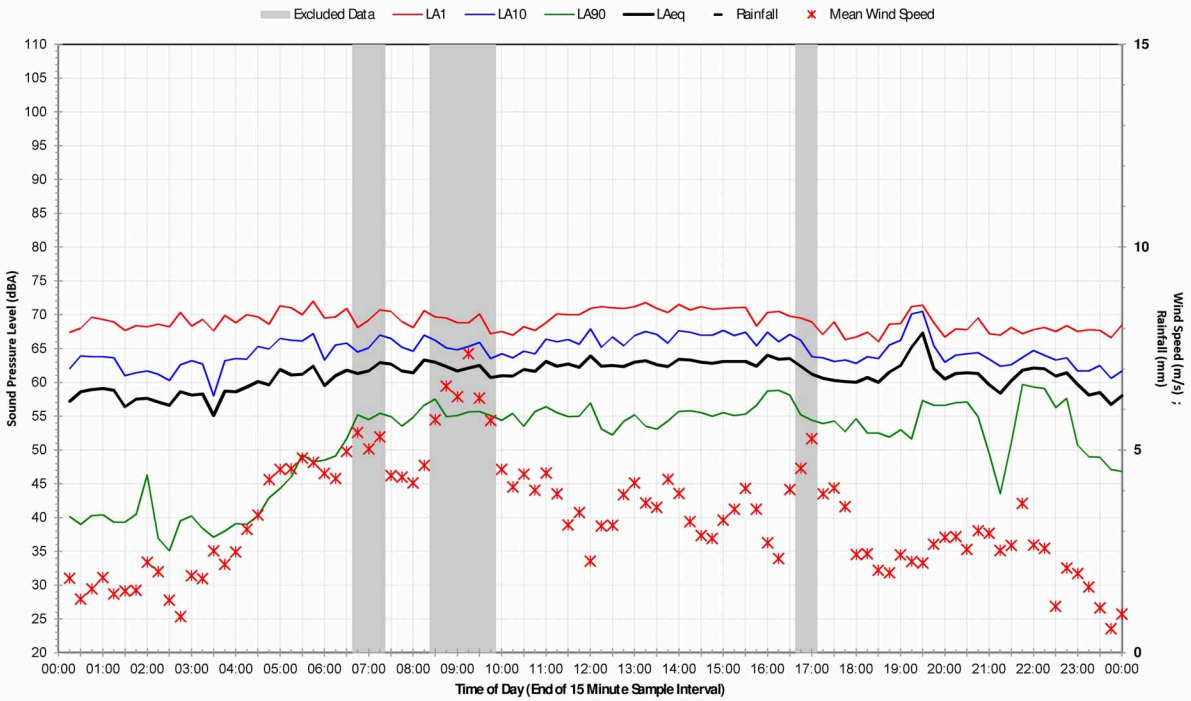
Statistical Ambient Noise Levels
Monitoring Location 8 - Wednesday 7 March 2012



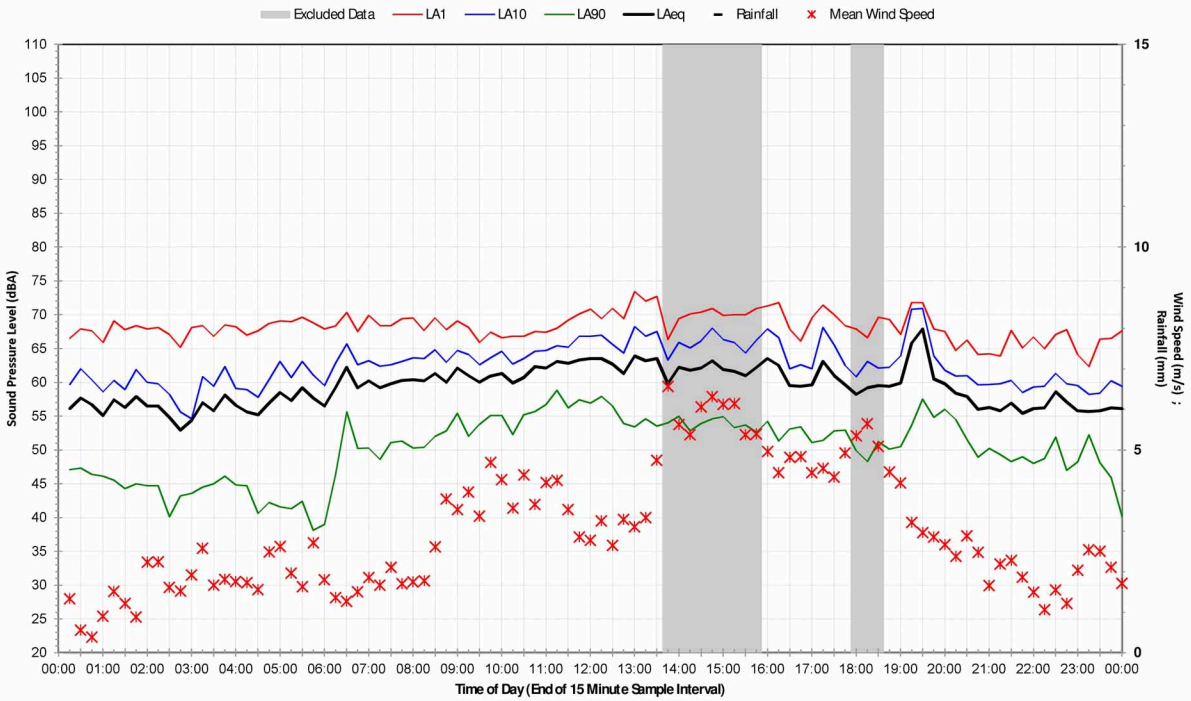
Statistical Ambient Noise Levels
Monitoring Location 8 - Thursday 8 March 2012



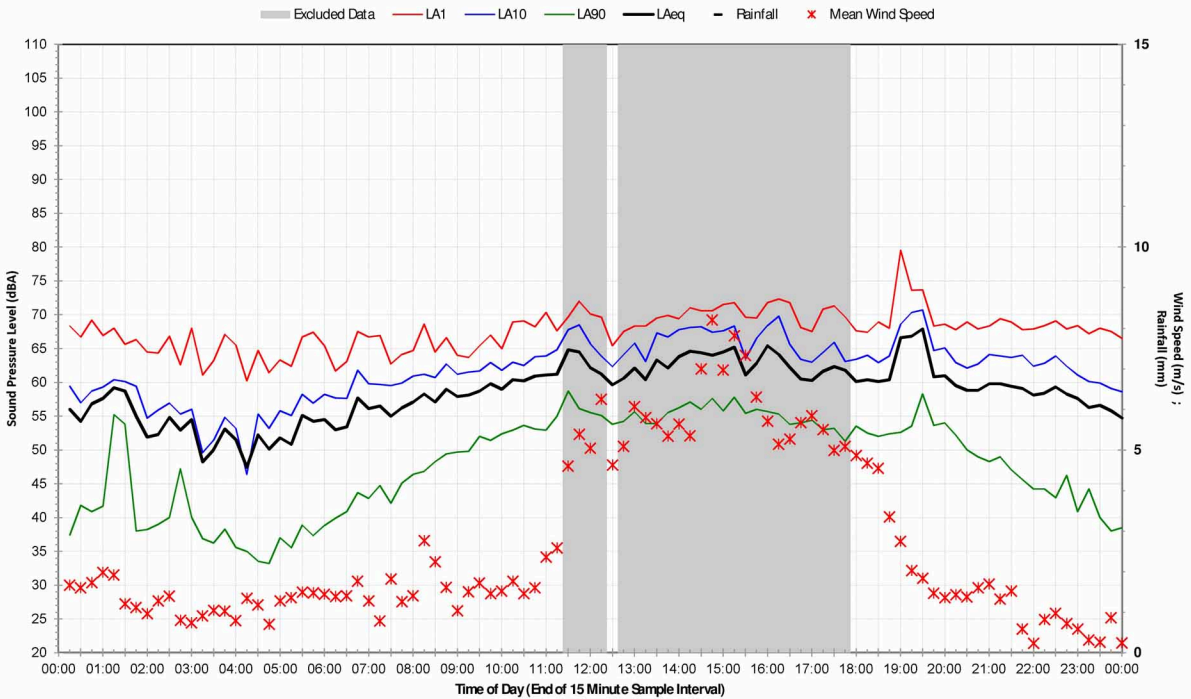
Statistical Ambient Noise Levels
Monitoring Location 8 - Friday 9 March 2012



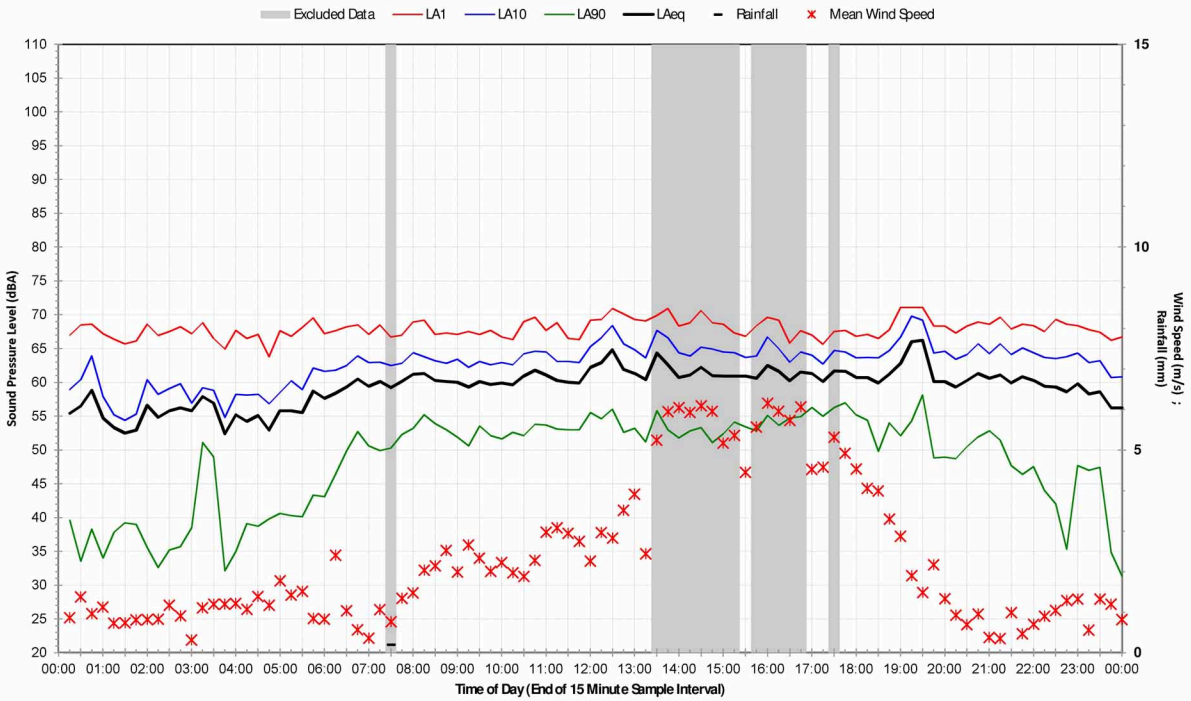
Statistical Ambient Noise Levels
Monitoring Location 8 - Saturday 10 March 2012



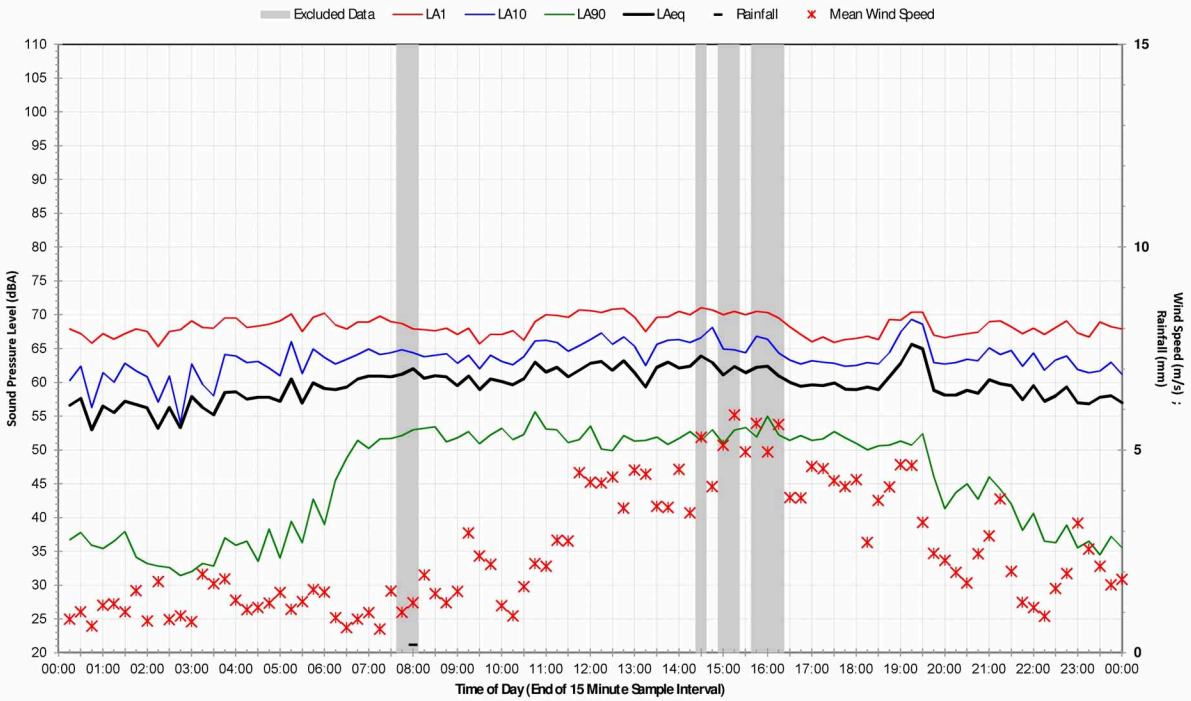
Statistical Ambient Noise Levels
Monitoring Location 8 - Sunday 11 March 2012



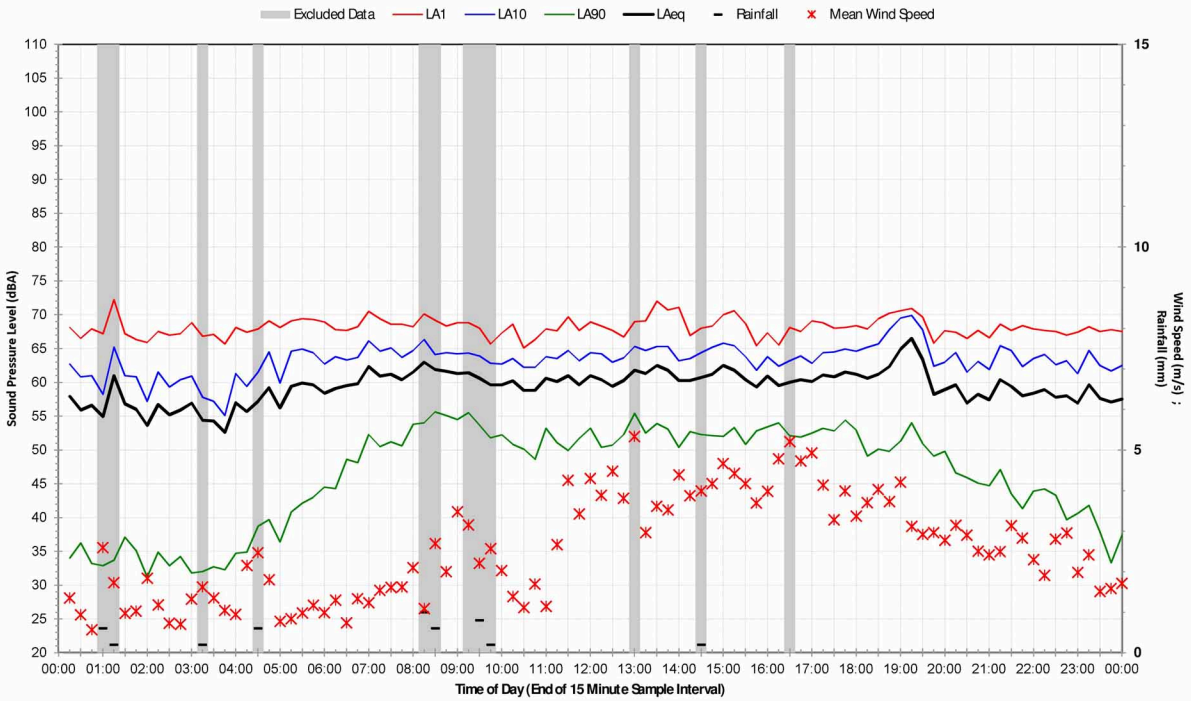
Statistical Ambient Noise Levels
Monitoring Location 8 - Monday 12 March 2012



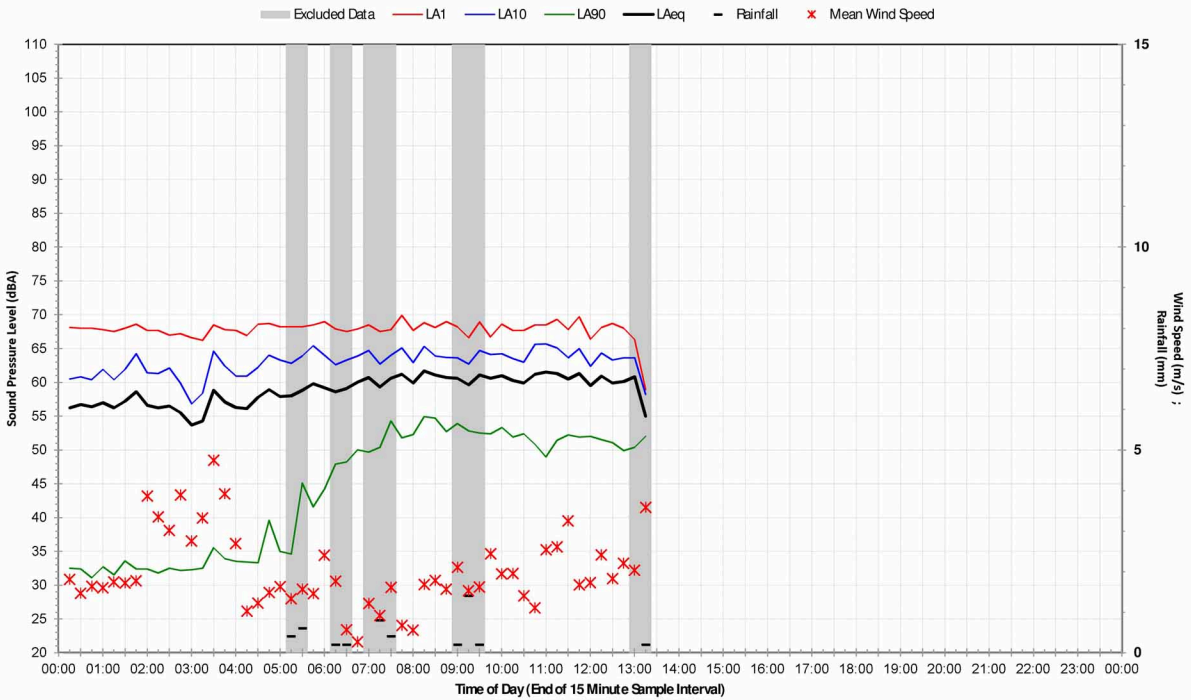
Statistical Ambient Noise Levels
Monitoring Location 8 - Tuesday 13 March 2012



Statistical Ambient Noise Levels
Monitoring Location 8 - Wednesday 14 March 2012

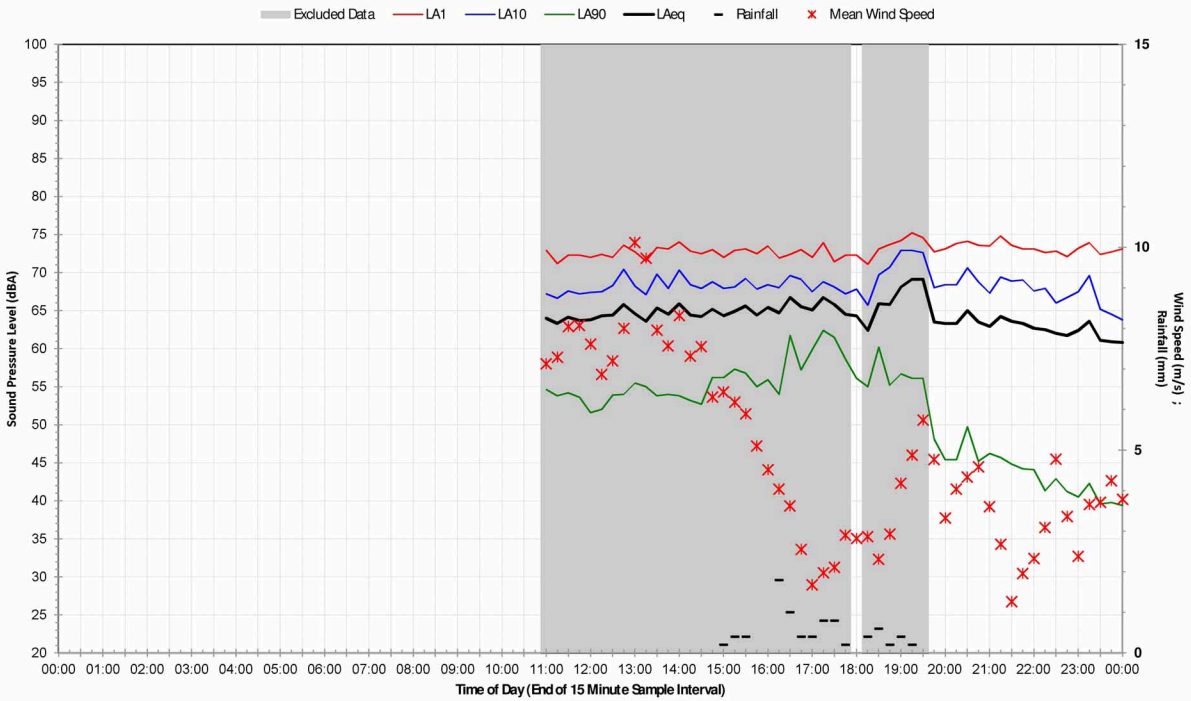


Statistical Ambient Noise Levels
Monitoring Location 8 - Thursday 15 March 2012

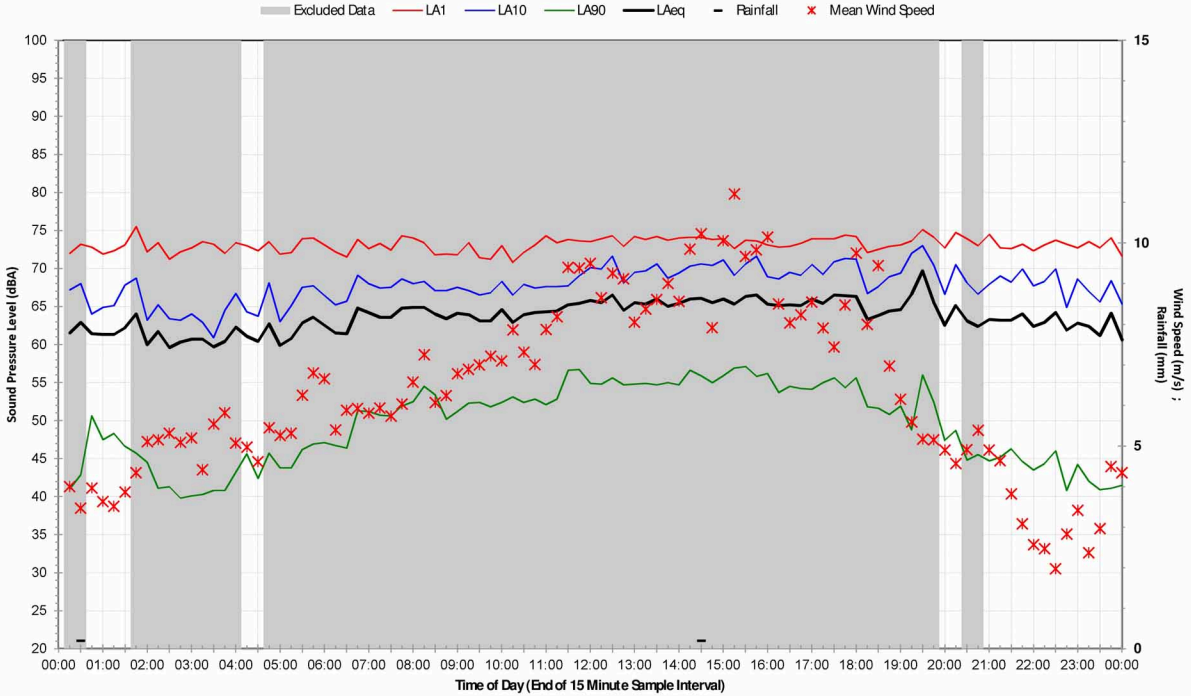


Appendix K – Noise Monitoring Charts – Noise monitoring location L09

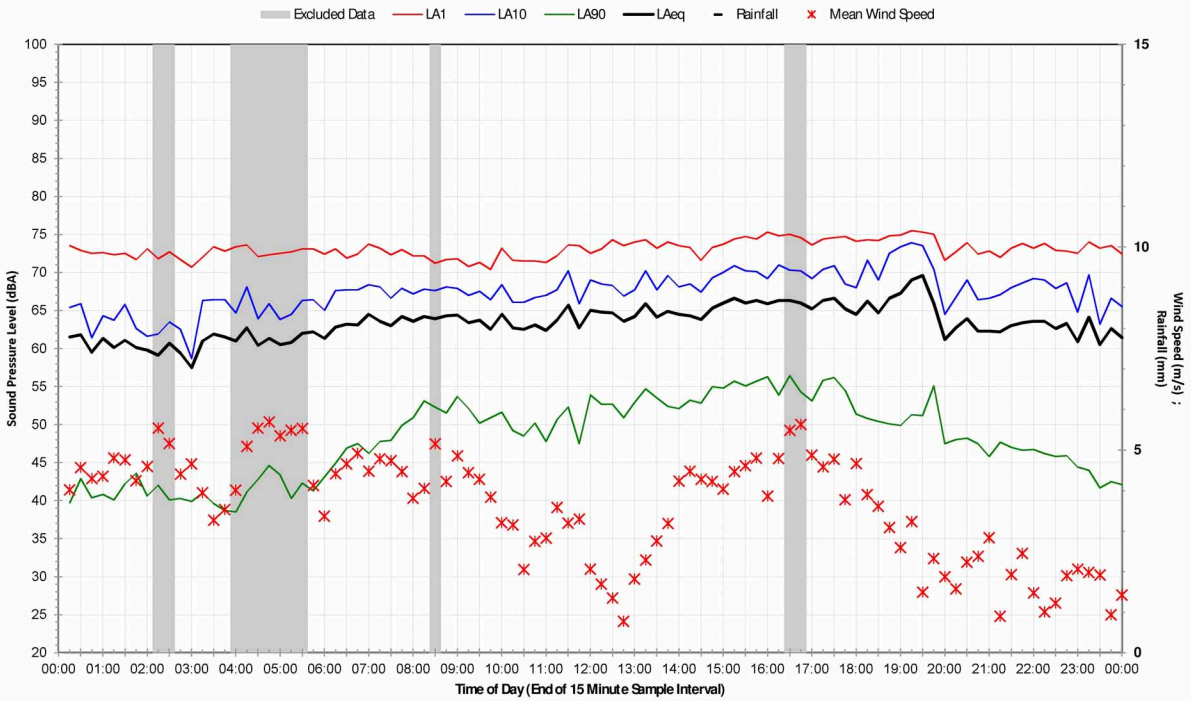
Statistical Ambient Noise Levels
Monitoring Location 9 - Tuesday 6 March 2012



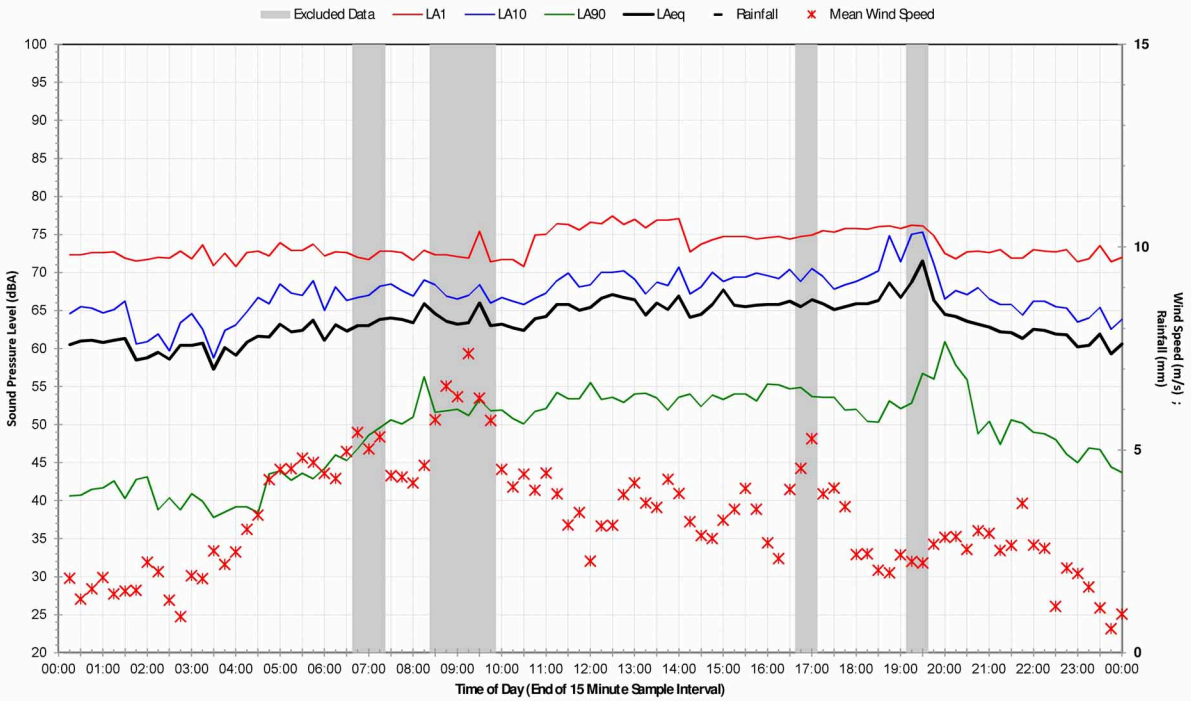
Statistical Ambient Noise Levels
Monitoring Location 9 - Wednesday 7 March 2012



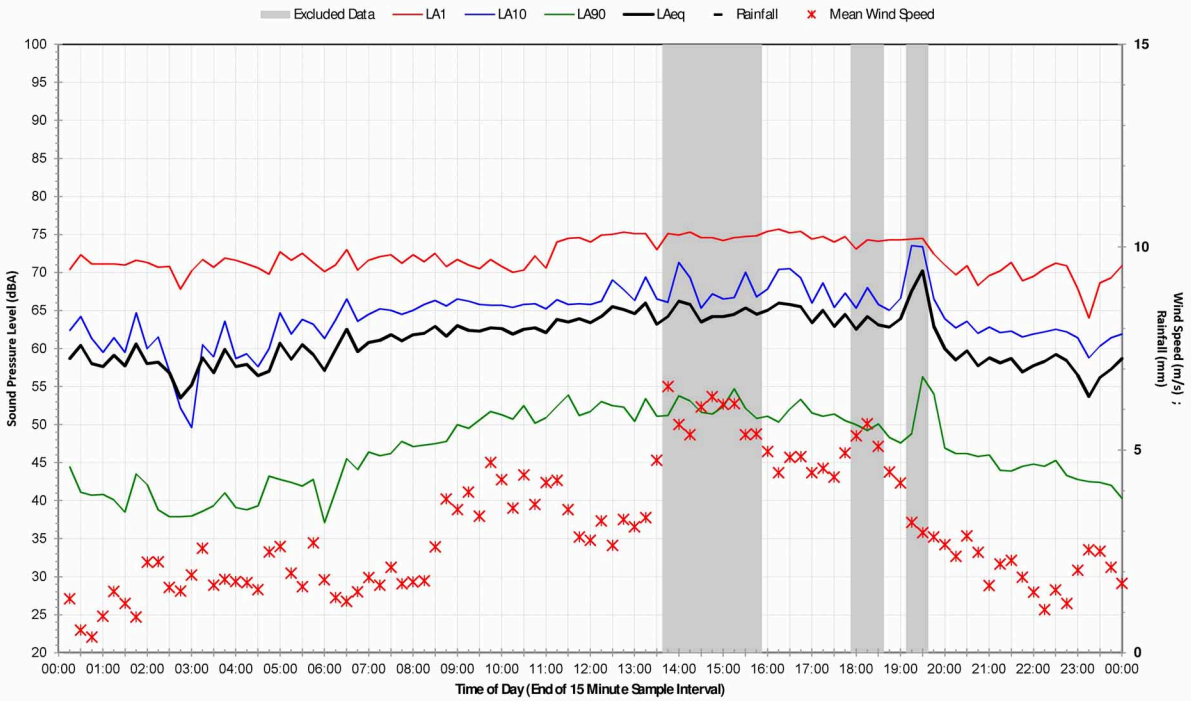
Statistical Ambient Noise Levels
Monitoring Location 9 - Thursday 8 March 2012



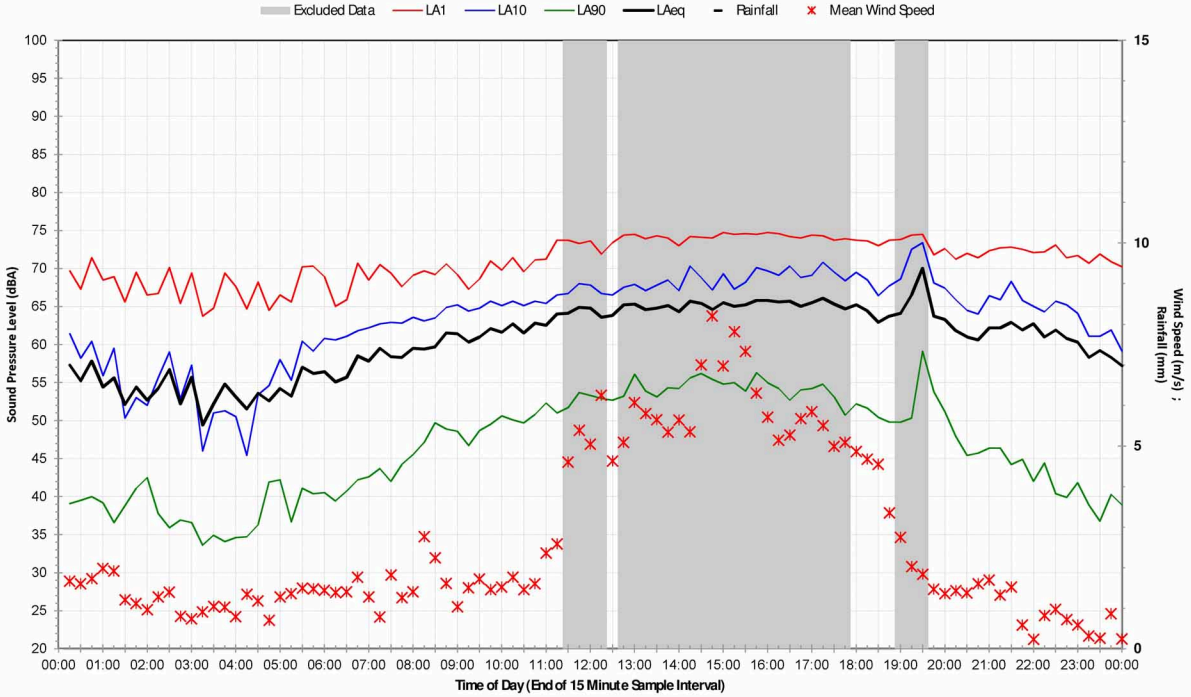
Statistical Ambient Noise Levels
Monitoring Location 9 - Friday 9 March 2012



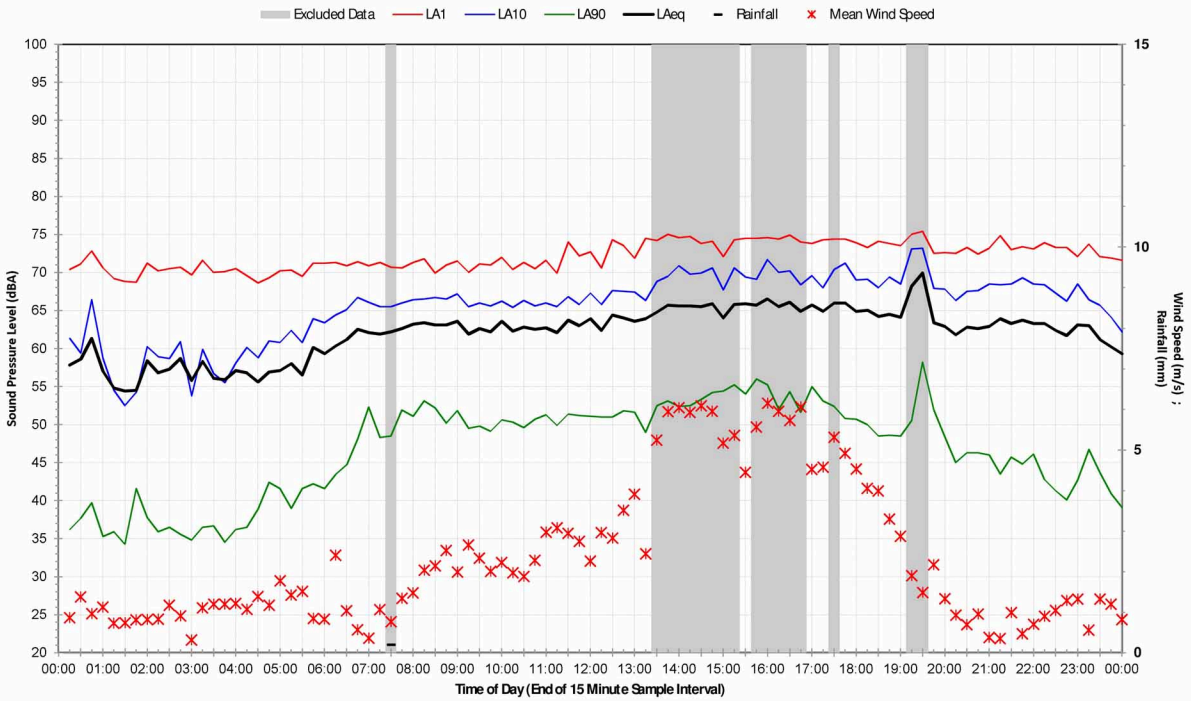
Statistical Ambient Noise Levels
Monitoring Location 9 - Saturday 10 March 2012



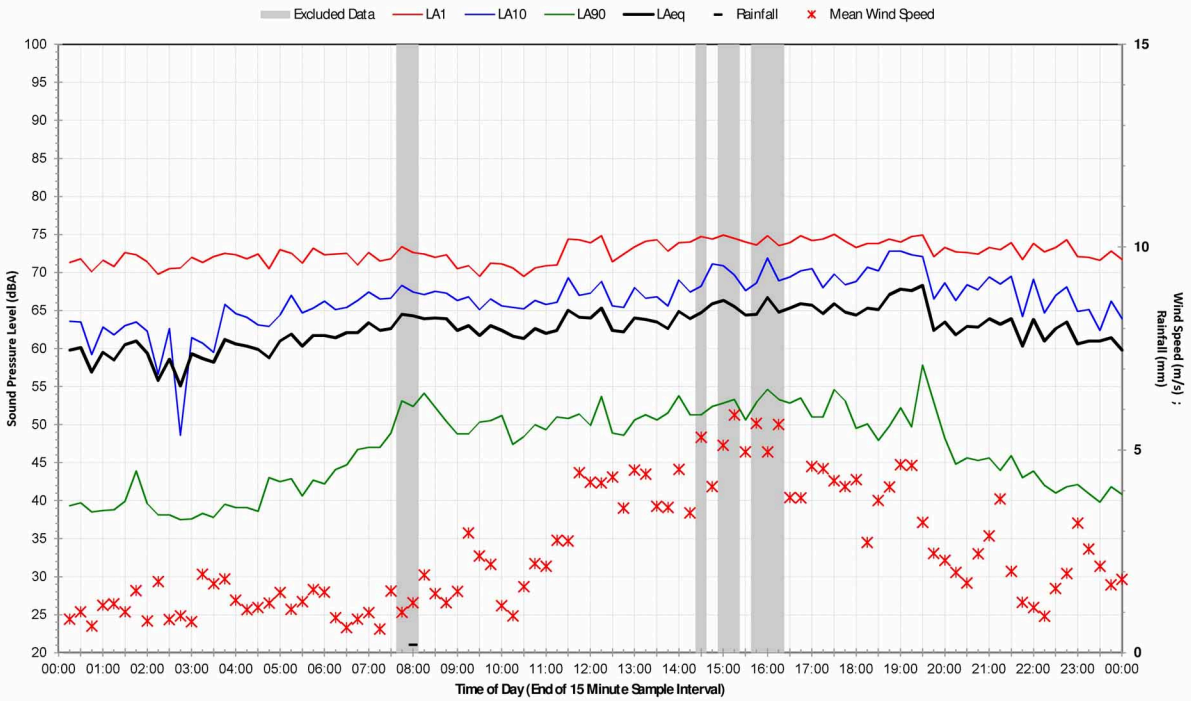
Statistical Ambient Noise Levels
Monitoring Location 9 - Sunday 11 March 2012



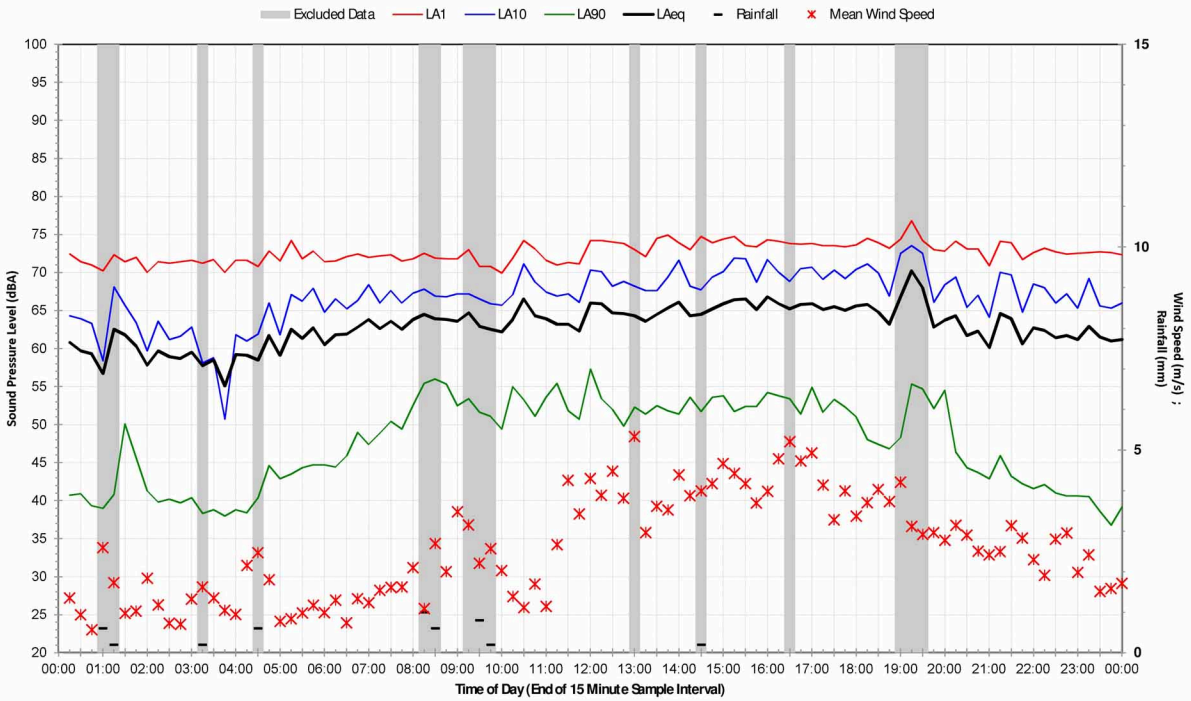
Statistical Ambient Noise Levels
Monitoring Location 9 - Monday 12 March 2012



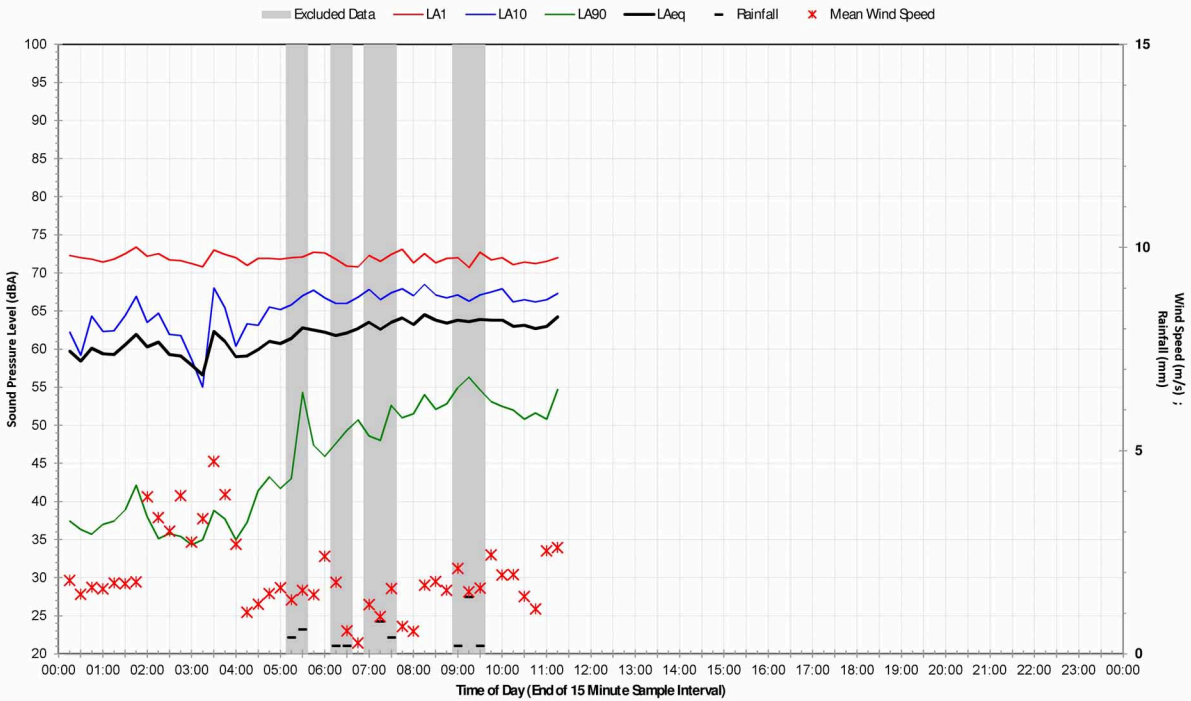
Statistical Ambient Noise Levels
Monitoring Location 9 - Tuesday 13 March 2012



Statistical Ambient Noise Levels
Monitoring Location 9 - Wednesday 14 March 2012

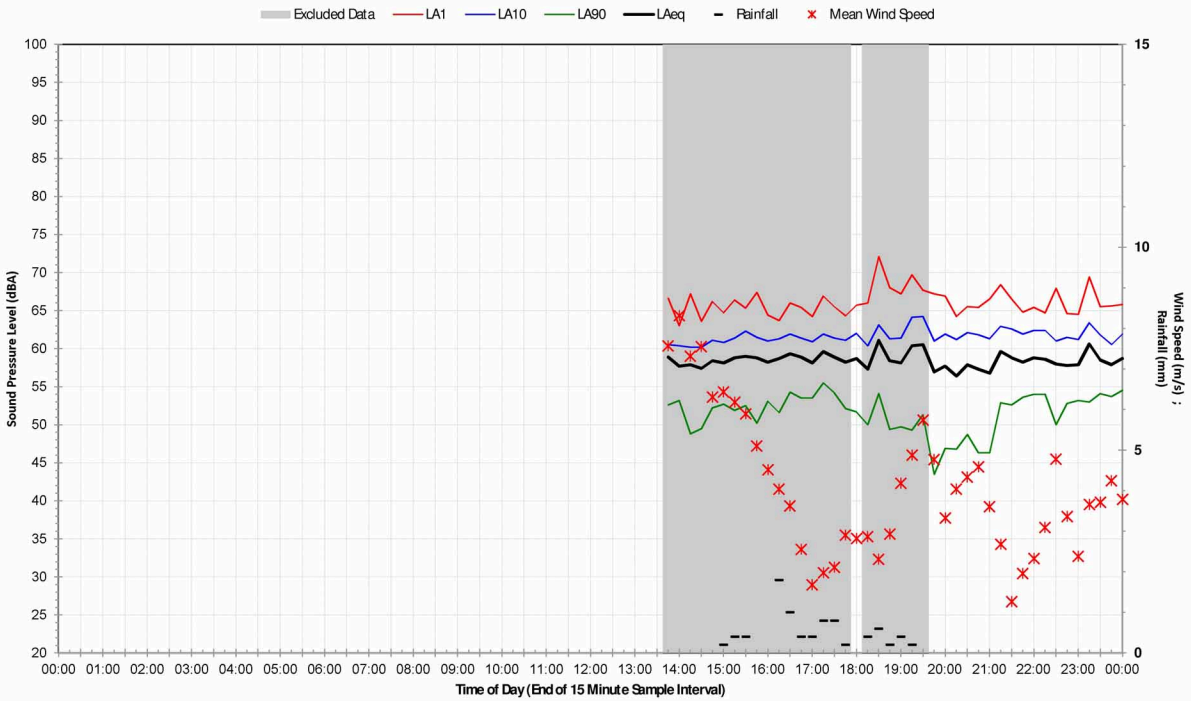


Statistical Ambient Noise Levels
Monitoring Location 9 - Thursday 15 March 2012

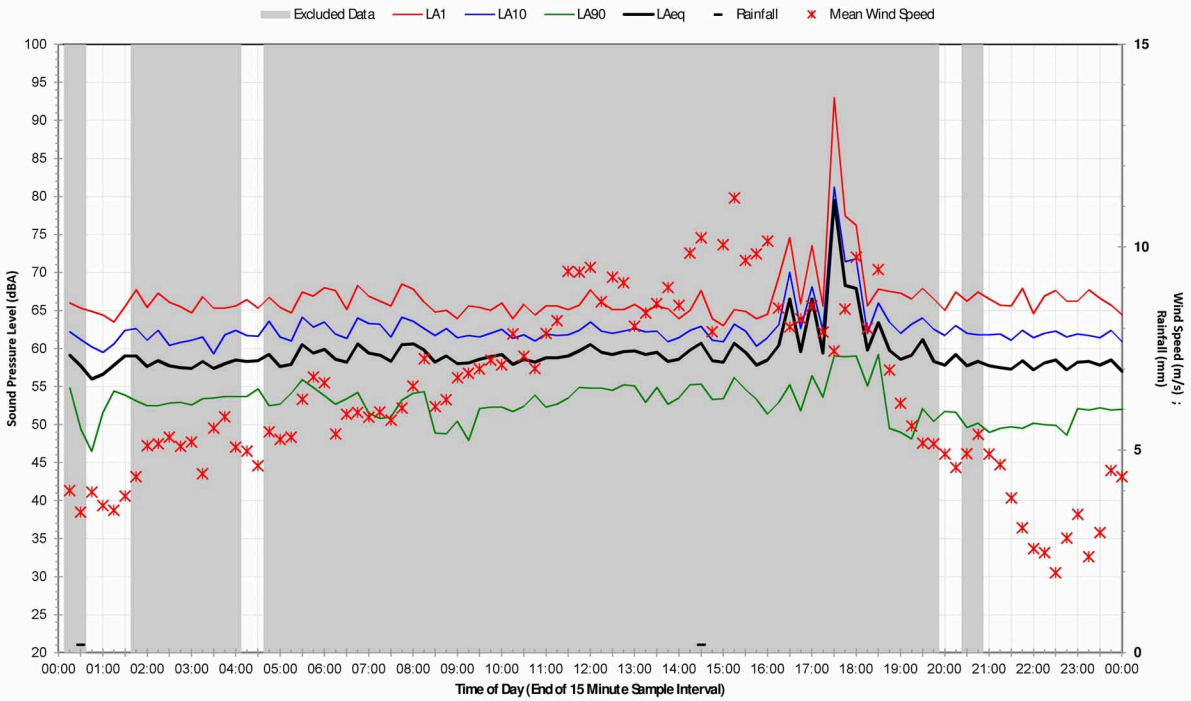


Appendix L – Noise Monitoring Charts – Noise monitoring location L10

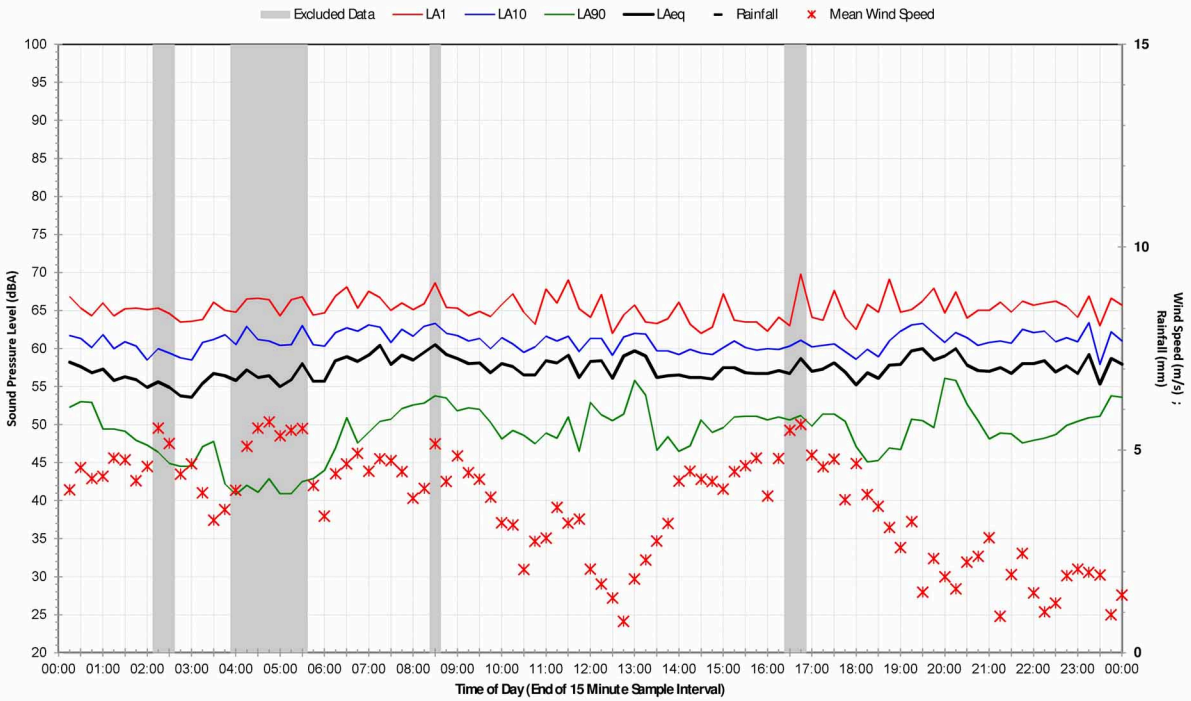
Statistical Ambient Noise Levels
Monitoring Location 10 - Tuesday 6 March 2012



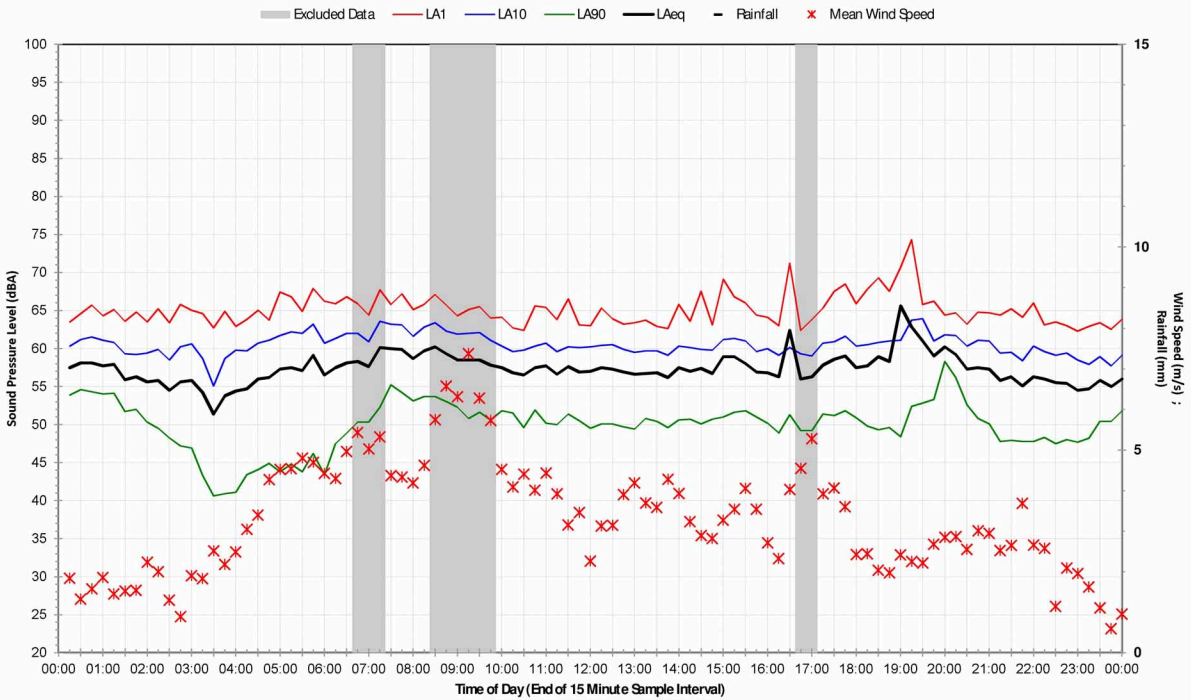
Statistical Ambient Noise Levels
Monitoring Location 10 - Wednesday 7 March 2012



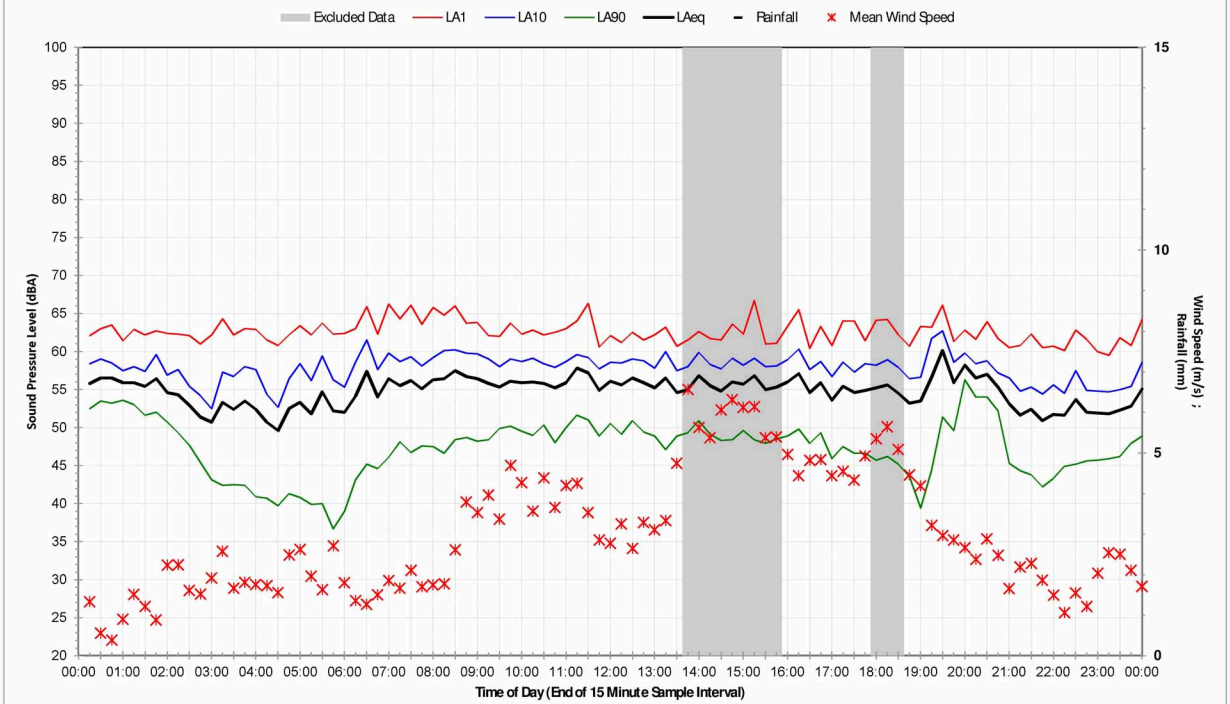
Statistical Ambient Noise Levels
Monitoring Location 10 - Thursday 8 March 2012



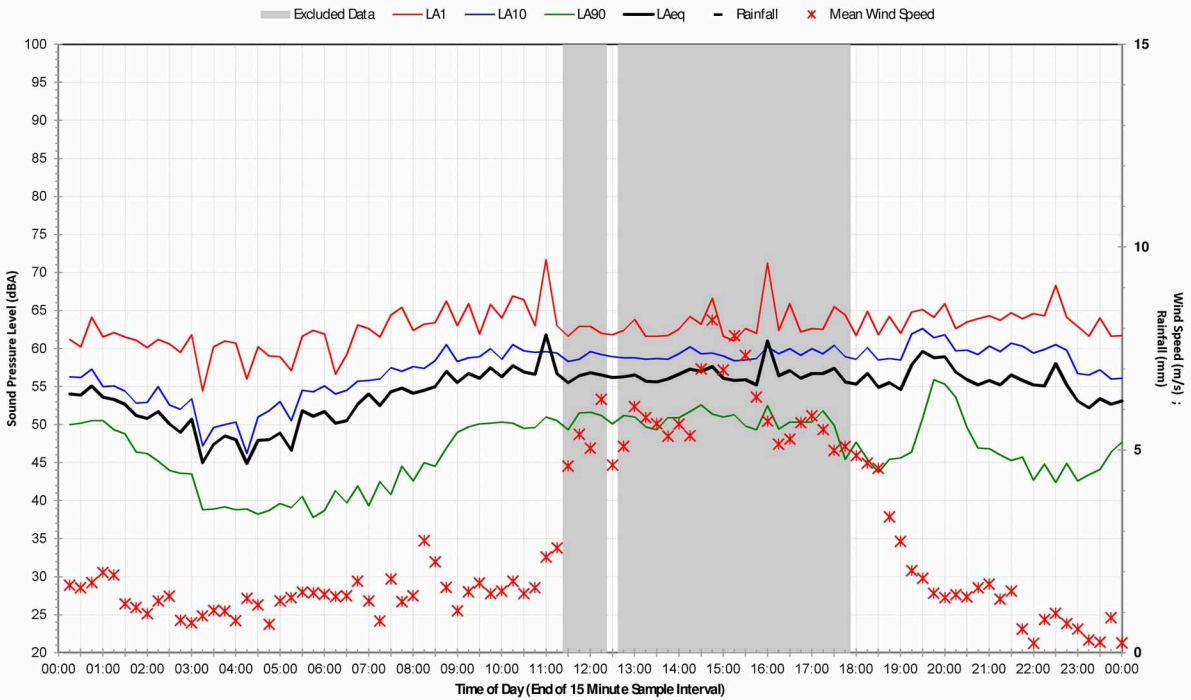
Statistical Ambient Noise Levels
Monitoring Location 10 - Friday 9 March 2012



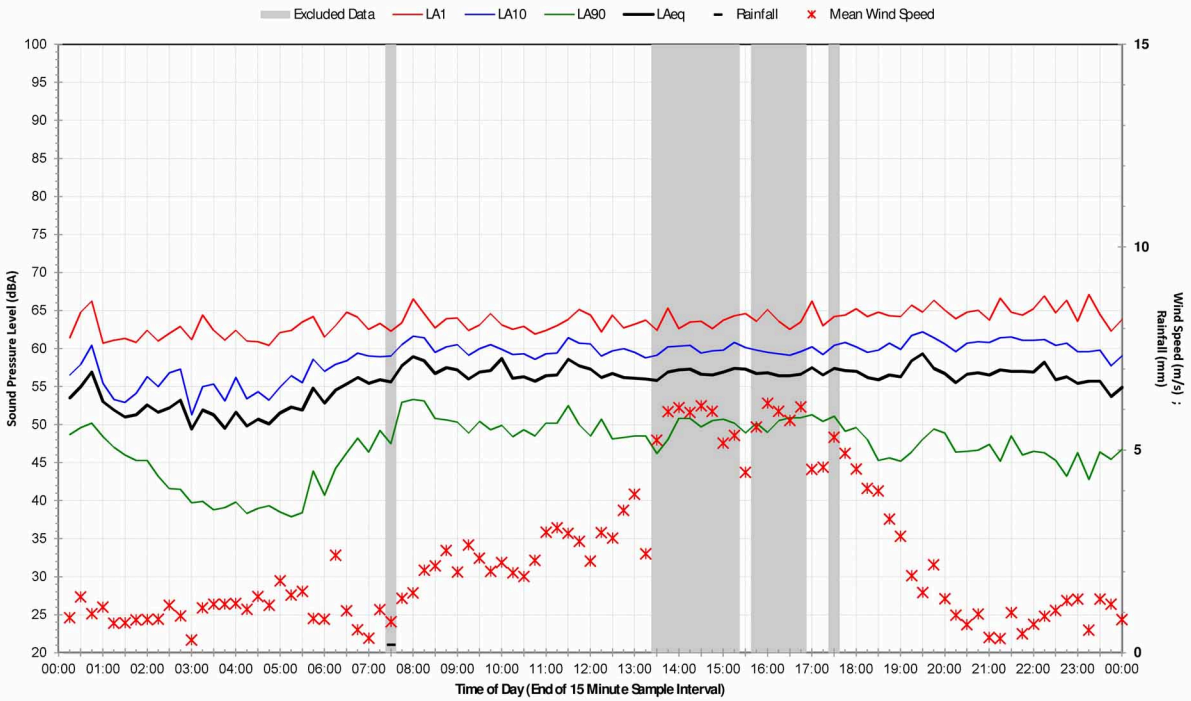
Statistical Ambient Noise Levels
Monitoring Location 10 - Saturday 10 March 2012



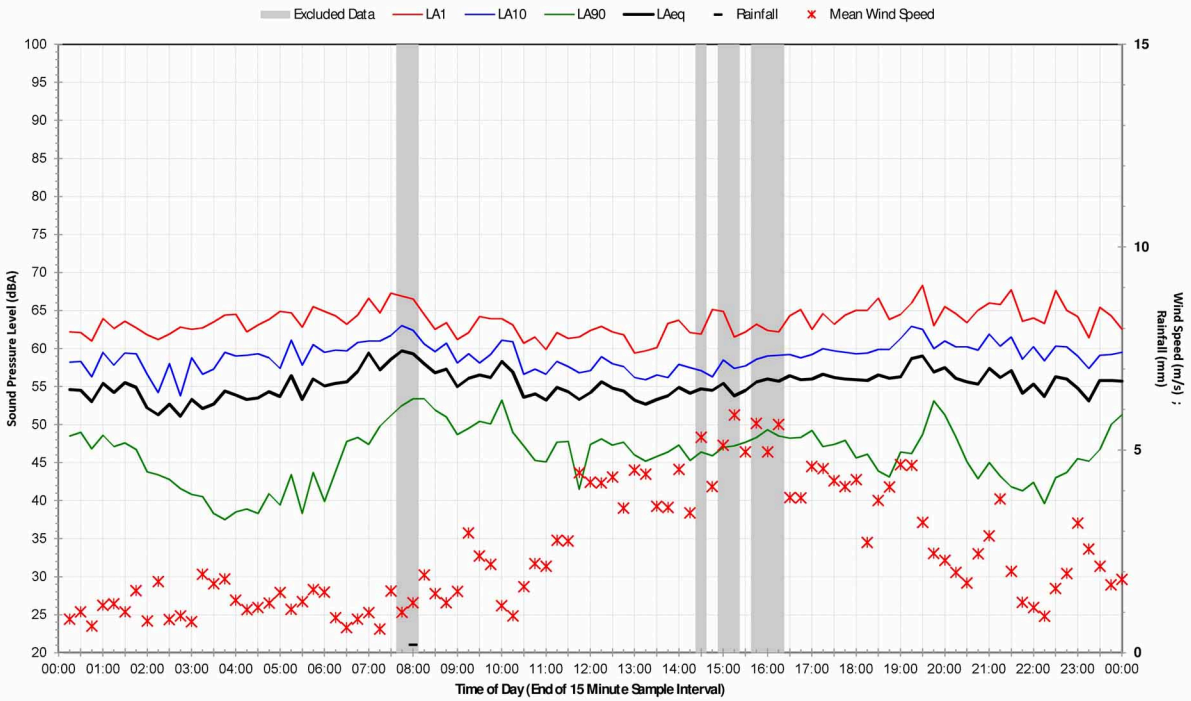
Statistical Ambient Noise Levels
Monitoring Location 10 - Sunday 11 March 2012



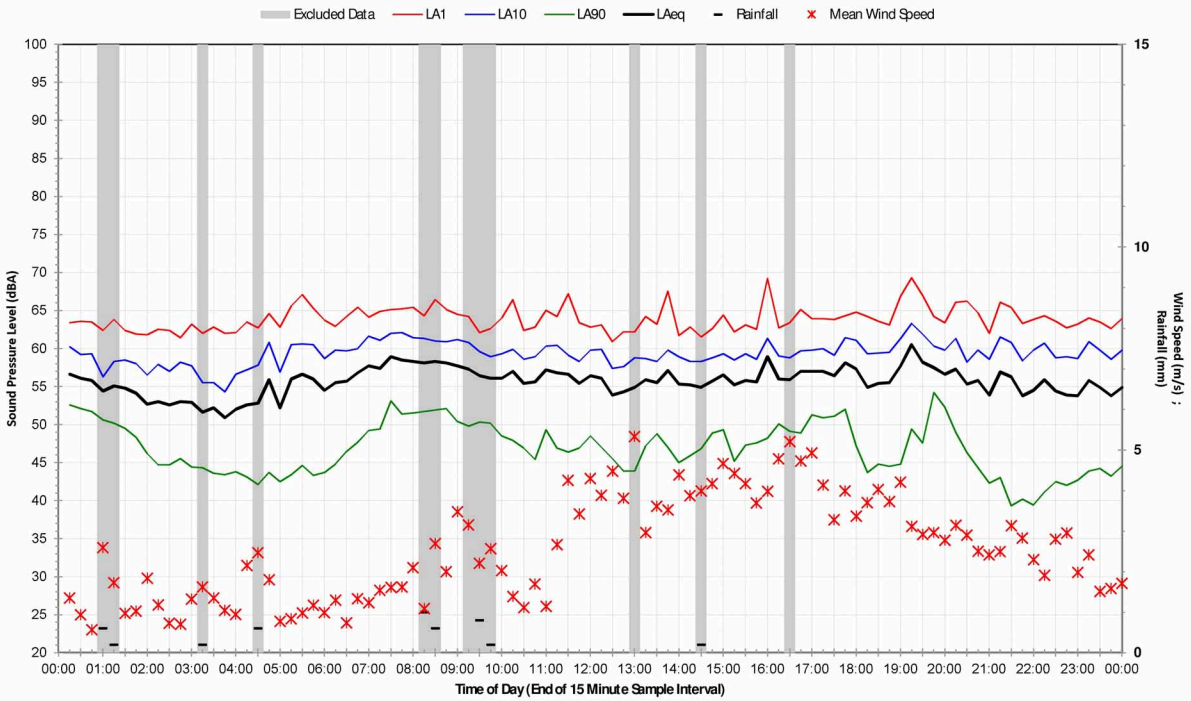
Statistical Ambient Noise Levels
Monitoring Location 10 - Monday 12 March 2012



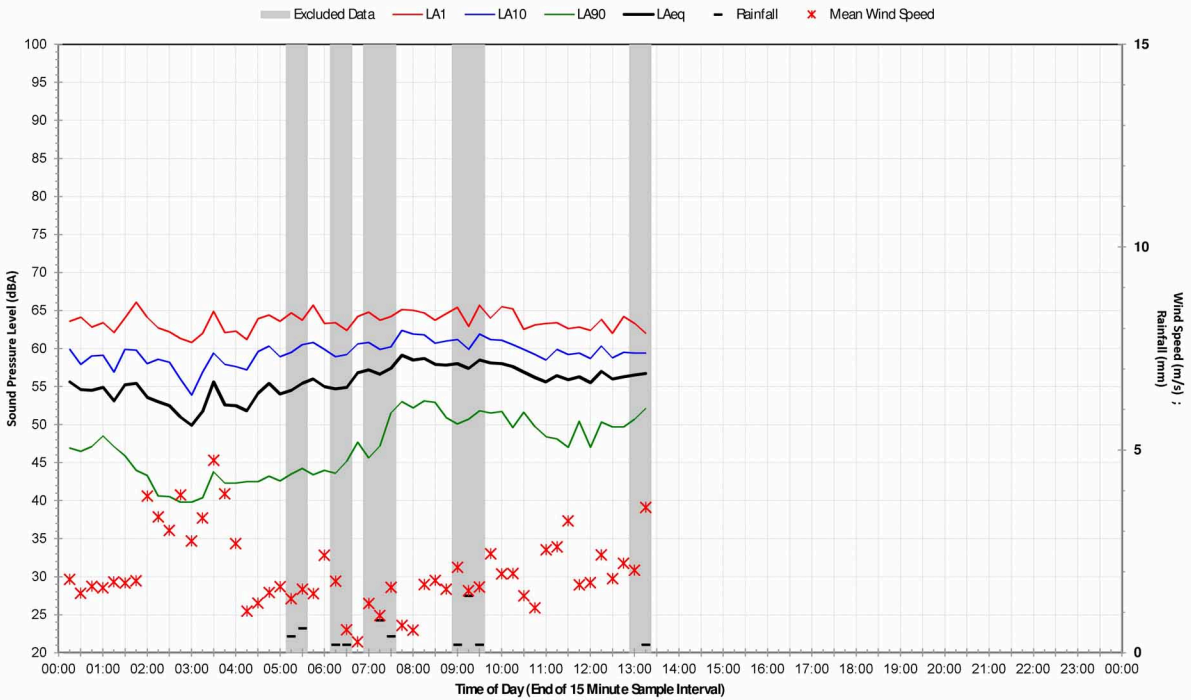
Statistical Ambient Noise Levels
Monitoring Location 10 - Tuesday 13 March 2012



Statistical Ambient Noise Levels
Monitoring Location 10 - Wednesday 14 March 2012

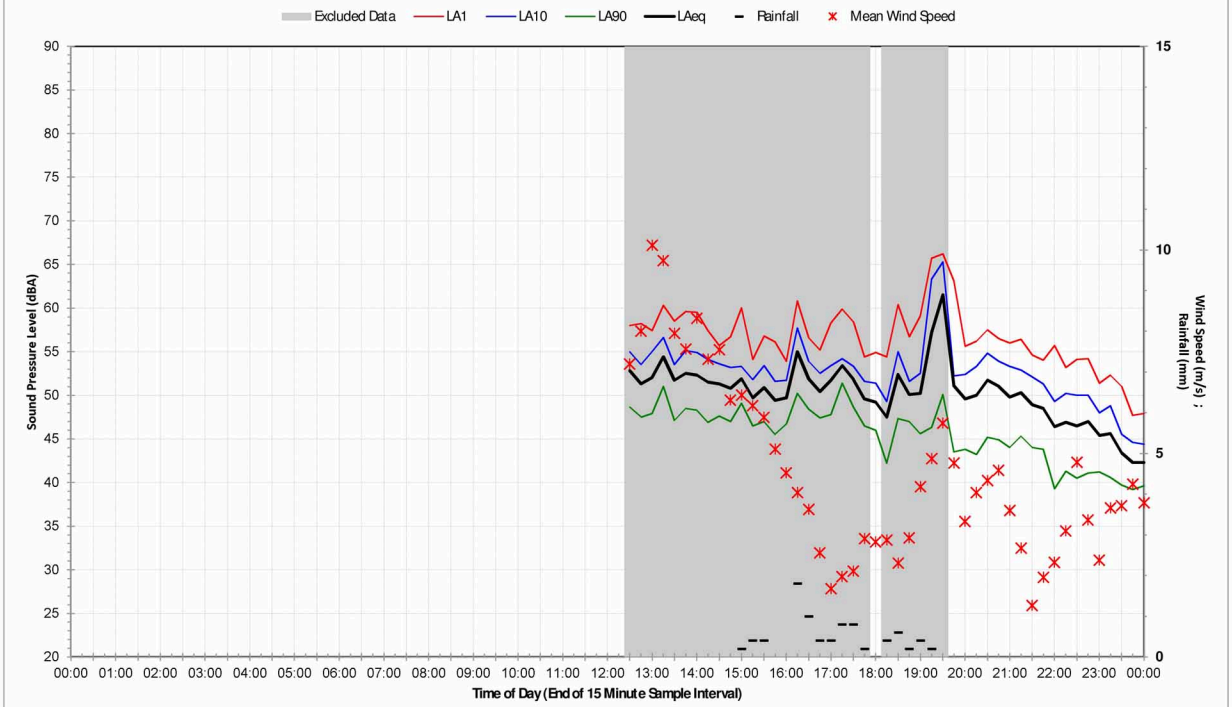


Statistical Ambient Noise Levels
Monitoring Location 10 - Thursday 15 March 2012

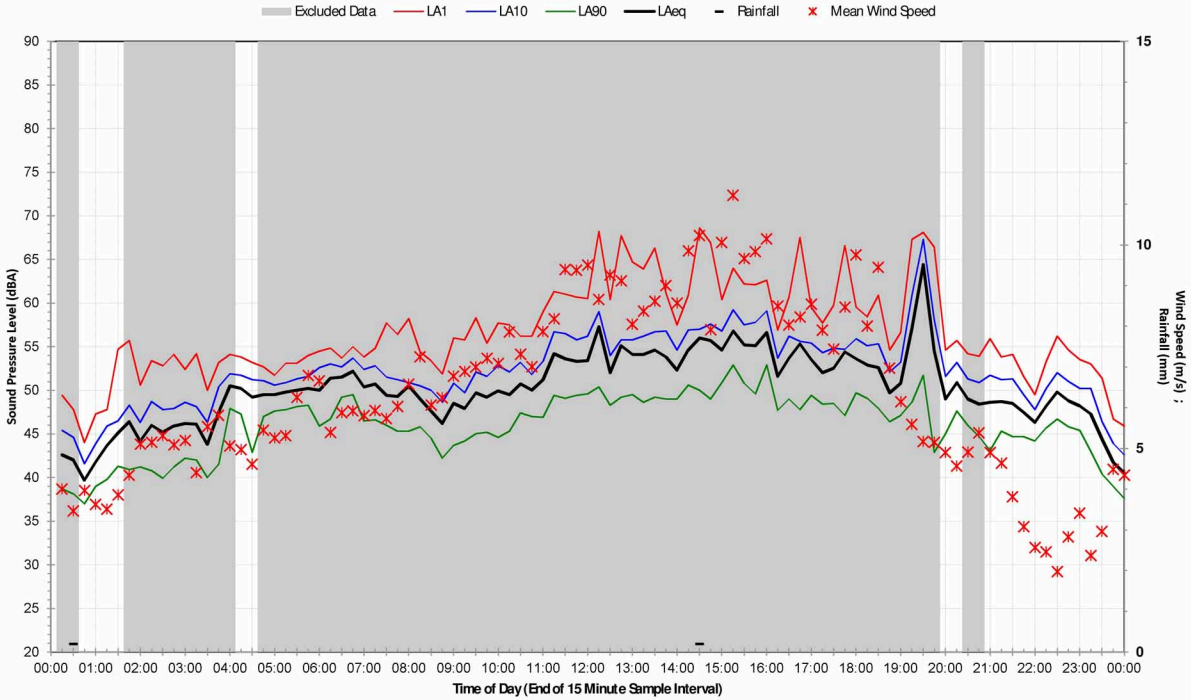


Appendix M – Noise Monitoring Charts – Noise monitoring location L11

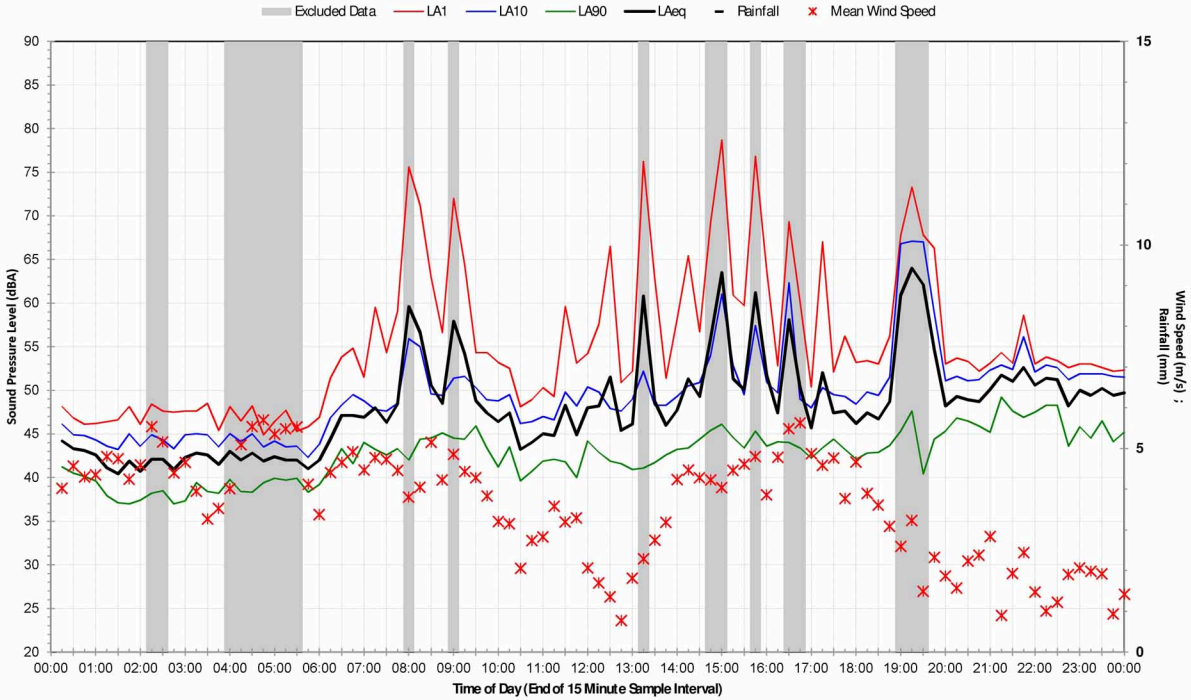
Statistical Ambient Noise Levels
Monitoring Location 11 - Tuesday 6 March 2012



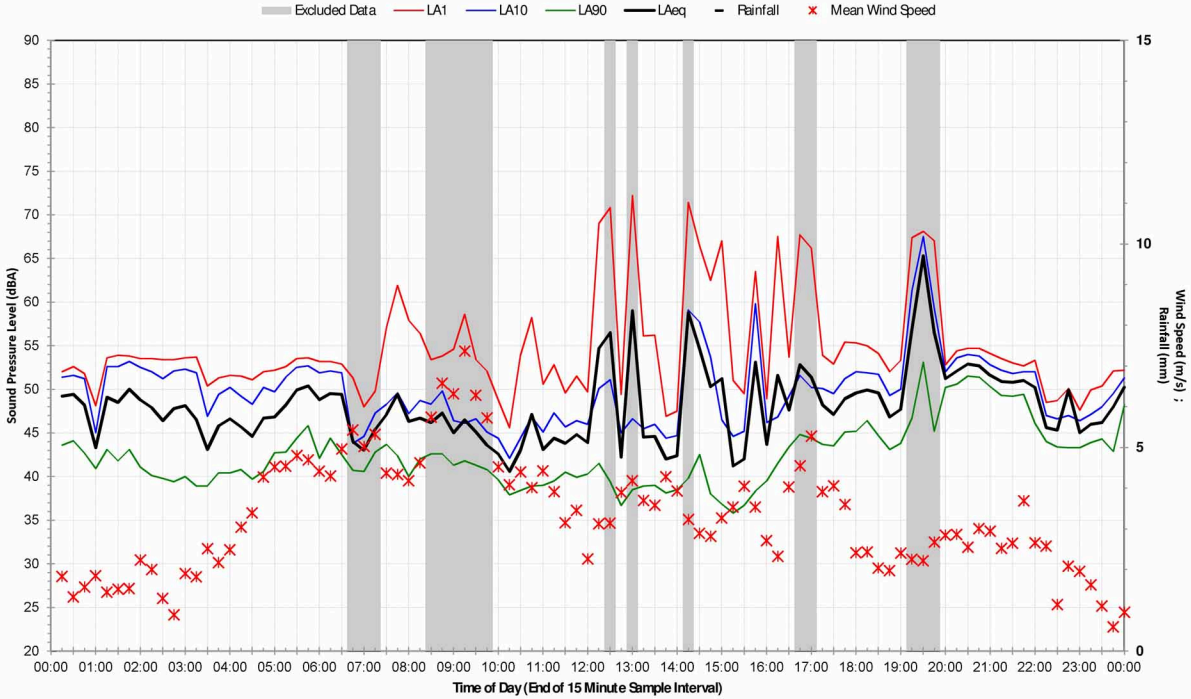
Statistical Ambient Noise Levels
Monitoring Location 11 - Wednesday 7 March 2012



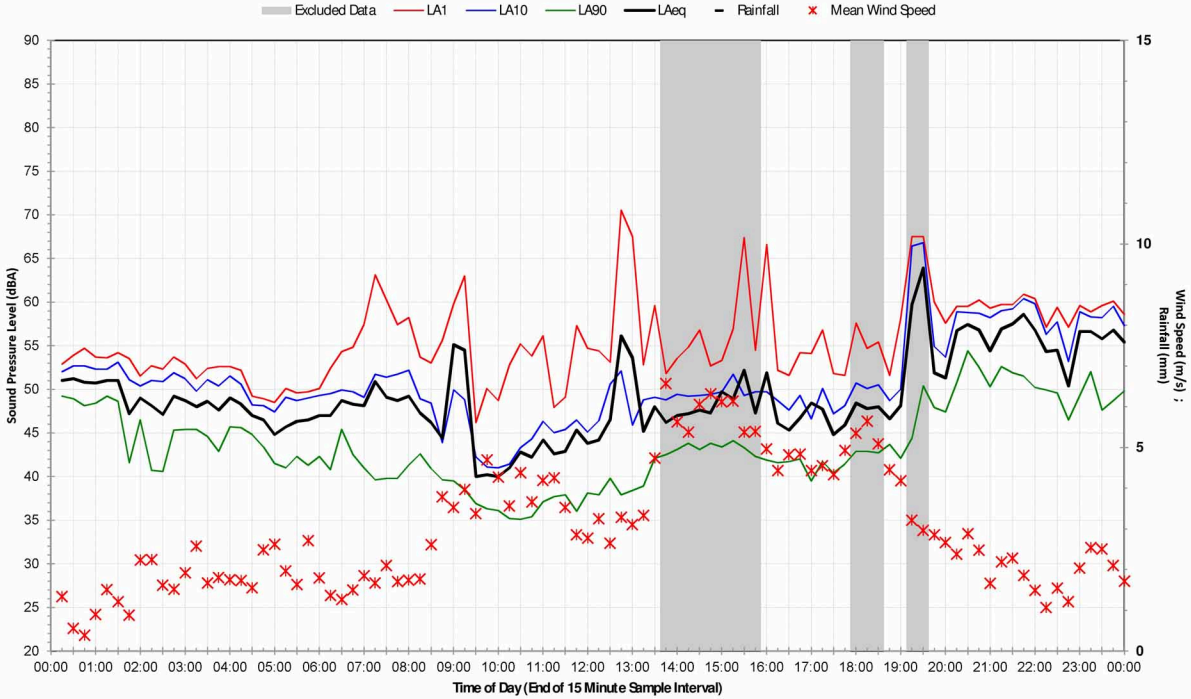
Statistical Ambient Noise Levels
Monitoring Location 11 - Thursday 8 March 2012



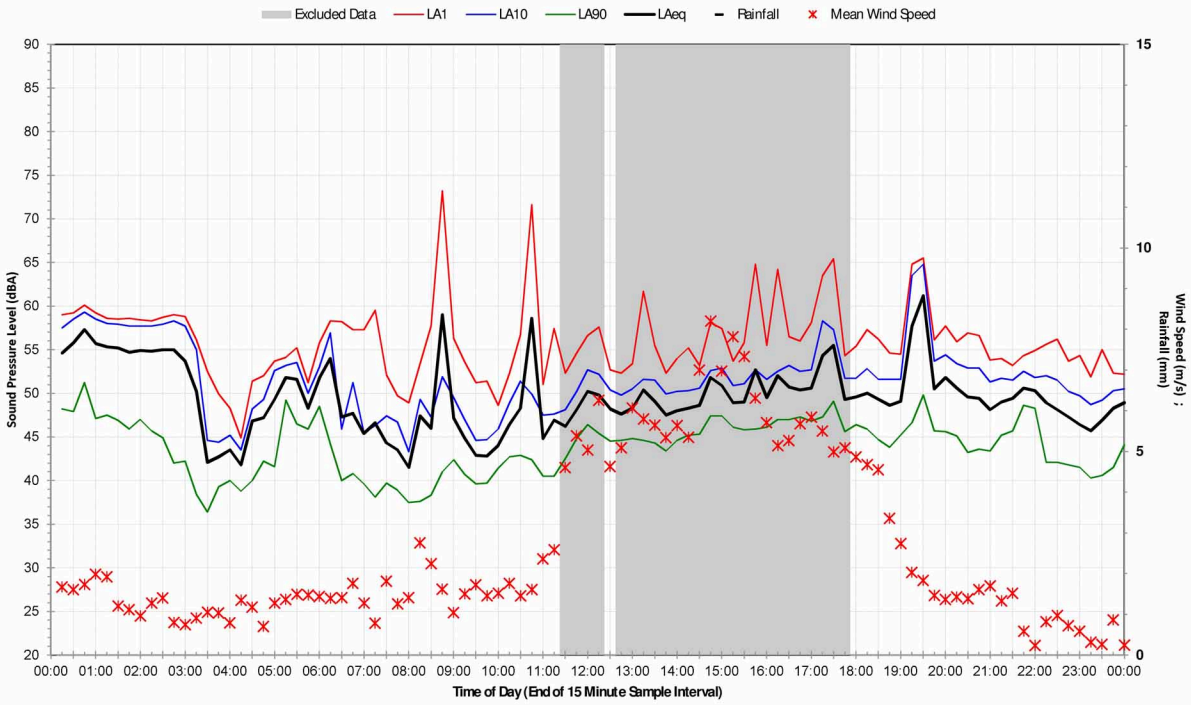
Statistical Ambient Noise Levels
Monitoring Location 11 - Friday 9 March 2012



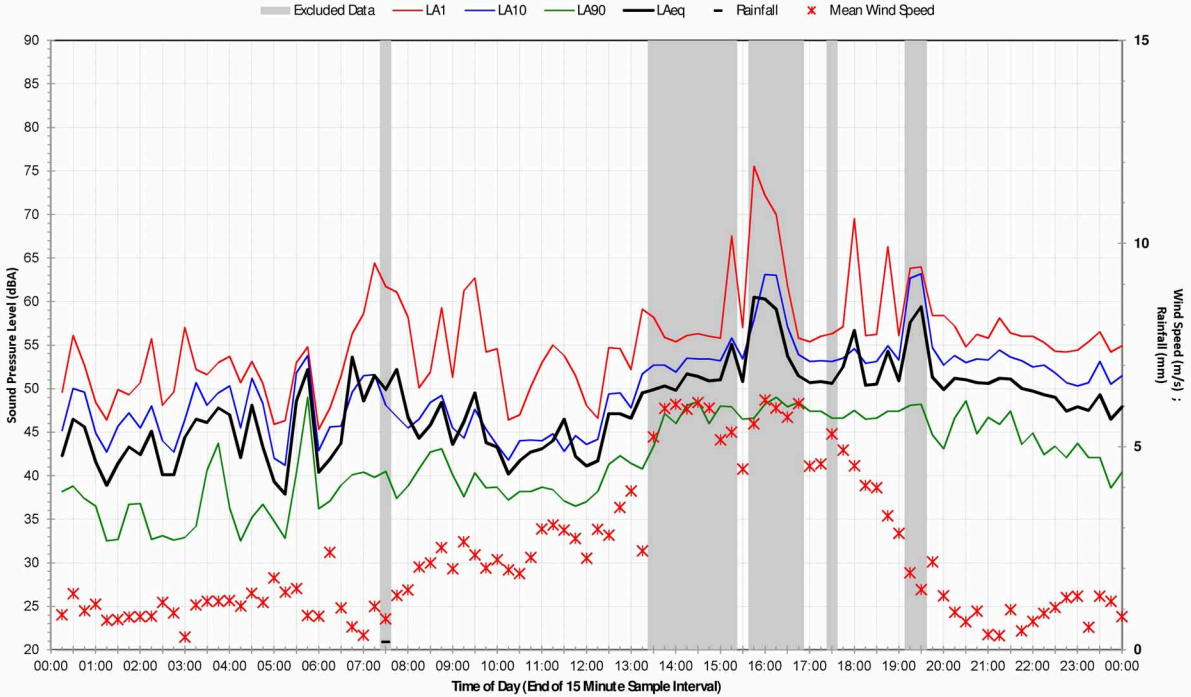
Statistical Ambient Noise Levels
Monitoring Location 11 - Saturday 10 March 2012



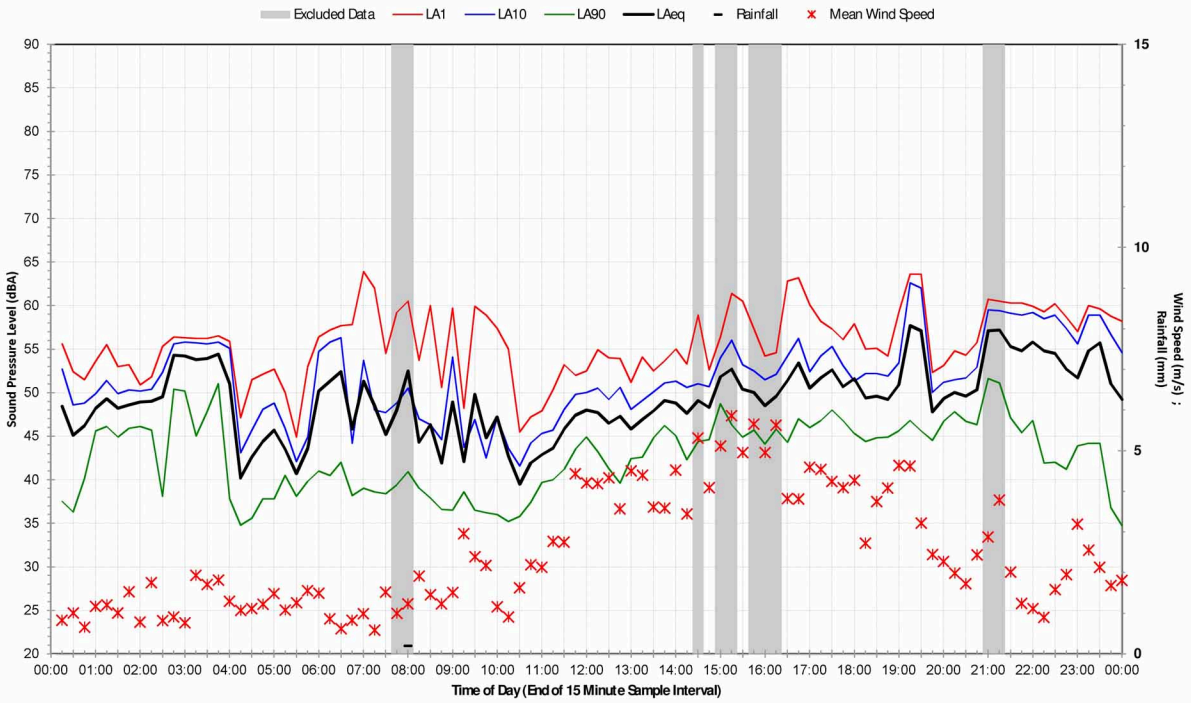
Statistical Ambient Noise Levels
Monitoring Location 11 - Sunday 11 March 2012



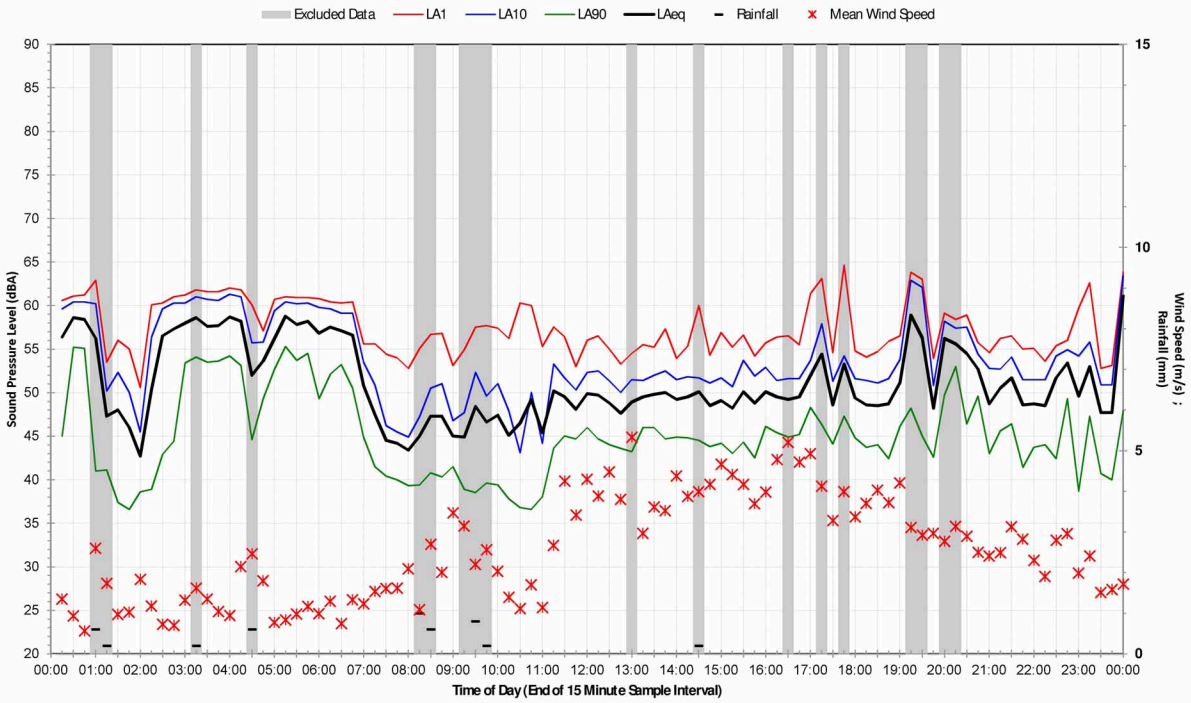
Statistical Ambient Noise Levels
Monitoring Location 11 - Monday 12 March 2012



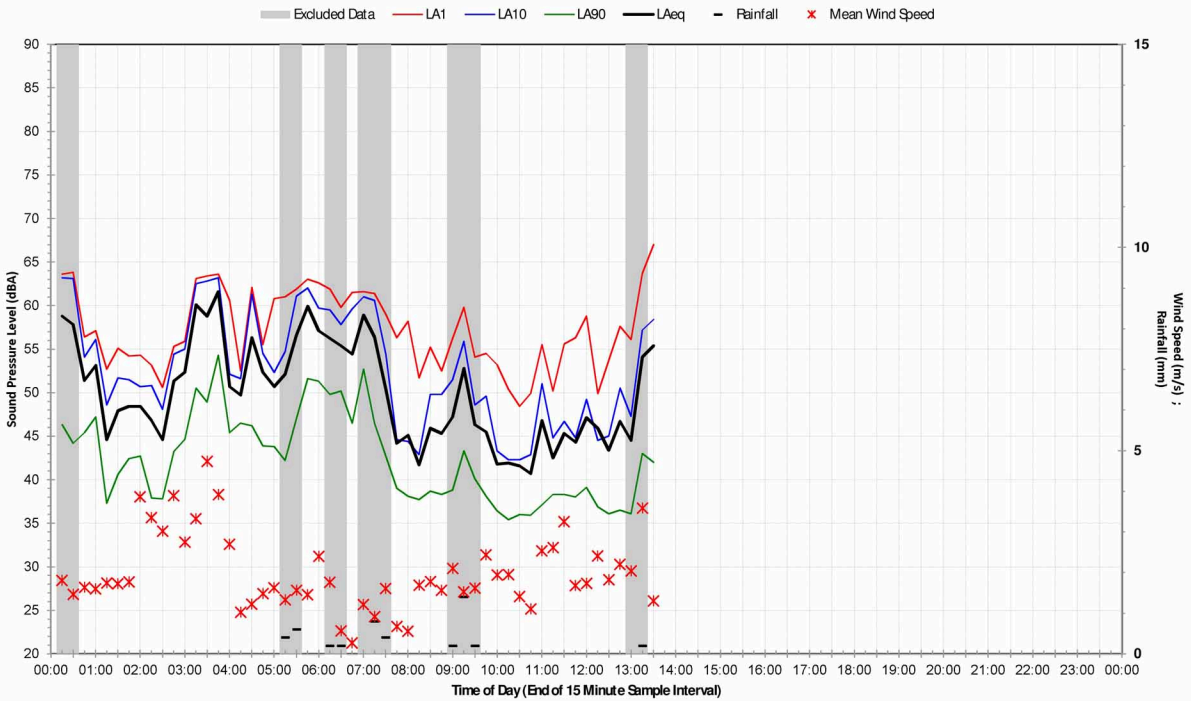
Statistical Ambient Noise Levels
Monitoring Location 11 - Tuesday 13 March 2012



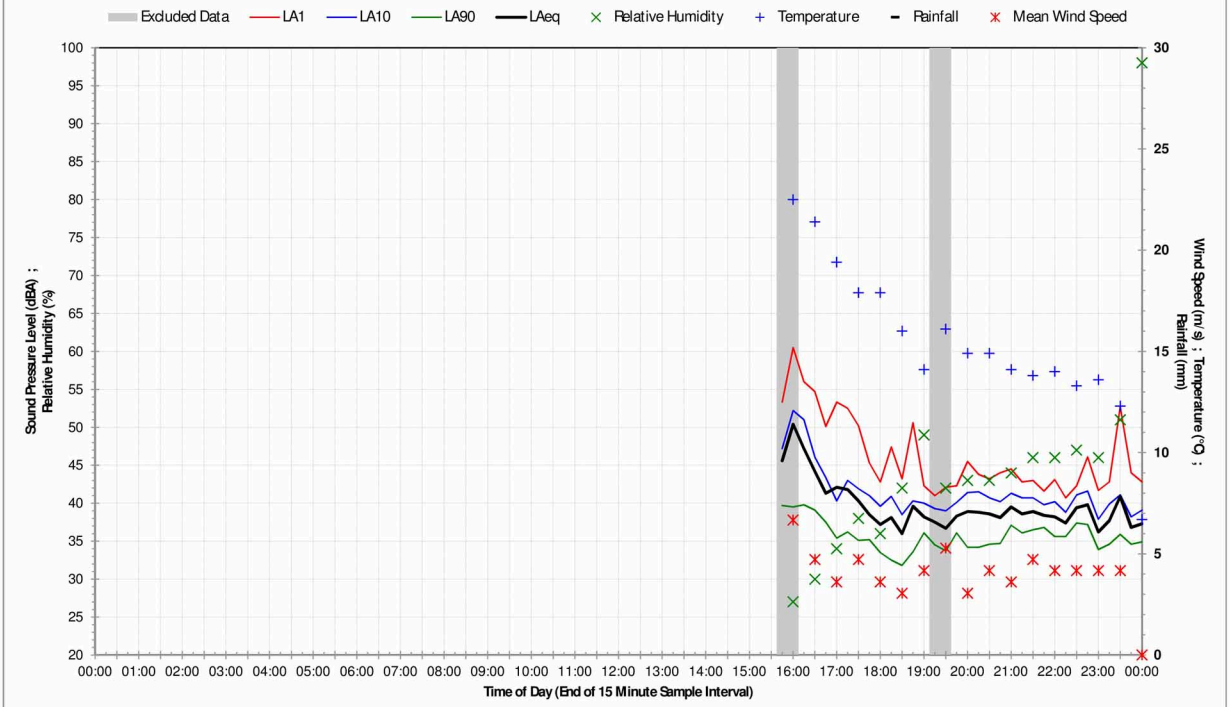
Statistical Ambient Noise Levels
Monitoring Location 11 - Wednesday 14 March 2012



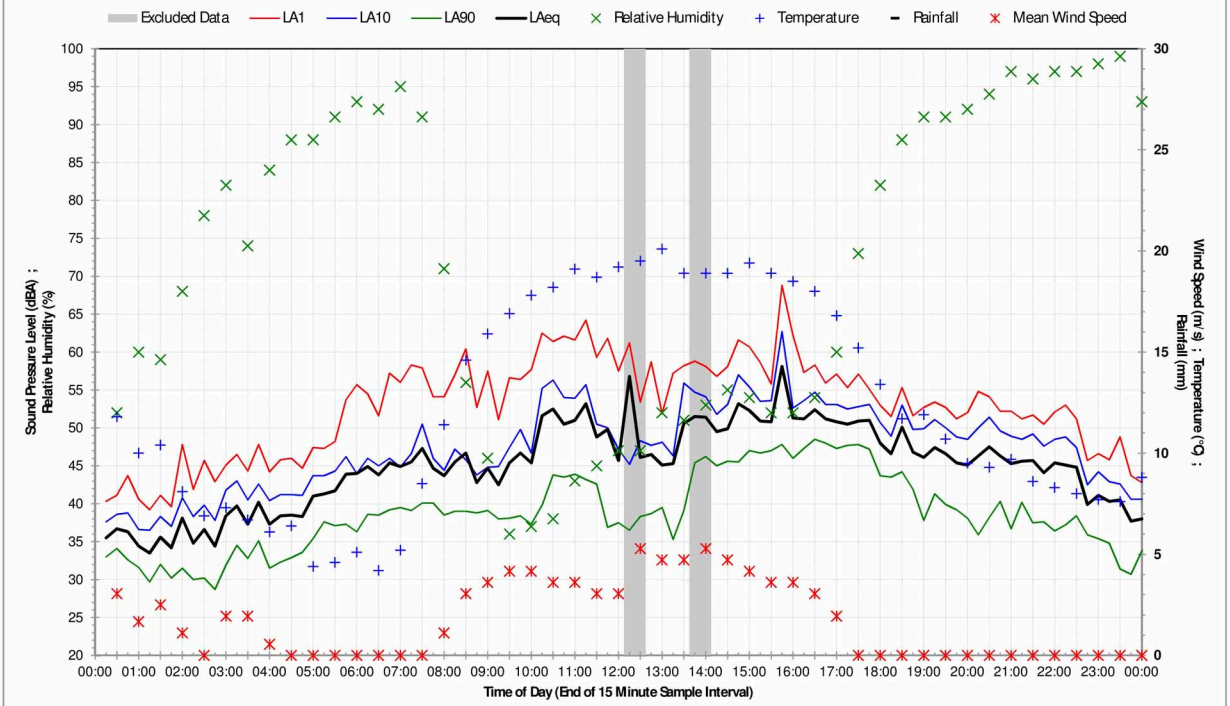
Statistical Ambient Noise Levels
Monitoring Location 11 - Thursday 15 March 2012



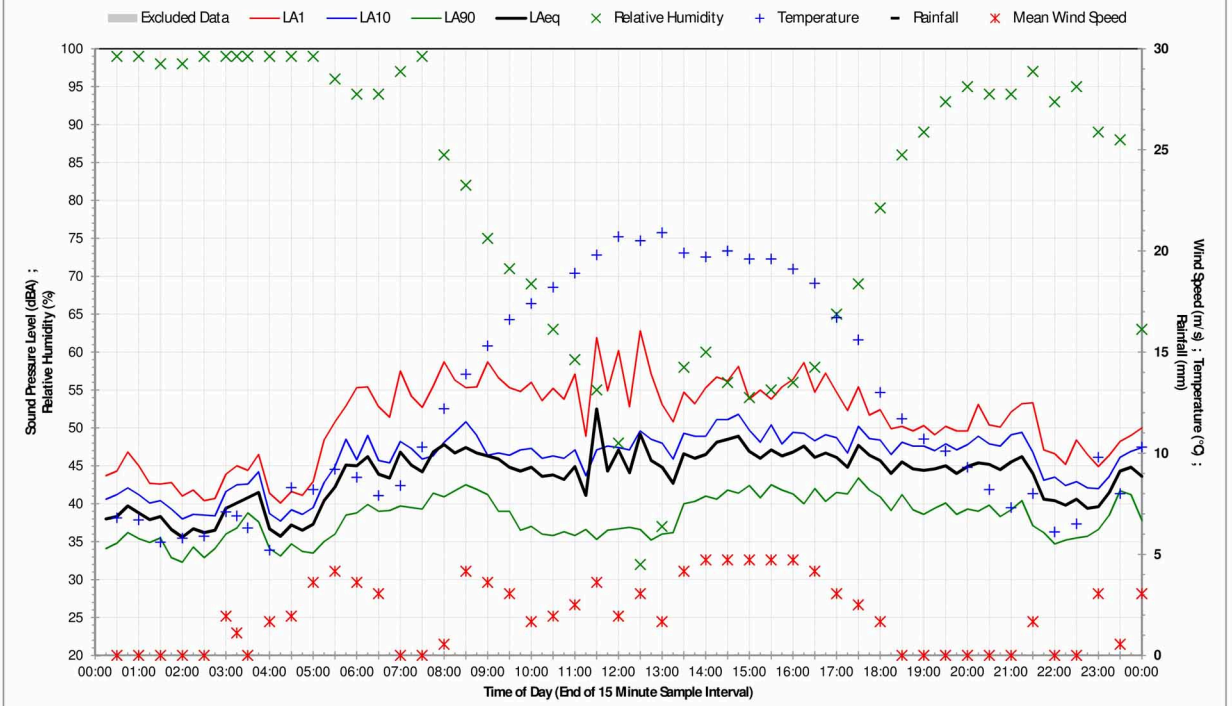
Statistical Ambient Noise Levels
Monitoring Location 11 - Monday 6 August 2012



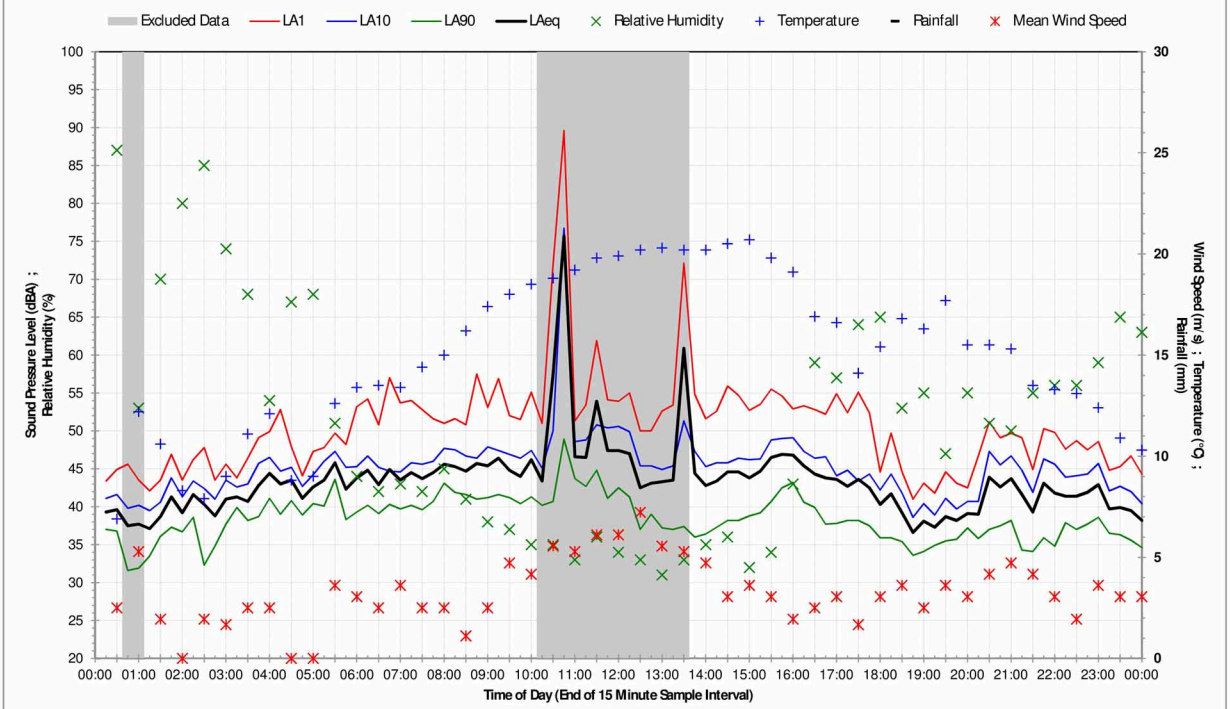
Statistical Ambient Noise Levels
Monitoring Location 11 - Tuesday 7 August 2012



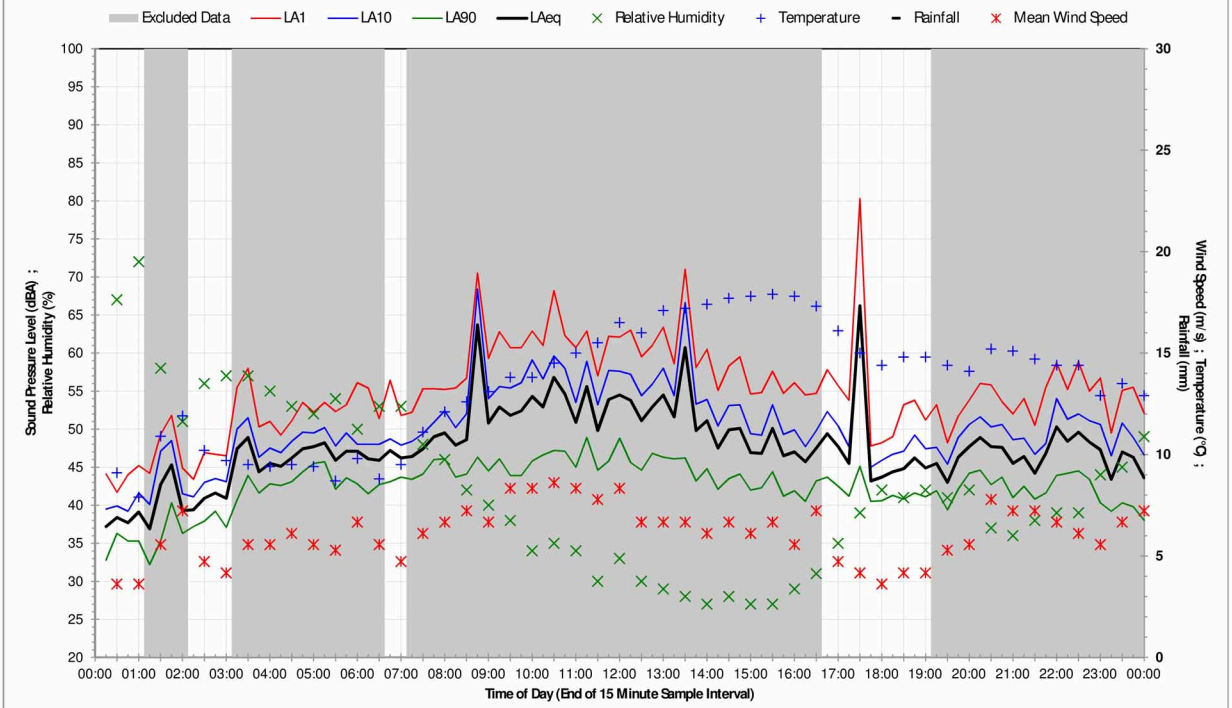
Statistical Ambient Noise Levels
Monitoring Location 11 - Wednesday 8 August 2012



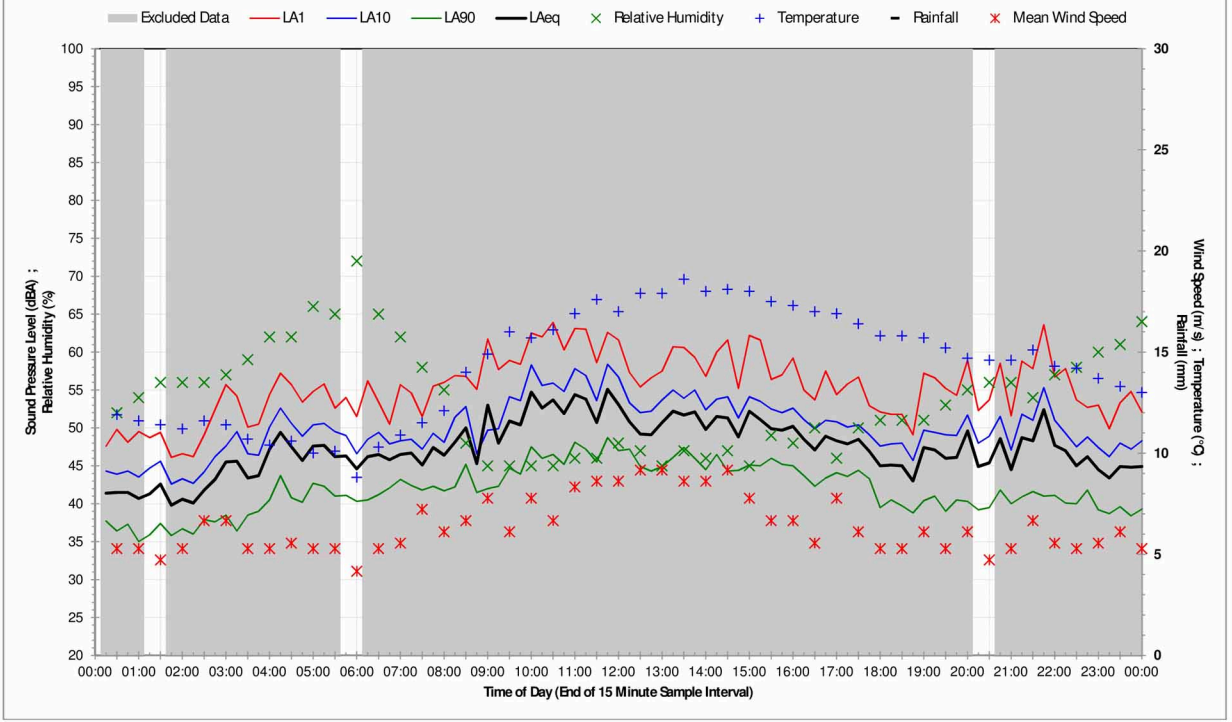
Statistical Ambient Noise Levels
Monitoring Location 11 - Thursday 9 August 2012



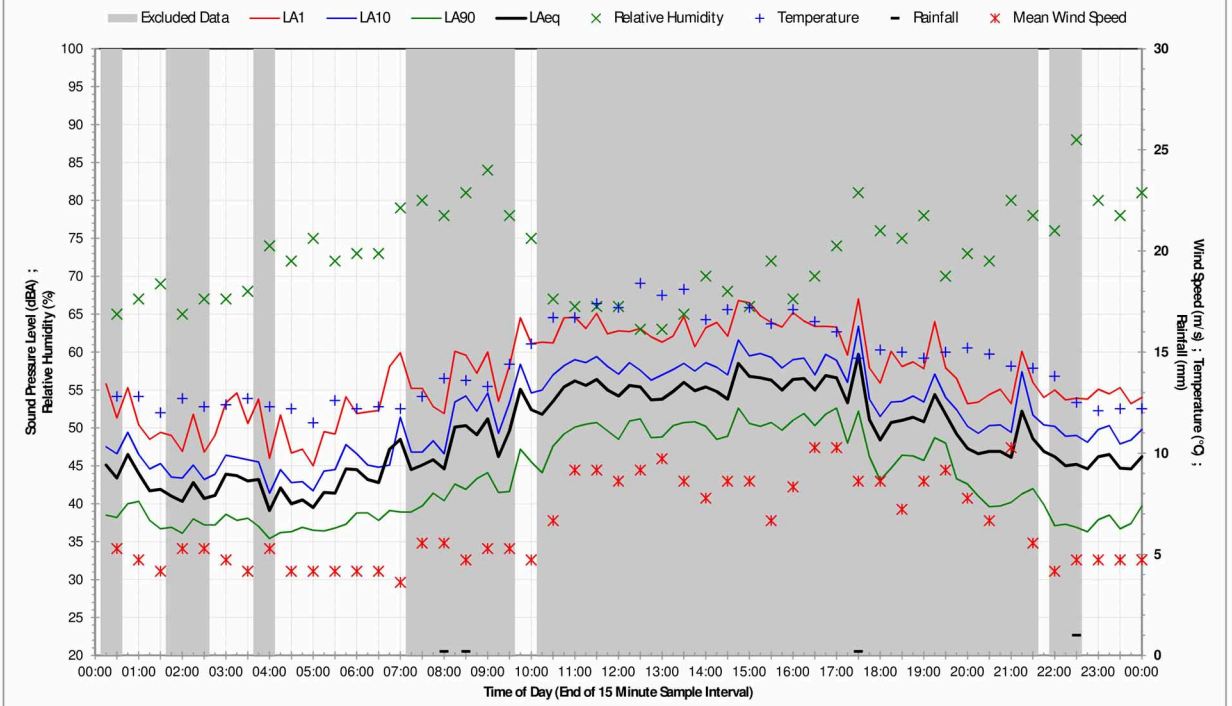
Statistical Ambient Noise Levels
Monitoring Location 11 - Friday 10 August 2012



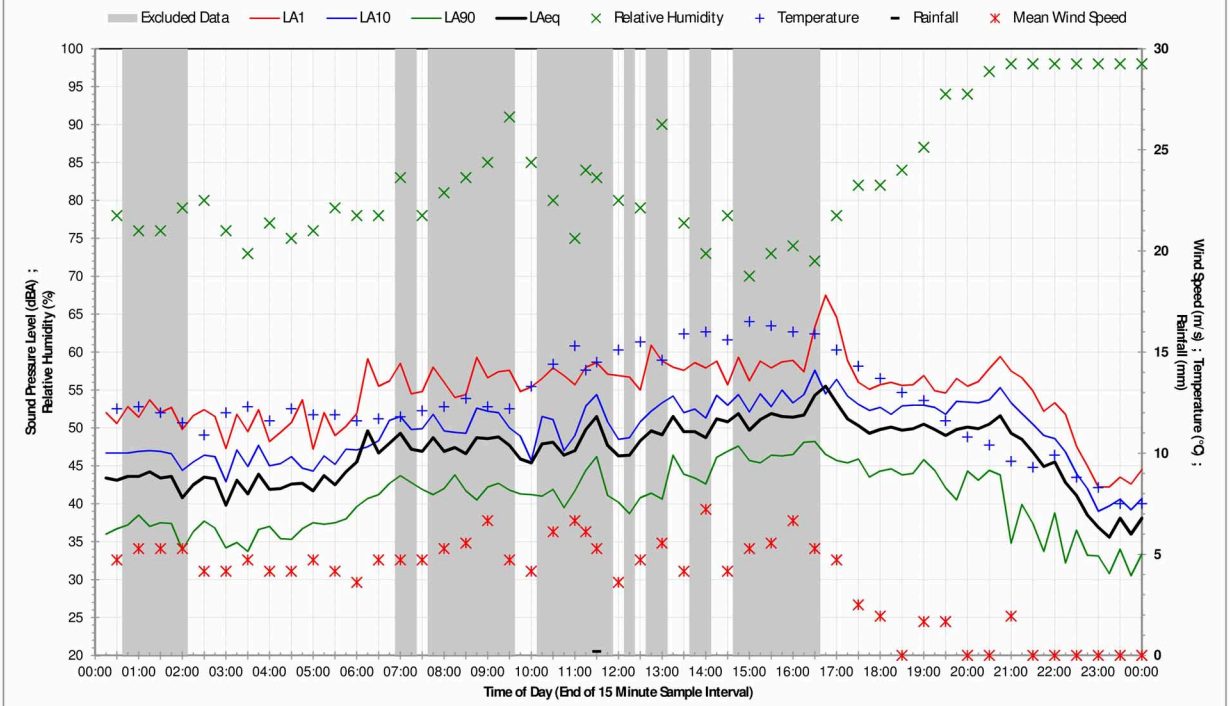
Statistical Ambient Noise Levels
Monitoring Location 11 - Saturday 11 August 2012



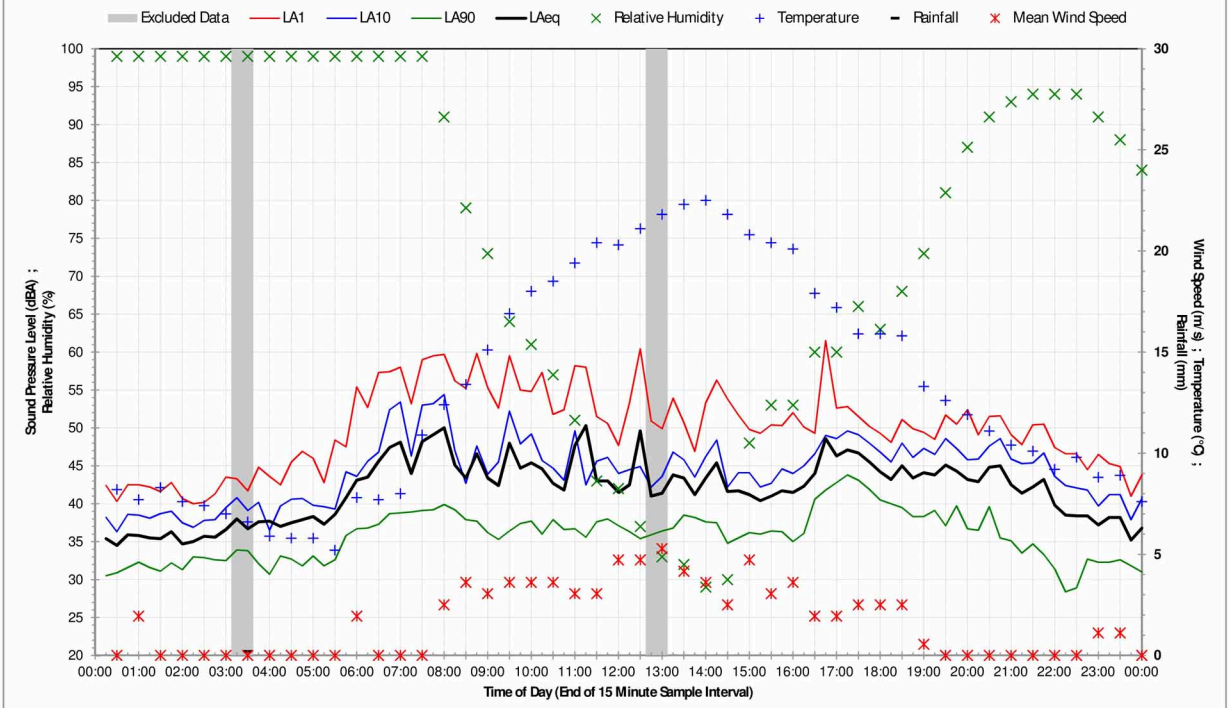
Statistical Ambient Noise Levels
Monitoring Location 11 - Sunday 12 August 2012



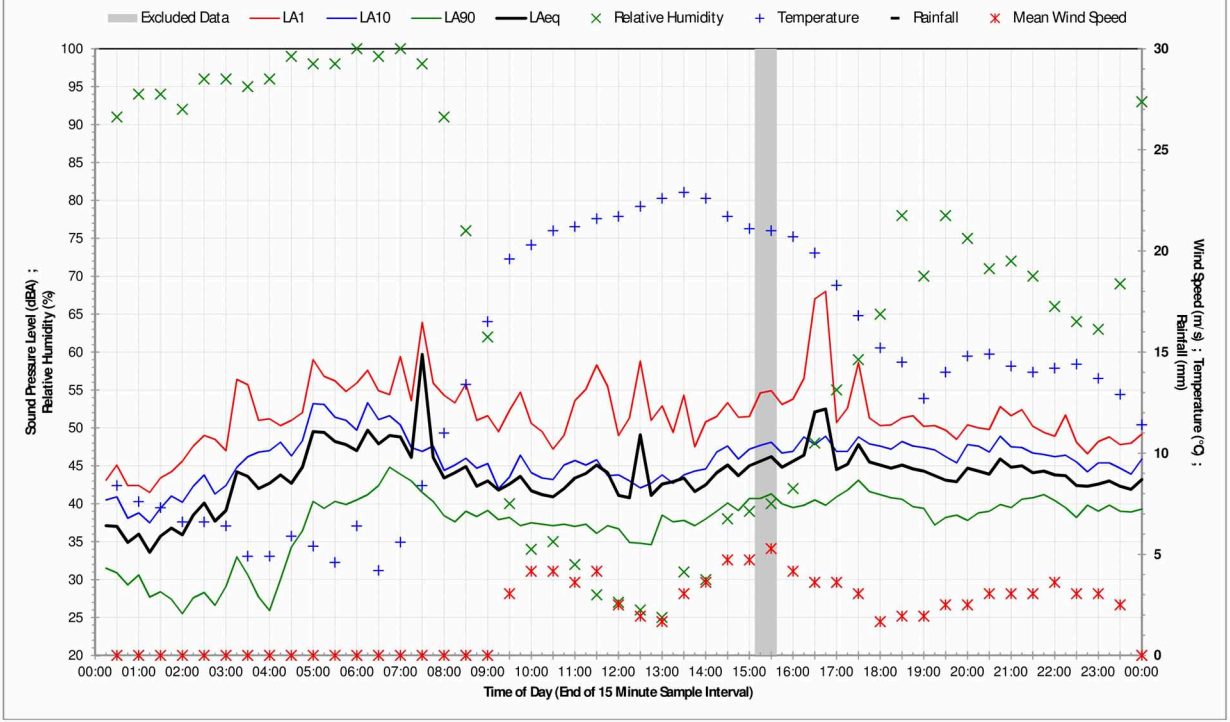
Statistical Ambient Noise Levels
Monitoring Location 11 - Monday 13 August 2012



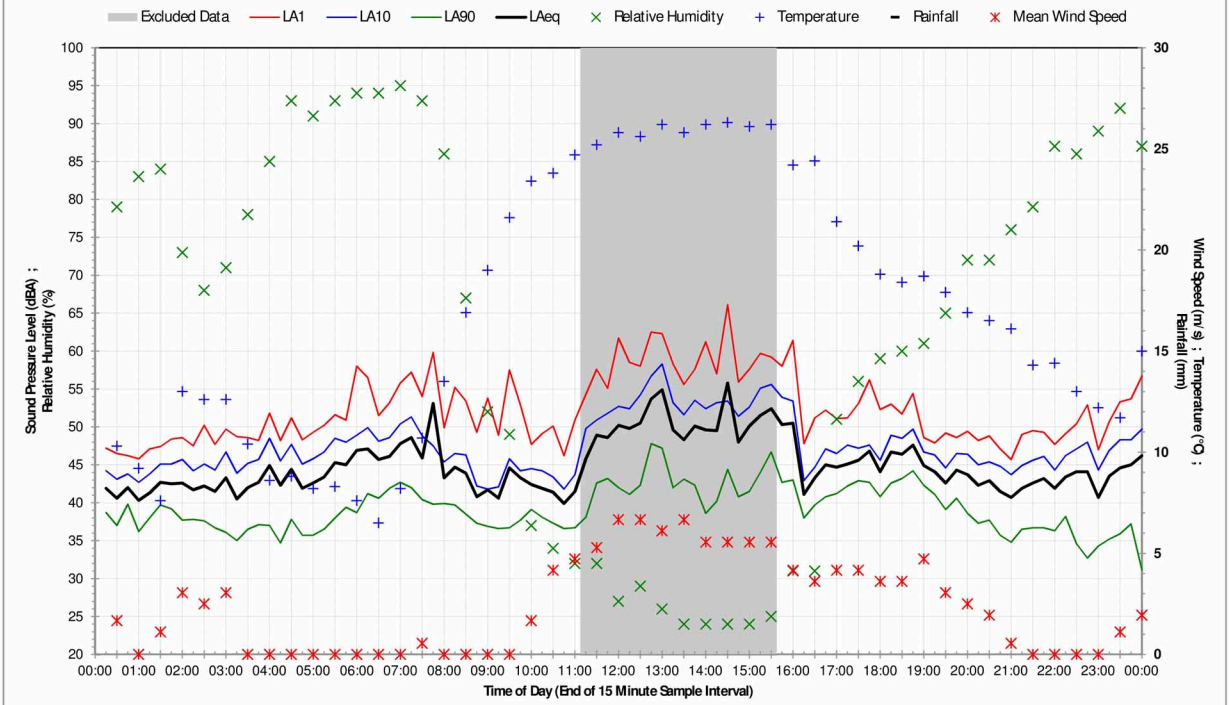
Statistical Ambient Noise Levels
Monitoring Location 11 - Tuesday 14 August 2012



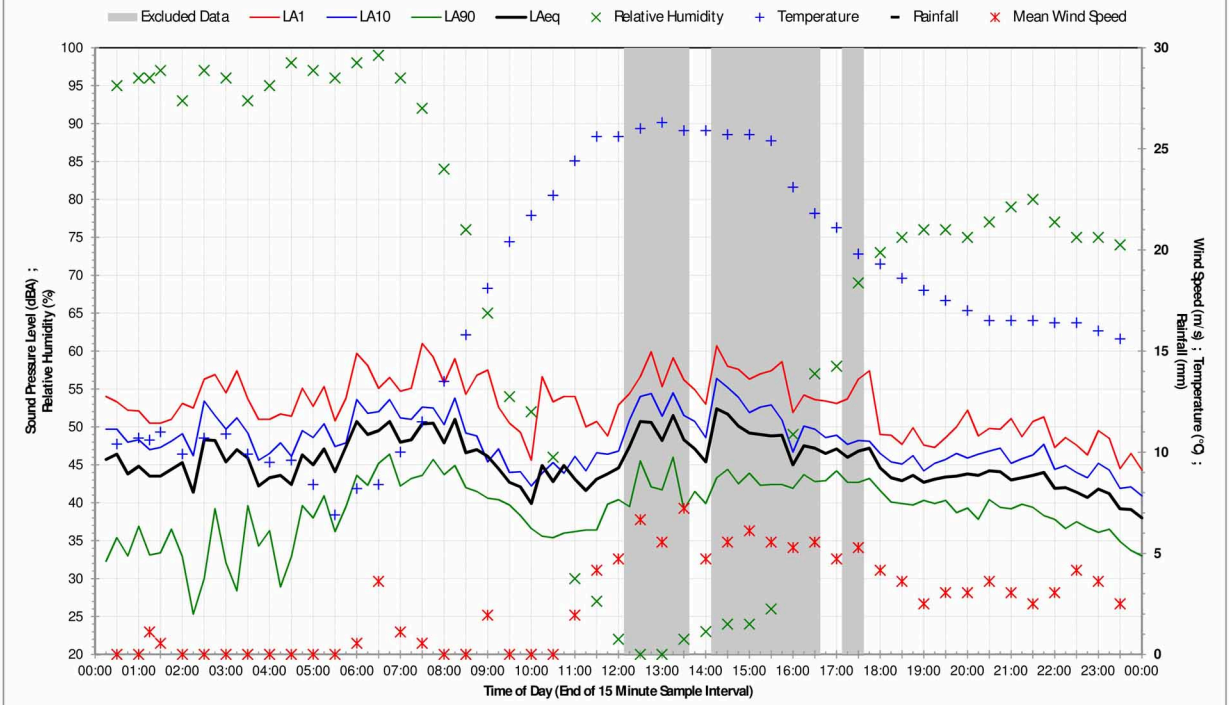
Statistical Ambient Noise Levels
Monitoring Location 11 - Wednesday 15 August 2012



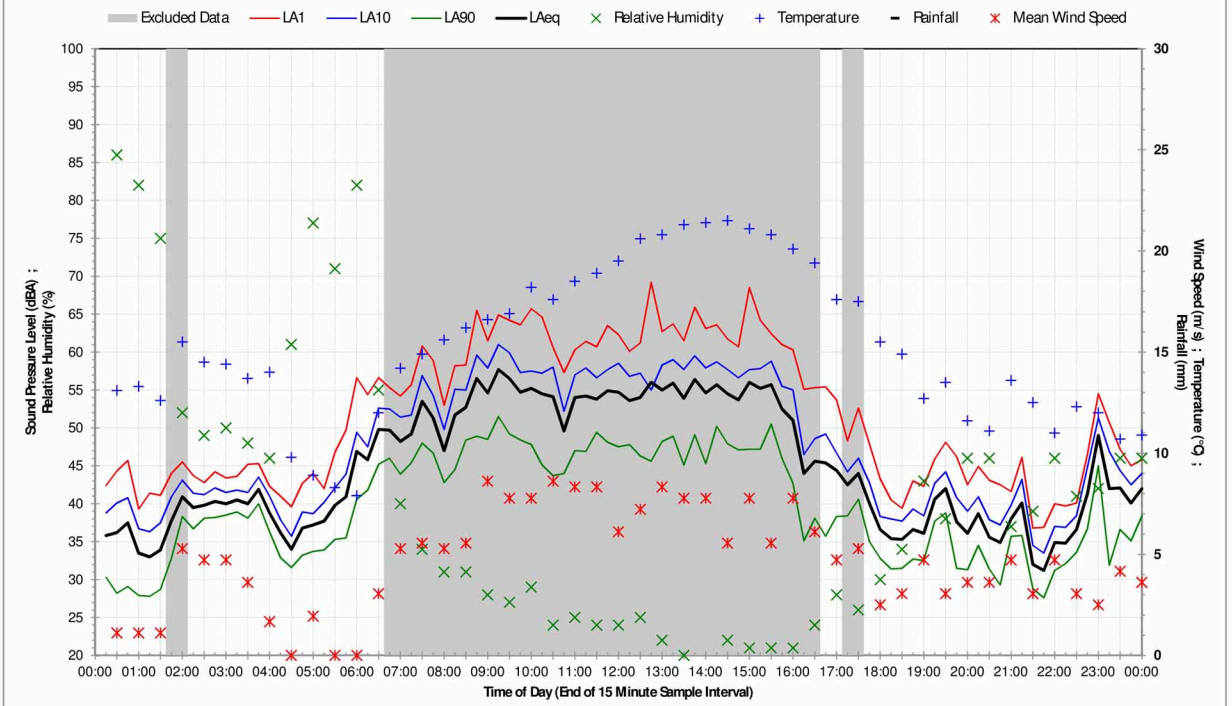
Statistical Ambient Noise Levels
Monitoring Location 11 - Thursday 16 August 2012



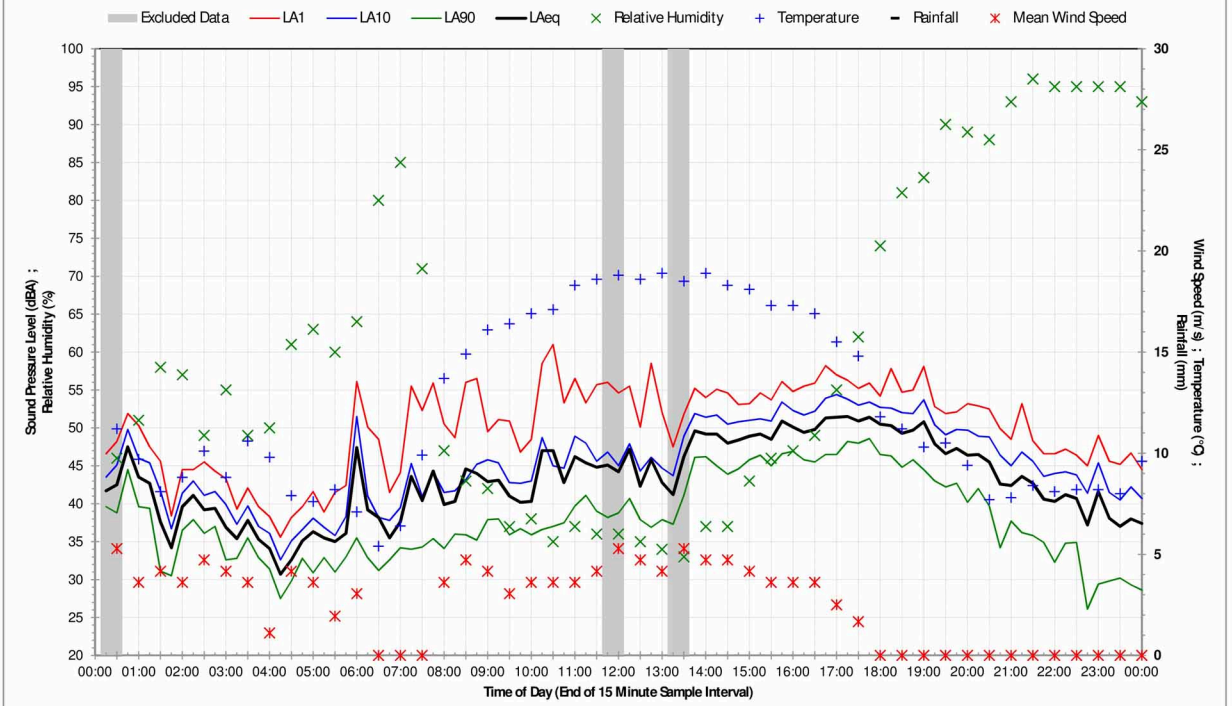
Statistical Ambient Noise Levels
Monitoring Location 11 - Friday 17 August 2012



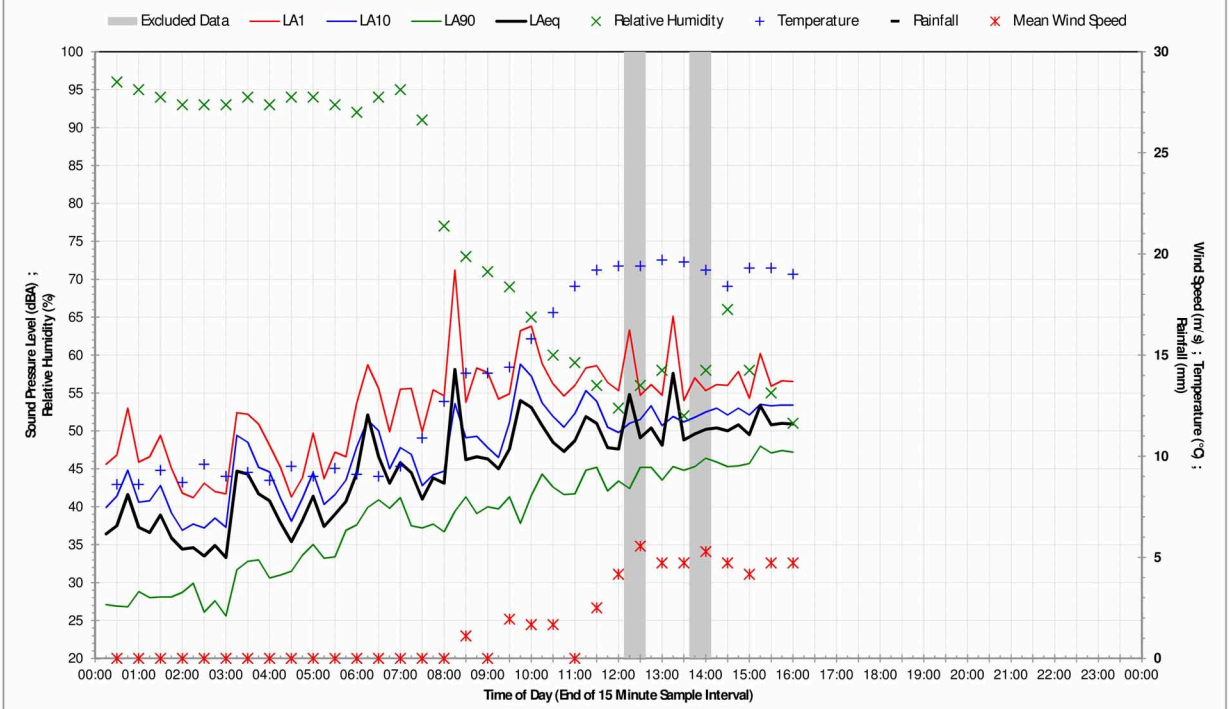
Statistical Ambient Noise Levels
Monitoring Location 11 - Saturday 18 August 2012



Statistical Ambient Noise Levels
Monitoring Location 11 - Sunday 19 August 2012

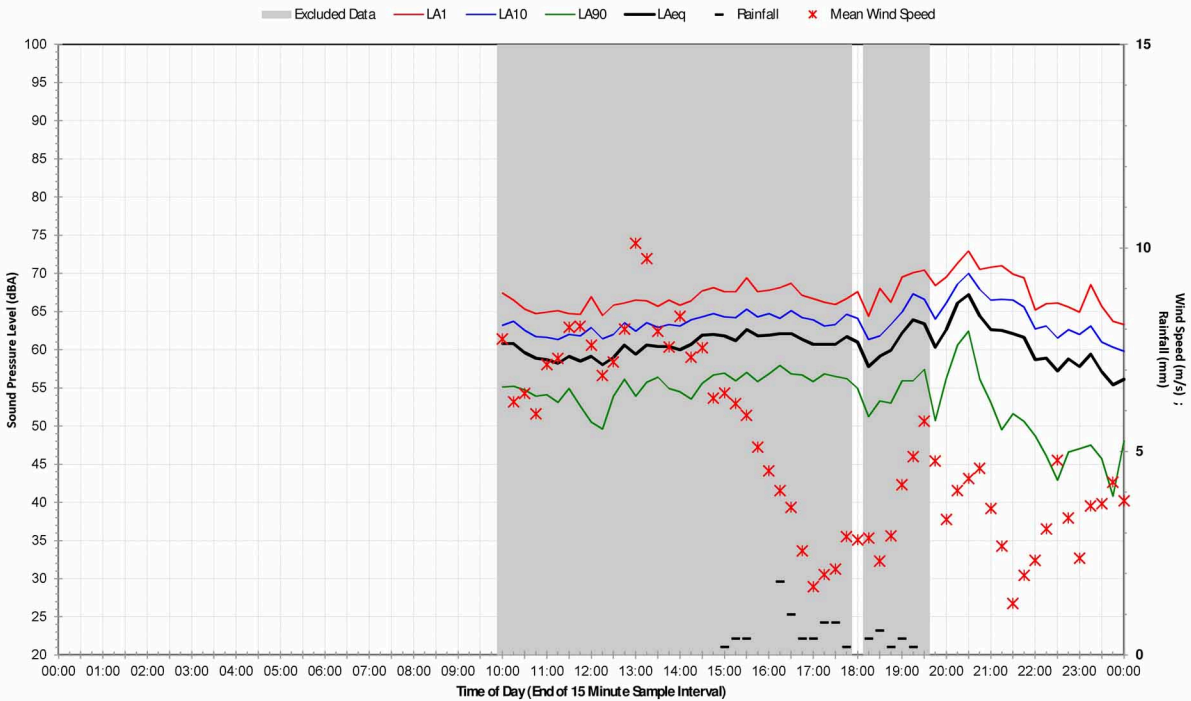


Statistical Ambient Noise Levels
Monitoring Location 11 - Monday 20 August 2012

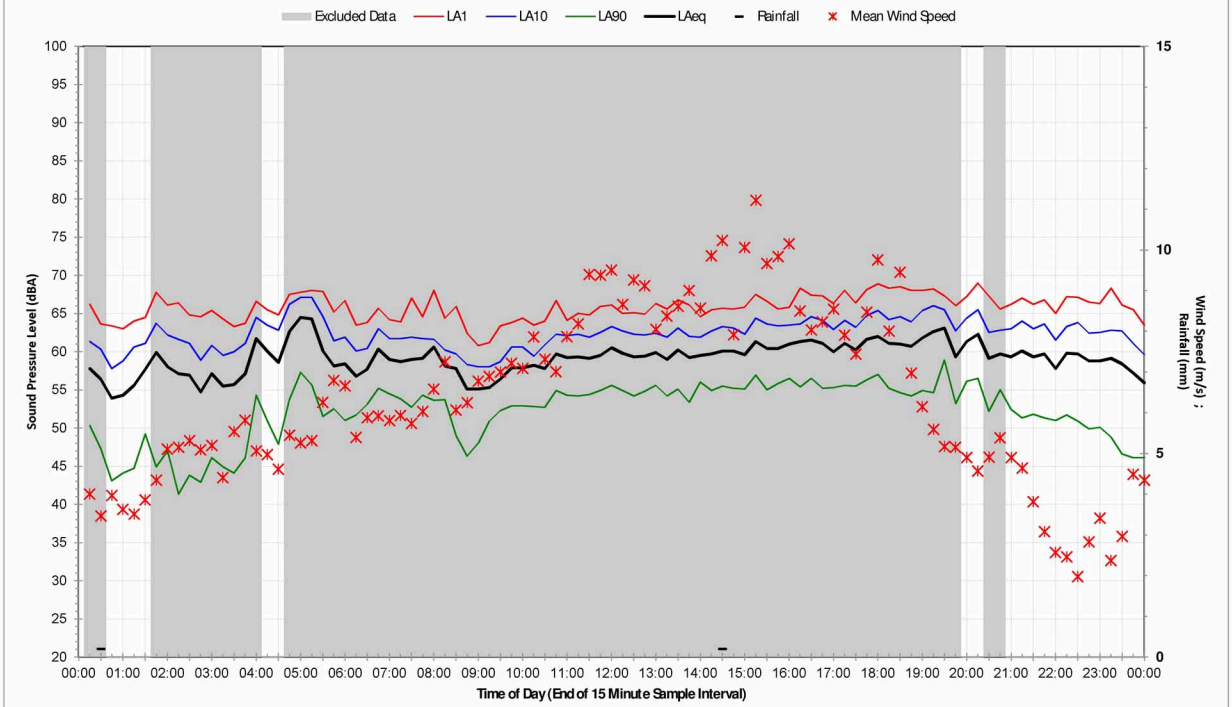


Appendix N – Noise Monitoring Charts – Noise monitoring location L12

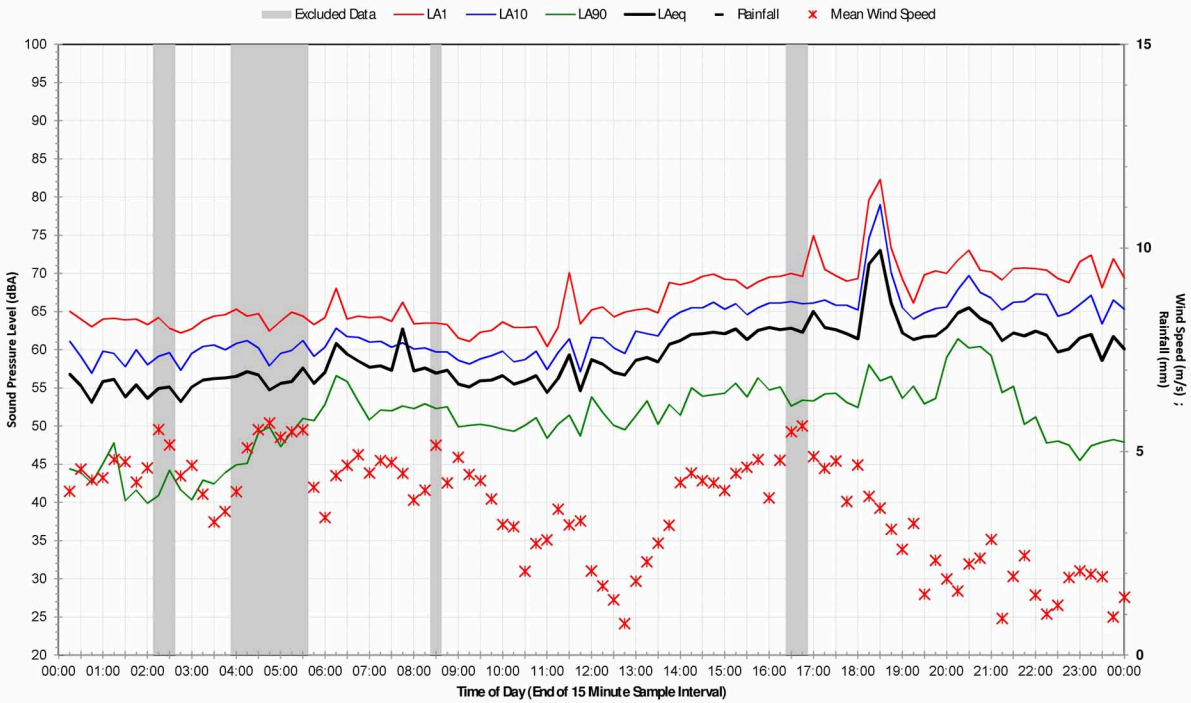
Statistical Ambient Noise Levels
Monitoring Location 12 - Tuesday 6 March 2012



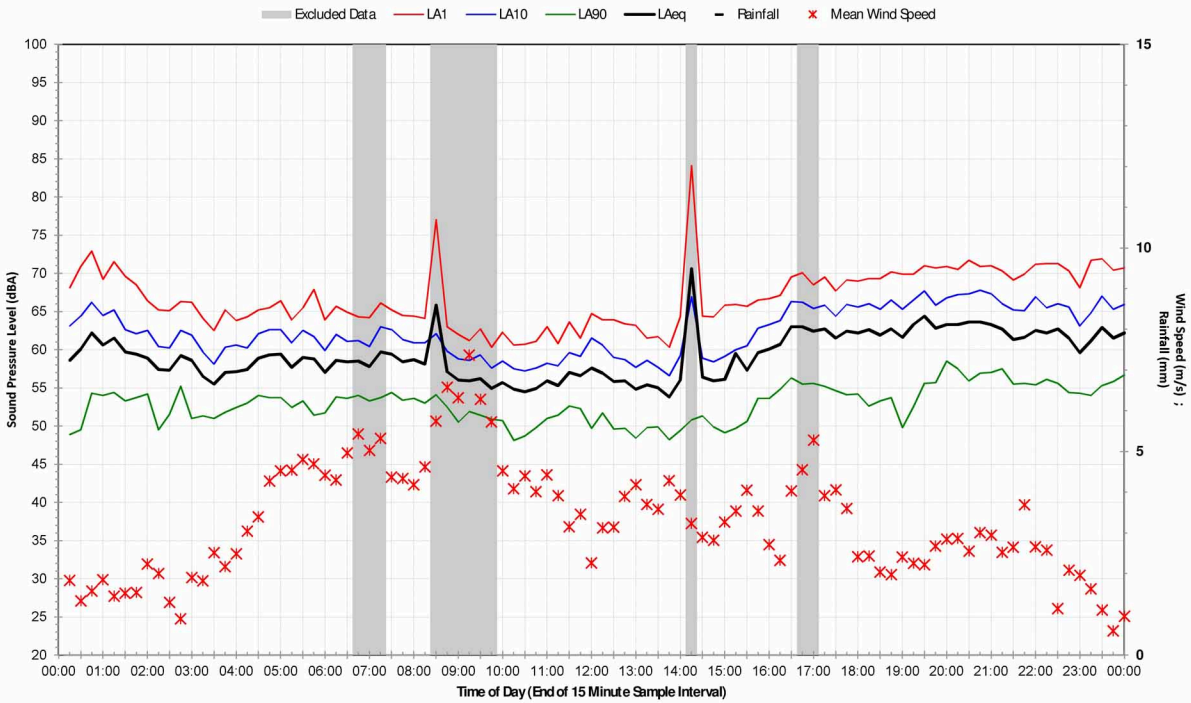
Statistical Ambient Noise Levels
Monitoring Location 12 - Wednesday 7 March 2012



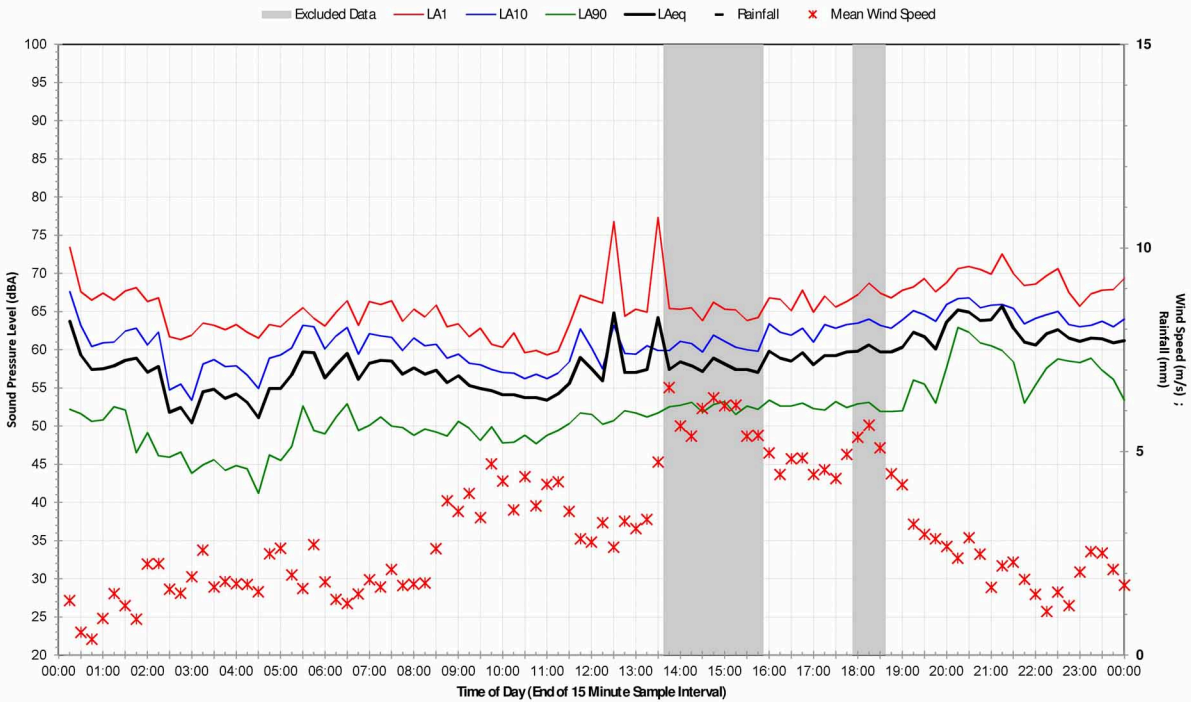
Statistical Ambient Noise Levels
Monitoring Location 12 - Thursday 8 March 2012



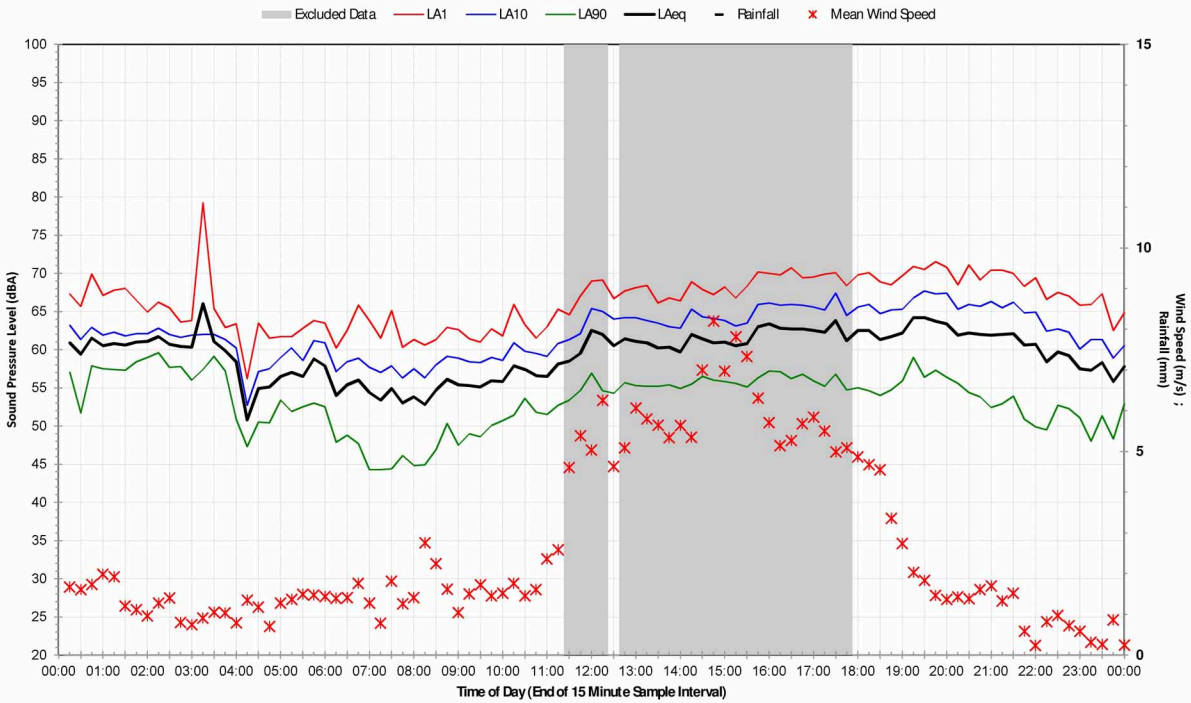
Statistical Ambient Noise Levels
Monitoring Location 12 - Friday 9 March 2012



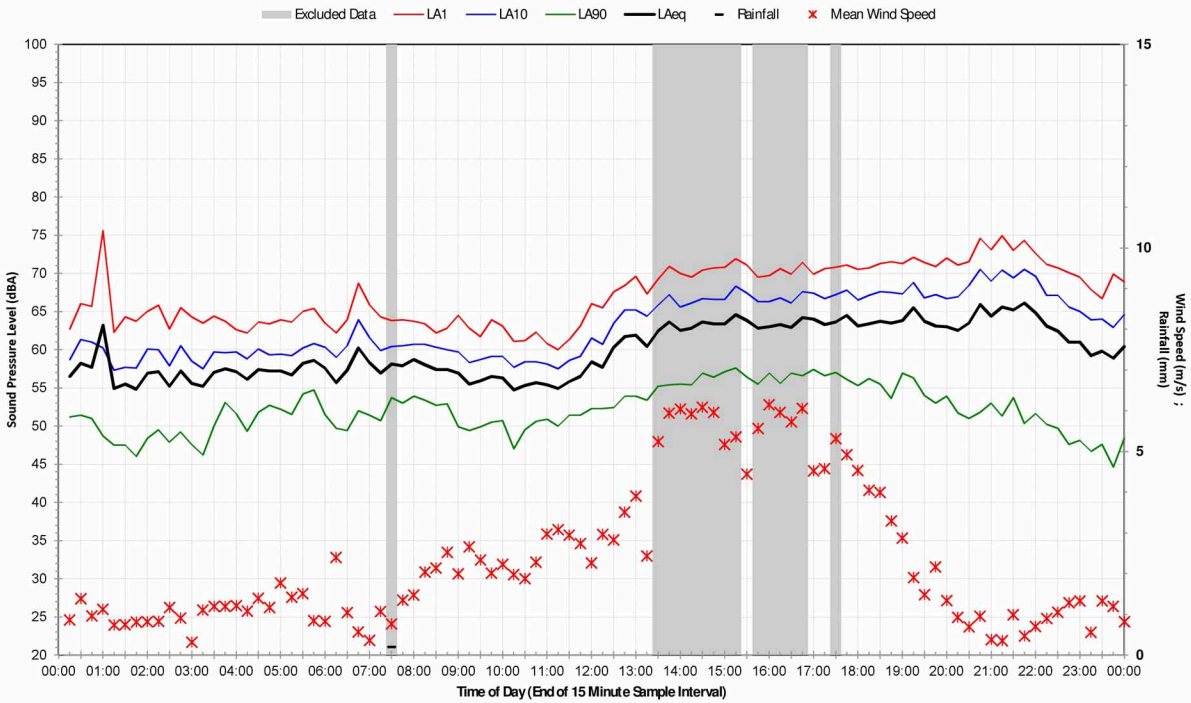
Statistical Ambient Noise Levels
Monitoring Location 12 - Saturday 10 March 2012



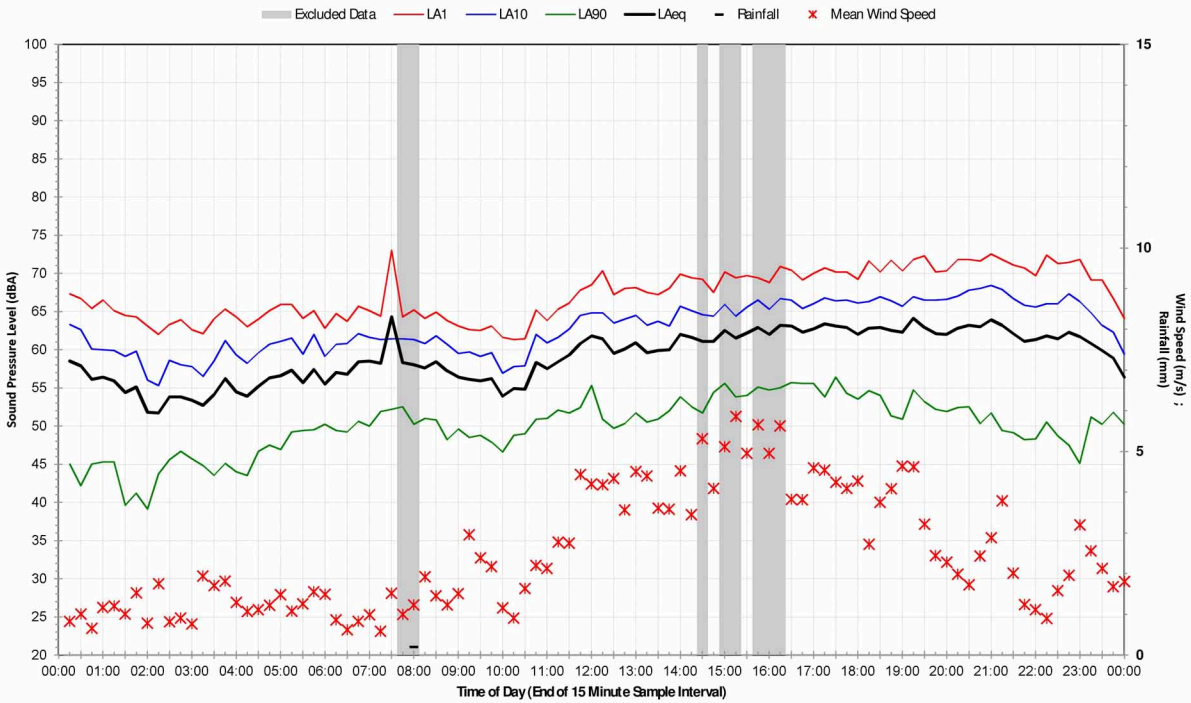
Statistical Ambient Noise Levels
Monitoring Location 12 - Sunday 11 March 2012



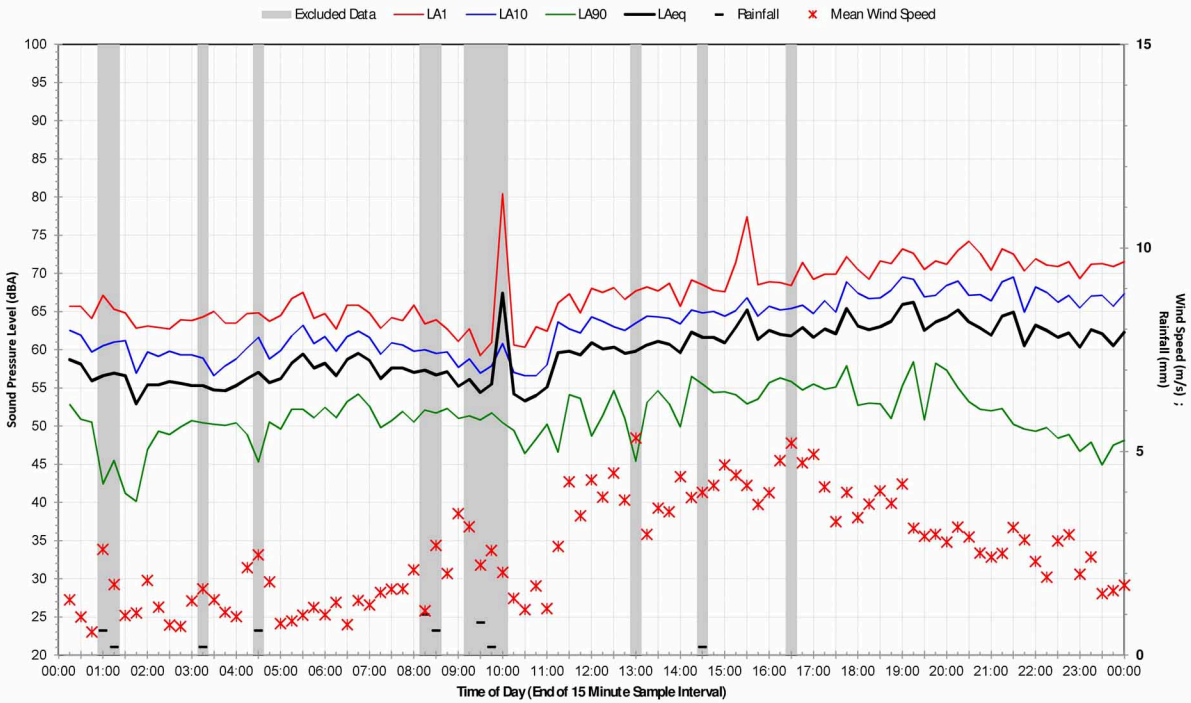
Statistical Ambient Noise Levels
Monitoring Location 12 - Monday 12 March 2012



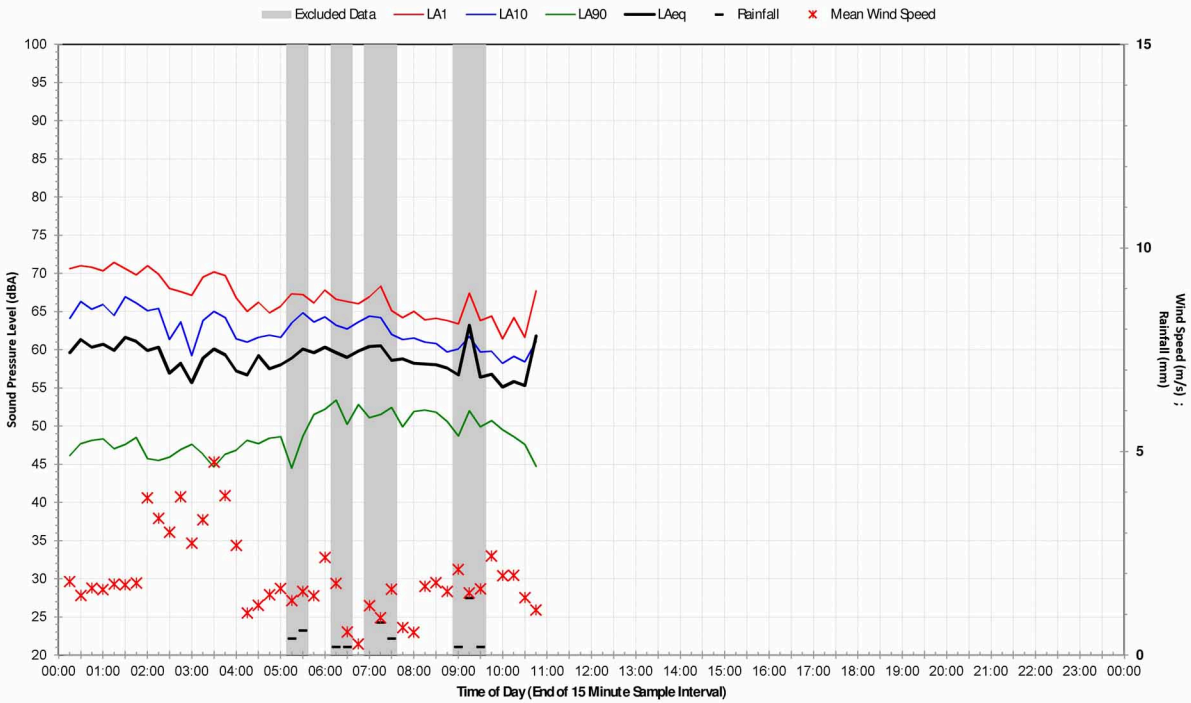
Statistical Ambient Noise Levels
Monitoring Location 12 - Tuesday 13 March 2012



Statistical Ambient Noise Levels
Monitoring Location 12 - Wednesday 14 March 2012

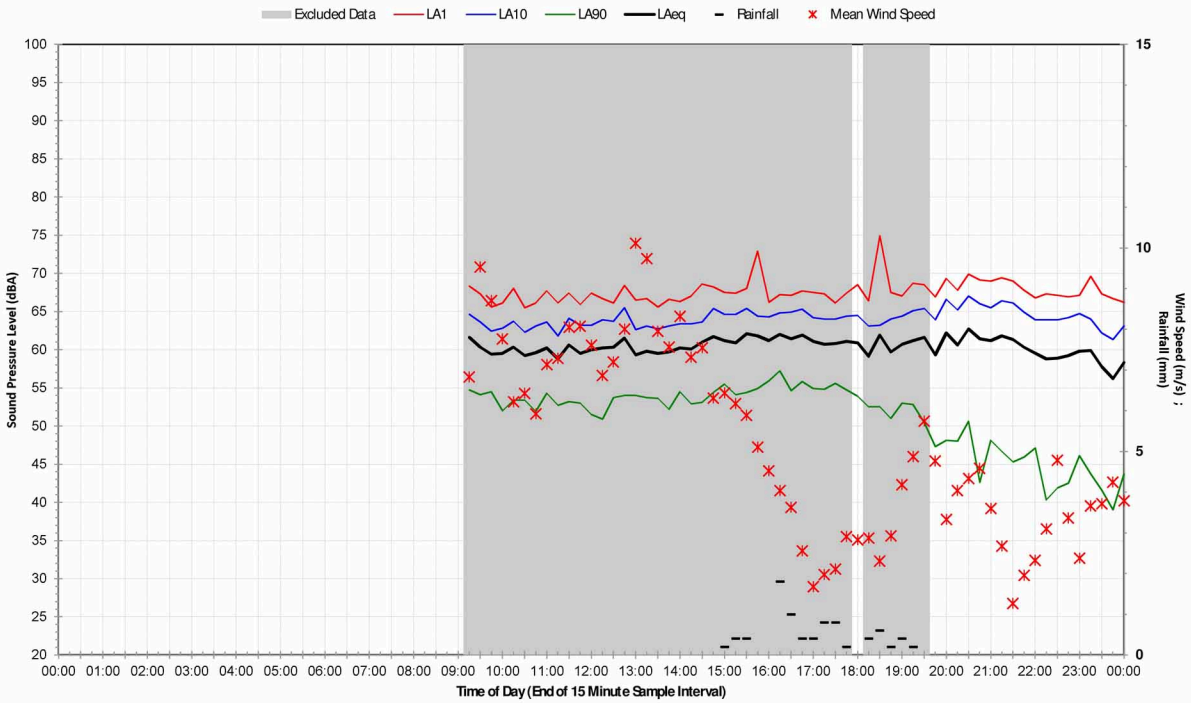


Statistical Ambient Noise Levels
Monitoring Location 12 - Thursday 15 March 2012

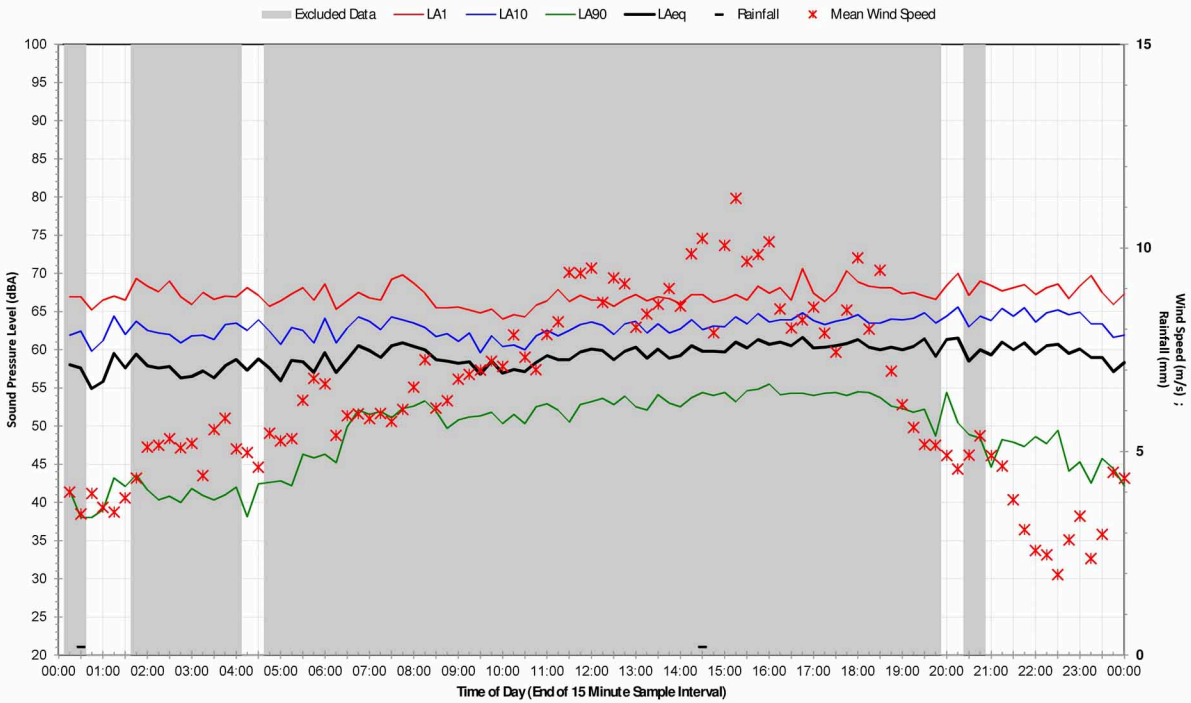


Appendix O – Noise Monitoring Charts – Noise monitoring location L13

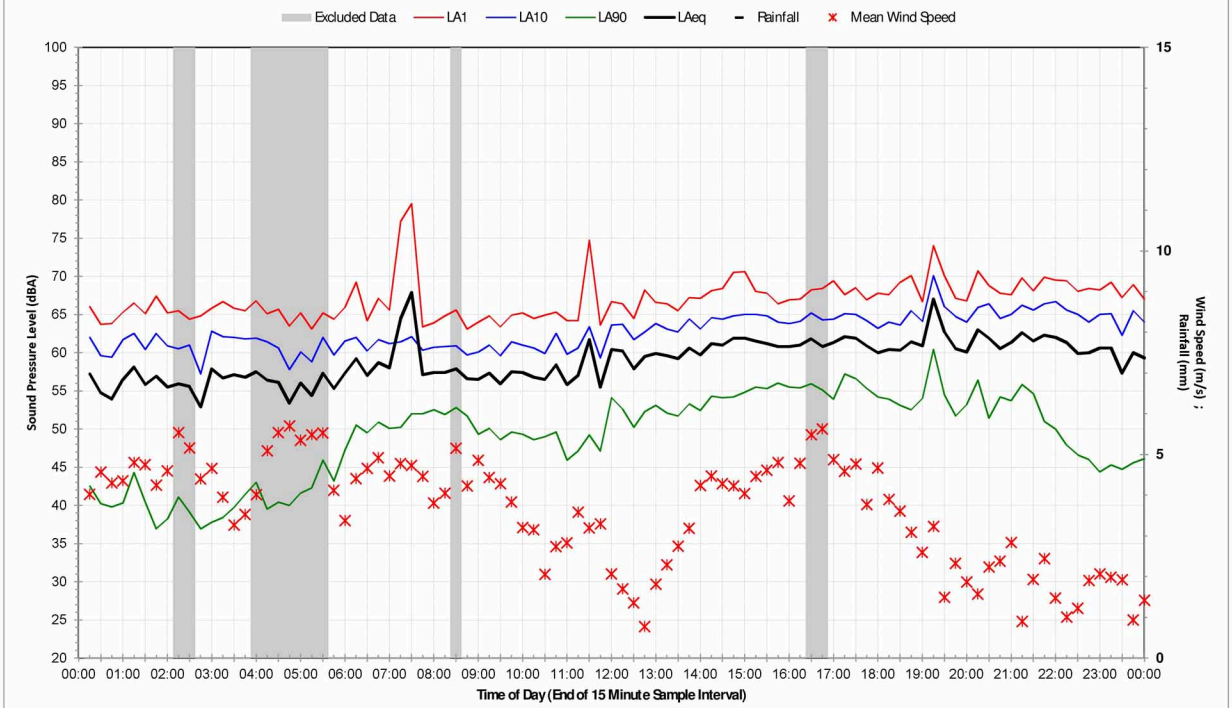
Statistical Ambient Noise Levels
Monitoring Location 13 - Tuesday 6 March 2012



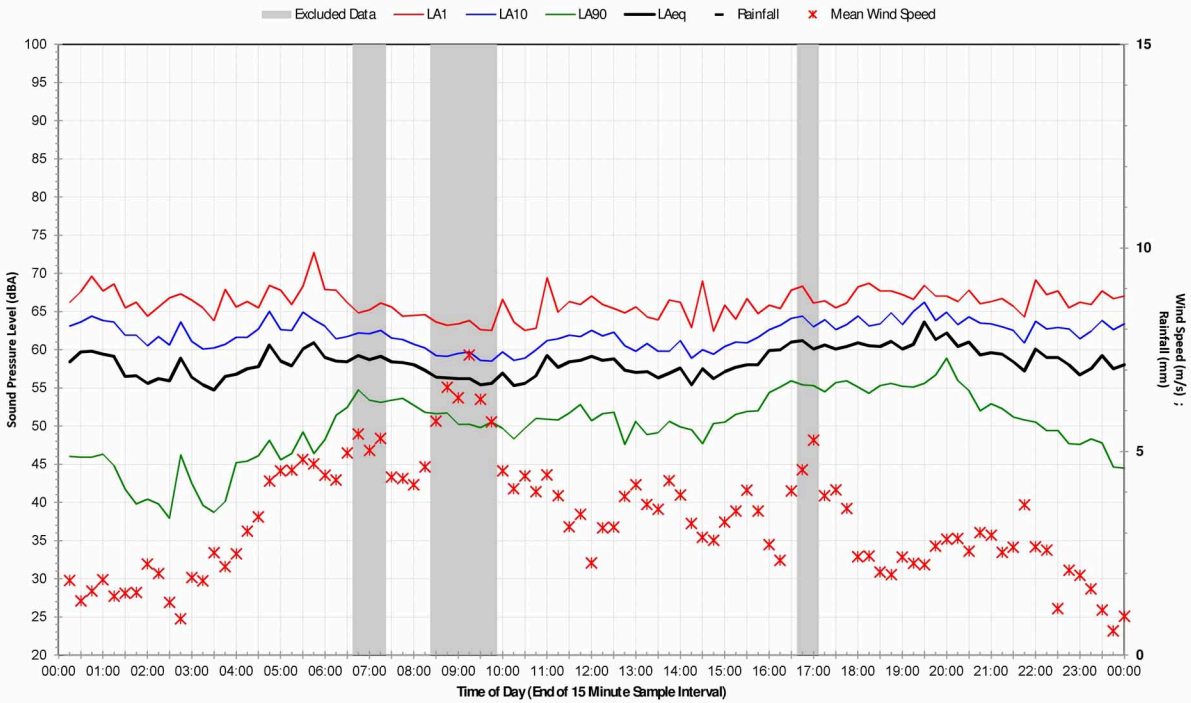
Statistical Ambient Noise Levels
Monitoring Location 13 - Wednesday 7 March 2012



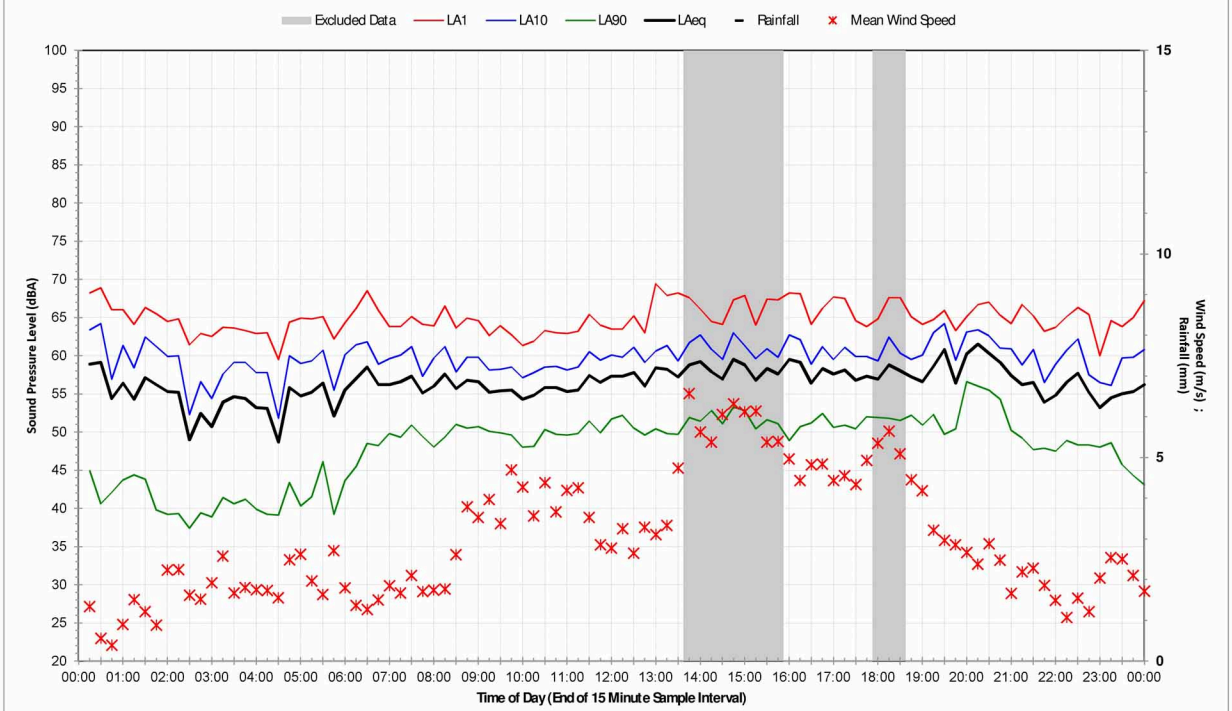
Statistical Ambient Noise Levels
Monitoring Location 13 - Thursday 8 March 2012



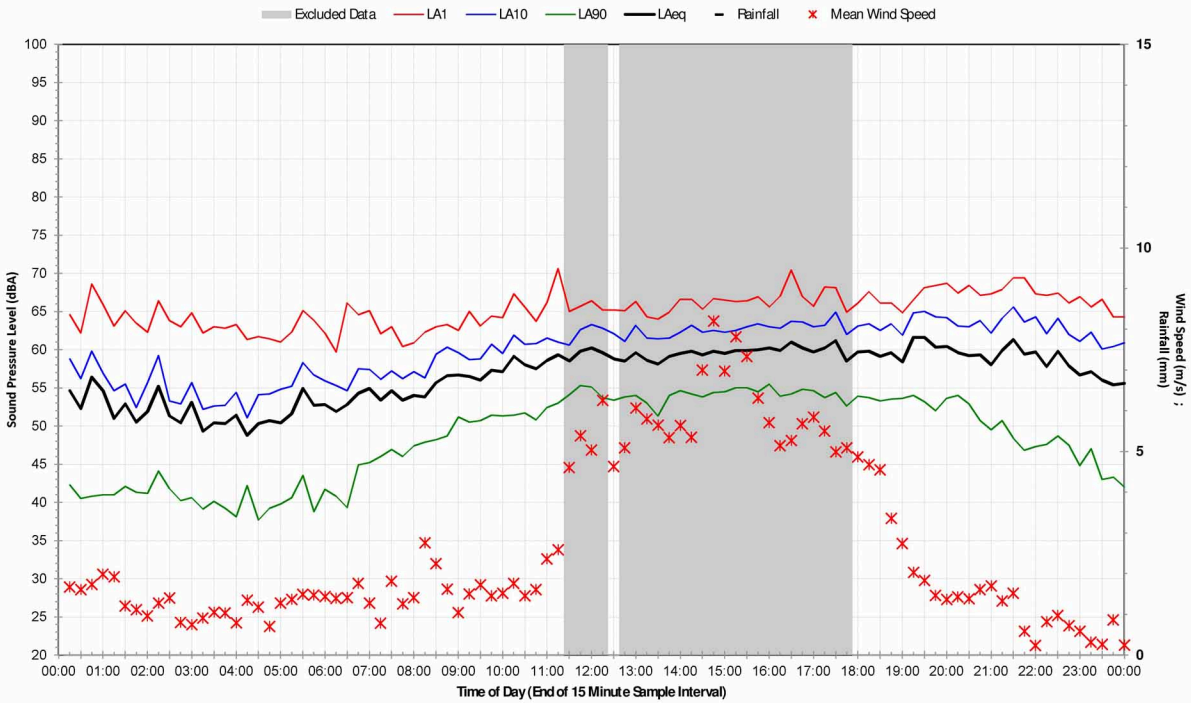
Statistical Ambient Noise Levels
Monitoring Location 13 - Friday 9 March 2012



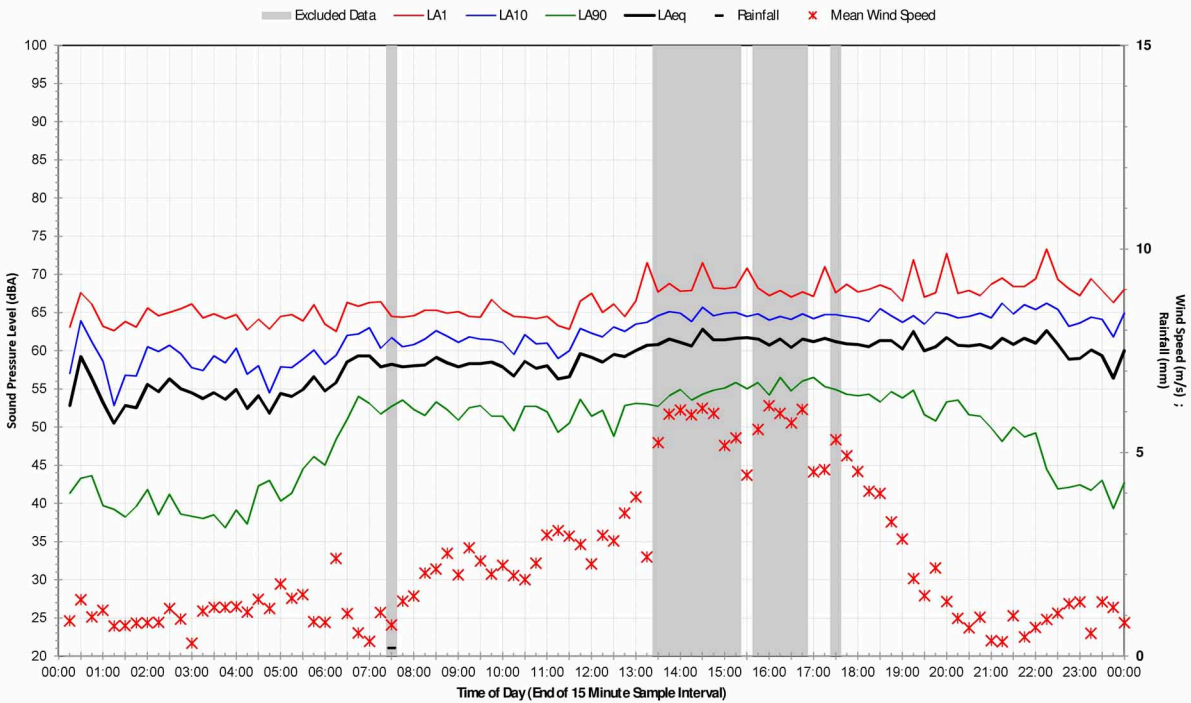
Statistical Ambient Noise Levels
Monitoring Location 13 - Saturday 10 March 2012



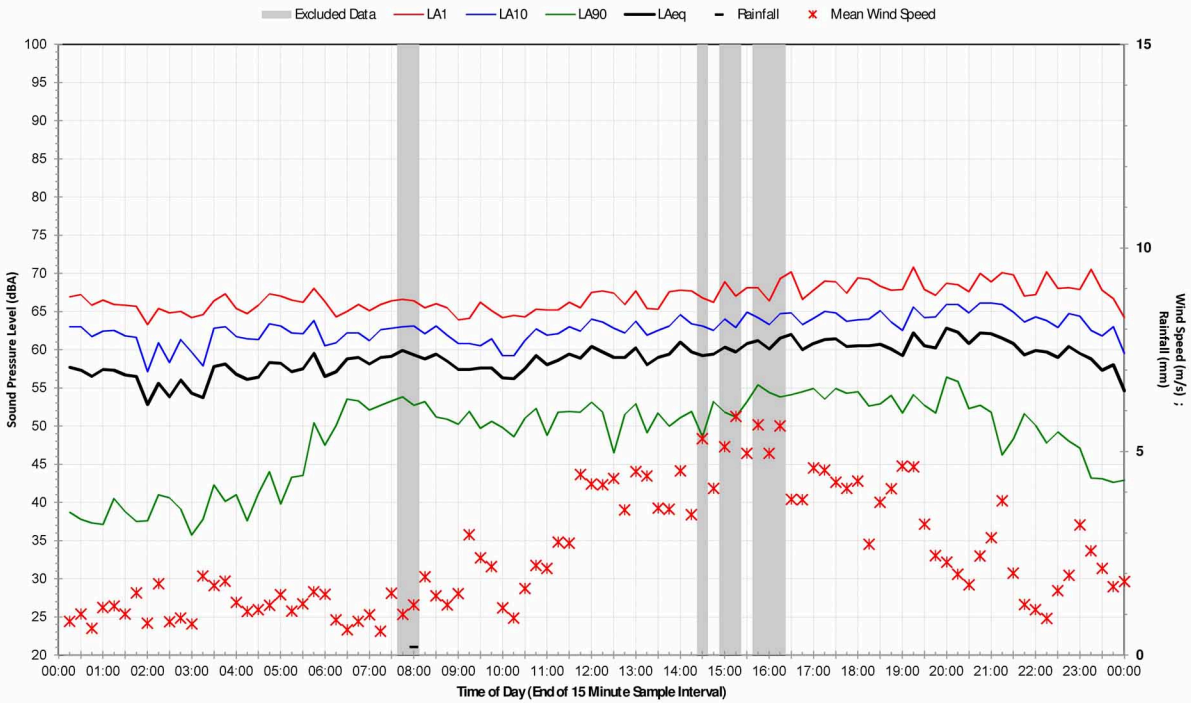
Statistical Ambient Noise Levels
Monitoring Location 13 - Sunday 11 March 2012



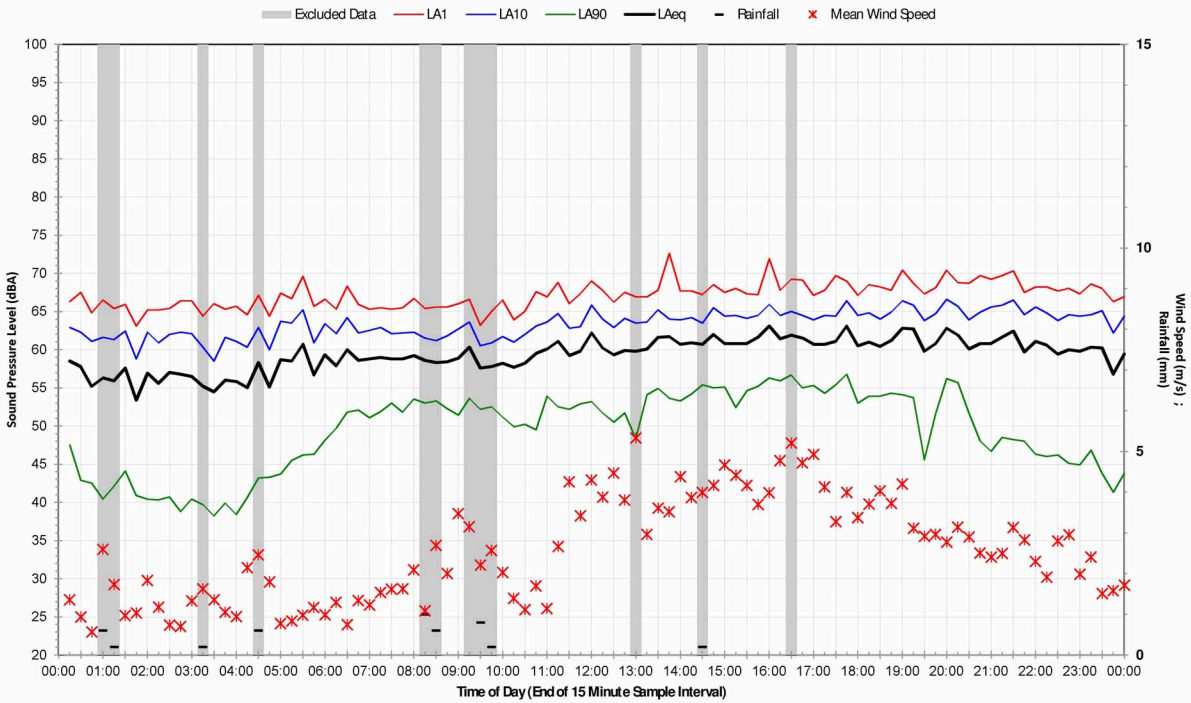
Statistical Ambient Noise Levels
Monitoring Location 13 - Monday 12 March 2012



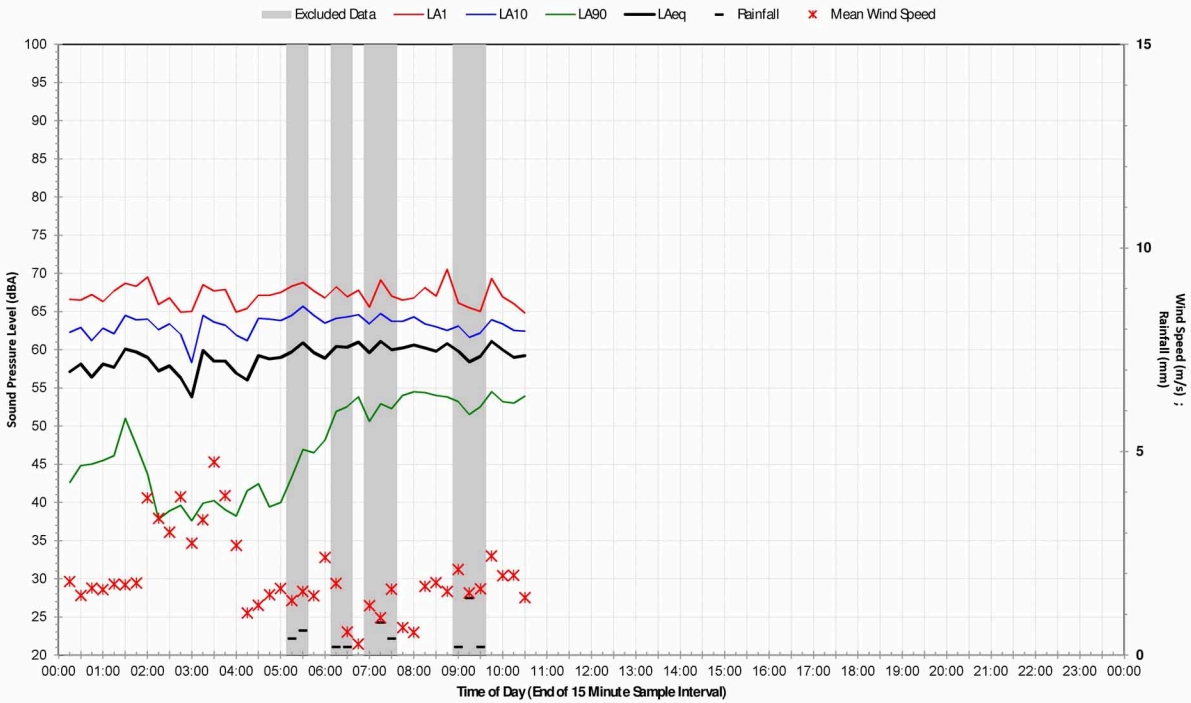
Statistical Ambient Noise Levels
Monitoring Location 13 - Tuesday 13 March 2012



Statistical Ambient Noise Levels
Monitoring Location 13 - Wednesday 14 March 2012

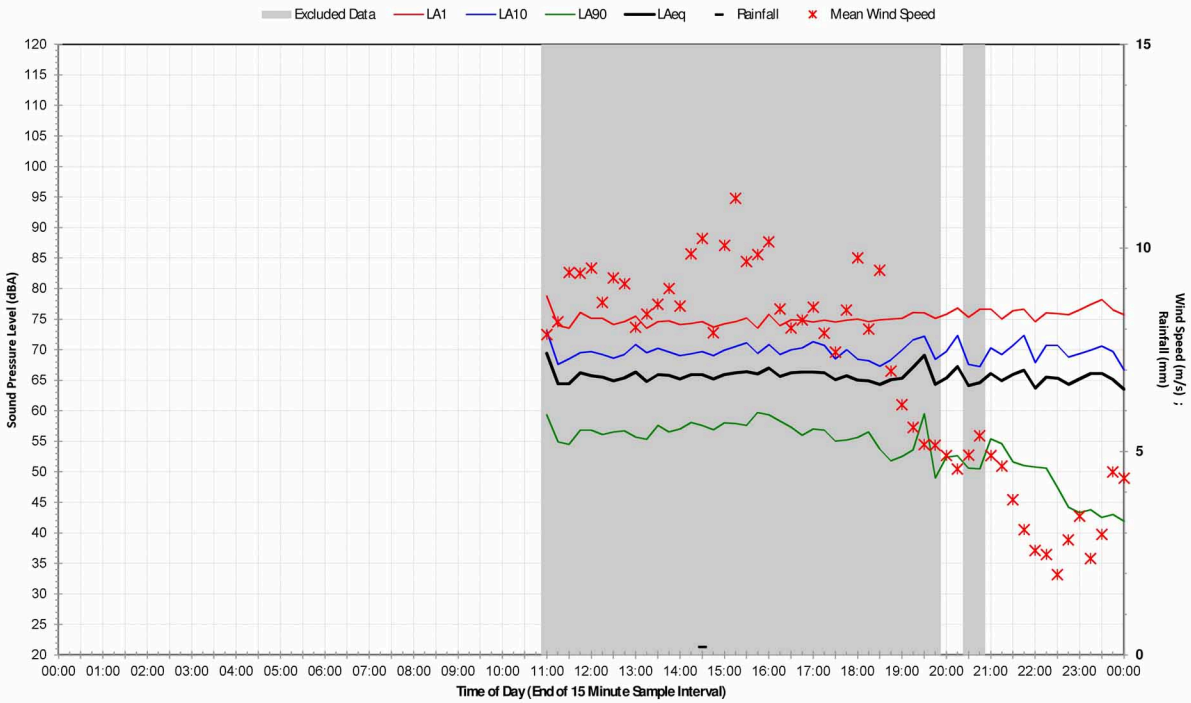


Statistical Ambient Noise Levels
Monitoring Location 13 - Thursday 15 March 2012

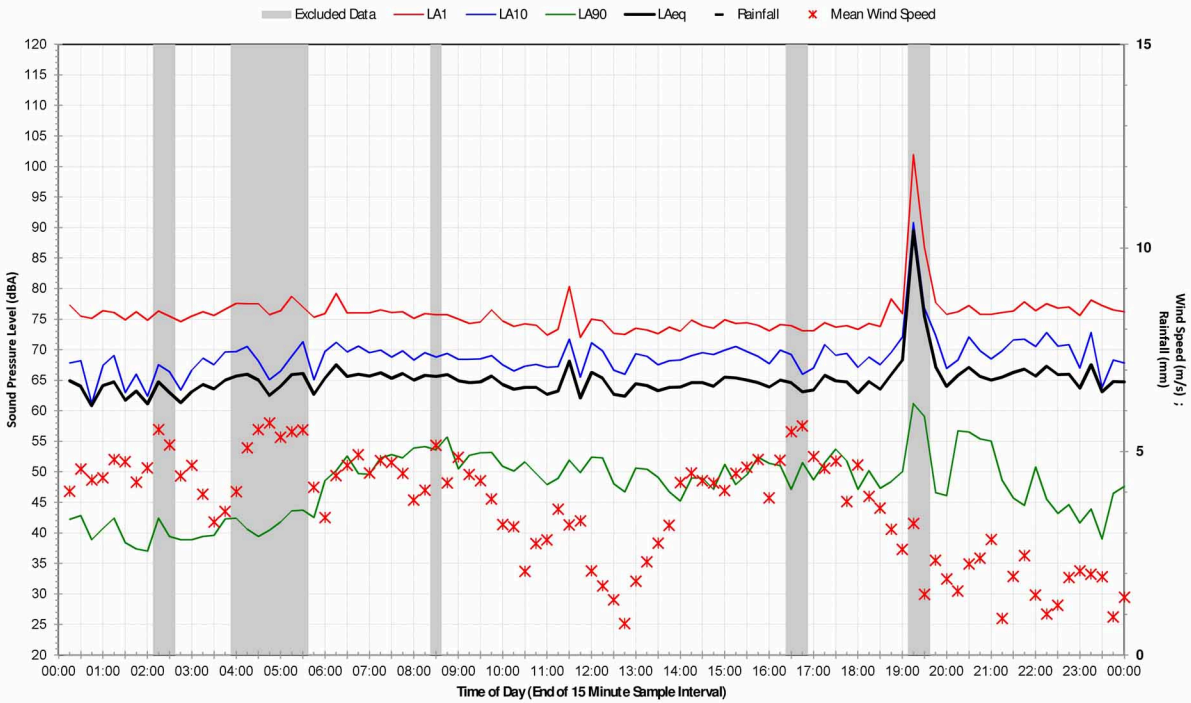


Appendix P – Noise Monitoring Charts – Noise monitoring location L14

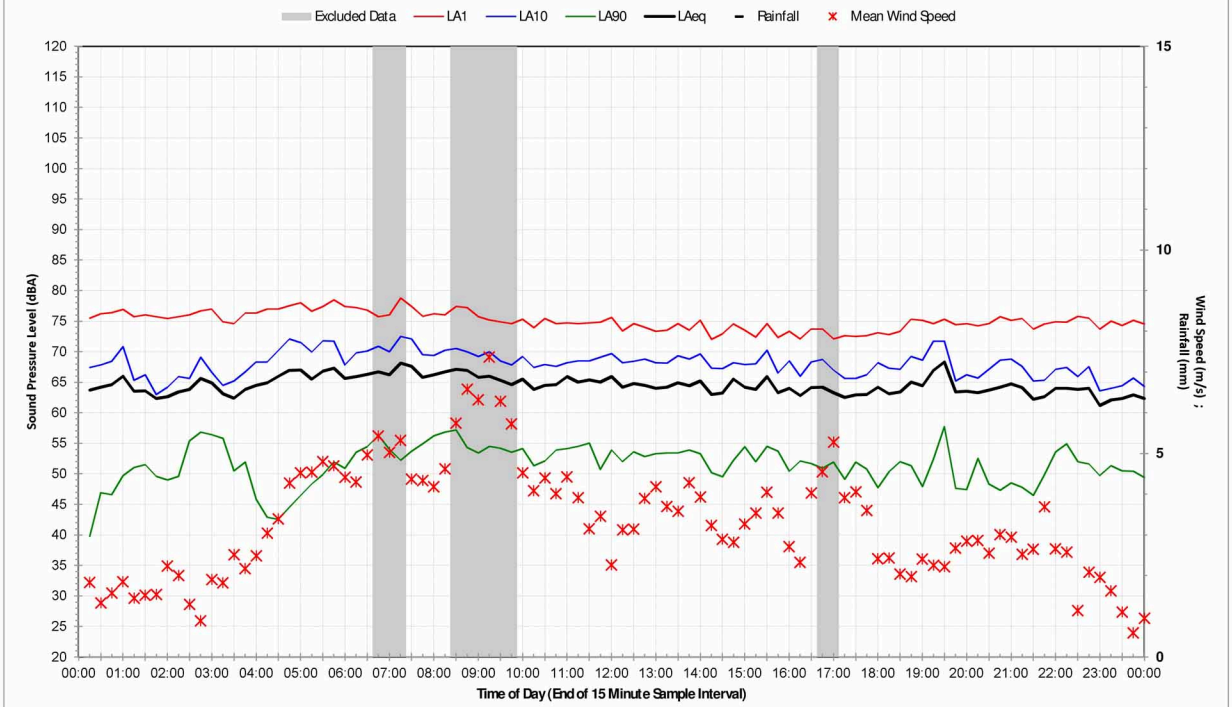
Statistical Ambient Noise Levels
Monitoring Location 14 - Wednesday 7 March 2012



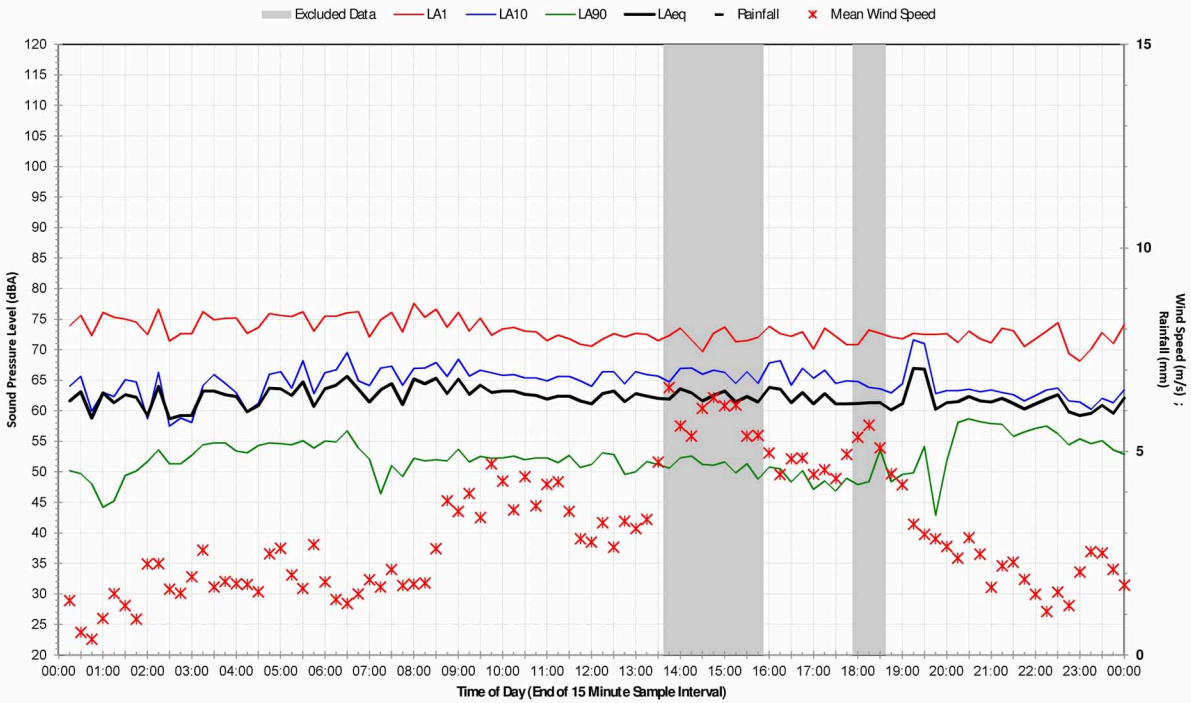
Statistical Ambient Noise Levels
Monitoring Location 14 - Thursday 8 March 2012



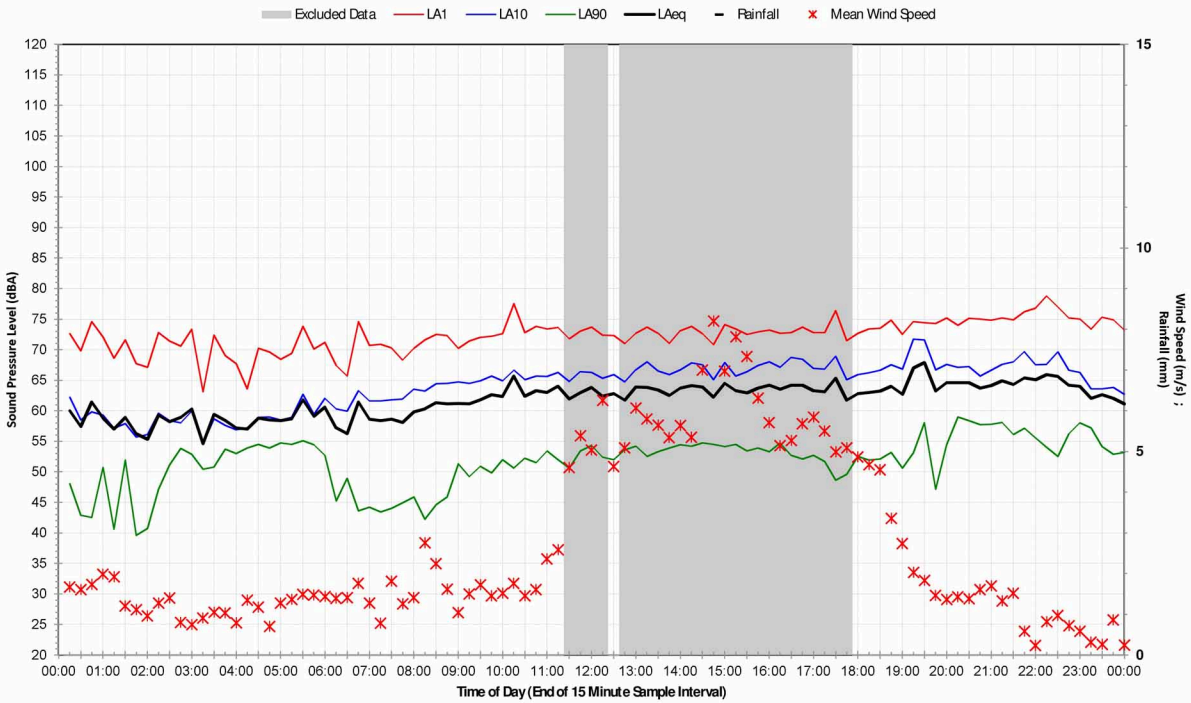
Statistical Ambient Noise Levels
Monitoring Location 14 - Friday 9 March 2012



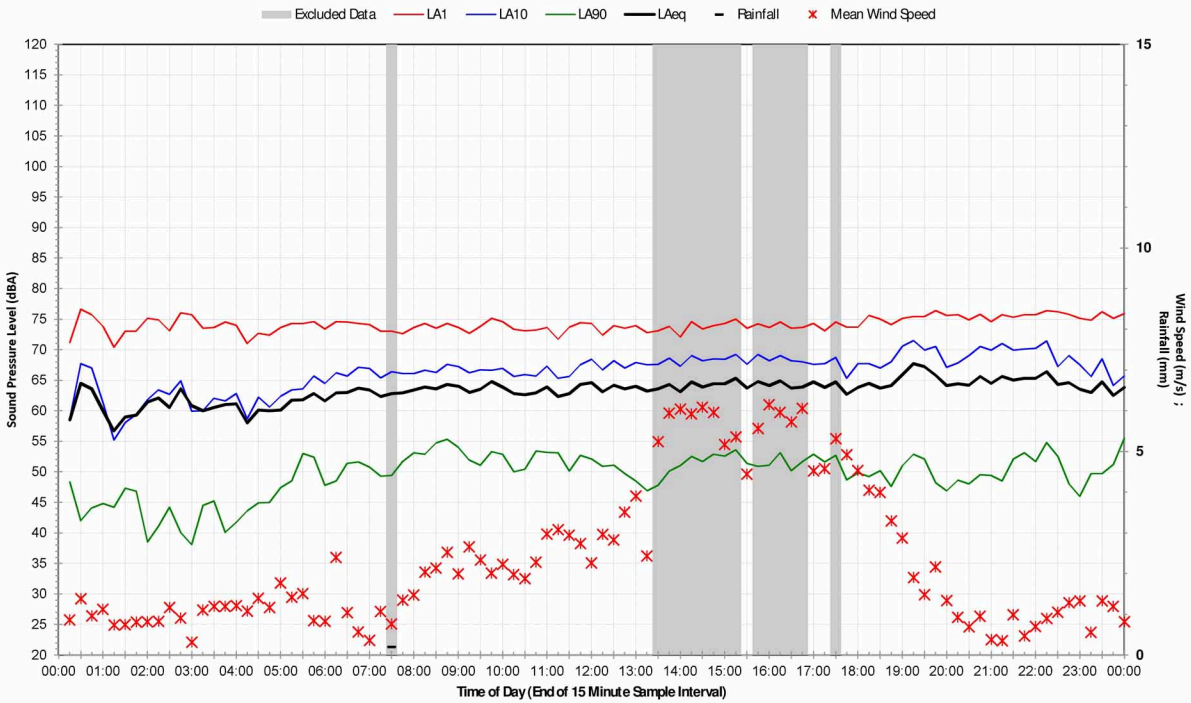
Statistical Ambient Noise Levels
Monitoring Location 14 - Saturday 10 March 2012



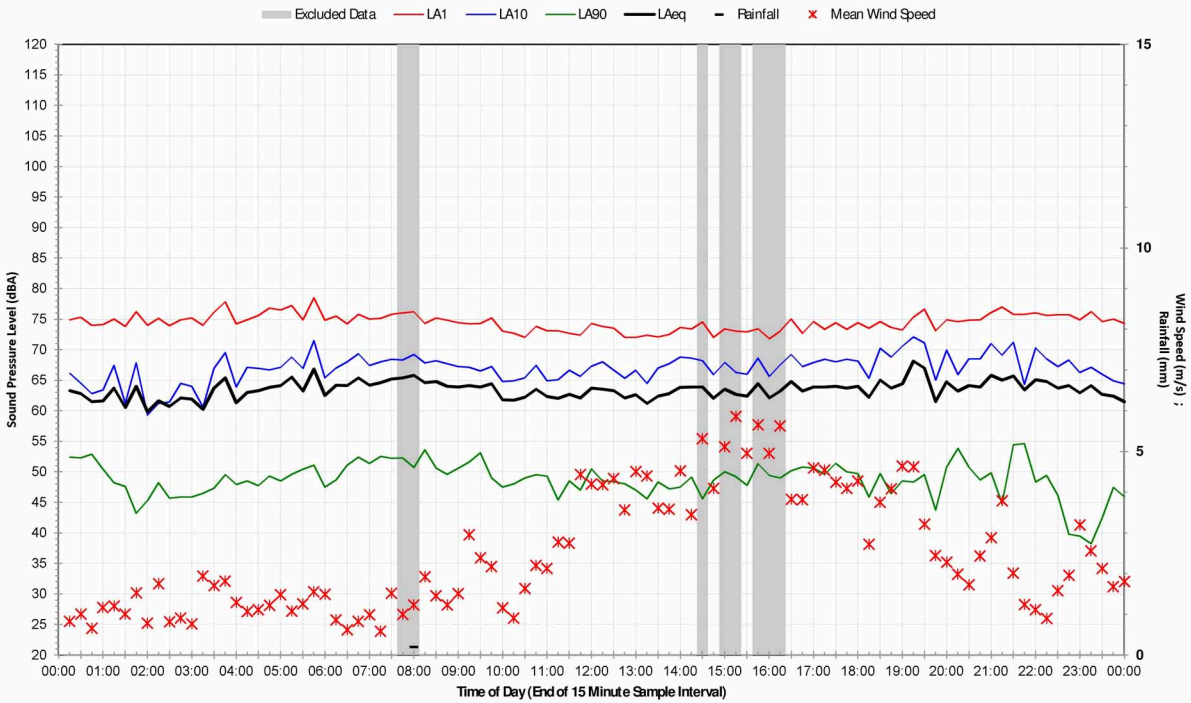
Statistical Ambient Noise Levels
Monitoring Location 14 - Sunday 11 March 2012



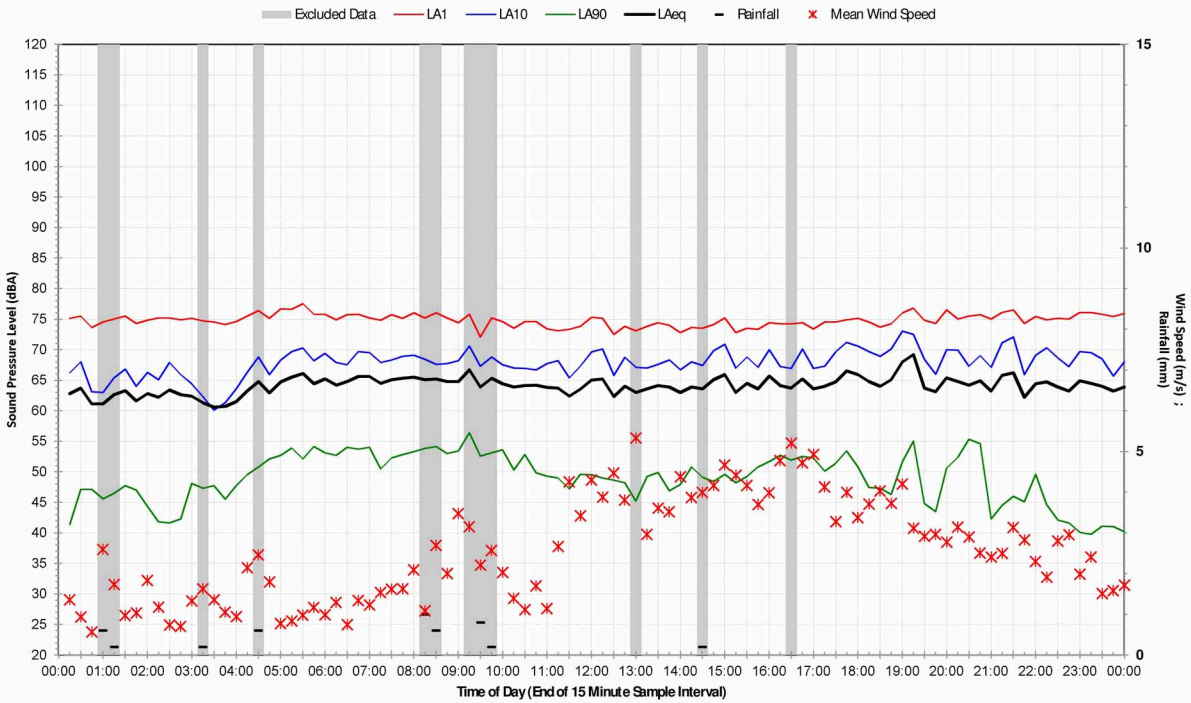
Statistical Ambient Noise Levels
Monitoring Location 14 - Monday 12 March 2012



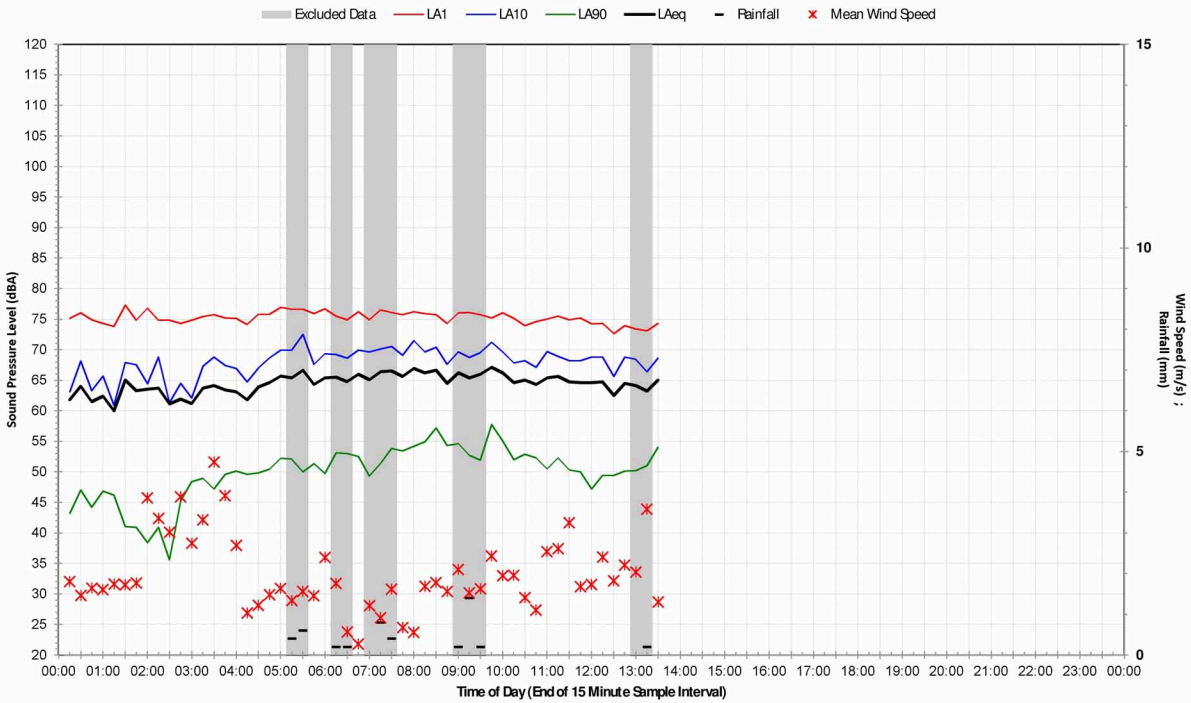
Statistical Ambient Noise Levels
Monitoring Location 14 - Tuesday 13 March 2012



Statistical Ambient Noise Levels
Monitoring Location 14 - Wednesday 14 March 2012



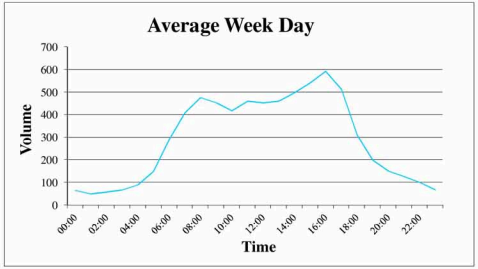
Statistical Ambient Noise Levels
Monitoring Location 14 - Thursday 15 March 2012



Appendix Q – Traffic Count Data

Site 121954 **Site1 N Pacific Hwy 200m N of Macadamia Castle** **North** **Lane 1**

	5	6	7	1	2	3	4			
Day	8/03/2012	Fri	Sat	Sun	Mon	Tue	Wed	W/Day	W/End	7 Day
Time	8/03/2012	9-Mar-12	10-Mar-12	11-Mar-12	12-Mar-12	13-Mar-12	14-Mar-12	Ave.	Ave.	Ave
0:00	54	83	56	48	64	52	71	65	52	61
1:00	55	47	61	39	34	56	49	48	50	49
2:00	67	68	34	39	53	47	51	57	37	51
3:00	89	78	62	20	40	78	49	67	41	59
4:00	80	134	62	33	47	92	91	89	48	77
5:00	152	164	103	52	116	151	166	150	78	129
6:00	291	299	177	79	261	290	308	290	128	244
7:00	413	434	239	141	386	410	398	408	190	346
8:00	543	480	405	224	427	450	482	476	315	430
9:00	470	529	512	402	422	402	444	453	457	454
10:00	396	466	540	470	452	408	369	418	505	443
11:00	433	494	551	605	469	446	456	460	578	493
12:00	486	557	549	606	430	419	367	452	578	488
13:00	438	563	519	604	493	394	411	460	562	489
14:00	505	594	485	671	475	419	494	497	578	520
15:00	575	625	447	683	522	491	492	541	565	548
16:00	593	694	429	627	586	521	571	593	528	574
17:00	502	586	338	510	522	450	503	513	424	487
18:00	295	374	248	353	294	317	277	311	301	308
19:00	187	267	177	270	192	175	171	198	224	206
20:00	164	202	104	205	138	121	125	150	155	151
21:00	155	142	92	165	107	105	126	127	129	127
22:00	117	103	103	124	91	88	104	101	114	104
23:00	82	61	75	81	57	71	69	68	78	71
Total	**7142**	**8044**	**6368**	**7051**	**6678**	**6453**	**6644**	**6992**	**6710**	**6911**



Summary	from	to	
AM Peak	8:00 AM	9:00 AM	543
PM Peak	4:00 PM	5:00 PM	694
Week Day Average			6992
Weekend Day Average			6710
7 Day Average			6911

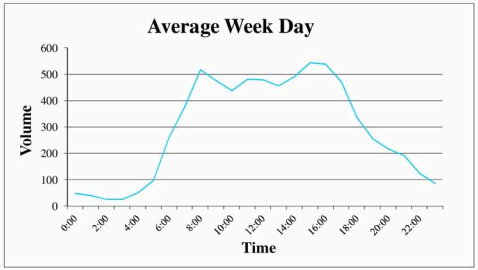
Site 1 N

Weekday Average **Vehicle Class**

Time	Total	1	2	3	4	5	6	7	8	9	10	11	12	13
0:00	65	19	2	4	1	0	0	0	1	16	20	0	0	0
1:00	48	8	2	2	0	0	0	0	1	16	19	0	0	0
2:00	57	10	1	3	1	0	0	0	1	15	26	0	0	0
3:00	67	14	1	4	0	0	0	0	2	17	29	0	0	0
4:00	89	23	1	6	1	0	0	0	2	20	35	0	0	0
5:00	150	72	3	6	1	0	0	0	3	21	43	0	0	0
6:00	290	212	6	12	2	0	1	1	3	21	30	0	0	0
7:00	408	314	10	24	6	0	2	2	2	19	30	0	0	0
8:00	476	390	12	20	5	0	1	1	3	18	27	0	0	0
9:00	453	360	19	24	4	1	1	1	3	22	18	0	0	0
10:00	418	335	27	22	6	1	1	2	1	14	11	0	0	0
11:00	460	372	20	26	6	0	2	2	2	15	14	0	0	1
12:00	452	366	20	28	6	0	1	3	1	14	11	0	0	1
13:00	460	375	24	26	5	1	1	2	4	13	9	0	0	0
14:00	497	417	22	27	7	1	1	2	2	9	10	0	0	0
15:00	541	467	20	26	6	0	2	3	2	8	7	0	0	1
16:00	593	526	17	24	3	0	1	2	2	8	8	0	0	0
17:00	513	460	11	15	3	0	2	2	2	8	11	0	0	0
18:00	311	267	8	11	0	0	1	1	2	10	11	0	0	0
19:00	198	159	5	7	2	0	1	1	2	11	11	0	0	0
20:00	150	106	4	6	1	0	1	0	2	12	17	0	0	0
21:00	127	77	4	3	1	0	0	1	2	20	18	0	0	0
22:00	101	49	3	3	0	0	0	1	2	23	19	0	0	0
23:00	68	27	2	2	1	0	0	0	2	13	20	0	0	0
Total	6992	5427	243	329	68	6	20	29	48	362	456	1	0	3

Site 121954 **Site1 S Pacific Hwy 200m N of Macadamia Castle** **South** **Lane 1**

	5	6	7	1	2	3	4			
Day	8/03/2012	Fri	Sat	Sun	Mon	Tue	Wed	W/Day	W/End	7 Day
Time	8/03/2012	9-Mar-12	10-Mar-12	11-Mar-12	12-Mar-12	13-Mar-12	14-Mar-12	Ave.	Ave.	Ave
0:00	70	54	73	56	28	40	42	47	65	52
1:00	47	44	46	23	23	33	45	38	35	37
2:00	30	29	26	29	18	23	28	26	28	26
3:00	36	23	36	16	29	19	20	25	26	26
4:00	47	63	34	30	68	35	35	50	32	45
5:00	98	105	53	78	98	93	92	97	66	88
6:00	254	265	139	121	285	246	253	261	130	223
7:00	390	350	208	170	392	379	379	378	189	324
8:00	505	534	404	275	529	501	519	518	340	467
9:00	480	475	508	374	489	467	470	476	441	466
10:00	360	488	513	503	498	395	454	439	508	459
11:00	514	571	584	566	513	411	401	482	575	509
12:00	453	531	544	557	501	439	471	479	551	499
13:00	459	522	510	557	476	394	432	457	534	479
14:00	457	517	447	580	534	461	484	491	514	497
15:00	583	606	471	605	525	479	524	543	538	542
16:00	513	691	387	530	511	477	500	538	459	516
17:00	487	565	332	406	435	430	439	471	369	442
18:00	344	429	261	318	319	288	302	336	290	323
19:00	257	350	224	241	211	221	234	255	233	248
20:00	216	325	176	144	166	202	172	216	160	200
21:00	182	244	116	137	192	165	173	191	127	173
22:00	129	180	112	90	108	111	87	123	101	117
23:00	98	113	74	43	86	62	75	87	59	79
Total	**7009**	**8074**	**6278**	**6449**	**7034**	**6371**	**6631**	**7024**	**6364**	**6835**



Summary	from	to	
AM Peak	11:00 AM	12:00 PM	571
PM Peak	4:00 PM	5:00 PM	691
Week Day Average			7024
Weekend Day Average			6364
7 Day Average			6835

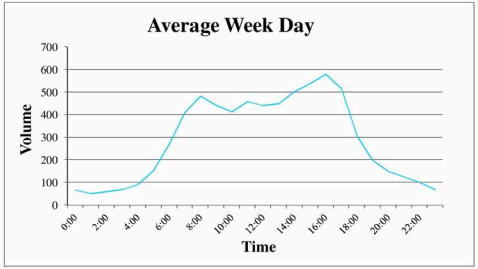
Site 1 S

Weekday Average — **Vehicle Class**

Time	Total	1	2	3	4	5	6	7	8	9	10	11	12	13
0:00	47	18	1	1	0	0	0	0	0	6	21	0	0	0
1:00	38	19	1	0	0	0	0	0	0	6	12	0	0	0
2:00	26	12	0	2	0	0	0	0	0	6	6	0	0	0
3:00	25	12	1	2	0	0	0	0	0	4	5	0	0	0
4:00	50	30	3	4	2	0	0	1	0	5	5	0	0	0
5:00	97	72	5	7	3	0	0	0	1	6	4	0	0	0
6:00	261	211	11	11	5	1	1	2	1	10	9	0	0	0
7:00	378	315	12	26	4	1	2	2	2	8	7	0	0	0
8:00	518	447	17	21	4	1	2	3	2	13	8	1	0	0
9:00	476	403	22	23	4	0	1	2	2	9	8	0	0	0
10:00	439	360	23	22	3	1	1	1	2	13	11	1	0	0
11:00	482	391	28	19	5	1	1	1	3	17	16	0	0	0
12:00	479	383	25	23	6	0	2	1	3	16	20	0	0	0
13:00	457	351	24	23	4	0	2	1	5	25	22	0	0	0
14:00	491	382	22	25	4	0	1	2	2	28	25	0	0	0
15:00	543	434	17	26	5	0	2	2	3	25	29	0	0	0
16:00	538	442	15	20	4	0	1	1	5	26	24	0	0	0
17:00	471	392	10	10	2	0	1	1	3	21	29	0	0	0
18:00	336	264	9	9	1	0	1	0	2	20	31	0	0	0
19:00	255	181	6	6	1	0	1	1	2	22	34	0	0	0
20:00	216	135	5	6	1	0	0	0	4	21	44	0	0	0
21:00	191	107	3	9	0	0	0	0	2	13	56	0	0	0
22:00	123	66	2	4	1	0	0	0	1	14	35	0	0	0
23:00	87	44	1	3	0	0	0	0	1	12	24	0	0	0
Total	7024	5471	263	300	59	7	20	23	47	346	483	3	0	1

Site 121954 **Site2 N Pacific Hwy 30m N of Hambly Ln** **North** **Lane 1**

	5	6	7	1	2	3	4			
Day	8/03/2012	Fri	Sat	Sun	Mon	Tue	Wed	W/Day	W/End	7 Day
Time	8/03/2012	9-Mar-12	10-Mar-12	11-Mar-12	12-Mar-12	13-Mar-12	14-Mar-12	Ave.	Ave.	Ave
0:00	52	90	58	49	64	55	71	66	54	63
1:00	57	49	61	40	35	60	49	50	51	50
2:00	73	72	34	39	51	46	51	59	37	52
3:00	94	75	59	20	42	78	48	67	40	59
4:00	87	133	66	34	47	94	91	90	50	79
5:00	161	162	102	51	110	170	162	153	77	131
6:00	275	278	179	78	239	271	282	269	129	229
7:00	405	441	241	145	380	419	403	410	193	348
8:00	558	491	404	225	432	448	485	483	315	435
9:00	454	510	498	411	419	398	431	442	455	446
10:00	393	451	535	464	444	401	372	412	500	437
11:00	429	500	542	599	476	438	446	458	571	490
12:00	479	525	540	602	427	418	353	440	571	478
13:00	442	539	513	604	470	397	394	448	559	480
14:00	501	600	478	648	490	417	497	501	563	519
15:00	573	630	447	681	519	489	479	538	564	545
16:00	586	677	423	615	576	504	556	580	519	562
17:00	518	590	333	502	524	435	511	516	418	488
18:00	285	372	243	353	290	314	266	305	298	303
19:00	183	274	176	272	188	175	166	197	224	205
20:00	161	193	103	203	143	121	126	149	153	150
21:00	152	139	95	164	103	102	126	124	130	126
22:00	120	105	104	124	91	87	98	100	114	104
23:00	81	65	73	80	52	70	75	69	77	71
Total	**7119**	**7961**	**6307**	**7003**	**6612**	**6407**	**6538**	**6927**	**6655**	**6850**



Summary

	from	to	
AM Peak	8:00 AM	9:00 AM	**558**
PM Peak	4:00 PM	5:00 PM	**677**
		Week Day Average	**6927**
		Weekend Day Average	**6655**
		7 Day Average	**6850**

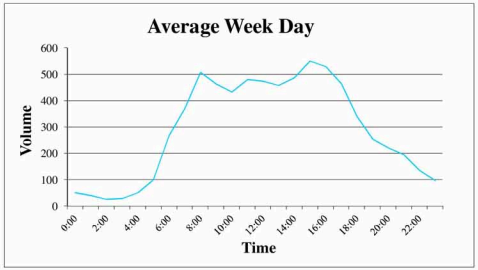
Site 2 N

Weekday Average — **Vehicle Class**

Time	Total	1	2	3	4	5	6	7	8	9	10	11	12	13
0:00	66	21	2	4	1	0	1	0	1	16	21	0	0	0
1:00	50	10	1	2	0	0	0	0	1	16	19	0	0	0
2:00	59	12	1	2	1	0	0	0	1	15	25	1	0	0
3:00	67	15	1	3	0	0	0	0	2	17	29	0	0	0
4:00	90	27	1	6	0	0	0	0	2	20	34	0	0	0
5:00	153	78	4	6	1	0	0	0	3	20	41	0	0	0
6:00	269	193	5	11	2	0	1	1	3	21	29	0	0	0
7:00	410	313	10	28	6	0	2	2	2	18	30	0	0	0
8:00	483	392	11	24	5	0	2	1	2	18	27	1	0	0
9:00	442	348	18	26	4	1	1	2	2	22	18	0	0	0
10:00	412	323	25	27	5	1	1	3	2	14	11	0	0	0
11:00	458	367	20	29	4	0	2	3	3	15	14	0	0	1
12:00	440	352	21	29	5	0	1	3	1	14	12	0	0	0
13:00	448	361	24	29	5	1	1	2	3	13	9	0	0	0
14:00	501	418	21	30	6	1	1	2	2	9	10	0	0	0
15:00	538	456	21	33	4	0	3	3	2	8	8	1	0	0
16:00	580	508	16	30	3	1	1	3	2	8	8	1	0	0
17:00	516	458	10	20	3	0	2	2	2	8	11	0	0	0
18:00	305	259	8	13	0	0	1	1	2	10	11	0	0	0
19:00	197	156	5	8	2	0	1	0	2	10	12	0	0	0
20:00	149	104	5	7	1	0	0	0	2	12	17	0	0	0
21:00	124	74	4	3	1	0	0	2	2	20	18	0	0	0
22:00	100	49	3	3	0	0	0	1	2	23	18	0	0	0
23:00	69	28	2	2	1	0	0	0	2	13	20	0	0	0
Total	6927	5324	239	377	62	7	22	32	48	361	449	4	0	1

Site 121954 **Site2 S Pacific Hwy 30m N of Hambly Ln** **South** **Lane 1**

	5	6	7	1	2	3	4			
Day	8/03/2012	Fri	Sat	Sun	Mon	Tue	Wed	W/Day	W/End	7 Day
Time	8/03/2012	9-Mar-12	10-Mar-12	11-Mar-12	12-Mar-12	13-Mar-12	14-Mar-12	Ave.	Ave.	Ave
0:00	74	54	72	53	31	46	43	50	63	53
1:00	47	47	45	21	25	39	34	38	33	37
2:00	30	29	26	28	17	25	28	26	27	26
3:00	46	27	42	17	31	18	20	28	30	29
4:00	49	66	37	28	68	36	32	50	33	45
5:00	98	110	48	84	98	93	100	100	66	90
6:00	269	277	146	118	286	252	254	268	132	229
7:00	385	349	218	170	387	360	368	370	194	320
8:00	492	520	378	275	531	484	510	507	327	456
9:00	462	464	496	376	478	460	453	463	436	456
10:00	350	484	521	506	492	395	446	433	514	456
11:00	517	569	569	552	510	407	396	480	561	503
12:00	459	522	533	553	493	439	453	473	543	493
13:00	448	515	508	556	488	399	440	458	532	479
14:00	480	507	442	586	526	443	480	487	514	495
15:00	598	622	452	600	532	473	529	551	526	544
16:00	517	672	387	517	505	470	483	529	452	507
17:00	497	570	327	400	425	416	418	465	364	436
18:00	348	411	255	320	325	287	326	339	288	325
19:00	249	355	220	237	206	221	238	254	229	247
20:00	235	322	176	142	174	205	167	221	159	203
21:00	194	257	116	135	185	169	170	195	126	175
22:00	160	190	119	92	119	116	90	135	106	127
23:00	100	117	72	40	88	71	108	97	56	85
Total	**7104**	**8056**	**6205**	**6406**	**7020**	**6324**	**6586**	**7018**	**6306**	**6814**



Summary	from	to	
AM Peak	11:00 AM	12:00 PM	569
PM Peak	4:00 PM	5:00 PM	672
Week Day Average			7018
Weekend Day Average			6306
7 Day Average			6814

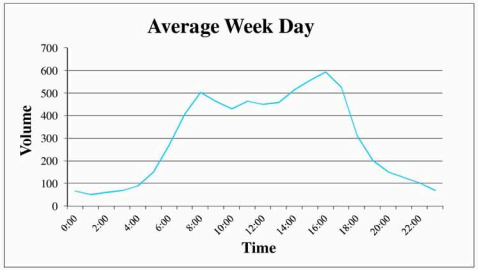
Site 2 S

Weekday Average — **Vehicle Class**

Time	Total	1	2	3	4	5	6	7	8	9	10	11	12	13
0:00	50	23	1	1	0	0	0	0	1	5	19	0	0	0
1:00	38	19	1	0	0	0	0	0	0	6	11	0	0	0
2:00	26	12	0	2	0	0	0	0	0	5	6	0	0	0
3:00	28	16	1	2	0	0	0	0	0	4	5	0	0	0
4:00	50	31	3	4	2	0	0	1	0	5	4	0	0	0
5:00	100	74	5	8	3	0	0	0	1	5	4	0	0	0
6:00	268	219	11	12	4	1	1	2	1	9	8	1	0	0
7:00	370	307	13	23	4	1	2	2	2	7	7	0	0	0
8:00	507	438	16	23	3	1	2	3	2	12	8	1	0	0
9:00	463	392	22	23	4	0	1	2	2	10	8	0	0	0
10:00	433	357	23	21	3	1	1	1	2	13	10	1	0	0
11:00	480	389	28	19	5	1	0	0	3	17	16	1	0	0
12:00	473	377	25	25	5	1	2	1	3	15	18	1	0	0
13:00	458	353	23	22	4	0	2	1	5	24	23	0	0	0
14:00	487	382	22	25	3	0	1	2	1	28	22	1	0	0
15:00	551	441	15	28	6	0	2	2	3	25	28	0	0	0
16:00	529	437	15	18	3	0	2	1	5	25	23	0	0	0
17:00	465	386	11	11	2	0	1	1	3	20	30	0	0	0
18:00	339	268	8	8	1	0	1	1	2	21	30	0	0	0
19:00	254	184	6	6	1	0	1	1	2	20	32	0	0	0
20:00	221	141	5	6	1	0	1	0	4	20	43	0	0	0
21:00	195	113	3	9	0	0	0	0	2	13	54	0	0	0
22:00	135	81	2	4	0	0	0	0	1	13	34	0	0	0
23:00	97	56	1	2	0	0	0	0	1	11	24	0	0	0
Total	7018	5498	260	301	54	7	20	23	45	334	468	5	0	1

Site 121954 **Site3 N Pacific Hwy 200m N of Broken Head Rd** **North** **Lane 1**

	5	6	7	1	2	3	4			
Day	8/03/2012	Fri	Sat	Sun	Mon	Tue	Wed	W/Day	W/End	7 Day
Time	8/03/2012	9-Mar-12	10-Mar-12	11-Mar-12	12-Mar-12	13-Mar-12	14-Mar-12	Ave.	Ave.	Ave
0:00	52	82	58	50	70	56	69	66	54	62
1:00	55	49	63	38	33	61	52	50	51	50
2:00	63	75	33	37	54	54	52	60	35	53
3:00	90	73	61	20	48	81	49	68	41	60
4:00	85	130	62	33	47	93	89	89	48	77
5:00	141	178	109	55	112	151	168	150	82	131
6:00	290	279	189	79	237	264	280	270	134	231
7:00	412	435	245	154	368	412	412	408	200	348
8:00	574	508	424	225	453	474	511	504	325	453
9:00	475	517	525	433	441	429	452	463	479	467
10:00	409	498	554	471	452	405	387	430	513	454
11:00	442	512	547	608	480	444	445	465	578	497
12:00	483	542	553	600	434	417	370	449	577	486
13:00	462	528	524	620	471	419	408	458	572	490
14:00	510	621	484	653	500	443	497	514	569	530
15:00	594	639	472	703	538	488	521	556	588	565
16:00	603	696	431	613	575	510	586	594	522	573
17:00	522	594	350	525	518	452	543	526	438	501
18:00	285	391	275	362	306	320	259	312	319	314
19:00	181	270	183	282	199	180	182	202	233	211
20:00	166	203	108	231	140	122	119	150	170	156
21:00	151	151	100	158	101	103	126	126	129	127
22:00	124	105	108	130	94	85	99	101	119	106
23:00	85	66	75	76	57	67	76	70	76	72
Total	**7254**	**8142**	**6533**	**7156**	**6728**	**6530**	**6752**	**7081**	**6845**	**7014**



Summary

	from	to	
AM Peak	8:00 AM	9:00 AM	**574**
PM Peak	4:00 PM	5:00 PM	**696**
		Week Day Average	**7081**
		Weekend Day Average	**6845**
		7 Day Average	**7014**

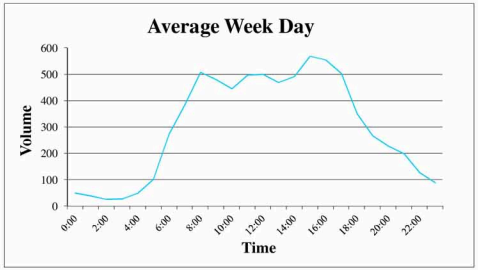
Site 3 N

Weekday Average **Vehicle Class**

Time	Total	1	2	3	4	5	6	7	8	9	10	11	12	13
0:00	66	21	2	3	1	0	1	0	1	16	21	0	0	0
1:00	50	10	2	2	0	0	0	0	1	16	19	0	0	0
2:00	60	14	1	3	1	0	0	0	1	14	26	0	0	0
3:00	68	16	1	3	0	0	0	0	2	16	28	0	0	0
4:00	89	25	1	7	1	0	0	0	2	20	34	0	0	0
5:00	150	74	4	5	0	0	0	0	3	21	43	0	0	0
6:00	270	191	6	10	2	0	1	1	3	22	31	0	0	0
7:00	408	317	11	21	6	0	1	2	2	19	30	0	0	0
8:00	504	417	13	20	5	0	1	1	3	18	28	0	0	0
9:00	463	373	19	21	4	1	1	1	2	22	18	0	0	0
10:00	430	341	27	24	6	1	1	2	2	15	11	0	0	0
11:00	465	380	21	24	5	0	1	2	3	15	14	0	0	1
12:00	449	362	20	29	5	0	2	3	1	14	12	0	0	0
13:00	458	373	23	26	6	1	1	2	4	13	9	0	0	0
14:00	514	438	23	24	6	1	1	2	2	9	9	0	0	0
15:00	556	481	22	24	5	0	2	3	2	8	9	0	0	0
16:00	594	526	17	26	4	1	1	2	2	8	8	0	0	0
17:00	526	472	11	15	3	0	2	2	2	8	11	0	0	0
18:00	312	270	7	10	1	0	0	2	2	10	11	0	0	0
19:00	202	163	5	7	2	0	1	0	2	10	12	0	0	0
20:00	150	105	5	7	1	0	1	0	2	12	17	0	0	0
21:00	126	77	4	3	1	0	1	1	2	20	18	0	0	0
22:00	101	51	3	2	0	0	0	1	2	23	18	0	0	0
23:00	70	30	2	2	1	0	0	0	2	14	20	0	0	0
Total	7081	5525	248	319	65	7	20	28	48	363	455	2	0	1

Site 121954 **Site3 S Pacific Hwy 200m N of Broken Head Rd** **South** **Lane 1**

	5	6	7	1	2	3	4			
Day	8/03/2012	Fri	Sat	Sun	Mon	Tue	Wed	W/Day	W/End	7 Day
Time	8/03/2012	9-Mar-12	10-Mar-12	11-Mar-12	12-Mar-12	13-Mar-12	14-Mar-12	Ave.	Ave.	Ave
0:00	73	57	70	53	26	43	42	48	62	52
1:00	48	43	46	24	27	33	37	38	35	37
2:00	30	29	28	26	17	22	27	25	27	26
3:00	39	25	32	17	29	19	20	26	25	26
4:00	48	63	35	28	66	34	31	48	32	44
5:00	103	112	51	88	101	93	101	102	70	93
6:00	274	284	157	114	297	259	255	274	136	234
7:00	392	365	240	183	400	375	392	385	212	335
8:00	507	521	394	290	534	469	511	508	342	461
9:00	478	490	549	400	476	485	472	480	475	479
10:00	355	492	568	518	507	427	447	446	543	473
11:00	537	583	594	579	518	416	428	496	587	522
12:00	483	551	568	581	509	477	476	499	575	521
13:00	449	525	546	584	495	426	452	469	565	497
14:00	501	533	465	591	529	432	463	492	528	502
15:00	600	655	480	626	547	480	563	569	553	564
16:00	563	695	422	536	520	495	504	555	479	534
17:00	519	609	320	425	468	462	460	504	373	466
18:00	367	415	293	320	331	307	337	351	307	339
19:00	258	383	247	254	221	224	246	266	251	262
20:00	228	333	175	145	188	217	170	227	160	208
21:00	189	253	124	138	195	178	175	198	131	179
22:00	141	179	114	90	107	112	93	126	102	119
23:00	99	116	75	41	82	56	90	89	58	80
Total	**7281**	**8311**	**6593**	**6651**	**7190**	**6541**	**6792**	**7223**	**6622**	**7051**



Summary	from	to	
AM Peak	11:00 AM	12:00 PM	583
PM Peak	4:00 PM	5:00 PM	695
Week Day Average			7223
Weekend Day Average			6622
7 Day Average			7051

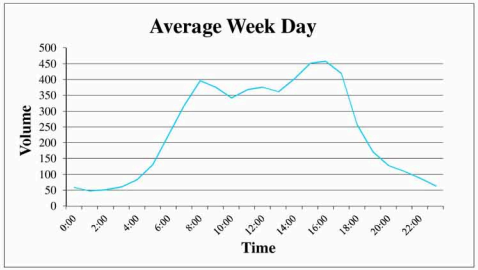
Site 3 S

Weekday Average — **Vehicle Class**

Time	Total	1	2	3	4	5	6	7	8	9	10	11	12	13
0:00	48	21	1	1	0	0	0	0	0	5	19	0	0	0
1:00	38	18	1	0	0	0	0	0	0	6	11	0	0	0
2:00	25	11	0	2	0	0	0	0	0	6	6	0	0	0
3:00	26	13	1	2	0	0	0	0	0	4	6	0	0	0
4:00	48	30	3	4	2	0	0	1	0	5	4	0	0	0
5:00	102	76	5	7	3	0	0	0	1	6	4	0	0	0
6:00	274	223	11	12	4	1	1	2	1	11	8	0	0	0
7:00	385	319	14	25	3	1	2	2	2	8	7	0	0	0
8:00	508	438	18	20	4	1	2	2	2	13	8	1	0	0
9:00	480	407	22	22	5	0	1	2	2	10	8	0	0	0
10:00	446	369	23	21	3	1	1	1	2	13	10	1	0	0
11:00	496	403	28	21	6	0	0	0	2	18	17	0	0	0
12:00	499	401	27	23	5	1	2	1	3	16	19	1	0	0
13:00	469	361	24	22	5	1	2	2	4	26	23	0	0	0
14:00	492	386	21	23	4	1	1	2	2	29	24	0	0	0
15:00	569	461	17	24	6	0	2	2	4	25	29	0	0	0
16:00	555	463	15	16	5	0	2	1	5	25	24	0	0	0
17:00	504	426	11	9	2	1	1	1	3	21	29	0	0	0
18:00	351	278	9	8	1	0	1	1	2	21	31	0	0	0
19:00	266	193	6	7	1	0	1	2	2	21	34	0	0	0
20:00	227	148	5	5	1	0	0	0	3	21	43	0	0	0
21:00	198	115	3	9	0	0	0	0	2	13	55	0	0	0
22:00	126	70	1	4	1	0	0	0	1	13	36	0	0	0
23:00	89	45	1	2	0	0	0	0	2	12	26	0	0	0
Total	7223	5676	267	288	62	8	19	22	46	348	481	5	0	1

Site 121954 **Site4 N Pacific Hwy 500m N of Byron Ck Bridge** **North** **Lane 1 & 2**

	5	6	7	1	2	3	4			
Day	8/03/2012	Fri	Sat	Sun	Mon	Tue	Wed	W/Day	W/End	7 Day
Time	8/03/2012	9-Mar-12	10-Mar-12	11-Mar-12	12-Mar-12	13-Mar-12	14-Mar-12	Ave.	Ave.	Ave
0:00	42	72	45	51	66	50	63	59	48	56
1:00	58	56	50	34	29	54	43	48	42	46
2:00	54	57	29	34	50	41	54	51	32	46
3:00	90	65	44	19	35	71	39	60	32	52
4:00	85	122	56	24	44	85	82	84	40	71
5:00	126	147	85	41	95	138	146	130	63	111
6:00	247	235	159	70	203	215	224	225	115	193
7:00	314	346	180	113	288	323	321	318	147	269
8:00	439	408	314	176	357	377	402	397	245	353
9:00	402	434	422	343	357	334	354	376	383	378
10:00	326	387	447	382	385	325	288	342	415	363
11:00	336	425	430	521	359	345	372	367	476	398
12:00	391	467	458	513	372	341	305	375	486	407
13:00	371	446	428	538	378	316	297	362	483	396
14:00	435	479	403	559	394	335	370	403	481	425
15:00	489	524	404	618	422	388	430	451	511	468
16:00	472	567	368	521	444	369	438	458	445	454
17:00	421	483	294	453	405	355	433	419	374	406
18:00	229	340	225	333	239	260	220	258	279	264
19:00	153	243	147	257	174	140	149	172	202	180
20:00	147	180	91	200	110	95	110	128	146	133
21:00	133	128	76	153	87	89	111	110	115	111
22:00	108	95	85	122	77	79	83	88	104	93
23:00	76	62	65	67	50	61	72	64	66	65
Total	**5944**	**6768**	**5305**	**6142**	**5420**	**5186**	**5406**	**5745**	**5724**	**5739**



Summary

	from	to	
AM Peak	8:00 AM	9:00 AM	**439**
PM Peak	4:00 PM	5:00 PM	**567**
		Week Day Average	**5745**
		Weekend Day Average	**5724**
		7 Day Average	**5739**

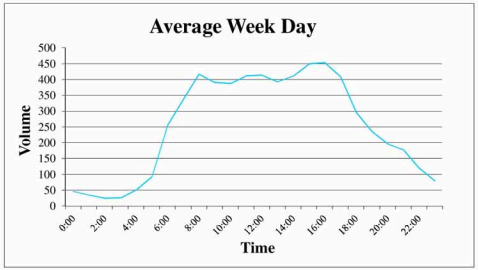
Site 4 N

Weekday Average **Vehicle Class**

Time	Total	1	2	3	4	5	6	7	8	9	10	11	12	13
0:00	59	17	2	2	1	0	0	1	1	15	19	0	0	0
1:00	48	7	1	3	0	0	0	0	1	16	20	0	0	0
2:00	51	8	1	3	1	0	0	0	1	13	25	0	0	0
3:00	60	11	1	3	0	0	0	0	2	16	27	0	0	0
4:00	84	22	1	6	1	1	0	0	1	18	34	0	0	0
5:00	130	59	3	4	0	0	0	0	3	20	40	0	0	0
6:00	225	148	5	12	2	0	0	1	3	22	30	0	0	0
7:00	318	235	8	19	5	0	1	1	2	17	30	0	0	0
8:00	397	314	10	19	4	0	1	1	2	18	27	0	0	0
9:00	376	288	15	25	3	1	1	2	3	20	18	0	0	0
10:00	342	262	22	22	5	1	1	2	2	15	11	0	0	0
11:00	367	283	20	27	4	0	1	2	3	14	14	0	0	1
12:00	375	292	19	25	5	0	2	3	1	15	12	0	0	0
13:00	362	284	20	23	6	1	1	2	3	12	9	0	0	0
14:00	403	331	21	23	5	0	1	2	2	9	8	0	0	0
15:00	451	373	20	27	4	0	2	3	2	9	9	0	0	0
16:00	458	395	15	23	3	1	1	2	2	8	8	0	0	0
17:00	419	368	9	16	2	0	2	2	2	7	10	0	0	0
18:00	258	214	8	11	1	0	0	1	2	10	10	0	0	0
19:00	172	132	4	8	2	0	1	1	2	11	11	0	0	0
20:00	128	83	5	8	2	0	0	0	2	10	18	0	0	0
21:00	110	61	3	4	1	0	0	1	2	19	18	0	0	0
22:00	88	42	3	2	0	0	0	1	1	22	16	0	0	0
23:00	64	24	1	3	1	0	0	0	2	14	19	0	0	0
Total	5745	4253	219	319	58	7	15	31	46	349	443	2	1	2

Site 121954 **Site4 S Pacific Hwy 500m N of Byron Ck Bridge** **South** **Lane 1**

	5	6	7	1	2	3	4			
Day	8/03/2012	Fri	Sat	Sun	Mon	Tue	Wed	W/Day	W/End	7 Day
Time	8/03/2012	9-Mar-12	10-Mar-12	11-Mar-12	12-Mar-12	13-Mar-12	14-Mar-12	Ave.	Ave.	Ave
0:00	68	47	62	50	30	44	41	46	56	49
1:00	42	42	41	21	25	34	34	35	31	34
2:00	28	29	24	26	18	19	28	24	25	25
3:00	34	26	31	15	30	20	18	26	23	25
4:00	61	61	36	29	65	34	34	51	33	46
5:00	87	105	51	78	95	90	86	93	65	85
6:00	242	271	143	112	280	242	241	255	128	219
7:00	366	321	224	151	346	324	332	338	188	295
8:00	418	431	317	261	445	378	413	417	289	380
9:00	366	420	428	355	387	394	385	390	392	391
10:00	373	426	463	463	420	349	367	387	463	409
11:00	432	484	495	500	448	342	352	412	498	436
12:00	403	467	483	531	419	385	393	413	507	440
13:00	376	426	467	513	451	332	379	393	490	421
14:00	407	459	411	536	452	354	388	412	474	430
15:00	486	537	386	547	418	375	432	450	467	454
16:00	446	594	362	462	430	397	400	453	412	442
17:00	421	508	282	382	399	356	364	410	332	387
18:00	323	379	250	269	267	244	269	296	260	286
19:00	222	349	203	224	187	194	226	236	214	229
20:00	209	310	168	141	148	170	148	197	155	185
21:00	160	239	104	120	183	156	155	179	112	160
22:00	139	162	91	86	95	109	96	120	89	111
23:00	91	96	66	34	80	51	83	80	50	72
Total	**6200**	**7189**	**5588**	**5906**	**6118**	**5393**	**5664**	**6113**	**5747**	**6008**



Summary

	from	to	
AM Peak	11:00 AM	12:00 PM	**484**
PM Peak	4:00 PM	5:00 PM	**594**
		Week Day Average	**6113**
		Weekend Day Average	**5747**
		7 Day Average	**6008**

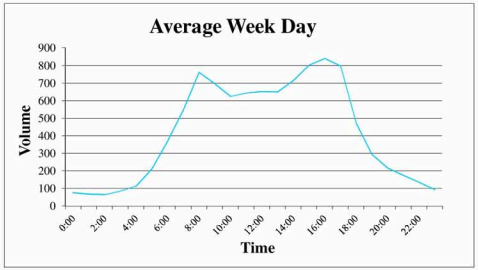
Site 4 S

Weekday Average — **Vehicle Class**

Time	Total	1	2	3	4	5	6	7	8	9	10	11	12	13
0:00	46	19	1	1	0	0	0	0	0	5	20	0	0	0
1:00	35	16	1	0	0	0	0	0	0	6	11	0	0	0
2:00	24	11	0	2	0	0	0	0	0	5	6	0	0	0
3:00	26	11	2	3	0	0	0	0	0	5	5	0	0	0
4:00	51	30	3	5	2	0	0	1	0	6	5	0	0	0
5:00	93	66	4	9	3	0	0	0	1	5	4	0	0	0
6:00	255	190	11	25	5	1	1	2	1	10	9	0	0	0
7:00	338	273	11	27	3	1	2	2	2	9	6	0	0	0
8:00	417	345	15	24	3	1	3	2	2	13	8	1	0	0
9:00	390	314	21	27	3	0	2	2	2	11	9	0	0	0
10:00	387	307	21	24	2	1	1	1	2	14	11	1	0	0
11:00	412	320	25	24	5	1	1	0	2	17	16	0	0	0
12:00	413	313	25	28	4	0	2	1	3	15	19	1	0	0
13:00	393	284	21	23	5	0	2	2	5	27	22	1	0	0
14:00	412	300	19	30	3	1	1	2	2	28	25	0	0	0
15:00	450	340	14	29	5	0	1	3	3	25	28	1	0	0
16:00	453	357	12	22	4	0	2	1	4	25	25	0	0	0
17:00	410	329	9	13	1	1	1	1	4	21	29	1	0	0
18:00	296	222	8	11	1	0	1	1	2	21	30	0	0	0
19:00	236	158	5	7	1	0	1	1	2	22	36	0	0	0
20:00	197	117	4	9	1	0	0	0	3	19	42	1	0	0
21:00	179	94	3	10	0	0	1	0	2	14	55	0	0	0
22:00	120	63	1	5	1	0	0	0	1	13	35	0	0	0
23:00	80	37	1	4	0	0	0	0	2	12	25	0	0	0
Total	6113	4517	238	360	54	7	24	26	46	347	481	8	1	2

Site 121954 **Site5 N Pacific Hwy 500m N of Helena Rd.** **North** **Lane 1**

	5	6	7	1	2	3	4			
Day	8/03/2012	Fri	Sat	Sun	Mon	Tue	Wed	W/Day	W/End	7 Day
Time	8/03/2012	9-Mar-12	10-Mar-12	11-Mar-12	12-Mar-12	13-Mar-12	14-Mar-12	Ave.	Ave.	Ave
0:00	71	75	66	84	79	67	89	76	75	76
1:00	83	87	63	56	43	71	51	67	60	65
2:00	51	72	44	59	66	52	78	64	52	60
3:00	112	87	69	33	58	99	68	85	51	75
4:00	118	154	77	38	85	109	112	116	58	99
5:00	214	239	148	82	177	222	208	212	115	184
6:00	399	377	234	147	345	375	356	370	191	319
7:00	575	560	336	206	498	565	537	547	271	468
8:00	813	770	521	344	729	716	779	761	433	667
9:00	726	786	736	572	657	640	674	697	654	684
10:00	565	694	777	694	674	604	583	624	736	656
11:00	612	705	780	764	671	595	632	643	772	680
12:00	669	758	734	774	636	616	575	651	754	680
13:00	661	802	679	811	633	597	554	649	745	677
14:00	735	802	668	866	707	651	683	716	767	730
15:00	858	899	680	952	757	753	750	803	816	807
16:00	863	989	595	827	815	715	819	840	711	803
17:00	838	906	499	733	716	731	789	796	616	745
18:00	464	574	399	548	416	476	427	471	474	472
19:00	282	430	260	380	251	251	259	295	320	302
20:00	223	295	163	285	206	172	186	216	224	219
21:00	215	204	153	228	138	147	171	175	191	179
22:00	152	153	153	146	109	135	131	136	150	140
23:00	104	107	111	95	75	85	99	94	103	97
Total	**10403**	**11525**	**8945**	**9724**	**9541**	**9444**	**9610**	**10105**	**9335**	**9885**



Summary	from	to	
AM Peak	8:00 AM	9:00 AM	813
PM Peak	4:00 PM	5:00 PM	989
Week Day Average			10105
Weekend Day Average			9335
7 Day Average			9885

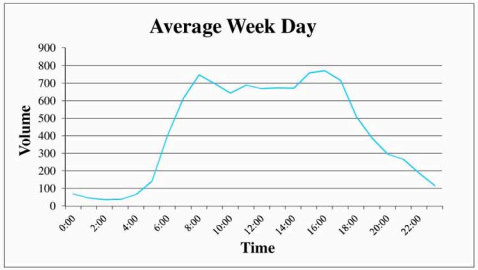
Site 5 N

Weekday Average — **Vehicle Class**

Time	Total	1	2	3	4	5	6	7	8	9	10	11	12	13
0:00	76	30	2	3	2	1	0	0	1	16	20	0	0	0
1:00	67	18	1	3	1	0	0	0	1	20	20	0	0	1
2:00	64	16	1	4	1	0	0	0	1	17	24	0	0	0
3:00	85	29	1	4	1	0	0	0	3	19	27	0	0	1
4:00	116	41	2	9	1	1	0	0	4	22	35	0	0	1
5:00	212	111	4	12	5	2	0	0	6	30	38	0	0	3
6:00	370	269	7	20	5	1	1	2	4	27	32	0	0	1
7:00	547	432	10	37	7	1	1	2	2	23	30	1	0	1
8:00	761	637	14	47	7	0	1	1	3	24	27	0	0	0
9:00	697	569	20	47	5	1	1	3	3	26	20	1	0	2
10:00	624	496	31	51	6	1	1	3	3	20	12	0	0	0
11:00	643	516	24	52	8	0	1	3	3	20	13	0	0	1
12:00	651	527	25	49	6	1	3	3	2	18	14	1	0	1
13:00	649	530	26	46	11	1	2	3	4	16	11	0	0	0
14:00	716	596	28	50	12	1	2	3	2	13	9	0	0	0
15:00	803	685	23	52	8	0	3	4	2	14	11	0	0	1
16:00	840	732	22	53	5	1	2	3	3	10	9	0	0	0
17:00	796	713	14	37	3	0	2	2	4	8	12	0	0	0
18:00	471	414	10	19	2	0	0	2	3	10	10	0	0	0
19:00	295	243	5	16	2	0	1	1	2	12	11	0	0	0
20:00	216	159	5	14	4	0	1	0	2	12	18	0	0	0
21:00	175	122	4	6	1	0	0	2	2	21	17	0	0	0
22:00	136	81	4	5	1	0	0	1	2	24	18	0	0	0
23:00	94	50	2	4	2	0	0	0	2	15	17	0	0	1
Total	10105	8015	284	642	108	15	24	41	64	437	456	4	0	15

Site 121954 **Site5 S Pacific Hwy 300m N of Helena Rd.** **South** **Lane 1**

	5	6	7	1	2	3	4			
Day	8/03/2012	Fri	Sat	Sun	Mon	Tue	Wed	W/Day	W/End	7 Day
Time	8/03/2012	9-Mar-12	10-Mar-12	11-Mar-12	12-Mar-12	13-Mar-12	14-Mar-12	Ave.	Ave.	Ave
0:00	89	81	106	91	51	67	58	69	99	78
1:00	70	44	77	42	30	44	46	47	60	50
2:00	52	43	42	49	30	23	32	36	46	39
3:00	61	38	46	22	40	24	28	38	34	37
4:00	70	77	42	47	91	45	51	67	45	60
5:00	149	153	85	114	139	138	127	141	100	129
6:00	390	414	196	181	429	383	405	404	189	343
7:00	639	576	345	219	632	605	622	615	282	520
8:00	786	737	485	396	760	728	721	746	441	659
9:00	743	684	658	591	692	667	705	698	625	677
10:00	687	681	712	734	656	586	604	643	723	666
11:00	709	780	782	795	731	638	590	690	789	718
12:00	652	731	766	799	654	649	655	668	783	701
13:00	684	726	757	818	724	564	662	672	788	705
14:00	650	756	712	807	703	618	623	670	760	696
15:00	758	882	685	811	721	659	768	758	748	755
16:00	774	941	597	715	716	722	694	769	656	737
17:00	717	818	523	646	710	660	677	716	585	679
18:00	515	629	478	481	462	456	493	511	480	502
19:00	366	543	379	421	315	348	366	388	400	391
20:00	293	512	283	252	212	246	220	297	268	288
21:00	267	344	222	199	259	238	223	266	211	250
22:00	229	249	196	153	140	172	152	188	175	184
23:00	129	148	118	65	109	77	122	117	92	110
Total	**10479**	**11587**	**9292**	**9448**	**10006**	**9357**	**9644**	**10215**	**9370**	**9973**



Summary	from	to	
AM Peak	8:00 AM	9:00 AM	786
PM Peak	4:00 PM	5:00 PM	941
Week Day Average			10215
Weekend Day Average			9370
7 Day Average			9973

Site 5 S

Weekday Average **Vehicle Class**

Time	Total	1	2	3	4	5	6	7	8	9	10	11	12	13
0:00	69	36	1	3	1	0	0	0	1	8	18	0	0	0
1:00	47	26	1	1	1	0	0	0	1	8	11	0	0	0
2:00	36	17	0	4	0	0	0	0	0	8	6	0	0	0
3:00	38	18	2	4	1	0	0	0	0	7	5	0	0	0
4:00	67	45	3	5	3	1	0	1	0	5	4	0	0	0
5:00	141	105	7	13	2	0	0	1	1	7	5	0	0	0
6:00	404	324	15	25	9	1	1	1	2	15	10	0	0	0
7:00	615	518	17	40	9	1	1	3	3	13	7	0	0	0
8:00	746	644	22	37	6	1	2	2	3	19	9	1	0	0
9:00	698	590	29	44	6	1	1	3	2	14	7	0	0	0
10:00	643	530	28	38	7	1	1	1	3	19	12	1	0	0
11:00	690	564	31	35	8	2	1	2	4	25	17	0	0	0
12:00	668	540	31	39	9	1	1	1	3	20	20	1	0	1
13:00	672	532	27	37	9	0	1	3	6	33	25	0	0	0
14:00	670	535	22	41	8	1	1	2	4	31	26	0	0	0
15:00	758	615	21	48	8	0	1	2	4	30	28	1	0	0
16:00	769	659	17	28	5	0	2	2	4	26	26	0	0	0
17:00	716	622	13	18	4	1	1	2	4	23	28	1	0	1
18:00	511	429	10	13	2	0	0	1	2	22	31	1	0	0
19:00	388	301	7	11	2	0	1	1	3	26	35	0	0	0
20:00	297	211	5	10	1	0	0	0	3	21	44	0	0	0
21:00	266	178	4	10	1	0	0	0	2	16	55	0	0	0
22:00	188	125	2	6	1	0	0	0	1	17	35	0	0	0
23:00	117	68	1	5	1	0	0	0	1	15	26	0	0	0
Total	10215	8230	317	513	105	12	17	29	59	429	490	7	2	5

Appendix R – Predicted Noise Results at all Sensitive Receivers, LAeq and Lmax dB(A) (All receivers at 1.5m)

Receiver ID	Future Existing 2014 Noise Level		Type of development[1]	EDRTN Target Criteria[2]		Development 2014 Noise Level		Development 2024 Noise Level		Development 2024 - Future Existing 2014 (Noise Level Increase)		Receiver identified and assessed in EA[3]	Acquired (whole or partially by RMS) or no longer identified as a residential receiver (e.g. shed)	EDRTN Target Criteria Exceeded?	2024 Acute Noise Criteria Exceeded (65 dB Day or 80 dB Night)	Treatment Required with Consideration to the EDRTN	Treatment provided or pending	Additional Treatment required	Pass-by Maximum Noise Level dB(A)	
	Day	Night		Day	Night	Day	Night	Day	Night	Day	Night								Predicted Development Lmax	Lmax - Development 2014 Leq (Night)
Brook Farm	46.5	42.5	new road	Not a sensitive receiver		58.5	55.0	59.5	55.5	13.0	13.0	✓							60	Lmax < 65
Ewingsdale Community Hall	57.5	53.5	new road	40.0	40.0	62.0	56.0	62.5	57.0	5.0	0	✓		✓		✓	✓		63	Lmax < 65
Feros Village Bangalow	53.5	49.5	new road	35.0	35.0	52.5	48.5	53.5	49.5	0	0								59	Lmax < 65
Macadamia Castle	66.5	63.0	new road	60.0	-	61.5	57.0	62.5	58.0	-4.0	-5.0	✓							76	19
Newrybar Public School	59.0	55.0	new road	55.0		56.0	52.0	57.0	53.0	-2.0	0	✓		✓		✓			67	15
Stone Fruit Farm	54.5	50.5	new road	Not a sensitive receiver		57.5	53.5	58.5	54.5	4.0	4.0								62	Lmax < 65
RT18	51.5	47.5	new road	55.0	50.0	55.0	51.0	56.0	52.0	4.5	4.5			✓		✓	✓		52	Lmax < 65
RT23	51.5	48.0	new road	55.0	50.0	54.0	50.0	55.0	51.0	3.5	3.0			✓		✓	✓		50	Lmax < 65
RT24	51.5	47.5	new road	55.0	50.0	54.0	50.0	55.0	51.0	3.5	3.5			✓		✓	✓		48	Lmax < 65
T2	48.0	44.5	new road	55.0	50.0	52.0	48.0	53.5	49.0	5.5	4.5								47	Lmax < 65
T7	50.5	46.5	new road	55.0	50.0	53.5	49.5	54.5	50.5	4.0	4.0			✓		✓		✓	45	Lmax < 65
T9	49.5	45.5	new road	55.0	50.0	52.5	48.5	53.5	49.5	4.0	4.0								44	Lmax < 65
T10	51.0	47.0	new road	55.0	50.0	54.0	49.5	55.0	50.5	4.0	3.5			✓		✓		✓	46	Lmax < 65
T13	51.0	47.5	new road	55.0	50.0	53.5	49.5	54.5	50.5	3.5	3.0			✓		✓		✓	48	Lmax < 65
T16	48.5	45.0	new road	55.0	50.0	46.5	42.5	48.0	43.5	-0.5	-1.5								54	Lmax < 65
T17	47.0	43.0	new road	55.0	50.0	46.0	41.5	47.0	42.5	0.0	-0.5								55	Lmax < 65
S10	64.5	60.0	new road	55.0	50.0	63.0	57.0	64.5	57.0	0.0	-3.0								72	15
59-HO1	50.0	45.0	new road	55.0	50.0	52.5	48.0	53.5	49.0	3.5	4.0	✓							51	Lmax < 65
65-HO1	47.0	42.0	new road	55.0	50.0	53.5	49.0	54.5	50.0	7.5	8.0	✓							55	Lmax < 65
72-HO1	56.5	49.0	new road	57.0	50.0	57.5	50.0	58.0	49.0	1.5	-3.0	✓		✓		✓		✓	50	Lmax < 65
73-HO1	49.5	44.5	new road	55.0	50.0	53.0	48.5	54.0	49.0	4.5	4.5	✓							52	Lmax < 65
79-HO1	52.5	46.0	new road	55.0	50.0	54.0	49.0	55.0	49.5	2.5	3.5	✓							52	Lmax < 65
80-HO1	61.0	53.0	new road	61.5	53.5	61.0	53.5	62.5	50.0	1.5	-3.0	✓		✓		✓		✓	52	Lmax < 65
81-HO1	71.0	67.5	new road	71.5	68.0	62.5	55.5	63.5	56.5	-7.5	-11.0	✓							89	33
82-HO1	61.0	53.0	new road	61.5	53.5	59.5	52.5	60.5	50.0	-0.5	-3.0	✓							54	Lmax < 65
85-HO1	60.0	56.5	new road	60.5	57.0	59.5	55.5	60.5	56.5	0.5	0	✓							67	12
86-HO1	45.0	39.0	new road	55.0	50.0	52.0	48.0	53.5	48.5	8.5	9.5	✓							54	Lmax < 65
87-HO1	59.5	51.0	new road	60.0	51.5	59.0	51.0	60.0	46.0	0.5	-5.0	✓							51	Lmax < 65
88-HO1	53.5	49.5	new road	55.0	50.0	58.5	54.0	59.5	55.0	6.0	5.5	✓		✓		✓	✓		64	Lmax < 65
93-HO1	55.0	47.5	new road	55.5	50.0	54.0	49.0	55.5	49.5	0.5	2.0	✓							57	Lmax < 65
94-HO1	68.0	64.5	new road	68.5	65.0	62.0	57.5	63.0	58.5	-5.0	-6.0	✓							81	23
98-HO1	46.0	40.0	new road	55.0	50.0	47.0	41.0	48.5	41.0	2.5	1.0	✓							49	Lmax < 65
98-HO2	48.0	44.0	new road	55.0	50.0	48.5	44.5	49.5	45.5	1.5	1.5	✓							51	Lmax < 65
99-HO1	63.5	55.5	new road	64.0	56.0	60.0	53.0	61.5	50.5	-2.0	-5.0	✓							58	Lmax < 65
102-HO1	65.5	57.5	new road	66.0	58.0	62.0	54.0	63.0	50.5	-2.5	-7.0	✓					✓		59	Lmax < 65
106-HO1	62.5	57.0	new road	63.0	57.5	60.5	55.0	61.5	55.5	-1.0	-1.5	✓							70	15
109-HO1	57.5	51.0	new road	58.0	51.5	57.0	51.5	58.5	51.5	1.0	0.5	✓		✓		✓		✓	58	Lmax < 65
110-HO1	67.0	63.5	new road	67.5	64.0	59.5	55.0	60.5	56.0	-6.5	-7.5	✓							79	24
113-HO1	69.0	61.5	new road	69.5	62.0	63.5	57.0	64.5	56.0	-4.5	-5.5	✓							73	16
121-HO1	66.5	63.0	new road	67.0	63.5	64.5	60.5	66.0	61.5	-0.5	-1.5	✓			✓		✓		80	19
121-HO2	67.5	64.0	new road	68.0	64.5	64.5	60.5	65.5	61.5	-2.0	-2.5	✓			✓		✓		82	21
122-HO1	53.0	49.0	new road	55.0	50.0	53.5	49.0	54.5	50.0	1.5	1.0	✓							57	Lmax < 65
125-HO1	65.0	61.5	new road	65.5	62.0	64.0	60.0	65.0	61.0	0	-0.5	✓			✓		✓		78	18
127-HO1	54.0	50.0	new road	55.0	50.5	53.5	49.5	54.5	50.5	0.5	0.5	✓					✓		56	Lmax < 65
128-HO1	49.5	46.0	new road	55.0	50.0	49.0	45.0	50.0	46.0	0.5	0	✓							52	Lmax < 65
128-HO2	44.5	40.5	new road	55.0	50.0	46.0	42.0	47.0	43.0	2.5	2.5	✓							50	Lmax < 65
129-HO1	62.5	59.0	new road	63.0	59.5	71.5	67.5	72.5	68.5	10.0	9.5	✓	✓						80	12
130-HO1	66.5	63.0	new road	67.0	63.5	65.5	61.5	66.5	62.5	0	-0.5	✓			✓		✓		78	16
137-HO1	65.0	61.5	new road	65.5	62.0	62.5	58.5	63.5	59.5	-1.5	-2.0	✓	✓						77	19
141-HO1	56.5	53.5	new road	57.0	54.0	62.0	59.0	63.5	60.0	7.0	6.5	✓		✓	✓		✓		69	10
142-HO1	54.0	50.5	new road	55.0	51.0	52.5	48.5	53.5	49.0	-0.5	-1.5	✓							62	Lmax < 65
146-HO1	67.5	64.0	new road	68.0	64.5	62.0	58.0	63.5	59.0	-4.0	-5.0	✓					✓		82	24
149-HO1	69.5	66.0	new road	70.0	66.5	64.5	60.5	65.5	61.5	-4.0	-4.5	✓			✓		✓		86	25
154-HO1	51.5	48.0	new road	55.0	50.0	55.0	51.0	56.0	52.0	4.5	4.0	✓		✓		✓	✓		50	Lmax < 65
155-HO1	59.5	56.0	new road	60.0	56.5	70.0	66.5	71.0	67.5	11.5	11.5	✓	✓						81	14
156-HO1	59.0	55.5	new road	59.5	56.0	57.0	52.5	58.0	53.5	-1.0	-2.0								67	15
157-HO1	57.0	53.5	new road	57.5	54.0	56.0	51.5	57.0	52.5	0	-1.0	✓							68	17
158-HO1	64.5	61.0	new road	65.0	61.5	63.0	59.0	64.0	60.0	-0.5	-1.0	✓			✓		✓		75	16
159-HO1	59.5	56.0	new road	60.0	56.5	58.5	54.5	59.5	55.5	0	-0.5								67	12
161-HO1	49.0	45.5	new road	55.0	50.0	52.5	48.5	53.5	49.5	4.5	4.0	✓					✓		50	Lmax < 65

Receiver ID	Future Existing 2014 Noise Level		Type of development[1]	EDRTN Target Criteria[2]		Development 2014 Noise Level		Development 2024 Noise Level		Development 2024 - Future Existing 2014 (Noise Level Increase)		Receiver identified and assessed in EA[3]	Acquired (whole or partially by RMS) or no longer identified as a residential receiver (e.g. shed)	EDRTN Target Criteria Exceeded?	2024 Acute Noise Criteria Exceeded (65 dB Day or 60 dB Night)	Treatment Required with Consideration to the EDRTN	Treatment provided or pending	Additional Treatment required	Pass-by Maximum Noise Level dB(A)	
	Day	Night		Day	Night	Day	Night	Day	Night	Day	Night								Predicted Development Lmax	Lmax - Development 2014 Leq (Night)
161-HO2	50.0	46.0	new road	55.0	50.0	54.0	50.5	55.5	51.5	5.5	5.5	✓		✓		✓	✓		52	Lmax < 65
163-HO1	46.5	43.0	new road	55.0	50.0	45.0	41.0	46.0	42.0	-0.5	-1.0	✓							56	Lmax < 65
165-HO1	58.5	55.0	new road	59.0	55.5	56.5	52.5	57.5	53.5	-1.0	-1.5	✓							68	16
166-HO1	56.0	52.5	new road	56.5	53.0	53.5	49.0	54.5	50.0	-1.5	-2.5	✓							67	18
167-HO1	65.0	61.0	new road	65.5	61.5	59.5	55.0	60.5	56.0	-4.5	-5.0	✓							76	21
168-HO1	44.5	41.0	new road	55.0	50.0	48.5	44.5	49.5	45.5	5.0	4.5	✓							50	Lmax < 65
168-HO2	47.0	43.5	new road	55.0	50.0	51.0	47.0	52.0	48.0	5.0	4.5								49	Lmax < 65
170-HO1	59.5	56.0	new road	60.0	56.5	57.0	52.5	58.0	53.5	-1.5	-2.5	✓							70	18
175-HO1	59.0	55.5	new road	59.5	56.0	70.5	67.0	71.5	68.0	12.5	12.5	✓	✓	✓	✓	✓			78	11
175-HO2	55.0	51.5	new road	55.5	52.0	63.0	59.0	64.0	60.0	9.0	8.5	✓		✓	✓	✓	✓		68	9
178-HO1	59.5	56.0	new road	60.0	56.5	55.5	51.0	56.5	52.0	-3.0	-4.0	✓							73	22
183-HO1	71.0	67.5	new road	71.5	68.0	64.5	59.5	65.5	60.5	-5.5	-7.0	✓			✓	✓	✓		89	29
184-HO1	69.0	65.5	new road	69.5	66.0	63.5	58.5	64.5	60.0	-4.5	-5.5	✓			✓	✓	✓		86	28
184-HO2	70.0	66.0	new road	70.5	66.5	63.0	58.0	64.0	59.0	-6.0	-7.0	✓							85	27
185-HO1	66.5	63.0	new road	67.0	63.5	67.5	64.0	69.0	65.0	2.5	2.0	✓		✓	✓	✓	✓		80	16
186-HO1	72.5	69.0	new road	73.0	69.5	67.0	63.5	68.0	64.5	-4.5	-4.5	✓			✓	✓	✓		90	26
188-HO1	72.0	68.5	new road	72.5	69.0	64.5	60.0	65.5	61.0	-6.5	-7.5	✓			✓	✓	✓		89	29
190-HO1	62.0	58.5	new road	62.5	59.0	72.0	68.0	73.0	69.0	11.0	10.5	✓	✓	✓	✓	✓	✓		81	13
192-HO1	56.5	52.5	new road	57.0	53.0	63.5	59.5	64.5	60.5	8.0	8.0	✓		✓	✓	✓	✓		62	Lmax < 65
194-HO1	74.0	70.5	new road	74.5	71.0	64.0	57.5	65.0	58.5	-9.0	-12.0	✓			✓	✓	✓		92	34
196-HO1	69.0	65.5	new road	69.5	66.0	62.0	57.0	63.0	58.0	-6.0	-7.5	✓							84	27
196-HO2	41.0	37.5	new road	55.0	50.0	42.0	38.0	43.0	39.0	2.0	1.5	✓							52	Lmax < 65
197-HO1	42.0	38.5	new road	55.0	50.0	43.0	39.0	44.0	40.0	2.0	1.5								50	Lmax < 65
199-HO1	42.0	38.5	new road	55.0	50.0	42.5	38.5	43.5	39.5	1.5	1.0	✓							52	Lmax < 65
204-HO1	58.5	55.0	new road	59.0	55.5	67.0	63.5	68.0	64.5	9.5	9.5	✓		✓	✓	✓	✓		76	12
204-HO2	59.5	56.0	new road	60.0	56.5	73.5	70.0	74.5	71.0	15.0	15.0	✓	✓						85	15
206-HO1	49.0	45.5	new road	55.0	50.0	49.0	45.0	50.0	46.0	1.0	0.5	✓							54	Lmax < 65
209-HO1	69.5	66.0	new road	70.0	66.5	62.5	58.0	63.5	59.0	-6.0	-7.0	✓							84	26
211-HO1	49.0	45.5	new road	55.0	50.0	46.5	42.5	48.0	43.5	-1.0	-2.0	✓							52	Lmax < 65
214-HO1	48.0	44.5	new road	55.0	50.0	45.0	40.5	46.0	41.5	-2.0	-3.0	✓							50	Lmax < 65
221-HO1	48.5	45.0	new road	55.0	50.0	45.0	40.5	46.0	41.5	-2.5	-3.5	✓							52	Lmax < 65
224-HO1	47.5	44.0	new road	55.0	50.0	52.5	49.0	53.5	50.0	6.0	6.0	✓							55	Lmax < 65
227-HO1	63.0	59.5	new road	63.5	60.0	60.0	55.5	61.0	57.0	-2.0	-2.5	✓							75	19
230-HO1	68.5	65.0	new road	69.0	65.5	62.5	58.0	63.5	59.0	-5.0	-6.0	✓							83	25
231-HO1	60.0	56.5	new road	60.5	57.0	68.5	65.0	69.5	66.0	9.5	9.5	✓		✓	✓	✓	✓		78	13
233-HO1	52.0	48.5	new road	55.0	50.0	46.5	42.0	47.5	43.0	-4.5	-5.5	✓							62	Lmax < 65
237-HO1	61.5	58.5	new road	62.0	59.0	54.5	49.5	55.5	50.5	-6.0	-8.0	✓	✓						75	25
238-HO1	68.0	64.5	new road	68.5	65.0	69.5	65.5	70.5	66.5	2.5	2.0	✓		✓	✓	✓	✓		84	19
238-HO2	74.5	71.0	new road	75.0	71.5	68.5	64.5	69.5	65.5	-5.0	-5.5	✓			✓	✓	✓		93	29
241-HO1	50.5	47.0	new road	55.0	50.0	55.5	51.5	56.5	52.5	6.0	5.5	✓		✓		✓	✓		54	Lmax < 65
242-HO1	62.0	58.5	new road	62.5	59.0	56.0	51.0	57.0	52.0	-5.0	-6.5	✓							77	26
248-HO1	68.0	65.0	new road	68.5	65.5	60.5	55.5	61.5	56.5	-6.5	-8.5	✓							84	28
249-HO1	54.0	50.5	new road	55.0	51.0	60.0	56.0	61.0	57.0	7.0	6.5	✓		✓		✓	✓		63	Lmax < 65
252-HO1	63.0	59.5	new road	63.5	60.0	58.0	54.0	59.0	55.0	-4.0	-4.5	✓							74	20
253-HO1	63.0	59.0	new road	63.5	59.5	63.5	60.0	64.5	61.0	1.5	2.0	✓		✓	✓	✓	✓		71	11
253-HO2	69.0	65.5	new road	69.5	66.0	63.5	59.0	64.5	60.0	-4.5	-5.5	✓			✓	✓	✓		84	25
254-HO1	69.5	66.0	new road	70.0	66.5	61.5	56.5	62.5	57.5	-7.0	-8.5	✓							85	29
255-HO1	57.0	53.5	new road	57.5	54.0	56.0	52.0	57.5	53.0	0.5	-0.5	✓							65	13
256-HO1	62.5	58.5	new road	63.0	59.0	58.5	54.5	59.5	55.5	-3.0	-3.0	✓							71	17
257-HO1	60.0	56.0	new road	60.5	56.5	57.5	53.5	58.5	54.5	-1.5	-1.5	✓							67	13
259-HO1	53.0	49.0	new road	55.0	50.0	52.0	48.0	53.0	49.0	0	0	✓							56	Lmax < 65
259-HO2	65.0	61.5	new road	65.5	62.0	58.5	54.0	59.5	55.0	-5.5	-6.5								76	22
260-HO1	59.5	55.5	new road	60.0	56.0	64.5	61.0	65.5	62.0	6.0	6.5	✓		✓	✓	✓	✓		71	10
260-HO2	59.5	56.0	new road	60.0	56.5	64.0	60.0	65.0	61.0	5.5	5.0			✓	✓	✓	✓		67	7
264-HO1	56.5	53.0	new road	57.0	53.5	69.5	66.0	70.5	67.0	14.0	14.0	✓	✓	✓	✓	✓	✓		75	9
266-HO1	61.0	57.0	new road	61.5	57.5	61.0	57.0	62.0	58.0	1.0	1.0	✓		✓		✓	✓		67	10
266-HO2	61.0	57.0	new road	61.5	57.5	60.5	56.5	61.5	57.5	0.5	0.5						✓		67	10
268-HO1	48.5	46.0	new road	55.0	50.0	51.0	47.0	52.0	48.0	2.5	2.0	✓							54	Lmax < 65
269-HO1	58.5	54.5	new road	59.0	55.0	67.0	63.5	68.0	64.5	9.5	10.0	✓		✓	✓	✓	✓		73	10
270-HO1	71.0	67.5	new road	71.5	68.0	61.5	56.0	62.5	57.0	-8.5	-10.5	✓							88	32
272-HO1	59.0	55.5	new road	59.5	56.0	55.5	51.5	56.5	52.5	-2.5	-3.0	✓							66	15

Receiver ID	Future Existing 2014 Noise Level		Type of development[1]	EDRTN Target Criteria[2]		Development 2014 Noise Level		Development 2024 Noise Level		Development 2024 - Future Existing 2014 (Noise Level Increase)		Receiver identified and assessed in EA[3]	Acquired (whole or partially by RMTA or no longer identified as a residential receiver (e.g. shed)	EDRTN Target Criteria Exceeded?	2024 Acute Noise Criteria Exceeded (55 dB Day or 60 dB Night)	Treatment Required with Consideration to the EDRTN	Treatment provided or pending	Additional Treatment required	Pass-by Maximum Noise Level dB(A)	
	Day	Night		Day	Night	Day	Night	Day	Night	Day	Night								Predicted Development Lmax	Lmax - Development 2014 Leq (Night)
273-HO1	60.0	56.5	new road	60.5	57.0	55.5	51.0	56.5	52.0	-3.5	-4.5	✓							69	18
275-HO1	62.0	58.5	new road	62.5	59.0	57.0	52.5	58.0	53.5	-4.0	-5.0	✓							72	19
276-HO1	56.5	52.5	new road	57.0	53.0	54.5	50.5	55.5	51.5	-1.0	-1.0	✓							62	Lmax < 65
277-HO1	70.0	66.5	new road	70.5	67.0	61.0	55.5	62.0	56.5	-8.0	-10.0	✓							85	30
280-HO1	54.0	50.5	new road	55.0	51.0	54.0	50.0	55.0	51.0	1.0	0.5	✓							58	Lmax < 65
283-HO1	55.5	51.5	new road	56.0	52.0	56.5	52.5	57.5	53.5	2.0	2.0	✓		✓		✓	✓		61	Lmax < 65
286-HO1	54.0	50.0	new road	55.0	50.5	54.5	50.5	55.5	51.5	1.5	1.5	✓		✓		✓	✓		60	Lmax < 65
291-HO1	63.0	60.0	new road	63.5	60.5	60.5	57.0	61.5	58.0	-1.5	-2.0	✓					✓		76	19
292-HO1	48.5	45.0	new road	55.0	50.0	50.5	46.5	51.5	47.5	3.0	2.5	✓							57	Lmax < 65
296-HO1	60.5	57.0	new road	61.0	57.5	59.0	55.0	60.5	56.0	0	-1.0	✓					✓		67	12
296-HO2	59.5	56.0	new road	60.0	56.5	54.5	50.5	55.5	51.5	-4.0	-4.5	✓					✓		69	18
299-HO1	48.0	44.5	new road	55.0	50.0	49.0	45.0	50.0	46.0	2.0	1.5	✓							54	Lmax < 65
304-HO1	50.5	46.5	new road	55.0	50.0	51.5	47.5	52.5	48.5	2.0	2.0	✓							55	Lmax < 65
307-HO1	59.5	56.0	new road	60.0	56.5	58.5	54.5	59.5	55.5	0	-0.5	✓							65	Lmax < 65
308-HO1	49.0	45.5	new road	55.0	50.0	49.5	45.5	50.5	46.5	1.5	1.0	✓							54	Lmax < 65
310-HO1	48.0	44.0	new road	55.0	50.0	49.5	44.5	49.5	45.5	1.5	1.5	✓							52	Lmax < 65
312-HO1	47.5	43.5	new road	55.0	50.0	48.0	44.0	49.0	45.0	1.5	1.5	✓							52	Lmax < 65
313-HO1	68.5	65.0	new road	69.0	65.5	64.5	61.0	65.5	62.0	-3.0	-3.0	✓			✓		✓	✓	83	22
314-HO1	55.0	51.5	new road	55.5	52.0	58.0	55.0	59.0	56.0	4.0	4.5	✓	✓	✓		✓	✓		68	13
322-HO1	51.5	47.5	new road	55.0	50.0	54.0	50.0	55.0	51.0	3.5	3.5	✓		✓		✓	✓		57	Lmax < 65
322-HO2	56.5	53.0	new road	57.0	53.5	57.0	53.5	58.0	54.5	1.5	1.5	✓		✓		✓	✓		64	Lmax < 65
322-HO3	59.5	55.5	new road	60.0	56.0	58.5	55.5	60.0	56.5	0.5	1.0			✓		✓	✓		67	12
323-HO1	66.5	63.0	new road	67.0	63.5	63.5	60.0	64.5	61.0	-2.0	-2.0	✓			✓	✓	✓		80	20
331-HO1	58.0	54.5	new road	58.5	55.0	62.0	58.0	63.0	59.0	5.0	4.5	✓		✓		✓	✓		69	11
335-HO1	54.5	51.0	new road	55.0	51.5	55.0	51.5	56.5	52.5	2.0	1.5	✓		✓		✓	✓		60	Lmax < 65
337-HO1	59.5	55.5	new road	60.0	56.0	58.5	55.0	59.5	56.0	0	0.5	✓					✓		67	12
344-HO1	60.0	56.5	new road	60.5	57.0	59.0	56.0	60.0	57.0	0	0.5	✓					✓		67	11
347-HO1	70.0	66.5	new road	70.5	67.0	62.0	59.5	63.0	60.5	-7.0	-6.0	✓			✓	✓	✓		77	18
354-HO2	48.5	45.0	new road	55.0	50.0	49.5	45.5	50.5	46.5	2.0	1.5	✓							52	Lmax < 65
355-HO1	47.5	43.5	new road	55.0	50.0	48.5	45.0	49.5	46.0	2.0	2.5	✓							48	Lmax < 65
358-HO1	68.0	64.5	new road	68.5	65.0	66.5	63.5	68.0	64.5	0	0	✓	✓						83	20
361-HO1	47.5	43.5	new road	55.0	50.0	48.5	44.5	49.5	45.5	2.0	2.0	✓							48	Lmax < 65
363-HO1	46.5	43.0	new road	55.0	50.0	48.0	44.0	49.0	45.0	2.5	2.0	✓							48	Lmax < 65
365-HO1	49.0	45.5	new road	55.0	50.0	51.5	47.5	52.5	48.5	3.5	3.0	✓							50	Lmax < 65
369-HO1	48.0	44.0	new road	55.0	50.0	48.0	44.0	49.0	45.0	1.0	1.0	✓							52	Lmax < 65
369-HO2	46.5	42.5	new road	55.0	50.0	46.0	42.0	47.0	43.0	0.5	0.5	✓							57	Lmax < 65
378-HO1	48.5	44.5	new road	55.0	50.0	50.5	47.0	51.5	48.0	3.0	3.5	✓							51	Lmax < 65
379-HO1	47.5	43.5	new road	55.0	50.0	50.0	46.5	51.0	47.5	3.5	4.0	✓							49	Lmax < 65
385-HO1	48.0	44.5	new road	55.0	50.0	50.5	47.0	51.5	48.0	3.5	3.5	✓							52	Lmax < 65
387-HO1	67.5	64.0	new road	68.0	64.5	58.5	53.0	59.5	54.0	-8.0	-10.0	✓							82	29
388-HO1	50.0	46.5	new road	55.0	50.0	51.0	47.0	52.0	48.0	2.0	1.5	✓							54	Lmax < 65
393-HO1	67.0	63.5	new road	67.5	64.0	57.5	54.0	58.5	55.0	-8.5	-8.5	✓							84	30
394-HO1	53.0	49.0	new road	55.0	50.0	49.0	44.5	50.0	45.5	-3.0	-3.5	✓							59	Lmax < 65
398-HO1	42.5	39.0	new road	55.0	50.0	42.5	38.5	43.5	39.5	1.0	0.5								52	Lmax < 65
401-HO1	75.5	69.0	new road	73.0	69.5	60.0	56.0	61.0	57.0	-11.5	-12.0	✓							91	35
405-HO1	52.0	48.5	new road	55.0	50.0	48.5	44.5	49.5	45.5	-2.5	-3.0	✓							59	Lmax < 65
406-HO1	71.0	67.5	new road	71.5	68.0	60.0	56.5	61.5	57.5	-9.5	-10.0	✓							89	33
407-HO1	65.5	62.0	new road	66.0	62.5	57.0	51.5	58.0	53.0	-7.5	-9.0	✓							80	28
409-HO1	70.0	66.5	new road	70.5	67.0	60.5	57.0	61.5	58.0	-8.5	-8.5	✓							87	30
413-HO1	72.0	68.5	new road	72.5	69.0	62.5	56.5	63.5	57.5	-8.5	-11.0	✓							89	33
415-HO1	52.5	49.0	new road	55.0	50.0	49.5	45.0	50.5	46.5	-2.0	-2.5	✓							59	Lmax < 65
416-HO1	68.0	64.5	new road	68.5	65.0	59.5	54.0	60.5	55.0	-7.5	-9.5	✓							83	29
419-HO1	66.0	62.0	new road	66.5	62.5	58.0	53.0	59.0	54.0	-7.0	-8.0	✓							78	25
420-HO1	45.0	41.0	new road	55.0	50.0	45.0	41.0	46.0	42.0	1.0	1.0	✓							54	Lmax < 65
423-HO1	64.5	61.0	new road	65.0	61.5	57.5	52.5	58.5	53.5	-6.0	-7.5	✓							78	25
424-HO1	65.5	61.5	new road	66.0	62.0	57.5	52.5	58.5	54.0	-7.0	-7.5	✓							78	25
426-HO1	59.5	56.0	new road	60.0	56.5	54.5	50.0	55.5	51.0	-4.0	-5.0	✓							72	22
429-HO1	52.5	48.5	new road	55.0	50.0	47.0	43.0	48.5	44.0	-4.0	-4.5	✓							61	Lmax < 65
431-HO1	65.5	62.0	new road	66.0	62.5	58.0	53.0	59.0	54.5	-6.5	-7.5	✓							79	26
433-HO1	45.0	41.5	new road	55.0	50.0	44.0	40.5	45.0	41.5	0	0	✓							53	Lmax < 65
434-HO1	59.5	56.0	new road	60.0	56.5	54.5	50.5	56.0	51.5	-3.5	-4.5	✓							72	22

Receiver ID	Future Existing 2014 Noise Level		Type of development[1]	EDRN Target Criteria[2]		Development 2014 Noise Level		Development 2024 Noise Level		Development 2024 - Future Existing 2014 (Noise Level Increase)		Receiver identified and assessed in EA[3]	Acquired (whole or partially by RMS) or no longer identified as a residential receiver (e.g. shed)	EDRN Target Criteria Exceeded?	2024 Acute Noise Criteria Exceeded (85 dB Day or 80 dB Night)	Treatment Required with Consideration to the EDRN	Treatment provided or pending	Additional Treatment required	Pass-by Maximum Noise Level dB(A)	
	Day	Night		Day	Night	Day	Night	Day	Night	Day	Night								Predicted Development Lmax	Lmax - Development 2014 Leq (Night)
436-HO1	66.5	63.0	new road	67.0	63.5	59.0	54.0	60.0	55.0	-6.5	-8.0	✓							80	26
438-HO1	52.0	48.0	new road	55.0	50.0	49.5	45.5	51.0	46.5	-1.0	-1.5	✓							58	Lmax < 65
441-HO1	58.0	54.5	new road	58.5	55.0	63.0	60.0	64.0	61.0	6.0	6.5	✓	✓						76	16
444-HO1	68.5	65.0	new road	69.0	65.5	60.5	55.0	61.5	56.5	-7.0	-8.5	✓							84	29
445-HO1	57.5	54.0	new road	58.0	54.5	52.5	48.5	53.5	49.5	-4.0	-4.5	✓							70	21
446-HO1	57.5	53.5	new road	58.0	54.0	52.5	48.0	53.5	49.0	-4.0	-4.5	✓							68	20
449-HO1	55.0	51.5	new road	55.5	52.0	50.5	46.5	51.5	47.0	-3.5	-4.5	✓							60	Lmax < 65
451-HO1	57.0	53.5	new road	57.5	54.0	52.0	47.5	53.0	48.5	-4.0	-5.0	✓							66	19
452-HO1	52.5	49.0	new road	55.0	50.0	50.5	46.5	51.5	47.5	-1.0	-1.5	✓							63	Lmax < 65
454-HO1	56.5	52.5	new road	57.0	53.0	51.5	47.5	52.5	48.5	-4.0	-4.0	✓							65	18
455-HO1	59.5	56.0	new road	60.0	56.5	54.0	49.5	55.0	50.5	-4.5	-5.5	✓							71	21
461-HO1	51.0	47.0	new road	55.0	50.0	55.0	51.5	56.0	52.5	5.0	5.5	✓		✓		✓	✓		58	Lmax < 65
462-HO1	48.5	44.5	new road	55.0	50.0	51.5	48.0	52.5	48.5	4.0	4.0	✓							52	Lmax < 65
463-HO1	62.5	59.0	new road	63.0	59.5	55.0	50.0	56.0	51.5	-6.5	-7.5	✓							74	24
464-HO1	64.5	61.0	new road	65.0	61.5	58.0	54.5	59.0	55.5	-5.5	-5.5	✓					✓		76	22
470-HO1	53.5	49.5	new road	55.0	50.0	49.5	45.5	50.5	46.5	-3.0	-3.0	✓							59	Lmax < 65
485-HO1	65.0	61.0	new road	65.5	61.5	56.0	51.5	57.0	52.5	-8.0	-8.5	✓							75	23
489-HO1	54.0	47.0	new road	55.0	50.0	52.0	48.5	53.5	49.5	-0.5	2.5	✓							57	Lmax < 65
490-HO1	55.5	51.0	new road	56.0	51.5	61.5	57.5	62.5	58.5	7.0	7.5	✓		✓		✓	✓		71	14
493-HO1	56.0	51.0	new road	56.5	51.5	60.0	56.0	61.0	57.0	5.0	6.0	✓		✓		✓	✓		66	10
501-HO1	72.0	68.5	new road	72.5	69.0	61.5	55.5	62.5	56.5	-9.5	-12.0	✓							90	34
501-HO2	66.5	63.0	new road	67.0	63.5	57.0	51.0	58.0	52.0	-8.5	-11.0	✓							79	28
505-HO1	44.5	41.0	new road	55.0	50.0	47.5	43.5	48.5	44.5	4.0	3.5	✓							52	Lmax < 65
506-HO1	57.0	51.0	new road	57.5	51.5	58.0	53.5	59.0	54.5	2.0	3.5	✓		✓		✓	✓		62	Lmax < 65
508-HO1	57.0	47.5	new road	57.5	50.0	46.5	42.5	47.5	43.5	-9.5	-4.0	✓							55	Lmax < 65
509-HO1	53.0	44.5	new road	55.0	50.0	46.5	42.5	47.5	43.5	-5.5	-1.0	✓							51	Lmax < 65
510-HO1	56.0	46.5	new road	56.5	50.0	46.0	42.0	47.0	43.0	-9.0	-3.5	✓							52	Lmax < 65
512-HO1	65.5	62.0	new road	66.0	62.5	59.5	55.5	60.5	56.5	-5.0	-5.5	✓							78	22
515-HO1	50.5	44.0	new road	55.0	50.0	48.0	44.0	49.0	45.0	-1.5	1.0	✓							53	Lmax < 65
518-HO1	44.0	40.0	new road	55.0	50.0	46.5	42.5	47.5	43.5	3.5	3.5	✓							52	Lmax < 65
519-HO1	56.5	48.0	new road	57.0	50.0	46.5	42.5	47.5	43.5	-9.0	-4.5	✓					✓		53	Lmax < 65
520-HO1	44.5	40.5	new road	55.0	50.0	47.0	43.0	48.0	44.0	3.5	3.5	✓							52	Lmax < 65
523-HO1	62.5	58.5	new road	63.0	59.0	64.0	60.5	65.0	61.5	2.5	3.0	✓	✓						74	14
528-HO1	53.0	48.0	new road	55.0	50.0	56.0	52.0	57.0	53.0	4.0	5.0	✓		✓		✓	✓		59	Lmax < 65
528-HO2	52.5	48.5	new road	55.0	50.0	54.0	50.0	55.0	51.0	2.5	2.5	✓	✓						60	Lmax < 65
532-HO1	48.5	44.0	new road	55.0	50.0	49.5	46.0	51.0	47.0	2.5	3.0								53	Lmax < 65
533-HO1	43.0	38.5	new road	55.0	50.0	43.0	39.5	44.5	40.5	1.5	2.0								47	Lmax < 65
534-HO1	44.0	40.5	new road	55.0	50.0	46.0	42.0	47.0	43.0	3.0	2.5	✓							51	Lmax < 65
536-HO1	50.5	47.0	new road	55.0	50.0	48.5	44.5	49.5	45.5	-1.0	-1.5	✓							53	Lmax < 65
537-HO1	53.0	46.5	new road	55.0	50.0	51.5	47.5	52.5	48.5	-0.5	2.0	✓							54	Lmax < 65
538-HO1	49.0	45.0	new road	55.0	50.0	51.5	47.5	52.5	48.5	3.5	3.5	✓							54	Lmax < 65
540-HO1	47.5	43.5	new road	55.0	50.0	48.0	44.0	49.0	45.0	1.5	1.5	✓							50	Lmax < 65
543-HO1	49.0	45.0	new road	55.0	50.0	52.0	48.0	53.0	49.0	4.0	4.0	✓							56	Lmax < 65
547-HO1	49.0	45.0	new road	55.0	50.0	51.5	48.0	53.0	49.0	4.0	4.0	✓							54	Lmax < 65
553-HO1	49.5	45.5	new road	55.0	50.0	51.0	47.5	52.0	48.0	2.5	2.5	✓							53	Lmax < 65
558-HO1	50.0	45.5	new road	55.0	50.0	52.0	48.0	53.0	49.0	3.0	3.5	✓							55	Lmax < 65
566-HO1	48.0	45.0	new road	55.0	50.0	50.5	46.5	51.5	47.5	2.5	2.5	✓							53	Lmax < 65
574-HO1	48.0	44.0	new road	55.0	50.0	48.5	44.5	49.5	45.5	1.5	1.5	✓							52	Lmax < 65
579-HO1	45.5	41.5	new road	55.0	50.0	46.5	42.5	47.5	43.5	2.0	2.0	✓							49	Lmax < 65
583-HO1	58.0	54.5	new road	58.5	55.0	56.5	52.5	57.5	53.5	-0.5	-1.0	✓							70	18
584-HO1	48.0	44.5	new road	55.0	50.0	48.0	44.0	49.0	45.0	1.0	0.5	✓							53	Lmax < 65
588-HO1	55.5	52.0	new road	56.0	52.5	53.5	49.5	54.5	50.5	-1.0	-1.5	✓							68	18
592-HO1	55.5	52.0	new road	56.0	52.5	60.5	56.5	61.5	57.5	6.0	5.5	✓	✓						63	Lmax < 65
596-HO1	46.0	42.5	new road	55.0	50.0	47.0	43.0	48.0	44.0	2.0	1.5	✓							50	Lmax < 65
598-HO1	47.0	43.5	new road	55.0	50.0	48.0	44.5	49.5	45.5	2.5	2.0	✓							53	Lmax < 65
601-HO1	53.5	50.0	new road	55.0	50.5	50.0	45.5	51.0	46.5	-2.5	-3.5	✓							61	Lmax < 65
601-HO2	53.0	49.5	new road	55.0	50.0	50.5	46.5	51.5	47.5	-1.5	-2.0	✓							63	Lmax < 65
607-HO1	63.5	60.0	new road	64.0	60.5	59.5	55.0	60.5	56.0	-3.0	-4.0	✓							76	21
611-HO1	51.0	47.5	new road	55.0	50.0	48.5	44.5	49.5	45.5	-1.5	-2.0	✓							54	Lmax < 65
616-HO1	66.5	63.5	new road	67.0	64.0	59.5	54.0	60.5	55.0	-6.0	-8.5	✓							84	30
631-HO1	67.5	64.0	new road	68.0	64.5	62.0	57.5	63.0	58.5	-4.5	-5.5	✓							82	24

Receiver ID	Future Existing 2014 Noise Level		Type of development[1]	EDRN Target Criteria[2]		Development 2014 Noise Level		Development 2024 Noise Level		Development 2024 - Future Existing 2014 (Noise Level Increase)		Receiver identified and assessed in EA[3]	Acquired (whole or partially by RMS) or no longer identified as a residential receiver (e.g. shed)	EDRN Target Criteria Exceeded?	2024 Acute Noise Criteria Exceeded (65 dB Day or 60 dB Night)	Treatment Required with Consideration to the EDRN	Treatment provided or pending	Additional Treatment required	Pass-by Maximum Noise Level dB(A)	
	Day	Night		Day	Night	Day	Night	Day	Night	Day	Night								Predicted Development Lmax	Lmax - Development 2014 Leq (Night)
632-HO1	55.0	52.0	new road	55.5	52.5	48.5	44.0	49.5	45.0	-5.5	-7.0	✓							65	Lmax < 65
637-HO1	56.5	53.0	new road	57.0	53.5	60.5	56.5	61.5	57.5	5.0	4.5	✓		✓		✓	✓		66	10
643-HO1	67.5	64.0	new road	68.0	64.5	72.5	68.5	73.5	69.5	6.0	5.5	✓	✓						83	14
646-HO1	52.5	49.0	new road	55.0	50.0	49.0	45.0	50.0	46.0	-2.5	-3.0	✓							58	Lmax < 65
647-HO1	47.5	43.5	new road	55.0	50.0	50.5	46.5	51.5	47.5	4.0	4.0	✓							49	Lmax < 65
653-HO1	59.5	57.0	new road	60.0	57.5	52.0	47.0	53.0	48.0	-6.5	-9.0	✓							73	26
658-HO2	53.5	50.0	new road	55.0	50.5	55.0	51.0	56.0	52.0	2.5	2.0	✓	✓	✓		✓			62	Lmax < 65
660-HO1	68.0	64.5	new road	68.5	65.0	60.0	55.0	61.0	56.0	-7.0	-8.5	✓							84	29
676-HO1	53.5	50.0	new road	55.0	50.5	52.0	48.0	53.0	49.0	-0.5	-1.0	✓							60	Lmax < 65
683-HO1	63.0	59.0	Redevelopment	65.0	61.0	64.5	61.0	65.5	62.0	2.5	3.0	✓	✓						70	9
695-HO1	60.5	56.5	Redevelopment	62.5	58.5	60.0	56.0	61.0	57.0	0.5	0.5	✓							67	11
701-HO1	63.5	59.5	Redevelopment	65.5	61.5	64.5	61.0	65.5	62.0	2.0	2.5	✓		✓	✓	✓	✓		73	12
710-HO1	62.5	58.5	Redevelopment	64.5	60.5	61.5	57.5	62.5	58.5	0	0	✓							69	12
712-HO1	57.0	53.5	Redevelopment	60.0	55.0	56.5	52.5	57.5	53.5	0.5	0	✓							64	Lmax < 65
713-HO1	55.5	51.5	Redevelopment	60.0	55.0	54.0	50.0	55.0	51.0	-0.5	-0.5	✓							63	Lmax < 65
714-HO1	60.5	57.0	Redevelopment	62.5	59.0	59.5	55.5	60.5	56.5	0	-0.5	✓							67	11
715-HO1	51.5	48.0	new road	55.0	50.0	51.0	47.5	52.0	48.5	0.5	0.5	✓							58	Lmax < 65
717-HO1	52.0	48.0	new road	55.0	50.0	51.0	47.5	52.5	48.5	0.5	0.5	✓							58	Lmax < 65
719-HO1	60.0	56.0	Redevelopment	62.0	58.0	58.5	54.5	59.5	55.5	-0.5	-0.5	✓							66	12
722-HO1	60.5	56.5	Redevelopment	62.5	58.5	59.0	55.0	60.0	56.0	-0.5	-0.5	✓							66	11
725-HO1	54.5	51.0	Redevelopment	60.0	55.0	52.0	48.5	53.0	49.5	-1.5	-1.5	✓							62	Lmax < 65
731-HO1	59.0	55.5	Redevelopment	60.0	57.5	57.0	53.5	58.0	54.5	-1.0	-1.0	✓							66	12
735-HO1	54.5	50.5	new road	55.0	51.0	53.0	49.5	54.0	50.5	-0.5	0	✓							62	Lmax < 65
735-HO2	52.5	49.0	new road	55.0	50.0	50.5	46.5	51.5	47.5	-1.0	-1.5								58	Lmax < 65
736-HO1	56.5	52.5	Redevelopment	60.0	55.0	53.5	50.0	54.5	51.0	-2.0	-1.5	✓							64	Lmax < 65
736-HO2	56.5	52.5	Redevelopment	60.0	55.0	54.0	50.5	55.0	51.5	-1.5	-1.0								60	Lmax < 65
751-HO1	55.0	51.0	new road	55.5	51.5	52.0	48.0	53.0	49.0	-2.0	-2.0	✓							61	Lmax < 65
751-HO2	54.0	50.0	new road	55.0	50.5	50.5	47.0	51.5	47.5	-2.5	-2.5								58	Lmax < 65
759-HO1	51.0	47.5	new road	55.0	50.0	49.5	46.0	50.5	46.5	-0.5	-1.0	✓							57	Lmax < 65
768-HO1	52.0	48.0	new road	55.0	50.0	49.5	46.0	50.5	46.5	-1.5	-1.5	✓							56	Lmax < 65
769-HO1	60.5	57.0	new road	61.0	57.5	58.0	54.5	58.5	55.5	-1.0	-1.5	✓							65	11
782-HO1	52.5	48.5	new road	55.0	50.0	50.0	46.0	51.0	47.0	-1.5	-1.5	✓							56	Lmax < 65
799-HO1	48.0	44.0	new road	55.0	50.0	46.5	43.0	47.5	44.0	-0.5	0	✓							52	Lmax < 65
800-HO1	54.5	50.5	new road	55.0	51.0	52.5	48.5	53.5	49.5	-1.0	-1.0	✓							60	Lmax < 65
801-HO1	45.5	41.5	new road	55.0	50.0	44.5	40.5	45.5	41.5	0	0	✓							51	Lmax < 65
802-HO1	43.0	39.0	new road	55.0	50.0	50.5	47.0	51.0	47.5	8.0	8.5	✓							54	Lmax < 65
808-HO1	45.5	42.0	new road	55.0	50.0	45.0	41.0	46.0	42.0	0.5	0	✓							52	Lmax < 65
810-HO1	53.5	50.0	new road	55.0	50.5	51.0	47.0	52.0	48.0	-1.5	-2.0	✓							57	Lmax < 65
815-HO1	49.0	45.5	new road	55.0	50.0	48.0	44.5	49.0	45.5	0	0	✓							53	Lmax < 65
818-HO1	49.0	45.5	new road	55.0	50.0	48.0	44.0	49.0	45.0	0	-0.5	✓							54	Lmax < 65
819-HO1	49.5	46.0	new road	55.0	50.0	48.0	44.5	49.0	45.0	-0.5	-1.0	✓							55	Lmax < 65
820-HO1	49.5	46.0	new road	55.0	50.0	48.0	44.5	49.0	45.5	-0.5	-0.5	✓							54	Lmax < 65
821-HO1	53.5	50.0	new road	55.0	50.5	51.0	47.5	52.0	48.0	-1.5	-2.0	✓							57	Lmax < 65
822-HO1	49.5	46.0	new road	55.0	50.0	48.5	44.5	49.5	45.5	0	-0.5	✓							54	Lmax < 65
823-HO1	55.0	51.0	new road	55.5	51.5	53.5	49.5	54.5	50.5	-0.5	-0.5	✓							61	Lmax < 65
826-HO1	50.0	46.0	new road	55.0	50.0	48.5	44.5	49.5	45.5	-0.5	-0.5	✓							55	Lmax < 65
827-HO1	50.0	46.5	new road	55.0	50.0	48.5	45.0	49.5	46.0	-0.5	-0.5	✓							55	Lmax < 65
830-HO1	50.0	46.0	new road	55.0	50.0	48.5	45.0	49.5	46.0	-0.5	0	✓							55	Lmax < 65
831-HO1	50.0	46.0	new road	55.0	50.0	48.5	45.0	50.0	46.0	0	0	✓							55	Lmax < 65
832-HO1	50.0	46.0	new road	55.0	50.0	48.5	45.0	50.0	46.0	0	0	✓							55	Lmax < 65
834-HO1	49.5	45.5	new road	55.0	50.0	48.5	45.0	49.5	45.5	0	0	✓							55	Lmax < 65
835-HO1	49.5	46.0	new road	55.0	50.0	47.5	43.5	48.5	44.5	-1.0	-1.5	✓							52	Lmax < 65
836-HO1	49.0	45.0	new road	55.0	50.0	47.5	43.5	48.5	44.5	-0.5	-0.5								52	Lmax < 65
839-HO1	53.5	50.0	new road	55.0	50.5	51.0	47.5	52.0	48.5	-1.5	-1.5	✓							56	Lmax < 65
846-HO1	50.0	46.0	new road	55.0	50.0	48.0	44.5	49.0	45.0	-1.0	-1.0	✓							52	Lmax < 65
847-HO1	48.0	44.0	new road	55.0	50.0	46.0	42.0	47.0	43.0	-1.0	-1.0	✓							54	Lmax < 65
848-HO1	48.0	44.0	new road	55.0	50.0	46.5	42.5	47.5	43.5	-0.5	-0.5	✓							54	Lmax < 65
849-HO1	48.0	44.5	new road	55.0	50.0	46.5	42.5	47.5	43.5	-0.5	-1.0	✓							54	Lmax < 65
853-HO1	48.5	44.5	new road	55.0	50.0	46.5	43.0	47.5	44.0	-1.0	-0.5	✓							54	Lmax < 65
853-HO2	48.5	44.5	new road	55.0	50.0	47.0	43.0	48.0	44.0	-0.5	-0.5	✓							54	Lmax < 65
855-HO1	48.0	44.0	new road	55.0	50.0	46.5	43.0	47.5	44.0	-0.5	0	✓							55	Lmax < 65

Receiver ID	Future Existing 2014 Noise Level		Type of development[1]	EDRTN Target Criteria[2]		Development 2014 Noise Level		Development 2024 Noise Level		Development 2024 - Future Existing 2014 (Noise Level Increase)		Receiver identified and assessed in EA[3]	Acquired (whole or partially by RMT) or no longer identified as a residential receiver (e.g. shed)	EDRTN Target Criteria Exceeded?	2024 Acute Noise Criteria Exceeded (65 dB Day or 60 dB Night)	Treatment Required with Consideration to the EDRTN	Treatment provided or pending	Additional Treatment required	Pass-by Maximum Noise Level dB(A)	
	Day	Night		Day	Night	Day	Night	Day	Night	Day	Night								Predicted Development Lmax	Lmax - Development 2014 Leq (Night)
857-HO1	50.0	46.5	new road	55.0	50.0	48.5	44.5	49.5	45.5	-0.5	-1.0	✓							51	Lmax < 65
859-HO1	49.0	45.5	new road	55.0	50.0	47.5	43.5	48.0	44.5	-1.0	-1.0	✓							53	Lmax < 65
859-HO2	50.0	46.0	new road	55.0	50.0	47.5	43.5	48.5	44.5	-1.5	-1.5	✓							53	Lmax < 65
859-HO3	50.5	47.0	new road	55.0	50.0	47.5	44.0	48.5	45.0	-2.0	-2.0	✓							53	Lmax < 65
859-HO4	49.0	45.0	new road	55.0	50.0	45.0	41.5	46.0	42.0	-3.0	-3.0	✓							52	Lmax < 65
859-HO5	49.0	45.0	new road	55.0	50.0	45.5	42.0	46.5	42.5	-2.5	-2.5	✓							52	Lmax < 65
860-HO1	51.5	47.5	new road	55.0	50.0	48.5	45.0	49.5	46.0	-2.0	-1.5	✓							55	Lmax < 65
860-HO2	53.0	49.0	new road	55.0	50.0	49.5	46.0	50.5	47.0	-2.5	-2.0	✓							55	Lmax < 65
860-HO3	53.0	49.0	new road	55.0	50.0	49.5	46.0	50.5	47.0	-2.5	-2.0	✓							55	Lmax < 65
861-HO1	49.5	45.5	new road	55.0	50.0	47.0	43.0	48.0	44.0	-1.5	-1.5	✓							53	Lmax < 65
865-HO1	49.0	45.0	new road	55.0	50.0	46.0	42.0	46.5	43.0	-2.5	-2.0	✓							53	Lmax < 65
866-HO1	50.0	46.5	new road	55.0	50.0	48.0	44.0	49.0	45.0	-1.0	-1.5	✓							53	Lmax < 65
867-HO1	49.0	45.5	new road	55.0	50.0	46.5	43.0	47.0	43.5	-2.0	-2.0	✓							54	Lmax < 65
869-HO1	50.0	46.5	new road	55.0	50.0	46.5	43.0	47.5	43.5	-2.5	-3.0	✓							54	Lmax < 65
874-HO1	53.5	50.0	new road	55.0	50.5	50.5	47.0	51.5	48.0	-2.0	-2.0	✓							55	Lmax < 65
875-HO1	50.5	47.0	new road	55.0	50.0	49.0	45.0	50.0	46.0	-0.5	-1.0	✓							52	Lmax < 65
876-HO1	50.5	47.0	new road	55.0	50.0	49.0	45.5	50.0	46.5	-0.5	-0.5	✓							52	Lmax < 65
877-HO1	51.0	47.0	new road	55.0	50.0	48.0	44.0	49.0	45.0	-2.0	-2.0	✓							54	Lmax < 65
878-HO1	49.0	45.0	new road	55.0	50.0	49.0	45.0	49.5	46.0	0.5	1.0	✓							62	Lmax < 65
880-HO1	51.0	47.5	new road	55.0	50.0	49.0	45.5	50.0	46.5	-1.0	-1.0	✓							52	Lmax < 65
884-HO1	47.0	43.5	new road	55.0	50.0	46.0	42.5	47.0	43.0	0	-0.5	✓							53	Lmax < 65
885-HO1	47.5	43.5	new road	55.0	50.0	46.0	42.5	47.0	43.0	-0.5	-0.5	✓							53	Lmax < 65
888-HO1	48.5	44.5	new road	55.0	50.0	47.0	43.0	48.0	44.0	-0.5	-0.5	✓							54	Lmax < 65
888-HO2	53.0	49.0	new road	55.0	50.0	50.0	46.0	51.0	47.0	-2.0	-2.0	✓							54	Lmax < 65
894-HO1	67.0	63.0	new road	67.5	63.5	58.0	54.5	59.0	55.0	-8.0	-8.0	✓							65	11
894-HO2	59.0	55.0	new road	59.5	55.5	57.5	53.5	58.5	54.5	-0.5	-0.5	✓							65	Lmax < 65
894-HO3	57.5	53.5	new road	58.0	54.0	57.0	53.5	58.0	54.5	0.5	1.0	✓		✓		✓		✓	63	Lmax < 65
894-HO4	54.5	51.0	new road	55.0	51.5	51.5	48.0	52.0	48.5	-2.5	-2.5	✓							64	Lmax < 65
894-HO5	54.5	51.0	new road	55.0	51.5	48.5	44.0	49.5	45.0	-5.0	-6.0	✓							63	Lmax < 65
894-HO6	50.5	46.5	new road	55.0	50.0	50.5	46.5	51.5	47.5	1.0	1.0	✓							60	Lmax < 65
894-HO7	61.0	58.0	new road	61.5	58.5	54.5	51.5	55.5	52.0	-5.5	-6.0	✓							69	18
894-HO8	58.0	55.0	new road	58.5	55.5	53.5	50.5	54.5	51.0	-3.5	-4.0								69	19
894-HO9	55.0	51.5	new road	55.5	52.0	52.0	49.0	53.0	49.5	-2.0	-2.0								67	18
895-HO1	55.5	52.0	new road	56.0	52.5	52.5	49.0	53.0	49.5	-2.5	-2.5								68	19
895-HO2	62.0	58.5	new road	62.5	59.0	54.5	51.0	55.5	52.0	-6.5	-6.5								70	19
895-HO3	58.0	54.5	new road	58.5	55.0	53.5	50.5	54.0	51.0	-4.0	-3.5								68	17
895-HO4	55.5	52.0	new road	56.0	52.5	52.0	49.0	52.5	49.5	-3.0	-2.5								64	Lmax < 65
895-HO5	53.5	50.0	new road	55.0	50.5	51.5	48.5	52.0	49.0	-1.5	-1.0								64	Lmax < 65
895-HO6	52.5	48.5	new road	55.0	50.0	48.5	44.5	49.5	45.5	-3.0	-3.0								66	21
895-HO7	57.0	53.5	new road	57.5	54.0	51.0	47.0	52.0	48.0	-5.0	-5.5								66	19
895-HO8	58.5	55.5	new road	59.0	56.0	50.5	47.0	51.5	47.5	-7.0	-8.0								65	18
895-HO9	63.0	59.5	new road	63.5	60.0	54.5	51.5	55.5	52.0	-7.5	-7.5								69	17
896-HO1	51.0	47.5	new road	55.0	50.0	49.5	45.5	50.0	46.5	-1.0	-1.0	✓							53	Lmax < 65
896-HO2	67.0	63.5	new road	67.5	64.0	55.0	51.0	55.5	51.5	-11.5	-12.0								67	16
896-HO3	61.0	57.5	new road	61.5	58.0	54.5	51.0	55.0	51.5	-6.0	-6.0								68	17
896-HO4	59.5	56.5	new road	60.0	57.0	54.5	51.5	55.5	52.0	-4.0	-4.5								68	17
896-HO5	56.5	53.0	new road	57.0	53.5	49.5	46.0	50.5	46.5	-6.0	-6.5								66	20
896-HO6	59.5	55.5	new road	60.0	56.0	51.5	47.5	52.5	48.5	-7.0	-7.0								66	19
896-HO7	68.5	64.5	new road	69.0	65.0	56.5	53.0	57.0	53.5	-11.5	-11.0								68	15
896-HO8	63.0	59.5	new road	63.5	60.0	53.5	49.5	54.0	50.5	-9.0	-9.0								69	19
896-HO9	59.5	56.0	new road	60.0	56.5	53.0	49.5	53.5	50.0	-6.0	-6.0								67	18
897-HO1	65.0	61.5	new road	65.5	62.0	58.5	55.0	59.5	55.5	-5.5	-6.0								62	70
897-HO2	65.0	61.5	new road	65.5	62.0	59.0	55.5	60.0	56.5	-5.0	-5.0								68	12
897-HO3	65.5	61.5	new road	66.0	62.0	58.5	55.0	59.5	55.5	-6.0	-6.0								67	12
897-HO4	64.5	61.0	new road	65.0	61.5	57.0	53.5	58.0	54.0	-6.5	-7.0								66	12
897-HO5	64.5	60.5	new road	65.0	61.0	58.0	54.0	59.0	55.0	-5.5	-5.5								66	12
897-HO6	57.0	53.0	new road	57.5	53.5	56.5	53.0	57.5	54.0	0.5	1.0			✓		✓		✓	63	Lmax < 65
897-HO7	57.0	53.0	new road	57.5	53.5	56.5	52.5	57.5	53.5	0.5	0.5								63	Lmax < 65
897-HO8	55.5	52.0	new road	56.0	52.5	55.0	51.5	56.5	52.5	1.0	0.5			✓		✓		✓	64	Lmax < 65
897-HO9	54.5	51.0	new road	55.0	51.5	54.0	50.5	55.5	51.5	1.0	0.5			✓		✓		✓	61	Lmax < 65
898-HO1	54.5	50.5	new road	55.0	51.0	54.0	50.5	55.0	51.5	0.5	1.0			✓		✓		✓	61	Lmax < 65

Receiver ID	Future Existing 2014 Noise Level		Type of development[1]	EDRN Target Criteria[2]		Development 2014 Noise Level		Development 2024 Noise Level		Development 2024 - Future Existing 2014 (Noise Level Increase)		Receiver identified and assessed in EA[3]	Acquired (whole or partially by RMS) or no longer identified as a residential receiver (e.g. shed)	EDRN Target Criteria Exceeded?	2024 Acute Noise Criteria Exceeded (65 dB Day or 60 dB Night)	Treatment Required with Consideration to the EDRN	Treatment provided or pending	Additional Treatment required	Pass-by Maximum Noise Level dB(A)	
	Day	Night		Day	Night	Day	Night	Day	Night	Day	Night								Predicted Development Lmax	Lmax - Development 2014 Leq (Night)
898-HO2	47.5	43.5	new road	55.0	50.0	47.0	43.0	48.0	44.0	0.5	0.5								59	Lmax < 65
898-HO3	48.5	45.0	new road	55.0	50.0	48.5	45.0	49.5	46.0	1.0	1.0								58	Lmax < 65
898-HO4	48.5	45.0	new road	55.0	50.0	47.0	43.5	48.0	44.5	-0.5	-0.5								58	Lmax < 65
898-HO5	56.5	52.5	new road	57.0	53.0	56.5	53.0	58.0	54.0	1.5	1.5			✓		✓		✓	62	Lmax < 65
898-HO6	52.0	48.0	new road	55.0	50.0	52.5	48.5	53.5	49.5	1.5	1.5								63	Lmax < 65
898-HO7	50.5	46.5	new road	55.0	50.0	48.5	44.5	49.0	45.0	-1.5	-1.5								61	Lmax < 65
898-HO8	53.0	49.0	new road	55.0	50.0	49.5	45.0	50.0	46.0	-3.0	-3.0								59	Lmax < 65
898-HO9	55.0	51.5	new road	55.5	52.0	49.0	45.0	49.5	45.5	-5.5	-6.0								64	Lmax < 65
899-HO1	55.0	51.5	new road	55.5	52.0	53.0	49.5	54.0	50.5	-1.0	-1.0								65	Lmax < 65
899-HO2	55.5	52.0	new road	56.0	52.5	52.0	48.0	52.5	49.0	-3.0	-3.0								64	Lmax < 65
899-HO3	54.5	51.0	new road	55.0	51.5	51.0	47.5	52.0	48.0	-2.5	-3.0								64	Lmax < 65
899-HO4	53.5	49.5	new road	55.0	50.0	49.5	45.5	50.5	46.5	-3.0	-3.0								63	Lmax < 65
899-HO5	48.5	44.5	new road	55.0	50.0	50.5	46.5	51.5	47.5	3.0	3.0								59	Lmax < 65
899-HO6	48.5	44.5	new road	55.0	50.0	48.5	44.5	49.5	45.5	1.0	1.0								59	Lmax < 65
899-HO7	46.0	42.0	new road	55.0	50.0	48.5	45.0	49.5	46.0	3.5	4.0								60	Lmax < 65
899-HO8	49.0	45.5	new road	55.0	50.0	50.0	46.5	51.0	47.5	2.0	2.0								58	Lmax < 65
899-HO9	51.5	48.0	new road	55.0	50.0	49.0	45.0	49.5	46.0	-2.0	-2.0								63	Lmax < 65
900-HO1	47.0	43.5	new road	55.0	50.0	46.5	42.5	47.0	43.0	0	-0.5								58	Lmax < 65
900-HO2	44.0	40.0	new road	55.0	50.0	46.0	42.0	47.0	43.0	3.0	3.0								59	Lmax < 65
902-HO1	48.5	44.5	new road	55.0	50.0	50.0	46.5	51.0	47.5	2.5	3.0								52	Lmax < 65
904-HO1	49.5	45.5	new road	55.0	50.0	48.0	44.0	48.5	45.0	-1.0	-0.5	✓							57	Lmax < 65
905-HO1	47.5	43.5	new road	55.0	50.0	46.0	42.5	47.0	43.0	-0.5	-0.5	✓							56	Lmax < 65
905-HO1	49.0	45.0	new road	55.0	50.0	47.5	43.5	48.5	44.5	-0.5	-0.5	✓							56	Lmax < 65
907-HO1	51.5	47.5	new road	55.0	50.0	50.0	46.5	51.0	47.5	-0.5	0	✓							58	Lmax < 65
908-HO1	53.5	49.5	new road	55.0	50.0	50.0	46.5	51.0	47.5	-2.5	-2.0	✓							55	Lmax < 65
908-HO2	51.5	47.5	new road	55.0	50.0	49.5	45.5	50.5	46.5	-1.0	-1.0	✓							52	Lmax < 65
908-HO3	51.0	47.5	new road	55.0	50.0	49.0	45.5	50.0	46.5	-1.0	-1.0	✓							53	Lmax < 65
908-HO4	52.0	48.0	new road	55.0	50.0	49.5	46.0	50.5	46.5	-1.5	-1.5	✓							55	Lmax < 65
908-HO5	55.0	51.0	new road	55.5	51.5	50.5	47.0	51.5	47.5	-3.5	-3.5								55	Lmax < 65
909-HO1	50.5	47.0	new road	55.0	50.0	50.0	46.0	51.0	47.0	0.5	0	✓							60	Lmax < 65
910-HO1	51.5	48.0	new road	55.0	50.0	50.0	46.5	51.0	47.5	-0.5	-0.5	✓							62	Lmax < 65
911-HO1	51.5	47.5	new road	55.0	50.0	49.0	45.5	50.0	46.0	-1.5	-1.5	✓							61	Lmax < 65
912-HO1	57.5	54.0	new road	58.0	54.5	52.5	48.5	53.0	49.5	-4.5	-4.5	✓							63	Lmax < 65
912-HO2	57.5	54.0	new road	58.0	54.5	51.5	48.0	52.5	48.5	-5.0	-5.5								65	Lmax < 65
912-HO3	53.0	49.5	new road	55.0	50.0	50.0	46.5	51.0	47.0	-2.0	-2.5								65	19
914-HO1	51.0	47.5	new road	55.0	50.0	49.5	46.0	50.0	46.5	-1.0	-1.0	✓							53	Lmax < 65
917-HO1	51.5	47.5	new road	55.0	50.0	49.5	46.0	50.5	47.0	-1.0	-0.5	✓							54	Lmax < 65
918-HO1	51.5	47.5	new road	55.0	50.0	49.5	46.0	50.5	47.0	-1.0	-0.5	✓							55	Lmax < 65
922-HO1	51.5	47.5	new road	55.0	50.0	49.5	46.0	50.5	47.0	-1.0	-0.5	✓							54	Lmax < 65
924-HO1	52.5	48.5	new road	55.0	50.0	50.0	46.5	51.0	47.5	-1.5	-1.0	✓							55	Lmax < 65
926-HO1	62.5	59.5	new road	63.0	60.0	55.5	52.0	56.5	53.0	-6.0	-6.5	✓							72	20
929-HO1	52.5	48.5	new road	55.0	50.0	50.0	46.5	51.0	47.5	-1.5	-1.0	✓							55	Lmax < 65
930-HO1	52.5	48.5	new road	55.0	50.0	50.0	46.5	51.0	47.5	-1.5	-1.0	✓							56	Lmax < 65
932-HO1	51.5	48.0	new road	55.0	50.0	50.0	46.5	51.0	47.0	-0.5	-1.0	✓							54	Lmax < 65
932-HO2	49.0	45.0	new road	55.0	50.0	48.0	44.0	49.0	45.0	0	0	✓							55	Lmax < 65
933-HO1	52.5	49.0	new road	55.0	50.0	50.0	46.5	51.0	47.5	-1.5	-1.5	✓							56	Lmax < 65
934-HO1	52.5	49.0	new road	55.0	50.0	50.5	47.0	51.5	47.5	-1.0	-1.5	✓							56	Lmax < 65
937-HO1	52.0	48.5	new road	55.0	50.0	50.0	46.5	51.0	47.5	-1.0	-1.0	✓							55	Lmax < 65
938-HO1	52.5	49.0	new road	55.0	50.0	50.5	47.0	51.5	47.5	-1.0	-1.5	✓							56	Lmax < 65
939-HO1	52.5	48.5	new road	55.0	50.0	50.0	46.5	51.0	47.5	-1.5	-1.0	✓							55	Lmax < 65
941-HO1	50.5	47.0	new road	55.0	50.0	49.0	45.5	50.0	46.5	-0.5	-0.5	✓							55	Lmax < 65
942-HO1	53.0	49.5	new road	55.0	50.0	50.5	47.0	51.5	48.0	-1.5	-1.5	✓							57	Lmax < 65
943-HO1	52.5	48.5	new road	55.0	50.0	50.5	47.0	51.5	47.5	-1.0	-1.0	✓							56	Lmax < 65
944-HO1	53.0	49.5	new road	55.0	50.0	50.5	47.0	51.5	48.0	-1.5	-1.5	✓							58	Lmax < 65
945-HO1	51.5	48.0	new road	55.0	50.0	49.5	46.0	50.5	47.0	-1.0	-1.0	✓							55	Lmax < 65
946-HO1	50.5	47.0	new road	55.0	50.0	54.0	50.5	55.0	51.5	4.5	4.5	✓		✓		✓	✓		56	Lmax < 65
947-HO1	45.5	42.0	new road	55.0	50.0	49.5	46.0	50.0	46.5	4.5	4.5	✓							55	Lmax < 65
948-HO1	52.5	49.0	new road	55.0	50.0	50.5	47.0	51.5	47.5	-1.0	-1.5	✓							56	Lmax < 65
949-HO1	53.0	49.0	new road	55.0	50.0	50.5	47.0	51.5	48.0	-1.5	-1.0	✓							59	Lmax < 65
950-HO1	51.0	47.0	new road	55.0	50.0	49.0	45.5	50.0	46.0	-1.0	-1.0	✓							58	Lmax < 65
951-HO1	51.5	48.0	new road	55.0	50.0	49.5	46.0	50.5	47.0	-1.0	-1.0	✓							56	Lmax < 65

Receiver ID	Future Existing 2014 Noise Level		Type of development[1]	EDRTN Target Criteria[2]		Development 2014 Noise Level		Development 2024 Noise Level		Development 2024 - Future Existing 2014 (Noise Level Increase)		Receiver identified and assessed in EA[3]	Acquired (whole or partially by RMTA or no longer identified as a residential receiver (e.g. shed)	EDRTN Target Criteria Exceeded?	2024 Acute Noise Criteria Exceeded (55 dB Day or 60 dB Night)	Treatment Required with Consideration to the EDRTN	Treatment provided or pending	Additional Treatment required	Pass-by Maximum Noise Level dB(A)	
	Day	Night		Day	Night	Day	Night	Day	Night	Day	Night								Predicted Development Lmax	Lmax - Development 2014 Leq (Night)
952-HO1	48.0	44.0	new road	55.0	50.0	45.0	41.5	46.0	42.5	-2.0	-1.5	✓							55	Lmax < 65
953-HO1	47.0	43.5	new road	55.0	50.0	50.0	46.5	51.0	47.5	4.0	4.0	✓							52	Lmax < 65
954-HO1	52.5	48.5	new road	55.0	50.0	50.5	47.0	51.5	47.5	-1.0	-1.0	✓							57	Lmax < 65
954-HO2	49.5	45.5	new road	55.0	50.0	48.0	44.5	49.0	45.0	-0.5	-0.5	✓							55	Lmax < 65
955-HO1	54.0	50.0	new road	55.0	50.5	51.0	47.5	52.0	48.5	-2.0	-1.5	✓							59	Lmax < 65
957-HO1	51.5	48.0	new road	55.0	50.0	49.0	45.5	50.0	46.5	-1.5	-1.5	✓							56	Lmax < 65
959-HO1	53.0	49.0	new road	55.0	50.0	51.0	47.0	51.5	48.0	-1.5	-1.0	✓							58	Lmax < 65
960-HO1	55.0	51.5	new road	55.5	52.0	51.5	47.5	52.5	48.5	-2.5	-3.0	✓							60	Lmax < 65
961-HO1	53.5	49.5	new road	55.0	50.0	51.0	47.5	51.5	48.0	-2.0	-1.5	✓							58	Lmax < 65
962-HO1	47.5	43.5	new road	55.0	50.0	45.5	41.5	46.0	42.5	-1.5	-1.0	✓							55	Lmax < 65
962-HO2	52.0	48.5	new road	55.0	50.0	51.0	47.0	52.0	48.0	0	-0.5								54	Lmax < 65
963-HO1	51.5	48.0	new road	55.0	50.0	49.5	45.5	50.5	46.5	-1.0	-1.5	✓							56	Lmax < 65
964-HO1	54.0	50.5	new road	55.0	51.0	51.5	48.0	52.5	48.5	-1.5	-2.0	✓							59	Lmax < 65
965-HO1	56.5	52.5	new road	57.0	53.0	51.5	47.5	52.0	48.5	-4.5	-4.0	✓							62	Lmax < 65
968-HO1	50.0	46.0	new road	55.0	50.0	48.0	44.0	48.5	45.0	-1.5	-1.0	✓							56	Lmax < 65
969-HO1	52.0	48.0	new road	55.0	50.0	46.5	41.5	47.5	42.5	-4.5	-5.5	✓							58	Lmax < 65
970-HO1	53.5	49.5	new road	55.0	50.0	51.0	47.5	52.0	48.0	-1.5	-1.5	✓							58	Lmax < 65
971-HO1	56.5	52.5	new road	57.0	53.0	52.5	48.5	53.5	49.5	-3.0	-3.0	✓							61	Lmax < 65
971-HO2	56.0	52.0	new road	56.5	52.5	52.5	48.5	53.5	49.5	-2.5	-2.5								59	Lmax < 65
972-HO1	53.0	49.5	new road	55.0	50.0	51.0	47.5	52.0	48.5	-1.0	-1.0	✓							58	Lmax < 65
973-HO1	51.0	47.0	new road	55.0	50.0	50.5	46.5	51.0	47.5	0	0.5								56	Lmax < 65
974-HO1	63.0	59.5	new road	63.5	60.0	61.5	59.0	62.5	60.0	-0.5	0.5	✓			✓	✓	✓		77	18
974-HO2	58.5	55.0	new road	59.0	55.5	61.0	58.5	62.0	59.0	3.5	4.0		✓						77	18
975-HO1	58.5	54.5	new road	59.0	55.0	51.5	47.5	52.5	48.0	-6.0	-6.5	✓							63	Lmax < 65
976-HO1	58.0	54.0	new road	58.5	54.5	52.5	48.0	53.0	49.0	-5.0	-5.0								60	Lmax < 65
979-HO1	52.5	49.0	new road	55.0	50.0	50.5	47.0	51.5	48.0	-1.0	-1.0	✓							58	Lmax < 65
980-HO1	54.0	50.5	new road	55.0	51.0	50.0	46.5	51.0	47.0	-3.0	-3.5	✓							61	Lmax < 65
981-HO1	54.0	50.0	new road	55.0	50.5	50.5	46.5	51.5	47.5	-2.5	-2.5								59	Lmax < 65
982-HO1	52.0	48.0	new road	55.0	50.0	51.0	47.0	52.0	48.0	0	0	✓							55	Lmax < 65
983-HO1	57.0	53.0	new road	57.5	53.5	52.5	48.5	53.5	49.5	-3.5	-3.5	✓							62	Lmax < 65
984-HO1	55.5	51.5	new road	56.0	52.0	52.0	48.0	52.5	48.0	-3.0	-2.5	✓							61	Lmax < 65
985-HO1	54.5	50.5	new road	55.0	51.0	52.0	48.5	53.0	49.5	-1.5	-1.0	✓							60	Lmax < 65
986-HO1	52.5	48.5	new road	55.0	50.0	48.0	44.0	48.0	44.5	-3.5	-4.0	✓							57	Lmax < 65
991-HO1	55.5	51.5	new road	56.0	52.0	50.5	47.0	51.5	47.5	-4.0	-4.0	✓							61	Lmax < 65
994-HO1	57.0	53.0	new road	57.5	53.5	53.5	49.5	54.5	50.5	-2.5	-2.5	✓							62	Lmax < 65
995-HO1	59.5	55.5	new road	60.0	56.0	53.0	49.0	54.0	50.0	-5.5	-5.5								62	Lmax < 65
996-HO1	58.5	54.5	new road	59.0	55.0	53.0	49.5	54.0	50.0	-4.5	-4.5	✓							63	Lmax < 65
996-HO2	57.5	53.5	new road	58.0	54.0	52.5	49.0	53.5	49.5	-4.0	-4.0								62	Lmax < 65
997-HO1	60.0	56.0	new road	60.5	56.5	53.5	49.0	54.5	50.0	-5.5	-6.0	✓							65	16
998-HO1	55.0	51.0	new road	55.5	51.5	52.5	49.0	53.5	50.0	-1.5	-1.0	✓							59	Lmax < 65
999-HO1	49.0	45.5	new road	55.0	50.0	55.0	52.0	56.0	52.5	7.0	7.0	✓		✓		✓	✓		57	Lmax < 65
1001-HO1	47.0	43.0	new road	55.0	50.0	49.5	46.0	50.0	46.5	3.0	3.5	✓							52	Lmax < 65
1002-HO1	59.5	55.5	new road	60.0	56.0	53.0	49.0	54.0	50.0	-5.5	-5.5	✓							64	Lmax < 65
1004-HO1	55.0	51.0	new road	55.5	51.5	46.5	41.5	47.5	42.5	-7.5	-8.5	✓							64	Lmax < 65
1005-HO1	45.5	41.5	new road	55.0	50.0	47.0	43.0	47.5	44.0	2.0	2.5	✓							50	Lmax < 65
1006-HO1	56.0	52.0	new road	56.5	52.5	46.5	41.0	47.5	42.0	-8.5	-10.0	✓							64	Lmax < 65
1007-HO1	46.5	42.5	new road	55.0	50.0	48.5	44.5	49.0	45.5	2.5	3.0	✓							51	Lmax < 65
1010-HO1	61.0	57.0	new road	61.5	57.5	53.5	49.0	54.5	50.0	-6.5	-7.0	✓							66	17
1010-HO2	61.5	57.5	new road	62.0	58.0	53.5	49.0	54.5	50.0	-7.0	-7.5	✓							67	18
1012-HO1	61.0	57.0	new road	61.5	57.5	52.5	48.0	53.5	49.0	-7.5	-8.0	✓							67	19
1013-HO1	58.0	54.0	new road	58.5	54.5	53.0	48.5	54.0	49.5	-4.0	-4.5	✓							66	17
1017-HO1	62.0	58.0	new road	62.5	58.5	53.5	48.5	54.5	49.5	-7.5	-8.5	✓							68	19
1019-HO1	61.5	57.5	new road	62.0	58.0	52.0	47.0	53.0	48.0	-8.5	-9.5	✓							68	21
1020-HO1	50.5	47.0	new road	55.0	50.0	56.5	53.5	57.0	54.0	6.5	7.0	✓	✓						63	Lmax < 65
1022-HO1	48.5	44.5	new road	55.0	50.0	52.0	48.5	52.5	49.0	4.0	4.5	✓					✓		53	Lmax < 65
1024-HO1	48.0	44.5	new road	55.0	50.0	53.5	50.0	54.0	50.5	6.0	6.0	✓		✓		✓	✓		55	Lmax < 65
1029-HO1	56.0	52.0	new road	56.5	52.5	50.0	45.5	51.0	46.5	-5.0	-5.5	✓							62	Lmax < 65
1030-HO1	58.5	55.0	new road	59.0	55.5	51.0	46.0	52.0	47.0	-6.5	-8.0	✓							65	Lmax < 65
1033-HO1	52.5	48.5	new road	55.0	50.0	45.5	39.5	46.5	40.5	-6.0	-8.0	✓							58	Lmax < 65
1033-HO2	51.5	48.0	new road	55.0	50.0	44.0	38.5	45.0	39.5	-6.5	-8.5	✓							60	Lmax < 65
1034-HO1	44.5	40.5	new road	55.0	50.0	55.5	52.0	56.5	52.5	12.0	12.0	✓		✓		✓	✓		53	Lmax < 65

Receiver ID	Future Existing 2014 Noise Level		Type of development[1]	EDRN Target Criteria[2]		Development 2014 Noise Level		Development 2024 Noise Level		Development 2024 - Future Existing 2014 (Noise Level Increase)		Receiver identified and assessed in EA[3]	Acquired (whole or partially by RMS) or no longer identified as a residential receiver (e.g. shed)	EDRN Target Criteria Exceeded?	2024 Acute Noise Criteria Exceeded (65 dB Day or 60 dB Night)	Treatment Required with Consideration to the EDRN	Treatment provided or pending	Additional Treatment required	Pass-by Maximum Noise Level dB(A)	
	Day	Night		Day	Night	Day	Night	Day	Night	Day	Night								Predicted Development Lmax	Lmax - Development 2014 Leq (Night)
1035-HO1	49.0	45.5	new road	55.0	50.0	55.5	52.0	56.5	53.0	7.5	7.5	✓		✓		✓	✓		61	Lmax < 65
1035-HO2	49.0	45.0	new road	55.0	50.0	54.5	51.0	55.5	52.0	6.5	7.0	✓		✓		✓	✓		57	Lmax < 65
1039-HO1	43.0	39.0	new road	55.0	50.0	54.0	50.0	54.5	51.0	11.5	12.0	✓		✓		✓	✓		53	Lmax < 65
1042-HO1	34.0	30.0	new road	55.0	50.0	37.5	33.5	38.0	34.5	4.0	4.5	✓							45	Lmax < 65
1045-HO1	48.0	44.5	new road	55.0	50.0	52.5	49.0	53.5	49.5	5.5	5.0	✓					✓		52	Lmax < 65
1046-HO1	43.0	39.0	new road	55.0	50.0	54.0	50.5	54.5	51.0	11.5	12.0	✓		✓		✓	✓		53	Lmax < 65
1048-HO1	56.5	52.5	new road	57.0	53.0	48.0	42.5	49.0	43.5	-7.5	-9.0	✓							70	28
1050-HO1	44.0	40.0	new road	55.0	50.0	56.0	52.5	57.0	53.0	13.0	13.0	✓		✓		✓	✓		56	Lmax < 65
1050-HO2	44.5	40.5	new road	55.0	50.0	54.0	50.5	54.5	51.0	10.0	10.5	✓		✓		✓	✓		57	Lmax < 65
1051-HO1	45.5	42.0	new road	55.0	50.0	53.5	49.5	54.0	50.5	8.5	8.5	✓		✓		✓	✓		52	Lmax < 65
1055-HO1	54.0	50.5	new road	55.0	51.0	47.0	42.5	48.0	43.5	-6.0	-7.0	✓							60	Lmax < 65
1055-HO2	48.0	44.5	new road	55.0	50.0	48.5	43.5	49.5	44.5	1.5	0	✓							57	Lmax < 65
1060-HO1	45.5	42.0	new road	55.0	50.0	58.0	54.0	58.5	55.0	13.0	13.0	✓		✓		✓	✓		54	Lmax < 65
1060-HO2	45.5	41.5	new road	55.0	50.0	58.0	54.0	58.5	55.0	13.0	13.5	✓		✓		✓	✓		54	Lmax < 65
1060-HO3	42.0	38.0	new road	55.0	50.0	52.5	48.5	53.0	49.0	11.0	11.0	✓					✓		53	Lmax < 65
1060-HO4	37.0	33.0	new road	55.0	50.0	45.0	41.5	46.0	42.0	9.0	9.0	✓					✓		46	Lmax < 65
1060-HO5	42.5	38.5	new road	55.0	50.0	53.0	49.5	54.0	50.0	11.5	11.5	✓					✓		53	Lmax < 65
1060-HO6	45.0	41.0	new road	55.0	50.0	58.0	54.0	58.5	54.5	13.5	13.5	✓		✓		✓	✓		54	Lmax < 65
1060-HO7	39.0	35.0	new road	55.0	50.0	51.0	47.5	52.0	48.0	13.0	13.0						✓		49	Lmax < 65
1062-HO1	46.5	42.5	new road	55.0	50.0	62.0	59.0	63.0	59.5	16.5	17.0	✓		✓		✓	✓		69	10
1062-HO2	45.5	41.5	new road	55.0	50.0	59.0	56.0	60.0	56.5	14.5	15.0	✓		✓		✓	✓		66	10
1074-HO1	43.5	39.5	new road	55.0	50.0	55.0	51.5	56.0	52.5	12.5	13.0	✓		✓		✓	✓		59	Lmax < 65
1074-HO2	46.0	42.5	new road	55.0	50.0	56.5	53.0	57.5	54.0	11.5	11.5	✓		✓		✓	✓		56	Lmax < 65
1076-HO1	73.0	69.5	new road	73.5	70.0	68.5	61.5	69.5	62.5	-3.5	-7.0	✓	✓		✓	✓			88	27
1078-HO1	46.0	42.0	new road	55.0	50.0	62.0	58.5	62.5	59.0	16.5	17.0	✓	✓	✓		✓	✓		66	7
1083-HO1	39.0	35.0	new road	55.0	50.0	52.5	48.5	53.0	49.0	14.0	14.0	✓					✓		52	Lmax < 65
1084-HO1	58.5	54.5	new road	59.0	55.0	53.5	46.5	54.5	47.0	-4.0	-7.5	✓							66	20
1097-HO1	48.5	44.5	new road	55.0	50.0	52.0	49.0	53.0	49.5	4.5	5.0	✓					✓		58	Lmax < 65
1097-HO2	48.0	44.0	new road	55.0	50.0	54.0	50.5	54.5	51.0	6.5	7.0	✓		✓		✓	✓		60	Lmax < 65
1097-HO3	47.5	44.0	new road	55.0	50.0	54.0	51.0	55.0	51.5	7.5	7.5			✓		✓	✓		59	Lmax < 65
1099-HO1	59.5	55.5	new road	60.0	56.0	55.0	48.0	55.5	48.0	-4.0	-6.5	✓							72	24
1100-HO1	62.0	58.5	new road	62.5	59.0	57.0	50.5	58.0	51.5	-4.0	-7.0	✓							73	22
1101-HO1	45.0	41.5	new road	55.0	50.0	64.0	60.5	65.0	61.0	20.0	19.5	✓	✓	✓	✓	✓			65	Lmax < 65
1102-HO1	55.5	52.0	new road	56.0	52.5	51.0	44.5	52.0	45.0	-3.5	-7.0	✓							62	Lmax < 65
1104-HO1	66.0	62.0	new road	66.5	62.5	61.0	54.0	62.0	55.0	-4.0	-7.0	✓							78	24
1106-HO1	57.0	53.0	new road	57.5	53.5	52.5	46.0	53.5	46.5	-3.5	-6.5	✓							65	19
1109-HO1	60.0	56.5	new road	60.5	57.0	55.5	48.5	56.5	49.5	-3.5	-7.0	✓							70	21
1112-HO1	55.5	51.5	new road	56.0	52.0	51.0	44.5	52.0	45.0	-3.5	-6.5	✓							63	Lmax < 65
1113-HO1	71.5	68.0	new road	72.0	68.5	66.5	60.0	67.5	61.0	-4.0	-7.0	✓			✓	✓	✓		88	28
1113-HO2	69.0	65.5	new road	69.5	66.0	64.0	57.5	65.0	58.5	-4.0	-7.0	✓			✓	✓	✓		83	25
1115-HO1	49.0	45.0	new road	55.0	50.0	52.0	48.5	53.0	49.0	4.0	4.0	✓							57	Lmax < 65
1117-HO1	42.5	38.5	new road	55.0	50.0	51.0	47.0	52.0	47.5	9.5	9.0	✓							52	Lmax < 65
1119-HO1	56.5	52.5	new road	57.0	53.0	56.5	52.5	57.5	53.0	1.0	0.5	✓		✓		✓	✓		62	Lmax < 65
1120-HO1	46.5	42.5	new road	55.0	50.0	62.0	58.0	63.0	59.0	16.5	16.5	✓	✓	✓		✓			64	Lmax < 65
1120-HO2	47.5	43.5	new road	55.0	50.0	56.5	52.5	57.0	53.0	9.5	9.5	✓		✓		✓	✓		64	Lmax < 65
1122-HO1	51.5	47.5	new road	55.0	50.0	54.0	49.5	55.0	50.5	3.5	3.0	✓		✓		✓	✓		57	Lmax < 65
1124-HO1	57.5	53.5	new road	58.0	54.0	52.5	46.0	53.5	46.5	-4.0	-7.0	✓							64	Lmax < 65
1125-HO1	66.0	62.0	new road	66.5	62.5	61.5	54.5	62.0	55.0	-4.0	-7.0	✓							75	21
1126-HO1	66.0	62.5	new road	66.5	63.0	61.5	54.5	62.5	55.5	-3.5	-7.0	✓					✓		79	25
1128-HO1	45.5	42.0	new road	55.0	50.0	50.0	45.5	50.5	46.0	5.0	4.0	✓							53	Lmax < 65
1130-HO1	47.0	43.0	new road	55.0	50.0	53.5	49.0	54.0	50.0	7.0	7.0	✓					✓		55	Lmax < 65
1134-HO1	42.5	39.0	new road	55.0	50.0	49.0	44.0	50.0	45.0	7.5	6.0	✓							50	Lmax < 65
1134-HO2	41.5	38.0	new road	55.0	50.0	46.5	40.5	47.0	41.5	5.5	3.5	✓							50	Lmax < 65
1135-HO1	48.5	44.5	new road	55.0	50.0	58.5	54.5	59.0	55.0	10.5	10.5	✓		✓		✓	✓		58	Lmax < 65
1136-HO1	58.0	54.0	new road	58.5	54.5	53.0	46.5	54.0	47.0	-4.0	-7.0	✓							66	19
1139-HO1	55.5	52.0	new road	56.0	52.5	55.0	50.5	55.5	51.0	0	-1.0	✓					✓		62	Lmax < 65
1139-HO2	54.5	51.0	new road	55.0	51.5	55.0	49.5	56.0	50.0	1.5	-1.0			✓		✓	✓		63	Lmax < 65
1141-HO1	59.0	55.5	new road	59.5	56.0	55.0	49.0	56.0	49.5	-3.0	-6.0	✓							71	22
1142-HO1	66.0	62.0	new road	66.5	62.5	61.0	54.5	62.0	55.0	-4.0	-7.0	✓							79	24
1143-HO1	45.0	41.0	new road	55.0	50.0	49.0	43.5	50.0	44.0	5.0	3.0	✓							53	Lmax < 65
1144-HO1	61.0	57.5	new road	61.5	58.0	57.5	51.0	58.5	51.5	-2.5	-6.0	✓							74	23

Receiver ID	Future Existing 2014 Noise Level		Type of development[1]	EDRTN Target Criteria[2]		Development 2014 Noise Level		Development 2024 Noise Level		Development 2024 - Future Existing 2014 (Noise Level Increase)		Receiver identified and assessed in EIA[3]	Acquired (whole or partially by RMTA or no longer identified as a residential receiver (e.g. shed)	EDRTN Target Criteria Exceeded?	2024 Acute Noise Criteria Exceeded (55 dB Day or 60 dB Night)	Treatment Required with Consideration to the EDRTN	Treatment provided or pending	Additional Treatment required	Pass-by Maximum Noise Level dB(A)	
	Day	Night		Day	Night	Day	Night	Day	Night	Day	Night								Predicted Development Lmax	Lmax - Development 2014 Leq (Night)
1145-HO1	45.0	41.0	new road	55.0	50.0	50.5	45.0	51.5	46.0	6.5	5.0	✓					✓		56	Lmax < 65
1146-HO1	58.0	54.0	new road	58.5	54.5	57.5	52.5	58.5	53.5	0.5	-0.5	✓					✓		64	Lmax < 65
1147-HO1	61.5	57.5	new road	62.0	58.0	58.0	51.5	59.0	52.0	-2.5	-5.5	✓					✓		69	18
1150-HO1	54.0	50.5	new road	55.0	51.0	49.5	42.5	50.5	43.5	-3.5	-7.0	✓							61	Lmax < 65
1150-HO2	63.5	60.0	new road	64.0	60.5	59.0	52.0	60.0	52.5	-3.5	-7.5	✓							74	22
1151-HO1	70.0	66.0	new road	70.5	66.5	65.5	59.0	66.5	59.5	-3.5	-6.5	✓			✓	✓	✓		84	25
1153-HO1	56.0	52.5	new road	56.5	53.0	55.5	51.5	56.5	52.5	0.5	0	✓					✓		63	Lmax < 65
1158-HO1	55.0	51.5	new road	55.5	52.0	57.5	53.5	58.0	54.0	3.0	2.5	✓		✓		✓	✓		62	Lmax < 65
1158-HO2	45.5	42.0	new road	55.0	50.0	49.5	44.5	50.0	45.5	4.5	3.5	✓							58	Lmax < 65
1159-HO1	71.0	67.0	new road	71.5	67.5	69.5	62.5	70.5	63.5	-0.5	-3.5	✓			✓	✓	✓		89	27
1162-HO1	50.0	46.5	new road	55.0	50.0	56.5	51.0	57.0	52.0	7.0	5.5	✓		✓		✓	✓		66	15
1165-HO1	38.5	35.0	new road	55.0	50.0	43.0	38.0	43.5	39.0	5.0	4.0	✓							51	Lmax < 65
1166-HO1	40.5	37.0	new road	55.0	50.0	44.5	40.0	45.5	40.5	5.0	3.5	✓							53	Lmax < 65
1169-HO1	39.0	35.0	new road	55.0	50.0	42.5	38.0	43.5	38.5	4.5	3.5	✓							50	Lmax < 65
1170-HO1	59.0	55.5	new road	59.5	56.0	56.5	49.5	57.0	50.5	-2.0	-5.0	✓							65	16
1171-HO1	41.5	38.0	new road	55.0	50.0	45.0	40.5	46.0	41.0	4.5	3.0	✓							52	Lmax < 65
1172-HO1	42.5	39.0	new road	55.0	50.0	46.5	42.0	47.5	42.5	5.0	3.5	✓							53	Lmax < 65
1173-HO1	58.5	55.5	new road	59.0	56.0	54.5	48.5	55.5	49.0	-3.0	-6.5	✓							65	Lmax < 65
1178-HO1	47.5	43.5	new road	55.0	50.0	49.0	43.5	49.5	44.0	2.0	0.5	✓							51	Lmax < 65
1179-HO1	42.5	38.5	new road	55.0	50.0	45.0	40.0	46.0	41.0	3.5	2.5	✓							50	Lmax < 65
1180-HO1	44.5	40.5	new road	55.0	50.0	46.5	41.5	47.5	42.0	3.0	1.5	✓							51	Lmax < 65
1181-HO1	48.0	44.5	new road	55.0	50.0	49.5	44.5	50.5	45.0	2.5	0.5	✓							53	Lmax < 65
1184-HO1	48.0	44.0	new road	55.0	50.0	49.5	44.5	50.0	45.0	2.0	1.0	✓							53	Lmax < 65
1185-HO1	44.0	40.5	new road	55.0	50.0	46.0	41.0	47.0	42.0	3.0	1.5	✓							51	Lmax < 65
1186-HO1	46.0	42.5	new road	55.0	50.0	51.5	47.0	52.5	47.5	6.5	5.0	✓							59	Lmax < 65
1187-HO1	48.5	45.0	new road	55.0	50.0	49.0	43.5	50.0	44.0	1.5	-1.0	✓							52	Lmax < 65
1188-HO1	45.5	42.0	new road	55.0	50.0	49.5	45.0	50.5	45.5	5.0	3.5	✓							57	Lmax < 65
1190-HO1	45.0	41.5	new road	55.0	50.0	52.0	47.5	53.0	48.0	8.0	6.5	✓							60	Lmax < 65
1192-HO1	47.0	43.5	new road	55.0	50.0	53.5	49.5	54.5	50.0	7.5	6.5	✓							63	Lmax < 65
1194-HO1	47.0	43.5	new road	55.0	50.0	53.0	48.5	54.0	49.5	7.0	6.0	✓							61	Lmax < 65
1195-HO1	48.0	44.0	new road	55.0	50.0	50.5	45.5	51.5	46.5	3.5	2.5	✓							55	Lmax < 65
1196-HO1	46.0	42.5	new road	55.0	50.0	50.5	45.5	51.0	46.0	5.0	3.5	✓							58	Lmax < 65
1196-HO2	47.0	43.5	new road	55.0	50.0	51.0	46.5	52.0	47.0	5.0	3.5	✓							57	Lmax < 65
1197-HO1	47.0	43.5	new road	55.0	50.0	51.5	46.5	52.5	47.5	5.5	4.0	✓							57	Lmax < 65
1198-HO1	49.0	45.5	new road	55.0	50.0	54.5	50.0	55.0	50.0	6.0	4.5	✓							65	15
1199-HO1	47.0	43.0	new road	55.0	50.0	52.5	47.5	53.0	48.5	6.0	5.5	✓							59	Lmax < 65
1200-HO1	45.0	41.0	new road	55.0	50.0	49.0	44.0	50.0	45.0	5.0	4.0	✓							54	Lmax < 65
1202-HO1	46.5	42.5	new road	55.0	50.0	48.5	43.5	49.5	44.5	3.0	2.0	✓							53	Lmax < 65
1203-HO1	46.5	42.5	new road	55.0	50.0	48.0	42.5	48.5	43.0	2.0	0.5	✓							51	Lmax < 65
1205-HO1	49.5	45.5	new road	55.0	50.0	53.5	49.0	54.5	49.5	5.0	4.0	✓							63	Lmax < 65
1205-HO2	47.0	43.5	new road	55.0	50.0	53.0	48.5	54.0	49.0	7.0	5.5	✓							61	Lmax < 65
1208-HO1	49.5	46.0	new road	55.0	50.0	53.0	48.5	54.0	49.0	4.5	3.0	✓							62	Lmax < 65
1209-HO1	47.5	44.0	new road	55.0	50.0	53.0	48.0	53.5	49.0	6.0	5.0	✓							59	Lmax < 65
1210-HO1	49.0	45.5	new road	55.0	50.0	51.5	46.5	52.0	47.0	3.0	1.5	✓							55	Lmax < 65
1211-HO1	48.0	44.5	new road	55.0	50.0	54.0	49.0	54.5	49.5	6.5	5.0	✓							60	Lmax < 65
1212-HO1	47.0	43.5	new road	55.0	50.0	50.0	45.0	50.5	45.5	3.5	2.0	✓							54	Lmax < 65
1213-HO1	48.0	45.0	new road	55.0	50.0	52.0	47.0	53.0	47.5	4.0	2.5	✓							58	Lmax < 65
1214-HO1	49.5	46.0	new road	55.0	50.0	53.0	48.0	54.0	49.0	4.5	3.0	✓							63	Lmax < 65
1215-HO1	48.5	45.0	new road	55.0	50.0	53.5	48.5	54.0	49.0	5.5	4.0	✓							62	Lmax < 65
1218-HO1	48.0	44.0	new road	55.0	50.0	49.5	44.0	50.0	44.5	2.0	0.5	✓							51	Lmax < 65
1220-HO1	44.0	40.0	new road	55.0	50.0	47.5	42.5	48.5	43.5	4.5	3.5	✓							53	Lmax < 65
1221-HO1	49.0	45.0	new road	55.0	50.0	51.0	46.0	52.0	47.0	3.0	2.0	✓							54	Lmax < 65
1223-HO1	59.0	55.0	new road	59.5	55.5	57.0	51.5	57.5	52.5	-1.5	-2.5	✓							65	14
1225-HO1	48.5	45.0	new road	55.0	50.0	53.5	49.0	54.5	49.5	6.0	4.5	✓							62	Lmax < 65
1225-HO2	50.5	46.5	new road	55.0	50.0	53.5	49.0	54.5	49.5	4.0	3.0								61	Lmax < 65
1226-HO1	48.0	44.0	new road	55.0	50.0	49.5	44.0	50.0	45.0	2.0	1.0	✓							51	Lmax < 65
1228-HO1	46.5	43.0	new road	55.0	50.0	49.5	44.0	50.0	45.0	3.5	2.0	✓							52	Lmax < 65
1229-HO1	48.0	44.5	new road	55.0	50.0	50.5	45.5	51.5	46.0	3.5	1.5	✓							54	Lmax < 65
1234-HO1	48.5	44.5	new road	55.0	50.0	51.5	46.5	52.5	47.0	4.0	2.5	✓							55	Lmax < 65
1235-HO1	49.0	45.0	new road	55.0	50.0	49.0	44.5	50.0	45.0	1.0	0	✓							55	Lmax < 65
1236-HO1	48.5	45.0	new road	55.0	50.0	52.0	46.5	53.0	47.5	4.5	2.5	✓							58	Lmax < 65

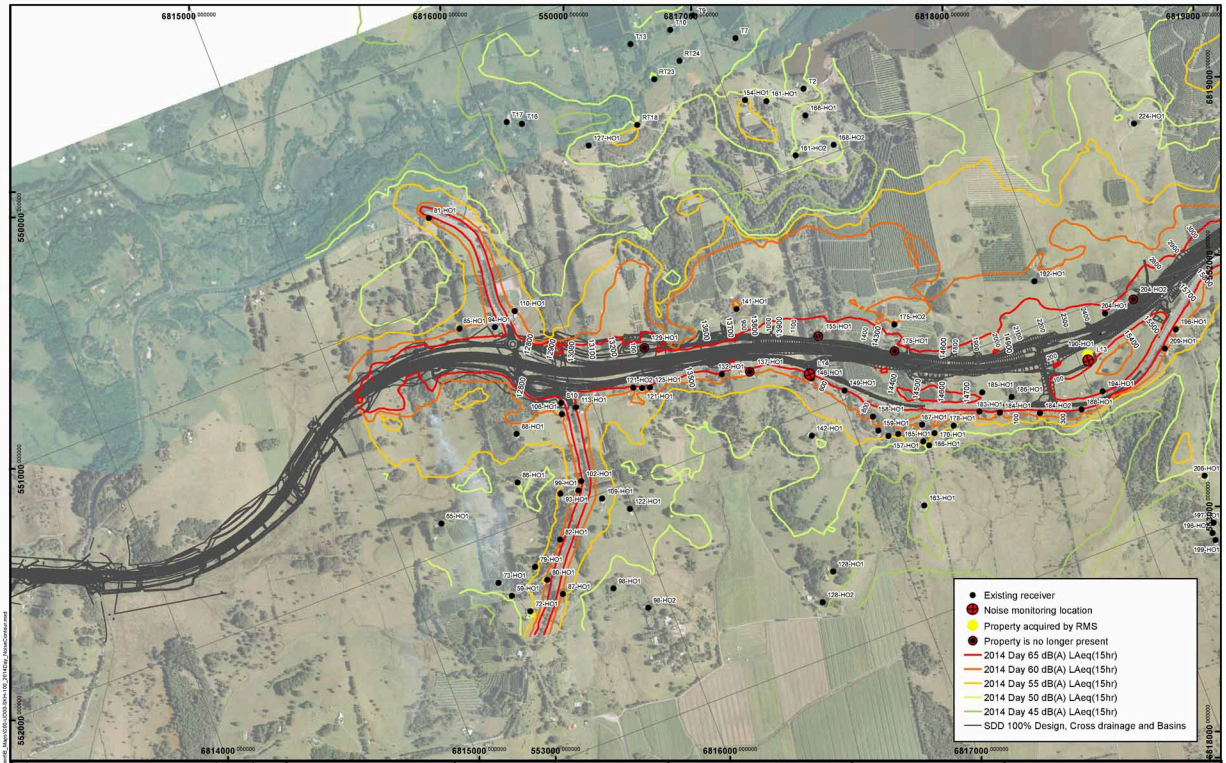
Receiver ID	Future Existing 2014 Noise Level		Type of development[1]	EDRTN Target Criteria[2]		Development 2014 Noise Level		Development 2024 Noise Level		Development 2024 - Future Existing 2014 (Noise Level Increase)		Receiver identified and assessed in EA[3]	Acquired (whole or partially by RMS) or no longer identified as a residential receiver (e.g. shed)	EDRTN Target Criteria Exceeded?	2024 Acute Noise Criteria Exceeded (55 dB Day or 60 dB Night)	Treatment Required with Consideration to the EDRTN	Treatment provided or pending	Additional Treatment required	Pass-by Maximum Noise Level dB(A)	
	Day	Night		Day	Night	Day	Night	Day	Night	Day	Night								Predicted Development Lmax	Lmax - Development 2014 Leq (Night)
1237-HO1	47.5	43.5	new road	55.0	50.0	50.0	45.0	51.0	45.5	3.5	2.0	✓							53	Lmax < 65
1238-HO1	49.5	45.5	new road	55.0	50.0	50.5	45.5	51.0	46.0	1.5	0.5								58	Lmax < 65
1239-HO1	50.0	46.0	new road	55.0	50.0	53.0	48.0	54.0	48.5	4.0	2.5	✓							57	Lmax < 65
1240-HO1	46.5	42.5	new road	55.0	50.0	48.5	43.0	49.0	44.0	2.5	1.5	✓							51	Lmax < 65
1241-HO1	47.0	43.5	new road	55.0	50.0	49.0	44.0	50.0	44.5	3.0	1.0	✓							52	Lmax < 65
1243-HO1	47.5	44.0	new road	55.0	50.0	49.5	44.0	50.5	45.0	3.0	1.0	✓							54	Lmax < 65
1244-HO1	45.0	41.0	new road	55.0	50.0	49.0	44.0	48.5	44.5	4.5	3.5	✓							52	Lmax < 65
1245-HO1	46.0	42.0	new road	55.0	50.0	48.0	43.0	49.0	43.5	3.0	1.5	✓							50	Lmax < 65
1248-HO1	46.0	42.0	new road	55.0	50.0	49.0	44.0	50.0	44.5	4.0	2.5	✓							53	Lmax < 65
1250-HO1	50.0	46.0	new road	55.0	50.0	53.0	47.5	53.5	48.5	3.5	2.5	✓							56	Lmax < 65
1251-HO1	49.5	45.5	new road	55.0	50.0	52.0	46.5	52.5	47.5	3.0	2.0	✓							55	Lmax < 65
1252-HO1	47.5	44.0	new road	55.0	50.0	49.5	44.5	50.5	45.0	3.0	1.0	✓							53	Lmax < 65
1256-HO1	50.5	46.5	new road	55.0	50.0	53.5	48.5	54.5	49.0	4.0	2.5	✓							58	Lmax < 65
1256-HO2	50.0	46.0	new road	55.0	50.0	53.5	48.0	54.0	49.0	4.0	3.0	✓							58	Lmax < 65
1256-HO3	50.5	46.5	new road	55.0	50.0	53.5	48.0	54.5	49.0	4.0	2.5								56	Lmax < 65
1256-HO4	50.0	46.5	new road	55.0	50.0	53.5	47.5	54.0	48.5	4.0	2.0								56	Lmax < 65
1257-HO1	47.0	43.0	new road	55.0	50.0	50.0	45.0	51.0	45.5	4.0	2.5	✓							52	Lmax < 65
1258-HO1	50.0	46.5	new road	55.0	50.0	53.0	47.5	54.0	48.5	4.0	2.0								57	Lmax < 65
1260-HO1	48.0	44.5	new road	55.0	50.0	49.5	44.5	50.5	45.0	2.5	0.5	✓							53	Lmax < 65
1261-HO1	46.5	42.5	new road	55.0	50.0	49.5	44.5	50.5	45.5	4.0	3.0	✓							54	Lmax < 65
1262-HO1	49.5	45.5	new road	55.0	50.0	53.0	47.5	53.5	48.0	4.0	2.5	✓							57	Lmax < 65
1265-HO1	48.0	44.0	new road	55.0	50.0	49.5	44.5	50.5	45.0	2.5	1.0	✓							53	Lmax < 65
1267-HO1	47.0	43.0	new road	55.0	50.0	49.5	44.5	50.5	45.5	3.5	2.5	✓							55	Lmax < 65
1270-HO1	49.5	45.5	new road	55.0	50.0	52.5	47.0	53.5	48.0	4.0	2.5	✓							57	Lmax < 65
1271-HO1	46.0	42.0	new road	55.0	50.0	48.5	43.5	49.5	44.5	3.5	2.5	✓							53	Lmax < 65
1272-HO1	46.0	42.0	new road	55.0	50.0	48.0	43.0	49.0	44.0	3.0	2.0	✓							55	Lmax < 65
1274-HO1	47.0	43.0	new road	55.0	50.0	49.5	44.5	50.5	45.0	3.5	2.0	✓							52	Lmax < 65
1277-HO1	45.5	41.5	new road	55.0	50.0	48.5	43.5	49.0	44.0	3.5	2.5	✓							55	Lmax < 65
1280-HO1	47.0	43.0	new road	55.0	50.0	49.0	43.5	49.5	44.5	2.5	1.5	✓							53	Lmax < 65
1281-HO1	47.0	43.0	new road	55.0	50.0	49.5	44.0	50.5	45.0	3.5	2.0	✓							54	Lmax < 65
1282-HO1	46.0	42.0	new road	55.0	50.0	48.5	43.5	49.5	44.0	3.5	2.0	✓							52	Lmax < 65
1283-HO1	47.5	43.5	new road	55.0	50.0	49.0	44.0	50.0	45.0	2.5	1.5	✓							51	Lmax < 65
1283-HO3	47.5	43.5	new road	55.0	50.0	49.0	44.0	50.0	44.5	2.5	1.0								49	Lmax < 65
1283-HO4	47.5	43.0	new road	55.0	50.0	49.0	43.5	50.0	44.5	2.5	1.5								48	Lmax < 65
1284-HO1	47.5	44.0	new road	55.0	50.0	49.5	44.5	50.5	45.0	3.0	1.0	✓							52	Lmax < 65
1285-HO1	46.5	42.5	new road	55.0	50.0	49.0	43.5	50.0	44.5	3.5	2.0	✓							54	Lmax < 65
1287-HO1	47.5	43.0	new road	55.0	50.0	49.5	44.0	50.5	45.0	3.0	2.0	✓							51	Lmax < 65
1288-HO1	48.0	44.0	new road	55.0	50.0	50.5	45.0	51.0	46.0	3.0	2.0	✓							53	Lmax < 65
1289-HO1	47.5	43.5	new road	55.0	50.0	50.0	44.5	51.0	45.5	3.5	2.0	✓							52	Lmax < 65
1290-HO1	45.0	41.0	new road	55.0	50.0	50.0	44.5	50.5	45.0	5.5	4.0	✓							53	Lmax < 65
1291-HO1	59.5	55.5	new road	60.0	56.0	59.0	53.5	59.5	54.0	0	-1.5	✓							64	Lmax < 65
1295-HO2	57.5	53.5	new road	58.0	54.0	62.0	56.0	63.0	57.0	5.5	3.5			✓		✓	✓		63	Lmax < 65
1303-HO1	53.5	49.5	new road	55.0	50.0	55.0	50.0	56.0	50.5	2.5	1.0	✓	✓						63	Lmax < 65
1303-HO2	54.0	50.0	new road	55.0	50.5	56.5	51.0	57.5	52.0	3.5	2.0	✓		✓		✓	✓		64	Lmax < 65
1307-HO1	58.0	54.0	new road	58.5	54.5	59.0	54.0	60.0	54.5	2.0	0.5	✓		✓		✓	✓		75	21
1308-HO1	57.0	53.0	new road	57.5	53.5	58.0	53.0	58.5	54.0	1.5	1.0	✓		✓		✓	✓		72	19
1309-HO1	56.0	52.0	new road	56.5	52.5	58.0	52.5	58.5	53.5	2.5	1.5	✓		✓		✓	✓		67	14
1311-HO1	54.0	50.0	new road	55.0	50.5	58.0	52.5	59.0	53.5	5.0	3.5	✓		✓		✓	✓		58	Lmax < 65
1311-HO2	54.0	50.0	new road	55.0	50.5	58.0	52.5	59.0	53.0	5.0	3.0			✓		✓	✓		58	Lmax < 65
1313-HO1	57.0	53.0	new road	57.5	53.5	59.5	54.5	60.0	55.0	3.0	2.0	✓		✓		✓	✓		65	11
1314-HO1	64.0	60.0	new road	64.5	60.5	65.0	60.5	65.5	61.0	1.5	1.0			✓	✓	✓		✓	71	10
1314-HO2	69.0	65.0	new road	69.5	65.5	70.5	66.0	71.5	67.0	2.5	2.0			✓	✓	✓		✓	81	15
BANG-21	49.0	45.0	new road	55.0	50.0	47.5	43.5	48.5	44.5	-0.5	-0.5	✓							51	Lmax < 65
BANG-62	51.0	47.0	new road	55.0	50.0	49.5	45.5	50.5	46.5	-0.5	-0.5	✓							54	Lmax < 65
BANG-71	49.0	45.0	new road	55.0	50.0	47.0	43.0	47.5	44.0	-1.5	-1.0	✓							54	Lmax < 65

Note 1: Based on EMMM Practice Notes (i)

Note 2: Based on EDRTN

Note 3: Some receivers may have been labelled under a different name for the EA. For example, receivers in the Clover Hill area.

Appendix S – Detailed Design Noise Contour Plots (5 dB increments)



Issue	Description	Date	Approved
F2	100% DESIGN	04.03.14	EM

Scales

0 2000 100 100 200 250 Metres

1:13000

PRELIMINARY ONLY
NOT TO BE USED FOR CONSTRUCTION

Original Size	A3	Drawn	SW
Coordinate System	MGA ZONE 56	Designed	TG
Height Datum	AHD	Date Printed	5/03/2014 -3:47:00 PM
Filename	G00-UD00-SKH-100_2014Day_NoiseContour.mxd		

RTA Reg'n no:

Transport Roads & Maritime Services

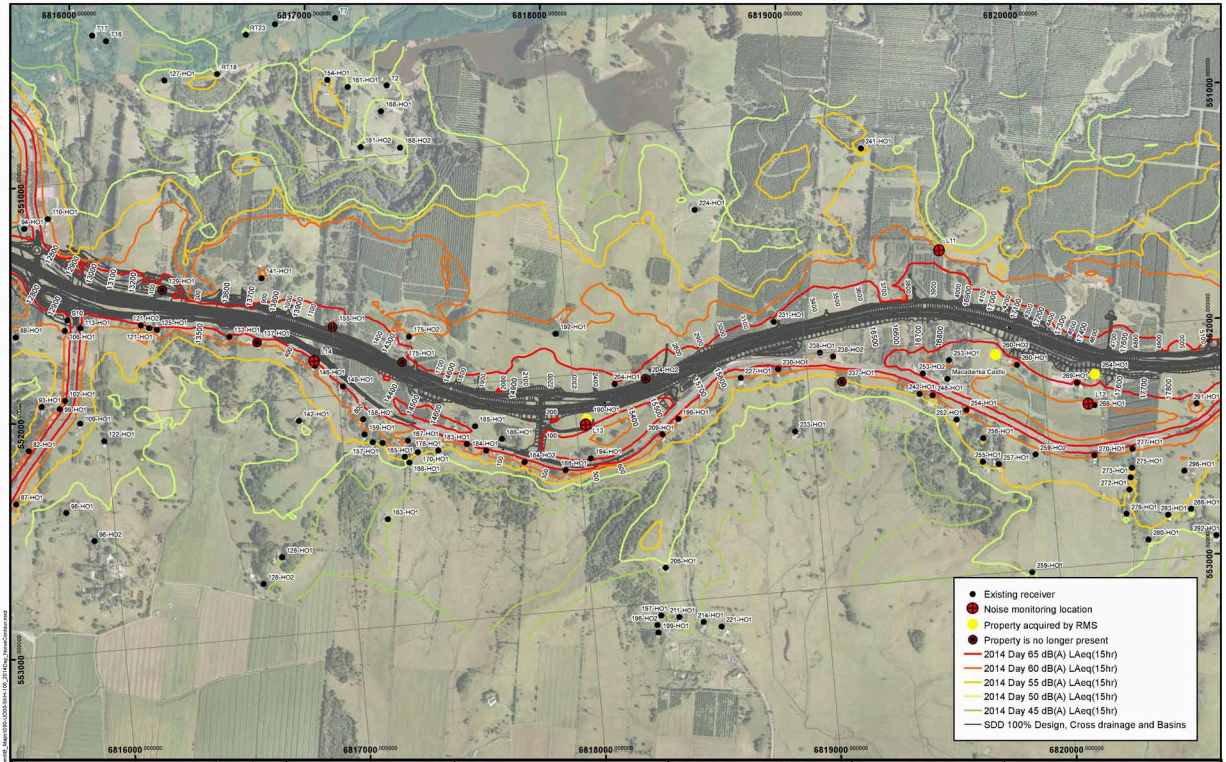
PACIFIC HIGHWAY UPGRADE
TINTENBAR TO EWINGSDALE

OPERATION NOISE MANAGEMENT REPORT

2014 Day LAeq(15hr) Noise Contour Plots

Zone	Lot Code	Doc Code	Drawing No	Issue
S02	UD00	SKH	110	A

50mm on Original



Issue	Description	Date	Approved
F2	100% DESIGN	04.03.14	EM

50mm on Original

Scales

0 2000 100 100 200 250 Metres

1:13000

PRELIMINARY ONLY
NOT TO BE USED FOR CONSTRUCTION

Original Size	A3	Drawn	SW
Coordinate System	MGA ZONE 56	Designed	TG
Height Datum	AHD	Date Printed	5/03/2014 -3:47:43 PM
Filename	000-UD00-SKH-100_20140ay_NoiseContour.mxd		

RTA Reg'n no.

Transport Roads & Maritime Services

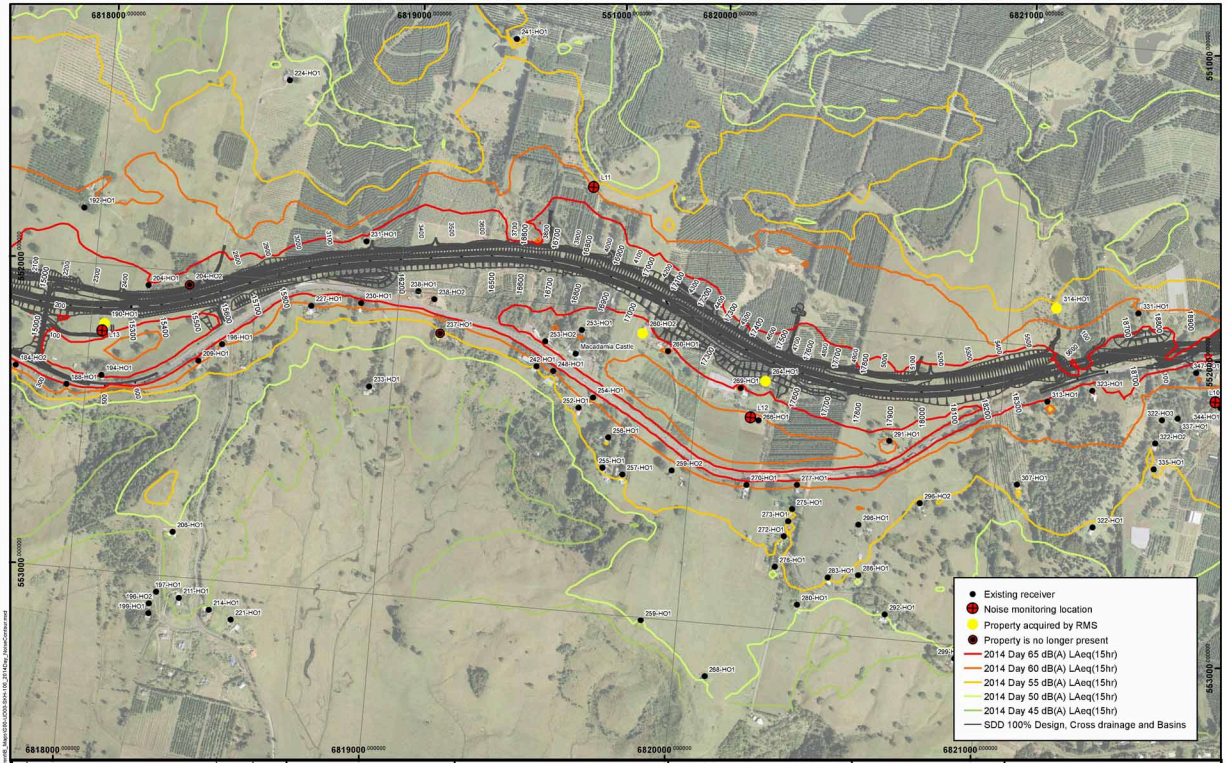
PACIFIC HIGHWAY UPGRADE
TINTENBAR TO EWINGSDALE

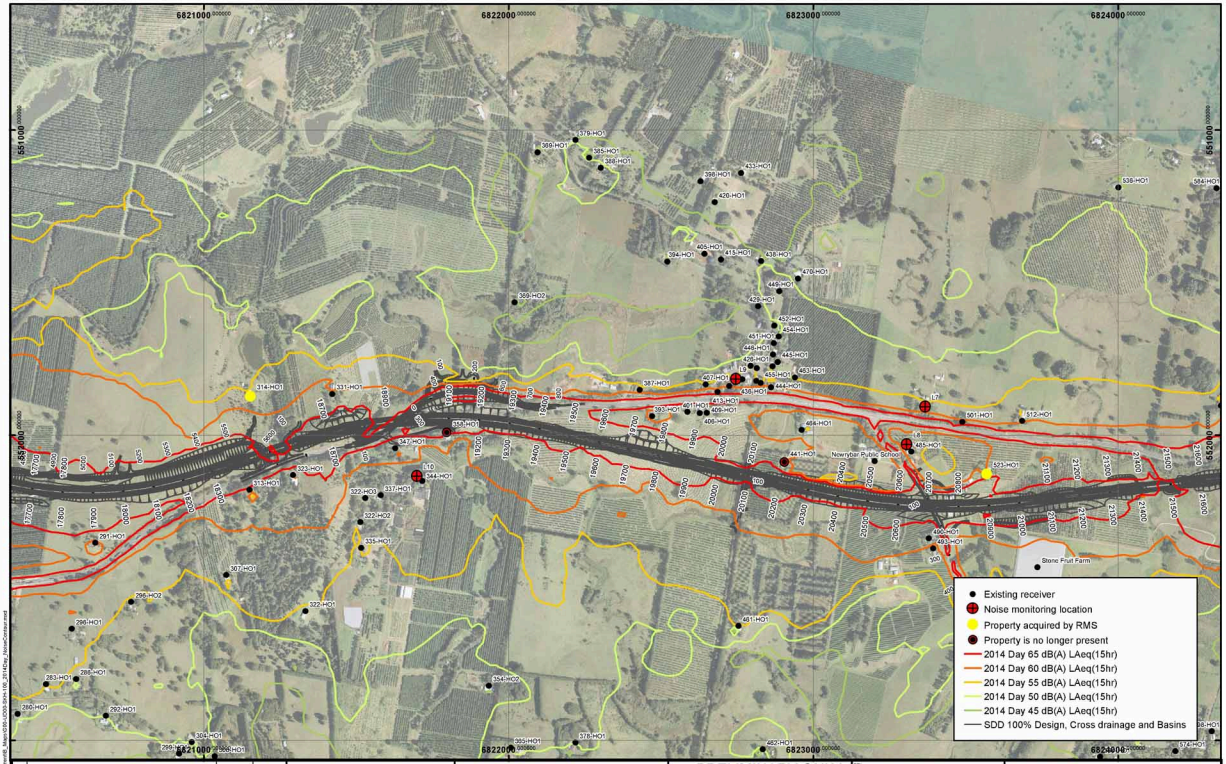
OPERATION NOISE MANAGEMENT REPORT

2014 Day LAeq(15hr) Noise Contour Plots

Zone	Lot Code	Doc Code	Drawing No.	Issue
S02	UD00	SKH	111	A

P:\81099\81099_EIS_EIS_SKCH_Current\8_Maps\GIS\UD00-SKH-100_20140ay_NoiseContour.mxd


6818000
6819000
6820000
6821000
553000
553100
553200
553300
553400
553500
553600
553700
553800
553900
554000
554100
554200
554300
554400
554500
554600
554700
554800
554900
555000
555100
555200
555300
555400
555500
555600
555700
555800
555900
556000
556100
556200
556300
556400
556500
556600
556700
556800
556900



F2	100% DESIGN	04.03.14	EM
Issue	Description	Date	Approved

50mm on Original

Scales

0 25 50 100 150 200 250 Metres

1:10000

PRELIMINARY ONLY
NOT TO BE USED FOR CONSTRUCTION

Original Size	A3	Drawn	SW
Coordinate System	MGA ZONE 56	Designed	TG
Height Datum	AHD	Date Printed	5/03/2014 - 3:48:47 PM
Filename	000-UD00-SKH-100_20140ay_NoiseContour.mxd		

RTA Reg'n no.

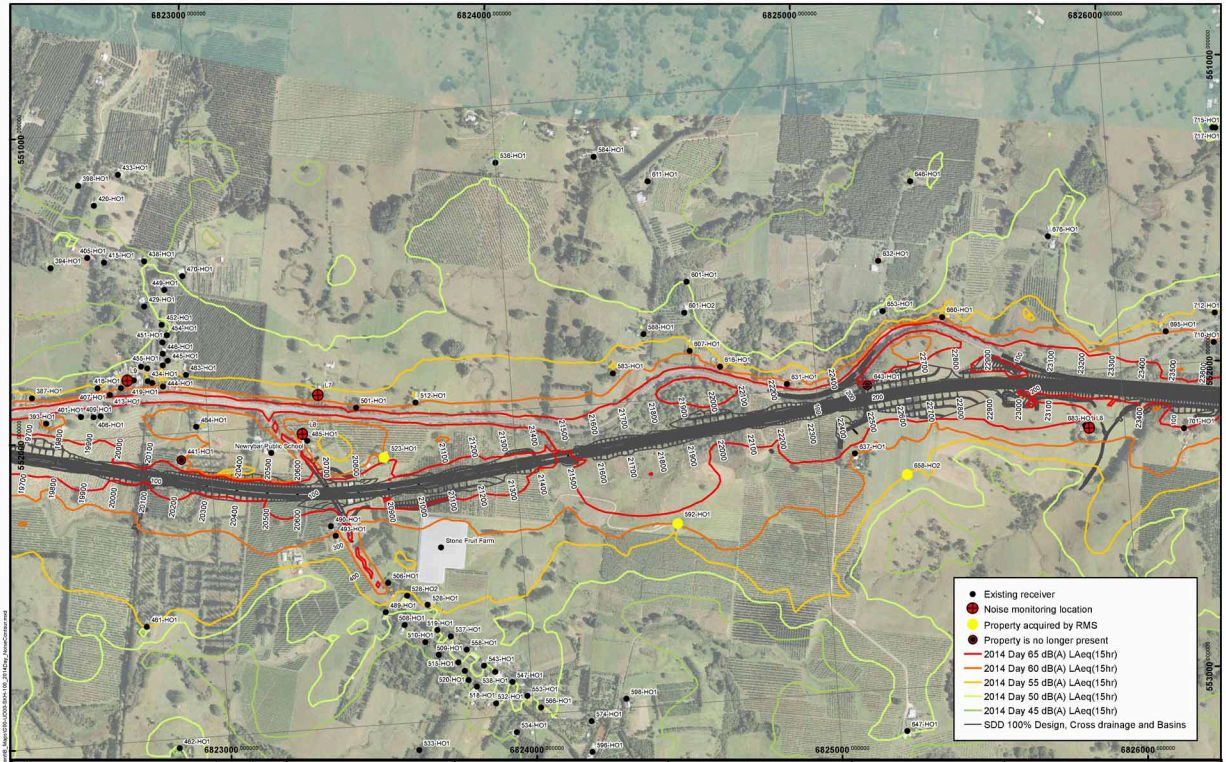
Transport Roads & Maritime Services

PACIFIC HIGHWAY UPGRADE
TINTENBAR TO EWINGSDALE

OPERATION NOISE MANAGEMENT REPORT

2014 Day LAeq(15hr) Noise Contour Plots

Zone	Lot Code	Doc Code	Drawing No.	Issue
S02	UD00	SKH	113	A



F2	100% DESIGN	04.03.14	EM
Issue	Description	Date	Approved

50mm on Original

Scales

0 25 50 100 150 200 250 Metres

1:10000

Hyder

müller + hereth

BAULDERSTONE

GHD

CM+

PRELIMINARY ONLY

NOT TO BE USED FOR CONSTRUCTION

Original Size	A3	Drawn	SW
Coordinate System	MGA ZONE 56	Designed	TG
Height Datum	AHD	Date Printed	5/03/2014 - 3:49:08 PM
Filename	C00-UD00-SKH-100_20140ay_NoiseContour.mxd		

RTA Reg'n no.

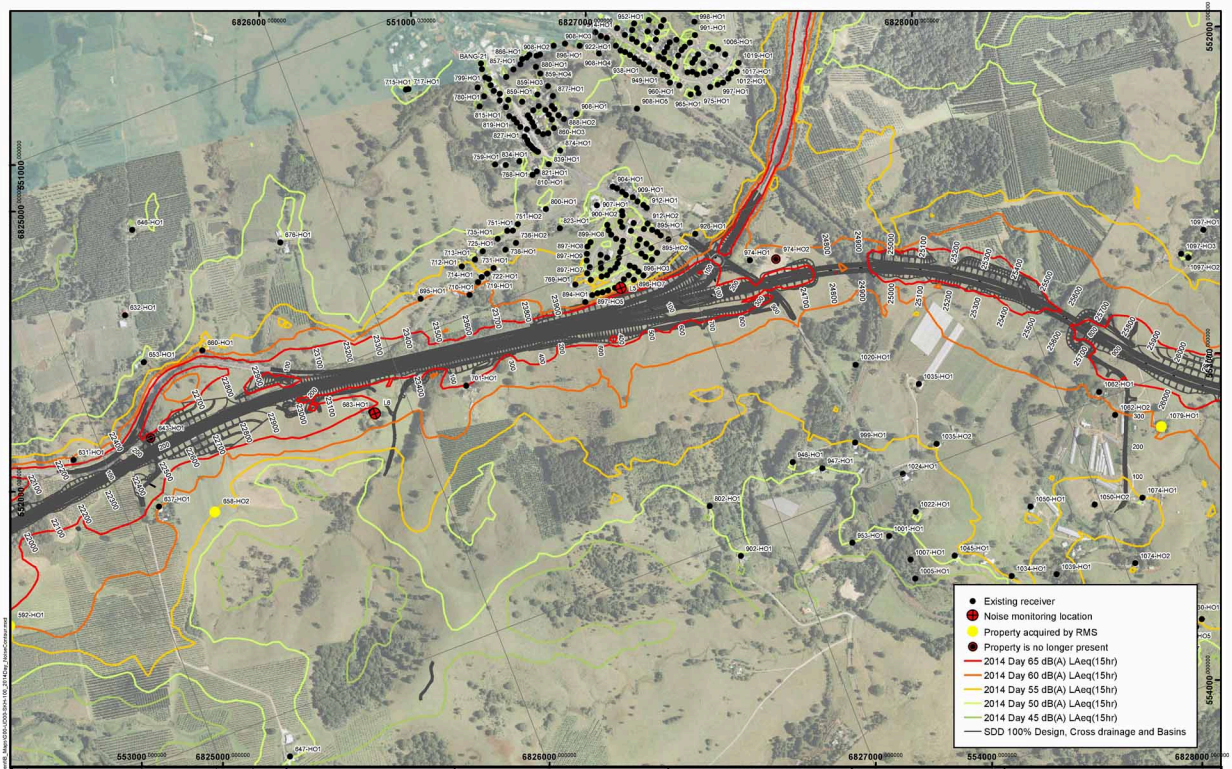
NSW GOVERNMENT Transport Roads & Maritime Services

PACIFIC HIGHWAY UPGRADE
TINTENBAR TO EWINGSDALE

OPERATION NOISE MANAGEMENT REPORT

2014 Day LAeq(15hr) Noise Contour Plots

Zone	Lot Code	Doc Code	Drawing No.	Issue
C03	UD00	SKH	114	A



Issue	Description	Date	Approved
F2	100% DESIGN	04.03.14	EM

50mm on Original

Scales: 1:10000 (0 25 50 100 150 200 250 Metres)

Hyder | müller + hereth | BAULDERSTONE | GHD | CM+

PRELIMINARY ONLY
NOT TO BE USED FOR CONSTRUCTION

Original Size	A3	Drawn	SW
Coordinate System	MGA ZONE 56	Designed	TG
Height Datum	AHD	Date Printed	5/03/2014 - 3:49:30 PM
Filename	C00-UD00-SKH-100_20140ay_NoiseContour.mxd		

RTA Reg'n no.

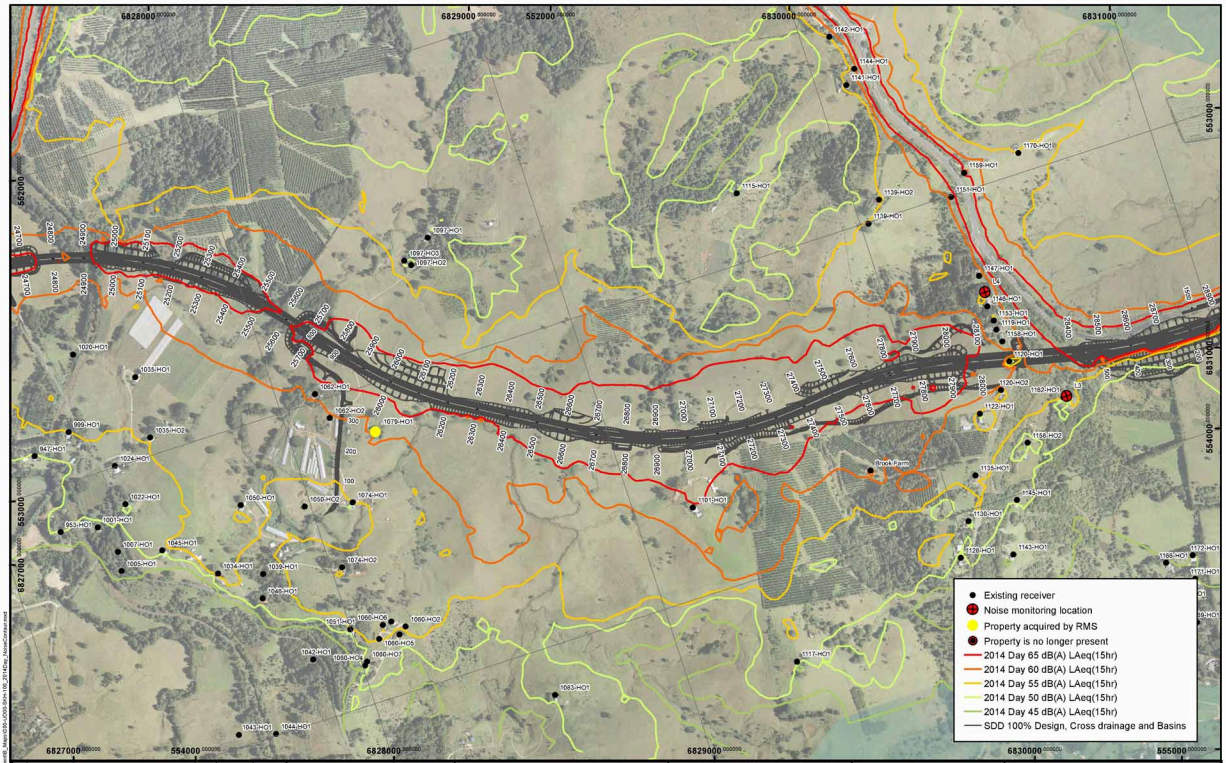
NSW GOVERNMENT Transport Roads & Maritime Services

PACIFIC HIGHWAY UPGRADE
TINTENBAR TO EWINGSDALE

OPERATION NOISE MANAGEMENT REPORT

2014 Day LAeq(15hr) Noise Contour Plots

Zone	Lot Code	Doc Code	Drawing No	Issue
C03	UD00	SKH	115	A



Issue	Description	Date	Approved
F2	100% DESIGN	04.03.14	EM

10mm on Original

Scales: 0 25 50 100 150 200 250 Metres — 1:10000

Hyder | müller + hereth | BAULDERSTONE | GHD | CM+

PRELIMINARY ONLY
NOT TO BE USED FOR CONSTRUCTION

Original Size	A3	Drawn	SW
Coordinate System	MGA ZONE 56	Designed	TG
Height Datum	AHD	Date Printed	5/03/2014 - 3:50:04 PM
Filename	000-UD00-SKH-100_20140ay_NoiseContour.mxd		

RTA Reg'n no:

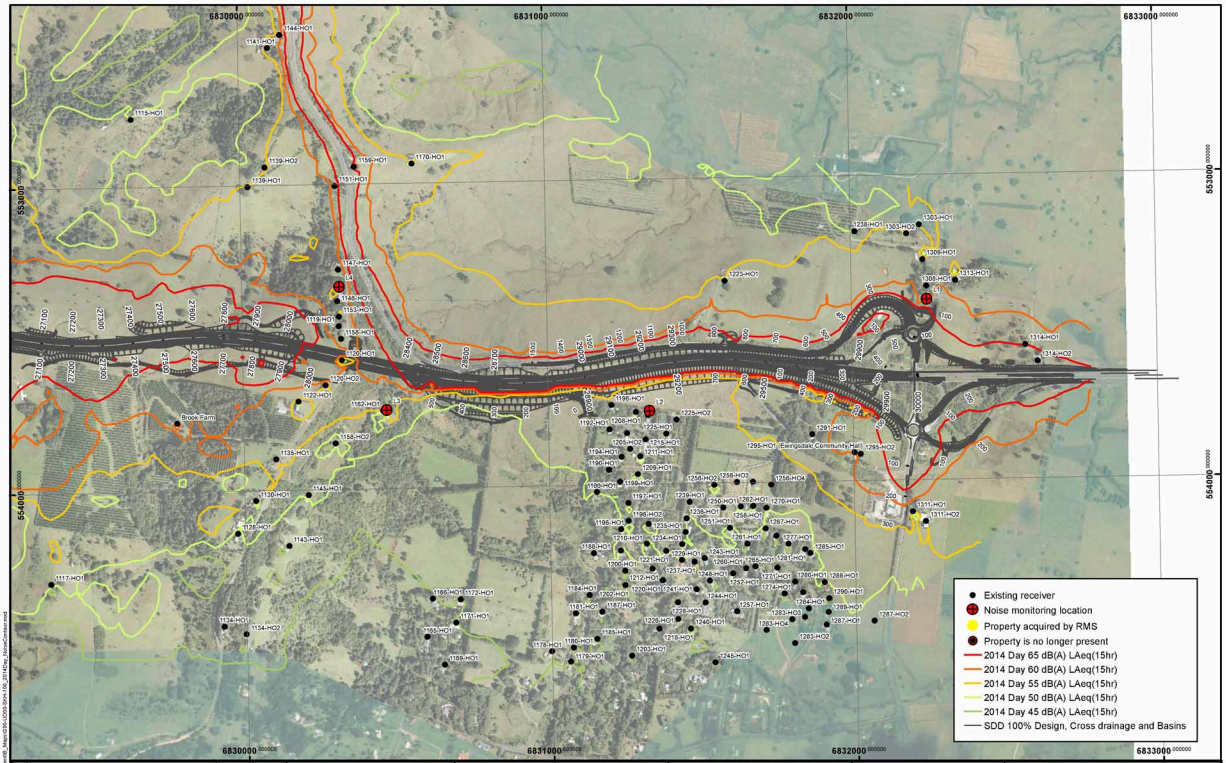
NSW GOVERNMENT Transport Roads & Maritime Services

PACIFIC HIGHWAY UPGRADE
TINTENBAR TO EWINGSDALE

OPERATION NOISE MANAGEMENT REPORT

2014 Day LAeq(15hr) Noise Contour Plots

Zone	Lot Code	Doc Code	Drawing No	Issue
N04	UD00	SKH	116	A



Issue	Description	Date	Approved
F2	100% DESIGN	04.03.14	EM

50mm on Original

Scales

0 25 50 100 150 200 250 Metres

1:10,000

Hyder

BAULDERSTONE

GHD

CM+

möller + hereth

PRELIMINARY ONLY

NOT TO BE USED FOR CONSTRUCTION

Original Size	A3	Drawn	SW
Coordinate System	MGA ZONE 56	Designed	TG
Height Datum	AHD	Date Printed	5/03/2014 - 3:50:32 PM
Filename	000-UD00-SKH-100_20140ay_NoiseContour.mxd		

RTA Reg'n no.

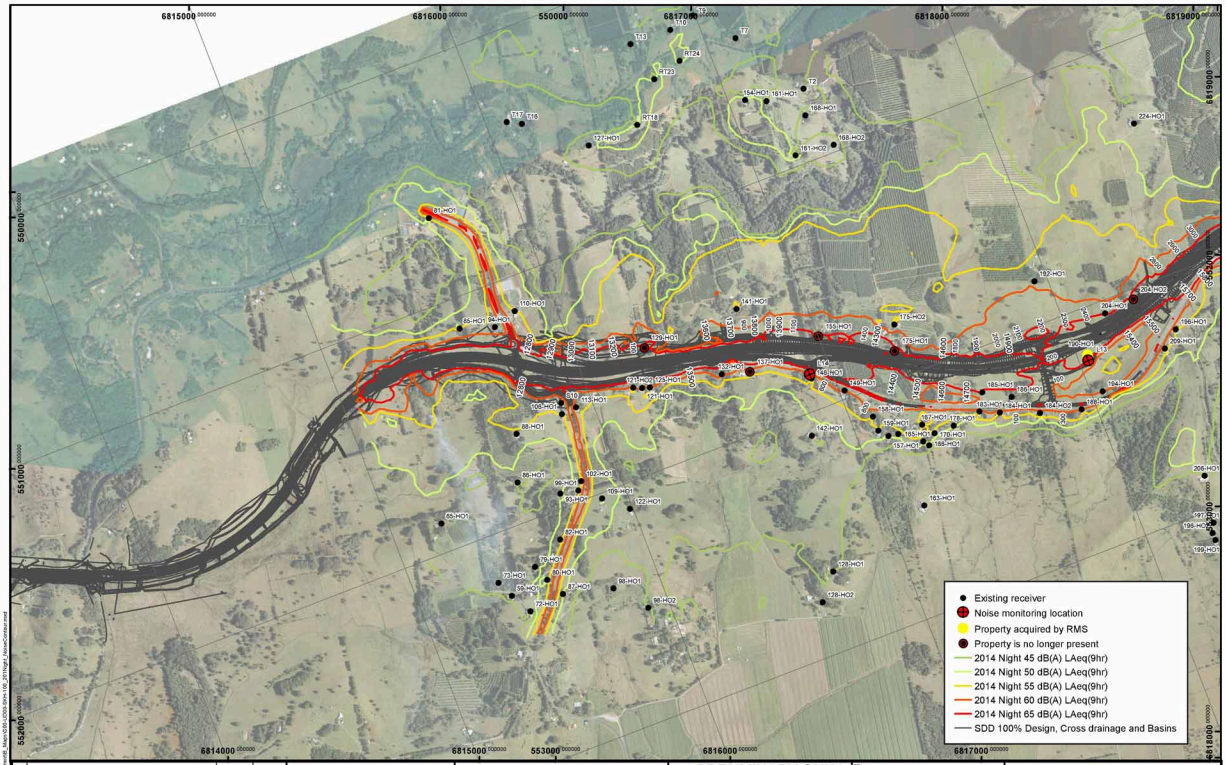
NSW GOVERNMENT Transport Roads & Maritime Services

PACIFIC HIGHWAY UPGRADE
TINTENBAR TO EWINGSDALE

OPERATION NOISE MANAGEMENT REPORT

2014 Day LAeq(15hr) Noise Contour Plots

Zone	Lot Code	Doc Code	Drawing No.	Issue
N04	UD00	SKH	117	A



Issue	Description	Date	Approved
F2	100% DESIGN	04.03.14	EM

Scales

0 2500 100 150 200 250 Metres

1:13000

50mm on Original

PRELIMINARY ONLY
NOT TO BE USED FOR CONSTRUCTION

Original Size	A3	Drawn	SW
Coordinate System	MGA ZONE 56	Designed	TG
Height Datum	AHD	Date Printed	5/03/2014 -3:47:07 PM
Filename	G00-UD00-SKH-100_2014Night_NoiseContour.mxd		

RTA Reg'n no.

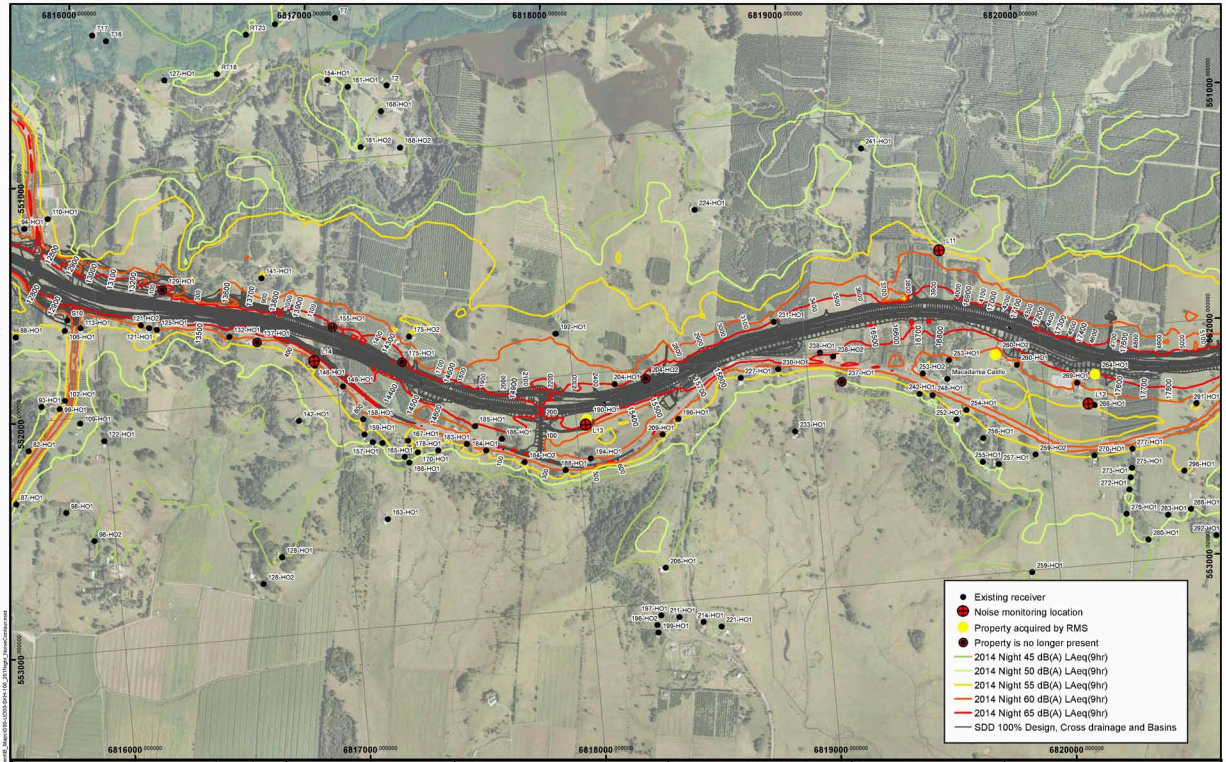
Transport Roads & Maritime Services

PACIFIC HIGHWAY UPGRADE
TINTENBAR TO EWINGSDALE

OPERATION NOISE MANAGEMENT REPORT

2014 Night LAeq(9hr) Noise Contour Plots

Zone	Lot Code	Doc Code	Drawing No	Issue
S02	UD00	SKH	210	A



Issue	Description	Date	Approved
F2	100% DESIGN	04.03.14	EM

50mm on Original

Scales: 0 2500 100 150 200 250 Metres — 1:13000

PRELIMINARY ONLY
NOT TO BE USED FOR CONSTRUCTION

Original Size	A3	Drawn	SW
Coordinate System	MGA ZONE 56	Designed	TG
Height Datum	AHD	Date Printed	5/03/2014 -3:47:48 PM
Filename	G00-UD00-SKH-100_2014Night_NoiseContour.mxd		

RTA Reg'n no.

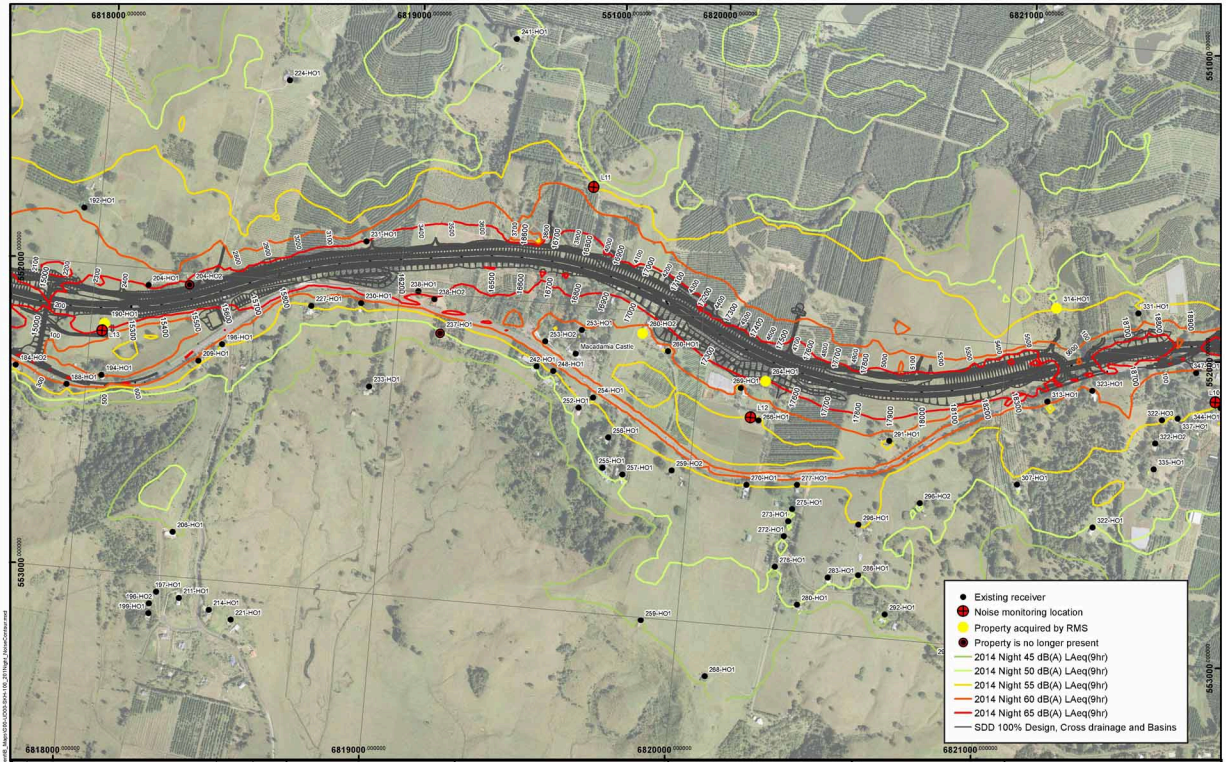
Transport Roads & Maritime Services — NSW Government

PACIFIC HIGHWAY UPGRADE
TINTENBAR TO EWINGSDALE

OPERATION NOISE MANAGEMENT REPORT

2014 Night LAeq(9hr) Noise Contour Plots

Zone	Lot Code	Doc Code	Drawing No	Issue
S02	UD00	SKH	211	A



F2	100% DESIGN	04.03.14	EM
Issue	Description	Date	Approved

Scales

0 25 50 100 150 200 250 Metres

1:10000

50mm on Original

PRELIMINARY ONLY
NOT TO BE USED FOR CONSTRUCTION

Original Size	A3	Drawn	SW
Coordinate System	MGA ZONE 56	Designed	TG
Height Datum	AHD	Date Printed	5/03/2014 - 3:48:25 PM
Filename		G00-UD00-SKH-100_2014Night_NoiseContour.mxd	

RTA Reg'n no.

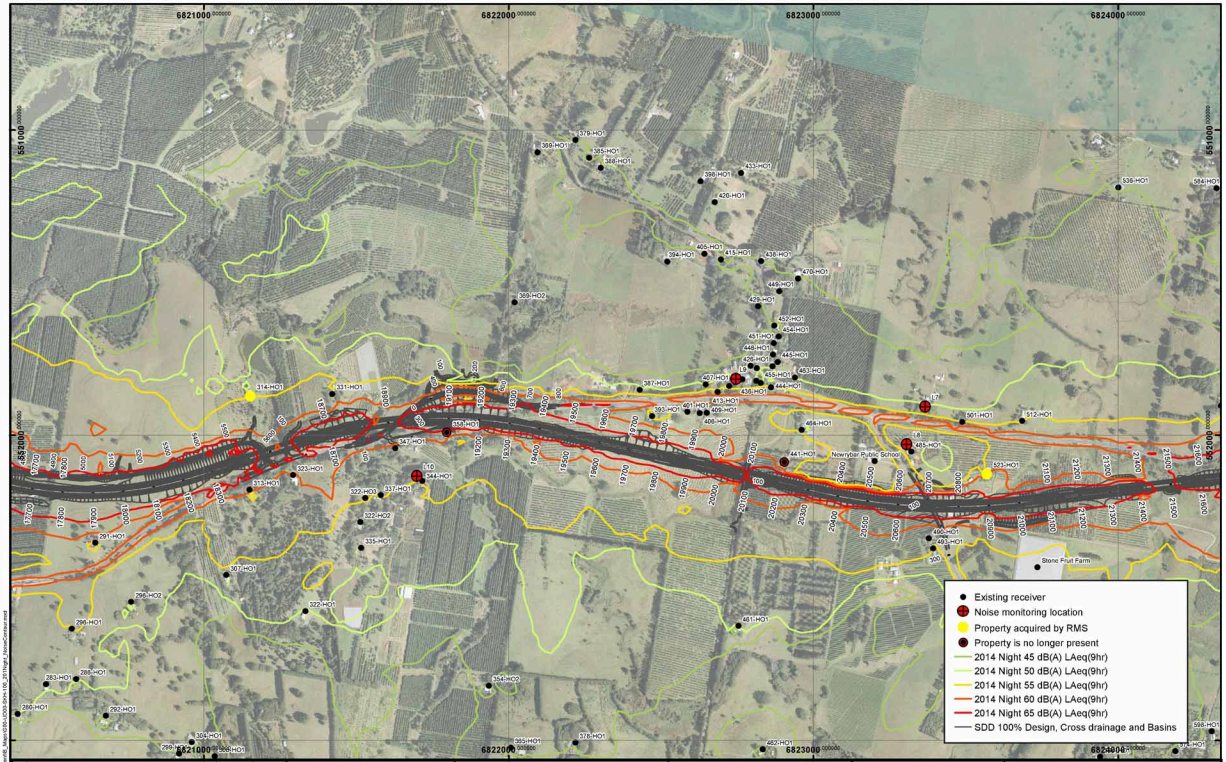
Transport Roads & Maritime Services

PACIFIC HIGHWAY UPGRADE
TINTENBAR TO EWINGSDALE

OPERATION NOISE MANAGEMENT REPORT

2014 Night LAeq(9hr) Noise Contour Plots

Zone	Lot Code	Doc Code	Drawing No	Issue
S02	UD00	SKH	222	A



Issue	Description	Date	Approved
F2	100% DESIGN	04.03.14	EM

Scales: 1:10000

0 25 50 100 150 200 250 Metres

50mm on Original

PRELIMINARY ONLY
NOT TO BE USED FOR CONSTRUCTION

Original Size	A3	Drawn	SW
Coordinate System	MGA ZONE 56	Designed	TG
Height Datum	AHD	Date Printed	5/03/2014 - 3:48:49 PM
Filename	G00-UD00-SKH-100_2014Night_NoiseContour.mxd		

RTA Reg'n no.

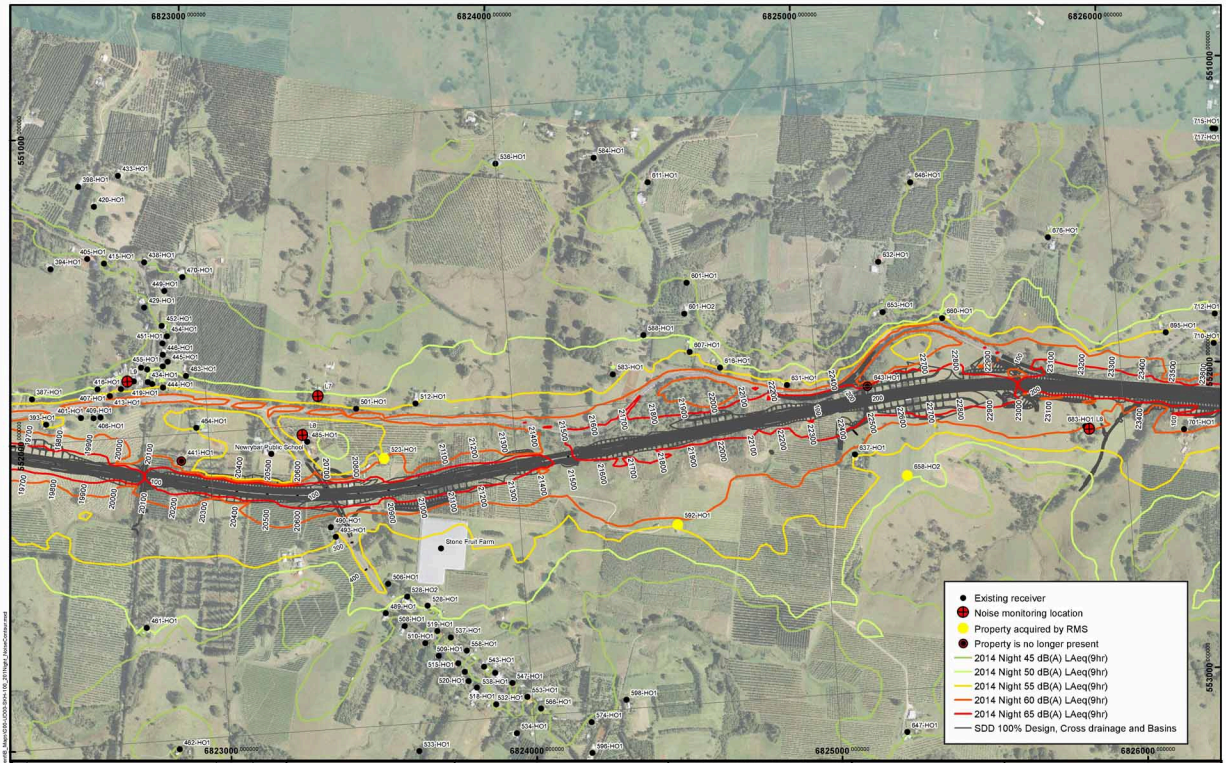
Transport Roads & Maritime Services

PACIFIC HIGHWAY UPGRADE
TINTENBAR TO EWINGSDALE

OPERATION NOISE MANAGEMENT REPORT

2014 Night LAeq(9hr) Noise Contour Plots

Zone	Lot Code	Doc Code	Drawing No	Issue
S02	UD00	SKH	213	A



F2	100% DESIGN	04.03.14	EM
Issue	Description	Date	Approved

50mm on Original

Scales

0 25 50 100 150 200 250 Metres

1:10000

Hyder

müller + hereth

BAULDERSTONE

GHD

CM+

PRELIMINARY ONLY

NOT TO BE USED FOR CONSTRUCTION

Original Size	A3	Drawn	SW
Coordinate System	MGA ZONE 56	Designed	TG
Height Datum	AHD	Date Printed	5/03/2014 -3:49.10 PM
Filename	G00-UD00-SKH-100_2014Night_NoiseContour.mxd		

RTA Reg'n no.

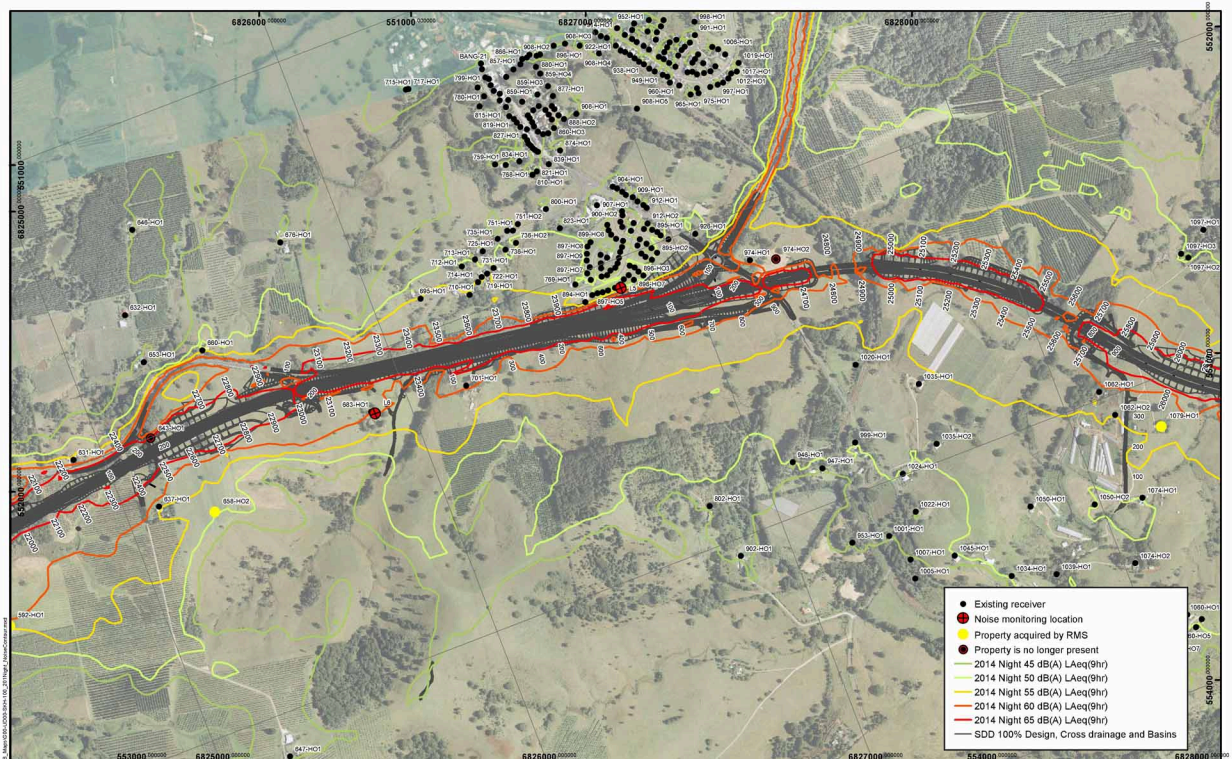
NSW GOVERNMENT Transport Roads & Maritime Services

PACIFIC HIGHWAY UPGRADE
TINTENBAR TO EWINGSDALE

OPERATION NOISE MANAGEMENT REPORT

2014 Night LAeq(9hr) Noise Contour Plots

Zone	Lot Code	Doc Code	Drawing No	Issue
C03	UD00	SKH	214	A



Issue	Description	Date	Approved
F2	100% DESIGN	04.03.14	EM

50mm on Original

Scales: 1:10000 (0 25 50 100 150 200 250 Metres)

Hyder | müller + hereth | BAULDERSTONE | GHD | CM+

PRELIMINARY ONLY
NOT TO BE USED FOR CONSTRUCTION

Original Size	A3
Drawn	SW
Coordinate System	MGA ZONE 56
Designed	TG
Height Datum	AHD
Date Printed	5/03/2014 -3:49:32 PM
Filename	G00-UD00-SKH-100_2014Night_NoiseContour.mxd

RTA Reg'n no.

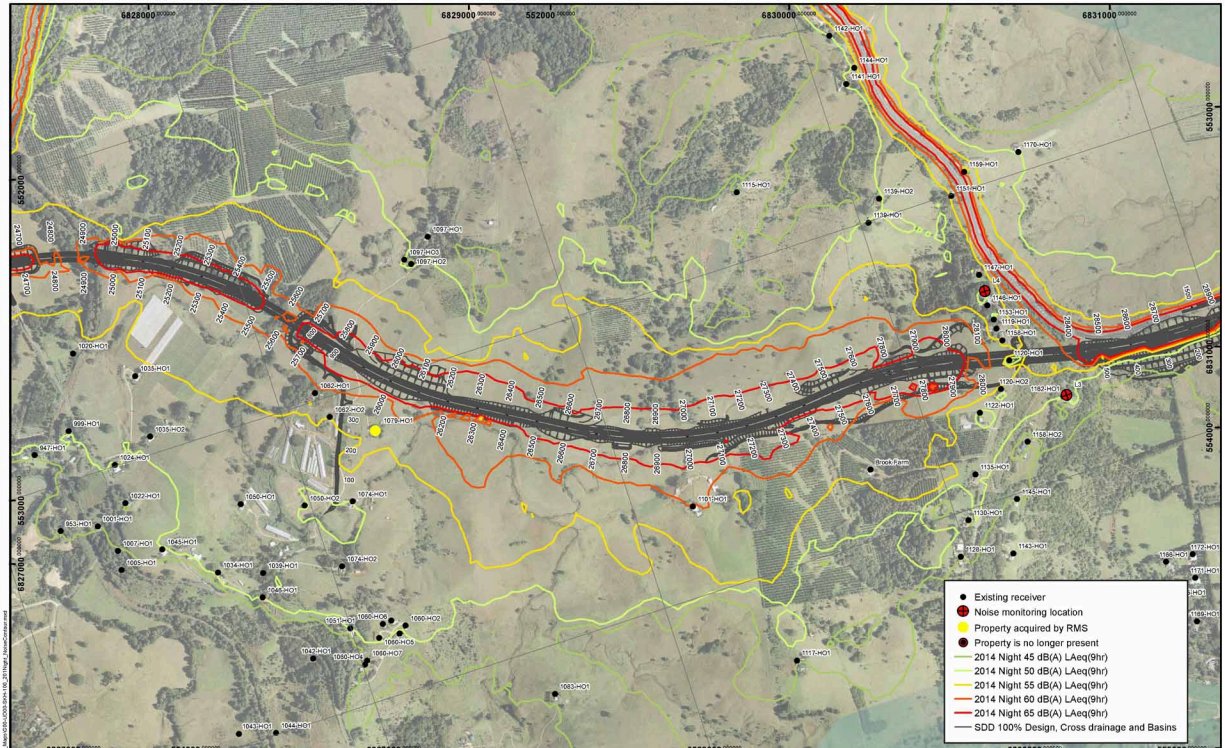
NSW GOVERNMENT Transport Roads & Maritime Services

PACIFIC HIGHWAY UPGRADE
TINTENBAR TO EWINGSDALE

OPERATION NOISE MANAGEMENT REPORT

2014 Night LAeq(9hr) Noise Contour Plots

Zone	Lot Code	Doc Code	Drawing No.	Issue
C03	UD00	SKH	215	A



Issue	Description	Date	Approved
F2	100% DESIGN	04.03.14	EM

50mm on Original

Scales

0 25 50 100 150 200 250 Metres

1:10000

Hyder

müller + hereth

BAULDERSTONE

GHD

CM+

PRELIMINARY ONLY

NOT TO BE USED FOR CONSTRUCTION

Original Size	A3	Drawn	SW
Coordinate System	MGA ZONE 56	Designed	TG
Height Datum	AHD	Date Printed	5/03/2014 - 3:50:05 PM
Filename	000-UD00-SKH-100_2014Night_NoiseContour.mxd		

RTA Reg'n no:

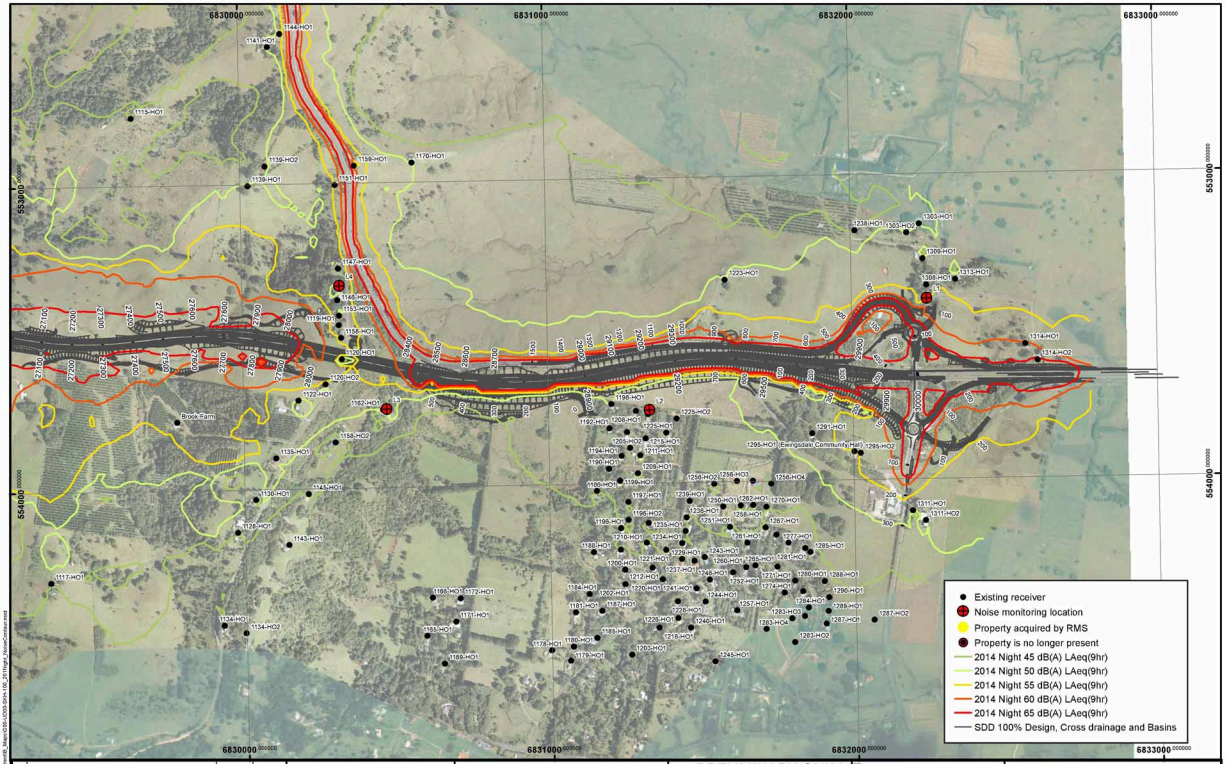
NSW GOVERNMENT Transport Roads & Maritime Services

PACIFIC HIGHWAY UPGRADE
TINTENBAR TO EWINGSDALE

OPERATION NOISE MANAGEMENT REPORT

2014 Night LAeq(9hr) Noise Contour Plots

Zone	Lot Code	Doc Code	Drawing No	Issue
N04	UD00	SKH	216	A



Issue	Description	Date	Approved
F2	100% DESIGN	04.03.14	EM

50mm on Original

Scales

0 25 50 100 150 200 250 Metres

1:10000

PRELIMINARY ONLY
NOT TO BE USED FOR CONSTRUCTION

Original Size	A3	Drawn	SW
Coordinate System	MGA ZONE 56	Designed	TG
Height Datum	AHD	Date Printed	5/03/2014 - 3:50:32 PM
Filename	G00-UD00-SKH-100_2014Night_NoiseContour.mxd		

RTA Reg'n no.

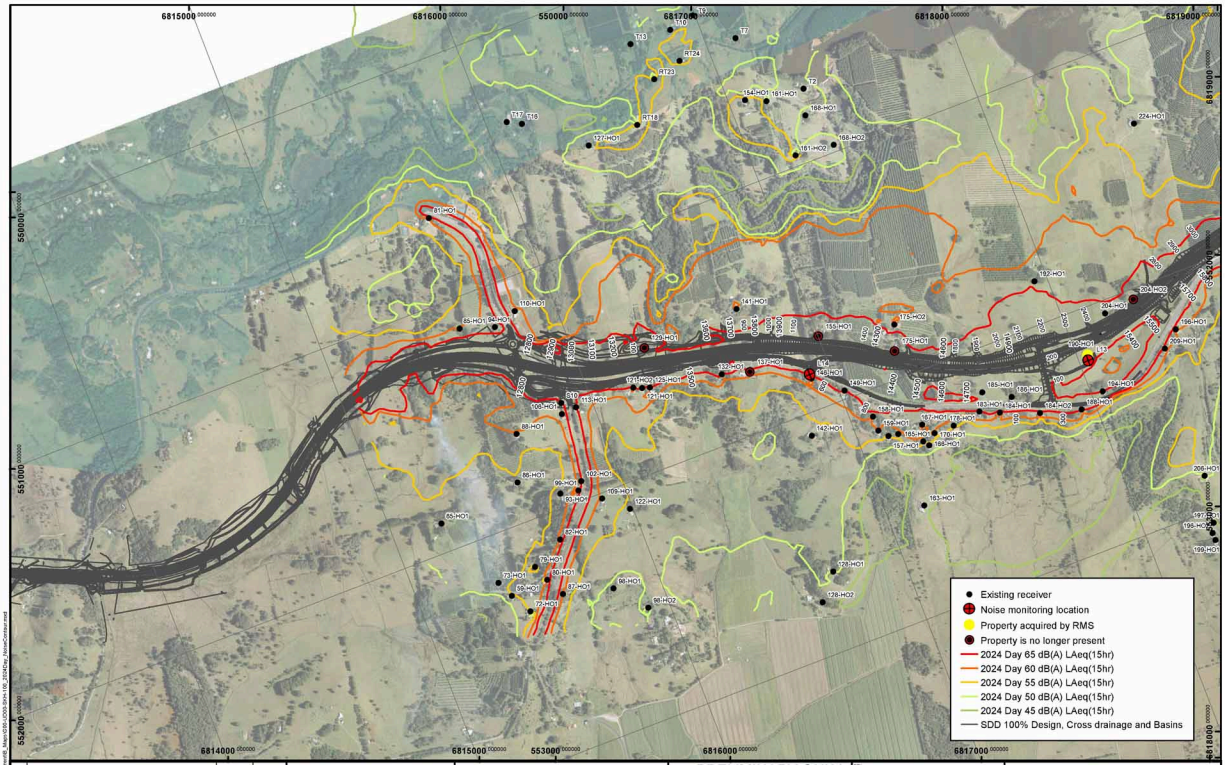
Transport Roads & Maritime Services

PACIFIC HIGHWAY UPGRADE
TINTENBAR TO EWINGSDALE

OPERATION NOISE MANAGEMENT REPORT

2014 Night LAeq(9hr) Noise Contour Plots

Zone	Lot Code	Doc Code	Drawing No	Issue
N04	UD00	SKH	217	A



Issue	Description	Date	Approved
F2	100% DESIGN	04.03.14	EM

Scales

0 2550 100 150 200 250 Metres

1:13000

Hyder

müller + hereth

BAULDERSTONE

GHD

CM+

PRELIMINARY ONLY

NOT TO BE USED FOR CONSTRUCTION

Original Size	A3	Drawn	SW
Coordinate System	MGA ZONE 56	Designed	TG
Height Datum	AHD	Date Printed	5/03/2014 -3:37:14 PM
Filename	G00-UD00-SKH-100_2024Day_NoiseContour.mxd		

RTA Reg'n no.

NSW GOVERNMENT Transport Roads & Maritime Services

PACIFIC HIGHWAY UPGRADE
TINTENBAR TO EWINGSDALE

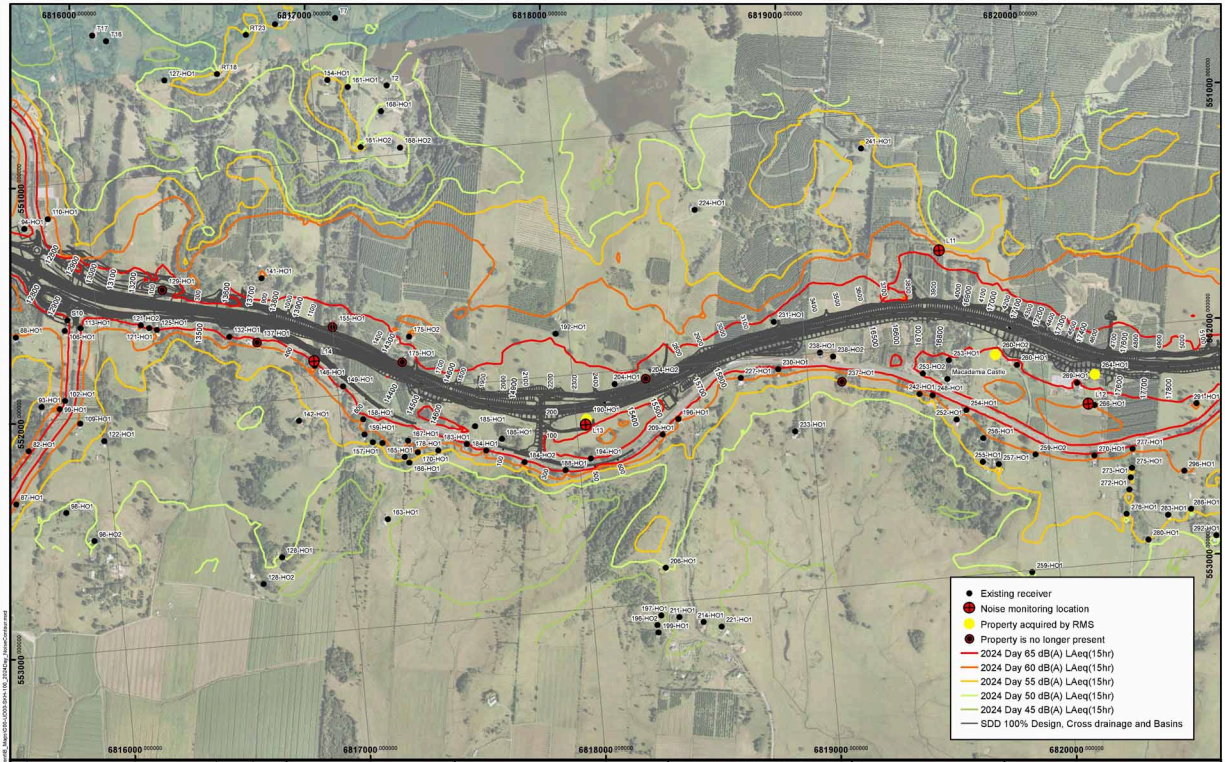
OPERATION NOISE MANAGEMENT REPORT

2024 Day LAeq(15hr) Noise Contour Plots

Zone	Lot Code	Doc Code	Drawing No.	Issue
S02	UD00	SKH	310	A

50mm on Original

G:\SYDPROJECTS\E_EIS_EIS\04_Current\E_Assess\GIS\G00-SKH-100_2024Day_NoiseContour.mxd



Issue	Description	Date	Approved
F2	100% DESIGN	04.03.14	EM

50mm on Original

Scales

0 2550 100 150 200 250 Metres

1:13000

PRELIMINARY ONLY
NOT TO BE USED FOR CONSTRUCTION

Original Size	A3	Drawn	SW
Coordinate System	MGA ZONE 56	Designed	TG
Height Datum	AHD	Date Printed	5/03/2014 -3:37:55 PM
Filename	000-UD00-SKH-100_2024Day_NoiseContour.mxd		

RTA Reg'n no.

Transport Roads & Maritime Services

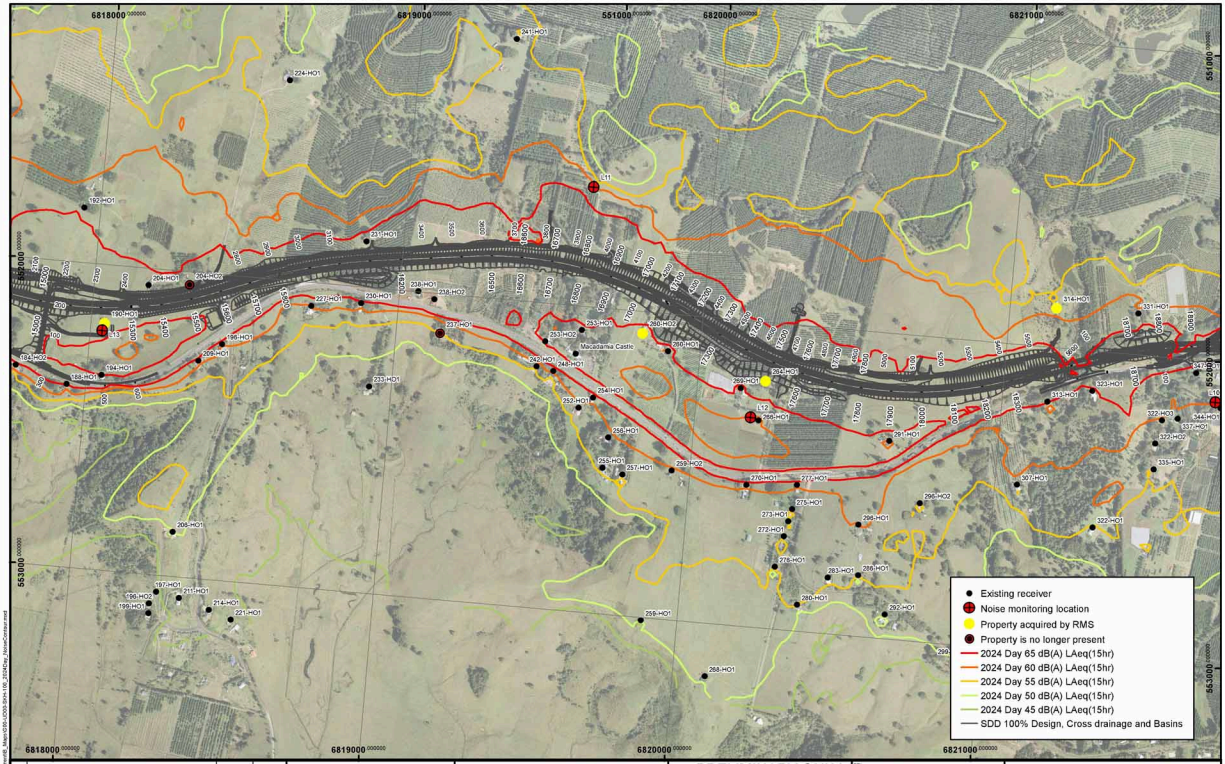
PACIFIC HIGHWAY UPGRADE
TINTENBAR TO EWINGSDALE

OPERATION NOISE MANAGEMENT REPORT

2024 Day LAeq(15hr) Noise Contour Plots

Zone	Lot Code	Doc Code	Drawing No.	Issue
S02	UD00	SKH	311	A

G:\31\00994\EIS\TAB_EIS_2012\N_Contour\N_Maps\SKH-UD00-SKH-100_2024Day_NoiseContour.mxd



Issue	Description	Date	Approved
F2	100% DESIGN	04.03.14	EM

32mm on Original

Scales

0 25 50 100 150 200 250 Metres

1:10000

Hyder

müller+hereth

BAULDERSTONE

GHD

CM+

PRELIMINARY ONLY

NOT TO BE USED FOR CONSTRUCTION

Original Size	A3	Drawn	SW
Coordinate System	MGA ZONE 56	Designed	TG
Height Datum	AHD	Date Printed	5/03/2014 - 3:38:36 PM
Filename	000-UD00-SKH-100_2024Day_NoiseContour.mxd		

RTA Reg'n no.

NSW GOVERNMENT Transport Roads & Maritime Services

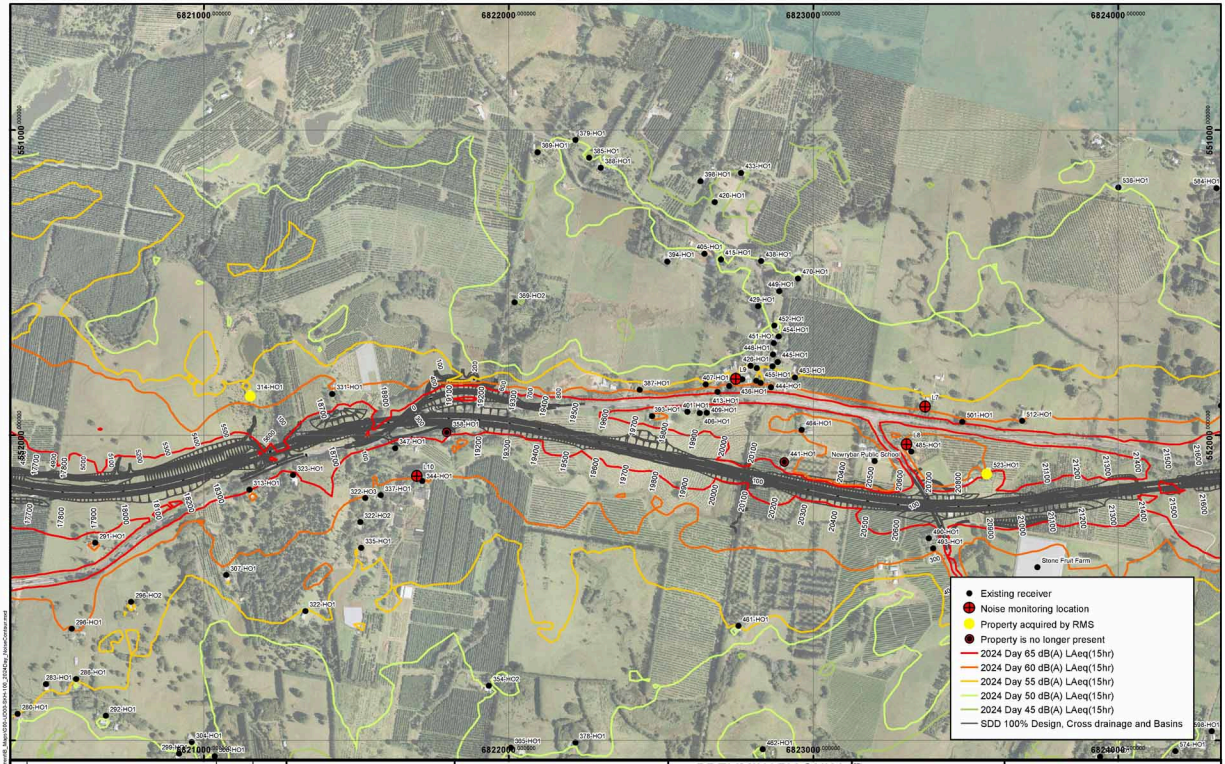
PACIFIC HIGHWAY UPGRADE
TINTENBAR TO EWINGSDALE

OPERATION NOISE MANAGEMENT REPORT

2024 Day LAeq(15hr) Noise Contour Plots

Zone	Lot Code	Doc Code	Drawing No	Issue
S02	UD00	SKH	322	A

G:\21\00000351\TIS_EIS_EIS\24_Current\B_Maps\SKH-UD00-SKH-100_2024Day_NoiseContour.mxd



Issue	Description	Date	Approved
F2	100% DESIGN	04.03.14	EM

50mm on Original

Scales: 0 25 50 100 150 200 250 Metres

1:10000

Hyder

müller + hereth

BAULDERSTONE

GHD

CM+

PRELIMINARY ONLY

NOT TO BE USED FOR CONSTRUCTION

Original Size	A3	Drawn	SW
Coordinate System	MGA ZONE 56	Designed	TG
Height Datum	AHD	Date Printed	5/03/2014 -3:39:01 PM
Filename	000-UD00-SKH-100_2024Day_NoiseContour.mxd		

RTA Reg'n no.

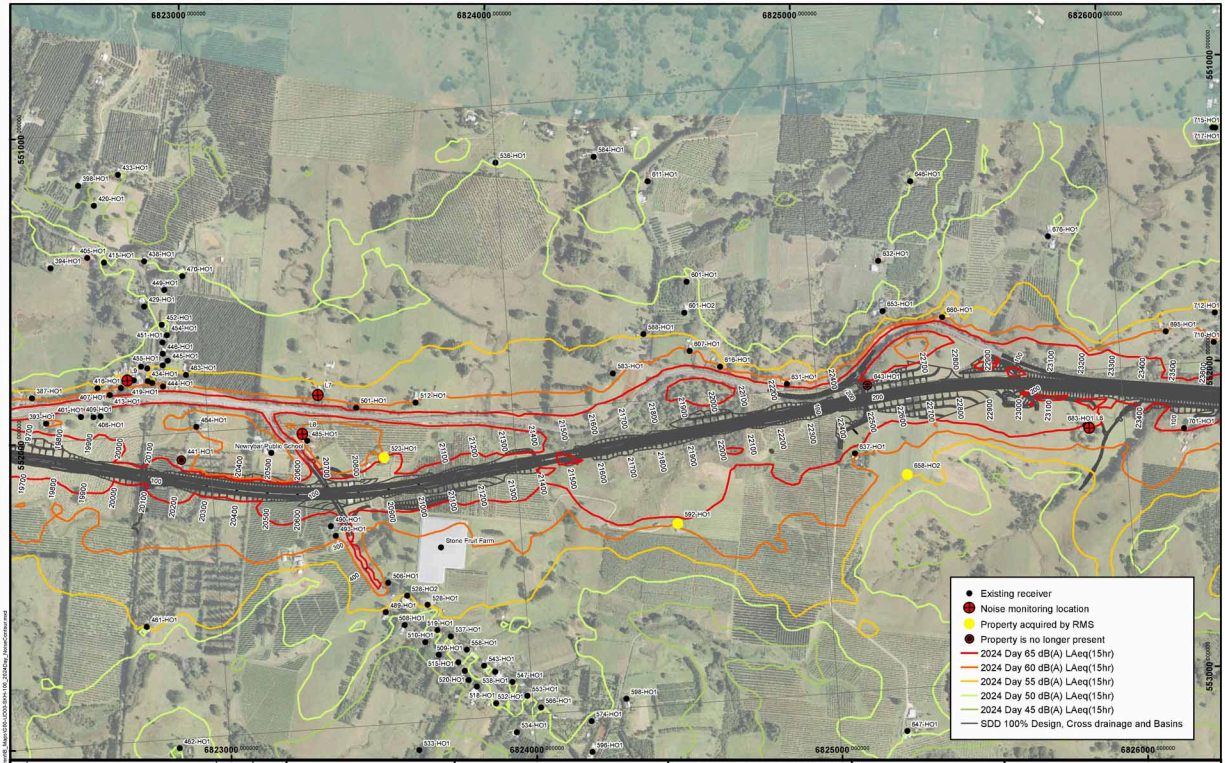
NSW GOVERNMENT Transport Roads & Maritime Services

PACIFIC HIGHWAY UPGRADE
TINTENBAR TO EWINGSDALE

OPERATION NOISE MANAGEMENT REPORT

2024 Day LAeq(15hr) Noise Contour Plots

Zone	Lot Code	Doc Code	Drawing No.	Issue
S02	UD00	SKH	313	A



Issue	Description	Date	Approved
F2	100% DESIGN	04.03.14	EM

Scales

0 25 50 100 150 200 250 Metres

1:10000

Hyder

müller + hereth

BAULDERSTONE

GHD

CM+

PRELIMINARY ONLY
NOT TO BE USED FOR CONSTRUCTION

Original Size	A3	Drawn	SW
Coordinate System	MGA ZONE 56	Designed	TG
Height Datum	AHD	Date Printed	5/03/2014 -3:39:22 PM
Filename	G00-UD00-SKH-100_2024Day_NoiseContour.mxd		

RTA Reg'n no:

NSW GOVERNMENT Transport Roads & Maritime Services

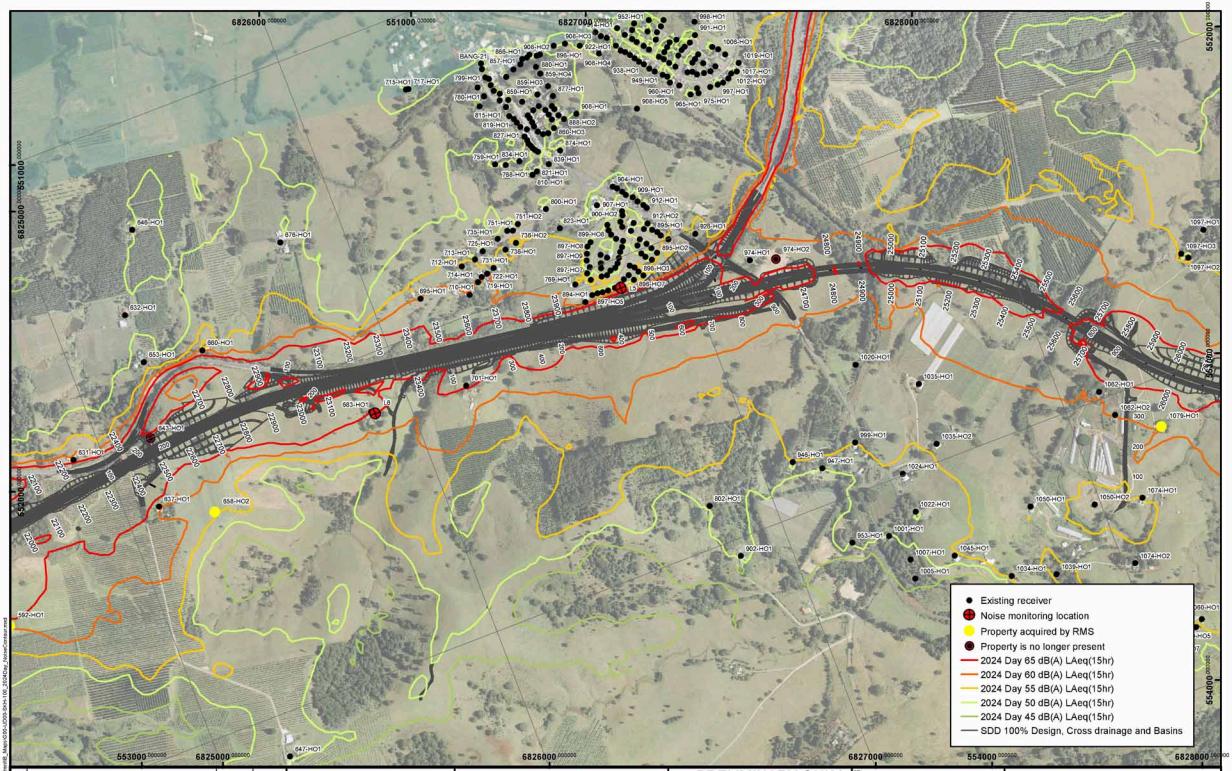
PACIFIC HIGHWAY UPGRADE
TINTENBAR TO EWINGSDALE

OPERATION NOISE MANAGEMENT REPORT

2024 Day LAeq(15hr) Noise Contour Plots

Zone	Lot Code	Doc Code	Drawing No	Issue
C03	UD00	SKH	314	A

50mm on Original



Issue	Description	Date	Approved
F2	100% DESIGN	04.03.14	EM

Scales: 1:10000 (0 25 50 100 150 200 250 Metres)

PRELIMINARY ONLY
NOT TO BE USED FOR CONSTRUCTION

Original Size	A3	Drawn	SW
Coordinate System	MGA ZONE 56	Designed	TG
Height Datum	AHD	Date Printed	5/03/2014 -3:39:45 PM
Filename	C00-UD00-SKH-100_2024Day_NoiseContour.mxd		

RTA Reg'n no.

Transport Roads & Maritime Services

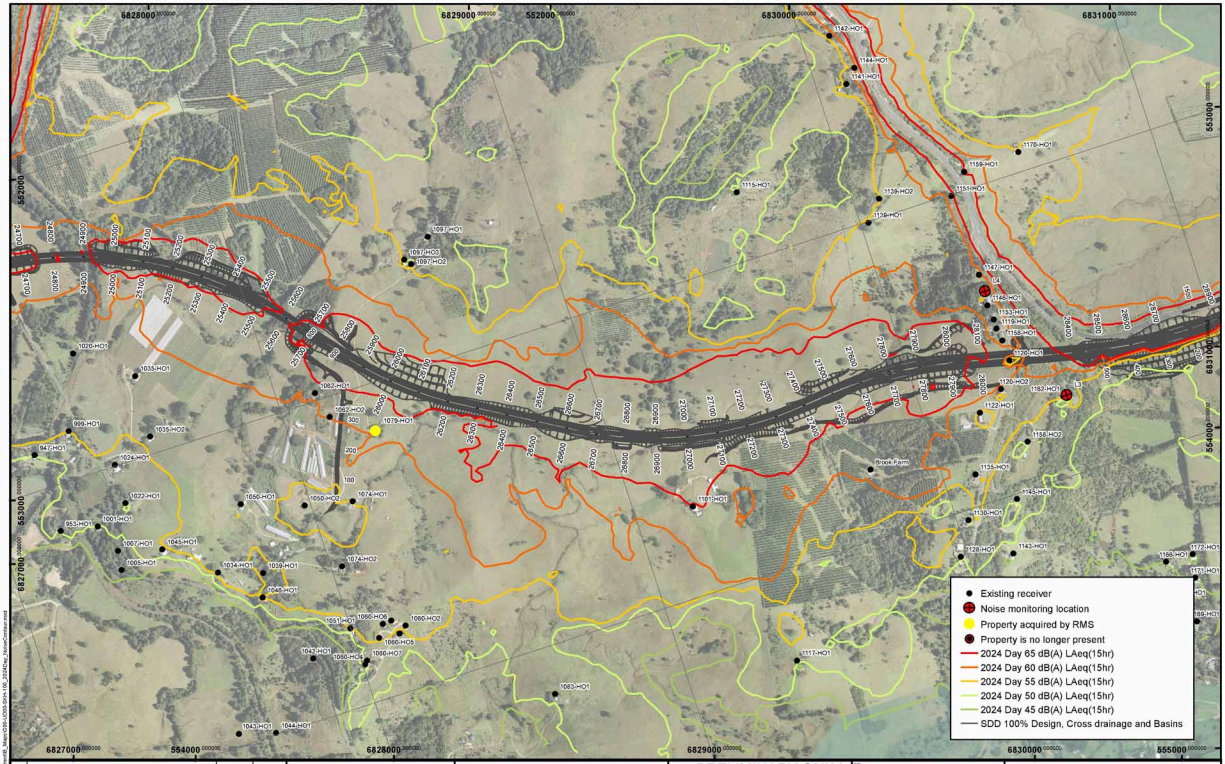
PACIFIC HIGHWAY UPGRADE
TINTENBAR TO EWINGSDALE

OPERATION NOISE MANAGEMENT REPORT

2024 Day LAeq(15hr) Noise Contour Plots

Zone	Lot Code	Doc Code	Drawing No.	Issue
C03	UD00	SKH	315	A

50mm on Original



Issue	Description	Date	Approved
F2	100% DESIGN	04.03.14	EM

50mm on Original

Scales

0 25 50 100 150 200 250 Metres

1:10000

Hyder

müller + hereth

BAULDERSTONE

GHD

CM+

PRELIMINARY ONLY

NOT TO BE USED FOR CONSTRUCTION

Original Size	A3	Drawn	SW
Coordinate System	MGA ZONE 56	Designed	TG
Height Datum	AHD	Date Printed	5/03/2014 -3:40:17 PM
Filename	000-UD00-SKH-100_2024Day_NoiseContour.mxd		

RTA Reg'n no.

NSW GOVERNMENT Transport Roads & Maritime Services

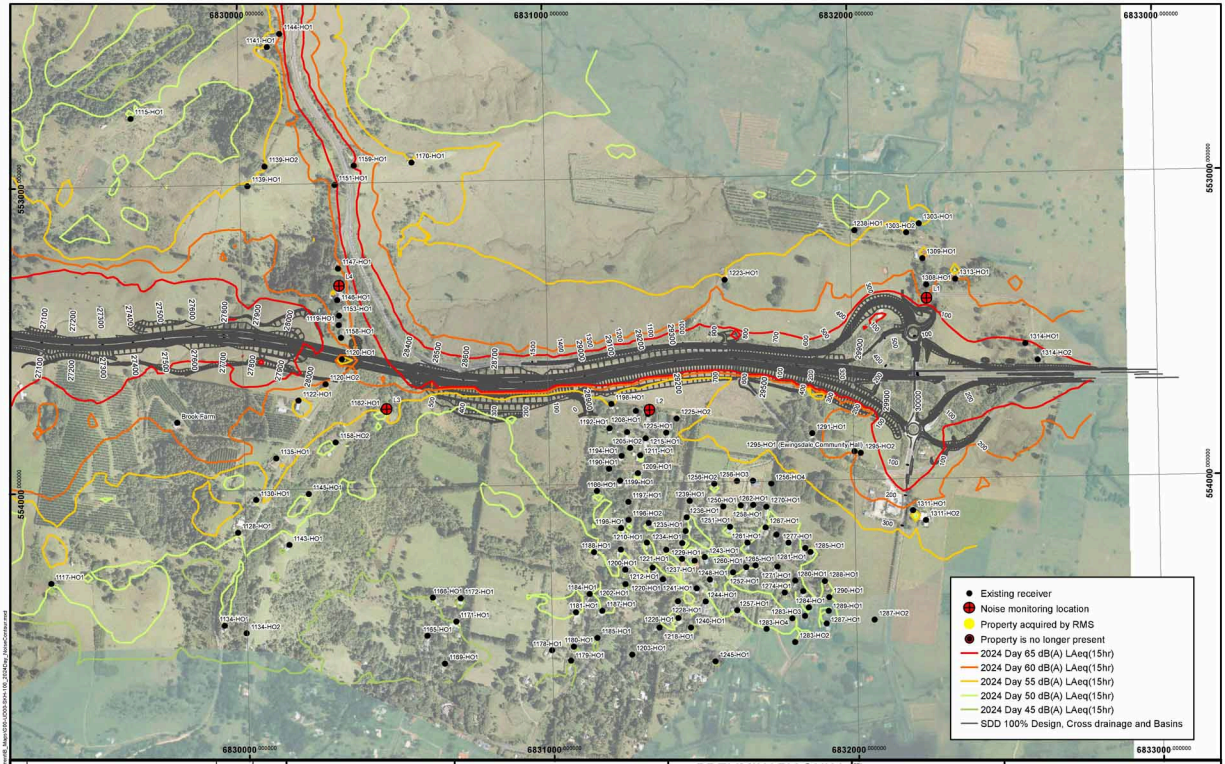
PACIFIC HIGHWAY UPGRADE
TINTENBAR TO EWINGSDALE

OPERATION NOISE MANAGEMENT REPORT

2024 Day LAeq(15hr) Noise Contour Plots

Zone	Lot Code	Doc Code	Drawing No	Issue
N04	UD00	SKH	316	A

C:\3 ENVIRONMENT\NE_004_REVH_Current\N_Maps\SKH-000\SKH-100_2024Day_NoiseContour.mxd



Issue	Description	Date	Approved
F2	100% DESIGN	04.03.14	EM

50mm on Original

Scales

0 25 50 100 150 200 250 Metres

1:10000

Hyder

müller + hereth

BAULDERSTONE

GHD

CM+

PRELIMINARY ONLY

NOT TO BE USED FOR CONSTRUCTION

Original Size	A3	Drawn	SW
Coordinate System	MGA ZONE 56	Designed	TG
Height Datum	AHD	Date Printed	5/03/2014 -3:40:43 PM
Filename	000-UD000-SKH-100_2024Day_NoiseContour.mxd		

RTA Reg'n no.

NSW GOVERNMENT Transport Roads & Maritime Services

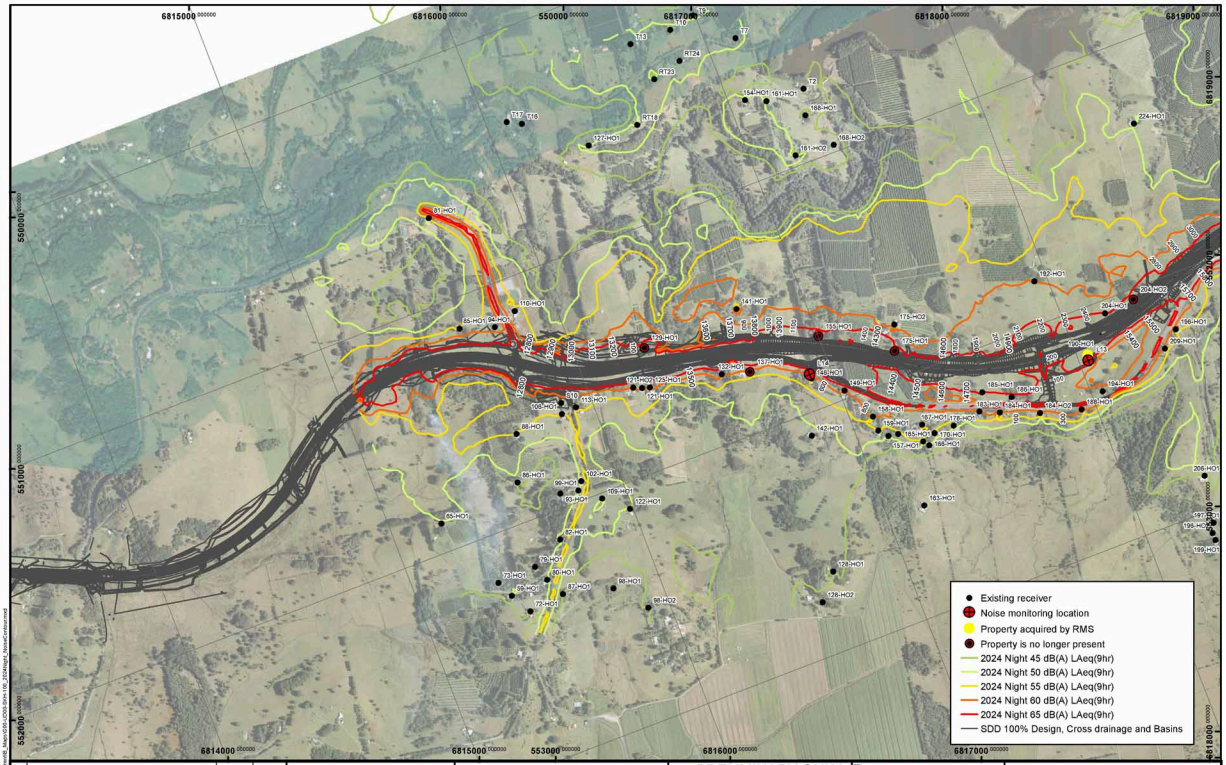
PACIFIC HIGHWAY UPGRADE
TINTENBAR TO EWINGSDALE

OPERATION NOISE MANAGEMENT REPORT

2024 Day LAeq(15hr) Noise Contour Plots

Zone	Lot Code	Doc Code	Drawing No.	Issue
N04	UD00	SKH	317	A

G:\3\30999\83\TXE_IDS_SKH_Current\8_Maps\GIS\000-SKH-100_2024Day_NoiseContour.mxd



Issue	Description	Date	Approved
F2	100% DESIGN	05.03.14	EM

50mm on Original

Scales

0 2550 100 150 200 250 Metres

1:13000

Hyder

müller + herath

BAULDERSTONE

GHD

CM+

PRELIMINARY ONLY

NOT TO BE USED FOR CONSTRUCTION

Original Size	A3	Drawn	SW
Coordinate System	MGA ZONE 56	Designed	TG
Height Datum	AHD	Date Printed	5/03/2014 -3:38:50 PM
Filename	G00-UD00-SKH-100_2024Night_NoiseContour.mxd		

RTA Reg'n no.

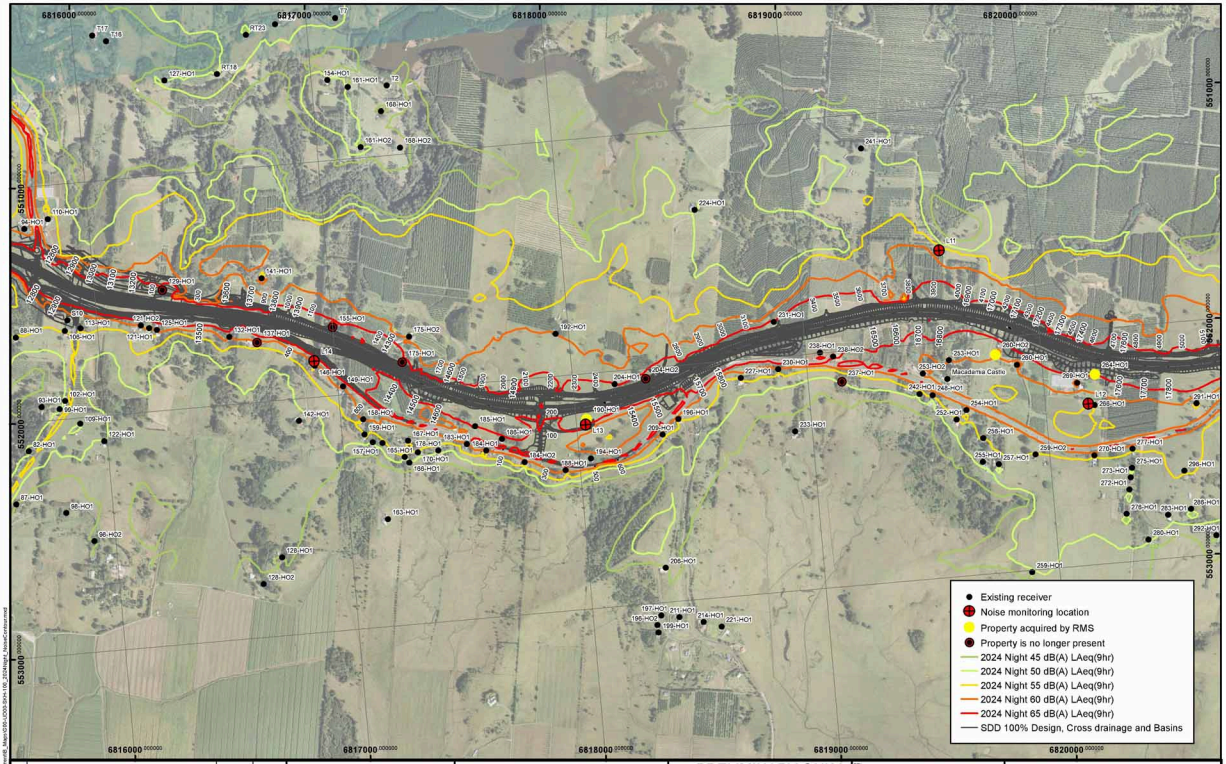
NSW GOVERNMENT Transport Roads & Maritime Services

PACIFIC HIGHWAY UPGRADE
TINTENBAR TO EWINGSDALE

OPERATION NOISE MANAGEMENT REPORT

2024 Night LAeq(9hr) Noise Contour Plots

Zone	Lot Code	Doc Code	Drawing No	Issue
S02	UD00	SKH	410	A



Issue	Description	Date	Approved
F2	100% DESIGN	05.03.14	EM

50mm on Original

Scales

0 2550 100 150 200 255 Metres

1:13000

Hyder

müller + hereth

BAULDERSTONE

GHD

CM+

PRELIMINARY ONLY

NOT TO BE USED FOR CONSTRUCTION

Original Size	A3	Drawn	SW
Coordinate System	MGA ZONE 56	Designed	TG
Height Datum	AHD	Date Printed	5/03/2014 - 3:39:32 PM
Filename	000-UD00-SKH-100_2024Night_NoiseContour.mxd		

RTA Reg'n no.

NSW GOVERNMENT Transport Roads & Maritime Services

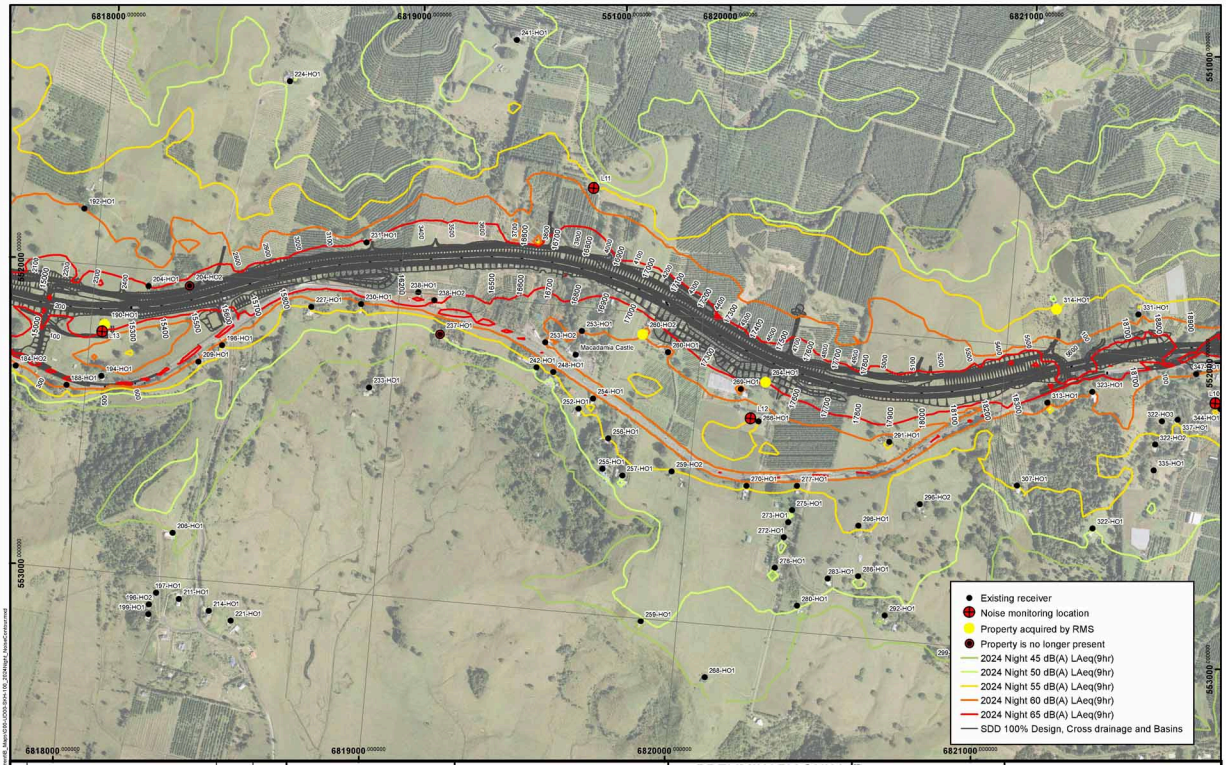
PACIFIC HIGHWAY UPGRADE
TINTENBAR TO EWINGSDALE

OPERATION NOISE MANAGEMENT REPORT

2024 Night LAeq(9hr) Noise Contour Plots

Zone	Lot Code	Doc Code	Drawing No	Issue
S02	UD00	SKH	411	A

G:\21\00994\EIS\TXT\E_EIS_REVH_Comms&_Assess\SKH-UD00-SKH-100_2024Night_NoiseContour.mxd



Issue	Description	Date	Approved
F2	100% DESIGN	05.03.14	EM

Scales

0 25 50 100 150 200 250 Metres

1:10000

50mm on Original

PRELIMINARY ONLY
NOT TO BE USED FOR CONSTRUCTION

Original Size	A3
Drawn	SW
Coordinate System	MGA ZONE 56
Designed	TG
Height Datum	AHD
Date Printed	5/03/2014 - 3:40:09 PM

Filename: 000-UD00-SKH-100_2024Night_NoiseContour.mxd

RTA Reg'n no.

Transport Roads & Maritime Services

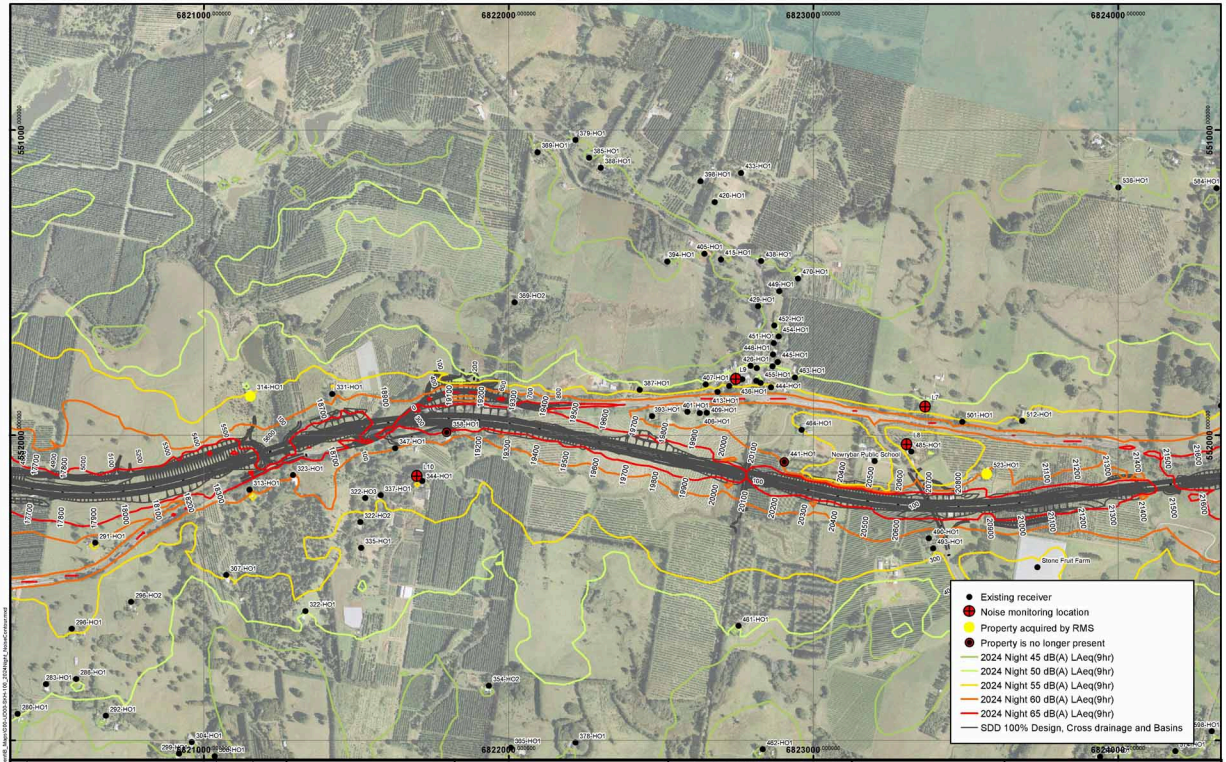
PACIFIC HIGHWAY UPGRADE
TINTENBAR TO EWINGSDALE

OPERATION NOISE MANAGEMENT REPORT

2024 Night LAeq(9hr) Noise Contour Plots

Zone	Lot Code	Doc Code	Drawing No	Issue
S02	UD00	SKH	422	A

G:\21\00994\SIT\File_GIS_SKH_Current\A_Maps\SKH-UD00-SKH-100_2024Night_NoiseContour.mxd



Issue	Description	Date	Approved
F2	100% DESIGN	05.03.14	EM

10mm on Original

Scales

0 25 50 100 150 200 250 Metres

1:10000

Hyder

müller + hereth

BAULDERSTONE

GHD

CM+

PRELIMINARY ONLY

NOT TO BE USED FOR CONSTRUCTION

Original Size	A3	Drawn	SW
Coordinate System	MGA ZONE 56	Designed	TG
Height Datum	AHD	Date Printed	5/03/2014 - 3:40:33 PM
Filename	000-UD00-SKH-100_2024Night_NoiseContour.mxd		

RTA Reg'n no.

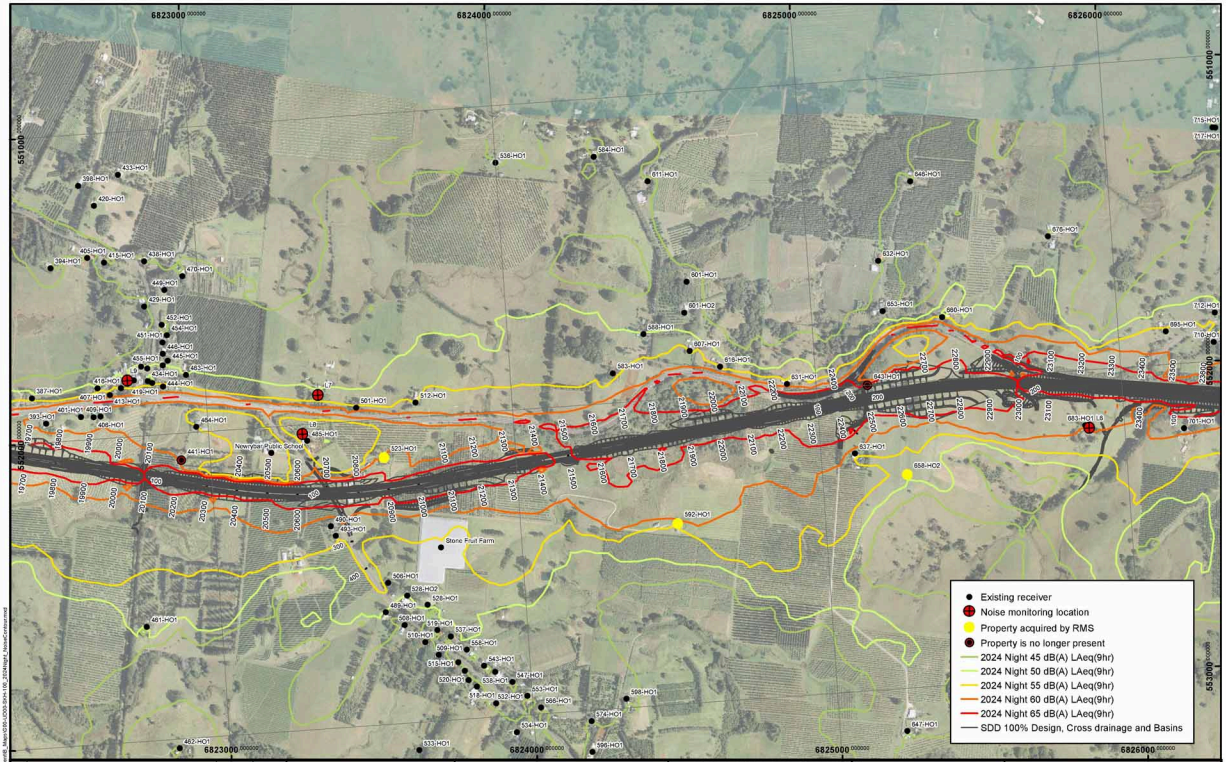
NSW GOVERNMENT Transport Roads & Maritime Services

PACIFIC HIGHWAY UPGRADE
TINTENBAR TO EWINGSDALE

OPERATION NOISE MANAGEMENT REPORT

2024 Night LAeq(9hr) Noise Contour Plots

Zone	Lot Code	Doc Code	Drawing No	Issue
S02	UD00	SKH	413	A



Issue	Description	Date	Approved
F2	100% DESIGN	05.03.14	EM

Scales

0 25 50 100 150 200 250 Metres

1:10000

50mm on Original

PRELIMINARY ONLY
NOT TO BE USED FOR CONSTRUCTION

Original Size	A3	Drawn	SW
Coordinate System	MGA ZONE 56	Designed	TG
Height Datum	AHD	Date Printed	5/03/2014 -3:40:54 PM
Filename	C00-UD00-SKH-100_2024Night_NoiseContour.mxd		

RTA Reg'n no.

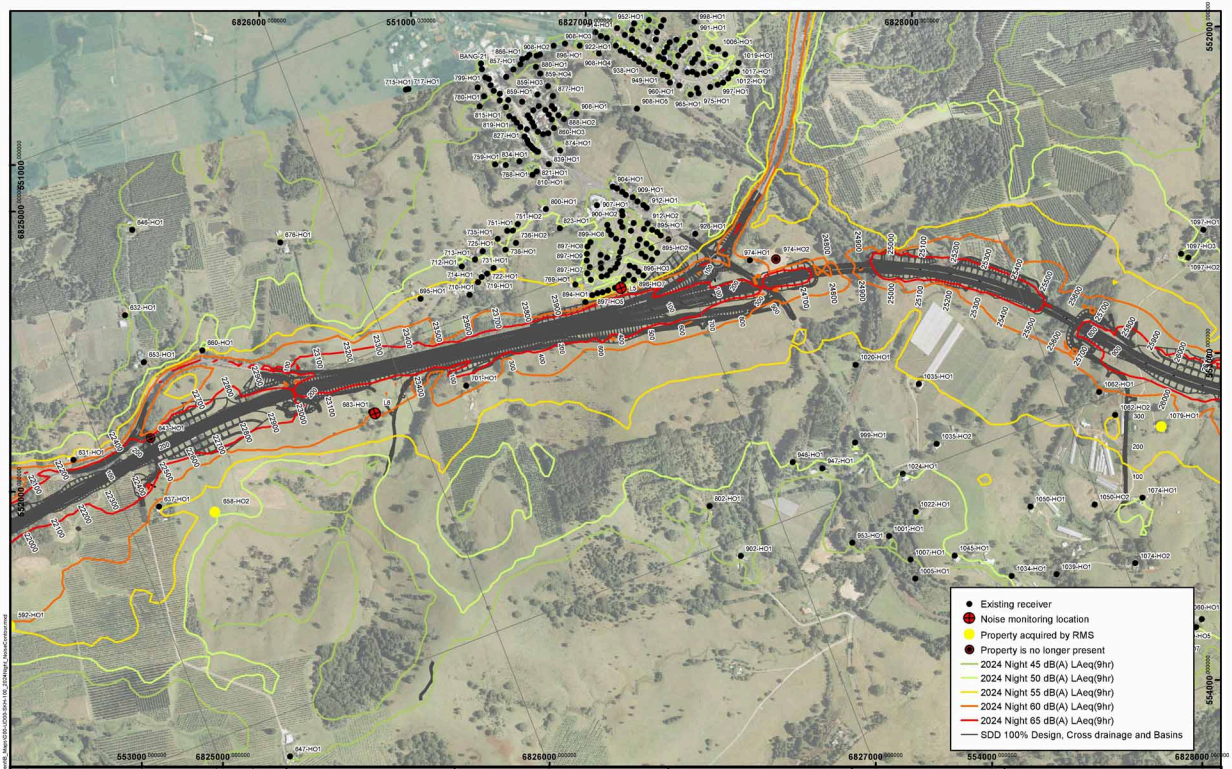
Transport Roads & Maritime Services

PACIFIC HIGHWAY UPGRADE
TINTENBAR TO EWINGSDALE

OPERATION NOISE MANAGEMENT REPORT

2024 Night LAeq(9hr) Noise Contour Plots

Zone	Lot Code	Doc Code	Drawing No.	Issue
C03	UD00	SKH	414	A



Issue	Description	Date	Approved
F2	100% DESIGN	05.03.14	EM

Scales: 1:10000 (0 25 50 100 150 200 250 Metres)

50mm on Original

PRELIMINARY ONLY
NOT TO BE USED FOR CONSTRUCTION

Original Size	A3	Drawn	SW
Coordinate System	MGA ZONE 56	Designed	TG
Height Datum	AHD	Date Printed	5/03/2014 -3:41:16 PM
Filename	C00-UD00-SKH-100_2024Night_NoiseContour.mxd		

RTA Reg'n no.

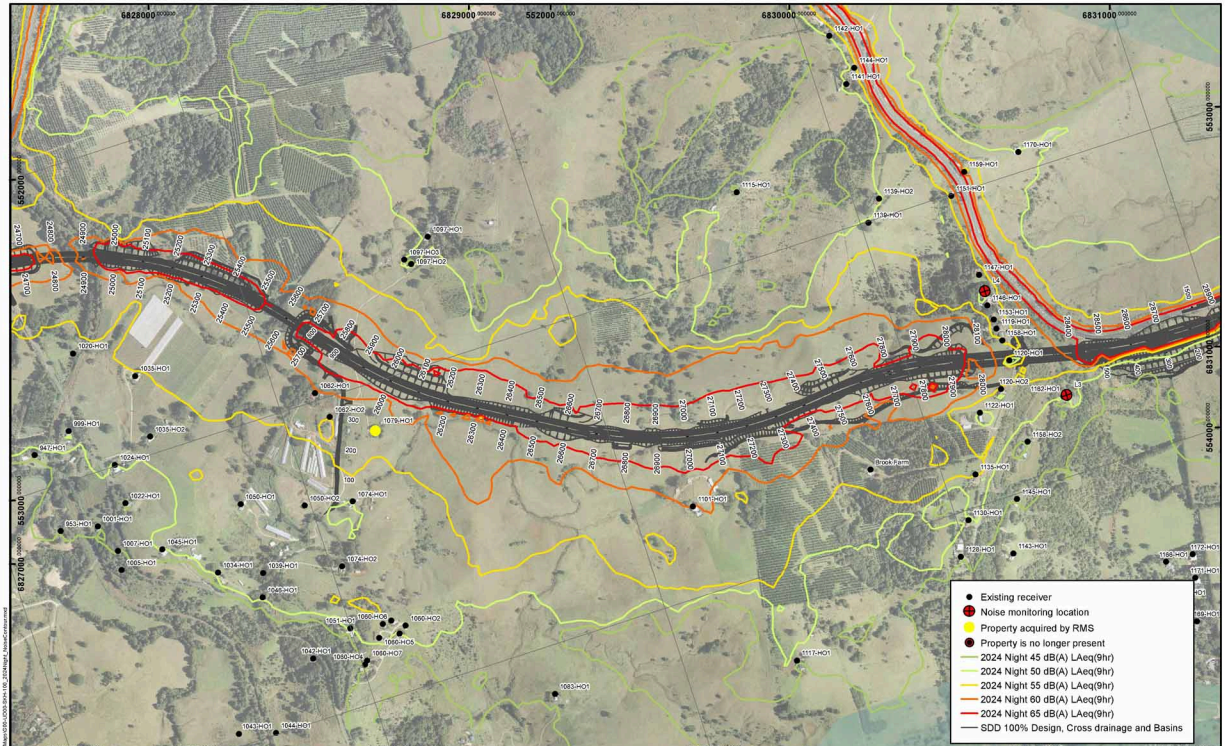
Transport Roads & Maritime Services

PACIFIC HIGHWAY UPGRADE
TINTENBAR TO EWINGSDALE

OPERATION NOISE MANAGEMENT REPORT

2024 Night LAeq(9hr) Noise Contour Plots

Zone	Lot Code	Doc Code	Drawing No	Issue
C03	UD00	SKH	415	A



Issue	Description	Date	Approved
F2	100% DESIGN	05.03.14	EM

50mm on Original

Scales

0 25 50 100 150 200 250 Metres

1:10000

Hyder

müller + hereth

BAULDERSTONE

GHD

CM+

PRELIMINARY ONLY

NOT TO BE USED FOR CONSTRUCTION

Original Size	A3	Drawn	SW
Coordinate System	MGA ZONE 56	Designed	TG
Height Datum	AHD	Date Printed	5/03/2014 -3:41:49 PM
Filename	000-UD00-SKH-100_2024Night_NoiseContour.mxd		

RTA Reg'n no.

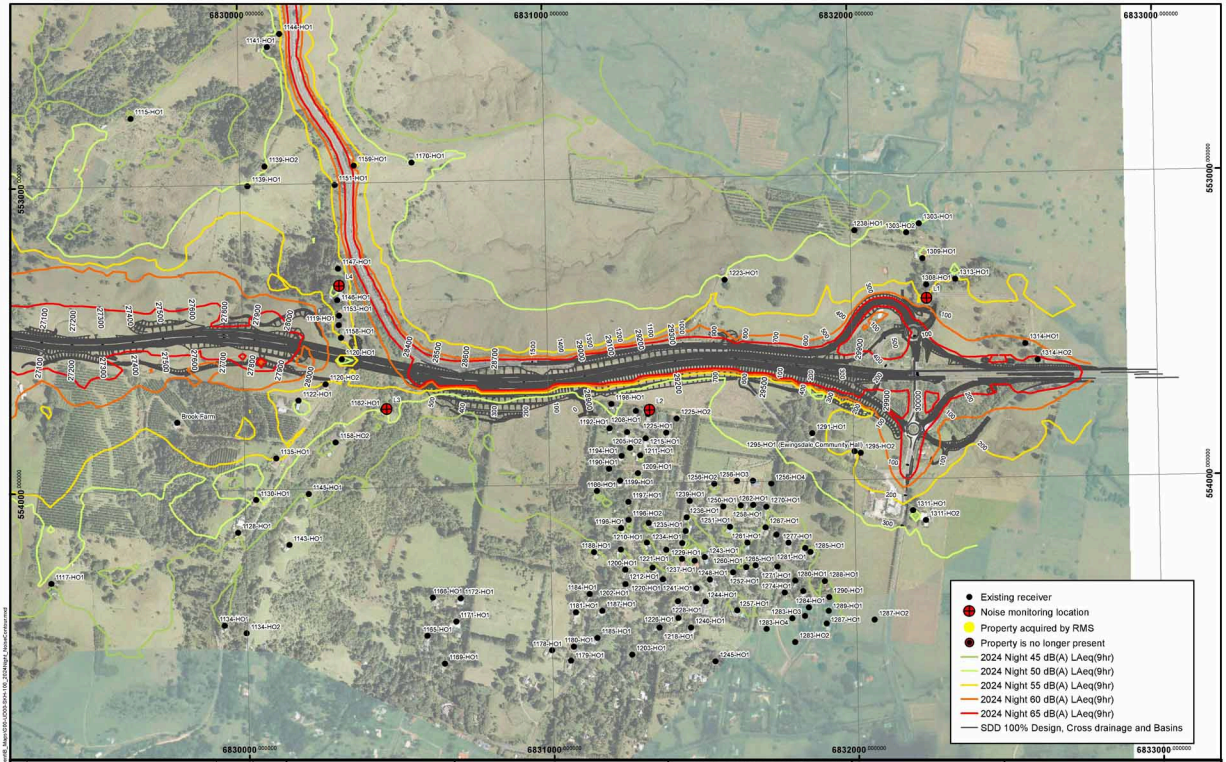
NSW GOVERNMENT Transport Roads & Maritime Services

PACIFIC HIGHWAY UPGRADE
TINTENBAR TO EWINGSDALE

OPERATION NOISE MANAGEMENT REPORT

2024 Night LAeq(9hr) Noise Contour Plots

Zone	Lot Code	Doc Code	Drawing No.	Issue
N04	UD00	SKH	416	A



Issue	Description	Date	Approved
F2	100% DESIGN	05.03.14	EM

Scales

0 25 50 100 150 200 250 Metres

1:10000

50mm on Original

PRELIMINARY ONLY
NOT TO BE USED FOR CONSTRUCTION

Original Size	A3	Drawn	SW
Coordinate System	MGA ZONE 56	Designed	TG
Height Datum	AHD	Date Printed	5/03/2014 - 3:42:17 PM
Filename	G00-UD00-SKH-100_2024Night_NoiseContour.mxd		

RTA Reg'n no.

Transport Roads & Maritime Services

PACIFIC HIGHWAY UPGRADE
TINTENBAR TO EWINGSDALE

OPERATION NOISE MANAGEMENT REPORT

2024 Night LAeq(9hr) Noise Contour Plots

Zone	Lot Code	Doc Code	Drawing No	Issue
N04	UD00	SKH	417	A

Appendix T – Community Information Session Meeting Notes

MEETING NOTES

Transport Roads & Maritime Services

26 MARCH 2013

Name of meeting: **Community Information Session #12 (sessions 1 and 2)**
Construction update

Location of meeting: Bangalow A & I Hall

Date: **26 March 2013** **Time:** 12.00pm–1.20pm (20 attendees)
5.30pm–7.15pm (9 attendees)

Attendees: **Project staff:**
Peter Borrelli, RMS Senior Project Manager (PB)
James O'Connor, RMS Assistant Resident Engineer (JO'C)
Nyssa Peak, RMS Communications and Community Engagement Officer (NP)
Vincent Chavand, GHD Representative (VC)
Vincent Newton, Baulderstone Project Director (VN)
Susan Scott, Baulderstone Community Relations Manager (SS)
Kevin Sweeney, Baulderstone Engineering Manager (KS)
Vanessa Vardi, Baulderstone Community Relations Coordinator (VV)
Caitlin Lea, Baulderstone Graduate Community Relations Coordinator (CL)
Jacqueline Allen, Baulderstone Graduate Community Relations Coordinator (JA)

AGENDA ITEMS:

Item	Description
1.	Welcome and introductions (SS)
2.	Noise overview (PB)
3.	Legislation, guidelines and reference documents (PB)
4.	Noise level criteria (PB)
5.	Reasonable and feasible (PB)
6.	Sleep disturbance: maximum noise assessment (PB)
7.	Heavy vehicles (PB)
8.	Mitigation measures (PB)
9.	Operational noise assessment process
10.	Contour plans
11.	Road pavement surfaces
12.	Noise barrier and mounds

13.	Post opening
14.	Ewingsdale interchange proposed design refinements

NOTES:

Item	Topic	Personnel
1	**Welcome** Community Relations Manager, Susan Scott, welcomed attendees, introduced the project team in attendance and outlined the agenda for the session.	**SS**
2	**Noise overview** Peter Borelli provided an overview of operational noise, outlining modelling undertaken so far. **Questions and comments – 26 March (session 1)** ***No questions or comments for session 1*** **Questions and comments – 26 March (session 2)** ***No questions or comments for session 2***	**PB**
3	**Legislation, guidelines and reference documents** Peter Borelli provided an outline of the relevant legislation, guidelines and reference documents for operational noise, including: • Minister's Conditions of Approval 2.19 and 3.3 • Australian Standard AS 2702 Acoustic Methods for the Measurement of Road Traffic Noise • Environmental Criteria for Road Traffic Noise (ECTRN, EPA 1999) • Environmental Noise Management Manual (ENMM, RTA 2001) • Austroads: An approach to the Validation of Road Traffic Noise Models (2002) • Noise Wall Design Guidelines (RTA 2007) • Environmental Assessment – Working Paper 8, Noise and vibration assessment. **Questions and comments — 26 March (session 1)** ***No questions or comments for session 1*** **Questions and comments – 26 March (session 2)** ***No questions or comments for session 2***	**PB**
4	**Noise level criteria** Peter Borelli provided an overview of the noise level criteria, including operational traffic noise target levels and acute noise levels. **Questions and comments – 26 March (session 1)** **Question: Are you talking about an average?** Peter Borelli advised that the levels are LA_{eq} (Equivalent Continuous Noise Level); are a logarithmic dBA values for the average noise levels between night time hours - 10pm to 7am. Peter Borelli further advised that maximum noise levels were also considered additional to this. ***End of questions and comments for session 1*** **Questions and comments – 26 March (session 2)** ***No questions or comments for session 2***	**PB**
	Reasonable and feasible Peter Borelli explained the concept of what is considered reasonable and feasible in	**PB**

	regards to noise mitigation. **Questions and comments – 26 March (session 1)** **Question: A lot of what you are saying about noise is construction noise. The source of the noise for the majority of residents is from trucks. Some of the trucks along the highway are as loud as jumbo jets, because that's what they sound like. When is RMS going to phase out some of these engine brake control vehicles?** Peter Borelli advised that the project team has to work with the current road rules. He advised that this topic would be mentioned later in the slides regarding what RMS is doing at an industry level. There are two things that can be done to manage noise. Certain things can happen at a project level and then some wider longer-term things that RMS can work on with the industry. It is well recognised that over the years, or over the longer term, truck fleets across the whole country improve their regulations and new standards are applied that truck fleets must comply with; these changes to policy take time to implement. **Comment: We have had the compression braking problem for years. What we get away with in this country would never happen in Europe. I cannot see or hear that there has been much change.** Peter Borelli advised that the presentation will outline what is being done at a project level that will make a difference, now, in real time, rather than some of the longer-term things that are happening in the industry. ***End of questions and comments for session 1*** **Questions and comments – 26 March (session 2)** ***No questions or comments for session 2***	
	Sleep disturbance – maximum noise assessment Peter Borelli provided an explanation of maximum noise assessment, including mitigation measures implemented on the project. **Questions and comments — 26 March (session 1)** ***No questions or comments for session 1*** **Questions and comments – 26 March (session 2)** ***No questions or comments for session 2***	**PB**
	Heavy vehicles Peter Borelli explained mitigation measures for heavy vehicle noise impacts, including: • Inspections • Compression Brake Sign Education Strategy **Questions and comments – 26 March (session 1)** **Comment: I think they take that as a challenge [compression braking signs].** Peter Borelli commented that RMS has found compression braking signage often has the opposite effect; there are some drivers who see the signage as an opportunity to test what their brakes sound like. Signage is only the first step in the education program; RMS is slowly educating drivers, that this sort of behaviour is unacceptable. ***End of questions and comments for session 1*** **Questions and comments – 26 March (session 2)** ***No questions and comments for session 2***	**PB**
	Mitigation measures	**PB, JO'C**

Peter Borelli provided an overview of the three key stages of the upgrade where operational noise mitigation measures are identified and implemented, these stages are:

- Route selection
- Environmental assessment / concept design
- Detailed design

Questions and comments – 26 March (session 1)

Comment: Just going back to twelve months after the opening; you are indicating to me that the further you go down the track, the less options you have to rectify any problems. So twelve months after the road is open, the chances of rectifying any problems, are very slim.

Peter Borrelli explained that the diagram he was referring to showed the project's ability to be able to affect noise outcomes. Relative to the point at the beginning of the table [route selection phase] the project team's ability [to change noise outcomes] is reduced by the time it gets to the detailed design stage. The project team does a lot of work to get it right in the beginning. Once the road has been built, the route cannot be changed, the road cannot be redesigned and at that point in time the project team is forced to look at what other measures can be taken, such as at-residence treatment, noise barriers, earth mounds etc. The diagram doesn't mean nothing can be done, but that the ability to change the outcome and get the greatest impact is during the early stages of the project.

Question: How significantly is noise abatement worked in to the route selection and design concept? I find it hard to believe that economically noise gets much of a rating in the design concept when you've got all the other cost benefit factors of ground suitability, topography and everything else. Is noise considered during the design phase?

Peter Borrelli advised that it is a very important factor; noise and noise abatement is certainly taken in to consideration.

Question: Is the noise abatement coincidental to the route that was chosen? The route was chosen based on economics, the cut and fill and how flat you can make the alignment. Is there a point where it gets to 'enough is enough'; we've done as much cut and fill as we can and coincidentally lowered the noise? How much does noise factor in to it?

Peter Borrelli advised that noise abatement was an integral part of the route selection, particularly in the later stages of submission.

James O'Connor used the roll plot to demonstrate that the area adjacent to Newrybar (at Minor and Emigrant Creek) experiences a lot of existing truck noise leading up to Newrybar. By having a lower grade [or road] in that area, peak noise events from trucks braking, would be reduced.

Comment: By lowering the road I think the noise is going to be increased [at Newrybar] because you've got the hill at the back and the noise is being pushed to the east.

James O'Connor advised that low noise pavement through Newrybar will be installed (from Minor Creek bridge to Skinners Creek).

End of questions and comments for session 1

Questions and comments – 26 March (session 2)

Question: Is that happening [low noise pavement] in terms of where we are here?

Peter Borelli advised that the areas receiving low noise pavement will be covered in the presentation.

	Question: What is it [the alignment] like around Ross Lane? Peter Borelli referred to the roll plot, advising that the Ross Lane interchange will not be as erratic; with less acceleration and deceleration than before. There are still some flatter and steeper sections as the climb onto the bridge has to continue, but that the grade had improved. **Comment: The Ross Lane section has finished three meters higher than it should have. So we are now in the line of sight where we live at the top of Fernleigh Road. We experience a lot of noise in Fernleigh Road and I notice that on these maps, Fernleigh Road isn't even included. The noise goes up. You don't seem to understand.** Peter Borelli clarified that he was not saying that people won't hear the highway, but that the noise from the highway will comply with the criteria and the guidelines. It might be the case that some residents were not happy with the criteria and with the limits. James O'Connor commented that in terms of the height of the road, nothing had changed since the Environmental Assessment. The idea that the height of the road had been changed is incorrect. He advised that what people are talking about when they say it is three meters higher, or different, is the difference between the existing road and the new grade level, but this is not a change from the EA. **Comment: But we are in line of sight now, which we were not before. The noise is far, far greater. You talk about truck noise; you come up here [to Fernleigh Road] at 1 o'clock in the morning. The truckies obviously drive as loud as they can and the noise just booms up the hill. Last night was a very good example of that.** James O'Connor asked if they were talking about noise from the south of the cutting; from Ross Lane? **Comment: No I'm talking about noise to the north.** James O'Connor advised that the noise from the north is from trucks driving up the hill towards the water tower at Knockrow, rather than the difference in the road height. The new alignment provides a much flatter grade to the north, which should reduce the noise. **Comment: We are higher than Friday Hut Road, what you don't seem to understand is the way the noise goes up. Think of a theatre, look at the orchestra pit, where is it? In a theatre, the noise goes up. And it just booms up; we used to hear noise from the Tintenbar Hill, yes it was very noisy, yes we'd shut our windows and doors. When the new road opened, all the noise went from one end of the house to the other and it's getting steadily worse.** Peter Borelli advised that the project must comply with the noise criteria. Once the highway is completed, the project team will come back and monitor the noise, and, if for some reason the forecast is wrong, it will be investigated. Highway noise may be loud in some areas, and the residents may not like it, but the levels will comply with the approved criteria. **Comment: If you come back in twelve months' time, basically nothing will be done. You've already said that it's all too late to do anything.** Peter Borrelli advised that the noise would comply with approved criteria, and some residents may not agree with those criteria. **Comment: Perhaps you should change the guidelines.** Peter Borelli advised that if the community would like to change the guidelines they would need to submit their request to the government. If residents can hear the highway noise, this does not mean noise levels do not comply with the guidelines. It is well understood that residents would prefer levels to be lower, or not to be able to hear the road at all, but this may not be practical.	

	Question: Well, are the noise guidelines different here to other parts of the state? Peter Borelli advised that the government had set a policy and made it equitable across the whole of the state. People in the city would have the same issues and the same noise. **Comment: Yes, but you have so many great big buildings [in cities].** Peter Borrelli commented that they also had a lot more traffic; it's not an easy process. **Comment: We had somebody come and check the noise at our house; they were there for about 10 mins at about 10.00pm at night, probably the quietest time.** Peter Borelli advised that these comments would be kept in mind. The project team is required to come back within twelve months and, if noise levels do not comply, mitigation measures must be implemented. **Question: What is the gradient at the cutting south of Ross Lane?** Peter Borelli advised that the gradient is 6.5%. **Question: What is the gradient coming out of the tunnel south?** Peter Borelli advised that the gradient is 4.5%. . ***End of questions and comments for session 2***	
	Operational noise scope – of EA assessment Peter Borrelli explained the scope of the Environmental Assessment with regards to operational noise. This included how many residences were potentially affected by noise. **Questions and comments – 26 March (session 1)** **Question: Does noise modelling include the possibility of B-triples?** Peter Borrelli advised that the noise modelling did not include the possibility of B-triples and that it was completed on traffic as it is known today. ***End of questions and comments for session 1*** **Questions and comments – 26 March (session 2)** **Comment: Some issues came out of our [operational noise] meeting; I would like to raise two issues. What people need to know is relative change, what noise levels people are getting in the 'do nothing' case, what they are getting now, and what they will get in 2024. It is this relative change that is important to them, otherwise the numbers mean nothing.** **The next thing I think is important is that you approach some people within the guidelines for treatment and that's fine. But there are people that are within those lines that you have not approached. I think you should approach them and tell them why they aren't receiving treatment. Like myself for instance, I'm not going to receive treatment, but I don't know why. It's better to tell us now, rather than in 6 months or twelve months' time when problems start arising.** Peter Borelli advised that in terms of the relative noise, the project has the 'do nothing' [2014] noise levels and in addition, there are point receiver results for forecasted individual properties that can be provided. RMS is unaware of other residences that are due and right for at-residence treatment but would be happy to hear from any residents who believe they may have a noise problem. **Comment: The point is that people may be within those lines but they don't know it. It would be better to be proactive and to go and tell them that they are within the lines, but for these reasons you won't get treatment. Otherwise they will**	**PB**

	discover later on that they were within the lines and will wonder why you didn't go and speak with them. Peter Borrelli advised that some residents are within the contour lines but are within the approved noise level criteria. **Comment: Well in my case I am within the line and I don't know why I'm not receiving treatment.** Peter Borelli commented that it might be better to have that discussion individually. **Question: Thank you for giving the [operational noise] presentation last week. I have an excerpt from a piece of research which states that guidelines from the World Health Organisation recommend an average of less than 40 dB(A) outside the bedrooms to prevent negative health effects from night noise. Now, that is the first time that I've been able to track down research that is less than the Australian standard. The research goes on to say that figures from the European Union show that about 30% of the population in EU countries is exposed to road traffic noise at night at levels exceeding 55 dB(A). It is obviously becoming an issue in Europe, and there are now an increasing number of legal cases where people are actually saying that the standards being delivered are against the health interests of the community. The other thing that suddenly struck me, and tell me if I am wrong, is that dB(A) is a logarithmic scale so that a 5 dB reduction in noise from say 55 to 60 is a lot more of a reduction of sound. It's not 10%, it's actually much more than that.** Vincent Chavand confirmed that this [dBA is logarithmic] is correct. **Comment: In your presentation, it might be worth explaining that it's not about 1dB or 2 dB differences, it's actually a lot bigger. By the same token of course, increases are a lot louder.** Vincent Chavand commented that in this instance people are talking about the perception of noise. A double of sound energy represents a 3dB(A) change, so 5dB(A) would be a significant reduction of noise, in terms of energy. **Comment: I don't know that the layman actually understands that. The difference between the 55dB contour and the 50 is quite substantial. What would you say that the difference is in percentage?** Vincent Chavand advised that 5dB(A) might be 30% or 40%. Peter Borelli advised that they are the guidelines set by the EPA; if government decides to change the guidelines the project will work with those changes. A change in the guidelines would mean a greater cost for projects; resulting in less projects statewide. Without doing anything to the road, there would be 398 people putting up with more noise. The 50 and 55 dB9A) levels that the government applies are fair levels to apply across the state. The EPA looks at health and the community. **Comment: It's like smoking, it used to be trendy and then scientists discovered that it was having a serious impact on people's health and making the cost of health care higher. The same thing is likely to happen with noise.** **Comment: 398 houses is a huge number.** Peter Borelli advised that 398 was not a significantly large number for the scale of the project. If the project was in the city, that number could be 10 times this amount. After after noise abatement treatment, that number has been reduced to 117. **Question: Is the NSW criteria the same as the other states? Is NSW higher or lower?** Vincent Chavand advised that noise regulations were different from state to state but that generally all states are around the same mark.	

	Question: The 398 residences identified, does that include the 80 houses you've demolished? Peter Borelli advised that he didn't believe 80 houses had been demolished and that demolished properties were not included in the 398 property figure. ***End of questions and comments for session 2***	
	Operational noise assessment process Kevin Sweeney provided an explanation of the operational noise assessment process in terms of predicted traffic volumes and noise modelling methods. **Questions and comments – 26 March (session 1)** ***No questions or comments for session 1*** **Questions and comments – 26 March (session 2)** ***No questions or comments for session 2***	**KS**
	Contour plans Kevin Sweeney referred to the noise plots to provide an overview of the 2024 night time contour plans and noise contours within the project zone. **Questions and comments – 26 March (session 1)** **Question: The monitoring stations were following the road alignment, is your contour line [50dB] an extrapolation from the data collected on the road line?** Kevin Sweeney advised that the contours were developed from the mathematical model which takes in to account topography and predicted traffic volumes. The mathematical model extrapolates what the noise pressure will be at a given location and is calibrated back to the physical measurements taken from the road alignment. The noise modelling used to create the contour map involved building the highway virtually, and then using the actual monitoring results to calibrate the model. **Q. When you go back to verify [within twelve months of opening] what is your record of accuracy?** Kevin Sweeney advised that the record of accuracy is generally quite good; however, a mathematical model is never perfect. Correction factors were applied to the model to combat inaccuracy. The project team overestimate, generally, so the measurements often come back lower than predicted. ***End of questions and comments for session 1*** **Questions and comments – 26 March (session 2)** **Question: Thank you Peter for putting this on. I live in the line of sight of Skinners Creek. How high is the monitoring device?** Kevin Sweeney advised that the monitor is 1.5m. [for a single storey dwelling] **Question: So, it is sitting at the existing level of the highway and then you model?** Kevin Sweeney advised that modelling is undertaken at 1.5m and 4.5m. [for single storey and double storey respectively] **Question: The new bridge at Skinners Creek is sitting 10m above the existing road? How do you compensate for that in terms of sound?** Kevin Sweeney explained that the area being referred to (just north of the Skinners Creek bridge) was higher than the existing highway. He advised that he couldn't read it	**KS**

	clearly on the map on screen but could use the hard copy roll plots to explain after the presentation was complete. There may be some changes to noise levels than what is currently experienced, although the natural topography of the cutting will act as a noise barrier. **Question: The 1.5m meter (of the monitor) is this adequate for a house? We have stumps on one side but our living area faces the road, and takes the house down low and gradually slopes towards the highway. I'm just not sure how the 1.5 would work for our house.** Peter Borrelli commented that he wasn't sure if monitoring was undertaken at that specific property, however, point receiver information can be given for that area. **Question: Who says it has to be 1.5 meters?** Kevin Sweeney advised that 1.5 metres is the guideline in the ECRTN. This criterion is applied on every project in New South Wales consistently across the state. **Comment: I take your point but if the monitors were 2 meters you would get a different result.** Kevin Sweeney advised that there is a potential for differences depending on the road. Consistency across the state is required; the project has criteria that must be applied consistently. In order for the criteria to change, the project would need the change implemented through government policy. **Comment: I understand that your hands are tied, but anecdotally with the heights of different houses, I think you might find something different.** ***End of questions and comments for session 2***	
	Road pavement surfaces Kevin Sweeney provided an overview of the road pavement surfaces to be adopted on the main carriageways and ramps in areas with densely clustered residential areas. **Questions and comments – 26 March (session 1)** ***No questions or comments for session 1*** **Questions and comments – 26 March (session 2)** ***No questions or comments for session 2***	**KS**
	Noise barrier and mounds Kevin Sweeney explained how noise barriers and mounds mitigate operational noise, outlining their locations within the project. **Questions and comments – 26 March (session 1)** ***No questions or comments for session 1*** **Questions and comments – 26 March (session 2)** **Question: Compared to the use of concrete, can you give us a cost ratio for stone mastic asphalt (SMA)? So, SMA is X times more expensive than concrete.** Kevin Sweeney advised that this was a complicated question because it includes initial installation costs as well as maintenance costs over a 50 year period. **Question: I understand that there is a maintenance cost in the future. But is that saying concrete lasts forever?** Kevin Sweeney reiterated that the greatest impact would come from future maintenance costs.	**KS**

	Question: What are Class 1 and Class 2 vehicles? Peter Borelli advised that Class 1 vehicles are those carrying explosives and Class 2.1 vehicles are those carrying explosives or flammable gasses. **Question: So, fuel tankers cannot use the tunnel?** Peter Borrelli advised that fuel tankers were approved to use the tunnel. **Question: Are there 2 different types of concrete finishes you can use?** Kevin Sweeney advised that there is one concrete finish that includes both techniques [transverse tining and longitudinal hessian drag] displayed in the photographs. **Question: Is it different to the surface at Ballina?** Kevin Sweeney advised that the textured surface in Ballina was a trial of longitudinal tinning; running in the direction of traffic. The trial was conducted to test for noise reduction advantages and the results demonstrated that there were no real noise benefits away from the road but there was a minor reduction in vehicle cabin noise. These trials were being conducted in a few locations; theory being that longitudinal tinning might produce noise reduction benefits, but that hasn't been the case. **Question: With the noise monitoring; there were no receivers placed down through the Tinderbox Valley at all. Why is that?** Kevin Sweeney explained that noise monitors are used for calibration and need to be near the source of noise [the existing highway].	
	Post opening Kevin Sweeney provided an explanation of additional noise and traffic modelling to be carried out within 12 months of the project opening to traffic. **Questions and comments – 26 March (session 1)** **Comment: I would just like to voice for the local community that what is being done to the land is really disturbing for many people. I've got a number of friends that can't even drive south of here because they're just so upset over what has been happening. They drive past the school at Newrybar and it's really disturbing to see what's happened to the land. I appreciate your talk, but what you've done with your project, I'd just like you to know that it's really disturbing for me and for my friends and family.** Kevin Sweeney explained that the current state of the landscape is very much a temporary situation. The project team are taking local seeds and vegetation to increase biodiversity, and providing fauna passages to protect wildlife in the area. The project team is also working with RMS and Rous Water to develop riparian zones within the project to try and encourage animals through there as well. **Question: I just wanted to ask about the concrete surface; you talked about running the tines across the surface, and I presume that's when the concrete is nearly dry. On parts of the Ballina Bypass, they've got tines that run with the direction of the road. These ones run across don't they? Which way are the tines going?** Kevin Sweeney explained that a trial was conducted of tining 'in the direction of travel' [longitudinal] on the Ballina Bypass. We are applying tines transversally '90 degrees to the direction of travel' **Comment: I just don't understand the difference.** Peter Borrelli explained that at Ballina and in other parts of the state, RMS is trying different things to improve the tining process. The Ballina Bypass road treatment was a trial to test what effect the longitudinal tining had on noise abatement. There are two types of tining, transverse and longitudinal tining. Roads must be a smooth ride in the	**KS**

	car and rough enough to provide skid resistance. To achieve this roughness, a transverse tine (running across the road) and a hessian drag, which is a micro texture, will be used, since the trial of longitudinal tining showed little effect on the skid resistance and although it is a bit quieter in the car, it does not have a significant noise impact further away. **Question: Why when they pour the concrete surface, don't they put in an expansion joint? You see often after they've laid the road, they hire a contractor to come and saw cut the paving.** Peter Borelli advised that the of type of concrete pavement used on the project was continually reinforced concrete pavement, which is designed to hold any cracks in the pavement together as closely as possible. Using saw cuts is used as a 'crack enhancer' to force concrete surfaces to crack in a specific location, which helps with a smooth ride. ***End of questions and comments for session 1*** **Questions and comments – 26 March (session 2)** ***No questions and comments for session 1***	
	Ewingsdale interchange – proposed design refinements Peter Borelli provided information about the Ewingsdale interchange proposal, including: • Proposed design refinements • Construction of new north facing on-ramp • Connection of Woodford Lane • Features and benefits **Questions and comments – 26 March (session 1)** **Question: I think the locals are happier with that arrangement but they are also more concerned about the old highway. Locals are under the impression that there will still be more traffic coming down St Helena hill than there will be going through the tunnel. In the absence of a Bangalow Bypass, are there crossovers designed on the highway to allow one portal of the tunnel to be used, as is now currently done at Cudgen, to at least reduce the impact on that interchange in the future?** Peter Borrelli explained that there are crossovers either side of the tunnel. There will be times when traffic will need to be diverted via the interchange during planned maintenance, a significant maintenance event or a major incident in the tunnel. Crossovers will mean there is greater flexibility to switch traffic from one side to the other, if necessary. **Question: Exactly where would they be placed? Will they be done as part of the construction?** Peter Borelli advised that the crossovers for the tunnel are north of the interchange, and similarly on the other side of the tunnel, within 500m of the tunnel portal. They will be built as part of construction for the project. Peter Borrelli commented that in terms of traffic using the existing highway (as referred to in the previous question) there is still an element of debate as to how much traffic will come off at Ewingsdale to go to Lismore via Bangalow. In the long term, when the T2E section of the highway is open, the lower grade and flatter alignment may mean that trucks and most people will realise that even though T2E is slightly longer in distance, it would be better to stay on T2E and go to Lismore via the Bruxner Highway; travelling the longer distance at 110km/h. **Comment: We should be doing traffic counts as part of that exercise now and then when the highway is open.** Peter Borelli advised that there are traffic counts conducted throughout the project as	**PB**

well as post operational, when the noise and traffic data will be collected again.

Comment: I don't think that will happen, people will still go up through Bangalow. I'm a resident of the road leading up to Teven and people are still taking that exit off to Ross Lane. There is more traffic than there has ever been.

Peter Borelli advised that the majority will use the new highway, but it will take time.

Comment: It will probably depend what signage you have.

Peter Borrelli agreed but also commented that he believed the existing highway will not carry as much traffic as that of the new highway.

Comment: I believe you can fit a brake to trucks for about $450, which reduces the compression braking noise. Is there any way that RMS can force the trucking industry to fit them?

Peter Borrelli advised that the question would be taken on notice. Government agencies try to avoid forcing people to do things, preferring to work with people and encourage people to change behaviour over time.

Question: Just a question about lighting on the highway, is there criteria to determine what or if these roundabouts [Ewingsdale interchange] are lit?

Peter Borrelli advised that roundabouts on the project will have lighting for road safety reasons. Low-level, shielded, directional lighting is used to direct light down onto the pavement.

Comment: I asked because at the Banora Point upgrade there is very low-level lighting, it surprises me that it's not lit.

Peter Borrelli advised that the roadway is not usually lit, but key intersections generally are. The roundabout at Banora is lit as the run-in to the roundabout at the underpass.

Comment: Yes, but in the actual cutting you'd think it would have been an exercise to have some suspended lighting as it quite dark.

Peter Borrelli confirmed that the question was referring to the cutting; this area was lit for architectural and aesthetic reasons.

End of questions and comments for session 1

Questions and comments – 26 March (session 2)

Comment: It is always very confusing to turn south when you need to head north.

Peter Borrelli commented that this has been consistent feedback received by RMS over the years. While the project was being undertaken, it was a good opportunity to review the design of the interchange.

Question: The double lane road at the top of the map. How do you use that?

Peter Borrelli explained that there will be two north bound lanes and two south bound lanes. The northbound off ramp allows drivers to turn left to head up to St Helena or right into Byron Bay. The existing highway would become a local road.

Question: Does that take you back onto the existing highway?

Peter Borrelli confirmed that it does take motorists onto the existing highway.

Question: Will the [St Helena] speed camera go?

Peter Borelli advised that it wouldn't, though it may be reviewed. It is likely to be retained for road safety reasons.

	Comment: It creates noise with brakes. Peter Borelli advised local traffic will primarily use the existing highway, with the bulk of heavy traffic using the new highway, which should help reduce some of the braking noise. **Question: If you're coming from the north and going to Lismore do you come off the exit and go through both roundabouts to get there?** Peter Borelli advised that there were two options – if motorists are travelling south on the Pacific Highway, they can either stay on the highway and travel down to Ballina and along the Bruxner highway into Lismore, which is the way RMS would prefer to signpost it, or take the exit at Ewingsdale, through the two roundabouts at the interchange and travel up and over the hill. **Question: And the road on the left there, behind the noise mound, is that a local road?** Peter Borelli explained that the road in question was the southbound on-road ramp for vehicles leaving Byron Bay and heading to Ballina. He explained that it was a one-way entry onto the highway. **Question: Heading south approaching Ewingsdale, the RMS preferred route to Lismore is via Teven. Are you going to encourage the traffic to follow that route with signposting?** Peter Borrelli advised the preferred route for vehicles is to remain on the highway and travel to Lismore via the Bruxner Highway. It was the intention of RMS to signpost it this way, however, there has been a representation from the Lismore City Council for signposting to Lismore to be installed at the Ewingsdale interchange. **Comment: No right turn from Ewingsdale would be very safe.** **Comment: There is a piercing beep from the machines rather than the quack. When they shift the screen for the crushing plant it takes about ½ hour and it beeps continuously.** Peter Borelli advised that beepers are installed on all plant for safety reasons; it is a legal requirement. The project team does try to minimise reversing beeping. ***End of questions and comments for session 2***	
	Conclusion (SS) Susan Scott thanked everyone for their attendance, questions and comments and invited them to remain for a discussion with the project team.	
	Session 1: Formal presentations finished at approximately 1.50pm; discussion groups concluded at approximately 2.10pm. **Session 2:** Formal presentations finished at approximately 7.28pm; discussion groups concluded at approximately 7.45pm. ** Copy of the PowerPoint presentation and video from **session one** is available on the RMS website.	