

The TfNSW Construction Noise Estimator Tool (Public Transport Infrastructure) is only suitable for simple noise assessment as detailed in Section 6.1 of the TfNSW *Construction Noise and Vibration guide (Public Transport Infrastructure) (CNVG-PTI)*. To determine if the tool can be used, complete the questions below:



-	Description of construction site locality	Moss Vale Station and Stabling Yard Upgrade
-	Brief description of construction scenario to be assessed	CSR and EV Charging - excavation and installation of conduits
-	User Name and Company	Vivian Tse, TfNSW
-	Assessment Date	12 February 2024

	Question	User Input
1	When will work be completed?	OOHW Period/s
2	How long will it take to complete the construction works?	Less than 6-weeks
3a	Is vibration intensive equipment to be used within 100m of sensitive receivers? (Appendix D)	Yes
3b	Is vibration intensive equipment to be used outside of the minimum working distances for cosmetic damage to buildings or human disturbance? (Appendix D)	
4	Will the work exceed construction traffic noise objectives (increase traffic noise by 2dBA over 'without construction' levels) and/or sleep disturbance objectives (Activities with LA <sub>max</sub> in exceedance of 15dBA over RBL in Period 2 at the nearest receiver)?	

Feedback/Instructions
Yes, the Construction Noise Estimator Tool can be used.
Yes, the Construction Noise Estimator Tool can be used.
Go to Question 3b, more information is required.

**Cell colour scheme**

	User Input
	Calculated Value
	High Noise Plant/Equipment

**This spreadsheet is used to calculate the cumulative sound power level when multiple plants/equipment are used**

Equipment that generates noise with special audible characteristics (including intensive vibration) are highlighted in orange and a special audible correction has been included in their Sound Power

Note: The predictions provided by this Noise Estimator Tool will generate the worst case scenario for construction activities. For more accurate predictions it may be suitable to divide each work stage or work shift into separate activities or engage a suitably qualified person such as an acoustic consultant to prepare a Detailed Assessment.

Total number of plant/equipment to be used **5**

Cumulative Sound Power Level, SWL (dBA) **112**

Use whole numbers only. Include all equipment that will be used for a minimum of 15-minutes.

Plant / Equipment	SWL, L <sub>Aeq</sub> (dBA)	No. of plant / equipment to be used	Is noisiest plant used intermittently? < 7 mins in any 15-minutes	Temporary screening around individual plant used?	Plant Cum. SWL (dBA)
Abrasive blasting (nozzle)	117				0
Air Compressor	102				0
Air track drill	124				0
Asphalt paver	106				0
Asphalt Truck & Sprayer	106				0
Auger/Drill Rig	105				0
Backhoe	108				0
Ballast clean*	120				0
Ballast pour	111				0
Ballast regulator*	120				0
Blower (battery)	106				0
Blower (petrol)	106				0
Bobcat	107				0
Bobcat with Planer	110				0
Breaker, electric / hydraulic, 36kg*	117				0
Breaker, petrol, 36kg*	108				0
Breaker, pneumatic, 14kg silenced*	113				0
Breaker, pneumatic, 14kg standard*	121				0
Brushcutter	110				0
Bucket Crusher	111				0
Chainsaw (electric)	95				0
Chainsaw (hydraulic)	107				0
Chainsaw (petrol)	114				0
Cherry Picker	102				0
Circular Saw	106				0
Compactor	105				0
Compressor (approx. 1500 CFM)	105				0
Compressor (approx. 600 CFM)	100				0
Compressor (Towable) / Lawn Mower	100				0
Concrete Pencil Vibrator	103				0
Concrete Pump	109				0
Concrete saw/corer*	123				0
Concrete Truck / Agitator	109				0
Concrete Vibrator	113				0
Daymakers	98				0
Diamond Grinding	126				0
Directional Driller (approx. 10 tonne)	104				0
Directional Driller (approx. 18 tonne)	107				0
Dozer D10	121				0
Dozer D9	116				0
Drill, electric	91				0
Drill, Hammer 4kg*	109				0
Drill, Hammer 7kg*	115				0
Dump Truck (approx. 15 tonne)	107				0
Dump Truck, tipping fill	117				0
Dynamic track stabiliser*	113				0
Earthmover (Drott)	105				0
Elevated Work Platform	95				0
Excavator (10 tonne)	100				0
Excavator (20 tonne)	105				0
Excavator (3 tonne)	90				0
Excavator (30 tonne)	110				0
Excavator (40 tonne)	115				0
<b>Excavator (6 tonne)</b>	<b>96</b>	1	Yes		96
Excavator (large) rock breaker*	127				0
Excavator (tracked)	107				0
Excavator Rock Saw*	119				0
Fence post driver*	105				0
Fixed crane	113				0
Flatbed or mobile crane truck	108				0
<b>Flood Lights / Lighting Tower (Daymaker)</b>	<b>90</b>	1	No		90
Forklift	104				0
Front End / Wheeled Loader	111				0
Generator - 4 stroke portable petrol	103				0
Generator - Attenuated	92				0
Generator - Diesel	113				0
Grader/Scraper	113				0
Grinder (small - up to 7 inch)	109				0
Hand Power Tool	105				0
<b>Hand Power Tools (2-3 items)</b>	<b>110</b>	1	Yes		110
High pressure washer	83				0
Hi-rail vehicle	105				0
Impact drill	116				0
Impact wrench	111				0
Jackhammer*	118				0
Light vehicles	98				0
Light vehicles (eg 4WD)	103				0
Line Marking Plant	108				0
Loader - Front End/Telehandler	112				0
Manitou	105				0
Microdrilling Rig (Solmec SM-14)	105				0
Microdrilling Rig (Solmec SM-6)	115				0
Mobile Crane (20 tonne)	108				0
Mobile Crane (60 tonne)	108				0
Mobile crane (all terrain)	110				0
Mobile Crane (Franna)	98				0
Mulching machine	108				0
Pad Foot Roller	109				0
Pavement Profiler	117				0
Paving machine (Asphalt)	114				0
Piling Rig - Bored	110				0
Piling Rig - Driven	116				0
Piling Rig - Impact*	136				0
Piling Rig - Vibratory	118				0
Pin puller / hammer, manual	110				0
Planer	96				0
Pump, Concrete / Shotcrete / Dewater	105				0
Rail grinder, hand held profiler*	121				0
Rail grinder, RB36 (main line grinder)*	123				0
Rail grinder, RB64 (turnout grinder)*	119				0
Rail Regulator/Tamper	98				0
Rail Saw, handheld*	122				0
Rail wooden sleeper drill	107				0
Rock crusher	118				0
Rockbreaker, hydraulic*	123				0
Roller (non vibratory)	110				0
Roller 2.5T Smoothdrum	105				0
Scissor Lift	98				0
Scraper	116				0
Semi trailer	103				0
Skidsteer Loader 1 T	110				0
Skidsteer Loader 1/2 T	107				0
Smooth drum roller	107				0
Spreader	95				0
Stump Grinder	105				0
Sucker Truck/Road Sweeper	109				0
Tamper, handheld*	130				0
Tamper, handheld petrol powered*	119				0
Tamping machine, mainline*	118				0
Taper truck with dog	108				0
<b>Truck (10 tonne)</b>	<b>103</b>	1	Yes		103
Truck (Semi trailer)	103				0
Truck compressor	75				0
Truck Mounted Borer	107				0
Tub Grinder/Mulcher	116				0
Tunnel boring machine	111				0
Use 4WD	103				0
Vacuum Truck/Sweeper	109				0
Vibratory Roller (smooth wheels)*	112				0
Vibratory Roller*	114				0
Vibratory Screen	103				0
Wacker Packer	98				0
<b>Wacker rammer</b>	<b>106</b>	1	Yes		106
Water Tanker (8000 litre)	107				0
Welder	105				0
Welding Equipment (Thermit)	110				0
Wood Chipper	115				0
Work train - idling locomotive	115				0
Work train - moving	112				0
Other:	100				0
Other:	100				0
Other:	100				0

## Noise Estimate Results

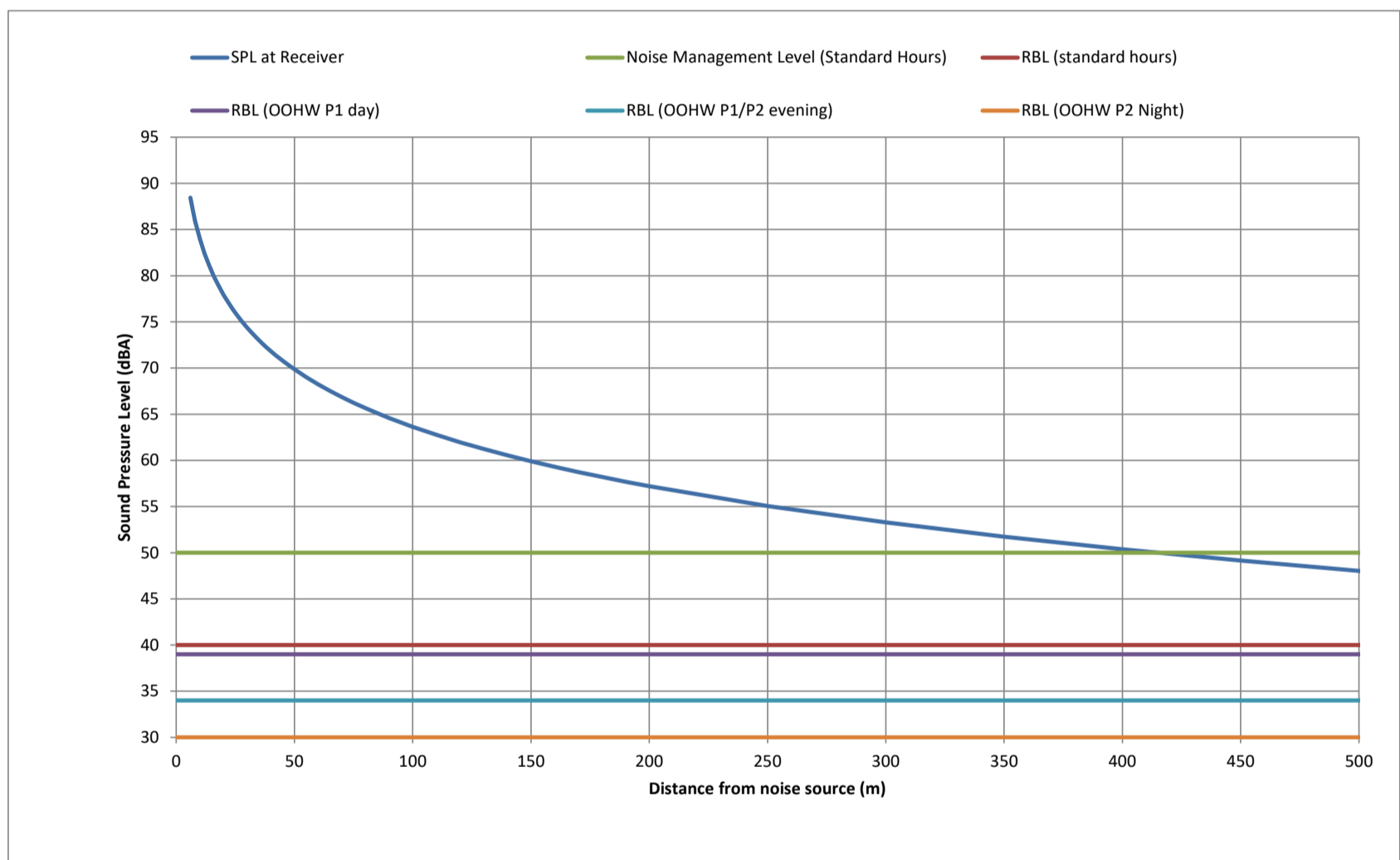


	Sound Power Level (dBA)	Distance (m)	Sound Pressure Level (dBA)	Air Attenuation (dBA) Day and Evening	Air Attenuation (dBA) Night	Additional Attenuation (whole site hoarding etc) (dBA) <sup>1</sup>	Predicted Noise level (SPL dBA LAeq) Day and Evening	Predicted Noise level (SPL dBA LAeq) Night
May to Sep	112	100	64	0.41	0.43	5	59	59

Area Type: **R1**  
 Standard Rating Background Level (RBL), or Measured RBL

	Standard Hours	OOHW P1 Day	OOHW P1/P2 Evening	OOHW P2 Night
Standard Rating Background Level (RBL), or Measured RBL	40	39	34	30
RBL Exceedance	19	20	25	29
Noise Management Level (NML)	50	44	39	35

May to Sep



Notes: Where the SPL line intersects with the RBL line in the graph above demonstrates the total radius (m) of impacted receivers  
 $SPL = SWL(\text{point}) - 20\log(r) - 8 - \text{Additional Attenuation}$   
 Sound Power Level includes +5dBA adjustment for noise with special audible characteristics (if required)

<sup>1</sup> Continuous, long solid barrier within the project boundary, that breaks line of sight between work area and receiver = 5dBA reduction  
 Enclosed, solid structure around work area/equipment = 10dBA reduction

The required mitigation measures for your activity are:

	Exceedance of RBL (dBA)																			
	Standard Hours				OOHW Period 1 - Day				OOHW Period 1 - Evening				OOHW Period 2 - Evening				OOHW Period 2 - Night			
	≤20	20-30	>30	>75dBA*	≤10	10-20	20-30	>30	≤10	10-20	20-30	>30	≤10	10-20	20-30	>30	≤10	10-20	20-30	>30
Standard Mitigation Measures (CNVG-PTI Sec 7.1)	Yes						Yes				Yes				Yes				Yes	
Additional Mitigation Measures (CNVG-PTI Sec 7.2):																				
Periodic notification							Yes				Yes				Yes				Yes	
Verification monitoring							Yes				Yes				Yes				Yes	
Specific Notification							Yes				Yes				Yes				Yes	
Respite Offer							Yes				Yes				Yes					
Respite Period											Yes				Yes					Yes
Duration Reduction											Yes				Yes					Yes
Alternative Accommodation																				

\* Any work above 75dBA regardless of RBL exceedance

**Assessment Summary**

Site Locality	
Construction Scenario	CSR and EV Charging - excavation and installation of conduits
User Name and Company	Vivian Tse, TfNSW
Number of Sources and SWL	5 Sources with overall SWL of 112 dBA
Receiver Distance	100 m
Site Barrier attenuation	5 dBA
Assessment Date	12 February 2024

Predicted Noise Level	Day & Evening	Night
	59 dBA	59 dBA

Period	RBL	NML	+ RBL
Standard Hours	40	50	19
OOHW Period 1 - Day	39	44	20
OOHW Period 1/2 - Evening	34	39	25
OOHW Period 2 - Night	30	35	29

A map showing the location of the proposed work area (source), nearest sensitive receiver, map scale and north arrow should be included into the noise estimator tool. The map should be clear with all required elements clearly visible and not cluttered with information.

- List of minimum required elements
- Landscape
  - Location of source
  - Location of receiver
  - Map scale
  - North arrow

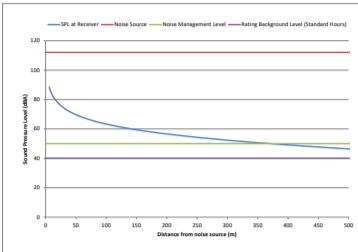
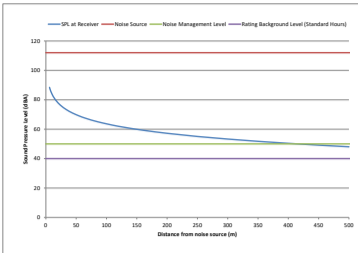


Noise area category (based on AS 1055.3-1997)	R0			R1			R2			R3			R4			R5		
Typical planning zoning – standard instrument	RU1 – primary production RU4 – primary production small lots R5 – large lot residential E2 – environmental conservation E3 – environmental management E4 – environmental living			RU2 – rural landscape RU5 – village RU6 – transition R2 – low density residential			RU5 – village RU6 – transition R2 – low density residential			R1 – general residential R2 – low density residential R3 – medium density residential			R1 – general residential R4 – high density residential B1 – neighbourhood centre (boarding houses and shop-top housing) B2 – local centre (boarding houses) B4 – mixed use			R4 – high density residential B2 – local centre (boarding houses) B4 – mixed use		
Time period	Day	Evening	Night	Day	Evening	Night	Day	Evening	Night	Day	Evening	Night	Day	Evening	Night	Day	Evening	Night
RBL/LA90 Background noise level (dBA)	30	30	30	40	35	30	45	40	35	50	45	40	55	50	45	60	55	50
Description	Rural residences that are isolated and seperated by over 500m away from any transport corridors			Rural – an area with an acoustical environment that is dominated by natural sounds, having little or no road traffic noise and generally characterised by low background noise levels. Settlement patterns would be typically sparse.			Rural residences along a major highway eg Pacific Hwy with speed limits of 100 km/h.			Suburban – an area that has local traffic with characteristically intermittent traffic flows (speed limits of 60 or 70 km/h) or with some limited commerce or industry. This area often has the following characteristic: evening ambient noise levels defined by the natural environment and human activity.			Urban – an area with an acoustical environment that: - is dominated by 'urban hum' or industrial source noise, where urban hum means the aggregate sound of many unidentifiable, mostly traffic and/or industrial related sound sources - has through-traffic with characteristically heavy and continuous traffic flows during peak periods - is near commercial districts or industrial districts - has any combination of the above.			CBD urban areas where it is predominantly commercial and densely concentrated skyscrapers. Eg Sydney, Parramatta, Chatswood.		

	RBL/LA90 (dBA)		
	Day	Evening	Night
R0	30	30	30
R1	40	35	30
R2	45	40	35
R3	50	45	40
R4	55	50	45
R5	60	55	50
-	-	-	-

May to Sep Cumulative Noise (dBA)

Table with columns: Distance, SPL (D), Excess Attenuation on, Barrier Loss, Predicted Noise Level. Rows 0-10000.



Oct to April Cumulative Noise (dBA)

Table with columns: Distance, SPL (D), Excess Attenuation on, Barrier Loss, Predicted Noise Level. Rows 0-10000.

Predicted Noise Level Cumulative Noise (dBA)

Table with columns: Distance, SPL (D), Excess Attenuation on, Barrier Loss, May to Sep, Oct to April, Predicted Noise Level. Rows 0-10000.

May to Sep Predicted Noise Level

Table with columns: Distance, Predicted Noise Level. Rows 0-10000.

**ISO 9613**  
**Atmospheric absorption (A<sub>atm</sub>)**  
**(α<sub>ph</sub>\*d)/1000**

Alpha Atmospheric attenuation coefficient  
d Distance

Distance 100

Frequency (Hz)	Temperature (C)	Relative Humidity	Atmospheric attenuation coefficient	Distance	Air Attenuation
500	5	60	1.69	100	0.169
1000	5	60	4.29	100	0.429
2000	5	60	14.2	100	1.42

Frequency (Hz)	Temperature (C)	Relative Humidity	Atmospheric attenuation coefficient	Distance	Air Attenuation
500	15	60	2.31	100	0.231
1000	15	60	4.06	100	0.406
2000	15	60	9.5	100	0.95

Frequency (Hz)	Temperature (C)	Relative Humidity	Atmospheric attenuation coefficient	Distance	Air Attenuation
500	30	60	3.36	100	0.336
1000	30	60	7.29	100	0.729
2000	30	60	12.2	100	1.22

Period	Day and Evening	Night
May to Sep	4.06	4.29
Oct to April	7.29	4.06



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-	Description of construction site locality	Moss Vale Station and Stabling Yard Upgrade
-	Brief description of construction scenario to be assessed	CSR trenching and installation - MTS compound and EV charging stations - Saw cutting only
-	User Name and Company	Vivian Tse, TfNSW
-	Assessment Date	12 February 2024

	Question	User Input
1	When will work be completed?	OOHW Period/s
2	How long will it take to complete the construction works?	Less than 6-weeks
3a	Is vibration intensive equipment to be used within 100m of sensitive receivers? (Appendix D)	Yes
3b	Is vibration intensive equipment to be used outside of the minimum working distances for cosmetic damage to buildings or human disturbance? (Appendix D)	
4	Will the work exceed construction traffic noise objectives (increase traffic noise by 2dBA over 'without construction' levels) and/or sleep disturbance objectives (Activities with LA <sub>max</sub> in exceedance of 15dBA over RBL in Period 2 at the nearest receiver)?	

Feedback/Instructions
Yes, the Construction Noise Estimator Tool can be used.
Yes, the Construction Noise Estimator Tool can be used.
Go to Question 3b, more information is required.

**Cell colour scheme**

	User Input
	Calculated Value
	High Noise Plant/Equipment

**This spreadsheet is used to calculate the cumulative sound power level when multiple plants/equipment are used**

Equipment that generates noise with special audible characteristics (including intensive vibration) are highlighted in orange and a special audible correction has been included in their Sound Power

Note: The predictions provided by this Noise Estimator Tool will generate the worst case scenario for construction activities. For more accurate predictions it may be suitable to divide each work stage or work shift into separate activities or engage a suitably qualified person such as an acoustic consultant to prepare a Detailed Assessment.

Total number of plant/equipment to be used **2**

Cumulative Sound Power Level, SWL (dBA) **123**

Use whole numbers only. Include all equipment that will be used for a minimum of 15-minutes.

Plant / Equipment	SWL, LAeq (dBA)	No. of plant / equipment to be used	Is noisiest plant used intermittently? < 7 mins in any 15-minutes	Temporary screening around individual plant used?	Plant Cum. SWL (dBA)
Abrasive blasting (nozzle)	117				0
Air Compressor	102				0
Air track drill	124				0
Asphalt paver	106				0
Asphalt Truck & Sprayer	106				0
Auger/Drill Rig	105				0
Backhoe	108				0
Ballast clean*	120				0
Ballast pour	111				0
Ballast regulator*	120				0
Blower (battery)	98				0
Blower (petrol)	106				0
Bobcat	107				0
Bobcat with Planer	110				0
Breaker, electric / hydraulic, 36kg*	117				0
Breaker, petrol, 36kg*	108				0
Breaker, pneumatic, 14kg silenced*	113				0
Breaker, pneumatic, 14kg standard*	121				0
Brushcutter	110				0
Bucket Crusher	111				0
Chainsaw (electric)	95				0
Chainsaw (hydraulic)	107				0
Chainsaw (petrol)	114				0
Cherry Picker	102				0
Circular Saw	106				0
Compactor	110				0
Compressor (approx. 1500 CFM)	105				0
Compressor (approx. 600 CFM)	100				0
Compressor (Towable) / Lawn Mower	100				0
Concrete Pencil Vibrator	103				0
Concrete Pump	109				0
<b>Concrete saw/corer*</b>	<b>123</b>	<b>1</b>	<b>Yes</b>		<b>123</b>
Concrete Truck / Agitator	113				0
Concrete Vibrator	113				0
Daymakers	98				0
Diamond Grinding	126				0
Directional Driller (approx. 10 tonne)	104				0
Directional Driller (approx. 18 tonne)	107				0
Dozer D10	121				0
Dozer D9	116				0
Drill, electric	91				0
Drill, Hammer 4kg*	109				0
Drill, Hammer 7kg*	115				0
Dump Truck (approx. 15 tonne)	107				0
Dump Truck, tipping fill	117				0
Dynamic track stabiliser*	113				0
Earthmover (Drott)	110				0
Elevated Work Platform	95				0
Excavator (10 tonne)	100				0
Excavator (20 tonne)	105				0
Excavator (3 tonne)	90				0
Excavator (30 tonne)	110				0
Excavator (40 tonne)	115				0
Excavator (6 tonne)	95				0
Excavator (large) - rock breaker*	127				0
Excavator (tracked)	107				0
Excavator Rock Saw*	119				0
Fence post driver*	105				0
Fixed crane	113				0
Flatbed or mobile crane truck	108				0
<b>Flood Lights / Lighting Tower (Daymaker)</b>	<b>90</b>	<b>1</b>	<b>No</b>		<b>90</b>
Forklift	100				0
Front End / Wheeled Loader	111				0
Generator - 4 stroke portable petrol	103				0
Generator - Attenuated	92				0
Generator - Diesel	113				0
Grader/Scraper	113				0
Grinder (small - up to 7 inch)	109				0
Hand Power Tool	105				0
Hand Power Tools (2-3 items)	110				0
High pressure washer	93				0
Hi-rail vehicle	105				0
Impact drill	116				0
Impact wrench	111				0
Jackhammer*	118				0
Light vehicles	98				0
Light vehicles (eg 4WD)	103				0
Line Marking Plant	108				0
Loader - Front End/Telehandler	112				0
Manitou	105				0
Microdrilling Rig (Solmec SM-14)	105				0
Microdrilling Rig (Solmec SM-6)	115				0
Mobile Crane (20 tonne)	108				0
Mobile Crane (60 tonne)	108				0
Mobile crane (all terrain)	110				0
Mobile Crane (Franna)	98				0
Mulching machine	108				0
Pad Foot Roller	109				0
Pavement Profiler	117				0
Paving machine (Asphalt)	114				0
Piling Rig - Bored	110				0
Piling Rig - Driven	116				0
Piling Rig - Impact*	136				0
Piling Rig - Vibratory	118				0
Pin puller / hammer, manual	110				0
Planer	96				0
Pump, Concrete / Shotcrete / Dewater	105				0
Rail grinder, hand held profiler*	121				0
Rail grinder, RR36 (main line grinder)*	123				0
Rail grinder, RR64 (turnout grinder)*	119				0
Rail Regulator/Tamper	98				0
Rail Saw, handheld*	122				0
Rail wooden sleeper drill	107				0
Rock crusher	118				0
Rockbreaker, hydraulic*	123				0
Roller (non vibratory)	110				0
Roller 2.5T Smoothdrum	105				0
Scissor Lift	98				0
Scraper	116				0
Semi trailer	103				0
Skidsteer Loader 1 T	110				0
Skidsteer Loader 1/2 T	107				0
Smooth drum roller	107				0
Spreader	95				0
Stump Grinder	105				0
Sucker Truck/Road Sweeper	109				0
Tamper, handheld*	130				0
Tamper, handheld petrol powered*	119				0
Tamping machine, mainline*	118				0
Taper truck with dog	108				0
Truck (10 tonne)	103				0
Truck (Semi trailer)	103				0
Truck compressor	75				0
Truck Mounted Borer	107				0
Tub Grinder/Mulcher	116				0
Tunnel boring machine	111				0
Use 4WD	103				0
Vacuum Truck/Sweeper	109				0
Vibratory Roller (smooth wheels)*	112				0
Vibratory Roller*	114				0
Vibratory Screen	103				0
Wacker Packer	98				0
Wacker rammer	106				0
Water Tanker (8000 litre)	107				0
Welder	105				0
Welding Equipment (Thermit)	110				0
Wood Chipper	115				0
Work train - idling locomotive	115				0
Work train - moving	112				0
Other:	100				0
Other:	100				0
Other:	100				0

## Noise Estimate Results



Sound Power Level (dBA)	Distance (m)	Sound Pressure Level (dBA)	Air Attenuation (dBA) Day and Evening	Air Attenuation (dBA) Night	Additional Attenuation (whole site hoarding etc) (dBA) <sup>1</sup>	Predicted Noise level (SPL dBA LAeq) Day and Evening	Predicted Noise level (SPL dBA LAeq) Night
123	100	75	0.41	0.43	5	70	70

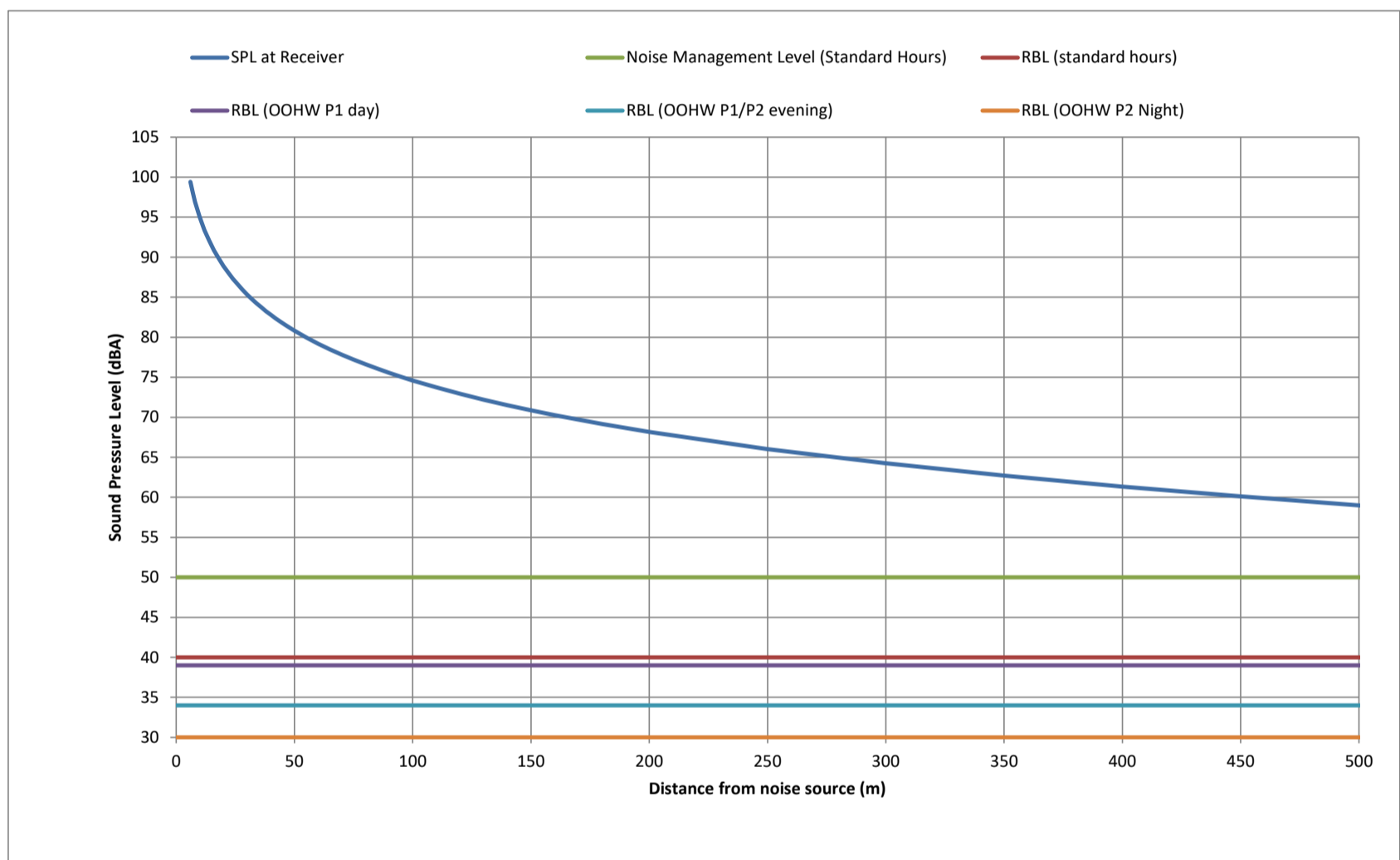
Area Type: **R1**  
 Standard Rating Background Level (RBL), or Measured RBL

Standard Hours	OOHW P1 Day	OOHW P1/P2 Evening	OOHW P2 Night
40	39	34	30
<b>30</b>	<b>31</b>	<b>36</b>	<b>40</b>
50	44	39	35

RBL Exceedance

Noise Management Level (NML)

May to Sep



Notes:

Where the SPL line intersects with the RBL line in the graph above demonstrates the total radius (m) of impacted receivers

$$SPL = SWL(\text{point}) - 20\log(r) - 8 - \text{Additional Attenuation}$$

Sound Power Level includes +5dBA adjustment for noise with special audible characteristics (if required)

<sup>1</sup> Continuous, long solid barrier within the project boundary, that breaks line of sight between work area and receiver = 5dBA reduction  
 Enclosed, solid structure around work area/equipment = 10dBA reduction

The required mitigation measures for your activity are:

	Exceedance of RBL (dBA)																			
	Standard Hours				OOHW Period 1 - Day				OOHW Period 1 - Evening				OOHW Period 2 - Evening				OOHW Period 2 - Night			
	≤20	20-30	>30	>75dBA*	≤10	10-20	20-30	>30	≤10	10-20	20-30	>30	≤10	10-20	20-30	>30	≤10	10-20	20-30	>30
Standard Mitigation Measures (CNVG-PTI Sec 7.1)			Yes					Yes				Yes				Yes				Yes
Additional Mitigation Measures (CNVG-PTI Sec 7.2):																				
Periodic notification			Yes					Yes				Yes				Yes				Yes
Verification monitoring			Yes					Yes				Yes				Yes				Yes
Specific Notification								Yes				Yes				Yes				Yes
Respite Offer								Yes				Yes				Yes				Yes
Respite Period												Yes				Yes				Yes
Duration Reduction												Yes				Yes				Yes
Alternative Accommodation																Yes				Yes

\* Any work above 75dBA regardless of RBL exceedance

Assessment Summary

Site Locality	
Construction Scenario	CSR trenching and installation - MTS compound and EV charging stations - Saw cutting only
User Name and Company	Vivian Tse, TfNSW
Number of Sources and SWL	2 Sources with overall SWL of 123 dBA
Receiver Distance	100 m
Site Barrier attenuation	5 dBA
Assessment Date	12 February 2024

Predicted Noise Level

Day & Evening	Night
70 dBA	70 dBA

Period	RBL	NML	+ RBL
Standard Hours	40	50	30
OOHW Period 1 - Day	39	44	31
OOHW Period 1/2 - Evening	34	39	36
OOHW Period 2 - Night	30	35	40

A map showing the location of the proposed work area (source), nearest sensitive receiver, map scale and north arrow should be included into the noise estimator tool. The map should be clear with all required elements clearly visible and not cluttered with information.

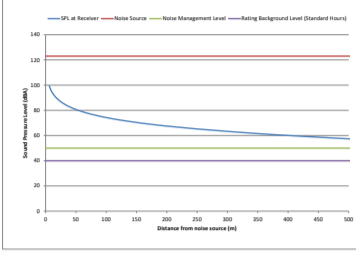
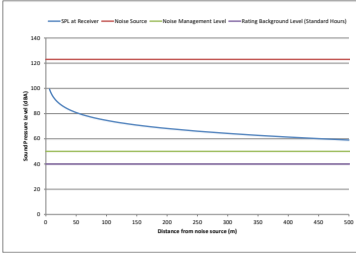
- List of minimum required elements
- Landscape
  - Location of source
  - Location of receiver
  - Map scale
  - North arrow



Noise area category (based on AS 1055.3-1997)	R0			R1			R2			R3			R4			R5		
Typical planning zoning – standard instrument	RU1 – primary production RU4 – primary production small lots R5 – large lot residential E2 – environmental conservation E3 – environmental management E4 – environmental living			RU2 – rural landscape RU5 – village RU6 – transition R2 – low density residential			RU5 – village RU6 – transition R2 – low density residential			R1 – general residential R2 – low density residential R3 – medium density residential			R1 – general residential R4 – high density residential B1 – neighbourhood centre (boarding houses and shop-top housing) B2 – local centre (boarding houses) B4 – mixed use			R4 – high density residential B2 – local centre (boarding houses) B4 – mixed use		
Time period	Day	Evening	Night	Day	Evening	Night	Day	Evening	Night	Day	Evening	Night	Day	Evening	Night	Day	Evening	Night
RBL/LA90 Background noise level (dBA)	30	30	30	40	35	30	45	40	35	50	45	40	55	50	45	60	55	50
Description	Rural residences that are isolated and seperated by over 500m away from any transport corridors			Rural – an area with an acoustical environment that is dominated by natural sounds, having little or no road traffic noise and generally characterised by low background noise levels. Settlement patterns would be typically sparse.			Rural residences along a major highway eg Pacific Hwy with speed limits of 100 km/h.			Suburban – an area that has local traffic with characteristically intermittent traffic flows (speed limits of 60 or 70 km/h) or with some limited commerce or industry. This area often has the following characteristic: evening ambient noise levels defined by the natural environment and human activity.			Urban – an area with an acoustical environment that: - is dominated by 'urban hum' or industrial source noise, where urban hum means the aggregate sound of many unidentifiable, mostly traffic and/or industrial related sound sources - has through-traffic with characteristically heavy and continuous traffic flows during peak periods - is near commercial districts or industrial districts - has any combination of the above.			CBD urban areas where it is predominantly commercial and densely concentrated skyscrapers. Eg Sydney, Parramatta, Chatswood.		

	RBL/LA90 (dBA)		
	Day	Evening	Night
R0	30	30	30
R1	40	35	30
R2	45	40	35
R3	50	45	40
R4	55	50	45
R5	60	55	50
-	-	-	-

Distance	SPL (d)	Excess Attenuation on	Barrier Loss	Predicted Noise Level
0	0	0	0	0
0.5	0	0	0	0.5
1	0	0	0	1
2	0	0	0	2
4	0	0	0	4
6	0	0	0	6
7	0	0	0	7
8	0	0	0	8
9	0	0	0	9
10	0	0	0	10
12	0	0	0	12
14	0	0	0	14
16	0	0	0	16
18	0	0	0	18
20	0	0	0	20
22	0	0	0	22
24	0	0	0	24
26	0	0	0	26
28	0	0	0	28
30	0	0	0	30
32	0	0	0	32
34	0	0	0	34
36	0	0	0	36
38	0	0	0	38
40	0	0	0	40
42	0	0	0	42
44	0	0	0	44
46	0	0	0	46
48	0	0	0	48
50	0	0	0	50
52	0	0	0	52
54	0	0	0	54
56	0	0	0	56
58	0	0	0	58
60	0	0	0	60
62	0	0	0	62
64	0	0	0	64
66	0	0	0	66
68	0	0	0	68
70	0	0	0	70
72	0	0	0	72
74	0	0	0	74
76	0	0	0	76
78	0	0	0	78
80	0	0	0	80
82	0	0	0	82
84	0	0	0	84
86	0	0	0	86
88	0	0	0	88
90	0	0	0	90
92	0	0	0	92
94	0	0	0	94
96	0	0	0	96
98	0	0	0	98
100	0	0	0	100
102	0	0	0	102
104	0	0	0	104
106	0	0	0	106
108	0	0	0	108
110	0	0	0	110
112	0	0	0	112
114	0	0	0	114
116	0	0	0	116
118	0	0	0	118
120	0	0	0	120
122	0	0	0	122
124	0	0	0	124
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128	0	0	0	128
130	0	0	0	130
132	0	0	0	132
134	0	0	0	134
136	0	0	0	136
138	0	0	0	138
140	0	0	0	140
142	0	0	0	142
144	0	0	0	144
146	0	0	0	146
148	0	0	0	148
150	0	0	0	150
152	0	0	0	152
154	0	0	0	154
156	0	0	0	156
158	0	0	0	158
160	0	0	0	160
162	0	0	0	162
164	0	0	0	164
166	0	0	0	166
168	0	0	0	168
170	0	0	0	170
172	0	0	0	172
174	0	0	0	174
176	0	0	0	176
178	0	0	0	178
180	0	0	0	180
182	0	0	0	182
184	0	0	0	184
186	0	0	0	186
188	0	0	0	188
190	0	0	0	190
192	0	0	0	192
194	0	0	0	194
196	0	0	0	196
198	0	0	0	198
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246	0	0	0	246
248	0	0	0	248
250	0	0	0	250
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256	0	0	0	256
258	0	0	0	258
260	0	0	0	260
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264	0	0	0	264
266	0	0	0	266
268	0	0	0	268
270	0	0	0	270
272	0	0	0	272
274	0	0	0	274
276	0	0	0	276
278	0	0	0	278
280	0	0	0	280
282	0	0	0	282
284	0	0	0	284
286	0	0	0	286
288	0	0	0	288
290	0	0	0	290
292	0	0	0	292
294	0	0	0	294
296	0	0	0	296
298	0	0	0	298
300	0	0	0	300
302	0	0	0	302
304	0	0	0	304
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346	0	0	0	346
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352	0	0	0	352
354	0	0	0	354
356	0	0	0	356
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360	0	0	0	360
362	0	0	0	362
364	0	0	0	364
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374	0	0	0	374
376	0	0	0	376
378	0	0	0	378
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382	0	0	0	382
384	0	0	0	384
386	0	0	0	386
388	0	0	0	388
390	0	0	0	390
392	0	0	0	392
394	0	0	0	394
396	0	0	0	396
398	0	0	0	398
400	0	0	0	400



Distance	SPL (d)	Excess Attenuation on	Barrier Loss	Predicted Noise Level
0	0	0	0	0
0.5	0	0	0	0.5
1	0	0	0	1
2	0	0	0	2
4	0	0	0	4
6	0	0	0	6
7	0	0	0	7
8	0	0	0	8
9	0	0	0	9
10	0	0	0	10
12	0	0	0	12
14	0	0	0	14
16	0	0	0	16
18	0	0	0	18
20	0	0	0	20
22	0	0	0	22
24	0	0	0	24
26	0	0	0	26
28	0	0	0	28
30	0	0	0	30
32	0	0	0	32
34	0	0	0	34
36	0	0	0	36
38	0	0	0	38
40	0	0	0	40
42	0	0	0	42
44	0	0	0	44
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50	0	0	0	50
52	0	0	0	52
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58	0	0	0	58
60	0	0	0	60
62	0	0	0	62
64	0	0	0	64
66	0	0	0	66
68	0	0	0	68
70	0	0	0	70
72	0	0	0	72
74	0	0	0	74
76	0	0	0	76
78	0	0	0	78
80	0	0	0	80
82	0	0	0	82
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88	0	0	0	88
90	0	0	0	90
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96	0	0	0	96
98	0	0	0	98
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186	0	0	0	186
188	0	0	0	188
190	0	0	0	190
192	0	0	0	192
194	0	0	0	194
196	0	0	0	196
198	0	0	0	198
200	0	0		

**ISO 9613**  
**Atmospheric absorption (A<sub>atm</sub>)**  
**(α<sub>ph</sub>\*d)/1000**

Alpha Atmospheric attenuation coefficient  
d Distance

Distance 100

Frequency (Hz)	Temperature (C)	Relative Humidity	Atmospheric attenuation coefficient	Distance	Air Attenuation
500	5	60	1.69	100	0.169
1000	5	60	4.29	100	0.429
2000	5	60	14.2	100	1.42

Frequency (Hz)	Temperature (C)	Relative Humidity	Atmospheric attenuation coefficient	Distance	Air Attenuation
500	15	60	2.31	100	0.231
1000	15	60	4.06	100	0.406
2000	15	60	9.5	100	0.95

Frequency (Hz)	Temperature (C)	Relative Humidity	Atmospheric attenuation coefficient	Distance	Air Attenuation
500	30	60	3.36	100	0.336
1000	30	60	7.29	100	0.729
2000	30	60	12.2	100	1.22

Period	Day and Evening	Night
May to Sep	4.06	4.29
Oct to April	7.29	4.06



The TfNSW Construction Noise Estimator Tool (Public Transport Infrastructure) is only suitable for simple noise assessment as detailed in Section 6.1 of the TfNSW *Construction Noise and Vibration guide (Public Transport Infrastructure) (CNVG-PTI)*. To determine if the tool can be used, complete the questions below:



-	Description of construction site locality	Moss Vale Station and Stabling Yard Upgrade
-	Brief description of construction scenario to be assessed	Stormwater upgrades - excavation and installation
-	User Name and Company	Vivian Tse, TfNSW
-	Assessment Date	12 February 2024

	Question	User Input
1	When will work be completed?	OOHW Period/s
2	How long will it take to complete the construction works?	Less than 6-weeks
3a	Is vibration intensive equipment to be used within 100m of sensitive receivers? (Appendix D)	Yes
3b	Is vibration intensive equipment to be used outside of the minimum working distances for cosmetic damage to buildings or human disturbance? (Appendix D)	
4	Will the work exceed construction traffic noise objectives (increase traffic noise by 2dBA over 'without construction' levels) and/or sleep disturbance objectives (Activities with LA <sub>max</sub> in exceedance of 15dBA over RBL in Period 2 at the nearest receiver)?	

Feedback/Instructions
Yes, the Construction Noise Estimator Tool can be used.
Yes, the Construction Noise Estimator Tool can be used.
Go to Question 3b, more information is required.

**Cell colour scheme**

	User Input
	Calculated Value
	High Noise Plant/Equipment

**This spreadsheet is used to calculate the cumulative sound power level when multiple plants/equipment are used**

Equipment that generates noise with special audible characteristics (including intensive vibration) are highlighted in orange and a special audible correction has been included in their Sound Power

Note: The predictions provided by this Noise Estimator Tool will generate the worst case scenario for construction activities. For more accurate predictions it may be suitable to divide each work stage or work shift into separate activities or engage a suitably qualified person such as an acoustic consultant to prepare a Detailed Assessment.

Total number of plant/equipment to be used **5**

Cumulative Sound Power Level, SWL (dBA) **112**

Use whole numbers only. Include all equipment that will be used for a minimum of 15-minutes.

Plant / Equipment	SWL, L <sub>Aeq</sub> (dBA)	No. of plant / equipment to be used	Is noisiest plant used intermittently? < 7 mins in any 15-minutes	Temporary screening around individual plant used?	Plant Cum. SWL (dBA)
Abrasive blasting (nozzle)	117				0
Air Compressor	102				0
Air track drill	124				0
Asphalt paver	106				0
Asphalt Truck & Sprayer	106				0
Auger/Drill Rig	105				0
Backhoe	108				0
Ballast clean*	120				0
Ballast pour	111				0
Ballast regulator*	120				0
Blower (battery)	98				0
Blower (petrol)	106				0
Bobcat	107				0
Bobcat with Planer	110				0
Breaker, electric / hydraulic, 36kg*	117				0
Breaker, petrol, 36kg*	108				0
Breaker, pneumatic, 14kg silenced*	113				0
Breaker, pneumatic, 14kg standard*	121				0
Brushcutter	110				0
Bucket Crusher	111				0
Chainsaw (electric)	95				0
Chainsaw (hydraulic)	107				0
Chainsaw (petrol)	114				0
Cherry Picker	102				0
Circular Saw	106				0
Compactor	103				0
Compressor (approx. 1500 CFM)	105				0
Compressor (approx. 600 CFM)	100				0
Compressor (Towable) / Lawn Mower	100				0
Concrete Pencil Vibrator	103				0
Concrete Pump	109				0
Concrete saw/corer*	123				0
Concrete Truck / Agitator	109				0
Concrete Vibrator	113				0
Daymakers	98				0
Diamond Grinding	126				0
Directional Driller (approx. 10 tonne)	104				0
Directional Driller (approx. 18 tonne)	107				0
Dozer D10	121				0
Dozer D9	116				0
Drill, electric	91				0
Drill, Hammer 4kg*	109				0
Drill, Hammer 7kg*	115				0
Dump Truck (approx. 15 tonne)	107				0
Dump Truck, tipping fill	117				0
Dynamic track stabiliser*	113				0
Earthmover (Drott)	103				0
Elevated Work Platform	95				0
Excavator (10 tonne)	100				0
Excavator (20 tonne)	105				0
Excavator (3 tonne)	90				0
Excavator (30 tonne)	110				0
Excavator (40 tonne)	115				0
<b>Excavator (6 tonne)</b>	<b>96</b>	1	Yes		96
Excavator (large) rock breaker*	127				0
Excavator (tracked)	107				0
Excavator Rock Saw*	119				0
Fence post driver*	105				0
Fixed crane	113				0
Flatbed or mobile crane truck	108				0
<b>Flood Lights / Lighting Tower (Daymaker)</b>	<b>90</b>	1	No		90
Forklift	104				0
Front End / Wheeled Loader	111				0
Generator - 4 stroke portable petrol	103				0
Generator - Attenuated	92				0
Generator - Diesel	113				0
Grader/Scraper	113				0
Grinder (small - up to 7 inch)	109				0
Hand Power Tool	105				0
<b>Hand Power Tools (2-3 items)</b>	<b>110</b>	1	Yes		110
High pressure washer	83				0
Hi-rail vehicle	105				0
Impact drill	116				0
Impact wrench	111				0
Jackhammer*	118				0
Light vehicles	98				0
Light vehicles (eg 4WD)	103				0
Line Marking Plant	108				0
Loader - Front End/Telehandler	112				0
Manitou	105				0
Microdrilling Rig (Solmec SM-14)	105				0
Microdrilling Rig (Solmec SM-6)	115				0
Mobile Crane (20 tonne)	108				0
Mobile Crane (60 tonne)	109				0
Mobile crane (all terrain)	110				0
Mobile Crane (Franna)	98				0
Mulching machine	108				0
Pad Foot Roller	109				0
Pavement Profiler	117				0
Paving machine (Asphalt)	114				0
Piling Rig - Bored	110				0
Piling Rig - Driven	116				0
Piling Rig - Impact*	136				0
Piling Rig - Vibratory	118				0
Pin puller / hammer, manual	110				0
Planer	96				0
Pump, Concrete / Shotcrete / Dewater	105				0
Rail grinder, hand held profiler*	121				0
Rail grinder, RR36 (main line grinder)*	123				0
Rail grinder, RR64 (turnout grinder)*	119				0
Rail Regulator/Tamper	98				0
Rail Saw, handheld*	122				0
Rail wooden sleeper drill	107				0
Rock crusher	118				0
Rockbreaker, hydraulic*	123				0
Roller (non vibratory)	110				0
Roller 2.5T Smoothdrum	105				0
Scissor Lift	98				0
Scraper	116				0
Semi trailer	103				0
Skidsteer Loader 1 T	110				0
Skidsteer Loader 1/2 T	107				0
Smooth drum roller	107				0
Spreader	95				0
Stump Grinder	105				0
Sucker Truck/Road Sweeper	109				0
Tamper, handheld*	130				0
Tamper, handheld petrol powered*	119				0
Tamping machine, mainline*	118				0
Taper truck with dog	108				0
<b>Truck (10 tonne)</b>	<b>103</b>	1	Yes		103
Truck (Semi trailer)	103				0
Truck compressor	75				0
Truck Mounted Borer	107				0
Tub Grinder/Mulcher	116				0
Tunnel boring machine	111				0
Use 4WD	103				0
Vacuum Truck/Sweeper	109				0
Vibratory Roller (smooth wheels)*	112				0
Vibratory Roller*	114				0
Vibratory Screen	103				0
Wacker Packer	98				0
<b>Wacker rammer</b>	<b>106</b>	1	Yes		106
Water Tanker (8000 litre)	107				0
Welder	105				0
Welding Equipment (Thermit)	110				0
Wood Chipper	115				0
Work train - idling locomotive	115				0
Work train - moving	112				0
Other:	100				0
Other:	100				0
Other:	100				0

## Noise Estimate Results

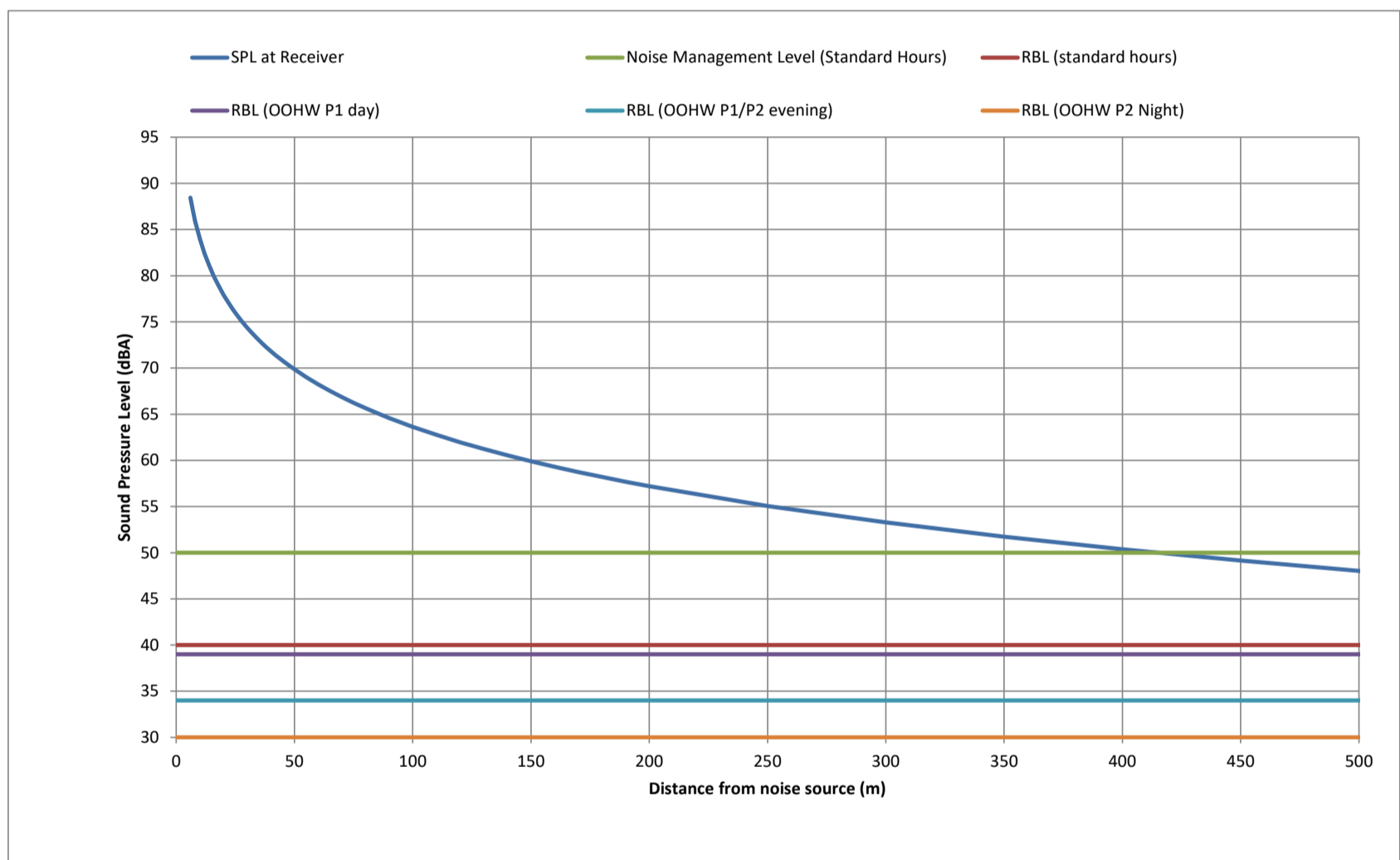


	Sound Power Level (dBA)	Distance (m)	Sound Pressure Level (dBA)	Air Attenuation (dBA) Day and Evening	Air Attenuation (dBA) Night	Additional Attenuation (whole site hoarding etc) (dBA) <sup>1</sup>	Predicted Noise level (SPL dBA LAeq) Day and Evening	Predicted Noise level (SPL dBA LAeq) Night
May to Sep	112	7	87	0.03	0.03	0	87	87

Area Type: **R1**  
 Standard Rating Background Level (RBL), or Measured RBL

	Standard Hours	OOHW P1 Day	OOHW P1/P2 Evening	OOHW P2 Night
Standard Rating Background Level (RBL), or Measured RBL	40	39	34	30
RBL Exceedance	47	48	53	57
Noise Management Level (NML)	50	44	39	35

May to Sep



Notes: Where the SPL line intersects with the RBL line in the graph above demonstrates the total radius (m) of impacted receivers  
 $SPL = SWL(\text{point}) - 20\log(r) - 8 - \text{Additional Attenuation}$   
 Sound Power Level includes +5dBA adjustment for noise with special audible characteristics (if required)

<sup>1</sup> Continuous, long solid barrier within the project boundary, that breaks line of sight between work area and receiver = 5dBA reduction  
 Enclosed, solid structure around work area/equipment = 10dBA reduction

The required mitigation measures for your activity are:

	Exceedance of RBL (dBA)																			
	Standard Hours				OOHW Period 1 - Day				OOHW Period 1 - Evening				OOHW Period 2 - Evening				OOHW Period 2 - Night			
	≤20	20-30	>30	>75dBA*	≤10	10-20	20-30	>30	≤10	10-20	20-30	>30	≤10	10-20	20-30	>30	≤10	10-20	20-30	>30
Standard Mitigation Measures (CNVG-PTI Sec 7.1)				Yes				Yes				Yes				Yes				Yes
Additional Mitigation Measures (CNVG-PTI Sec 7.2):																				
Periodic notification				Yes				Yes				Yes				Yes				Yes
Verification monitoring				Yes				Yes				Yes				Yes				Yes
Specific Notification				Yes				Yes				Yes				Yes				Yes
Respite Offer								Yes				Yes				Yes				Yes
Respite Period												Yes				Yes				Yes
Duration Reduction												Yes				Yes				Yes
Alternative Accommodation																Yes				Yes

\* Any work above 75dBA regardless of RBL exceedance

Assessment Summary

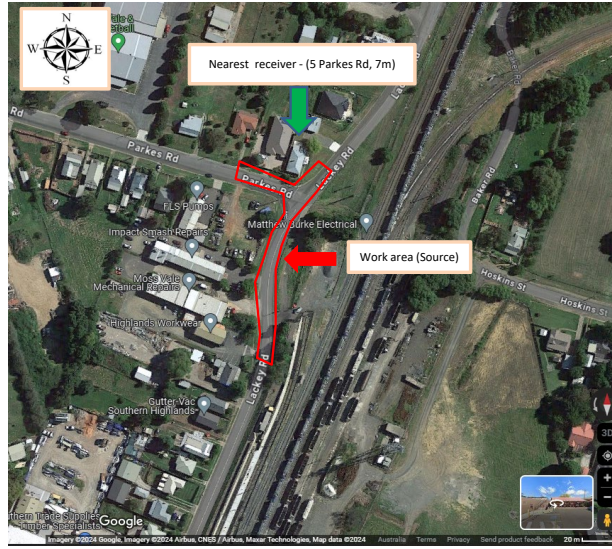
Site Locality	
Construction Scenario	Stormwater upgrades - excavation and installation
User Name and Company	Vivian Tse, TfNSW
Number of Sources and SWL	5 Sources with overall SWL of 112 dBA
Receiver Distance	7 m
Site Barrier attenuation	0 dBA
Assessment Date	12 February 2024

Predicted Noise Level	Day & Evening	Night
	87 dBA	87 dBA

Period	RBL	NML	+ RBL
Standard Hours	40	50	47
OOHW Period 1 - Day	39	44	48
OOHW Period 1/2 - Evening	34	39	53
OOHW Period 2 - Night	30	35	57

A map showing the location of the proposed work area (source), nearest sensitive receiver, map scale and north arrow should be included into the noise estimator tool. The map should be clear with all required elements clearly visible and not cluttered with information.

- List of minimum required elements
- Landscape
  - Location of source
  - Location of receiver
  - Map scale
  - North arrow

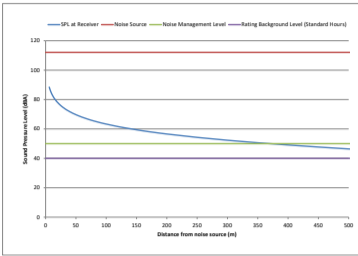
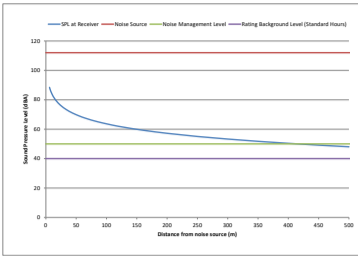


Noise area category (based on AS 1055.3-1997)	R0			R1			R2			R3			R4			R5		
Typical planning zoning – standard instrument	RU1 – primary production RU4 – primary production small lots R5 – large lot residential E2 – environmental conservation E3 – environmental management E4 – environmental living			RU2 – rural landscape RU5 – village RU6 – transition R2 – low density residential			RU5 – village RU6 – transition R2 – low density residential			R1 – general residential R2 – low density residential R3 – medium density residential			R1 – general residential R4 – high density residential B1 – neighbourhood centre (boarding houses and shop-top housing) B2 – local centre (boarding houses) B4 – mixed use			R4 – high density residential B2 – local centre (boarding houses) B4 – mixed use		
Time period	Day	Evening	Night	Day	Evening	Night	Day	Evening	Night	Day	Evening	Night	Day	Evening	Night	Day	Evening	Night
RBL/LA90 Background noise level (dBA)	30	30	30	40	35	30	45	40	35	50	45	40	55	50	45	60	55	50
Description	Rural residences that are isolated and seperated by over 500m away from any transport corridors			Rural – an area with an acoustical environment that is dominated by natural sounds, having little or no road traffic noise and generally characterised by low background noise levels. Settlement patterns would be typically sparse.			Rural residences along a major highway eg Pacific Hwy with speed limits of 100 km/h.			Suburban – an area that has local traffic with characteristically intermittent traffic flows (speed limits of 60 or 70 km/h) or with some limited commerce or industry. This area often has the following characteristic: evening ambient noise levels defined by the natural environment and human activity.			Urban – an area with an acoustical environment that: - is dominated by 'urban hum' or industrial source noise, where urban hum means the aggregate sound of many unidentifiable, mostly traffic and/or industrial related sound sources - has through-traffic with characteristically heavy and continuous traffic flows during peak periods - is near commercial districts or industrial districts - has any combination of the above.			CBD urban areas where it is predominantly commercial and densely concentrated skyscrapers. Eg Sydney, Parramatta, Chatswood.		

	RBL/LA90 (dBA)		
	Day	Evening	Night
R0	30	30	30
R1	40	35	30
R2	45	40	35
R3	50	45	40
R4	55	50	45
R5	60	55	50
-	-	-	-

May to Sep Cumulative Noise (dBA)

Table with columns: Distance, SPL (d), Excess Attenuation on, Barrier Loss, Predicted Noise Level. Contains data for distances from 0 to 10000 meters.



Oct to April Cumulative Noise (dBA)

Table with columns: Distance, SPL (d), Excess Attenuation on, Barrier Loss, Predicted Noise Level. Contains data for distances from 0 to 10000 meters.

Predicted Noise Level Cumulative Noise (dBA)

Table with columns: Distance, SPL (d), Excess Attenuation on, Barrier Loss, May to Sep, Oct to April, Predicted Noise Level. Contains data for distances from 0 to 10000 meters.

May to Sep Cumulative Noise (dBA)

Table with columns: Distance, SPL (d), Excess Attenuation on, Barrier Loss, Predicted Noise Level. Contains data for distances from 0 to 10000 meters.

**ISO 9613**  
**Atmospheric absorption (A<sub>atm</sub>)**  
**(α<sub>ph</sub>\*d)/1000**

Alpha Atmospheric attenuation coefficient  
 d Distance

Distance 7

Frequency (Hz)	Temperature (C)	Relative Humidity	Atmospheric attenuation coefficient	Distance	Air Attenuation
500	5	60	1.69	7	0.01183
1000	5	60	4.29	7	0.03003
2000	5	60	14.2	7	0.0994

Frequency (Hz)	Temperature (C)	Relative Humidity	Atmospheric attenuation coefficient	Distance	Air Attenuation
500	15	60	2.31	7	0.01617
1000	15	60	4.06	7	0.02842
2000	15	60	9.5	7	0.0665

Frequency (Hz)	Temperature (C)	Relative Humidity	Atmospheric attenuation coefficient	Distance	Air Attenuation
500	30	60	3.36	7	0.02352
1000	30	60	7.29	7	0.05103
2000	30	60	12.2	7	0.0854

Period	Day and Evening	Night
May to Sep	4.06	4.29
Oct to April	7.29	4.06



The TfNSW Construction Noise Estimator Tool (Public Transport Infrastructure) is only suitable for simple noise assessment as detailed in Section 6.1 of the TfNSW *Construction Noise and Vibration guide (Public Transport Infrastructure) (CNVG-PTI)*. To determine if the tool can be used, complete the questions below:



-	Description of construction site locality	Moss Vale Station and Stabling Yard Upgrade
-	Brief description of construction scenario to be assessed	Stormwater upgrades - saw cutting
-	User Name and Company	Vivian Tse, TfNSW
-	Assessment Date	12 February 2024

	Question	User Input
1	When will work be completed?	OOHW Period/s
2	How long will it take to complete the construction works?	Less than 6-weeks
3a	Is vibration intensive equipment to be used within 100m of sensitive receivers? (Appendix D)	Yes
3b	Is vibration intensive equipment to be used outside of the minimum working distances for cosmetic damage to buildings or human disturbance? (Appendix D)	
4	Will the work exceed construction traffic noise objectives (increase traffic noise by 2dBA over 'without construction' levels) and/or sleep disturbance objectives (Activities with LA <sub>max</sub> in exceedance of 15dBA over RBL in Period 2 at the nearest receiver)?	

Feedback/Instructions
Yes, the Construction Noise Estimator Tool can be used.
Yes, the Construction Noise Estimator Tool can be used.
Go to Question 3b, more information is required.

**Cell colour scheme**

	User Input
	Calculated Value
	High Noise Plant/Equipment

**This spreadsheet is used to calculate the cumulative sound power level when multiple plants/equipment are used**

Equipment that generates noise with special audible characteristics (including intensive vibration) are highlighted in orange and a special audible correction has been included in their Sound Power

Note: The predictions provided by this Noise Estimator Tool will generate the worst case scenario for construction activities. For more accurate predictions it may be suitable to divide each work stage or work shift into separate activities or engage a suitably qualified person such as an acoustic consultant to prepare a Detailed Assessment.

Total number of plant/equipment to be used **2**

Cumulative Sound Power Level, SWL (dBA) **123**

Use whole numbers only. Include all equipment that will be used for a minimum of 15-minutes.

Plant / Equipment	SWL, LAeq (dBA)	No. of plant / equipment to be used	Is noisiest plant used intermittently? < 7 mins in any 15-minutes	Temporary screening around individual plant used?	Plant Cum. SWL (dBA)
Abrasive blasting (nozzle)	117				0
Air Compressor	102				0
Air track drill	124				0
Asphalt paver	106				0
Asphalt Truck & Sprayer	106				0
Auger/Drill Rig	105				0
Backhoe	108				0
Ballast clean*	120				0
Ballast pour	111				0
Ballast regulator*	120				0
Blower (battery)	98				0
Blower (petrol)	106				0
Bobcat	107				0
Bobcat with Planer	110				0
Breaker, electric / hydraulic, 36kg*	117				0
Breaker, petrol, 36kg*	108				0
Breaker, pneumatic, 14kg silenced*	113				0
Breaker, pneumatic, 14kg standard*	121				0
Brushcutter	110				0
Bucket Crusher	111				0
Chainsaw (electric)	95				0
Chainsaw (hydraulic)	107				0
Chainsaw (petrol)	114				0
Cherry Picker	102				0
Circular Saw	106				0
Compactor	103				0
Compressor (approx. 1500 CFM)	105				0
Compressor (approx. 600 CFM)	100				0
Compressor (Towable) / Lawn Mower	100				0
Concrete Pencil Vibrator	103				0
Concrete Pump	109				0
<b>Concrete saw/corer*</b>	<b>123</b>	<b>1</b>			<b>123</b>
Concrete Truck / Agitator	113				0
Concrete Vibrator	113				0
Daymakers	98				0
Diamond Grinding	126				0
Directional Driller (approx. 10 tonne)	104				0
Directional Driller (approx. 18 tonne)	107				0
Dozer D10	121				0
Dozer D9	116				0
Drill, electric	91				0
Drill, Hammer 4kg*	109				0
Drill, Hammer 7kg*	115				0
Dump Truck (approx. 15 tonne)	107				0
Dump Truck, tipping fill	117				0
Dynamic track stabiliser*	113				0
Earthmover (Drott)	110				0
Elevated Work Platform	95				0
Excavator (10 tonne)	100				0
Excavator (20 tonne)	105				0
Excavator (3 tonne)	90				0
Excavator (30 tonne)	110				0
Excavator (40 tonne)	115				0
Excavator (6 tonne)	95				0
Excavator (large) - rock breaker*	127				0
Excavator (tracked)	107				0
Excavator Rock Saw*	119				0
Fence post driver*	105				0
Fixed crane	113				0
Flatbed or mobile crane truck	108				0
<b>Flood Lights / Lighting Tower (Daymaker)</b>	<b>90</b>	<b>1</b>			<b>90</b>
Forklift	100				0
Front End / Wheeled Loader	111				0
Generator - 4 stroke portable petrol	103				0
Generator - Attenuated	92				0
Generator - Diesel	113				0
Grader/Scraper	113				0
Grinder (small - up to 7 inch)	109				0
Hand Power Tool	105				0
Hand Power Tools (2-3 items)	110				0
High pressure washer	93				0
Hi-rail vehicle	105				0
Impact drill	116				0
Impact wrench	111				0
Jackhammer*	118				0
Light vehicles	98				0
Light vehicles (eg 4WD)	103				0
Line Marking Plant	108				0
Loader - Front End/Telehandler	112				0
Manitou	105				0
Microdrilling Rig (Solmec SM-14)	105				0
Microdrilling Rig (Solmec SM-6)	115				0
Mobile Crane (20 tonne)	108				0
Mobile Crane (60 tonne)	108				0
Mobile crane (all terrain)	110				0
Mobile Crane (Franna)	98				0
Mulching machine	108				0
Pad Foot Roller	109				0
Pavement Profiler	117				0
Paving machine (Asphalt)	114				0
Piling Rig - Bored	110				0
Piling Rig - Driven	116				0
Piling Rig - Impact*	136				0
Piling Rig - Vibratory	118				0
Pin puller / hammer, manual	110				0
Planer	96				0
Pump, Concrete / Shotcrete / Dewater	105				0
Rail grinder, hand held profiler*	121				0
Rail grinder, RR36 (main line grinder)*	123				0
Rail grinder, RR64 (turnout grinder)*	119				0
Rail Regulator/Tamper	98				0
Rail Saw, handheld*	122				0
Rail wooden sleeper drill	107				0
Rock crusher	118				0
Rockbreaker, hydraulic*	123				0
Roller (non vibratory)	110				0
Roller 2.5T Smoothdrum	105				0
Scissor Lift	98				0
Scraper	116				0
Semi trailer	103				0
Skidsteer Loader 1 T	110				0
Skidsteer Loader 1/2 T	107				0
Smooth drum roller	107				0
Spreader	95				0
Stump Grinder	105				0
Sucker Truck/Road Sweeper	109				0
Tamper, handheld*	130				0
Tamper, handheld petrol powered*	119				0
Tamping machine, mainline*	118				0
Taper truck with dog	108				0
Truck (10 tonne)	103				0
Truck (Semi trailer)	103				0
Truck compressor	75				0
Truck Mounted Borer	107				0
Tub Grinder/Mulcher	116				0
Tunnel boring machine	111				0
Use 4WD	103				0
Vacuum Truck/Sweeper	109				0
Vibratory Roller (smooth wheels)*	112				0
Vibratory Roller*	114				0
Vibratory Screen	103				0
Wacker Packer	98				0
Wacker rammer	106				0
Water Tanker (8000 litre)	107				0
Welder	105				0
Welding Equipment (Thermit)	110				0
Wood Chipper	115				0
Work train - idling locomotive	115				0
Work train - moving	112				0
Other:	100				0
Other:	100				0
Other:	100				0

## Noise Estimate Results

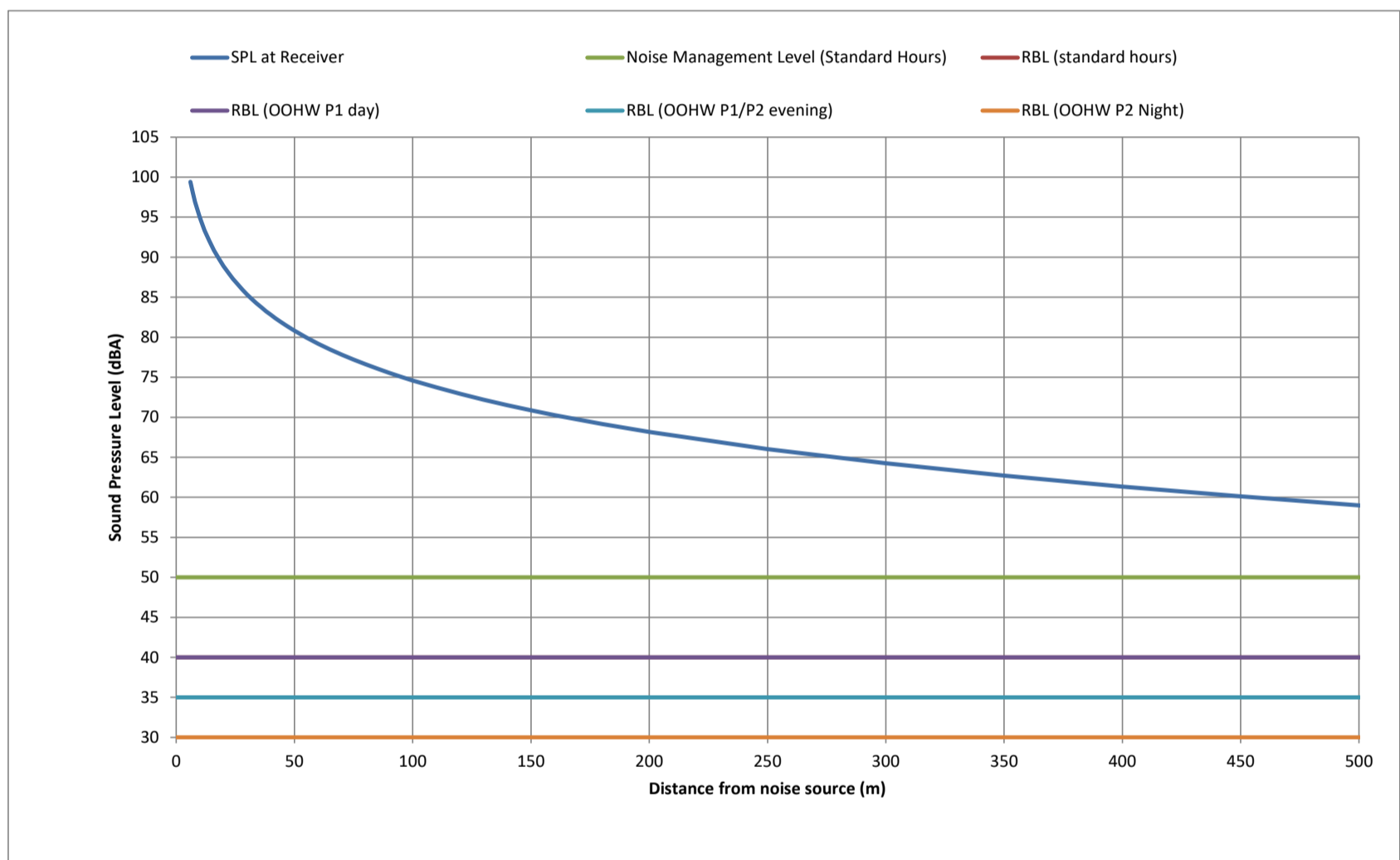


	Sound Power Level (dBA)	Distance (m)	Sound Pressure Level (dBA)	Air Attenuation (dBA) Day and Evening	Air Attenuation (dBA) Night	Additional Attenuation (whole site hoarding etc) (dBA) <sup>1</sup>	Predicted Noise level (SPL dBA LAeq) Day and Evening	Predicted Noise level (SPL dBA LAeq) Night
May to Sep	123	7	98	0.03	0.03	0	98	98

Area Type: **R1**  
 Standard Rating Background Level (RBL), or Measured RBL

	Standard Hours	OOHW P1 Day	OOHW P1/P2 Evening	OOHW P2 Night
Standard Rating Background Level (RBL), or Measured RBL	40	40	35	30
RBL Exceedance	58	58	63	68
Noise Management Level (NML)	50	45	40	35

May to Sep



Notes: Where the SPL line intersects with the RBL line in the graph above demonstrates the total radius (m) of impacted receivers  
 $SPL = SWL(\text{point}) - 20\log(r) - 8 - \text{Additional Attenuation}$   
 Sound Power Level includes +5dBA adjustment for noise with special audible characteristics (if required)

<sup>1</sup> Continuous, long solid barrier within the project boundary, that breaks line of sight between work area and receiver = 5dBA reduction  
 Enclosed, solid structure around work area/equipment = 10dBA reduction

The required mitigation measures for your activity are:

	Exceedance of RBL (dBA)																			
	Standard Hours				OOHW Period 1 - Day				OOHW Period 1 - Evening				OOHW Period 2 - Evening				OOHW Period 2 - Night			
	≤20	20-30	>30	>75dBA*	≤10	10-20	20-30	>30	≤10	10-20	20-30	>30	≤10	10-20	20-30	>30	≤10	10-20	20-30	>30
Standard Mitigation Measures (CNVG-PTI Sec 7.1)				Yes				Yes				Yes				Yes				Yes
Additional Mitigation Measures (CNVG-PTI Sec 7.2):																				
Periodic notification				Yes				Yes				Yes				Yes				Yes
Verification monitoring				Yes				Yes				Yes				Yes				Yes
Specific Notification				Yes				Yes				Yes				Yes				Yes
Respite Offer								Yes				Yes				Yes				Yes
Respite Period												Yes				Yes				Yes
Duration Reduction												Yes				Yes				Yes
Alternative Accommodation																Yes				Yes

\* Any work above 75dBA regardless of RBL exceedance

Assessment Summary

Site Locality	
Construction Scenario	Stormwater upgrades - saw cutting
User Name and Company	Vivian Tse, TfNSW
Number of Sources and SWL	2 Sources with overall SWL of 123 dBA
Receiver Distance	7 m
Site Barrier attenuation	0 dBA
Assessment Date	12 February 2024

Predicted Noise Level	Day & Evening	Night
	98 dBA	98 dBA

Period	RBL	NML	+ RBL
Standard Hours	40	50	58
OOHW Period 1 - Day	40	45	58
OOHW Period 1/2 - Evening	35	40	63
OOHW Period 2 - Night	30	35	68

The mitigation distances for your activity are:

	Additional Mitigation Measure - Minimum Distance (m)				
	Standard Hours	OOHW Period 1 - Day	OOHW Period 1 - Evening	OOHW Period 2 - Evening	OOHW Period 2 - Night
Periodic notification	562	1779	3163	5625	10003
Verification monitoring	562	562	1000	3163	5625
Specific Notification	100	562	1000	3163	1779
Respite Offer	-	562	1000	3163	-
Respite Period	-	-	3163	3163	1779
Duration Reduction	-	-	3163	3163	1779
Alternative Accommodation	-	-	-	316	562

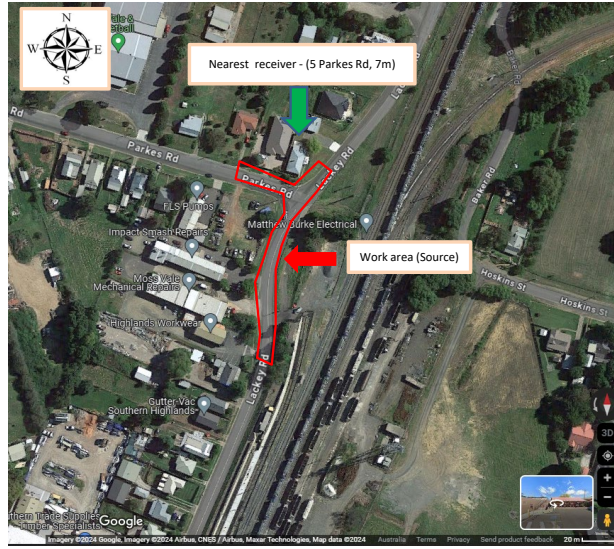
**Assessment Summary**

Site Locality	
Construction Scenario	Stormwater upgrades - saw cutting
User Name and Company	Vivian Tse, TfNSW
Number of Sources and SWL	2 Sources with overall SWL of 123 dBA
Receiver Distance	7 m
Barrier/enclosure attenuation	0 dBA
Assessment Date	12 February 2024

Period	RBL	NML
Standard Hours	40	50
OOHW Period 1 - Day	40	45
OOHW Period 1/2 - Evening	35	40
OOHW Period 2 - Night	30	35

A map showing the location of the proposed work area (source), nearest sensitive receiver, map scale and north arrow should be included into the noise estimator tool. The map should be clear with all required elements clearly visible and not cluttered with information.

- List of minimum required elements
- Landscape
  - Location of source
  - Location of receiver
  - Map scale
  - North arrow

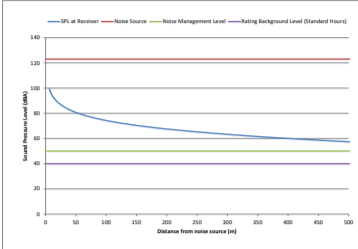
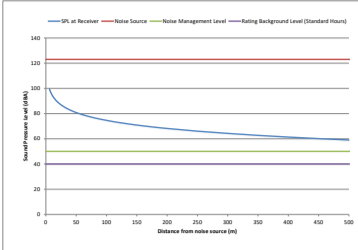


Noise area category (based on AS 1055.3-1997)	R0			R1			R2			R3			R4			R5		
Typical planning zoning – standard instrument	RU1 – primary production RU4 – primary production small lots R5 – large lot residential E2 – environmental conservation E3 – environmental management E4 – environmental living			RU2 – rural landscape RU5 – village RU6 – transition R2 – low density residential			RU5 – village RU6 – transition R2 – low density residential			R1 – general residential R2 – low density residential R3 – medium density residential			R1 – general residential R4 – high density residential B1 – neighbourhood centre (boarding houses and shop-top housing) B2 – local centre (boarding houses) B4 – mixed use			R4 – high density residential B2 – local centre (boarding houses) B4 – mixed use		
Time period	Day	Evening	Night	Day	Evening	Night	Day	Evening	Night	Day	Evening	Night	Day	Evening	Night	Day	Evening	Night
RBL/LA90 Background noise level (dBA)	30	30	30	40	35	30	45	40	35	50	45	40	55	50	45	60	55	50
Description	Rural residences that are isolated and seperated by over 500m away from any transport corridors			Rural – an area with an acoustical environment that is dominated by natural sounds, having little or no road traffic noise and generally characterised by low background noise levels. Settlement patterns would be typically sparse.			Rural residences along a major highway eg Pacific Hwy with speed limits of 100 km/h.			Suburban – an area that has local traffic with characteristically intermittent traffic flows (speed limits of 60 or 70 km/h) or with some limited commerce or industry. This area often has the following characteristic: evening ambient noise levels defined by the natural environment and human activity.			Urban – an area with an acoustical environment that: - is dominated by 'urban hum' or industrial source noise, where urban hum means the aggregate sound of many unidentifiable, mostly traffic and/or industrial related sound sources - has through-traffic with characteristically heavy and continuous traffic flows during peak periods - is near commercial districts or industrial districts - has any combination of the above.			CBD urban areas where it is predominantly commercial and densely concentrated skyscrapers. Eg Sydney, Parramatta, Chatswood.		

	RBL/LA90 (dBA)		
	Day	Evening	Night
R0	30	30	30
R1	40	35	30
R2	45	40	35
R3	50	45	40
R4	55	50	45
R5	60	55	50
-	-	-	-

May to Sep  
Cumulative Noise (dBA)

Distance	EPN (d)	Excess Attenuation on	Barrier Loss	Predicted Noise Level
0	0	0	0	0
0.5	0	0	0	0.5
1	0	0	0	1
2	0	0	0	2
4	0	0	0	4
6	0.08	0.084	0	6.08
7	0.08	0.084	0	6.08
8	0.17	0.172	0	6.17
10	0.26	0.263	0	6.26
12	0.33	0.333	0	6.33
14	0.4	0.403	0	6.4
16	0.47	0.473	0	6.47
18	0.5	0.503	0	6.5
20	0.57	0.573	0	6.57
22	0.6	0.603	0	6.6
24	0.67	0.673	0	6.67
26	0.7	0.703	0	6.7
28	0.77	0.773	0	6.77
30	0.8	0.803	0	6.8
32	0.87	0.873	0	6.87
34	0.9	0.903	0	6.9
36	0.97	0.973	0	6.97
38	1.0	1.003	0	7.0
40	1.07	1.073	0	7.07
42	1.1	1.103	0	7.1
44	1.17	1.173	0	7.17
46	1.2	1.203	0	7.2
48	1.27	1.273	0	7.27
50	1.3	1.303	0	7.3
52	1.37	1.373	0	7.37
54	1.4	1.403	0	7.4
56	1.47	1.473	0	7.47
58	1.5	1.503	0	7.5
60	1.57	1.573	0	7.57
62	1.6	1.603	0	7.6
64	1.67	1.673	0	7.67
66	1.7	1.703	0	7.7
68	1.77	1.773	0	7.77
70	1.8	1.803	0	7.8
72	1.87	1.873	0	7.87
74	1.9	1.903	0	7.9
76	1.97	1.973	0	7.97
78	2.0	2.003	0	8.0
80	2.07	2.073	0	8.07
82	2.1	2.103	0	8.1
84	2.17	2.173	0	8.17
86	2.2	2.203	0	8.2
88	2.27	2.273	0	8.27
90	2.3	2.303	0	8.3
92	2.37	2.373	0	8.37
94	2.4	2.403	0	8.4
96	2.47	2.473	0	8.47
98	2.5	2.503	0	8.5
100	2.57	2.573	0	8.57
102	2.6	2.603	0	8.6
104	2.67	2.673	0	8.67
106	2.7	2.703	0	8.7
108	2.77	2.773	0	8.77
110	2.8	2.803	0	8.8
112	2.87	2.873	0	8.87
114	2.9	2.903	0	8.9
116	2.97	2.973	0	8.97
118	3.0	3.003	0	9.0
120	3.07	3.073	0	9.07
122	3.1	3.103	0	9.1
124	3.17	3.173	0	9.17
126	3.2	3.203	0	9.2
128	3.27	3.273	0	9.27
130	3.3	3.303	0	9.3
132	3.37	3.373	0	9.37
134	3.4	3.403	0	9.4
136	3.47	3.473	0	9.47
138	3.5	3.503	0	9.5
140	3.57	3.573	0	9.57
142	3.6	3.603	0	9.6
144	3.67	3.673	0	9.67
146	3.7	3.703	0	9.7
148	3.77	3.773	0	9.77
150	3.8	3.803	0	9.8
152	3.87	3.873	0	9.87
154	3.9	3.903	0	9.9
156	3.97	3.973	0	9.97
158	4.0	4.003	0	10.0
160	4.07	4.073	0	10.07
162	4.1	4.103	0	10.1
164	4.17	4.173	0	10.17
166	4.2	4.203	0	10.2
168	4.27	4.273	0	10.27
170	4.3	4.303	0	10.3
172	4.37	4.373	0	10.37
174	4.4	4.403	0	10.4
176	4.47	4.473	0	10.47
178	4.5	4.503	0	10.5
180	4.57	4.573	0	10.57
182	4.6	4.603	0	10.6
184	4.67	4.673	0	10.67
186	4.7	4.703	0	10.7
188	4.77	4.773	0	10.77
190	4.8	4.803	0	10.8
192	4.87	4.873	0	10.87
194	4.9	4.903	0	10.9
196	4.97	4.973	0	10.97
198	5.0	5.003	0	11.0
200	5.07	5.073	0	11.07
202	5.1	5.103	0	11.1
204	5.17	5.173	0	11.17
206	5.2	5.203	0	11.2
208	5.27	5.273	0	11.27
210	5.3	5.303	0	11.3
212	5.37	5.373	0	11.37
214	5.4	5.403	0	11.4
216	5.47	5.473	0	11.47
218	5.5	5.503	0	11.5
220	5.57	5.573	0	11.57
222	5.6	5.603	0	11.6
224	5.67	5.673	0	11.67
226	5.7	5.703	0	11.7
228	5.77	5.773	0	11.77
230	5.8	5.803	0	11.8
232	5.87	5.873	0	11.87
234	5.9	5.903	0	11.9
236	5.97	5.973	0	11.97
238	6.0	6.003	0	12.0
240	6.07	6.073	0	12.07
242	6.1	6.103	0	12.1
244	6.17	6.173	0	12.17
246	6.2	6.203	0	12.2
248	6.27	6.273	0	12.27
250	6.3	6.303	0	12.3
252	6.37	6.373	0	12.37
254	6.4	6.403	0	12.4
256	6.47	6.473	0	12.47
258	6.5	6.503	0	12.5
260	6.57	6.573	0	12.57
262	6.6	6.603	0	12.6
264	6.67	6.673	0	12.67
266	6.7	6.703	0	12.7
268	6.77	6.773	0	12.77
270	6.8	6.803	0	12.8
272	6.87	6.873	0	12.87
274	6.9	6.903	0	12.9
276	6.97	6.973	0	12.97
278	7.0	7.003	0	13.0
280	7.07	7.073	0	13.07
282	7.1	7.103	0	13.1
284	7.17	7.173	0	13.17
286	7.2	7.203	0	13.2
288	7.27	7.273	0	13.27
290	7.3	7.303	0	13.3
292	7.37	7.373	0	13.37
294	7.4	7.403	0	13.4
296	7.47	7.473	0	13.47
298	7.5	7.503	0	13.5
300	7.57	7.573	0	13.57
302	7.6	7.603	0	13.6
304	7.67	7.673	0	13.67
306	7.7	7.703	0	13.7
308	7.77	7.773	0	13.77
310	7.8	7.803	0	13.8
312	7.87	7.873	0	13.87
314	7.9	7.903	0	13.9
316	7.97	7.973	0	13.97
318	8.0	8.003	0	14.0
320	8.07	8.073	0	14.07
322	8.1	8.103	0	14.1
324	8.17	8.173	0	14.17
326	8.2	8.203	0	14.2
328	8.27	8.273	0	14.27
330	8.3	8.303	0	14.3
332	8.37	8.373	0	14.37
334	8.4	8.403	0	14.4
336	8.47	8.473	0	14.47
338	8.5	8.503	0	14.5
340	8.57	8.573	0	14.57
342	8.6	8.603	0	14.6
344	8.67	8.673	0	14.67
346	8.7	8.703	0	14.7
348	8.77	8.773	0	14.77
350	8.8	8.803	0	14.8
352	8.87	8.873	0	14.87
354	8.9	8.903	0	14.9
356	8.97	8.973	0	14.97
358	9.0	9.003	0	15.0
360	9.07	9.073	0	15.07
362	9.1	9.103	0	15.1
364	9.17	9.173	0	15.17
366	9.2	9.203	0	15.2
368	9.27	9.273	0	15.27
370	9.3	9.303	0	15.3
372	9.37	9.373	0	15.37
374	9.4	9.403	0	15.4
376	9.47	9.473	0	15.47
378	9.5	9.503	0	15.5
380	9.57	9.573	0	15.57
382	9.6	9.603	0	15.6
384	9.67	9.673	0	15.67
386	9.7	9.703	0	15.7
388	9.77	9.773	0	15.77
390	9.8	9.803	0	15.8
392	9.87	9.873	0	15.87
394	9.9	9.903	0	15.9
396	9.97	9.973	0	15.97
398	10.0	10.003	0	16.0
400	10.07	10.073	0	16.07



Oct to April  
Cumulative Noise (dBA)

Distance	EPN (d)	Excess Attenuation on	Barrier Loss	Predicted Noise Level
0	0	0	0	0
0.5	0	0	0	0.5
1	0	0	0	1
2	0	0	0	2
4	0	0	0	4
6	0.08	0.084	0	6.08
7	0.08	0.084	0	6.08
8	0.17	0.172	0	6.17
10	0.26	0.263	0	6.26
12	0.33	0.333	0	6.33
14	0.4	0.403	0	6.4
16	0.47	0.473	0	6.47
18	0.5	0.503	0	6.5
20	0.57	0.573	0	6.57
22	0.6	0.603	0	6.6
24	0.67	0.673	0	6.67
26	0.7	0.703	0	6.7
28	0.77	0.773	0	6.77
30	0.8	0.803	0	6.8
32	0.87	0.873	0	6.87
34	0.9	0.903	0	6.9
36	0.97	0.973	0	6.97
38	1.0	1.003	0	7.0
40	1.07	1.073	0	7.07
42	1.1	1.103	0	7.1
44	1.17	1.173	0	7.17
46	1.2	1.203	0	7.2
48	1.27	1.273	0	7.27
50	1.3	1.303	0	7.3
52	1.37	1.373	0	7.37
54	1.4	1.403	0	7.4
56	1.47	1.473	0	7.47
58	1.5	1.503	0	7.5
60	1.57	1.573	0	7.57
62	1.6	1.603	0	7.6
64	1.67	1.673	0	7.67
66	1.7	1.703	0	7.7
68	1.77	1.773	0	7.77
70	1.8	1.803	0	7.8
72	1.87	1.873	0	7.87
74	1.9	1.903	0	7.9
76	1.97	1.973	0	7.97
78	2.0	2.003	0	8.0
80	2.07	2.073	0	8.07
82	2.1	2.103	0	8.1
84	2.17	2.173	0	8.17
86	2.2	2.203	0	8.2
88	2.27	2.273	0	8.27
90	2.3	2.303	0	8.3
92	2.37	2.373	0	8.37
94	2.4	2.403	0	8.4
96	2.47	2.473	0	8.47
98	2.5	2.503	0	8.5