ENVIRONMENTAL MONITORING REPORT, FEBRUARY 2020

PARRAMATTA LIGHT RAIL INFRASTRUCTURE WORKS

25 February 2020

Parramatta Connect

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Project number	N81080
Document number	PLR1INF-CPBD-ALL-EN-RPT-000008
Revision date	25 February 2020
Revision	Rev A

Rev.	Date	Prepared By	Reviewed By	Approved By	Remarks
A	25 Feb 2020	N. Eisenlohr	P. Monsted	P. Monsted	Monthly Environmental Monitoring Report for February 2020

1. Introduction

1.1. Background

Parramatta Light Rail Stage 1 ('Stage 1') will connect Westmead to Carlingford via Parramatta Central Business District (CBD) and Camellia. Stage 1 is expected to be operational in 2023.

Stage 1 will create new communities, connect great places and help both local residents and visitors move around and explore what the region has to offer. The route will link Parramatta's CBD and train station to a number of key locations, including the Westmead Precinct, the Parramatta North Growth Centre, the new Western Sydney Stadium, the Camellia Town Centre, the new Powerhouse Museum and Riverside Theatre arts and cultural precinct, the private and social housing redevelopment at Telopea, the Rosehill Gardens Racecourse and the three Western Sydney University campuses.

Key features of Stage 1 include:

- A new dual track light rail network of approximately twelve (12) kilometres in length, including approximately seven (7) kilometres within the existing road corridor and approximately five (5) kilometres within the existing Carlingford Line and Sandown Line, replacing current heavy rail services
- Sixteen (16) stops that are fully accessible and integrated into the urban environment including a terminus stop at each end of Westmead and Carlingford
- High frequency 'turn-up-and-go' services operating seven days a week from 5am to 1am. Weekday services will operate approximately every 7.5 minutes in the peak period between 7am and 7pm
- Modern and comfortable air-conditioned light rail vehicles, nominally 45 metres long and driver-operated, each carrying up to 300 passengers.
- Intermodal interchanges with existing public transport services at Westmead terminus, Parramatta CBD and the Carlingford terminus
- Creation of two light rail and pedestrian zones (no general vehicle access) within the Parramatta CBD along Church Street (generally between Market Street and Macquarie Street) and along Macquarie Street (generally between Horwood Place and Smith Street)
- A Stabling and Maintenance (SaM) Facility located in Camellia for light rail vehicles to be stabled, cleaned and maintained
- New bridge structures along the alignment including over James Ruse Drive and Clay Cliff Creek, Parramatta River (near the Cumberland Hospital), Kissing Point Road and Vineyard Creek, Rydalmere
- Alterations to the existing road network including line marking, additional traffic lanes and turning lanes, new traffic signals, and changes to traffic flows
- Relocation and protection of existing utilities
- Public domain and urban design works along the corridor and at Stop precincts
- Closure of the heavy rail line between Carlingford and Clyde
- Active transport corridors and additional urban design features along sections of the alignment and within Stop precincts
- Integration with the Opal Electronic Ticketing System (ETS)
- Real time information in light rail vehicles and at Stops via visual displays and audio.

1.1.1. Statutory Context

A Construction Environmental Management Plan (CEMP) is being prepared for the Parramatta Light Rail Package 4 – Infrastructure Works (Infrastructure Works). The purpose of the CEMP and associated Sub-plans is to address the requirements of the Minister's Conditions of Approval (CoA) SSI-8285, the Revised Environmental Mitigation and Management Measures (REMMMs) and Environmental Performance Outcomes (EPO's) listed in Parramatta Light Rail Stage 1 Westmead to Carlingford via Parramatta CBD and Camellia Environmental Impact Statement (the EIS), as amended by the Parramatta Light Rail (Stage 1) Westmead to Carlingford via Parramatta CBD and Camellia Submissions Report (incorporating Preferred Infrastructure Report) (February 2018) (the SPIR). In addition, the CEMP addresses all applicable legislation and contractual requirements, including the PLR Stage 1 Infrastructure Contract Project Deed (ISD-17-6721).

The Parramatta Light Rail was subject to environmental impact assessment under the *Environmental Planning and Assessment Act 1979* (EP&A Act). It is classified as Critical State Significant Infrastructure (CSSI). The EIS assessed impacts for Parramatta Light Rail Stage 1 (Westmead to Carlingford). This covered the light rail and associated works including road enabling work.

Stage 1 received Infrastructure Approval from the Minister for Planning under Section 5.19 of the EP&A Act on 29 May 2018 (Critical State Significant Infrastructure Application SSI-8285), subject to the conditions provided in the Instrument of Approval, specifically Schedule B – Ministerial Conditions of Approval.

The Infrastructure Approval was subsequently modified under Section 5.25 of the EP&A Act on 21 December 2018 and 25 January 2019.

The planning approval, modifications and related environmental assessment documents are located at: http://majorprojects.planning.nsw.gov.au/index.pl?action=view_job&job_id=8285

1.2. Scope

The scope of this report is report is to present monthly results of the inspection and monitoring programs outlined in the Infrastructure Works CEMP and associated Sub-plans.

Environmental inspections and monitoring are undertaken to:

- Validate the predicted impacts of the Infrastructure Works
- Measure the effectiveness of environmental controls
- Track progress against targets and objectives of the CEMP.

The monitoring requirements for nominated aspects are included in the relevant environmental management sub plans and summarised in **Table 1-1**.

Where relevant, data will be presented on a progressive basis (i.e. monthly summary) to identify trends.

The data of the monitoring programs will also be reviewed annually in the Annual Environment Reports.

Table 1-1 Monthly Environmental Monitoring Reporting Requirements

CEMP or Sub-plan	Monitoring program
CEMP	– External Inspections with TfNSW, ER or other interested parties
Noise and Vibration Management Sub-plan	– Locations and descriptions of monitoring undertaken – Noise monitoring results – Summary of any exceedance of the nominated criteria – Corrective actions
Flora and Fauna Management Sub-plan	– Weed survey

CEMP or Sub-plan	Monitoring program
	– Nest boxes – Pre-clearing and clearing supervision – Grey headed flying fox monitoring – Tree removals, relocations and pruning
Soil and Water Management Sub-plan	– Weather forecasts and observations – Water Quality (Turbidity) monitoring – Discharge and dewatering monitoring
Landscape and Temporary Works Management Sub-plan	– Light spill observations – Crime Prevention Through Environmental Design (CPTED) inspections – Graffiti and advertising observations and actions
Air Quality Management Sub-plan	– Weather observations – Dust Deposition Monitoring – Real time aerosol dust monitors – Asbestos fibre air monitoring

2. Site Activities

Table 2-1 provides a summary of the site activities for February 2020.

Table 2-1 Monthly Environmental Monitoring Reporting Requirements

Precinct	Site Activities
Westmead and North Parramatta	– Utility Investigations – Utility Relocations – Archaeological Salvage
Parramatta CBD	– Utility Investigations – Utility Relocations
Camellia and Carlingford line	– Utility Investigations – Utility Relocations

3. Monitoring Results

Section 3 presents summaries of the environmental inspection and monitoring programs completed in February 2020 (reporting period from the 26th of January to the 25th of February). Detailed monitoring results for each program are presented in the Appendices.

No monitoring or inspections were completed under the following programs during February 2020:

– Landscape and Temporary Works

3.1. Inspections

Two inspections were completed in February 2020. **Table 3-1** provides a summary of the number of actions raised and closed within the agreed timeframe.

Table 3-1 Inspections for February 2020

Date	Type	Actions	Closed in time
29/01/2020	ER Inspection	2	Yes
18/02/2020	ER Inspection	2	Yes
25/02/2020	ER Inspection	Report not yet issued	-
Total	**3**	**4**	Yes

3.2. Weather

Weather during February 2020 was wet and windy. The total rainfall was 434.6 mm with 12 rain day (days with >1mm of rain). Four (4) rain days exceeded the 80th percentile (25.8mm) and the 85th percentile (33.1mm). Between the 7th and 10th of February there was a 359mm rain event. During this event there was a BOM Flood Watch for localised flooding of the Parramatta River. There were no construction areas active in the Flood Watch area.

During this reporting period there were 29 days (31 days in the reporting period) where the maximum wind gust recorded was greater than 25km/hr, and 4 days where the maximum wind gust recorded was greater than 50km/hr. 10 days of wind greater than 25km/hr were forecast and on each of those days notifications were issued to the construction team to alert them of the strong winds forecast. This month there was minimal ground disturbance works, so risk of dust generation was low. No complaints relating to dust generation were received.

A summary of the month's weather observations and weather events relevant to the Soil and Water Management Sub-plan and Air Quality Management Sub-Plan Trigger Action Response Plans (TARPs) are summarised in **Table 3-2**. A comparison between long term monthly means and recorded values can be found in **Figure 3-1** for rainfall and **Figure 3-2** for rain days >1mm.

Detailed weather observations records for February 2020 are presented in **Appendix A-1**.

Table 3-2 Weather Summary and Trigger Weather Events for February[1] 2020

Weather event	Forecast	Observation
Minimum temperature	-	14.4 °C

Weather event	Forecast	Observation
Maximum temperature	-	44.5 °C
Total rainfall	-	434.6 mm
Number of days with rain (>1mm)	-	12 days
>80th percentile (25.8mm) rain events	-	4
>85th percentile (33.1mm) rain events	-	4
Flood warning / events	07/02/2020 - Flood Watch for localised flooding of the Parramatta River	Localised flooding of the Parramatta River
>25km/hr wind[2]	10 days	29 days
>50km/hr wind	0 days	4 days

1. Weather summary based on data from the 26 January to 25 February (31 days).
2. Wind data from Sydney Olympic Park AWS (Archery Centre) {station 066212}. Weather data from Parramatta North (Masons Drive) {station 066124}.

Note: Red text in Observation column indicates observation greater than forecast.

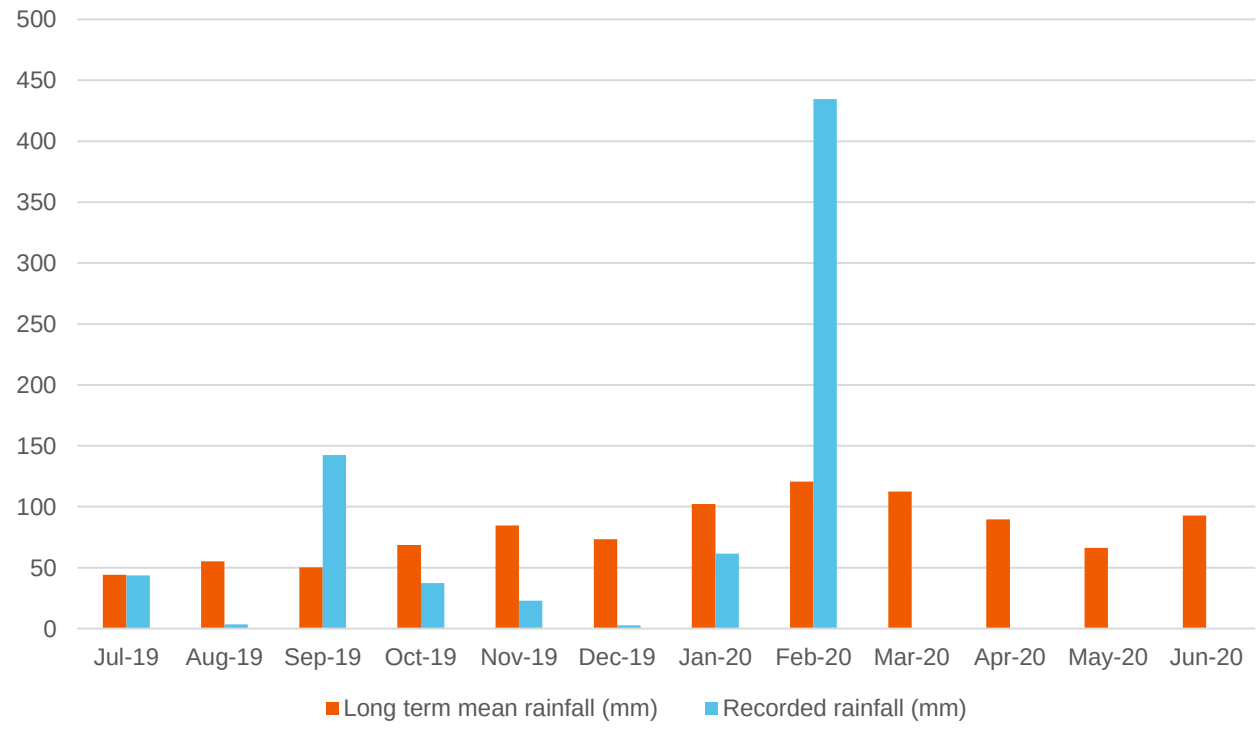

Figure 3-1 Monthly rainfall comparison

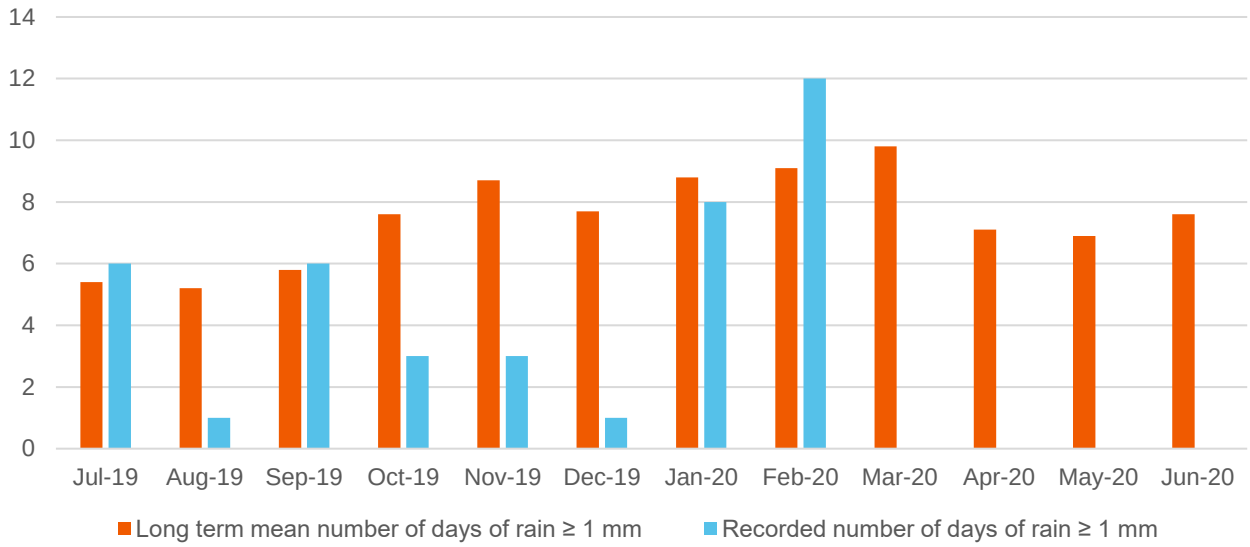

Figure 3-2 Monthly rain days comparison

3.3. Noise and Vibration

Table 3-3 provides a summary of noise monitoring events completed in February 2020. Detailed noise monitoring results and comments are presented in **Appendix A-2**.

Table 3-3 Summary of noise monitoring February 2020

Date	Monitoring Location	Description
29/01/2020	101c James Ruse Drive, Camellia	OOHW Period 2: Tree removal and mulching for utility relocations in Camellia
30/01/2020	Between Alex + Co and Bay Vista	OOHW Period 2: Excavator and non-destructive digging for utility relocations in Parramatta CBD
30/01/2020	Novotel	OOHW Period 2: Excavator and non-destructive digging for utility relocations in Parramatta CBD
30/01/2020	Riverside Theatre	OOHW Period 2: Non-destructive digging, backfill and compacting for utility relocations in Parramatta CBD
31/01/2020	Meriton (330 Church)	OOHW Period 2: Excavator and non-destructive digging for utility relocations in Parramatta CBD
31/01/2020	Novotel	OOHW Period 2: Traffic Management Plan Implementation in Parramatta CBD
17/02/2020	Skye Hotel Suites - Corner Marsh and Macquarie	OOHW Period 2: Non-destructive digging for utility relocations in Parramatta CBD
18/02/2020	Centenary Square	OOHW Period 2: Rock hammering and non-destructive digging for utility relocations in Parramatta CBD

3.4. Flora and Fauna

3.4.1. Weed survey

In February 2020 the site-wide Weed Survey was completed by the Project Ecologist. Ten (10) species of Priority Weeds were located in the Project Area.

3.4.2. Pre-clearing survey

In February 2020 the site-wide Pre-clearing Survey Report was completed by the Project Ecologist. A total of fifty-three (53) habitat trees and ten (10) habitat features were identified.

3.4.3. Tree removals

A summary of tree removals in February 2020 has been included in **Table 3-4** below.

Table 3-4 Summary of Tree Removals

Tree Protection Plan Name (Document Number)	Trees Removed	Date of Approval	Date of Removal
Grand Avenue North UTC (PLR1INF-CPBD-A03-EO-RPT-000007)	11165; 11166; 11167; 11168; 11169; 4748; 4750; 4751; 4752, 4774, 4776	29/11/2019	29/01/2020 to 31/01/2020

3.5. Soil and Water

3.5.1. Water quality (turbidity) in receiving waters

Water quality monitoring has focussed on pre-construction screening to verify the water quality objectives established on the baseline data presented in the EIS Technical Paper 6 – Water Quality Assessment. In February 2020, one wet weather monitoring event was undertaken as summarised by in Table 3-4.

The monitoring was undertaken following a 359 mm rain event on the 7th of February to the 10th of February. This was an extremely large wet weather event; water levels were high and there was debris present in all waterways. pH recorded by the water quality probe was high, however there was a discrepancy with the pH determined by laboratory analysis, which recorded a low value for PR1 and PR6. Total aluminium, copper and iron levels were high. Turbidity in the estuarine waters was above ANZECC Guideline trigger values.

Detailed water quality (turbidity) monitoring results and comments for February 2020 are presented in **Appendix A-3**.

Table 3-5 Water quality (turbidity) in receiving waters

Date	Type	Type of Results	Wet / Dry	Locations
11/02/2020	Pre-construction screening	Field and lab	Wet	Parramatta River: PR1; PR5; PR6 Clay Cliff Creek: CC1 Vineyard Creek: VY2 Subiaco Creek: SC1 Domain Creek: DC1

3.5.2. Discharge and dewatering

There was no discharge or dewatering events in February 2020.

3.6. Air Quality

3.6.1. Dust Deposition Monitoring

A dust deposition gauge has been set up at 13A Grand Avenue in Camellia. This gauge was installed at the end of December 2019 and the first month of results was received on the 27th of January 2020. See Table 3-6 for details of monitoring results.

Table 3-6 Dust Deposition Monitoring

Sample Period		Number of days	Sample Location	Total Insoluble Matter (g/m2/month)		Total Insoluble Matter (mg)	Exceedance
Date On	Date Off			Goal	Results	Result	
18/12/19	20/01/20	33	13A Grand Avenue	4.0	3.9	76.0	No

Appendices

A-1 Weather Observations

Table A-1-1 Weather observations: Parramatta North (Masons Drive) {station 066124}.

Date	Temps		Rain	9:00 AM				
	Min	Max		Temp	RH	Cld	Dir	Spd
	°C	°C	mm	°C	%	8th	km/h	
26/01/2020	22.6	37.3	0	28	78	2	NW	2
27/01/2020	23	30.2	5.6	25.5	80	8	SW	2
28/01/2020	21.4	33.1	0	26	80	7	SSW	2
29/01/2020	22.2	28.7	0	23.9	73	7	SE	4
30/01/2020	16.8	31.5	0	23.3	79	5	NE	4
31/01/2020	20.2	36	0	25.2	85	5	W	2
1/02/2020	22	44.5	0	30.5	64			
2/02/2020	25	32	0	26	80	6	ENE	6
3/02/2020	22	33.8	16.0	23.2	98	8	SW	4
4/02/2020	16.5	22.9	1.2	19	54	6	SSW	6
5/02/2020	14.4	26	0	22	62	4	E	6
6/02/2020	19	23	1.6	21.4	85	8	E	7
7/02/2020	17.5	21.5	48	19.4	99	8	ENE	6
8/02/2020	18	23.5	51	21.3	97	8	SE	2
9/02/2020	18.5	22.5	102	19.5	98	8	SE	52
10/02/2020	17.5	29.5	158	22.3	98	8	ENE	2
11/02/2020	18.5	30.7	0	23	84	3	W	4
12/02/2020	21.2	26.6	0	24.7	83	6	SW	6
13/02/2020	21	26.2	13.4	23.2	98	8	ENE	4
14/02/2020	19	27.6	10.2	22.2	95	6	SSW	6
15/02/2020	17	28	0	22.1	79	2	NE	2
16/02/2020	17.8	26.5	15.0	22.5	78	3	SW	4
17/02/2020	19.6	24.5	0.2	22.5	87	7	W	2
18/02/2020	18.5	33.5	0.8	23.2	86	2	NW	6
19/02/2020	18.4	28.5	11.4	24.3	47	0	W	13
20/02/2020	14.8	24.5	0	20.5	70	2	E	11
21/02/2020	18.9	24.5	0	22	73	7	E	4
22/02/2020	18	22.8	0	20	79	8	S	4
23/02/2020	18.2	24.5	0.2	21	86	8	N	2
24/02/2020	16.6	27.9	0	24	69	5	NE	6
25/02/2020	18.0	30.8	0	24	75	0	NE	7

Table A-1-2 Wind observations: Sydney Olympic Park AWS (Archery Centre) {station 066212}.

Date	Max Wind Gust			9:00 AM		3:00 PM	
	Dir	Spd	Time	Dir	Spd	Dir	Spd
	km/h		local	km/h		km/h	
26/01/2020	W	35	15:06	NE	4	ENE	15
27/01/2020	S	37	23:47	SSE	9	E	15
28/01/2020	SSE	35	18:23	SSE	6	ESE	15
29/01/2020	E	31	16:11	SSE	11	ESE	17
30/01/2020	E	35	15:01		Calm	ENE	11
31/01/2020	ESE	33	15:22	NNE	4	ESE	22
1/02/2020	ENE	33	17:12		Calm	E	15
2/02/2020	SE	46	15:08	ESE	11	ESE	28
3/02/2020	SSE	54	18:09	SE	4	WNW	9
4/02/2020	SSE	39	0:05	S	11	SE	17
5/02/2020	E	31	16:14	NW	6	NE	13
6/02/2020	E	30	16:36	ENE	2	ESE	13
7/02/2020	SE	44	9:55	ESE	11	SE	15
8/02/2020	E	54	14:20	SSE	6	SE	13
9/02/2020	ESE	81	14:29	ESE	35	ESE	33
10/02/2020	E	43	23:07	E	2	ESE	7
11/02/2020	NE	30	14:43	WNW	11	ENE	11
12/02/2020	E	31	16:20	SSE	9	ESE	17
13/02/2020	E	35	9:41	E	2	E	11
14/02/2020	SE	33	14:46	SSE	11	SE	17
15/02/2020	ESE	30	16:41	NW	6	ESE	13
16/02/2020	SE	28	12:02	SSE	9	SE	15
17/02/2020	NNE	19	11:19	W	2	E	7
18/02/2020	WNW	80	21:47	NW	7	SE	15
19/02/2020	NW	39	10:15	NW	15	NW	19
20/02/2020	SE	31	14:54	SE	6	SSE	17
21/02/2020	ESE	30	15:45		Calm	E	11
22/02/2020	S	28	1:55	WNW	2	ESE	9
23/02/2020	E	24	11:55		Calm	ENE	9
24/02/2020	E	30	14:16		Calm	ENE	11
25/02/2020	E	33	14:48	NW	2	ESE	17

Notes:

Blue text indicates a rain event greater than 1mm of rain.

Orange text indicates a rain event greater than the 80th percentile of 25.8mm, and a wind speed of greater than 25km/hr

Red text indicates a rain event greater than the 85th percentile of 33.1mm, and a wind speed greater than 50km/hr.

A-2 Noise and Vibration Monitoring Results

Table A-2-1 Noise monitoring results

Date	Time	Out of Hours Works Period	Construction Activity	Activity Location	Monitoring Location	NML (dBA)	Predicted (dBA)	Additional Mitigation Measures	Specified Noise Limit	Recorded $L_{eq,\ 15min}$ (dBA)	Exceedance of Specified Noise Limit (dBA)	Construction noise exceedance	Comments
29/01/2020	22:26:00	OOHW Period 2	Tree removal and mulching for utility relocations in Camellia	Corner of Grand Avenue North and James Ruse Drive	101c James Ruse Drive, Camellia	47	72	PN, V, SN, RP, DR	72	62.1	-9.9	No	**Construction noise audible:** Chainsaw; EWP; Mulcher; Crane active
30/01/2020	0:36:00	OOHW Period 2	Excavator and non-destructive digging for utility relocations in Parramatta CBD	Outside Meriton and at Lennox Bridge	Between Alex+Co and Bay Vista	48	82	PN, V, SN, RP, DR	82	43.5	-16.9	No	**Construction noise audible:** Bay Vista - 58-64dBA; Excavator changing bucket - 70-72dBA; Moving equipment - 68dBA;
30/01/2020	1:00:00	OOHW Period 2	Excavator and non-destructive digging for utility relocations in Parramatta CBD	Lennox Bridge	Novotel	61	80	PN, V, SN, RP, DR	80	30.7	-24	No	**Construction noise audible:** Pedestrian walking over metal pit cover - 80dBA; Car door slam - 65dBA; Vac truck and excavator - 54dBA; Talking - 70dBA; Clipboard noise - 70dBA.
30/01/2020	1:24:00	OOHW Period 2	Non-destructive digging, backfill and compacting for utility relocations in Parramatta CBD	Lennox Bridge	Riverside Theatre	51	80	PN, V, SN, RP, DR	80	62.1	-16.4	No	**Construction noise audible:** Tipper approaching worksite; NDD truck passing behind worksite; second vac truck starting up - 80dBA; Excavator starts up - no change in noise output.
31/01/2020	0:21:00	OOHW Period 2	Excavator and non-destructive digging for utility relocations in Parramatta CBD	Church between Macquarie and George	Meriton (330 Church)	58	82	PN, V, SN, RP, DR	82	65.1	-26.8	No	**Construction noise inaudible;** Cars passing; workers leaving Bay Vista; pedestrians talking; air conditioner noise; background noise/music from Crown Hotel
31/01/2020	22:39:00	OOHW Period 2	Traffic Management Plan Implementation in Parramatta CBD	Corner of Market and Church	Novotel	51	81	PN, V, SN, RP, DR	81	56	-16.1	No	**Construction noise audible:** Pedestrians walking past; Car entering Novotel; Car leaving Novotel; Water truck idle; Sound of grinding coming from basement of apartments; Pedestrian talking on phone
17/02/2020	23:52:00	OOHW Period 2	Non-destructive digging for utility relocations in Parramatta CBD	Corner Church and Macquarie	Skye Hotel Suites - Corner Marsh and Macquarie	48	89	PN, V, SN, RP, DR	89	63.6	-28.4	No	**Construction noise sometimes audible:** Main noise source - public road traffic. Construction noise faintly heard when there is no traffic - 55-56dBA. Vac truck heard when no traffic - 58-61dBA
18/02/2020	0:16:00	OOHW Period 2	Rock hammering and non-destructive digging for utility relocations in Parramatta CBD	Centenary Square	Centenary Square	48	90	PN, V, SN, RP, DR	90	80.7	-9.3	No	**Construction noise dominant noise source:** One excavator rock hammering: 80-83dBA; Two excavators rock hammering - 86 dBA; Two excavators and 2 vacuum trucks - 86 -87 dBA.

Notes:

Standard hours: Monday to Friday 7:00 am to 6:00 pm. Saturday 8:00 am to 1:00 pm

OOHW Period 1 is defined as:

a) 6:00pm to 10:00pm (evenings) Monday to Saturday

b) 7:00am to 8:00am and 1:00pm to 10:00pm (day & evening) Saturday and

c) 8:00am to 6:00pm Sunday and public holidays (days).

OOHW Period 2 is defined as:

a) 10:00pm to 7:00am (nights) Monday to Saturday and

6:00pm to 8:00am (nights) Sundays and public holidays.

Additional Mitigation Measures
PN = Project Notification
V = Verification Monitoring
RP = Respite Period
AA = Alternate Accommodation
SN = Specific Notification / individual briefing or phone call
DR = Duration Reduction
RO = Project Specific Respite Offer

A-3 Water Monitoring Results

Table A-3-1 Water Quality Monitoring - Comments and observations

Location	Waterway	Type	Date	Time	Temp (C)	pH	Dissolved Oxygen (mg/L)	Elec. Conduct. (µS/cm)	Turbidity (NTU)	Comments and observations
	ANZECC Guideline	Trigger	Values			LR[1]:6.5-7.5 E: 7-8.5	LR[1]:7.0-9.1 E: 6.6-9.1	LR[1]: 125–2200 E: None	LR[1]:6-50 E: 0.5-10	
PR1	Parramatta River	Wet	11/02/2020	13:30	25.02	7.64	7.32	405	23.2	Murky water. Slight current. Sunny. No wind.
DC1	Domain Creek	Wet	11/02/2020	13:45	27.35	7.31	5.16	489	23.5	Murky water. Slight current. Sunny. No wind.
PR5	Parramatta River	Wet	11/02/2020	12:10	24.29	7.75	17.04	466	17.1	Murky water. Moderate current. Sunny. Light wind.
CC1	Clay Cliff Creek	Wet	11/02/2020	12:25	25.4	7.58	14.76	656	11.3	Murky water. No current. Sunny. No wind. Rubbish present.
VY2	Vineyard Creek	Wet	11/02/2020	13:00	24.87	7.59	12.37	610	13.9	Murky water. No current. Sunny. No wind.
PR6	Parramatta River	Wet	11/02/2020	13:10	25.72	7.48	8.51	583	11.6	Murky water. Slight current. Sunny. No wind.
SC1	Subiaco Creek	Wet	11/02/2020	12:40	24.05	7.54	11.12	626	7.4	Murky water. No current. Sunny. No wind.

1. ANZECC Waterway types: LR: Lowland River (PR1, DC1, CC1 and VY2); E: Estuary (PR5, PR6 and SC1). Red text indicates values outside of ANZECC Guideline Trigger Values.

Table A-3-2 Water Quality Monitoring - Lab Results

Location	Waterway	Type	Date	pH	Elec. Cond. (µS/cm)	TSS (mg/L)	Turbidity (NTU)	Chloride (mg/L)	Sulfate (mg/L)	Total Nitrogen (mg/L)	Total Phosphorus (mg/L)	Total Al (mg/L)	Total Cu (mg/L)	Total Pb (mg/L)	Total Mn (mg/L)	Total Fe (mg/L)	TPH (µg/L)	TRH (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	o-Xylene (µg/L)	m+p-Xylene (µg/L)
	ANZECC Guideline	Trigger	Values	LR[1]:6.5-7.5 E: 7-8.5	LR: 125–2200 E: None		LR:6-50 E: 0.5-10	LR: 400 E: None	LR: 400 E: None	LR: 350 E: 300	LR: 25 E: 30	0.055	0.0014	0.0034	1.9	0.3	ID[2]	ID	950	ID	ID	350	ID
PR1	Parramatta River	Wet	11/02/2020	3.87	617	15	17.9	68	101	11.5	0.09	0.56	0.009	0.002	0.034	0.8	<LOR	<LOR	<1	<2	<2	<2	<2
DC1	Domain Creek	Wet	11/02/2020	6.64	532	12	25.5	55	101	3.0	0.71	0.45	0.01	0.002	0.119	0.85	<LOR	<LOR	<1	<2	<2	<2	<2
PR5	Parramatta River	Wet	11/02/2020	7.46	485	16	32.8	75	41	15.3	0.15	0.32	0.009	0.002	0.017	0.66	<LOR	<LOR	<1	<2	<2	<2	<2
CC1	Clay Cliff Creek	Wet	11/02/2020	7.21	803	20	9.8	113	124	7.3	0.10	0.45	0.012	0.002	0.017	0.54	<LOR	<LOR	<1	<2	<2	<2	<2
VY2	Vineyard Creek	Wet	11/02/2020	6.68	682	16	8.6	102	123	13.2	0.11	0.26	0.007	0.001	0.1	1.65	<LOR	<LOR	<1	<2	<2	<2	<2
PR6	Parramatta River	Wet	11/02/2020	5.10	700	14	12.9	123	112	8.8	0.18	0.4	0.009	0.001	0.019	0.56	<LOR	<LOR	<1	<2	<2	<2	<2
SC1	Subiaco Creek	Wet	11/02/2020	6.67	697	12	5.8	118	100	5.1	0.05	0.27	0.008	0.001	0.052	0.51	<LOR	<LOR	<1	<2	<2	<2	<2

1. ANZECC Waterway types: LR: Lowland River (PR1, DC1, CC1 and VY2); E: Estuary (PR5, PR6 and SC1). Red text indicates values outside of ANZECC Guideline Trigger Values.
2. ID: Insufficient data to derive a reliable trigger value (ANZECC 2000).
3. LOR: Limit of Reporting