

STORMWATER QUALITY MONITORING PROGRAM

Moorebank Intermodal Precinct – West
Precinct Stage 2

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SSD 7709

Stormwater Quality Monitoring Program

Author

Checker

Approver

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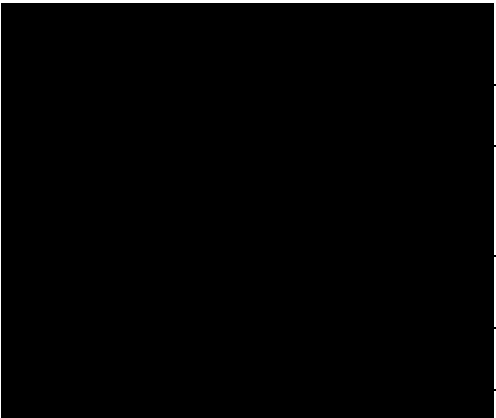
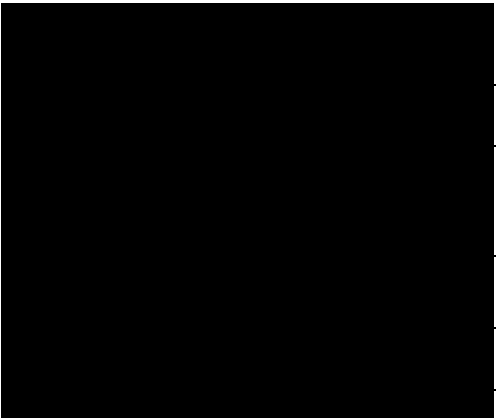
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REVISIONS

Revision	Date	Description	Prepared by	Approved by
01	16/02/2023	Draft for client review		
02	26/04/2023	Draft for ER review		
03	22/06/2023	Updated for ER endorsement		
04	08/11/2024	Updated for Modification 3		
05	14/01/2026	Updated for 2025 annual review		

Acronyms and Definitions

Acronym / Term	Meaning
ANZECC	Australian and New Zealand Environment and Conservation Council
BAEMP	Baseline Aquatic Ecological Monitoring Program
BTEX	Benzene, Toluene, Ethylbenzene, Trimethylbenzenes and three Xylene Isomers
BTEXN	BTEX and Naphthalene
CoC	Condition of Consent
CZMP	Coastal Zone Management Plan
ESR	ESR Australia & New Zealand
ha	hectare
kg	kilograms
LCC	Liverpool City Council
mg/L	Milligrams per Litre
MPW	Moorebank Precinct West
µg/L	Micrograms per Litre
ML	Megalitres
MUSIC modeling	Model for Urban Stormwater Improvement Conceptualisation
NATA	National Association of Testing Authorities
NEPM	National Environmental Protection Measure
NTU	Nephelometric Turbidity Unit
OEMP	Operational Environmental Management Plan
PAHs	Polycyclic Aromatic Hydrocarbons
PFAS	Poly-fluoroalkyl substances (including PFHxS)
PFHxS	Perfluorohexane sulfonate
PFOA	Perfluorooctanoic acid
PFOS	Perfluorooctane sulphonate
PMP	Probable Maximum Precipitation

Acronym / Term	Meaning
PPE	Personal Protective Equipment
QA	Quality Assurance
QC	Quality Control
SDDR	Stormwater Development Design Report
SIOMP	Stormwater Infrastructure Operation Maintenance Plan
SQMP	Stormwater Quality Monitoring Program
SSD	State significant development
TN	Total Nitrogen
TP	Total Phosphorus
TPH	Total Petroleum Hydrocarbons
TRH	Total Recoverable Hydrocarbons
TSS	Total Suspended Solids

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1. Introduction

1.1. Development Ownership

In 2022, LOGOS joined the ESR group of companies and since August 2024, the LOGOS and ESR operations have been integrated to now operate under the name ESR Australia & NZ (ESR). The applicant/ approval holder entity remains unchanged at this stage until further notice and references to LOGOS and LOGOS authored documents and/or plans may continue and remains relevant where LOGOS and ESR are used interchangeably.

1.2. Purpose, Context and Objectives

This Stormwater Quality Monitoring Program (SQMP) has been developed to address Condition of Consent (CoC) B38 'Stormwater Quality Monitoring' in the Consolidated Consent for State significant development (SSD) 7709.

The purpose of this SQMP is to provide details of the proposed program for monitoring the extent and nature of potential impacts to stormwater quality during operation of the Moorebank Precinct West (MPW) Stage 2 development.

The objectives of this SQMP are to:

- Provide a program for monitoring stormwater and water quality
- Identify monitoring sites and parameters
- Define sampling procedure and other requirements
- Establish baseline water condition prior to operation
- Include review and management requirements.

This program should be read in conjunction with the Operational Environmental Management Plan (OEMP) and Stormwater Infrastructure Operation Maintenance Plan (SIOMP). This SQMP has also been technically reviewed by Costin Roe Consulting, the stormwater specialists for the Development, who provided a letter confirming consistency with the requirements of the CoCs, as well as other relevant documentation. This letter is included as Appendix B.

The specific requirements of the CoC that apply to the SQMP, together with where these requirements have been addressed and reviewed are listed in Table 1-1.

Table 1-1 SQMP SSD 7709 CoC Review

CoC	Requirements	SQMP Section
B38	Prior to commencement of operation, the Applicant must prepare a Stormwater Quality Monitoring Program in consultation with Council and the EPA. The program must form part of the OEMP required under Condition C5, be implemented for the life of the development and include the following:	This SQMP Section 1.3 Appendix A Appendix B

CoC	Requirements	SQMP Section
B38(a)	base line water quality data	Section 4 Appendix B
B38(b)	monitoring parameters	Section 2.2 Section 3 Appendix B
B38(c)	water quality assessment criteria	Section 2.2 Appendix B
B38(d)	receiving water quality monitoring sites in Anzac Creek and upstream and downstream of the site in the Georges River	Section 2.1 Appendix B
B38(e)	monitoring of water quality at sediment basin/on-site detention/bioretention basin outlet channels and piped outlets discharging to the Georges River	Section 2.1 Appendix B
B38(f)	frequency of sampling, including wet weather sampling	Section 2.2 Section 3 Appendix B
B38(g)	method of sampling and analysis	Section 3 Appendix B
B38(h)	assess water quality and quantity performance for construction discharges and ongoing stormwater discharges from the development to ensure protection of the desired ecological values of Anzac Creek;	Section 4.1 Appendix B
B38(i)	include sampling locations and the frequency of sampling including wet weather sampling	Section 2 Section 3 Appendix B

1.3. Consultation

This SQMP has been prepared in consultation with relevant stakeholders identified in the CoC and a summary is provided in Table 1-2. Further evidence of consultation is provided in Appendix A.

Table 1-2 Consultation Summary

Agency	Date	Person contacted	Comment	Status
Liverpool City	20/10/2022	██████████ and ██████████, LCC	LCC was emailed to identify the appropriate person for consultation.	Open

Agency	Date	Person contacted	Comment	Status
Council (LCC)	20/10/2022	██████████, Aspect Environmental	LCC provided contact person for consultation via email.	Open
	2/05/2023	██████████ ██████████ ██████████, LCC	Draft SQMP provided for review and comment via email.	Open
	30/05/2023	██████████ ██████████ ██████████, LCC	Email sent to follow up progress of review.	Open
	20/06/2023	██████████, LCC	Phone call to follow up on review progress. Voice message left.	Open
	21/06/2023	██████████, LCC	Email sent to notify LCC of the phone call and requested an update on review progress.	Open
	22/06/2023	██████████, Aspect Environmental	LCC confirmed their flooding team are content with the SQMP.	Close
NSW EPA	20/10/2022	██████████, EPA	EPA was emailed to identify the appropriate person for consultation.	Open
	20/10/2022	██████████, Aspect Environmental	EPA provided contact person for consultation via email.	Open
	2/05/2023	EPA	Draft SQMP provided for review and comment via email.	Open
	11/05/2023	██████████, Aspect Environmental	Email noted that the EPA does not approve, comment on or endorse these programs as their role is to set environmental objectives for environmental management, not to be directly involved in developing strategies, such as this SQMP, to achieve those objectives. EPA advised that there is no concurrence required from the EPA for the SQMP.	Close

2. Monitoring Requirements

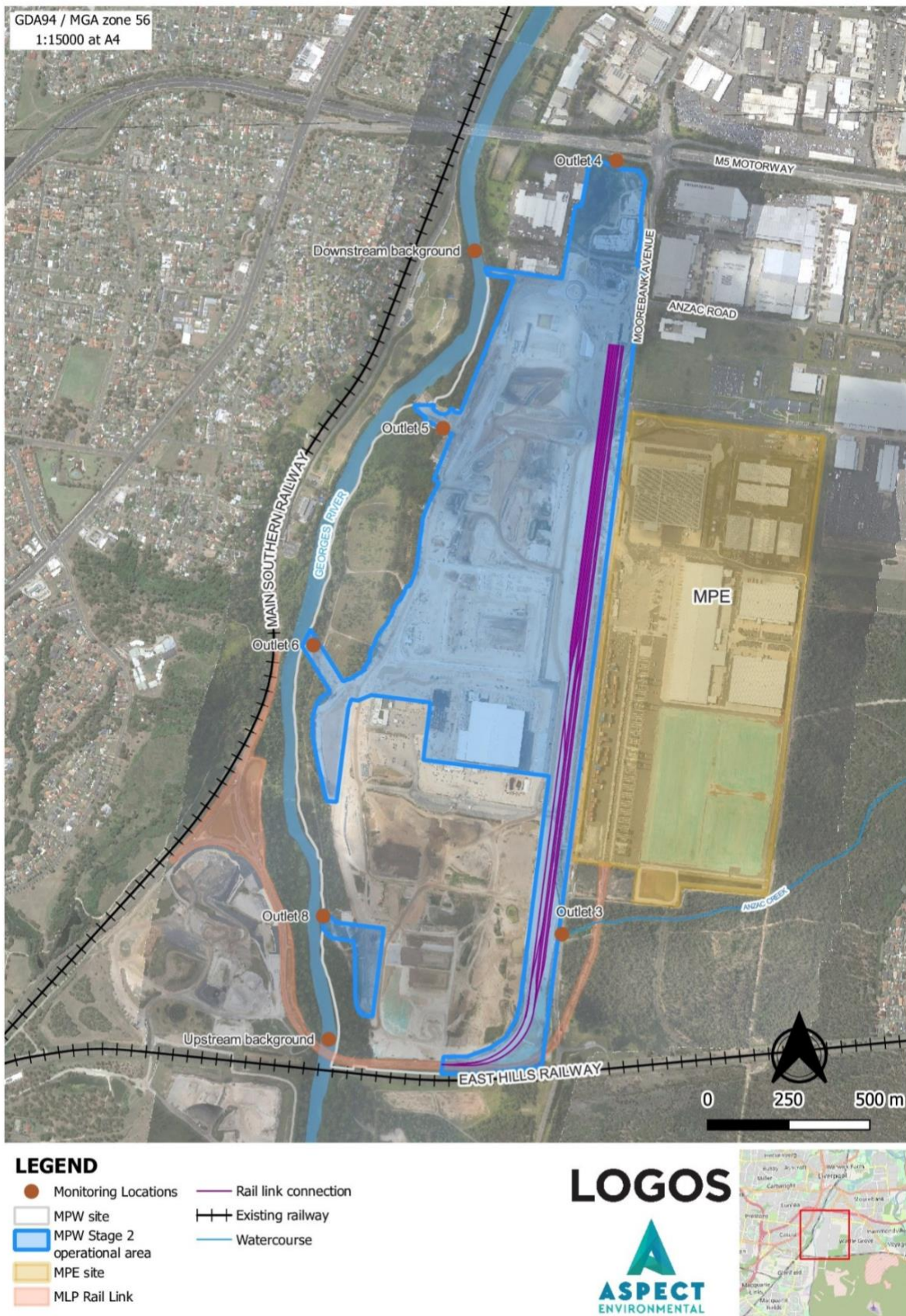
2.1. Monitoring locations

The MPW Stage 2 Site comprises five key existing drainage catchments. Four of the five drainage catchments (totaling 121.2ha) drain in a westerly direction and directly to the Georges River. The fifth catchment (24.82ha), located at the south-east of the development area, drains south-east to Moorebank Avenue and Anzac Creek.

The water quality monitoring locations within MPW Stage 2 development are shown in Figure 2-1. These locations include:

- Receiving water quality sites in Anzac Creek
- Receiving water quality sites upstream and downstream of the site in the Georges River
- Sediment basins
- On-site detention
- Bioretention basin outlet channels
- Piped outlet discharging to the Georges River.

Figure 2-1 Monitoring Locations



ASPS35AM15 | Date: 09/11/2024 | Created by: AH | Q.C. by: AH

2.2. Assessment criteria

Stormwater and water quality monitoring will be undertaken in accordance with relevant guidelines and CoC requirements. The details of the water quality parameters to be monitored and their trigger levels are shown in Table 2-1.

Table 2-1 Water Quality Monitoring Criteria

Pollutant	Trigger Level
Water Sample (Wet sites)	
Total Suspended Solids (TSS)	50 mg/L
Total Phosphorous (TP)	50 µg/L
Total Nitrogen (TN)	500 µg/L
Dissolved metals (standard 19 relevant to aquatic assessment)	Variable: see ANZECC 95% freshwater guidelines
Total Petroleum Hydrocarbons (TPH), BTEX (benzene, toluene, ethylbenzene, trimethylbenzenes and three xylene isomers) hydrocarbons	Variable: see ANZECC 95% freshwater guidelines

Note: Trigger levels for phosphorous and nitrogen are based on the Australian and New Zealand Guidelines for Fresh and Marine Water Quality (2018). As there are no trigger levels for TSS in the ANZECC Guidelines (only turbidity), the trigger level for TSS has been based on the Managing Urban Stormwater: Soils and Construction (Landcom 2004)

In the event that any of the monitoring criteria identified in Table 2-1 is exceeded at the monitoring locations identified in Figure 2-1, an investigation into the source of the pollution will be undertaken to determine whether the source of pollution is related to operation of the MPW Stage 2 development.

3. Sampling Methodology and Analysis

3.1. Surface water

Samples will be collected manually from the sampling locations identified in Figure 2-1 and will be stored in sampling jars provided by the National Association of Testing Authorities (NATA) accredited testing laboratory.

All samples will be of sufficient volume to allow analysis and will be clearly labelled with unique sampling identification nomenclature consisting of the sample date, location and sampler initials. All samples will be kept cool prior to dispatch to the NATA registered laboratory under chain of custody procedures.

Sample equipment will be cleaned on return to the laboratory where a sample site is particularly dirty (i.e. there is an algal bloom, or the site smells strongly of hydrocarbons, sewage or other pollution). In addition, equipment will need to be cleaned periodically to prevent a buildup of dirt as follows:

- Rinse the equipment well in tap water
- Clean with De-Con 90 (a phosphate free detergent), or equivalent
- Rinse well with tap water
- Rinse three times with de-ionised water
- Allow to dry.

In the case of a particularly dirty site being encountered during a sampling event, de-ionized water and tap water would be required for washing equipment in the field.

Field water quality parameters including temperature, electric conductivity, pH, dissolved oxygen and redox potential will be measured at each sampling location with a multi-probe field water quality meter. Other observations including odour and colour will also be recorded.

The multi-probe field water quality meter will be calibrated against known standards, as supplied by the manufacturer, at the start and completion of each day of water quality sampling. Calibration records will be maintained in accordance with the appropriate standard. A summary of surface water quality monitoring parameters is shown in Table 3-1.

Table 3-1 Surface Water Quality Monitoring Parameters

Analyte	Frequency
pH (field)	Six monthly
TSS	Six monthly
Turbidity	Six monthly
PFHxS	Six monthly

Analyte	Frequency
Perfluorooctane sulphonate (PFOS)	Six monthly
Perfluorooctanoic acid (PFOA)	Six monthly

Wet weather in-situ and chemical sampling will be undertaken to determine the water quality and chemical status of water passing through the waterways during periods of flow.

Quality Assurance/Quality Control (QA/QC) samples are collected to ensure the quality of the investigation procedures and sampling program. QA/QC samples provide analytical information that may be used to investigate anomalous results. QA/QC sampling will be undertaken in accordance with AS 5667.1:1998. Only NATA registered laboratories will be used to undertake analysis.

Replication is the collection and analysis of separate samples from the same sample site at the same time. This provides the experimental sampling error and thus a measure of the sampling precision. Replicate samples will be collected at random at a rate of approximately 1 in 10 total samples collected.

The laboratory will undertake their normal internal QA/QC testing in accordance with their NATA registration and industry standards, and will provide evidence of the following QA/QC procedures:

- Sample receipt and registration documentation
- Instrument blank analysis
- Surrogate spike and matrix spike analysis
- Laboratory duplicates.

4. Baseline Data

4.1. MUSIC Modelling

A Stormwater Development Design Report (SDDR) was prepared by Costin Roe Consulting in 2020 and included the MUSIC modelling (the Model for Urban Stormwater Improvement Conceptualisation). The MUSIC model was undertaken to determine the effectiveness of the treatment trains and to predict whether the load-based reduction requirements have been achieved for the MPW Stage 2 development.

The MUSIC model incorporated the latest Liverpool City Council MUSICLINK parameters and modelled water quality constituents, including Total Suspended Solids (TSS), Total Phosphorus (TP) and Total Nitrogen (TN).

A summary of the MUSIC analysis for the MPW Stage 2 development is shown in Table 4-1 (SDDR, 2020).

Table 4-1 MUSIC Analysis Results

Basin	Source	Residual Load	% Reduction	Target Met
Basin 3				
Flow (ML/yr)	68	65.6	3.6	NA
TSS (kg/yr)	20000	16.90	94.5	Y
TP (kg/yr)	35	8.27	76.4	Y
TN (kg/yr)	161	79.20	50.9	Y
Gross Pollutants (kg/yr)	1760	0	100	Y
Basin 4				
Flow (ML/yr)	17.8	16.9	5.3	NA
TSS (kg/yr)	5280	260	95.1	Y
TP (kg/yr)	9.26	1.68	81.8	Y
TN (kg/yr)	40.7	17.1	58	Y
Gross Pollutants (kg/yr)	377	0	100	Y

Basin	Source	Residual Load	% Reduction	Target Met
Basin 5				
Flow (ML/yr)	251	242	3.7	NA
TSS (kg/yr)	57600	6960	87.9	Y
TP (kg/yr)	107	29	72.8	Y
TN (kg/yr)	577	277	51.9	Y
Gross Pollutants (kg/yr)	6330	0	100	Y
Basin 6				
Flow (ML/yr)	387	374	3.5	NA
TSS (kg/yr)	61700	7570	87.7	Y
TP (kg/yr)	128	38.5	70	Y
TN (kg/yr)	877	408	53.5	Y
Gross Pollutants (kg/yr)	9850	0	100	Y
Basin 8				
Flow (ML/yr)	182	175	3.4	NA
TSS (kg/yr)	31700	3890	87.7	Y
TP (kg/yr)	63.2	19	69.9	Y
TN (kg/yr)	413	202	51	Y
Gross Pollutants (kg/yr)	4710	0	100	Y

The model results in Table 4-1 indicate that, through the use of the stormwater treatment system in the treatment train, pollutant load reductions for TSS, TP, TN and Gross Pollutants will meet the requirements as outlined in Table 2-1.

4.2. Anzac Creek and Georges River

4.2.1. Anzac Creek

A Baseline Aquatic Ecological Monitoring Program (BAEMP) was developed for MPE Stage 2 development by Biosis Pty Ltd in June 2018 to determine the stream health condition of Anzac Creek and to establish a Baseline Monitoring Strategy. The BAEMP suggested quarterly monitoring during the pre-construction and construction phases, and six-monthly monitoring during the operational phase within the spring and autumn seasons. Six locations have been established along Anzac Creek as ongoing monitoring sites to allow for identification of impacts to aquatic habitat and water quality within Anzac Creek. The aquatic monitoring site coordinates and the purpose of each location are identified in Table 4-2.

Table 4-2 Aquatic monitoring site coordinates and establishment

Site	Latitude	Longitude	Rationale
AQ1	-33.96111	150.92249	Upstream monitoring site, identifying aquatic ecological values entering the site.
AQ4	-33.960588	150.928069	Identifying impacts or changes to aquatic ecological values downstream of the rail and road crossing.
AQ8	-33.95566	150.935332	Identifying impacts or changes to aquatic ecological values within the "Boot land".
AQ12	-33.948845	150.937305	Identifying impacts or changes to aquatic ecological values within the permanent refuge pool.
AQ13	-33.946779	150.936964	Identifying impacts or changes to aquatic ecological values downstream of the overflow channel.
AQ14	-33.946449	150.937093	Identifying impacts or changes to aquatic ecological values downstream of the dam culvert.

Figure 4-1 shows assessment types for each site under nominal condition as recommended within BAEMP.

Figure 4-1 Recommended assessment types for monitoring site under nominal conditions (Source: BAEMP, 2018)

Type of assessment	Assessment protocol	AQ1	AQ4	AQ8	AQ12	AQ13	AQ14
Visual	DPI waterway classification	✓	✓	✓	✓	✓	✓
	NSW AUSRIVAS form	✓	✓	✓	✓	✓	✓
	HABSCORE assessment	✓	✓	✓	✓	✓	✓
	Ephemeral stream assessment	✓	✓	✓		✓	✓
Surface water and sediment quality	In situ water quality monitoring				✓		
	Nutrient, dissolved metal and PFAS sampling				✓		
	Sediment and PFAS sampling	✓	✓				✓
Aquatic macroinvertebrates	NSW AUSRIVAS and Signal2 sampling				✓		
Fish community	Fish community/habitat suitability				✓		

The Biodiversity Monitoring Report of 2020 and 2021 concluded no measurable changes in the indicator variables examined in relation to the findings of historical surveys and the BAEMP survey that could be attributed to the Project works. Thus, in accordance with the Biodiversity Monitoring Strategy, no adaptive management contingency measure was triggered.

4.3. Georges River

The Development is located within the catchment area of the Georges River, and as outlined in MPW Stage 2 SDDR, comprises four key existing drainage catchments that drain directly to the Georges River.

DRAINS modelling was undertaken in the preparation of the MPW Stage 2 EIS to generate rainfall runoff models, and to enable comparison of discharges and quantity on-site detention performance between existing conditions and post-development conditions. The DRAINS modelling has been run for storm durations of 5 minutes to 36 hours for the 2 year, 5 year, 10 year, 20 year, and 100 year ARIs, and 15 minute to 6 hours probable maximum precipitation (PMP) events, and 30 hour and 36 hour extreme events (represented by 5x100year ARI). A summary of results is provided in Figure 4-2. These results indicate that the proposed detention storages should adequately mitigate potential flow increases leaving the Development.

Figure 4-2 Summary of flow estimates comparison and detention storage (Source: MPW Stage 2 EIS, 2016)

Table 5-1: Comparison of Existing Conditions and Proposed Development Peak Flow Estimates[#]

Discharge Location	Site Condition	Catchment Area (ha)	DRAINS Model Label	Flow (m ³ /s)		
				5yr ARI	100yr ARI	PMF
8 Georges River MPW Site South	Existing	11.17	F Outlet 8	1.2	2.3	19
	Proposed	18.45	F PR Outlet 8	0.5	0.9	27
6 Georges River MPW Site (6+8)*	Existing	55.30	F Outlet 6	9.3	16.5	88
	Proposed	85.24	F PR Outlet 6	2.3	5.3	110
5 Georges River MPW Site (MPE + 5+6+8)*	Existing	155.53	F Outlet 5	16.0	29.1	168
	Proposed	190.61	F PR Outlet 5	9.2	14.3	259
4a MPW Site (at ABB Eastern Site boundary)	Existing	26.14	F EX G02	4.2	7.6	44
	Proposed	10.65	F EX G02	3.0	4.6	21
4 Georges River MPW Site North (4+4a+5+6+8)*	Existing	184.47	F EX Georges	19.4	34.8	199
	Proposed	204.5	F PR Georges	11.7	18.5	277
10 Georges River Rail MPW Site	Existing	1.48	C EX RAIL	0.0	0.1	0.6
	Proposed	0.25	C PR RAIL	0.0	0.0	0.2
3a Anzac Creek MPW Site South-east Site Boundary	Existing	24.82	F EX A3 Total	1.0	2.1	14
	Proposed	11.77	F Anzac Culvert	0.5	1.2	17

* indicates cumulative discharge from Proposal site areas (see Figures 5-1 and 5-2 for flow locations)

[#] Refer to Appendix B for same storm duration comparisons

Table 5-2: Detention Storage Performance Summary

Storage [water quality extended detention level mAHD]	Catchment Area (ha)	Event	Peak Inflow (m ³ /s)	Peak Outflow (m ³ /s)	Water Level (mAHD)	Volume (m ³)
Basin 4 MPW Site North [11.0]	3.3	100 year	1.9	0.3	11.48	3400*
		PMF	8.2	2.0	12.10	(7450)
Basin 5 Georges River MPW Site [11.3]	56.0	100 year	22.8	2.6	13.92	62800*
		PMF	105	80.0	14.70	(82600)
Basin 6 Georges River MPW Site [11.6]	66.8	100 year	27.2	4.3	13.92	58100*
		PMF	125	108	14.8	(79900)
Basin 8 Georges River MPW Site South [11.8]	18.5	100 year	8.2	0.9	14.49	20100*
		PMF	39	27.0	15.30	(26500)
Basin 3a Anzac Creek MPW Site South-east [15.0]	8.1	100 year	3.3	0.8	15.87	3500*
		PMF	17.5	15.1	16.40	(5500)

* Approximate 100 year active storage above water quality extended detention water level (see Figure 5-2 for Basin locations) Storage parameters and outlet configuration are included in Appendix B.

* Assumes OSD spills along approximate length of downstream wall.

Georges River Estuary Coastal Zone Management Plan (CZMP) and NorBE / Neutral or Beneficial Effect for water quality performance targets were adopted for the Development to assess the stormwater quality management objective including protection of the aquatic environment of the downstream waterways (e.g. Georges River).

CZMP water quality performance targets, and SSD 7709 targets under CoC B15, are provided in Table 4-3.

Table 4-3 Water quality performance targets

Item	Georges River Estuary CZMP 2013	SSD 7709 CoC B15
TSS	85%	85%
TP	60%	65%
TN	45%	45%
Gross Pollutant	90%	-

Gross pollutant traps and biofiltration/bioretenion systems were considered as two treatment measures, and their performance was assessed using MUSIC model. Results demonstrated implementation of treatment measures meets the Development water quality targets during operation.

5. Review and Improvement

Continual improvement is achieved through constant evaluation and review of the effectiveness of the program, and adjustment and improvement of the OEMP and project environmental outcomes.

This program will be updated as required:

- To take into account changes to the environment or generally accepted environmental management practices, new risks to the environment, any hazardous substances, contamination or changes in law.
- Where requested or required by the NSW Department of Planning, Housing and Infrastructure or any other Authority.
- In response to internal or external audits or management reviews.

A monitoring maintenance schedule has been provided to monitor the stormwater system condition within the Development and is available in Section 3-3 of the SIOMP. The results of the monitoring and inspection will be provided via maintenance reports and during operation, the updated program would be reviewed and approved in accordance with these reports and the process detailed in OEMP.

Appendix A – Evidence of Consultation

From: [REDACTED]@liverpool.nsw.gov.au>
Sent: Thursday, 20 October 2022 11:23 AM
To: [REDACTED]
Subject: RE: MPW Stage 2 (SSD 7709) - Operational Environmental Management Plan Consultation

Hi [REDACTED]

Thanks for reaching out, Charles is best for all things Traffic, please forward the SWQMP to [REDACTED] and [REDACTED].

Kind regards,

[REDACTED]
Coordinator Strategic Planning



[REDACTED]@liverpool.nsw.gov.au
Customer Service: 1300 36 2170 | 33 Moore Street Liverpool, NSW 2170, Australia
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We acknowledge the traditional custodians of the land that now resides within Liverpool City Council's boundaries, the Darug and Dharawal peoples.

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From: [REDACTED]@aspectenvironmental.com.au>
Sent: Thursday, 20 October 2022 10:56 AM
To: [REDACTED]@liverpool.nsw.gov.au>
Subject: MPW Stage 2 (SSD 7709) - Operational Environmental Management Plan Consultation

Hi [REDACTED] and [REDACTED]

Aspect Environmental is in the process of preparing the Operational Environmental Management Plans for operational activities at Moorebank Intermodal Precinct – West.

As required by CoC B38 and B118 of SSD 7709, Liverpool City Council must be consulted with on the Stormwater Quality Monitoring Program (SWQMP) and Operational Traffic and Access Management Plan (OTAMP).

Can you please confirm that you are best placed to receive these documents for consultation? If not, can you please direct me to the correct person within Liverpool City Council?

We expect these plans to be ready for consultation by mid-November.

Thanks,



[REDACTED]
Consultant – Environment
[REDACTED]@aspectenvironmental.com.au
www.aspectenvironmental.com.au
Suite 117, 25 Solent Circuit, Baulkham Hills NSW 2153



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From: [REDACTED]@liverpool.nsw.gov.au>
Sent: Thursday, 22 June 2023 09:50
To: [REDACTED]
Cc: [REDACTED]
Subject: RE: SSD 7709 - Moorebank Precinct West Stage 2 - Stormwater Quality Monitoring Program - for consultation

Hi [REDACTED]

Our flooding guys are content with the draft Program. Apologies for the delays.

Kind regards,

[REDACTED]
Coordinator Strategic Planning



[REDACTED]@liverpool.nsw.gov.au

Customer Service: 1300 36 2170 | 33 Moore Street Liverpool, NSW 2170, Australia



www.liverpool.nsw.gov.au



We acknowledge the traditional custodians of the land that now resides within Liverpool City Council's boundaries, the Darug and Dharawal peoples.

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From: [REDACTED]
Sent: Thursday, June 22, 2023 9:21 AM
To: [REDACTED]@aspectenvironmental.com.au>
Cc: [REDACTED]

Subject: RE: SSD 7709 - Moorebank Precinct West Stage 2 - Stormwater Quality Monitoring Program - for consultation

Hi [REDACTED]

I received no responses from [REDACTED] and [REDACTED] guys any quick comments on the draft Program before it gets sent off to DPE?

Cheers,

[REDACTED]
Coordinator Strategic Planning



WHO'S YOUR UNSUNG HERO?

Order of Liverpool Award nominations close 23 June

NOMINATE NOW

We acknowledge the traditional custodians of the land that now resides within Liverpool City Council's boundaries, the Darug and Dharawal peoples.

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From: [REDACTED] <[\[REDACTED\]@aspectenvironmental.com.au](mailto:[REDACTED]@aspectenvironmental.com.au)>

Sent: Wednesday, June 21, 2023 4:48 PM

To: [REDACTED] <[\[REDACTED\]@liverpool.nsw.gov.au](mailto:[REDACTED]@liverpool.nsw.gov.au)>

Cc: [REDACTED]

Subject: RE: SSD 7709 - Moorebank Precinct West Stage 2 - Stormwater Quality Monitoring Program - for consultation

I left a voicemail on your mobile phone yesterday (20/06/23).

We are currently waiting on Council's comments on the SQMP to allow finalisation and submission of the plan to DPE.

Could you please confirm whether Council has any comments on the SQMP provided to you on 2/05/23.

Thanks

[REDACTED]
General Manager, Environment
Aspect Environmental

[REDACTED] <[\[REDACTED\]@aspectenvironmental.com.au](mailto:[REDACTED]@aspectenvironmental.com.au)>



From: [REDACTED]

Sent: Tuesday, May 30, 2023 3:37 PM

To: [REDACTED]

Cc: [REDACTED]

Subject: RE: SSD 7709 - Moorebank Precinct West Stage 2 - Stormwater Quality Monitoring Program - for consultation

[REDACTED]

Just following up with you regarding the Stormwater Quality Monitoring Program.

We are now finalising this program for endorsement by the Environmental Representative for the project. Please advise whether Council intends to provide comments, and when they could be expected, if you do.

Note that Andrew is no longer working on this project. Please address any question to me.

Thanks

[REDACTED]
General Manager, Environment
Aspect Environmental

[REDACTED] [@aspectenvironmental.com.au](mailto:[REDACTED]@aspectenvironmental.com.au)



From: [REDACTED] [@aspectenvironmental.com.au](mailto:[REDACTED]@aspectenvironmental.com.au)>

Sent: Tuesday, May 2, 2023 5:35 PM

To: [REDACTED]

Subject: SSD 7709 - Moorebank Precinct West Stage 2 - Stormwater Quality Monitoring Program - for consultation

Hi [REDACTED] and [REDACTED]

Aspect Environmental, on behalf of Logos, is in the process of preparing the Operational Environmental Management Plan (and sub-plans) in advance of operational activities commencing at the Moorebank Intermodal Precinct – West under the MPW Stage 2 (SSD 7709) development consent.

Condition B38 of the consent requires the preparation of a Stormwater Quality Monitoring Program (SQMP) in consultation with Liverpool City Council. Accordingly, the SQMP is attached for your review and comment.

We would appreciate your comments by Friday 19 May 2023.

Please do not hesitate to contact [REDACTED] or [REDACTED] with any queries.

Much appreciated,

[REDACTED]



Associate

[\[REDACTED\]@aspectenvironmental.com.au](mailto:[REDACTED]@aspectenvironmental.com.au)

www.aspectenvironmental.com.au

Suite 117, 25 Solent Circuit, Baulkham Hills NSW 2153



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[REDACTED]

From: [REDACTED]@epa.nsw.gov.au>
Sent: Thursday, 20 October 2022 11:35 AM
To: [REDACTED]
Subject: RE: MPW Stage 2 (SSD 7709) Pre-Operations Management Plan Consultation

Thanks for your email [REDACTED]
Send your request for consultation (when ready) to info@epa.nsw.gov.au and it will be allocated to an appropriate person. It may not be me in all cases.
Kind Regards

[REDACTED]
Unit Head
Regulatory Operations
NSW Environment Protection Authority
[REDACTED]



www.epa.nsw.gov.au @NSW EPA

The EPA acknowledges the traditional custodians of the land and waters where we work. As part of the world's oldest surviving culture, we pay our respect to Aboriginal elders past, present and emerging.

Report pollution and environmental incidents 131 555 or +61 2 9995 5555

From: [REDACTED]@aspectenvironmental.com.au>
Sent: Thursday, 20 October 2022 11:32 AM
To: [REDACTED] [REDACTED]@epa.nsw.gov.au>
Subject: MPW Stage 2 (SSD 7709) Pre-Operations Management Plan Consultation

Hi [REDACTED]

Aspect Environmental is in the process of preparing the Operational Environmental Management Plans for operational activities at Moorebank Intermodal Precinct – West.

As required by CoC B38 of SSD 7709, The EPA must be consulted with on the Stormwater Quality Monitoring Program (SWQMP).

Can you please confirm that you are best placed to receive the SWQMP for consultation? If not, can you please direct me to the correct person within the EPA?

We expect this plan to be ready for consultation by mid-November.

Thanks,



[REDACTED]
Consultant – Environment
[REDACTED]@aspectenvironmental.com.au
www.aspectenvironmental.com.au
Suite 117, 25 Solent Circuit, Baulkham Hills NSW 2153



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PLEASE CONSIDER THE ENVIRONMENT BEFORE PRINTING THIS EMAIL

[REDACTED]

From: [REDACTED]@epa.nsw.gov.au>
Sent: Thursday, 11 May 2023 00:40
To: [REDACTED]
Cc: [REDACTED]
Subject: RE: SSD 7709 - Moorebank Precinct West Stage 2 - Stormwater Quality Monitoring Program - for consultation [ref:_00D7F6iTix_5007F1NXzQ5:ref]

Importance: High

Dear [REDACTED]

Thank you for your email requesting the review and comment of the proposed Stormwater Quality Monitoring Program (SQMP) for Moorebank Logistics Park-West Precinct (Stage 2).

Please note that the EPA does not approve, comment on or endorse these programs as our role is to set environmental objectives for environmental management, not to be directly involved in developing strategies, such as this SQMP, to achieve those objectives.

On this basis, there is no concurrence required from the EPA for the proposed SQMP.

Best Regards,

[REDACTED]
Operations Officer
Regulatory Operations Metro
NSW Environment Protection Authority
[REDACTED]



www.epa.nsw.gov.au @NSW_EPA

The EPA acknowledges the traditional custodians of the land and waters where we work. As part of the world's oldest surviving culture, we pay our respect to Aboriginal elders past, present and emerging.

Report pollution and environmental incidents 131 555 or +61 2 9995 5555

From: [REDACTED]@aspectenvironmental.com.au]
Sent: 2/05/2023 5:39 PM
To: info@epa.nsw.gov.au
Cc: [REDACTED]
Subject: SSD 7709 - Moorebank Precinct West Stage 2 - Stormwater Quality Monitoring Program - for consultation

Hello,

Aspect Environmental, on behalf of Logos, is in the process of preparing the Operational Environmental Management Plan (and sub-plans) in advance of operational activities commencing at the Moorebank Intermodal Precinct – West under the MPW Stage 2 (SSD 7709) development consent.

Condition B38 of the consent requires the preparation of a Stormwater Quality Monitoring Program (SQMP) in consultation with the NSW EPA. Accordingly, the SQMP is attached for your review and comment.

We would appreciate your comments by Friday 19 May 2023.

Please do not hesitate to contact [REDACTED] or [REDACTED] with any queries.

Much appreciated,

[REDACTED]



[REDACTED]
Associate

[REDACTED] [@aspectenvironmental.com.au](mailto:[REDACTED]@aspectenvironmental.com.au)
www.aspectenvironmental.com.au
Suite 117, 25 Solent Circuit, Baulkham Hills NSW 2153



ref:_00D7F6iTix._5007F1NXzQ5:ref

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PLEASE CONSIDER THE ENVIRONMENT BEFORE PRINTING THIS EMAIL

Appendix B – Costin Roe Endorsement Letter



Costin Roe Consulting Pty Ltd

ABN 50 003 696 446

PO Box N419 Sydney NSW 1220

e: mail@costinroe.com.au

w: costinroe.com.au



6 April 2023

Aspect Environmental

Attention:

Suite 117, 25 Solent Circuit, Norwest Business Park
Baulkham Hills NSW 2153

**Re: Moorebank Precinct West Stage 2
Stormwater Quality Monitoring Program (SQMP) and
Stormwater Infrastructure Operation and Maintenance Plan (SIOMP) Review**

Further to your request, Costin Roe Consulting are pleased to provide this review of the *Stormwater Quality Monitoring Program (SQMP)* and *Stormwater Infrastructure Operation and Maintenance Plan (SIOMP)* compiled by your office. Costin Roe have been engaged by Aspect Environmental to complete an assessment of the aforementioned documents to ensure consistency with the approved *Construction Soil & Water Management Plan (CSWMP – ref Co13455.07-03.rpt)* and *Stormwater Design Development Report (SDDR – Ref Co13455.07-02.rpt)* compiled by our office.

Conditions B36 & B38 of the *SSD-7709 Consent* (dated: 11 November 2019), require the *SQMP* and *SIOMP* to be submitted as part the *Operational Environmental Management Plan (OEMP)* to the Planning Secretary prior to the commencement of site operations. For the review process, Aspect Environmental provided the following documentation:

- Stormwater Quality Monitoring Program (SQMP), **Ref: SSS2-QPMS-EN-APP-00035**
- Stormwater Infrastructure Operation and Maintenance Plan (SIOMP), **Ref: SSS2-QPMS-EN-APP-00035**

The following relevant Consent Conditions have been reviewed as part of this assessment. Costin Roe Consulting's comments on how these have been addressed in the documents are shown in **red** below each condition:

B36: Prior to commencement of operation, the Applicant must prepare a Stormwater Infrastructure Operation and Maintenance Plan to manage the operation and maintenance of stormwater infrastructure on-site and off-site, to the satisfaction of the Planning Secretary. The plan must form part of the OEMP required under Condition C5 and must be implemented for the life of the assets and must include provision for:

- a) the management and maintenance of the assets, including evidence that a maintenance contract is in place with a reputable and experienced maintenance contractor;

CRC Response: the SIOMP provided by Aspect Environmental includes provision for the management and maintenance of assets.

- b) quarterly inspections, and inspections after major rainfall events including scour/ bank protection structures;

CRC Response: the SIOMP provided by Aspect Environmental provisions for quarterly inspections, and inspections following major rainfall events as required by this condition.

- c) schedule for routine checking (at least quarterly), cleaning and servicing of all water quality devices/ systems in accordance with the manufacturer's and/ or designer's recommendations;

CRC Response: the SIOMP provided by Aspect Environmental includes a routine inspection and maintenance schedule for stormwater elements and adequately addresses this condition.

- d) maintenance of records of all maintenance activities undertaken;

CRC Response: the SIOMP provided by Aspect Environmental includes for maintenance of records of all maintenance activities and adequately addresses this condition.

- e) preparing quarterly maintenance reports, detailing the results of quarterly inspections, inspections after major rainfall events, and maintenance activities;

CRC Response: the SIOMP provided by Aspect Environmental includes the requirements of quarterly maintenance reports as required by this condition

- f) recording results of water quality monitoring required under Condition B38;

CRC Response: the SIOMP provided by Aspect Environmental includes requirements of recording water quality monitoring results and adequately addresses this condition

- g) investigation, management and mitigation of water quality target exceedances;

CRC Response: the SIOMP provided by Aspect Environmental adequately addresses this condition

- h) requiring annual independent auditing; and

CRC Response: the SIOMP provided by Aspect Environmental adequately addresses this condition

- i) procedures for submission of the quarterly maintenance reports and annual independent audit reports to the Planning Secretary, including the results of inspections, management and maintenance actions and water quality monitoring.

CRC Response: the SIOMP provided by Aspect Environmental adequately addresses this condition

B38: Prior to commencement of operation, the Applicant must prepare a **Stormwater Quality Monitoring Program** in consultation with Council and the EPA. The program must form part of the OEMP required under **Condition C5**, be implemented for the life of the development and include the following:

- a) base line water quality data;

CRC Response: the SQMP provided by Aspect Environmental provides baseline water quality data as required by this condition and is therefore satisfied.

- b) monitoring parameters;

CRC Response: the SQMP provided by Aspect Environmental adequately addresses this condition.

- c) water quality assessment criteria;

CRC Response: the SQMP provided by Aspect Environmental includes a description of the water quality assessment criteria as required by this condition.

- d) receiving water quality monitoring sites in Anzac Creek and upstream and downstream of the site in the Georges River;

CRC Response: the SQMP provided by Aspect Environmental includes 5 aquatic monitoring locations located upstream of, adjacent to and downstream from the site as required by this condition

- e) monitoring of water quality at sediment basin/ on-site detention/ bioretention basin outlet channels and piped outlets discharging to the Georges River;

CRC Response: the SQMP provided by Aspect Environmental adequately addresses this condition

- f) frequency of sampling, including wet weather sampling;

CRC Response: the SQMP provided by Aspect Environmental provides frequency of sampling, including wet weather sampling as required by this condition

- g) method of sampling and analysis;

CRC Response: the SQMP provided by Aspect Environmental provides a method of sampling and analysis as required by this condition

- h) assess water quality and quantity performance for construction discharges and ongoing stormwater discharges from the development to ensure protection of the desired ecological values of Anzac Creek; and

CRC Response: the SQMP provided by Aspect Environmental adequately addresses this condition

- i) include sampling locations and the frequency of sampling including wet weather sampling.

CRC Response: the SQMP provided by Aspect Environmental adequately addresses this condition

This letter is based on the information supplied by the reporting author at the time of compiling. Reference should be made to the reports on which this letter is based. This letter is provided by Costin Roe Consulting Pty Ltd. Please contact the undersigned if clarification of any of the above items are required

Yours faithfully,
COSTIN ROE CONSULTING PTY LTD

