ENVIRONMENT WORK METHOD STATEMENT (EWMS)

SWMS Title:	Bridge RD Underbridge Construction including Temporary Jetty across Parramatta River	**EWMS No:**	PLR-EWMS-0001	**Revision No:**	2

Work **must** be performed in accordance with this SWMS. The SWMS **must** be available for inspection where the task is being performed, at all times during the task. If the SWMS is revised, all versions should be kept.

Organisation Details:	CPB Downer Joint Venture	**Supervisor on Project:**	(Name and Mobile Phone Number) Stuart Sweeney/Pat Carroll		
Project Manager:	(Name and Mobile Phone Number) David Saggerson	**Date:**	08/09/2021	**Work Pack Ref No:**	
Work Activity:	(Description of the Job) Bridge St Underbridge Construction including Temporary Jetty across Parramatta River	**Work Location:**	Bridge Rd, Cumberland Hospital, Westmead		

Business Defined High Risk Construction Work Tasks **Note:** Those activities marked with an asterisk (*) are Safety Essential related.						
	☐	*** Work at Height where a worker or an object could fall more than 2 metres**	☐	Work in areas that may be contaminated or flammable atmosphere	☐	Work on a telecommunication tower
	☐	*** Working in and around Mobile Plant**	☐	Work in/near trench deeper than1.5 m	☐	Work in a tunnel
	✓	*** Work with Temporary Works**	☐	Work in or near a confined space	☐	Work likely to involve disturbing asbestos
	☐	*** Working with Live Services**	☐	Demolition of load-bearing structure	☐	Use of explosives
	☐	*** Working near Live Traffic (road or railway including light rail)**	☐	Tilt-up or precast concrete elements	☐	Diving Work
	☐	*** Electrical Work**	☐	Work in artificial extremes of temperature	☐	Work on/ near chemical/fuel/refrigerant lines
	☐	*** Work involving Mobile Cranes and Lifting Operations**	✓	Work in or near water or other liquid that involves a risk of drowning	✓	A task that is not a Business defined High Risk Construction Work task. **Working on, in or adjacent to a waterway**

Who will ensure compliance	**Name:** David Barkho, Yogesh Pindoliya	**How compliance be measured**	In accordance with ECM, CEMP and subplans; Weekly Inspections; ER Inspections; Monthly Reviews
How will the control measures be reviewed?	3 monthly reviews	**Who will review control measures**	**Name:** Yogesh Pindoliya

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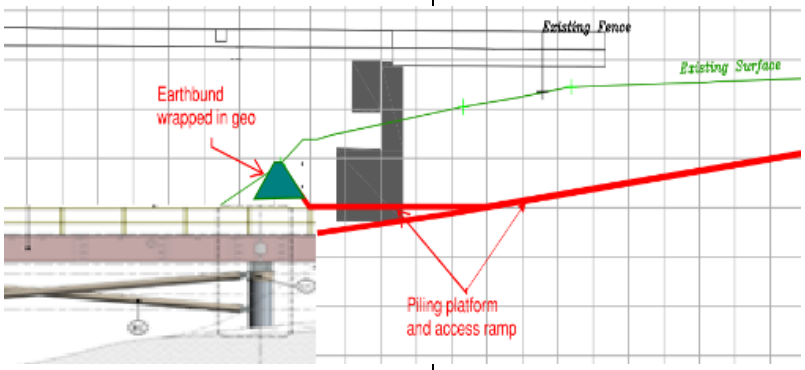
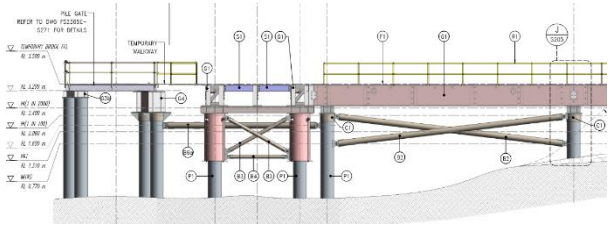
Enabling works	• Excavate ramp at eastern Abutment for piling rig and jetty access 	**HRCW – Working on, in or adjacent to a waterway** • Sediment and site run-off into Parramatta River	• All personnel to attend, listen, understand and sign onto Environmental Control Map which details mitigation measures implementation • Ensure Erosion and Sediment Controls are installed in accordance with approved Erosion and Sediment Control Plan – ESCP01 • Ensure work crew is kept up to date on current weather forecast and correct control measures are put in place for any inclement weather as per Table 1 outlined in ESCP01 • Access road to be capped with Select material • Install earth bunds at abutment and wrap with geotextile • Install rock checks to slow water flow down access ramp • Grade the piling platform and access road as well as installed catch drain as required to direct water to sump to treat and discharge
Access for substructure	• Install temporary jetty from eastern to western Abutment including Pier segment 1. *Vibrate and drive in temp hollow steel columns* 2. *Install supporting beams* 3. *Install deck including handrails* 4. *Repeat for 1-3 for next segment*	**HRCW – Working on, in or adjacent to a waterway** • Sediment from river bed 	• Ensure Erosion and Sediment Controls are installed in accordance with approved Erosion and Sediment Control Plan • Schedule works for a period of no rainfall and low flows as much as possible • Installation of floating silt curtain during piling works • Monitor sediment during and after installation - expectation is minimal • Install coir logs at each embankment as per ESCP01

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	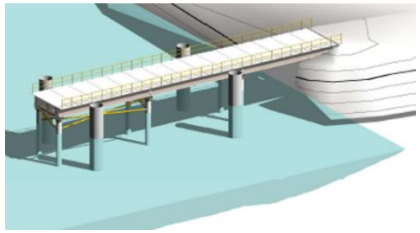	• Grey-headed flying fox (GHFF) colony impacts	• (HOLD POINT) Refer to GHFF Mitigation Application Procedure (Item 3, 4 and 5). • (HOLD POINT) Consult with flying-fox expert to determine appropriate control and implement any additional control measures. Update Environmental Control Map if any additional measures are required to be implemented. • notify Department of Planning, Industry and Environment prior to commencement of new high-risk activity • notify WIRES vaccinated and trained rescuer in flying-foxes to be on stand-by at commencement of new high-risk activity and be informed of duration of activity. • work-specific monitoring at camp required – daily from commencement of new high-risk activity – by two vaccinated and trained personnel for rescue if required (N.B. A reduction of two personnel daily to one personnel daily, then one personnel weekly will be determined by flying-fox expert based on flying-fox behaviour after 5 days of evaluation from commencement of high-risk activity) • work-specific camp monitors to have direct radio or phone communications with piling machine operators to allow prompt 'stop works' if required • plant operators to notify camp monitors before commencing high risk activity and check-in with camp monitors for any flying-fox welfare issues

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			• daily construction activities to begin with lower level noise disruption (i.e. do not begin with piling) • avoid obstructing waterway flying-fox transit path at night with plant or machinery • camp monitor to assess camp after sunset and determine if and when young flying-foxes begin creching in case of scheduled night works • camp monitor to provide daily evaluation of works to flying-fox expert • Section 7.5.1 from the Parramatta Light Rail GHFF Construction Monitoring Program applies: – a Responsible Person (i.e. flying-fox expert, vaccinated camp monitor) would need to have authority to temporarily stop construction work in the stop work zone if the GHFF are highly stressed, as evidenced by: • diurnal fly-outs leading to splintered camps in sensitive locations • welfare impacts • multiple negative interactions with public (e.g. flying-fox on ground, flying-fox scratch or contact with humans) – works would be allowed to resume when the flying-fox expert determines that the GHFF are no longer stressed and at risk to themselves or people – construction activities may need to temporarily stop between the camp and splinter group. A contingency response team consisting of two (preferably ABLV vaccinated) people, contactable

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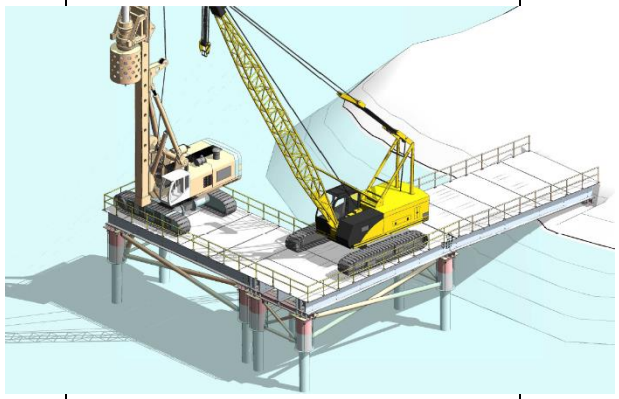
			by radio or mobile, will be required to flush the bats back to the camp by safe and agreed methods. ○ PCPLR Supervisor – Pat Carroll - 0428 922 740 ○ PCPLR Project Engineer – Yogesh Pindoliya – 0448 339 576 • Keep record details of the weekly visual checks.
Piling	• Install bored cast insitu reinforced concrete piles at Abutment and pier 	**HRCW – Working on, in or adjacent to a waterway** • Sediment from piling at pier • Water ponding in abutment piling pad • Concrete slurry run-off into river	• Ensure Erosion and Sediment Controls are installed in accordance with approved Erosion and Sediment Control Plan • Install silt fencing and coir logs downslope of temporary jetty and piling platform but above water line as per ESCP01 • Install fabric wrapped rock / earth bunds around piling platform as outlined in ESCP01 • Divert run-off and install sump away from work area but within project boundary as per ESCP01 • Installation of floating silt curtain during piling works • Pile rig to have enclosed spoil bucket and dispose into spoil bin • Spoil bin and truck for removal to be lined with plastic • Concrete poured with tremie placed inside permanent steel casing • Designated concrete washout bins to be set up within the project boundaries but away from the river.

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		Grey-headed flying fox disruption	• (HOLD POINT) Refer to GHFF Mitigation Application Procedure (Item 3, 4 and 5). • (HOLD POINT) Consult with flying-fox expert to determine appropriate control and implement any additional control measures. Update Environmental Control Map if any additional measures are required to be implemented. • notify Department of Planning, Industry and Environment prior to commencement of new high-risk activity • notify WIRES vaccinated and trained rescuer in flying-foxes to be on stand-by at commencement of new high-risk activity and be informed of duration of activity. • work-specific monitoring at camp required – daily from commencement of new high-risk activity – by two vaccinated and trained personnel for rescue if required (N.B. A reduction of two personnel daily to one personnel daily, then one personnel weekly will be determined by flying-fox expert based on flying-fox behaviour after 5 days of evaluation from commencement of high-risk activity) • work-specific camp monitors to have direct radio or phone communications with piling machine operators to allow prompt 'stop works' if required • plant operators to notify camp monitors before commencing high risk activity and check-in with camp monitors for any flying-fox welfare issues

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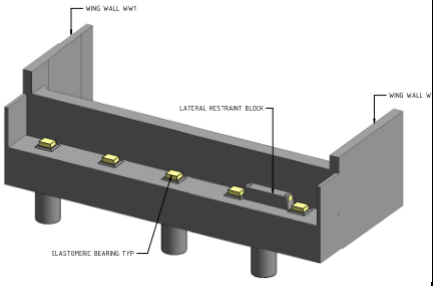
Form, Reo Pour concrete for abutment and pier	• Excavate to top of pile level and blind • Form and pour Abutments A and B including wingwalls • Form and pour pier column • Install Precast headstock – and FRP infill 	**HRCW – Working with temporary works** • Slurry / water run-off into	• Ensure Erosion and Sediment Controls are installed in accordance with approved Erosion and Sediment Control Plan ESCP01 • Installation of floating silt curtain during FRP works at pier column • No tools to be left unattended on jetty. Lanyards on tools to be used where appropriate. • No rubbish / waste to be left unattended on the temporary jetty or near the river. Kick boards to be installed along jetty where appropriate

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Cut pile casing at center piers	Divers to cut pile encasement below water level 	**HRCW – Working on, in or adjacent to a waterway** • Debris in waterway	• Installation of floating silt curtain • Steel casing to be connected with chains prior to cutting to ensure entire section is removed • Works to be carried out by licensed and competent personnel • Ensure all pieces of encasement are removed from the river
Construct superstructure	Install Super-T girders FRP diaphragm FRP bridge deck 	**HRCW – Working on, in or adjacent to a waterway** • Sediment and site run-off into Parramatta River • Dropped items / tools into Parramatta River	• Ensure Erosion and Sediment Controls are installed in accordance with approved Erosion and Sediment Control Plan • No tools to be left unattended on jetty. Lanyards on tools to be used where appropriate • During bridge deck pour and wet curing, any excess slurry or water to be diverted to a sump on site
Remove temporary jetty	Remove temporary jetty and make area good 1. *Remove support beams and handrails by crane.* 2. *Remove deck by crane.* 3. *Remove steel columns by mobile crane with grab attachment via vibratory method (High Impact Works).* 4. *Reinstate batters / embankments*	**HRCW – Working with temporary works** • Uncontrolled sediment / suspended material floating downstream	• Works to be planned for dry period. • Installation of slit boom when removing temporary piles
		Grey-headed flying fox disruption	• (HOLD POINT) Refer to GHFF Mitigation Application Procedure (Item 3, 4 and 5). • (HOLD POINT) Consult with flying-fox expert to

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	Works to be undertaken for a duration of up to 3-4 weeks, commencing in late September 2021.		determine appropriate control and implement any additional control measures. Update Environmental Control Map if any additional measures are required to be implemented. • notify Department of Planning, Industry and Environment prior to commencement of new high-risk activity • notify WIRES vaccinated and trained rescuer in flying-foxes to be on stand-by at commencement of new high-risk activity and be informed of duration of activity. • work-specific monitoring at camp required – daily from commencement of new high-risk activity – by two vaccinated and trained personnel for rescue if required (N.B. A reduction of two personnel daily to one personnel daily, then one personnel weekly will be determined by flying-fox expert based on flying-fox behaviour after 5 days of evaluation from commencement of high-risk activity) • work-specific camp monitors to have direct radio or phone communications with piling machine operators to allow prompt 'stop works' if required • plant operators to notify camp monitors before commencing high risk activity and check-in with camp monitors for any flying-fox welfare issues • daily construction activities to begin with lower level noise disruption (i.e. do not begin with piling) • avoid obstructing waterway flying-fox transit path

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Earthworks & Pavement	Backfill works Construction of approach slabs Completion works – barriers, fencing, guard rail and lighting	**HRCW – Working on, in or adjacent to a waterway** Erosion from stockpiled materials Uncover and disturb unexpected contaminate material Run-off from paving activities or curing entering the waterway	• Ensure Erosion and Sediment Controls are installed in accordance with approved Erosion and Sediment Control Plan ESCP01 • Monitor, review and amend ERSED as works progress • In-situ waste classifications to be undertaken where feasible and asbestos hygienist to be on-call if any asbestos contaminated material is found. • No stockpiling is to occur along river edge • Prior to any forecast rain, cover all bare areas with geofabric or jut matting
All	All	Grey-headed flying fox (GHFF) colony is located 200m away from the worksite therefore this document will be reviewed by flying fox expert.	• (HOLD POINT) Refer to GHFF Mitigation Application Procedure (Item 3, 4 and 5). • (HOLD POINT) Consult with flying-fox expert to determine appropriate control and implement any additional control measures. Update Environmental Control Map if any additional measures are required to be implemented. • notify Department of Planning, Industry and

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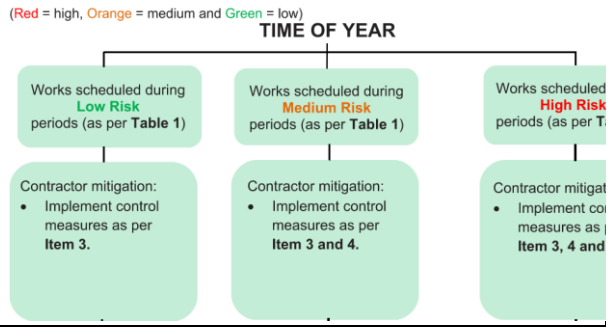
			• Keep record details of the weekly visual checks. Table 1: Risk matrix for Works within 300m of GHFF camp (Red = high, Orange = medium and Green = low) 

Time of day	Inside/outside 300m buffer	J	F	M	A	M	J	J	A	S	O
Day works	Inside buffer										
Night works	Inside buffer										

Workers Consulted in the development of this SWMS				
Name	**Position**	**Company**	**Signature**	**Date**
David Barkho	**Environmental Advisor**	**CPBDJV**		
Andrew Peacock	**Senior Project Engineer**	**CPBDJV**		
Yogesh Pindoliya	**Project Engineer**	**CPBDJV**		
Sahanna Gandhi	**Site Engineer**	**CPBDJV**		

Additions or Alterations **Note:** All alterations must be authorised by the Project Manager *(or authorised delegate).*	**Date of Addition or Alteration**	**Project Manager Review** *(or authorised delegate)*		
		Date of Review	Authorised	
			☐ Yes	☐ No
			☐ Yes	☐ No
			☐ Yes	☐ No
			☐ Yes	☐ No
			☐ Yes	☐ No
			☐ Yes	☐ No

Work Location	Bridge St Bridge - Cumberland	Work Pack Reference	

1	I understand the requirements of this SWMS	3	I understand what the hazards of the work is and what the risks are
2	I have been given an opportunity to comment on the method of work	4	I understand what controls must be in place before starting work

Name of Worker	Signature	Date	Name of Worker	Signature	Date