Barton Park Recreational Precinct Construction Environmental Management Plan

Prepared for Ford Civil Contracting

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Project Manager	Bethany Lavers
Prepared by	Beth Medway, Jemima Kenworthy
Reviewed by	Bethany Lavers
Approved by	Bethany Lavers
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Template 2.8.1

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Abbreviations

Abbreviation	Description
CEMP	Construction environmental management plan
ELA	Eco Logical Australia
EP&A Act	NSW *Environmental Planning and Assessment Act 1979*
DP	Deposited plan
PE	Project ecologist
PM	Project manager
REF	Review of Environmental Factors
SS	Site supervisor

1. Introduction

1.1. Purpose of this CEMP

This Construction Environmental Management Plan (CEMP) has been prepared to comply with the requirements of the Barton Park Precinct Review of Environmental Factors (ELA 2021) and Statement of Environmental Effects (The Planning Hub, 2021) approved by Bayside Council. It identifies environmental management practices to be followed during construction to ensure direct and indirect impacts are minimal and low risk. It relates to activities approved under Parts 4 and 5 of the NSW *Environmental Planning and Assessment Act 1979* (EP&A Act) for the Barton Park area indicated in Figure 1. It summarises information from the following sub-plans, and these should be referred to for further detail as required:

- Acid Sulphate Soil Management Plan (Edison 2022)
- Air Quality and Odour Management Plan (Ford Civil 2022)
- Arboricultural Impact Assessment and Tree Management Plan (Redgum Horticultural 2021)
- Asbestos Removal Control Plan (FCC 2022)
- Green and Golden Bell Frog Management Plan (ELA 2021)
- Remediation Works Plan (Edison 2022)
- Soil and Water Management Plan (Ford Civil 2022)
- Traffic Control Plan (SAF Group 2022)
- Weed Management Plan (ELA 2022)
- Wetlands Environmental Management Plan (ELA 2021)

Other sub-plans that may or will be required are as follows:

- Waste Classification – Excavated Materials report: this will be completed during the construction works if offsite disposal is required.
- Importation of Fill (General) report: this will be completed during the construction works when imported material are required.
- Contaminated Land – Site Validation report: to be completed at the end of the project.

This CEMP is intended to cover all works conducted onsite (i.e., the Grandstand development in accordance with Part 4 of the EP&A Act and the remaining works under Part 5 of the EP&A Act). All general works are to be completed in accordance with the Notice of Determination provided by Bayside Council under DA-2021/431.

1.2. Responsibility for preparation, approval & implementation of this CEMP

The proponent, Bayside Council, retains primary responsibility for the environmental performance of its project and responsibility to satisfy the approval conditions of the project, see Figure 3 and Table 2 for responsibility structure.

This CEMP has been prepared for Ford Civil Contracting, The Contractor, who has been engaged to implement the construction of the project on behalf of Council in accordance with the approval

conditions of the project. Prior to construction commencing, Council have reviewed and endorsed the CEMP.

1.3. Site description

Barton Park Precinct is at 88-96 Bestic Street, Banksia (Figure 1) and comprises two land parcels:

- Lot 100 DP 1228008: Crown Land
- Lot 1 DP 576148 and Road Reserve: Bayside Council

The site was a landfill between the 1940s-1980s and was capped with a variable thickness of clean cover soil and grass following completion of landfill operations (Ford Civil 2022). Surrounding sensitive land uses include Muddy Creek to the east, Spring Street Drain to the north and Landing Lights Wetlands to the north-west.

For the purposes of this CEMP, the Barton Park subject site is categorised as follows (see Figure 1):

- Construction area – this is the proposed construction works footprint
- Conservation area – this is the area to which the Wetlands Management Plan and Weed Management Plan apply; no construction activities will occur in the conservation area.

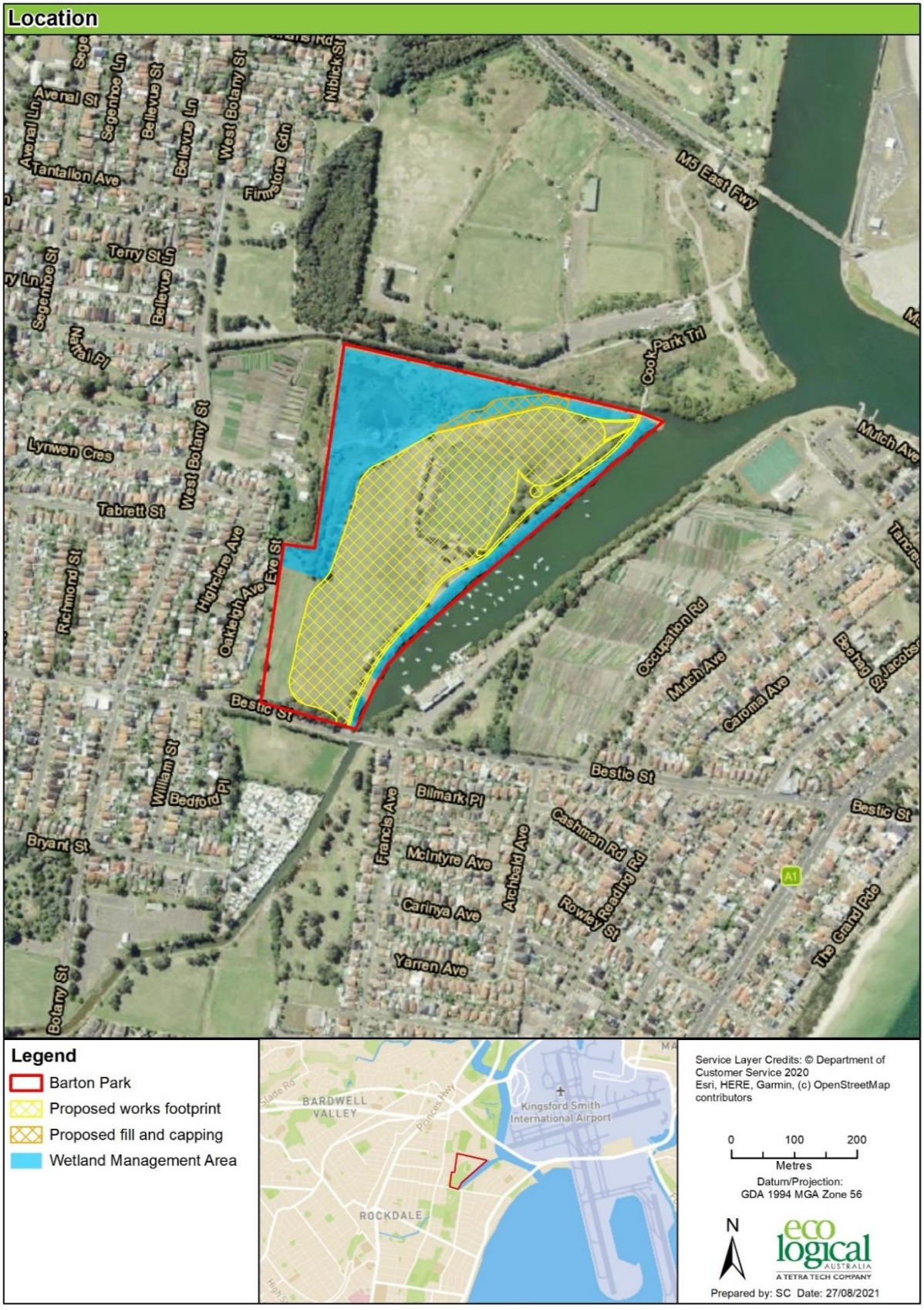

Figure 1: Barton Park area to which this CEMP applies

1.4. Project description

1.4.1. Construction works and process

Works covered by this CEMP include:

- Demolition of the existing grandstand and associated buildings
- Construction of a new sporting amenities building, including public amenities, change rooms, canteen and storage
- Sewer construction works for the amenities buildings
- Construction of a tiered seating area with shade structure
- Construction of four turf playing fields
- Construction of four multi-purpose synthetic courts and supporting infrastructure
- Construction of a new round about and associated works on Bestic Street
- Ausgrid light pole relocation on Bestic Street
- Off leash dog area
- Playground or natural play area
- Carparking and vehicular access driveways
- Improvements to the public domain, including footpaths, paving, landscaping and street furniture
- Shared pathway/cycleway
- Passive recreation opportunities including lookouts, picnic areas, seating and fitness
- Revegetation in the adjacent Landing Lights Wetland and along Muddy Creek (conservation area shown in Figure 1) (to be completed once construction is complete).

1.4.2. Access and site compound

Vehicular access to the site is to be provided via a new entry/exit driveway located at the eastern end of the Bestic Street site frontage, in essentially the same location as the existing driveway, which is proposed to be widened in accordance with Australian Standard 2890. A wheel wash station will be installed at this location (Figure 2) to prevent sediment leaving the construction area. The location of the site compound is also shown in Figure 2.

Access to the conservation area will be via existing roads and gates. There will be no access between the construction area and conservation area.

1.4.3. Work duration and working hours

The proposed works are intended to commence in October 2022 and be completed late March 2024. Work hours will be in accordance with Interim Construction Noise Guideline (DECC 2009) tabulated below.

Table 1: Workdays and hours

Work type	Weekday	Saturday	Sunday or public holiday
Normal construction	7:00 am - 6:00 pm	8:00 am – 1:00 pm	No work allowed

1.4.4. Plant and equipment

A list of machinery to be used (but is not limited to) is provided below:

- Hand-held power tools
- Mobile Cranes
- Dynamic Compaction Rollers
- Smooth drum and pad foot roller
- Concrete ground line pump
- Grader
- Bobcat
- Dozers (various sizes)
- Excavator drill rig
- Excavators (various sizes 5T – 30T)
- Concrete saw
- Concrete Truck
- All terrain dump trucks (various sizes 6T – 30T)
- Tipper trucks (various sizes 2T – 30T)
- Generator

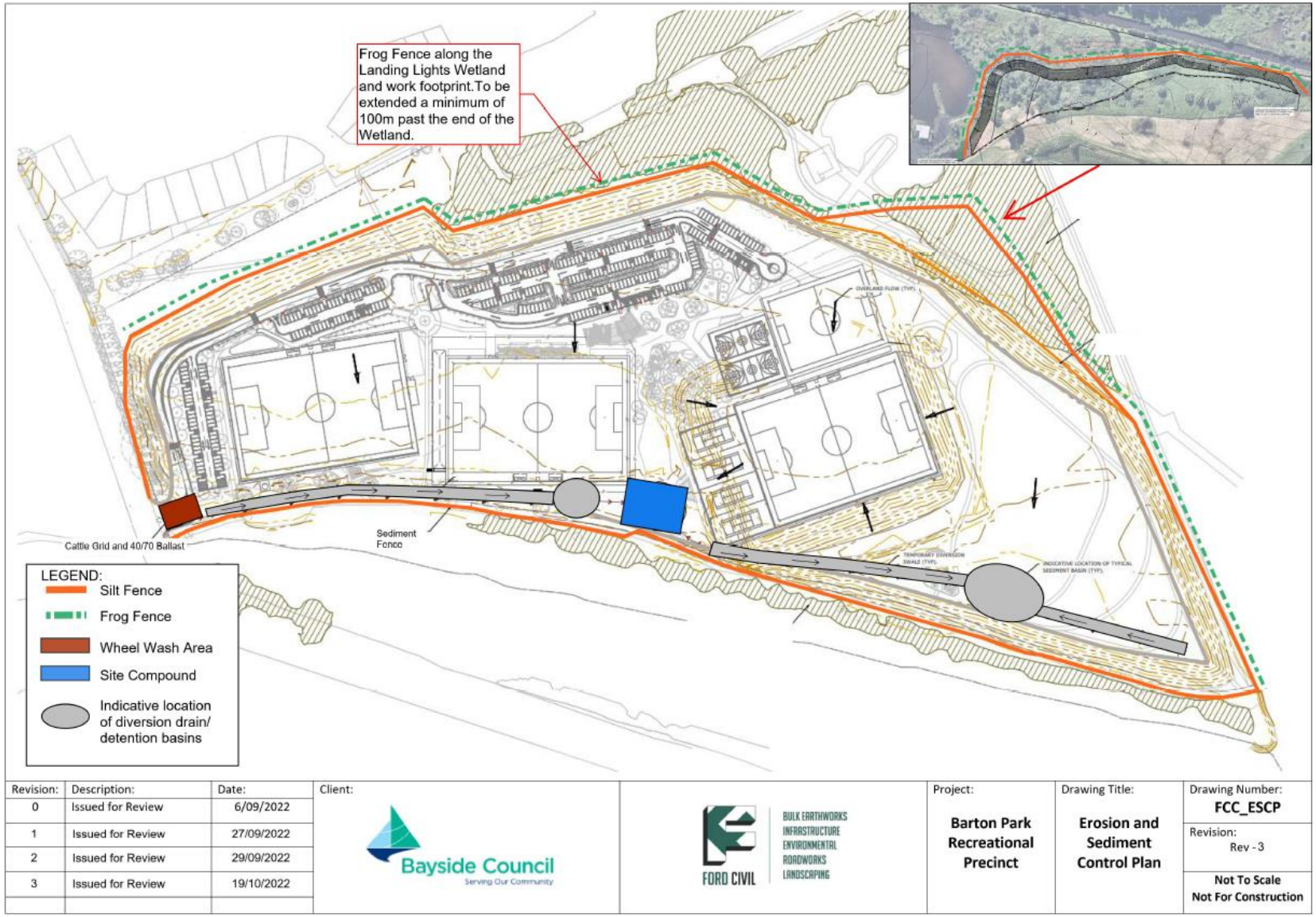

Figure 2: Erosion and sediment control plan, with site access and compound locations and agreed extent of frog fencing (Ford Civil 2022)

2. Environmental management

2.1. Management structure and responsibility

Key roles and responsibilities for implementation of the CEMP are presented in Figure 3 and Table 2.

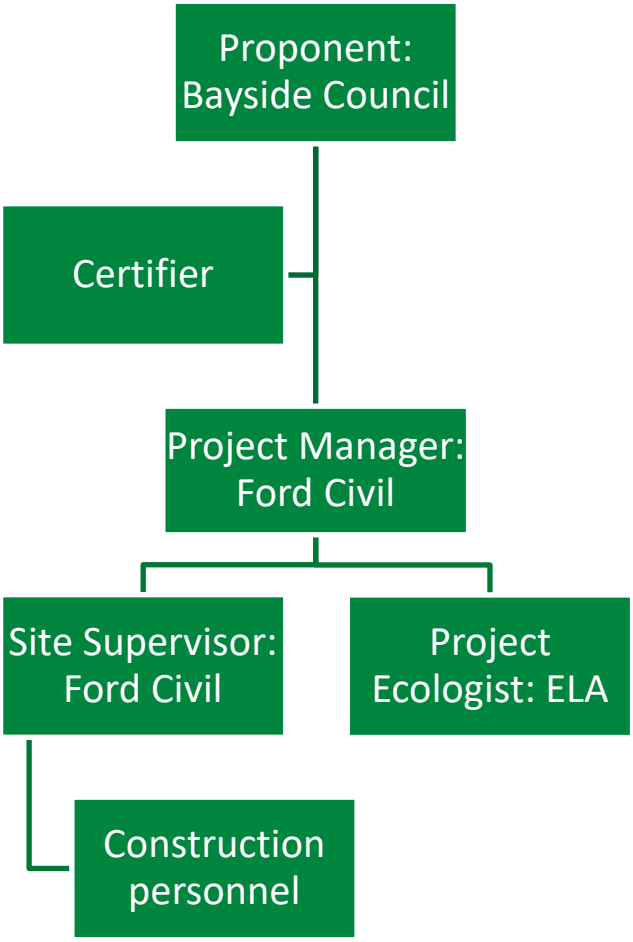

Figure 3: Project organisation chart

Table 2: Project personnel responsibilities

Role	Contact details	Responsibility
Project Manager	**Position:** Senior Project Manager **Company:** Ford Civil Contracting	• Reviews CEMP. • Notifies relevant contractors of changes to the project scope of works and updates the CEMP, if required. • Requires the contractor to adhere to the approved works. • Accountable for contractor's and subcontractor's environmental performance. • Reports any non-compliance to Bayside Council and the certifier. • Ensures the community are notified of commencement of works.
Site Supervisor	**Position:** Site Manager **Company:** Ford Civil Contracting **Position:** Project Manager **Company:** Ford Civil Contracting	• Issues stop work orders, if required. • Records any community complaints and notifies the Project Manager. • Responsible for site management, CEMP compliance, including subcontractors. • Facilitates environmental induction and toolbox talks for site personnel. • Undertakes minimum of weekly environmental inspections (or after environmental conditions change). • Initiates corrective actions. • Reports CEMP non-conformances to the Project Manager. • Reports incidents. • Notifies the Project Manager if the CEMP needs revising.
Construction personnel		• Comply with the CEMP. • Monitor and maintain controls. • Report breaches of the CEMP and potential / actual incidents to Site Supervisor • Report incidents. • Stop work and reports to Site Supervisor in the event of unexpected finds (e.g., potential contamination, fauna or heritage items). • Record any community complaints and notify the Site Supervisor.
Project Ecologist / Herpetologist	**Position:** Project Manager **Company:** Eco Logical Australia **Position:** Project Herpetologist **Company:** Eco Logical Australia	• Comply with the CEMP. • Monitor and maintain controls. • Report breaches of the CEMP and potential / actual incidents to Site Supervisor • Report incidents. • Stop work and reports to Site Supervisor in the event of unexpected finds (e.g., potential contamination, fauna or heritage items). • Record any community complaints and notify the Site Supervisor.

2.2. Environmental training and inductions

Prior to starting work, **all site personnel** must undergo and document the following training:

- A site induction including the requirements of this CEMP and any associated plans
- Emergency response training
- Familiarisation with site environmental features requiring protection and controls
- 'Toolbox Talks' will be used during construction for training and environmental awareness.

All **visitors** to the site must be accompanied by a person working at the site who has been fully inducted as above. In addition, visitors must undergo:

- General site induction
- Familiarisation with site features, hazard awareness and site evacuation plan.

A copy of the site induction material should remain at the work site to ensure hygiene protocols and fauna procedures can be accessed and adhered to. The induction sign-on sheet is provided in Appendix A.

2.3. Emergency management

In the event of an environmental incident causing or threatening 'material harm' to the environment (indicatively, costing more than $10,000 in clean-up (refer s.148 of the *Protection of the Environment Operations Act 1997*), the following authorities must be notified **immediately** (in this order):

- Call 000, **only** if the incident presents an immediate threat to human health or property
- Developer's Project Manager
- NSW Environment Protection Authority – 131 555
- SafeWork NSW – 131 050
- Fire and Rescue NSW – (02) 9265 2999

Immediate verbal communication should be given to each relevant authority. This is to be followed by notification in writing. Other emergency contacts are as follows:

- St George Hospital – 9113 1111
- State Emergency Services (SES) – 132 500
- WIRES (wildlife rescue) – 1300 094 737
- Origin Energy – 132 461
- Energy Australia – 133 466
- TransGrid System Operation – 1800 027 253
- Police Assistance Line (PAL) – 131 444
- Gas – Agility – 131 909
- Poisons Information – 131 126
- Telstra – 132 200
- Roads and Maritime Services – 132 213

2.4. Complaints process

Bayside Council will be responsible for handling complaints. Any complaints received by Ford Civil Contracting will be passed on to Bayside Council as soon as possible.

3. CEMP schedules

Environmental protection measures are tabulated below. The mitigation measures have been derived from the approved REF and sub-plans listed in section 1.1. Each task has been given a number, for easy reference throughout the project.

The schedule is logically structured, with three main phases separating the environmental protection measures during construction:

1. Measures to be implemented prior to works
2. Measures to be implemented and monitored during works
3. Measures to be implemented following completion of works

A separate schedule is provided for activities in the conservation area.

Persons involved in the implementation of the CEMP are as follows:

- PM – Project Manager
- SS – Site Supervisor
- PE – Project Ecologist/ Herpetologist
- All – All Site Personnel.

Several tasks are to be inspected by the Site Supervisor weekly and recorded using the '*Barton Park Recreation Precinct Site HSE Inspection Checklist – Weekly*' provided by Ford Civil Contracting (Form FCC-FOR-164 Rev 1). Records of these weekly monitoring inspections should be kept onsite, or in a shared electronic location.

3.1. Construction area and interface with conservation area

Table 3: Actions prior to construction

Item	Action	Responsibility	Timing
A1	**Site inductions** Induct all site personnel on matters relevant to this CEMP, including no-go areas, unexpected finds, emergencies and access protocols.	All	Before working on-site
A2	**Community consultation** All community consultation is to be conducted through Bayside Council website. Access to information in languages other than English is available. Explanation of the complaints process is to be included (refer to section 2.4). Notify sensitive receivers including businesses and schools which are at risk of impacts to day-to-day functioning and trading (e.g., from noise, traffic, light-spill) at least two weeks prior to works commencing.	PM	At least two weeks prior to works
A3	**Traffic management** Comply with Traffic Control Plan to ensure that traffic disruptions are mitigated, and commuters are notified of detours and closures through signage. Restrict heavy vehicles to specified routes. Consult Transport for NSW in accordance with Section 138 of the Roads Act if road closures are required on classified roads. Consult Bayside Council Traffic Team and notify of any intended / upcoming traffic changes. Notify nearby businesses and sensitive receivers and give opportunity to comment on temporary road closures prior to commencement of construction.	PM	At least two weeks prior to works
A4	**Define the construction footprint** Clearly delineate the construction works footprint. Areas to be cleared or disturbed should be marked and checked with surveyor's pegs to ensure that the minimum construction footprint is adopted. Clearing or soil disturbance should only occur within these areas. Conduct filling works as per the Bulk Earthworks Plan (Drawing C03.01-1). Emplacement area to be clearly delineated as per Asbestos Removal Control Plan (Ford 2022).	SS	Prior to demolition and earthworks
A5	**Fencing and signage** Install temporary fencing and no-go signage to prevent access between the construction area and the conservation area. Install fencing to restrict pedestrian access and temporary park closure. Install Tree Protection Fencing as per arborist advice. The shared path will be kept open for use temporarily until the new pathway is constructed.	SS	Prior to demolition and earthworks

Item	Action	Responsibility	Timing
A6	**Soil and water management** Implement the erosion and sediment control plan (Figure 2). Display Council's warning sign for soil and water management on the most prominent point of the site, visible from the street and site. Install erosion and sediment controls as per the 'Blue Book' Soils and Construction, Managing Urban Stormwater (Landcom 2004) with reference to Chapter 5 'Erosion Control: Management of Water' Blue Book. Sediment fences are to be trenched into the ground outside of the wetland areas, to prevent any sediment-laden water entering these sensitive areas.	SS	Prior to demolition and earthworks
A7	**Wash down facility** Establish a wash down facility at the site entrance, as shown in Figure 2. Develop a wash down protocol to control pathogens, weeds, contaminated soil and sediment entering and leaving the site (see Item B2).	SS	Prior to vehicle movements to/from the site
A8	**Frog exclusion fence** Establish a physical barrier using frog exclusion fencing between the Landing Lights Wetland and construction area. This frog fencing should be designed and installed in consultation with a person who has had at least five years' experience in the management of Green and Golden Bell Frogs (Project Herpetologist). Frog exclusion fences generally consist of a continuous curtain of impervious and relatively non-climbable material (usually shade cloth fabric) strung between support posts. The fence is at least 1 m high and has an overhanging outer lip. The overhanging lip is designed to prevent frogs climbing over the fence. The base of the fence is buried (to stop frogs from digging under the fence). If there are gates in the fence, the base section of the gate must still maintain a seal with the ground by being weighed down with length of flexible chain.	PE	Prior to construction works
A9	**Pre-clearance survey** Conduct a pre-clearance survey within the footprint. The survey should include two diurnal and two nocturnal surveys. *Winter to spring frog encounters:* If Green and Golden Bell Frogs are encountered sheltering in the base of dense vegetation or underneath rock, rubble or wood they need to be assessed for an over wintering position or torpor. Then the frogs are to be collected in accordance with the following protocol: • Placed in a clean, plastic holding container with 50 ml of purified water (at a minimum) • Frogs should be micro-chipped if not already tagged • Adult frogs should be sexed (if adult and showing external characteristics), snout-vent length measured, weight recorded, condition of the frog recorded (as determined by the Project Herpetologist), date and location of collection • The Project Herpetologist is to provide guidance when injured frogs are found • If frogs are not in torpor, the procedure for spring to autumn encounters applies. *Spring to autumn frog encounters:* If active frogs are encountered, then they are to be collected in accordance with the following protocol:	PE	Immediately prior to construction works being undertaken. The last nocturnal survey conducted the night prior to works being undertaken

Item	Action	Responsibility	Timing
	• Placed in a clean, plastic holding container with a small amount of purified water • Frogs should be microchipped if not already tagged • Adult frogs should be sexed, snout-vent length measured, weight recorded, condition of the frog, date and location of collection. Frogs found in the works footprint can then be relocated to suitable sheltering habitat within the established frog exclusion zone.		
A10	**Dial Before You Dig** Undertake a Dial Before You Dig Assessment (DBYD) to locate any service infrastructure present on site	SS	Prior to ground disturbance
A11	**Site compound** Establish a site storage compound and parking areas as indicated in Figure 2. Store all chemicals (e.g., fuel, oil) in appropriate bunding/storage systems within the approved storage facility.	SS	Prior to construction

A12	**Asbestos Preparation**
	Implement the Asbestos Removal Control Plan (FCC 2022) preparation controls:
	• All persons working in the dirty / remediation zone will be inducted into the safe, health, environmental work method statement (SHEWMS) for the works and sign onto it as proof of understanding. The SHEWMS will be updated as required by consultation with the workforce. All SHEWMS will be assessed at a maximum of 3-month intervals. The SHEWMS will be updated as the scope or steps change during the works.
	• Notify SafeWork NSW of impending works – remediation and handling of asbestos contaminated soils during the civil works and capping and containment of asbestos contaminated soils within the remediation footprint.
	• Asbestos Supervisor (Dominic Wallace) and Site Supervisor (Colin Shaw) managing remediation component.
	• First aid kit, fresh running water and a cool area to be designated in the event of an emergency.
	• Establish muster point (entrance on Bestic Street).
	• Site boundary secured with construction temporary fencing (minimum 1.8 m high) with nominated access points for vehicles – gates are to be secured with FCC locks. Open gates are to be manned.
	• Asbestos work areas are clearly marked and delineated via a nominal 10 m exclusion zone with flagging fence and asbestos signage
	• Excavation permit issued by FCC
	• Decontamination zone established onsite (facilitate the wearing of the PPE and storage of equipment)
	• Appropriate PPE worn by workers:
	  ○ Type 5/6 Coveralls
	  ○ Gloves
	  ○ P2 Disposable masks
	• All personnel working with asbestos are clean shaven or ensuring any facial hair fits within fitted P2 mask		

Item	Action	Responsibility	Timing
	Daily asbestos air monitoring competed for duration of the asbestos work and results reported back to workforce daily and prior to new days shift starting.		

Table 4: Actions during construction

Item	Action	Responsibility	Timing
B1	**Community consultation and complaints** Implement the community consultation plan (see Item A2). Implement all feasible and reasonable measures to address the source of complaints. Keep a register of any complaints, including details of the complaint such as date, time, the person receiving the complaint, complainant's contact number, the person referred to, description of the complaint, work area (for larger projects), time of verbal response and timeframe for written response where appropriate.	PM	During construction
B2	**Coordination of multiple projects** Where multiple projects are occurring within the same vicinity at the same time, undertake communication between construction contractors to ensure that potentially noisy or disruptive activities are not undertaken at the same time.	PM	During construction
B3	**Wash down** Adhere to the Arrive Clean, Leave Clean guidelines (DotE 2015) at all times, including: • Wash down equipment vehicles prior to entering the site (especially those heavily impacted by mud), to manage the introduction and spread of pathogens. Pay particular attention to cleaning mud flaps and tyres. • Thoroughly clean all equipment of soil and vegetation debris prior to entry into the construction area. • Use a solution of 70% ethanol or methylated spirits in 30% water for wash down and equipment cleaning to effectively disinfect areas. • Don't allow wash-down water to drain into adjacent sensitive areas such as Landing Lights Wetland. • Machinery and equipment must also be cleaned when leaving site.	SS	During construction
B4	**Traffic management** Implement Traffic Control Plan. Position vehicles, materials and equipment to minimise impacts to public access and parking. Maintain a project complaint register as part of the Traffic Management Plan.	SS	During construction

Item	Action	Responsibility	Timing
B5	**Light spill** FCC to notify community or neighbours where light impacts are anticipated. Position lighting in residential areas to direct light away from houses wherever possible. Where possible, consider additional revegetation to further reduce impact of light spill on residences. Floodlighting should face inward, to avoid nearby sensitive receivers/areas such as Landing Lights Wetland.	SS	During construction
B6	**Frog fence** Inspect frog fence - Any breaches of the fence are to be raised with the Contractor for immediate repair. Vegetation should be kept clear from at least a 1 m wide buffer strip on the outer side of the fence to stop frogs climbing to a height to be able to jump over the fence.	SS	Weekly
B7	**Vegetation removal** Remove vegetation within delineated construction footprint only. Manage weeds in accordance with the Weed Management Plan (ELA 2022): • Any weeds recorded on site are to be treated in an appropriate manner within five days of their presence been reported. It is recommended that Bayside Council establish an agreement with a suitable service provider to provide responses within these timeframes. • Wet areas within the site are monitored for weed occurrence monthly (including aquatic weeds) and weeds identified treated within the reporting period. • Herbicide spraying in proximity to waterways is to only use herbicides formulated for this purpose (e.g., Roundup©Bioactive™) and is to be conducted with care to avoid unnecessary damage to native species. • Where priority weeds, weeds of national significance and/or soil contaminated with those species is found onsite, it will be removed from the site in sealed plastic bags and disposed of offsite at an appropriately licensed waste disposal facility. • Regular (at minimum monthly) surveys and weed treatment of project boundaries and carriageways (e.g., pathways and access roads).	SS	Site clearing and monthly follow-up
B8	**Asbestos** Implement the Asbestos Removal Control Plan (FCC 2022) removal and relocation onsite, decontamination, waste disposal and clearance controls: <u>Removal / Relocation</u> • Closed Cabin Excavator and 30T dump truck undertaking asbestos relocation. • Material relocated to emplacement area in the NW portion of the site as per the RAP.	SS	As required

Item	Action	Responsibility	Timing
	• Geofabric marker layer installed over the extent of the exposed dirty zone (i.e. St George Fill Mounds and the Emplacement Area) followed by 500mm of clean imported validated material as per the RAP. • Water sprays applied to the soil via the aid of mobile water cart units to suppress dust. Use of water is to be regulated as not to oversaturate the land and cause runoff. • Daily air monitoring during remediation works is to be conducted (Clearsafe). • Clearance certificate issued by the LAA Hygienist. <u>Decontamination</u> • Mobile trailer mounted decontamination unit used onsite during remediation works for personnel decontamination. • Protective clothing and other waste wrapped into asbestos bags and placed into nominated ACM skip bin. • Skip bin is to be sealed with plastic (to make water tight) and loaded out as contaminated waste when full. • Trucks driven across wheel wash and inspected by qualified personnel prior to exiting site. • All contaminated geofabric and PPE disposed off at approved contamination waste collection point. • PPE is bagged, sealed via taping and placed in ACM skip bins. Bins must be clearly denoted and only used for ACM materials. Bags are to be no heavier than 20kg. • All contaminated waste tracked at loading and unloading points. <u>Clearance</u> • LAA Site Hygienist provide clearance certificate to confirm site is safe, controls can be removed, and clean zone earthworks can resume. • Hygienist is to sign off on any plant involved in asbestos works. Plant is to be clean after wash down for continued use onsite, or removal off site.		
B9	**Bulk earthworks** Earthworks include excavation and removal of topsoil and debris under pavement, building and field works areas. Topsoil from the existing St George Soccer field has been identified to be salvaged for re-use subject to additional environmental testing. At this stage, it is expected that the remainder of the site either has no existing topsoil cover or quality of the cover is poor and unlikely to be re-used onsite. Topsoil will be stockpiled on site for late reuse. All known contamination onsite will be dealt with in accordance with the ARCP. All other contamination will be dealt with on an unexpected finds basis and will be placed with emplacement area shown on Drawing C03.01-1. Compaction of subgrade and proof rolling of formed surface with a steel drum roller of at least 12 T static weight capacity Removal of any soft, wet or unsuitable subgrade materials with replacement of approved materials. Removal of excess excavated materials to a place of legal disposal Construction of temporary construction batters	SS	Monitoring of fill, including stockpiles will be required fortnightly for a period of three months after fill has been transported

Item	Action	Responsibility	Timing
	Topsoil removed and stockpiled for reuse as part of earthworks should be restricted to areas where there is minimal weed cover. If significant weeds are present, then management of weeds as per above must be undertaken. All stockpiles must be located > 50 m from riparian zones and areas of native intact vegetation. Stockpiles are to be covered in accordance with Landcom (2004) Blue Book and EPA Guidelines. Any fill used on-site must be 'clean' fill free of weed propagules and must meet the importation requirements outlined in the RAP. The site supplying the fill (either onsite or off site) is to be inspected prior to the transportation of any fill material. This includes the inspection of any topsoil on site that is to be stockpiled. If invasive weeds are present within the fill material, the weeds are to be treated prior to fill transportation. Treatment must take into consideration the likelihood of seed being present in the soil and include measures to reduce the potential for transported seed to germinate (e.g., through stockpiling time or using pre-emergent herbicides). The inspection is to be undertaken by a qualified person holding a minimum qualification of TAFE Cert III in CLM. Written certification that the fill is 'clean' from weeds should be obtained prior to transportation. The area receiving fill, including stockpiles, must have sediment fences installed around the perimeter of the fill placement areas. The frequency of the monitoring is designed to reduce the potential for weeds to reproduce and re-establish. A brief report is to be submitted following each site visit outlining the date of the inspection, weeds observed, and treatment action required/undertaken. Monitoring is to be undertaken by a suitably qualified person holding a minimum qualification of TAFE Cert III in CLM. Engage a qualified ecologist or bush regenerator to undertake regular maintenance inspections to ensure weeds are not re-establishing as dominants. If weeds are recorded on site, they must be treated within five days.		
B10	**Soil and water management** • All construction activities shall be undertaken in accordance with the Approved Soil and Water Management Plan for each stage • The contractor is to ensure that appropriate procedures and appropriately qualified personnel are engaged to plan and conduct site inspections throughout the works • Periods of open soil exposure shall be minimised where possible. The existing vegetation will remain in place until required to be removed to complete the works • Temporary diversion drains will be installed to minimise the flow of clean runoff into construction areas, material stockpiles and open trenches, in particular these will be provided around proposed stockpile areas and work zones as required to suit site works • Treatment of sediment-laden runoff will be undertaken from disturbed areas via installation of downslope sediment controls • Controls are to be implemented to prevent sediment being trafficked offsite • All internal and external stormwater structures are to be protected to prevent sediment laden runoff entering the drainage system.	SS	Regular inspections shall be undertaken to ensure erosion and sediment controls are maintained and remain appropriate for the duration of the works. The maintenance period shall be as follows:

Item	Action	Responsibility	Timing
			At least daily when work is occurring on site At least weekly when work is not occurring on site Within 24 hours of expected rainfall Within 18 hours following a rainfall event that caused runoff on site.
B11	**Acid Sulphate Soils** Monitor Acid Sulphate Soils as per the Acid Sulphate Soil Management Plan prepared by Edison 2022.	SS	As above
B12	**Water storage – clean surface water** All construction activities shall be undertaken in a manner that ensures no surface water runoff is allowed to discharge from the site. This will be achieved by constructing temporary diversion drains and detention basins to capture all surface water. All surface water that contacts the imported fill or existing covering soils will be treated as clean surface water and reused onsite for dust suppression purposes. Continually forecast and plan for wet weather events that may impact on capacity of the site to retain surface water. The following key mitigation/ maintenance strategies will be routinely completed: • Reducing volumes of water stored in detention basin prior to wet weather events • Enlarging the detention basin footprint to provide additional storage capacity in the event of a major forecast wet weather event • Allocation of standby contingency storage and management equipment including, pumps, transfer hoses and storage tanks. After a rain event the stored water in the detention basin will be treated for Total Suspended Solids (TSS) and pH. Following treatment, the water will be reused onsite for dust suppression. In the event of chemical contamination of stored surface water or excess volumes of water, the following will be enacted: • Reinjection soaker pit upstream from the dewatering location within the legacy landfill waste materials. Contaminated water will then be pumped from the work area (e.g., deep service trench) to the soaker pit and allowed to infiltrate.	SS	As above

Item	Action	Responsibility	Timing
	Other options include: • Pumping, transport & offsite disposal to licenced liquid waste disposal facility; or • Design, construction, commissioning and treatment of water via a dedicated wastewater treatment plant followed by discharge to sewer on site in accordance with trade waste agreement.		
B13	**Water storage – leachate management** To minimise leachate generation, the following mitigation measures will be implemented whilst excavating within legacy waste material: • Excavation will be programmed during periods of extended dry weather only • Temporary diversion drains or bunds to be constructed around the excavation as required to minimise external surface water entering the excavation • The relocation of waste material will be controlled such that excavated material will be covered by a clean capping layer as soon as practical. Any leachate generated will be pumped directly to a temporary above ground holding tank for further testing and potential offsite disposal at a licenced facility.	SS	As above
B14	**Contaminant controls** All materials removed from sediment erosion controls must be disposed of in line with materials management and supervision in accordance with Section 7.7 of the RAP (Edison 2021) Controls for the Management Area are detailed in the WEMP (ELA 2021a) and include the following: • Store all chemicals (e.g., fuel, oil) offsite. If required to be stored onsite, store chemicals in appropriate bunding/storage systems, outside of the Management Area and only for short periods • Ensure appropriate spill kits, are present onsite • Ensure all equipment is in good working order • Carry associated Safety Data Sheets (SDS) for all chemicals • Do not use any chemicals that are labelled as 'Class 9 Environmentally hazardous' as part of the proposed activities • Do not stockpile rubbish or store chemicals near native vegetation or waterways • Limit the use of fuel, chemicals and herbicides near waterways and other sensitive areas.	SS	During construction
B15	**Waste management** Do not use any chemicals that are labelled as 'Class 9 Environmentally hazardous' as part of the proposed activities. Carry associated Safety Data Sheets (SDS) for all chemicals. On site burning of waste of any kind is not permitted	SS	During construction

Item	Action	Responsibility	Timing
	Adhere to the Waste Management Plan (Ford Civil 2022). Consider resource management options for the Project against a hierarchy of the following order embodied in the Waste Avoidance and Resource Recovery Act 2001: • Avoid unnecessary resource consumption • Recover resources (including reuse, reprocessing, recycling and energy recovery) • Dispose (as a last resort). Classify all wastes and excess spoil in accordance to the Waste Classification Guidelines (DECC 2009) prior to disposal and transported to a licensed waste disposal facility. Upon completion of waste disposal, retain all original weighbridge / disposal receipts issued by the receiving waste facility in a waste register as evidence of proper disposal. Ensure an adequate number of bins are placed at the site for workers and that all litter is placed in these bins. Ensure work areas of the Project site are kept clean and free of litter, including cigarette butts, at all times.		
B16	**Air quality** Air Quality to be managed as per Table 4.2 of the Air Quality and Odour Management Plan (Ford Civil 2022). FCC Daily Observation Sheet to be completed each day. • Minimise works during high wind periods. • Apply dust suppression as required to limit excessive dust generation. • Regularly inspect plant and equipment to ascertain that fitted emission controls are operating efficiently. • Maintain plant and equipment in accordance with manufacturer's specifications to ensure that it is in a proper and efficient condition. • Do not have machinery running while not in use. • Minimise use of machinery for required activity only. • Look for excessive dust generation and slow down if needed (maximum speed limit of 25km/hour on surfaced and unsurfaced roads and in work areas for ALL onsite vehicles. • Minimise site movements. • Locate stockpiles away from sensitive receptors where possible. • Cover or water stockpiles that are not used for extended periods and keep moist to minimise transmission of dust. • Stockpiling for longer than 28 days minimised. Stockpiles to be stabilised and covered if longer than 28 days. • Erect shade cloth surrounding excavation works to suppress dust. • Cover (weatherproof enviro-tarpaulin) trucks entering / leaving the site to prevent escape of materials during transport. • Excavated material that is potentially contaminated or has a risk of producing methane should be stored and disposed of appropriately in accordance with LTSMP and RAP. • Where odour emissions are perceivable and may impact nearby sensitive receivers, consider odour suppression systems:	SS	During construction

Item	Action	Responsibility	Timing
	○ Odour suppressants will be applied to control odour at the point of excavation / trenching or at the stockpiles if strong odours are noted onsite. ○ A biodegradable and environmentally friendly liquid odour and vapour control suppressant concentrate EN2000 (equivalent to Biosolve Pinkwater) will be used to control odour where required ○ Odour monitoring (using hand held field screening equipment such as a photoionisation detector [PID] and landfill gas meter) at the site boundary to be undertaken at a minimum twice daily either in the morning or afternoon or at targeted intervals when odour is detected during site activities. ○ No smoking or hot works to be completed without a permit. ○ A water cart / truck is to be available onsite as needed and/or on dry and windy days for dust suppression.		
B17	**Noise and vibration** Avoid the use of radios or stereos outdoors where neighbours can be affected. Avoid shouting and minimise talking loudly and slamming vehicle doors. Keep truck drivers informed of designated vehicle routes, parking locations, acceptable delivery hours or other relevant practices (for example, minimising the use of engine brakes, and no extended periods of engine idling). Ensure consultation outlining building times, what works are expected to be noisy, their duration, what is being done to minimise noise and when respite periods will occur is undertaken. Use alternatives to diesel and petrol engines and pneumatic units, such as hydraulic or electric controlled units where feasible and reasonable. Where there is no electricity supply, use an electrical generator located away from residences. Examine different types of machines that perform the same function and compare the noise level data to select the least noisy machine. For example, rubber-wheeled tractors can be less noisy than steel tracked tractors. Pneumatic equipment is traditionally a problem – select super silenced compressors, silenced jackhammers and damped bits where possible. Operate plant in a quiet and efficient manner. Reduce throttle setting and turn off equipment when not being used. Regularly inspect and maintain equipment to ensure it is in good working order. Also, check the condition of mufflers. Place as much distance as possible between the plant or equipment and residences and other sensitive land uses. Restrict areas in which mobile plant can operate so that it is away from residences and other sensitive land uses at particular times. Avoid the use of reversing alarms by designing site layout to avoid reversing, such as by including drive through for parking and deliveries. In all circumstances, the requirements of the relevant Occupational Health and Safety legislation must be complied with. For information on replacing audible warning alarms on a mobile plant with less annoying alternatives	SS	During construction

Item	Action	Responsibility	Timing
	Use temporary site buildings and materials stockpiles as noise barriers Use natural landform as a noise barrier – place fixed equipment in cuttings, or behind earth berms. Organise work to be undertaken during the recommended standard hours where possible. If works outside the recommended standard hours are planned, avoid scheduling on Sundays or public holidays. Schedule noisy activities around times of high background noise (local road traffic or when other local noise sources are active) where possible to provide masking or to reduce the amount that the construction noise intrudes above the background. Schedule deliveries to nominated hours only. Reduce the line-of-sight noise transmission to residences or other sensitive land uses using temporary barriers. Erect temporary noise barriers before work commences to reduce noise from works as soon as possible.		
B18	**Infrastructure** Lay underground services and sealing of pavements and pouring of concrete for proposed buildings Construct drainage infrastructure and buildings Install lighting, signage and wayfinding.	SS	After earthworks
B19	**Landfill gas** Monitor and manage potential landfill-gas accumulation in buildings and buried conduits as detailed in the LTSMP. FCC Daily Observation Sheet contained with the AQOMP to be completed each day.	SS	At all times
B20	**Stop work or unanticipated find procedure - frogs** 1. The following procedure is to be implemented when Green and Golden Bell Frogs are observed within the works footprint: 2. Frogs observed during course of construction 3. STOP WORK IMMEDIATELY and notify site supervisor. Try to photograph the frog to assist in confirmation of the species. DO NOT RECOMMENCE WORK until directed by the Project Herpetologist and site supervisor. 4. Environmental representative to inform: Project Manager, Bayside Council and Project Herpetologist 5. Suitably qualified ecologist or representative appointed by the Project Herpetologist to follow procedures for winter to spring encounters and/or spring to summer encounters (detailed in Item A9) 6. Project Herpetologist, Bayside Council AND Site Supervisor declare works 'okay' to re-commence.	SS	As required
B21	**Unexpected heritage finds** In accordance with the Heritage Act and NPW Act, cease work if an archaeological relic (such as a deposit or artefact) is uncovered during works and contact a qualified archaeologist to assess the find. Further advice and clarification may be sought from the Heritage Council of NSW, or the Heritage Division under delegation regarding assessment and approvals.	SS	As required

Item	Action	Responsibility	Timing
	Should any unexpected historical archaeology be uncovered during any future excavation works, adhere to the following procedure: • Stop all work in the immediate area of the item and notify the Project Manager. • Establish a 'no-go zone' around the item. Use high visibility fencing, where practical. Inform all site personnel about the no-go zone. • No work is to be undertaken within this zone until further investigations are completed and written approval is given to recommence. • Engage a suitably qualified and experienced Archaeologist to assess the finds. • Notify the Heritage Council if the finds are of local or state significance. Additional approvals will be required before works can recommence on site (s146 permit). • If human remains are discovered, cease works immediately and contact the NSW Police. If the remains are suspected to be Aboriginal, consider contacting the Department of Planning and Environment to assist in determining appropriate management. Brief all contractors undertaking works on site on the protection of heritage objects, and the penalties for damage to these items.		

Table 5: Actions post-construction

Item	Action	Responsibility	Timing
C1	**Weeds** Continue weed management in accordance with the Weed Management Plan (ELA 2022)	SS	Until site handover
C2	**Landscaping** Landscaping and ancillary works would generally be completed subsequent to all other activities being completed. Landscaping of areas would take place including installation of signage, park furniture, and planting of all trees, shrubs and groundcovers (including grasses). Maintain adequate soil cover to minimise human contact with impacted cover soils	SS	Following construction works
C3	**Frog fence** Remove frog exclusion fence	SS	After landscaping is established
C4	**Waste management** Remove excess materials and dispose of excavated debris and waste as appropriate	SS	Following construction works
C5	**Rectification / rehabilitation** Rehabilitate construction site following completion of the works. Reinstate disturbed surfaces, including pathways and abutments Any damage from access or construction would be rectified.	SS	Until site handover

3.2. Conservation area

Actions relevant to the conservation area are mainly derived from the Wetland Environmental Management Plan (ELA 2021), Weed Management Plan (ELA 2022) and Green and Golden Bell Frog Management Plan (ELA 2021). These documents should be referred to for detail of required actions in the conservation area.

Table 6: Conservation area actions

Item	Action	Responsibility	Timing
D1	**Wetland revegetation program** Schedule wetland revegetation works for between April and August when migratory bird species are in fewer numbers.	PM	Prior to wetland revegetation
D2	**Site induction** Should any personnel access the conservation area, site inductions must be undertaken (see Item A2).	All	Prior to entering conservation area
D3	**Access and hygiene protocol** The following have been prepared in consideration with the NSW Hygiene Guidelines (DPIE 2020a): • All personnel (including visitors) to be inducted on chytrid management measures for the site • Avoid entry to the conservation area from the construction area • Work should be scheduled during dry weather (and not immediately following wet weather) to reduce adhesion of soil/mud to footwear, clothing, equipment and vehicles • Check and clean clothing, footwear, tools, equipment, vehicles and heavy machinery for soil, plant material/propagules and other debris • Disinfect with any of the following (depending on application): ○ 70% methylated spirits in water ○ 1% sodium hypochlorite in water ○ Benzalkonium chloride (various concentrations) ○ Industrial strength detergent ○ Chloramine and chlorhexidine-based products ○ Alcohol wipes ○ Alcohol gel As with all chemicals, disinfectants must be administered away from waterways • Keep hygiene kits at strategic locations (e.g., site office and each vehicle) containing the following (at a minimum): ○ Stiff brush	SS	At all times

Item	Action	Responsibility	Timing
	○ Spray bottle ○ Container of disinfectant solution with enough volume for several refills of the spray bottle • Where practical, provide vehicle wash down facility and boot wash down facility • Restrict vehicles to designated tracks, trails and parking areas • Provide parking and turn-around points on hard, well-drained surfaces		
D4	**Waste and chemicals** Store all chemicals (e.g., fuel, oil) offsite. If required to be stored onsite, store chemicals in appropriate bunding/storage systems, outside of the riparian zones and only for short periods. Ensure appropriate spill kits, are present onsite. Ensure all equipment is in good working order. Carry associated Safety Data Sheets (SDS) for all chemicals. Do not use any chemicals that are labelled as 'Class 9 Environmentally hazardous'. Do not stockpile rubbish or store chemicals near native vegetation or waterways. Limit the use of fuel, chemicals and herbicides near waterways and other sensitive areas.	SS	At all times
D5	**Weeds** Remove weeds using best management practices (including appropriate controls to prevent impacts to threatened species). Bag and remove all weed propagules offsite, preferably the same day and dispose of at designated green waste facility.	SS	At all times
D6	**Create vegetated buffer** Establish vegetated buffer between north and north western side of proposed sportsfields and Landing Lights Wetland, as described in Section 5 of the Wetlands Management Plan. Select plant species that grow to no more than 5 m tall to protect flight paths of migratory and shore birds.	SS	Prior to construction works
D7	**Frog handling** If handling frogs is necessary and unavoidable, the following controls should be applied: • Wear disposable, non-powdered gloves when handling amphibians • Use new gloves or a new bag for handling each individual amphibian • Wear well-rinsed (with water) vinyl gloves when handling tadpoles • If gloves are not available, wash hands with 70% alcohol between handling each animal	PE	If required

Item	Action	Responsibility	Timing
	• Make sure hands are dry before handling amphibians as alcohol exposure may be toxic to them. Rinse hands with potable water (if available) after disinfecting • Keep individual amphibians in separate containers. Dispose of or disinfect containers after use • Where possible, keep tadpoles in separate containers. If necessary, tadpoles from the same pond or stream section can be grouped in one container but avoid overcrowding. • Never mix amphibians from different sites. Amphibians should be released where they were captured.		
D8	**Permit to prune foreshore vegetation** Any pruning required to PCT920, Estuarine Mangrove, must obtain the relevant approvals under the *Fisheries Management Act*.	SS	If required
D9	**Monitoring** Ongoing threatened species monitoring, and bushland regeneration works within the Landing Lights Wetland in accordance with the WEMP and Green and Golden Bell Frog Management Plan (GGBFMP).	PE	At all times

4. Monitor and review

4.1. Environmental monitoring

The site environmental inspection checklist is contained in Appendix H. The site supervisor will record the outcomes on a weekly basis, after rain and if environmental conditions change. It is strongly suggested that photographs be taken of each item being assessed during the checklist. These photographs should be saved in a location that can be easily accessed by monitoring staff (e.g., SharePoint, MS Teams). The photographs can be used for monitoring of the site throughout all phases of works.

4.2. Records

The following records will be kept:

- Site inductions (refer to template in Appendix A)
- Site Supervisor weekly checklist items (refer to schedules in section 3)
- Environmental audits
- Complaints
- Environmental incidents and rectification actions taken
- Project Ecologist summary and compliance reports
- SDS's and chemical register
- Training and induction registers.

Environmental non-conformances shall be treated as incidents and recorded in Table 7 and rectified by the site supervisor.

Table 7: Record of complaints, incidents and corrective actions

Date Received	Complaint method	Incident / Complaint	Name	Address	Contact	Corrective Actions	Date Complete

4.3. CEMP audit

The implementation of the CEMP may be audited throughout the construction stage.

4.4. CEMP review

The CEMP will be reviewed, and updated if needed, with reference to the results of audit reports, complaints, incidents or changes in site conditions or scope of works.

References

Department of Environment & Climate Change NSW 2009. *Interim Construction Noise Guideline.*

Eco Logical Australia 2021. *Barton Park Precinct Review of Environmental Factors.* Prepared for Bayside Council.

Eco Logical Australia 2021. *Barton Park Precinct Green and Golden Bell Frog Management Plan.* Prepared for Bayside Council.

Eco Logical Australia 2021. *Barton Park Precinct Wetlands Environmental Management Plan*. Prepared for Bayside Council.

Eco Logical Australia 2022. *Barton Park Precinct Weed Management Plan*. Prepared for Ford Civil.

Edison 2011. *Barton Park Acid Sulphate Soil Management Plan*.

Edison 2022. *Barton Park Remediation Works Plan*.

FCC 2022. *Barton Park Asbestos Removal Control Plan*.

Ford Civil 2022. *Barton Park Recreation Precinct Soil and Water Management Plan.* Prepared for Bayside Council.

Appendix A Induction sign-off sheet

The following personnel certify the works will be carried out in accordance with the CEMP.

Table 8: CEMP induction record

Name	Position / Company	Signature	Date
	Project Manager Company:		
	Site Supervisor Company:		
	Staff Company:		
	Staff Company:		
	Staff Company:		
	Staff Company:		
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Appendix B Weekly site inspection checklist

The '*Barton Park Recreation Precinct Site HSE Inspection Checklist – Weekly*' provided by Ford Civil Contracting (Form FCC-FOR-164 Rev 1) should be utilised each week to ensure all safety, environment and operation items are complied with throughout works.

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1300 646 131
www.ecoaus.com.au