

Wallum Estate Torakina Road, Brunswick Heads - Lot 13 DP 1251383

Stormwater Maintenance and Management Plan – Existing Drain

Client:	Clarence Property Pty Ltd
Prepared by:	Australian Wetlands Consulting Pty Ltd
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Project Control

Project name: **Wallum Estate Torakina Road**
Stormwater Maintenance and Management Plan – Existing Drain

Project #: 1-21400
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1 Introduction

A Stormwater Maintenance and Management Plan (SMMP) has been prepared for the existing North South Drain at Wallum Estate. The SMMP has been prepared using *Healthy Waterways Water by Design Construction & Establishment Guidelines v1.1 April 2010* (Water By Design, 2010).

The SMMP responds to condition of consent No.12 (refer below) from development application DA 10.2021.575.1 (Byron Shire Council 2023) for the residential development at Lot 13 DP 1251383 15 Torakina Road, Brunswick Heads.

12 Stormwater Maintenance Management Plan for the Existing Drain

Prior to the issue of the Subdivision Works Certificate for Early Stage 2, a Stormwater Maintenance Management Plan to be prepared and submitted to Council for approval for the existing north south drain bisecting the subject land. The plan is to be consistent with the Approved Wallum Frog Management Plan and include initial work to be completed prior to its dedication to Council and ongoing management measures post dedication to Council for a functional stormwater drain. The plan to be prepared and signed off by a suitably qualified ecologist and stormwater engineer prior to submission to Council for approval.

The SMMP provides guidance for the following stages:

- Construction Phase
- Building and Establishment Phase
- Operation & Maintenance

The Wallum Estate has highly permeable soils and minimal grade. Earthworks have been minimized and erosion sediment controls tailored to these conditions. Large sediment loads typical of urban development requiring large cut/fill and modification are not expected for the development.

1.1 Asset Description - Existing North South Drain

The existing drain from Bayside Way is 340 m long and approximately 5m wide and drains a small urban catchment (<1 ha). The drain is not subject to construction works and will be protected throughout the construction phase. Long term management actions are provided in the VMP (AWC, 2023) and Section 7.1.

Some sediment has been deposited from recent uncontrolled earthworks adjacent to the drain (by others) and will be cleared out during site establishment. The main deposits are in the upper reach (400 mm) and another toward the southern boundary (600 mm). Temporary access for combination vacuum trucks for cleaning is recommended, one from Torakina Road and another to access the southern deposit close to the project boundary. Suction cleaning (rather than excavators) is preferred to minimise disturbance to the area. A sediment fence would be installed, and sediment dried on site before mixing back in with fill material for reuse.

2 Drain Maintenance and Management

Management and maintenance of the existing drain is expected to be minimal as the channel is well established and stable, however the following sections provide guidance on the expected management required to maintain the drain to the current condition.

2.1 Cleaning of Existing North South Drain

Removal of accumulated sediment from the invert of the existing may be required through the subdivision construction phase and operation phase.

2.1.1 Sediment in Existing Drain

Sediment has been deposited in the existing north south drain as a result of uncontrolled earthworks associated with the recent construction of the temporary flood accommodation to the north of the subject property. Sediment is present primarily at the northern end of existing drain where up to 400 mm has accumulated, and toward the southern boundary of the property where up to 600 mm has accumulated.

Once cleared and the site is established, due to the coarse nature of the soils on the site and the very small, sealed catchment flowing into the drain ongoing sediment build up is expected to be minor.

2.1.2 Sediment Removal and Access

In order to preserve existing vegetation within the existing north south drain no manual scraping of the channel is to occur during sediment removal, nor vegetation removed for machinery access. Given the small quantities of sediment required for removal, a vacuum truck is to be used for the removal of sediment. This will require the presence of two operators on foot in waterproof clothing within the drain itself, with the suction hose to be fed through existing vegetation for use where required.

Access on foot is possible from the eastern side at both the northern and southern extents of the drain on the site, which will provide close access to the areas of sediment build up. The vacuum truck will move adjacent to the drain on the eastern side to avoid areas of existing or newly created frog habitats on the western side of the drain. This accessway will be subject to further disturbance for the construction of the new north south drain and the pocket park, both of which will be constructed to the east of the existing drain, and hence plans for specific access tracks are not required.

Upon completion of removal of the known areas of sediment build up the full length of the existing drain on the property should be visually inspected by the operatives working within the drain, and any other isolated areas of sediment build up removed using the methodology described above.

Several local companies provide vacuum truck services. Available suction hose lengths are between 40-60 m which is ample to access the existing north south drain from the proposed road (currently known as Road 2 west) to the east of the drain. Table 2.1 provides details of three local

contractors. Figure 2.2 shows access locations for the initial cleaning and Figure 2.3 shows access for the ongoing maintenance during occupation.

Table 2.1 Local vacuum truck contractors and details

Company	Contact detail	Hose lengths available
MegaWaste Industries	02 6683 4843	standard hose is 50m
Minivac	0499 873 780	hose lengths up to 60m
Summerland Environmental	02 6687 2880	standard hose 20m. Extension available up to 40m

2.2 Maintenance

Operation and maintenance of the existing North South Drain (or central drain) is covered in the Vegetation Management Plan (VMP) prepared by AWC for the Wallum Estate (AWC, 2023). The area is contained within Management Zone 3b. Specific management actions provided in the VMP (AWC, 2023) are described in Figure 2.1 below.

Some sediment has been deposited from recent uncontrolled earthworks adjacent to the drain and will be cleared out during site establishment. Temporary access for combination vacuum trucks for cleaning is recommended, one from Torakina Road and another to access the southern deposit close to the project boundary. Suction cleaning (rather than excavators) is preferred to minimise disturbance to the area. A sediment fence will be installed, and sediment dried on site before mixing back in with fill material for reuse.

Note that the existing central drain will not be subject to any works and all existing regrowth flanking the drain will be retained in-situ. This vegetation is in good condition, weed free and is regenerating well; no further management is required.

Management actions for MZ 3b therefore are limited to:

- Removal/control of weed and exotic plant species (refer Figure 3.2) by a professional experienced bush regenerator.
- Rubbish removal.
- Maintaining Wallum Froglet habitat in accordance with the Wallum Froglet Management Plan (WFMP) (AWC 2023).
- Landscape plantings to establish wallum sand heath and a treatment swale, as specified in the Landscape Plan and Habitat Creation Revision C.2 at Appendix B (AWC 2021).. The landscape plan will specifically include a dense planting widths of up to 5m (space permitting) along mapped watercourses to restrict cane toad incursions (refer to Early Ecological Works Package Rev C (AWC 2023) in Appendix B).

Notes:

- For the long term habitat maintenance of wet heath and sedgeland habitat within MZ 3b (acid frog habitat), incursions of woody vegetation (eg. eucalypts, wattles etc which may form a closed canopy) must be removed to maintain biodiversity values associated with adjacent existing high quality habitat.

Figure 2.1 Management Zone 3b actions (Source: VMP (AWC, 2023))

Monitoring and inspection of the existing drain can occur at the same time as the new North South Drain once completed. Maintenance including manual raking of debris and removal of sediment should be scheduled six (6) monthly consistent with the New Drain maintenance schedule

2.2.1 Weed Control

Weed infestations are undesirable in and around the system as they compete with and displace native species and contribute to the decline in system health. Operation is mostly passive and requires little intervention. The operator must be observant and take appropriate action when weed problems develop.

2.2.2 Inlet and Outlet Points

Inflow and outflow points are prone to scour and litter build up. Debris can block inlets and outlets, becoming unsightly and compromising flow. The inlet point should be inspected as part of the routine inspection and cleaned of sediment and rubbish.

The channel should be inspected for damage, accumulated debris and working order at the routine inspection. Rubbish, debris, weed growth and sediment is to be removed to allow free flow of water. Any deflection can cause scour to the downstream banks and/or infrastructure.

2.2.3 Litter and Debris Removal

Litter and debris washed into the drain can be unsightly and dangerous for wildlife. Plastic containers, polystyrene, construction wrapping and other accumulated rubbish causes damage and provides breeding habitat for vermin and mosquitoes. Rubbish should be removed after storm events and/or during routine maintenance.

Rubbish should be recycled where possible. The quantity and type of rubbish should be recorded to help understand where it may originate from and help implement control measures.

2.3 Managing extreme events

2.3.1 Drought

The drain is existing and well established and should not require any intervention in times of drought.

2.3.2 Flood

Following a flood or significant storm event, the channel should be assessed for scouring, plant loss and general damage. If necessary, repair or replant to emulate pre-flood conditions and prevent further damage.

Extreme flooding events may also introduce weed species. Post-flood management should therefore place high priority on monitoring for, and vigilantly removing, weed and undesirable species. After floods there is commonly an accumulation of rubbish and debris. Resources will need to be allocated for the collection of this rubbish.

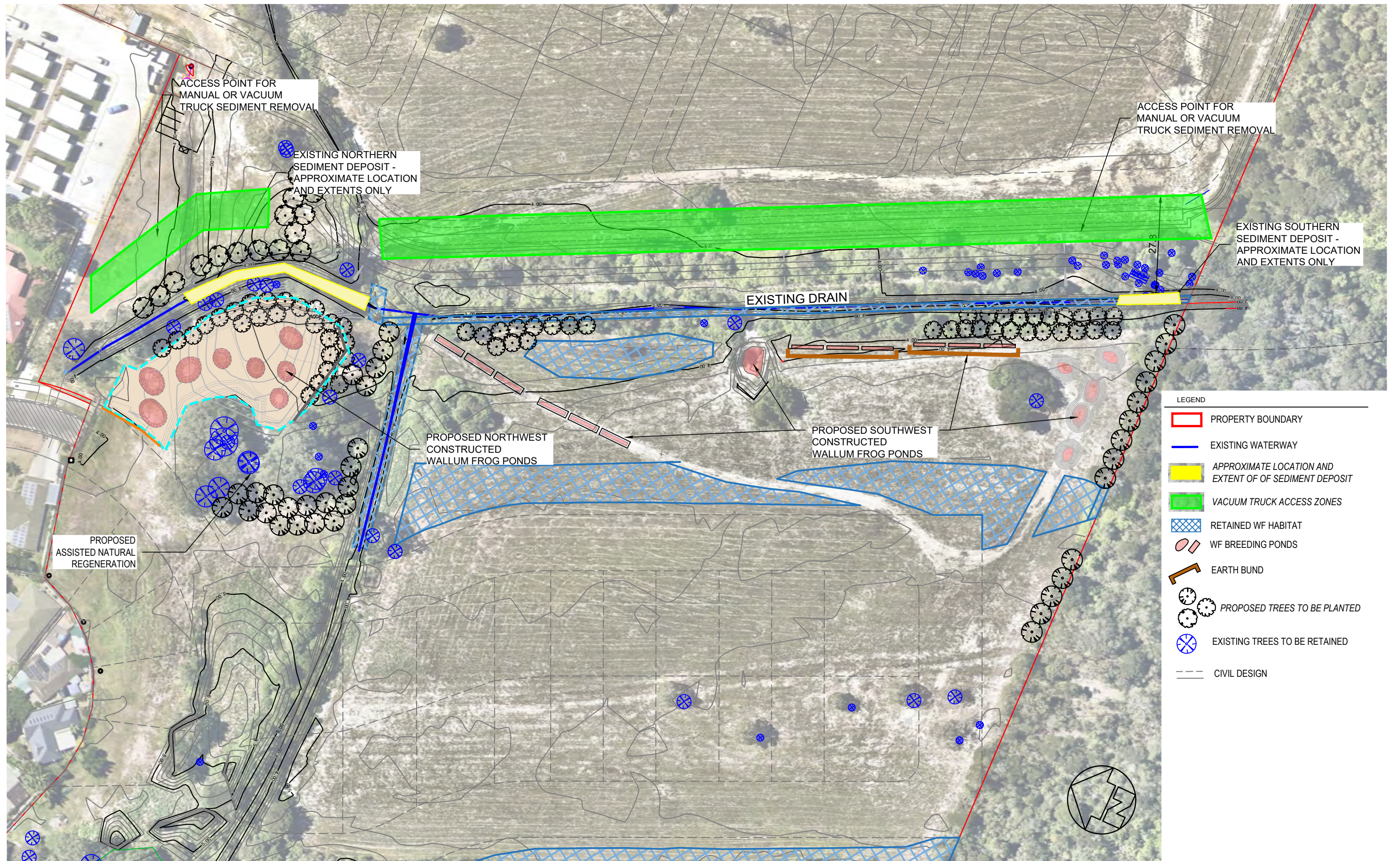
2.4 Maintenance Calendar

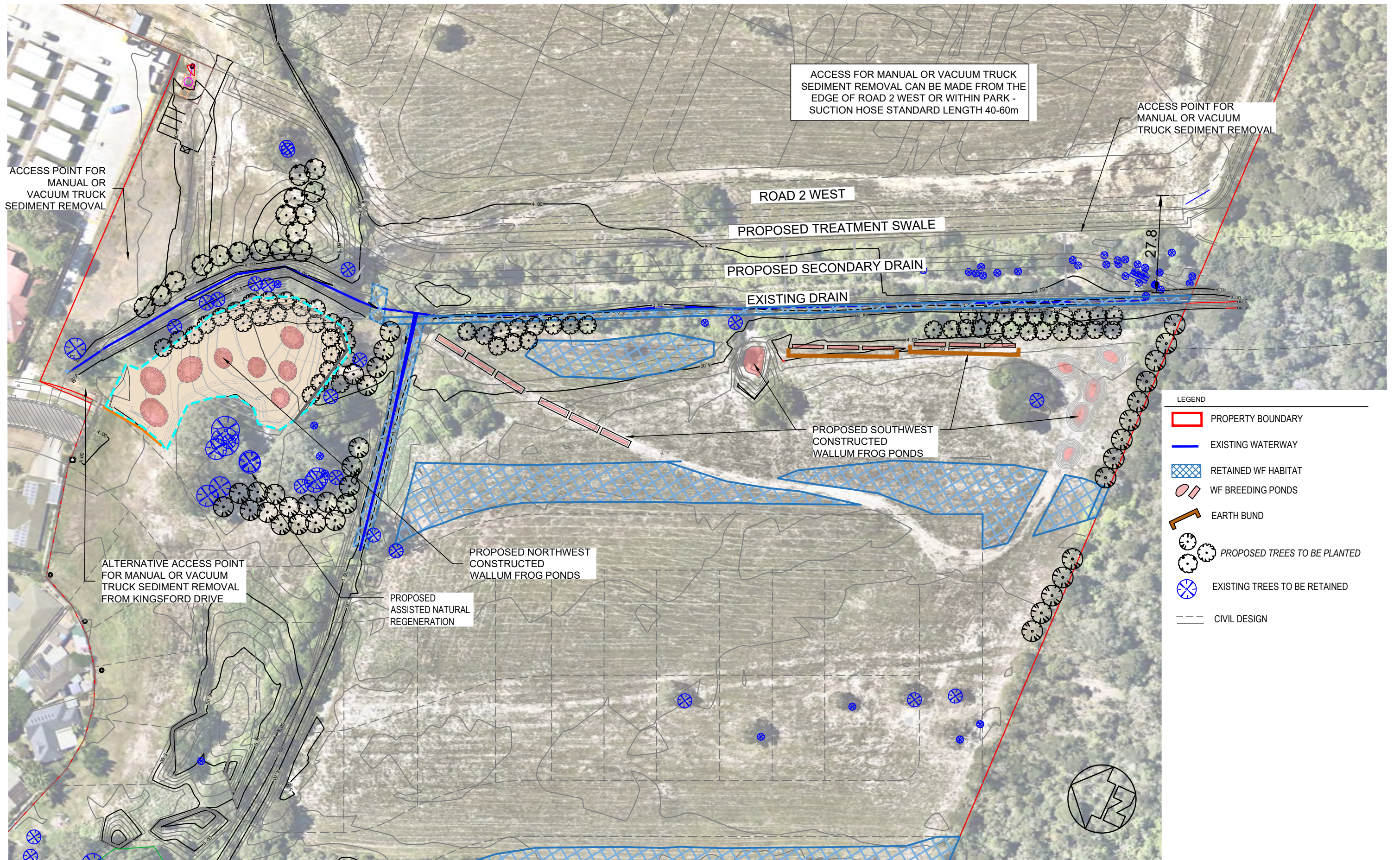
Table 2.1 outlines an annual schedule for routine inspection and if necessary, maintenance, of the existing North South Drain. No planting, replanting or vegetation removal is to be scheduled within the existing drain. Maintenance activities are limited to six (6) monthly inspection and removal of sediment and/or fallen vegetation.

All access is to be on foot, from the eastern side of the drain to avoid all areas of existing and created frog habitat to the west. Access into the drain will be close to the confluence of the new and existing drains at the southern boundary of the property, or via the park at the northern end of the property. Two staff in waterproof clothing will inspect the drain for sediment build up or fallen vegetation. Where found, sediment build-up can be raked, bagged and removed by hand. Fallen vegetation is to be removed by hand. In the unlikely event that larger build-ups of sediment require removal, then a vacuum truck with extended hose may be employed from the road reserve to the east, with the hose fed through the existing vegetation at the required locations.

Table 2.2 Annual schedule for inspections and maintenance of the existing north south drain

Purpose of visit	Month											
	J	F	M	A	M	J	J	A	S	O	N	D
Six monthly inspections						✓					✓	
Sediment and vegetation removal (as required)						✓					✓	





3 References

AWC. (2023). *Wallum Estate Torakina Road Brunswick Heads Revised VMP*. AWC.

Water By Design . (2010, April). *Construction and Establishment Guidelines: Swales, Bioretention Systems and Wetlands v1.1*. Retrieved from Water By Design.



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