



Natural Area
CONSULTING MANAGEMENT SERVICES

Association for Christian Education Inc.

Rehoboth Christian College – Kenwick Annual Compliance Report – Ministerial Statement 780

20 January 2020

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1.0 Introduction

The Association for Christian Education Inc. owns and operates the Rehoboth Christian College at 92 Kenwick Road, Kenwick, within the City of Gosnells (Figure 1). A referral describing proposed extensions to the school was submitted to the EPA under Part IV of the *Environmental Protection Act 1986* (WA) due to the potential impacts on flora and wetlands within the school boundary. The EPA issued Bulletin 1249 in March 2007 indicating that the assessment level for the project was 'assessment on referral information' (ARI). The Office of the Environmental Protection Authority (OEPA) published Ministerial Statement 780 on 19 January 2009 indicating the project could proceed.

Natural Area Holdings Pty Ltd, trading as Natural Area Consulting Management Services (Natural Area), was commissioned by Rehoboth Christian College on behalf of the proponent, Association for Christian Education Inc., to prepare this, the ninth Annual Compliance Report. It will report on the project for the period 20 January 2019 to 19 January 2020 and was submitted to the Office of the Environmental Protection Agency (OEPA) on Monday 20 January 2020. It will provide information relating to compliance documented within the Ministerial Statement and proponent commitment's audit tables, as well as outline work associated with completion of Stage 2 of the expansion works that commenced during 2018 in a portion of Lot 107 and Lot 900 (previously Lot 105A) Brixton Street and progression to the post-construction phase of Stage 2 works.

Phase 1 of the extension works involved the:

- development of 1.0 ha of land that was characterised as a conservation category wetland (CCW) that included 0.60 ha of the threatened ecological community (TEC) claypan wetlands of the Swan Coastal Plain
- conservation management of 2.3 ha of two TECs in the remainder of the school lot, including:
 - full rehabilitation of 0.18 ha of TEC claypan wetlands
 - partial rehabilitation of 0.66 ha of TEC claypan wetlands
 - preparation of a series of management plans for wetland and drainage areas.

All works associated with Phase 1 were completed by December 2015 and documented in the January 2016 Annual Compliance Report prepared by Natural Area.

Phase 2 extension works involved the:

- development of the predominantly triangular area bounded by Brixton Street, Wanaping Road and the wetland area (Lot 900 and a portion of Lot 107; these Lots have been amalgamated and are now known as Lot 901)
- clearing commenced on 26 April 2018, with construction commencing on 03 August 2018 and being finalised in May 2019
- the original *Drainage and Nutrient Management Plan* and the *Wetland Management Plan* prepared by BlueSands Environmental have been updated through preparation of an addendum and submitted to the EPA service unit on 12 March 2018, with approval for the addendums provided in a letter dated 11 November 2019. Note that the City of Gosnells required the development of updated stand-alone management plans as part of their development approval application that were approved on 23 July 2018.



2.0 Current Status

Phase 1 building commenced in February 2011 after the approval of the *Wetland Rehabilitation Plan*, the *Wetland Management Plan* and *Drainage and Nutrient Management Plan* in November 2010 (Sands, 2012, personal communication; OEPA, 2010, personal communication), and was completed later that year. Implementation of the *Wetland Revegetation Plan* is complete, as are the requirements of the *Drainage Management Plan* and the *Wetland Management Plan*, each of which were specific to Lot 107 (Phase 1). Updated versions of these plans were prepared by Natural Area, as were the eighth Annual Environmental Compliance Report and the fourth Performance Review Report which were submitted to DWER on 19 January 2018.

Phase 2 works commenced with clearing of the development area on 26 April 2018, with building works being finalised in May 2019. Accordingly, during 2019 Natural Area:

- continued to oversee construction contractor environmental performance during the Phase 2 construction process
- oversaw the relocation of monitoring bore MB2 approximately 8 m east of its original position due to the changed building layout within Phase 2
- continued the ground and surface water quality monitoring program within the development area and the conservation category wetland during the construction phase
- undertook audit/inspections of the phase 2 construction site on 27 March 2019 and 17 May 2019, with the site being clean and tidy with no obvious encroachment into the conservation area (Figure 2)
- obtained approval for the addendums to the Drainage and Nutrient Management Plan and the Wetland Management Plan submitted to the EPA Service Unit of the Department of Water and Environmental Regulation on 12 March 2018 (approval letter dated 11 November 2019)
- undertook an assessment of construction impacts within the wetland area in late August when weeds were more likely to be apparent and flora species were beginning to flower to assess any impacts associated with construction; during this assessment it was noted that an offcut from the turf laid in the play area during the Phase 2 construction process had been dropped or otherwise inadvertently disposed of within the wetland area by the landscaping contractor, the decision was made that Natural Area personnel would remove this material on their next scheduled visit to the site when additional growth was noted (Figures 2, 3)
- commenced implementation of the post-construction monitoring activities, including the post-construction flora and vegetation monitoring and the ground and surface water quality program.



27 March 2019 – site audit/inspection



17 May 2019 – site audit/inspection



Turf offcut, its preliminary growth and its removal

Figure 2: Phase 2 audits/inspections of construction activities; post-construction vegetation assessment



3.0 Compliance

The Association for Christian Education Inc. continues to comply with the conditions listed in Ministerial Statement 780 and the approved management plans. Evidence of this is included in the audit tables provided in Section 5.

3.1 Non-compliances and Non-conformances

According to the Environmental Protection Authority (2014), a non-compliance is a failure to meet requirements specified within the Ministerial Statement, while a non-conformance is any deviation from procedures, programs and/or management actions described in an environmental management plan. One non-conformance occurred during the final stages of the Phase 2 construction activities during the 20 January 2019 and 19 January 2020 reporting period, with a turf offcut being dropped or otherwise inadvertently disposed of by the landscaping contractor within the wetland area. This was discovered during the August 2019 post-construction vegetation assessment and was manually removed by Natural Area personnel during a later visit to the site (Figure 2).

3.2 Complaints Register

A complaints register has been prepared by Rehoboth Christian College and is kept at the front office. The complaints register includes the following provisions:

- date
- complainant
- contact details
- nature of the complaint
- response
- date of response.

No complaints have been received since the register was prepared in 2012.

3.3 Compliance Statement

This Annual Compliance Report provides verifiable evidence of compliance with required conditions outlined in Ministerial Statement 780 and endorsed actions and commitments outlined in proponent Management Plans. A Compliance Statement as per PAF Assessment Form 2 is provided in Appendix 1 of this document.

4.0 Environmental Monitoring and Research

During the period 20 January 2019 – 19 January 2020, environmental monitoring and research was limited to that carried out during the Phase 2 construction activities and the post-development phase of the project.

4.1 Groundwater Quality Monitoring

Two of the three groundwater monitoring bores were installed by Hyd₂O in 2016 have continued to be monitored during the construction and post-construction stages of the Phase 2 building program. Bore MB2 was relocated approximately 8 m to the east of its initial location due to the changes to building location and design and has been monitored since its installation; it is now known as MB2a. Current bore locations are shown in Figure 3. Groundwater quality monitoring certificates of analysis are provided in Appendix 2.

4.1.1 Pre-construction Monitoring

Five sampling events occurred between 22 Nov 2016 and 07 August 2018 and represent the baseline results to which the construction and post-construction monitoring events have been compared to. Results of all parameters were below recommended guideline levels listed in the ANZECC Fresh and Marine Water Quality Guidelines (ANZECC, 2000). Electrical conductivity (EC) readings remain variable in the bores, consistent with the brackish nature of the water. Total suspended solids (TSS) continue to be higher in MB3 with no obvious explanation for this being apparent. Various forms of nitrogen have recorded slightly elevated concentrations above ANZECC guideline levels. Given the limited development area and Rehoboth's practice of testing nutrient levels to determine the most suitable fertiliser based on site conditions, elevated readings are more likely to be associated with land-use practices beyond the site boundary.

4.1.2 During Construction Groundwater Quality Monitoring

An additional construction phase monitoring event occurred in March 2019, with results again consistent with pre-development monitoring outcomes (Table 1). Accordingly, it is not possible to associate construction activities with elevated results of various parameters.

4.1.3 Post-Development Groundwater Quality Monitoring

Post-development groundwater quality monitoring events occurred in August and December 2019. Results were consistent with pre-development results, indicating it is not possible to associate construction activities with elevated results.

4.2 Surface Water Quality Monitoring

The seasonal, shallow nature of the claypan wetlands within the conservation area of Lot 901 continue to mean there are difficulties collecting representative surface water quality samples, with the water depth typically less than 5 cm. Thus, while water was present within the wetland during winter months, it was not possible to collect representative samples during the 2019 construction or post-construction sampling events (Table 2).

Table 1: Groundwater quality monitoring results

			Pre-development monitoring														
Parameter	Units	ANZECC Guideline Values	22 Nov 2016			24 May 2017			15 Dec 2017			28 March 2018			07 August 2018		
			MB1	MB2	MB3	MB1	MB2	MB3	MB1	MB2	MB3	MB1	MB2	MB3	MB1	MB2	MB3
pH	pH units	7.0 – 8.5	8.05	7.86	7.23	8.03	7.88	7.40	7.77	NA	NA	7.80	7.02	7.30	7.54	NA	6.79
Electrical conductivity (EC)	µS/cm		8740	3240	3400	8190	3710	4460	5910	NA	NA	7420	6150	4530	842	NA	8380
Total suspended solids (TSS)	mg/L		15	6	10400	818	<5	18000	56	NA	NA	34	45	36700	10	NA	4380
Alkalinity as CaCO ₃	mg/L		26	8	67	42	12	65	29	NA	NA	29	43	105	13	NA	50
Aluminium	mg/L		<0.01	<0.01	0.16	<0.01	<0.01	<0.01	<0.01	NA	NA	<0.01	<0.01	<0.01	<0.01	NA	<0.01
Arsenic	mg/L		<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	NA	NA	<0.001	<0.001	<0.001	<0.001	NA	<0.001
Iron	mg/L		<0.05	<0.05	0.23	0.06	<0.05	<0.05	<0.05	NA	NA	<0.05	0.12	<0.05	0.12	NA	<0.05
Ammonia as N	mg/L	0.04	0.27	0.04	0.07	0.02	0.07	0.04	0.03	NA	NA	0.03	0.04	0.03	0.02	NA	0.10
Nitrite as N	mg/L		<0.01	<0.01	<0.01	0.12	<0.01	<0.01	0.06	NA	NA	0.09	0.02	<0.01	<0.01	NA	<0.01
Nitrate as N	mg/L		<0.01	0.03	0.03	1.00	0.01	0.01	0.54	NA	NA	1.64	0.03	0.01	0.12	NA	0.02
Nitrite + nitrate as N	mg/L	0.1	<0.01	0.03	0.03	1.12	0.01	0.01	0.60	NA	NA	1.73	0.05	0.01	0.12	NA	0.02
Total Kjeldahl nitrogen	mg/L		1.0	0.4	<1.0	0.6	0.4	38.0	0.8	NA	NA	1.0	0.2	1.7	0.8	NA	<0.5
Total nitrogen as N	mg/L	1.5	1.0	0.4	<1.0	1.7	0.4	38.0	1.4	NA	NA	2.7	0.2	1.7	0.9	NA	<0.5
Total phosphorous	mg/L	0.06	0.02	<0.01	0.31	0.09	0.02	2.68	0.07	NA	NA	0.02	<0.02	1.89	<0.01	NA	0.14

			Development Monitoring						Post-Development Monitoring					
Parameter	Units	ANZECC Guideline Values	30 November 2018			14 March 2019			08 August 2019			18 December 2019		
			MB1	MB2	MB3	MB1	MB2	MB3	MB1	MB2a	MB3	MB1	MB2a	MB3
pH	pH units	7.0 – 8.5	7.75	NA	6.92	7.77	NA	6.98	7.86	7.51	7.58	7.90	7.61	7.43
Electrical conductivity (EC)	µS/cm		3540	NA	3360	6710	NA	4810	1710	4850	8080	2710	5380	8230
Total suspended solids (TSS)	mg/L		25	NA	3260	120	NA	18300	14	8	52	6	36	29
Alkalinity as CaCO ₃	mg/L		16	NA	32	40	NA	71	31	33	48	10	12	21
Aluminium	mg/L		0.02	NA	0.01	<0.01	NA	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Arsenic	mg/L		0.001	NA	<0.001	0.001	NA	<0.001	<0.001	<0.001	0.002	0.002	0.001	0.003
Iron	mg/L		1.06	NA	<0.05	0.33	NA	0.05	<0.05	<0.05	3.40	0.33	<0.05	1.63
Ammonia as N	mg/L	0.04	0.05	NA	0.10	0.03	NA	0.03	0.14	0.05	<0.01	0.07	0.11	0.04
Nitrite as N	mg/L		<0.01	NA	<0.01	<0.01	NA	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Nitrate as N	mg/L		0.12	NA	0.01	0.02	NA	<0.01	0.01	0.06	0.01	0.03	0.15	0.08
Nitrite + nitrate as N	mg/L	0.1	0.12	NA	0.01	0.02	NA	<0.01	0.01	0.06	0.01	0.03	0.15	0.08
Total Kjeldahl nitrogen	mg/L		1.4	NA	0.5	0.7	NA	1.2	1.2	0.2	1.4	0.7	0.2	0.7
Total nitrogen as N	mg/L	1.5	1.5	NA	0.5	0.7	NA	1.2	1.2	0.3	1.4	0.7	0.4	0.8
Total phosphorous	mg/L	0.06	0.08	NA	0.15	0.03	NA	1.67	0.01	0.01	0.02	0.02	<0.01	0.02

Table 2: Surface water quality monitoring results

	Units	ANZECC Guideline Values	Pre-Construction		During Development	
					30 Aug 2018	
			SW1	SW2	SW1	SW2
Water level	cm		< 5		< 5	
pH	pH units	7.0 – 8.5	NA	NA	NA	7.22
Electrical conductivity (EC)	µS/cm		NA	NA	NA	2380
Total suspended solids (TSS)	mg/L		NA	NA	NA	46
Alkalinity as CaCO ₃	mg/L		NA	NA	NA	11
Aluminium	mg/L		NA	NA	NA	0.21
Arsenic	mg/L		NA	NA	NA	<0.001
Iron	mg/L		NA	NA	NA	0.43
Ammonia as N	mg/L	0.04	NA	NA	NA	0.02
Nitrite as N	mg/L		NA	NA	NA	<0.01
Nitrate as N	mg/L		NA	NA	NA	<0.01
Nitrite + nitrate as N	mg/L	0.1	NA	NA	NA	<0.01
Total Kjeldahl nitrogen	mg/L		NA	NA	NA	0.9
Total nitrogen as N	mg/L	1.5	NA	NA	NA	0.9
Total phosphorous	mg/L	0.06	NA	NA	NA	0.05



4.3 Nutrient Analysis

The College continues to undertake nutrient analysis of the ovals prior to fertilising, with nutrient analysis results provided in Appendix 3.

4.4 Post-Construction Flora and Vegetation Monitoring

A flora and vegetation assessment of the wetland area was carried out by Natural Area in late August 2019, when flora species were beginning to flower and weed species were more likely to be apparent, meaning a greater likelihood of determining whether impacts had occurred as a result of construction activities.

Outcomes of the assessment confirmed:

- flora species were consistent with previously recorded results, with 97 species from 46 families recorded, including one new native species, *Liparophyllum capitatum*
- vegetation condition has improved since restoration works within the conservation area commenced in 2012
- vegetation types remain similar to those recorded in 2011 by Natural Area
- the number and location of the threatened flora species *Lepidosperma rostratum* (Beaked Lepidosperma) has remained consistent with previous survey results
- six new weed species were recorded in 2019, with one, Kikuyu (*Cenchrus clandestinus*) being attributed to construction activities with an offcut from the turf being laid by landscapers making its way into the conservation area by some means, this was subsequently removed manually by Natural Area personnel to prevent its permanent presence within the conservation area; the presence of this species has been recorded as a non-conformance in this Annual Compliance Report
- other weed species are attributed to recruitment from surrounding gardens and the passage of birds or other fauna species carrying seeds from one location to another.

A copy of Natural Area's flora and vegetation assessment report is provided in Appendix 4.

5.0 Stakeholder Engagement

In order to prepare the 2020 annual compliance report, Natural Area contacted two individuals, the details of which are summarised in Table 3.

Table 3: Stakeholder Engagement

Date	Name	Position	Organisation	Purpose	Outcome
November 2019	Rachael Fairlamb	Accountant	Rehoboth Christian College (Association for Christian Education Inc.)	Inform RCC of acceptance of updated management plans by DWER (OEPA)	<ul style="list-style-type: none"> Information provided
	Mark Steyn	Chief Executive Officer			
December 2019	Rachael Fairlamb	Accountant	Rehoboth Christian College (Association for Christian Education Inc.)	Inform RCC of outcomes of discussions relating to the firebreak within the wetland area	<ul style="list-style-type: none"> Information provided, to be acted on by RCC
January 2020	Rachael Fairlamb	Accountant	Rehoboth Christian College (Association for Christian Education Inc.)	Evidence to support demonstration of compliance with Ministerial Statement 780 and proponent commitments for the project	<ul style="list-style-type: none"> Input into compliance report
	Mark Steyn	Chief Executive Officer			<ul style="list-style-type: none"> Input into compliance report and final sign off

6.0 Audit Tables

Two audit tables are applicable to the Rehoboth Christian College proposal, namely the Ministerial Statement Audit Table, and the audit table documenting compliance with proponent commitments. The school has commenced the process of implementing phase 2 of the development process that was the subject of the initial environmental approvals process that culminated in Ministerial Statement 780 being issued. The management plans have been updated, with some conditions again becoming active as a result of the proposed construction while others remain complete.

6.1 Ministerial Statement Audit Table

The Ministerial Statement Audit Table was prepared by the Office of the Environmental Protection Authority and outlines auditable Ministerial requirements and commitments that must be adhered to as part of the environmental approvals process. Each item has been assessed and an implementation status determined in accordance with guidance materials prepared by the OEPA (2014). Evidence of the status of each is also provided.

6.2 Environmental Management Plan Audit Table

Prior to any on-ground disturbances at Lot 107, a series of three environmental management plans (EMPs) were prepared in compliance with Ministerial Conditions 6.1, 8.1 and 9.1 of Ministerial Statement 780. These documents were prepared, approved and implemented, and explicitly stated they related Lot 107. However, as phase 2 of the development process occurred on a portion of Lot 107 and Lot 900, these documents were updated to include reference to Lot 900, as was the environmental management plan audit table. DWER have accepted addendums prepared by Natural Area in 2018 to the original management plans prepared by BlueSands Environmental in 2010, with evidence of signoff in the form of a letter dated 11 November 2019.



AUDIT TABLE

Statement Compliance Section

PROJECT: Extension of Rehoboth Christian School, 92 Kenwick Road, Kenwick, City of Gosnells
Statement 780

Note:

- Phases that apply in this table = **Pre-Construction, Construction, Operation, Decommissioning, Overall (several phases)**
- This audit table is a summary and timetable of conditions and commitments applying to this project. Refer to the Minister's Statement for full detail/precise wording of individual elements.
- Code prefixes: M = Minister's condition; P = Proponent's commitment; A = Audit specification; N = Procedure.
- Abbreviations: CAR = Compliance Assessment Report; CEO = Chief Executive Officer of OEPA; DEC = Department of Environment and Conservation; DER = Department of Environment Regulation; DIA = Department of Indigenous Affairs; DMP = Department of Mining and Petroleum; DoH = Department of Health; DoW = Department of Water, DPaW = Department of Parks and Wildlife, EPA = Environmental Protection Authority, Minister for Env = Minister for the Environment; OEPA = Office of the Environmental Protection Authority.
- Compliance Status: C = Compliant, CLD = Completed, NC = Non – compliant, NR = Not Required at this stage. Please note the terms NA = Not Audited and VR = Verification Required are only for OEPA use. IP = In Process may only be used by the proponent in circumstances outlined in Section 2.8 of the *Post Assessment Guideline for Preparing an Audit Table*.

Audit Code	Subject	Requirement	How	Evidence	Phase	Timeframe	Status
780:M1.1	Proposal Implementation	The proponent shall implement the proposal as assessed by the Environmental Protection Authority and described in schedule 1 of this statement subject to the conditions and procedures of this statement.	Stage 1 completed, Stage 2 in early stages of implementation	Compliance Reports (CR)	Overall	Phase 1 and 2 construction processes completed May 2019	CLD
780:M2.1	Proponent Nomination and Contact Details	The proponent for the time being nominated by the Minister for the Environment under sections 38(6) or 38(7) of the Environmental Protection Act 1986 is responsible for the implementation of the proposal.	No change	Website URL: http://www.rehoboth.wa.edu.au/ , accessed January 2019	Overall	Since April 2012	C
780:M2.2	Proponent Nomination and Contact Details	The proponent shall notify the Chief Executive Officer (CEO) of the Department of Environment and Conservation of any change of the name and address of the proponent for the serving of notices or other correspondence within 30 days of such change.	Not required	Letter to the CEO notifying of change of contact name and address.	Overall	Within 30 days of such change.	C
780:M3.1	Time Limit of Authorisation to commence	The authorisation to implement the proposal provided for in this statement shall lapse and be void within five years after the date of this statement if the proposal to which this statement relates is not substantially commenced.	Ministerial Statement 780 dated 19 Jan 2009	Stage 1 commenced 2011, completed 2015; Stage 2 (Lot 900 and part Lot 105) commenced	Overall	Initial implementation commenced by 19 January 2014.	CLD
780:M3.2	Time Limit of Authorisation to commence	The proponent shall provide the CEO of the Department of Environment and Conservation with written evidence which demonstrates that the proposal has substantially commenced on or before the expiration of five years from the date of this statement.	Completed	Letter to the CEO demonstrating that the proposal has substantially commenced.	Overall	Within one month of commencement.	CLD
780:M4.1	Compliance Reporting	The proponent shall submit to the CEO of the Department of Environment and Conservation environmental compliance reports annually	Compliance reporting, with 2020 compliance report prepared and submitted 20 January 2020.	Compliance report	Overall	Annually by 19 January each year unless required more frequently.	C

Audit Code	Subject	Requirement	How	Evidence	Phase	Timeframe	Status
		reporting on the previous twelve-month period, unless required by the CEO of the Department of Environment and Conservation to report more frequently.					
780:M4.2	Compliance Reporting	The environmental compliance reports shall address each element of an audit program approved by the CEO of the Department of Environment and Conservation and shall be prepared and submitted in a format acceptable to the CEO of the Department of Environment and Conservation	Audit template provided by OEPA, audited annually by Natural Area and included in Annual Compliance Report	Audit program and Compliance Report.	Overall	Annually	C
780:M4.3	Compliance Reporting	Submission of Environmental Compliance Reports.	The environmental compliance reports shall: 1.be endorsed by signature of the proponents Managing Director or a person, approved in writing by the CEO of the Department of Environment and Conservation, delegated to sign on behalf of the proponents Managing Director; 2.state whether the proponent has complied with each condition and procedure contained in this statement; 3.provide verifiable evidence of compliance with each condition and procedure contained in this statement; 4.state whether the proponent has complied with each key action contained in any environmental management plan or program required by this statement; 5.provide verifiable evidence of conformance with each key action contained in any environmental management plan or program required by this statement; 6.identify all non-compliances and non-conformances and describe the corrective and preventative actions taken in relation to each non-compliance or non-conformance; 7.review the effectiveness of all corrective and preventative actions taken; and 8.describe the state of implementation of the proposal.	Compliance Report	Overall	Annually	C
780:M4.4	Compliance Reporting	The proponent shall make the environmental compliance reports required by condition 4-1 publicly available in a manner approved by the CEO of the Department of Environment and Conservation	In accordance with Post Assessment Guideline for Making Information Publicly Available (PAG 4) (August 2012)	Available on college website: https://rehoboth.wa.edu.au/wp-content/uploads/2019/01/RCC-Annual-Compliance-Report-MS-780-January-2019-RFS.pdf	Overall	Within 2 weeks of submission to OEPA.	C

Audit Code	Subject	Requirement	How	Evidence	Phase	Timeframe	Status
780:M5.1	Performance Review and Reporting	The proponent shall submit to the CEO of the Department of Environment and Conservation Performance Review Reports at the conclusion of the first, third, fifth, seventh and ninth years after the start of implementation of the proposal and then, at such intervals as the CEO of the Department of Environment and Conservation may regard as reasonable.	The Performance Review Reports shall address: 1.the major environmental risks and impacts; the performance objectives, standards and criteria related to these; the success of risk reduction/impact mitigation measures and results of monitoring related to the management of the major risks and impacts; 2.the level of progress in the achievement of sound environmental performance, including industry benchmarking, and the use of best available technology where practicable; and 3.significant improvements gained in environmental management which could be applied to this and other similar projects.	Performance Review Reports, with fifth report submitted 20 January 2020. The 2020 report represents the fifth and final report as required by the original approval documented in MS 780. While it is recognised that an additional two years post-construction monitoring will be associated with the phase 2 construction activities, the nature of the project mean that an additional Performance Review Report beyond the current one is not warranted, with the EPA Services Unit requested to provide confirmation that the current report will be the final one required.	Overall	At the conclusion of the first, third, fifth, seventh and ninth years after the start of implementation of the proposal and then, at such intervals as the CEO of the DEC may regard as reasonable.	C
780:M6.1	Wetland and Vegetation Rehabilitation Plan	Prior to commencement of ground disturbance activities, the proponent shall prepare and submit a Wetland and Vegetation Rehabilitation Plan.	The plan shall meet the objectives set out in Condition 6-3 and the requirements of Condition 6-4 as determined by the CEO of the Department of Environment and Conservation.	Wetland and Vegetation Rehabilitation Plan for Lot 107 completed, letter from OEPA dated 25 October 2016.	Pre-construction	Prior to commencement of ground disturbance activities.	CLD
780:M6.2	Wetland and Vegetation Rehabilitation Plan	In preparing the Plan the proponent shall consult with the DEC and Department of Water (DoW).		Wetland and Vegetation Rehabilitation Plan for Lot 107 completed, letter from OEPA dated 25 October 2016.	Pre-construction	Prior to commencement of ground disturbance activities.	CLD
780:M6.3	Wetland and Vegetation Rehabilitation Plan	Prepare and submit a Wetland and Vegetation Rehabilitation Plan	The objectives of the Plan are to: 1.ensure full rehabilitation of not less than 0.18 hectares of Threatened Ecological Community claypan wetlands (refer to area delineated on Figure 2); 2.ensure partial rehabilitation of not less than 0.66 hectares of Threatened Ecological Community claypan wetlands (refer to area delineated on Figure 2) and; 3.ensure protection of endemic fauna.	Wetland and Vegetation Rehabilitation Plan for Lot 107 completed, letter from OEPA dated 25 October 2016.	Pre-construction	Prior to commencement of ground disturbance activities.	CLD
780:M6.4	Wetland and Vegetation Rehabilitation	Prepare and submit a Wetland and Vegetation Rehabilitation Plan	The Plan shall include management measures for: 1.identification and protection of endemic fauna; 2.removal of weeds; 3.installation of fencing prior to site works; 4.revegetation or rehabilitation with appropriate local species; and 5.implementation of the rehabilitation works by people with demonstrated expertise in rehabilitating wetlands	Wetland and Vegetation Rehabilitation Plan for Lot 107 completed, letter from OEPA dated 25 October 2016.	Pre-construction	Prior to commencement of ground disturbance activities.	CLD
780:M6.5	Wetland and Vegetation	The proponent shall implement the Wetland Management Plan required by condition 6-1.	Annual Compliance Reports to 2016	Wetland and Vegetation Rehabilitation Plan for Lot 107 completed, letter from OEPA dated 25 October 2016.	Overall	Post construction	CLD

Audit Code	Subject	Requirement	How	Evidence	Phase	Timeframe	Status
	Rehabilitation Plan						
780:M7.1	Conservation Covenant	Prior to commencement of ground disturbance activities, the proponent shall enter into a Conservation Covenant with a suitable covenant agency for the Conservation Area delineated in Figure 3 (attached) that will adequately protect the wetland and vegetation values, to the satisfaction of the CEO of the Department of Environment and Conservation.	The covenant shall: 1. ensure conservation of the Declared Rare Flora and Threatened Ecological Communities on site; 2. conserve the Conservation Category Wetland values and valuable linkages to other remnant vegetation and the Greater Brixton Street Wetlands; and 3. prohibit future development of the remaining undeveloped portion of Lot 107.	Conservation Covenant with a suitable covenant agency. Completed, OEPA letter dated 25 October 2016.	Pre-construction	Prior to commencement of ground disturbance activities.	CLD
780:M8.1	Wetland and Vegetation Management Plan	Prior to commencement of ground disturbance activities, the proponent shall prepare and submit a Wetland and Vegetation Management Plan.	The plan shall meet the objectives set out in Condition 8-3 and the requirements of Condition 8-4 as determined by the CEO of the Department of Environment and Conservation.	Wetland and Vegetation Management Plan for Lot 107 approved in 2010, addendum prepared 2018 to include reference to Lot 900, with approval provided by the EPA Services unit on 11 November 2019.	Pre-construction	Prior to commencement of ground disturbance activities.	C
780:M8.2	Wetland and Vegetation Management Plan	In preparing the Plan the proponent shall consult with the DEC and DoW.		Wetland and Vegetation Management Plan for Lot 107 approved in 2010, addendum prepared 2018 to include reference to Lot 900, with approval provided by the EPA Services unit on 11 November 2019.	Pre-construction	Prior to commencement of ground disturbance activities.	C
780:M8.3	Wetland and Vegetation Management Plan	Prepare and submit a Wetland and Vegetation Management Plan.	The objectives of the Plan are to ensure: 1. ongoing management of the Conservation Area, which includes the Declared Rare Flora, Threatened Ecological Communities and the Conservation Category Wetland (See Figure 3) and; 2. ongoing management of the developed site (post-construction).	Wetland and Vegetation Management Plan for Lot 107 approved in 2010, addendum prepared 2018 to include reference to Lot 900, with approval provided by the EPA Services unit on 11 November 2019.	Pre-construction	Prior to commencement of ground disturbance activities.	C
780:M8.4	Wetland and Vegetation Management Plan	Prepare and submit a Wetland and Vegetation Management Plan.	The Plan shall include management measures for: 1. identification and protection of endemic fauna; 2. provision and maintenance of ecological linkages; 3. provision of a densely vegetated strip of no less than 10 metres between the development boundary and the wetland; 4. maintenance of fencing; 5. ongoing weeding; 6. ongoing planting of appropriate local species; 7. maintenance of rehabilitation plantings to ensure successful establishment; 8. ongoing monitoring of wetland and vegetation condition; 9. maintenance of paths and access areas; 10. identification and protection of Aboriginal sites; and 11. fire protection	Wetland and Vegetation Management Plan for Lot 107 approved in 2010, addendum prepared 2018 to include reference to Lot 900, with approval provided by the EPA Services unit on 11 November 2019.	Pre-construction	Prior to commencement of ground disturbance activities.	C

Audit Code	Subject	Requirement	How	Evidence	Phase	Timeframe	Status
780:M8.5	Wetland and Vegetation Management Plan	The proponent shall implement the Wetland Management Plan required by condition 8-1.		<p>Wetland and Vegetation Management Plan for Lot 107 approved in 2010, addendum prepared 2018 to include reference to Lot 900, with approval provided by the EPA Services unit on 11 November 2019.</p> <p>During the final stages of the construction phase, an offcut from the turf being installed in the new play area during landscaping works was present in the wetland area and became established. This represents the introduction of a weed species into the wetland area due to construction activities. The grass was subsequently manually removed by Natural Area during their next visit to the site.</p>	Overall	Implementation will continue for Phase 2	NC
780:M9.1	Drainage and Nutrient Management Plan	Prior to commencement of ground disturbance activities, the proponent shall prepare and submit a Drainage and Nutrient Management Plan.	The plan shall meet the objectives set out in Condition 9-3 and the requirements of Condition 9-4 as determined by the CEO of the Department of Environment and Conservation.	Drainage and Nutrient Management Plan for Lot 107 approved in 2010, addendum prepared 2018 to include reference to Lot 900, with approval provided by the EPA Services unit on 11 November 2019.	Pre-construction	Implementation will continue for Phase 2	C
780:M9.2	Drainage and Nutrient Management Plan	In preparing the Plan the proponent shall consult with the DEC and DoW.		Drainage and Nutrient Management Plan for Lot 107 approved in 2010, addendum prepared 2018 to include reference to Lot 900, with approval provided by the EPA Services unit on 11 November 2019.	Pre-construction	Implementation will continue for Phase 2	C
780:M9.3	Drainage and Nutrient Management Plan	Prepare and submit a Drainage and Nutrient Management Plan.	<p>The objectives of the Plan are to:</p> <ol style="list-style-type: none"> 1. Protect the environmental values of the wetland, adjacent wetlands and waterways; 2. Ensure that the hydrological regime of the conserved wetland is maintained; 3. Prevent or minimise impacts of nutrients, sediments and other pollutants from stormwater on the water quality of the wetland; and 4. Avoid acid sulphate soil drainage impacts on the wetland. 	Drainage and Nutrient Management Plan for Lot 107 approved in 2010, addendum prepared 2018 to include reference to Lot 900, with approval provided by the EPA Services unit on 11 November 2019.	Pre-construction	Implementation will continue for Phase 2	C
780:M9.4	Drainage and Nutrient Management Plan	Prepare and submit a Drainage and Nutrient Management Plan.	<p>The Plan shall include management measures for:</p> <ol style="list-style-type: none"> 1. Acid sulphate soils, including an investigation that details the potential for acid sulphate soils relating to the installation of the perimeter drain and that the subsequent recommendations in the event that ASS be present; 2. Drainage of the site and its potential impacts on the wetland; 3. Stormwater management, including installation of detention basins to minimise impacts of nutrients, sediments and other pollutants on the water quality of the wetland; and 4. Nutrient and irrigation management 	Drainage and Nutrient Management Plan for Lot 107 approved in 2010, addendum prepared 2018 to include reference to Lot 900, with approval provided by the EPA Services unit on 11 November 2019.	Pre-construction	Implementation will continue for Phase 2	C

Audit Code	Subject	Requirement	How	Evidence	Phase	Timeframe	Status
780:M9.5	Drainage and Nutrient Management Plan	The proponent shall implement the Drainage and Nutrient Management Plan required by condition 9-1.		Drainage and Nutrient Management Plan for Lot 107 approved in 2010, addendum prepared 2018 to include reference to Lot 900, with approval provided by the EPA Services unit on 11 November 2019.	Overall	Implementation will continue for Phase 2	C

Management Plan Audit Table

Commitments Related to the Development Area

Phase: Prior to construction

No.	Management commitment	How	Evidence	Status	Date
PC1	Prior to site works commencing, the construction area and a 10m buffer will be fenced with temporary 2m high construction fencing prior to site works (in addition to the existing wetland fencing)	During pre-construction works	Limestone retaining wall constructed between development site and conservation area. Audits carried out on 24 October 2018, 27 March 2019 and 17 May 2019 confirmed no impacts to the wetland area.	CLD	19/01/2020
PC2	Prior to site works, sediment fencing will be erected along the northern boundary and the top half of the eastern boundary of the development area to prevent soil and sediment entering the wetland	During pre-construction works	As above	CLD	19/01/2020
PC2	Prior to construction, import clean fill to provide 0.5m clearance above AAMGL for development	During pre-construction works	Clean fill used, with confirmation of dieback free status provided by Glevan Consulting.	CLD	19/01/2020

Phase: During construction

No.	Management commitment	How	Evidence	Status	Date
DC1	During construction, install below ground drainage tanks and associated pipework with sufficient capacity to retain up to the 5 year ARI (as required by the City of Gosnells). Flows in excess of the 5 year ARI are permitted to discharge to the City of Gosnells piped stormwater network located along Brixton Street.	During construction works	Design approved by City of Gosnells during development approvals process; construction completed May 2019	CLD	19/01/2020
DC2	Any wash water resulting from construction activities (i.e. concreting, plastering, painting, gluing) shall be contained within a designated washdown area which will be lined with impervious material and covered to prevent stormwater entering the wash down area. The wash water will be regularly emptied and removed off site by a licensed contractor	Monitored by Site Supervisor and Natural Area	Visits to site by Natural Area since commencement of construction confirmed no requirement for wash water	CLD	19/01/2020
DC3	Waste will be stored in closed skip bins or wheelie bins to minimise wind-blown waste entering the wetland	Site planning and management, monitoring by Site Supervisor and Natural Area	Confirmed by Natural Area during various visits to the site	CLD	19/01/2020
DC4	Site personnel will be made aware of the location of waste bins and any special storage and disposal arrangements (e.g. wash down area)	Induction process and audits by Natural Area and/or Alita Constructions	Initial induction carried out by Natural Area on 27 August, with additional inductions carried out by Alita when required; evidence provided to Natural Area	CLD	19/01/2020
DC5	Where relevant, waste will be removed by a licensed contractor and will be disposed at an approved waste management facility	Waste skips removed weekly, or more frequently as required;	Confirmed by Natural Area during various visits to the site	CLD	19/01/2020

No.	Management commitment	How	Evidence	Status	Date
DC6	No hazardous substances or dangerous goods will be stored on site	Site planning and management; little or no requirement for dangerous goods during construction	Confirmed by Natural Area during various visits to the site	CLD	19/01/2020
DC7	Any material contaminated by spills i.e. fuel, oil, lubricants etc. will be stored in a sealed secure container and transported to an approved waste disposal site	Monitored by Site Supervisor and Natural Area	None recorded and no evidence during site visits by Natural Area	CLD	19/01/2020
DC8	Waste storage areas will be located at the southern end of the development area, away from the wetland and the stormwater system	Site planning and management	Confirmed by Natural Area during various visits to the site	CLD	19/01/2020
DC9	Temporary on-site toilets will be removed and replaced regularly	Ongoing construction management	Confirmed by Natural Area during various visits to the site	CLD	19/01/2020
DC10	No vehicles are to be serviced or cleaned onsite to prevent the discharge of pollutants to stormwater	Serviced by offsite providers at appropriate locations, monitored by Site Supervisor and Natural Area	Confirmed by Natural Area during various visits to the site	CLD	19/01/2020
DC11	Encourage construction vehicles to access the site via Kenwick Road and the southern end of Brixton Street, to minimise disturbance to fauna	To be confirmed prior to building commencing	Confirmed by Natural Area during various visits to the site	CLD	19/01/2020
DC12	Construction machinery shall remain on the fill area	Site planning and management	Confirmed by Natural Area during various visits to the site	CLD	19/01/2020
DC13	Flammable waste, including cigarette butts, shall be properly extinguished prior to disposal in waste bins	No smoking allowed on site; checked by Site Supervisor and Natural Area	Confirmed by Natural Area during various visits to the site	CLD	19/01/2020
DC14	Maintain construction fencing throughout construction phase to prevent unlawful access and activities in construction area (i.e. lighting waste bins)	Site planning and management	Confirmed by Natural Area during various visits to the site	CLD	19/01/2020
DC15	Place temporary demountable buildings for on-site personnel along the Brixton Street edge of the development area to screen construction activities from nearby residents	Site planning and management	Site in locations outside nominated building envelope	CLD	19/01/2020
DC16	Sediment fences will be regularly inspected, particularly during and after heavy rainfall to ensure they are fully functional	Site planning and management	Confirmed by Natural Area during various visits to the site	CLD	19/01/2020
DC17	Undertake a water monitoring program for the site, including groundwater levels and quality and surface water quantity and quality and surface water levels in wetland. This will require the establishment of a staff gauge in the wetland area to measure surface water levels.	Implementation of surface and groundwater monitoring program, as outlined in the Drainage and Nutrient Management Plan and Wetland and Vegetation Management Plan originally prepared by BlueSands Environmental in 2010 and updated by Natural Area 2018	Groundwater quality monitoring continued in 2018; certificates of analysis provided in Appendix 3. Staff gauge installed 18 September 2013, since damaged and removed. The shallow nature of the wetland means its reinstallation is not warranted.	CLD	19/01/2020
DC18	The boundary of the fill will be regularly inspected by the site manager and periodically by an environmental consultant, particularly during and after heavy rainfall to ensure erosion does not occur	Inspections regularly carried out by Site Supervisor and periodically by Natural Area	Confirmed by Natural Area during various visits to the site	CLD	19/01/2020

No.	Management commitment	How	Evidence	Status	Date
DC19	Regularly inspect the washdown area and ensure it is regularly emptied Environmental consultant to undertake random site inspections to ensure the management commitments are being adhered to and include findings in the performance report	Inspections regularly carried out by Site Supervisor and periodically by Natural Area	Confirmed by Natural Area during various visits to the site	CLD	19/01/2020
DC20	Site manager to regularly inspect the washdown area and ensure it is regularly emptied	Inspections regularly carried out by Site Supervisor and periodically by Natural Area	Confirmed by Natural Area during various visits to the site	CLD	19/01/2020
DC21	Site manager to ensure that the site is regularly cleared of any litter (at least once per week or more often if conditions require)	Inspections regularly carried out by Site Supervisor and periodically by Natural Area	Confirmed by Natural Area during various visits to the site	CLD	19/01/2020
DC22	Site manager to regularly inspect waste storage areas (>3 times/week during construction period) to ensure proper disposal of waste products	Inspections regularly carried out by Site Supervisor and periodically by Natural Area	Confirmed by Natural Area during various visits to the site	CLD	19/01/2020
DC23	Site manager to regularly inspect waste storage areas (>3 times/week during construction period) to ensure bins are regularly emptied and no overflow occurs	Inspections regularly carried out by Site Supervisor and periodically by Natural Area	Confirmed by Natural Area during various visits to the site	CLD	19/01/2020
DC24	Environmental consultant to undertake random site inspections to ensure the management commitments are being adhered to and include findings in the performance report	Random inspections carried out by Natural Area	Confirmed by Natural Area during various visits to the site	CLD	19/01/2020
DC25	Establish a log of any complaints related to construction activities received by Rehoboth Christian School during the construction phase	Electronic complaints register set up in main office, includes details of date, complainant, contact information, details of the complaint, and response	Complaints register in place, with no complaints recorded	CLD	19/01/2020

Phase: Post construction

No.	Management commitment	How	Evidence	Status	Date
PoC1	Provide a densely vegetated strip of local native species along the north western boundary of the development	Mulching and on-ground planting activities	Site visits by Natural Area Consulting at various times, plants growing well without being too dense and posing a fire hazard	CLD	12/12/11
PoC2	Plants and mulch used in landscaping shall be sourced from a NIASA accredited nursery. When ordering plants and mulch the manager/staff from the supplying nursery should be made aware that the plants and mulch must be disease free	Materials sourced from Benara Nursery, which is NIASA accredited	Communication with BlueSands Environmental, Benara website: http://www.benaranurseries.com/showpage.asp?ButtonID=1 , accessed 03 May 2012	CLD	03/05/12
PoC3	Only slow release fertilisers will be applied to the oval and any new grassed areas.	2019 results provided	Communication with Rehoboth Christian College, Reports from Nuturf and Westgate Grass Solutions provided in Appendix 2.	C	19/01/2020
PoC4	Application will only occur at peak growth times of the year, namely spring or early summer.				
PoC5	Fertiliser application will be subject to soil analysis, to avoid excessive fertiliser application and subsequent leaching into groundwater or runoff into the wetland.				
PoC6	Local native shrubs will be used in landscaping and the densely vegetated strip that shall be planted along the northern boundary of the buildings.	Mulching and on-ground planting activities	Site visit Natural Area Consulting at various times, plants growing well. Landscaping activities carried out during phase 2 works completed using local native species, with tubestock growing well.	CLD	19/01/2020

No.	Management commitment	How	Evidence	Status	Date
PoC7	Annually monitor the survival rate of plants within the vegetated strip for three years post-development	As per monitoring timetable for the conservation area, as determined by the on-ground works contractor, Natural Area	Site visits by Natural Area Consulting at various time confirmed that plants were thriving with no deaths. Monitoring has now occurred for three years post development and is no longer required.	CLD	19/01/15

Commitments Related to the Conservation Area

Phase: During construction

No.	Monitoring commitment	How	Evidence	Status	Date
DC26	Undertake a water monitoring program for the site, including groundwater levels and quality and surface water quantity and quality and surface water levels in wetland This will require the establishment of a staff gauge in the wetland area to measure surface water levels.	Implementation of surface and groundwater monitoring program, as outlined in the Drainage and Nutrient Management Plan and Wetland and Vegetation Management Plan originally prepared by BlueSands Environmental in 2010 and updated by Natural Area 2018	Groundwater quality monitoring continued in 2019; certificates of analysis provided in Appendix 3. Staff gauge installed 18 September 2013, since damaged and removed. The shallow nature of the wetland means its reinstallation is not warranted.	C	19/01/2020

Phase: Post construction

No.	Management commitment	How	Evidence	Status	Date
PoC8	Rehabilitate degraded areas of the conservation area, as per the Wetland and Vegetation Rehabilitation Plan (including weed removal, revegetation and maintenance)	On-ground works complete 2013	Natural Area Consulting Management Services Annual Report – January 2015	CLD	19/01/15
PoC9	Control weeds within the conservation area, paying particular attention to the boundary to ensure no new weed species are introduced to the area	On-ground works complete 2013	Natural Area Consulting Management Services Annual Report – January 2015	CLD	19/01/15
PoC10	Prevent uncontrolled access of students and other pedestrians entering conservation area by maintaining fencing and keeping access points closed	Retain or install fencing between the main school grounds and the conservation category wetland	Ongoing visits by Natural Area	CLD	19/01/15
PoC11	Prevent students accessing the area during the months of June to September to prevent any disruption to the breeding season of the Quenda (<i>Isoodon obesulus fusciventer</i>)	Retain or install fencing between the main school grounds and the conservation category wetland; No student field and/or project activities to be undertaken during this period	Register of student site visits indicates that visits are not permitted during June – September	C	19/01/2020
PoC12	Remove any waste dumped in the conservation area as soon as practical, in order to discourage further dumping and to prevent any impacts to flora and fauna	Inspections for the presence of rubbish occur at least each term, any reported rubbish is removed as required	Various site visits by Natural Area	C	19/01/2020
PoC13	Manage exotic (introduced) fauna and flora on school grounds and in the conservation area by discouraging pets to be brought into the school grounds and by informing adjacent residents of the need to keep pets out of the conservation area (either by letter drop or a notice in the local paper)	No pets are allowed at the school at any time	Communication with Rehoboth Christian College personnel; school grounds are fenced preventing uncontrolled access to the wetland area, fence continues to be in good repair	C	19/01/2020

No.	Management commitment	How	Evidence	Status	Date
PoC14	Ensure that exterior building lighting is minimised, particularly on the eastern and northern edges of the new classroom block, to minimise any light disruptions to fauna	Specification during building process, the number of lights in the vicinity of the wetland has been kept to a minimum, as has the illumination level of the lights	Communication with Alita Constructions, included in design requirements, construction in progress	CLD	19/01/2020
PoC15	Annually maintain existing fire breaks and access points	As per City of Gosnells requirements	Bushfire management plan updated 2017, discussions with City of Gosnells, RCC and Natural Area December 2019 to agree alternative firebreak requirements.	C	19/01/2020
PoC16	Liaise with Gosnells Volunteer Fire Brigade to ensure they are familiar with access points to the management area	RCC has developed comprehensive bushfire response procedures, a copy of which has been provided to relevant external organisations, including the fire brigade	Bushfire management plan updated 2017, discussions with City of Gosnells, RCC and Natural Area December 2019 to agree alternative firebreak requirements included access considerations.	C	19/01/2020
PoC17	Report any suspicious behaviour of people in the conservation area to the relevant authorities	None has occurred at present; policy developed, register set up in main office	Communication with Rehoboth Christian College personnel, details included in RCC Critical Incident Policy	C	19/01/2020
PoC18	Maintain existing fencing to prevent unregulated access to the conservation area	New fencing installed between school and wetland (approx. Jan 2012), existing fencing around wetland will be maintained; fencing will be checked a minimum of once each term, and on an ad hoc basis during class site visits	Various site visits by Natural Area	C	19/01/2020
PoC19	Establish a register for class visits to the wetland area. The register will be included in the annual compliance report, detailing the date of the visit, supervising teacher, number of students and location of visit (i.e. firebreaks, listening posts or transect monitoring)	Register set up and available for inspection at Senior College administration area	Continued communication with Rehoboth Christian School personnel	C	19/01/2020
PoC20	Undertake a water monitoring program for the site, including groundwater levels and quality and surface water quantity and quality and surface water levels in wetland. This will require the establishment of a staff gauge in the wetland area to measure surface water levels.	Implementation of surface and groundwater monitoring program, as outlined in the Drainage and Nutrient Management Plan and Wetland and Vegetation Management Plan originally prepared by BlueSands Environmental in 2010 and updated by Natural Area 2018	Groundwater quality monitoring continued in 2019; certificates of analysis provided in Appendix 3. Staff gauge installed 18 September 2013, since damaged and removed. The shallow nature of the wetland means its reinstallation is not warranted.	C	19/01/2020
PoC21	Establish three transects in the rehabilitation areas to determine the success of rehabilitation activities (for sampling details, see the Wetland and Vegetation Rehabilitation Plan)	Documented by on-ground works contractor (Natural Area Management and Services)	Natural Area 2015 Annual Report	CLD	19/01/15

No.	Management commitment	How	Evidence	Status	Date
PoC22	Monitor populations of Declared Rare Flora <i>Lepidosperma rostratum</i> (for sampling details, see the Wetland and Vegetation Rehabilitation Plan)	Documented by on-ground works contractor	Natural Area 2015 Annual Report	CLD	19/01/15
PoC23	Conduct a flora survey every five years to measure the cover and composition of native taxa, vegetation condition, priority flora, presence of disease and cover and composition of weeds in the conservation area (for sampling details, see the Wetland and Vegetation Rehabilitation Plan)	To be carried out by appropriately experienced personnel, outcomes compared to the baseline and other monitoring data, and documented	Natural Area 2015 Annual Report	CLD	19/01/15
PoC24	Monitor indicator bird species that are susceptible to cat predation	Will be documented by on-ground works contractor in annual report, to be carried out in conjunction with senior school students	Natural Area 2016 Performance Review Report	CLD	19/01/15
PoC25	Monitor endemic fauna, including Quenda and frogs as per the monitoring schedule outlined in the <i>Wetland and Vegetation Rehabilitation Plan</i>	Will be documented by on-ground works contractor in annual report, to be carried out in conjunction with senior school students	Natural Area 2016 Performance Review Report	CLD	19/01/15
PoC26	Publicise the results of the fauna monitoring program undertaken by students in the school newsletter and submit the article to the local newspaper	Results included in NAMS 2013 Annual Works Report	Natural Area 2016 Performance Review Report	CLD	19/01/15
PoC27	Monitor the occurrence of fire within the conservation area	None to date, fire assessment at the school has been prepared	Aerial imagery available from NearMap and/or Landgate, communication with Rehoboth personnel	C	19/01/2020
PoC28	Periodically inspect perimeter fencing every 2 to 3 months to ensure it is in good condition	Regular inspections of perimeter fencing for general condition will occur once per term as a minimum	New fence installed approx. Jan 2012, continues to be in good repair	C	19/01/2020

7.0 Glossary

ANZECC	Australian and New Zealand Environment and Conservation Council
ARI	Assessment on Referral Information; assessment level under Part IV of the <i>Environmental Protection Act 1986</i> (WA) set by the Environmental Protection Authority (EPA) whereby the assessment is carried out on the basis of information submitted by the proponent
ARMCANZ	Agriculture and Resource Management Council of Australia and New Zealand
CCW	Conservation category wetland as defined by the wetlands branch of the Department of Parks and Wildlife (DPaW) and listed on the Geomorphic Wetlands Swan Coastal Plain Dataset
DBCA	Department of Biodiversity, Conservation and Attractions
DEC	Department of Environment and Conservation; then DER and DPaW, now DWER and DBCA
DER	Department of Environment Regulation, now DWER
DPaW	Department of Parks and Wildlife, now DBCA
DWER	Department of Water and Environmental Regulation
EMP	Environmental management plan, prepared as an environmental approval condition
EPA	Environmental Protection Authority (Western Australia)
OEPA	Office of the Environmental Protection Authority
TEC	Threatened ecological community declared or listed under the <i>Biodiversity Conservation Act 2016</i> (WA) (and/or the <i>Environmental Protection and Biodiversity Conservation Act 1999</i> (Cwlth))

8.0 References

Australian and New Zealand Environment Conservation Council (ANZECC) and Agriculture and Resource Management Council of Australia and New Zealand (ARMCANZ), (2000), *Australian and New Zealand Guidelines for Fresh and Marine Water Quality*, available World Wide Web URL:

<https://www.waterquality.gov.au/guidelines/anz-fresh-marine>, accessed January 2020.

Environmental Protection Authority, (2007), *Bulletin 1249, Report and Recommendations: Extension of Rehoboth Christian School, 92 Kenwick Road, Kenwick*, available World Wide Web URL:

http://www.epa.wa.gov.au/sites/default/files/EPA_Report/2460_Bull_1249_Rehoboth.pdf, accessed January 2020.

Fairlamb, R., (2019 and 2020), Accountant, Rehoboth Christian College, Personal Communication.

Natural Area Consulting Management Services, (2019), *Flora Monitoring and Weed Mapping Report – Rehoboth Conservation Area*, unpublished report prepared for Rehoboth Christian College.

Office of Environmental Protection Authority, (2009), *Statement that a Proposal May be Implemented (Pursuant to the Provisions of the Environmental Protection Act 1986) – Extension of Rehoboth Christian School 92 Kenwick Road, Kenwick, City of Gosnells*, available World Wide Web URL:

<http://www.epa.wa.gov.au/sites/default/files/1MINSTAT/00780.pdf>, accessed January 2020.

Office of Environmental Protection Authority, (2009), *Statement that a Proposal May be Implemented (Pursuant to the Provisions of the Environmental Protection Act 1986) – Extension of Rehoboth Christian School 92 Kenwick Road, Kenwick, City of Gosnells*, available World Wide Web URL:

http://www.epa.wa.gov.au/sites/default/files/Ministerial_Statement/00780.pdf, accessed January 2020.

Steyn, M., (2019 and 2020), Chief Executive Officer, Association for Christian Education Inc. (Rehoboth Christian College), Personal Communication.

Biodiversity Conservation Act 2016 (WA)

Appendix 1: Statement of Compliance

1. Proposal and Proponent Details

Proposal Title		Extension of Rehoboth Christian School 92 Kenwick Road, Kenwick, City of Gosnells
Statement Number		780
Proponent Name		Association for Christian Education Inc.
Proponent's Australian Company Number (where relevant)		N/A

2. Statement of Compliance Details


Reporting Period	20/01/18 to 19/01/19
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Implementation phase(s) during reporting period (please tick ✓ relevant phase(s))					
Pre-construction	✓	Construction	✓	Operation	
				Decommissioning	

Audit Table for Statement addressed in this Statement of Compliance is provided at Attachment:	Included in ACR
An audit table for the Statement addressed in this Statement of Compliance must be provided as Attachment 2 to this Statement of Compliance. The audit table must be prepared and maintained in accordance with the Department of Water and Environmental Regulation (DWER) <i>Post Assessment Guideline for Preparing an Audit Table</i> , as amended from time to time. The 'Status Column' of the audit table must accurately describe the compliance status of each implementation condition and/or procedure for the reporting period of this Statement of Compliance. The terms that may be used by the proponent in the 'Status Column' of the audit table are limited to the Compliance Status Terms listed and defined in Table 1 of Attachment 1.	

Were all implementation conditions and/or procedures of the Statement complied with within the reporting period? (please tick ✓ the appropriate box)			
No (please proceed to Section 3)	✓	Yes (please proceed to Section 4)	

Each page (including Attachment 2) must be initialled by the person who signs Section 4 of this Statement of Compliance.

INITIALS: 

3. Details of Non-compliance(s) and/or Potential Non-compliance(s)

The information required Section 3 must be provided for each non-compliance or potential non-compliance identified during the reporting period covered by this Statement of Compliance.

Non-compliance/potential non-compliance 0-1

Which implementation condition or procedure was non-compliant or potentially non-compliant?	
780:M8.5	
Was the implementation condition or procedure non-compliant or potentially non-compliant?	
Yes	
On what date(s) did the non-compliance or potential non-compliance occur (if applicable)?	
The presence of the turf offcut was noted by Natural Area personnel on 29 August during a vegetation assessment of the wetland area.	
Was this non-compliance or potential non-compliance reported to the Chief Executive Officer, DWER?	
<input type="checkbox"/> Yes <input type="checkbox"/> Reported to DWER verbally Date _____ <input type="checkbox"/> Reported to DWER in writing Date _____	<input checked="" type="checkbox"/> No
What are the details of the non-compliance or potential non-compliance and where relevant, the extent of and impacts associated with the non-compliance or potential non-compliance?	
The presence of the turf offcut represents the introduction of a weed species into the wetland area as a result of construction activities	
What is the precise location where the non-compliance or potential non-compliance occurred (if applicable)? (please provide this information as a map or GIS co-ordinates)	
Refer to Figure 3 within the ACR	
What was the cause(s) of the non-compliance or potential non-compliance?	
The cause was the dropping or other form of inadvertent disposal of the turf offcut, allowing it to spread in favourable growing conditions between visits by Natural Area	
What remedial and/or corrective action(s), if any, were taken or are proposed to be taken in response to the non-compliance or potential non-compliance?	
The turf that became established was manually removed by Natural Area personnel during a subsequent visit to the site (Figure 2)	
What measures, if any, were in place to prevent the non-compliance or potential non-compliance before it occurred? What, if any, amendments have been made to those measures to prevent re-occurrence?	
Natural Area undertook an initial environmental induction for building personnel and preliminary subcontractors in August 2018 ahead of construction, with future inductions carried out by Alita Constructions when additional personnel commenced at the site. As the incident occurred in the final stages of the construction process and building was completed by the time of the vegetation assessment by Natural Area, no changes to the induction measures are warranted.	

Each page (including Attachment 2) must be initialled by the person who signs Section 4 of this Statement of Compliance.

INITIALS: 

Please provide information/documentation collected and recorded in relation to this implementation condition or procedure:

- in the reporting period addressed in this Statement of Compliance; and
- as outlined in the approved Compliance Assessment Plan for the Statement addressed in this Statement of Compliance.

(the above information may be provided as an attachment to this Statement of Compliance)

For additional non-compliance or potential non-compliance, please duplicate this page as required.

Each page (including Attachment 2) must be initialled by the person who signs Section 4 of this Statement of Compliance.

INITIALS:

Handwritten initials, possibly 'AS', written in black ink.

4. Proponent Declaration

I, MARK CHRISTOPHER STEYN - CEO, (full name and position title)

declare that I am authorised on behalf of the Association for Christian Education.....

(being the person responsible for the proposal) to submit this form and that the information contained in this form is true and not misleading.

Signature: 

Date: 17 January 2019

Please note that:

- it is an offence under section 112 of the *Environmental Protection Act 1986* for a person to give or cause to be given information that to his knowledge is false or misleading in a material particular; and
- the Chief Executive Officer of the DWER has powers under section 47(2) of the *Environmental Protection Act 1986* to require reports and information about implementation of the proposal to which the statement relates and compliance with the implementation conditions.

5. Submission of Statement of Compliance

One hard copy and one electronic copy (preferably PDF on CD or thumb drive) of the Statement of Compliance are required to be submitted to the Chief Executive Officer, DWER, marked to the attention of Manager, Compliance (Ministerial Statements).

Please note, the DWER has adopted a procedure of providing written acknowledgment of receipt of all Statements of Compliance submitted by the proponent, however, the DWER does not approve Statements of Compliance.

6. Contact Information

Queries regarding Statements of Compliance, or other issues of compliance relevant to a Statement may be directed to Compliance (Ministerial Statements), DWER:

Manager, Compliance (Ministerial Statements)

Department of Water and Environmental Regulation

Postal Address: Locked Bag 10
EAST PERTH WA 6892

Phone: (08) 6364 700

Email: compliance@dwer.wa.gov.au

7. Post Assessment Guidelines and Forms

Post assessment documents can be found at www.epa.wa.gov.au


Each page (including Attachment 2) must be initialled by the person who signs Section 4 of this Statement of Compliance.

INITIALS: 

ATTACHMENT 1

Table 1 Compliance Status Terms

Compliance Status Terms	Abbrev	Definition	Notes
Compliant	C	Implementation of the proposal has been carried out in accordance with the requirements of the audit element.	This term applies to audit elements with: <ul style="list-style-type: none"> ongoing requirements that have been met during the reporting period; and requirements with a finite period of application that have been met during the reporting period, but whose status has not yet been classified as 'completed'.
Completed	CLD	A requirement with a finite period of application has been satisfactorily completed.	This term may only be used where: <ul style="list-style-type: none"> audit elements have a finite period of application (e.g. construction activities, development of a document); the action has been satisfactorily completed; and the DWER has provided written acceptance of 'completed' status for the audit element.
Not required at this stage	NR	The requirements of the audit element were not triggered during the reporting period.	This should be consistent with the 'Phase' column of the audit table.
Potentially Non-compliant	PNC	Possible or likely failure to meet the requirements of the audit element.	This term may apply where during the reporting period the proponent has identified a potential non-compliance and has not yet finalized its investigations to determine whether non-compliance has occurred.
Non-compliant	NC	Implementation of the proposal has not been carried out in accordance with the requirements of the audit element.	This term applies where the requirements of the audit element are not "complete" have not been met during the reporting period.
In Process	IP	Where an audit element requires a management or monitoring plan be submitted to the DWER or another government agency for approval, that submission has been made and no further information or changes have been requested by the DWER or the other government agency and assessment by the DWER or other government agency for approval is still pending.	<p>The term 'In Process' may not be used for any purpose other than that stated in the Definition Column.</p> <p>The term 'In Process' may not be used to describe the compliance status of an implementation condition and/or procedure that requires implementation throughout the life of the project (e.g. implementation of a management plan).</p>

Each page (including Attachment 2) must be initialled by the person who signs Section 4 of this Statement of Compliance. INITIALS: 

Appendix 2: ALS Environmental Groundwater Certificate of Analysis

CERTIFICATE OF ANALYSIS

Work Order : **EP1902370**
Client : **NATURAL AREA CONSULTING**
Contact : SUE BRAND
Address : 99C LORD STREET
 WHITEMAN WESTERN AUSTRALIA 6068
Telephone : 08 9209 2767
Project : Rehoboth Christian College
Order number : -
C-O-C number : 655
Sampler : SHARON HYNES, SUE BRAND
Site : Rehoboth Christian College-1
Quote number : EP/740/18
No. of samples received : 2
No. of samples analysed : 2

Page : 1 of 3
Laboratory : Environmental Division Perth
Contact : Customer Services EP
Address : 26 Rigali Way Wangara WA Australia 6065

Telephone : +61-8-9406 1301
Date Samples Received : 14-Mar-2019 13:40
Date Analysis Commenced : 14-Mar-2019
Issue Date : 21-Mar-2019 16:45



This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QA/QC Compliance Assessment to assist with Quality Review and Sample Receipt Notification.

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	Position	Accreditation Category
Canhuang Ke	Inorganics Supervisor	Perth Inorganics, Wangara, WA
Chris Lemaitre	Laboratory Manager (Perth)	Perth Inorganics, Wangara, WA
Indra Astuty	Instrument Chemist	Perth Inorganics, Wangara, WA



General Comments

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

When sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes.

Where a result is required to meet compliance limits the associated uncertainty must be considered. Refer to the ALS Contact for details.

Key : CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
^ = This result is computed from individual analyte detections at or above the level of reporting
ø = ALS is not NATA accredited for these tests.
~ = Indicates an estimated value.



Analytical Results

Sub-Matrix: **GROUNDWATER**
 (Matrix: **WATER**)

Client sample ID

				MB-1	MB-3	----	----	----
Client sampling date / time				14-Mar-2019 10:19	14-Mar-2019 09:55	----	----	----
Compound	CAS Number	LOR	Unit	EP1902370-001	EP1902370-002	-----	-----	-----
				Result	Result	----	----	----
EA005P: pH by PC Titrator								
pH Value	----	0.01	pH Unit	7.77	6.98	----	----	----
EA010P: Conductivity by PC Titrator								
Electrical Conductivity @ 25°C	----	1	µS/cm	6710	4810	----	----	----
EA025: Total Suspended Solids dried at 104 ± 2°C								
Suspended Solids (SS)	----	5	mg/L	120	18300	----	----	----
ED038A: Acidity								
Acidity as CaCO ₃	----	1	mg/L	40	72	----	----	----
EG020F: Dissolved Metals by ICP-MS								
Aluminium	7429-90-5	0.01	mg/L	<0.01	<0.01	----	----	----
Arsenic	7440-38-2	0.001	mg/L	0.001	<0.001	----	----	----
Iron	7439-89-6	0.05	mg/L	0.33	0.05	----	----	----
EK055G: Ammonia as N by Discrete Analyser								
Ammonia as N	7664-41-7	0.01	mg/L	0.03	0.03	----	----	----
EK057G: Nitrite as N by Discrete Analyser								
Nitrite as N	14797-65-0	0.01	mg/L	<0.01	<0.01	----	----	----
EK058G: Nitrate as N by Discrete Analyser								
Nitrate as N	14797-55-8	0.01	mg/L	0.02	<0.01	----	----	----
EK059G: Nitrite plus Nitrate as N (NO_x) by Discrete Analyser								
Nitrite + Nitrate as N	----	0.01	mg/L	0.02	<0.01	----	----	----
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser								
Total Kjeldahl Nitrogen as N	----	0.1	mg/L	0.7	1.2	----	----	----
EK062G: Total Nitrogen as N (TKN + NO_x) by Discrete Analyser								
^ Total Nitrogen as N	----	0.1	mg/L	0.7	1.2	----	----	----
EK067G: Total Phosphorus as P by Discrete Analyser								
Total Phosphorus as P	----	0.01	mg/L	0.03	1.67	----	----	----

CERTIFICATE OF ANALYSIS

Work Order : **EP1907899**
Client : **NATURAL AREA CONSULTING**
Contact : **SUE BRAND**
Address : **99C LORD STREET**
WHITE MAN WESTERN AUSTRALIA 6068
Telephone : **08 9209 2767**
Project : **Rehoboth Christian College**
Order number :
C-O-C number :
Sampler : **Sharon Hynes**
Site :
Quote number : **EP/740/18**
No. of samples received : **3**
No. of samples analysed : **3**

Page : 1 of 3
Laboratory : Environmental Division Perth
Contact : Customer Services EP
Address : 26 Rigali Way Wangara WA Australia 6065
Telephone : +61-8-9406 1301
Date Samples Received : 08-Aug-2019 13:40
Date Analysis Commenced : 08-Aug-2019
Issue Date : 14-Aug-2019 17:30



This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QA/QC Compliance Assessment to assist with Quality Review and Sample Receipt Notification.

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	Position	Accreditation Category
Canhuang Ke	Inorganics Supervisor	Perth Inorganics, Wangara, WA



General Comments

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

When sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes.

Where a result is required to meet compliance limits the associated uncertainty must be considered. Refer to the ALS Contact for details.

Key : CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.

LOR = Limit of reporting

^ = This result is computed from individual analyte detections at or above the level of reporting

ø = ALS is not NATA accredited for these tests.

~ = Indicates an estimated value.

- EG020F: Positive results for arsenic, iron for sample EP1907899-003 have been confirmed by re-analysis.



Analytical Results

Sub-Matrix: **GROUNDWATER**
 (Matrix: **WATER**)

Client sample ID

				MB1	MB2	MB3	----	----
Client sampling date / time				08-Aug-2019 09:20	08-Aug-2019 09:50	08-Aug-2019 10:15	----	----
Compound	CAS Number	LOR	Unit	EP1907899-001	EP1907899-002	EP1907899-003	-----	-----
				Result	Result	Result	----	----
EA005P: pH by PC Titrator								
pH Value	----	0.01	pH Unit	7.86	7.51	7.58	----	----
EA010P: Conductivity by PC Titrator								
Electrical Conductivity @ 25°C	----	1	µS/cm	1710	4850	8080	----	----
EA025: Total Suspended Solids dried at 104 ± 2°C								
Suspended Solids (SS)	----	5	mg/L	14	8	52	----	----
ED038A: Acidity								
Acidity as CaCO ₃	----	1	mg/L	31	33	48	----	----
EG020F: Dissolved Metals by ICP-MS								
Aluminium	7429-90-5	0.01	mg/L	<0.01	<0.01	<0.01	----	----
Arsenic	7440-38-2	0.001	mg/L	<0.001	<0.001	0.002	----	----
Iron	7439-89-6	0.05	mg/L	<0.05	<0.05	3.40	----	----
EK055G: Ammonia as N by Discrete Analyser								
Ammonia as N	7664-41-7	0.01	mg/L	0.14	0.05	<0.01	----	----
EK057G: Nitrite as N by Discrete Analyser								
Nitrite as N	14797-65-0	0.01	mg/L	<0.01	<0.01	<0.01	----	----
EK058G: Nitrate as N by Discrete Analyser								
Nitrate as N	14797-55-8	0.01	mg/L	0.01	0.06	0.01	----	----
EK059G: Nitrite plus Nitrate as N (NO_x) by Discrete Analyser								
Nitrite + Nitrate as N	----	0.01	mg/L	0.01	0.06	0.01	----	----
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser								
Total Kjeldahl Nitrogen as N	----	0.1	mg/L	1.2	0.2	1.4	----	----
EK062G: Total Nitrogen as N (TKN + NO_x) by Discrete Analyser								
^ Total Nitrogen as N	----	0.1	mg/L	1.2	0.3	1.4	----	----
EK067G: Total Phosphorus as P by Discrete Analyser								
Total Phosphorus as P	----	0.01	mg/L	0.01	0.01	0.02	----	----

CERTIFICATE OF ANALYSIS

Work Order : **EP1913542**
Client : **NATURAL AREA CONSULTING**
Contact : **SUE BRAND**
Address : **99C LORD STREET**
WHITEMAN WESTERN AUSTRALIA 6068
Telephone : **08 9209 2767**
Project : **Rehoboth Christian College**
Order number : **----**
C-O-C number : **----**
Sampler : **Sharon Hynes**
Site : **Rehoboth Christian College**
Quote number : **EP/889/19**
No. of samples received : **3**
No. of samples analysed : **3**

Page : 1 of 3
Laboratory : Environmental Division Perth
Contact : Customer Services EP
Address : 26 Rigali Way Wangara WA Australia 6065
Telephone : +61-8-9406 1301
Date Samples Received : 18-Dec-2019 15:40
Date Analysis Commenced : 18-Dec-2019
Issue Date : 31-Dec-2019 16:54



This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QA/QC Compliance Assessment to assist with Quality Review and Sample Receipt Notification.

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	Position	Accreditation Category
Canhuang Ke	Inorganics Supervisor	Perth Inorganics, Wangara, WA
Daniel Fisher	Inorganics Analyst	Perth Inorganics, Wangara, WA



General Comments

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

When sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes.

Where a result is required to meet compliance limits the associated uncertainty must be considered. Refer to the ALS Contact for details.

Key : CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
^ = This result is computed from individual analyte detections at or above the level of reporting
ø = ALS is not NATA accredited for these tests.
~ = Indicates an estimated value.



Analytical Results

Sub-Matrix: GROUNDWATER
 (Matrix: WATER)

Client sample ID

				MB1	MB2	MB3	----	----
Client sampling date / time				18-Dec-2019 09:30	18-Dec-2019 09:45	18-Dec-2019 09:55	----	----
Compound	CAS Number	LOR	Unit	EP1913542-001	EP1913542-002	EP1913542-003	-----	-----
				Result	Result	Result	----	----
EA005P: pH by PC Titrator								
pH Value	----	0.01	pH Unit	7.90	7.61	7.43	----	----
EA010P: Conductivity by PC Titrator								
Electrical Conductivity @ 25°C	----	1	µS/cm	2710	5380	8230	----	----
EA025: Total Suspended Solids dried at 104 ± 2°C								
Suspended Solids (SS)	----	5	mg/L	6	36	29	----	----
ED038A: Acidity								
Acidity as CaCO ₃	----	1	mg/L	10	12	21	----	----
EG020F: Dissolved Metals by ICP-MS								
Aluminium	7429-90-5	0.01	mg/L	<0.01	<0.01	<0.01	----	----
Arsenic	7440-38-2	0.001	mg/L	0.002	0.001	0.003	----	----
Iron	7439-89-6	0.05	mg/L	0.33	<0.05	1.63	----	----
EK055G: Ammonia as N by Discrete Analyser								
Ammonia as N	7664-41-7	0.01	mg/L	0.07	0.11	0.04	----	----
EK057G: Nitrite as N by Discrete Analyser								
Nitrite as N	14797-65-0	0.01	mg/L	<0.01	<0.01	<0.01	----	----
EK058G: Nitrate as N by Discrete Analyser								
Nitrate as N	14797-55-8	0.01	mg/L	0.03	0.15	0.08	----	----
EK059G: Nitrite plus Nitrate as N (NO_x) by Discrete Analyser								
Nitrite + Nitrate as N	----	0.01	mg/L	0.03	0.15	0.08	----	----
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser								
Total Kjeldahl Nitrogen as N	----	0.1	mg/L	0.7	0.2	0.7	----	----
EK062G: Total Nitrogen as N (TKN + NO_x) by Discrete Analyser								
^ Total Nitrogen as N	----	0.1	mg/L	0.7	0.4	0.8	----	----
EK067G: Total Phosphorus as P by Discrete Analyser								
Total Phosphorus as P	----	0.01	mg/L	0.02	<0.01	0.02	----	----

Appendix 3: Nutrient Analysis Reports

Soil Comparison

Conducted by The Ninemire Group LLC



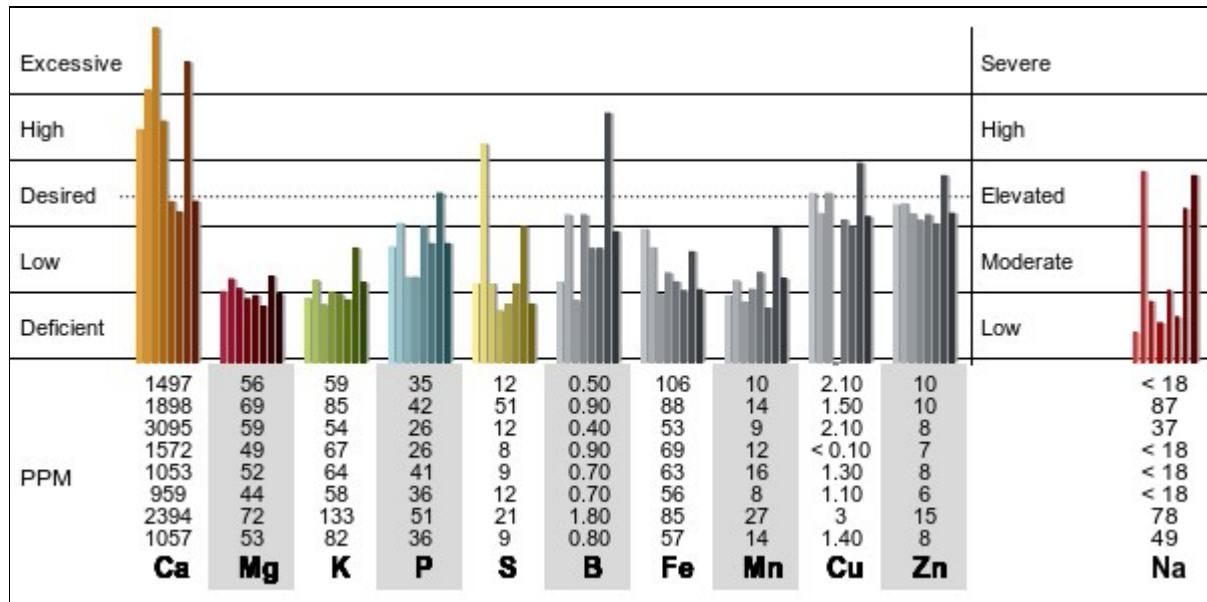
Client: Rehoboth Christian College

Field Representative: Josh Walker

Date of Analysis: September 22, 2015



COMPARISON CHART



KEY ELEMENTS

	IDEAL	GYM LAWN OVAL 2015-09-22	GYM LAWN OVAL 2016-03-08	GYM LAWN OVAL 2016-11-20	GYM LAWN OVAL 2017-06-28	GYM LAWN OVAL 2017-11-29	GYM LAWN OVAL 2018-09-10	GYM LAWN OVAL 2019-01-16	GYM LAWN OVAL 2019-04-02
Organic Matter (humus)		1.50	1.90	1.30	1.20	2.50	1.50	2.30	2.10
pH		8.20	7.90	8.70	8.00	7.50	7.40	8.10	8.00
Total Exchange Capacity		8.50	11.20	17.00	8.90	6.20	5.60	13.90	6.40
Ca	68-72%	87.84%	85.08%	90.95%	88.49%	84.91%	85.64%	86.33%	82.19%
Mg	13-16%	5.51%	5.18%	2.90%	4.56%	7.00%	6.58%	4.35%	6.83%
K	3-5%	1.77%	1.96%	0.81%	1.94%	2.64%	2.67%	2.46%	3.27%
Na	<3%	0.48%	3.37%	0.94%	0.62%	1.05%	0.71%	2.45%	3.31%
H	4.50%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Other	5%	4.40%	4.40%	4.40%	4.40%	4.40%	4.40%	4.40%	4.40%

Unit B2 Lidcombe Business Park 3-9 Birnie Avenue Lidcombe NSW 2421 **T** +61 2 9395 1200 **F** +61 2 9395 1241 **W**
 www.nuturf.com.au
 PO Box 6390 Silverwater NSW 1811

22 September 2015

Soil Analysis

Conducted by The Ninemire Group LLC



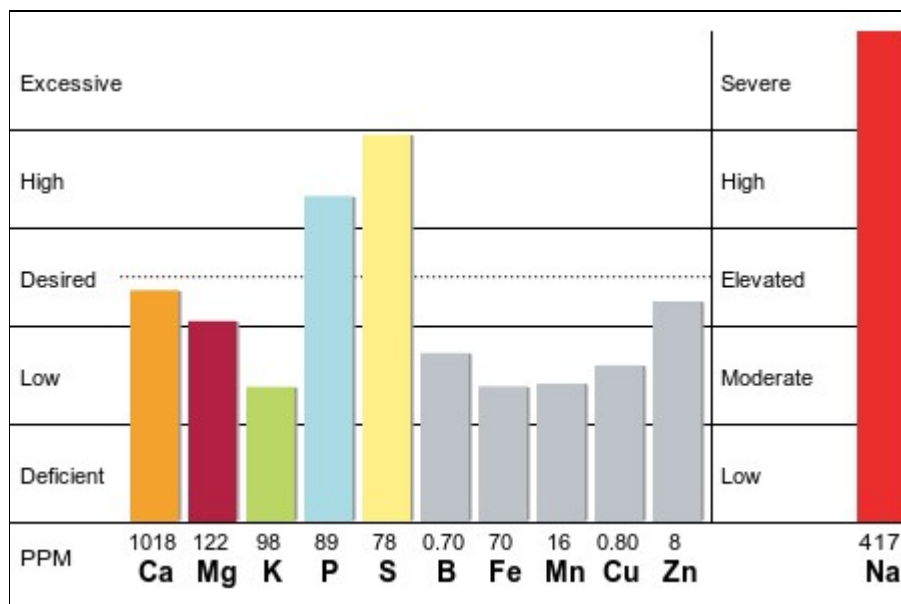
Client: Rehoboth Christian College

Field Representative: Josh Walker

Date of Analysis: April 2, 2019



SOIL NUTRIENT STATUS: MAIN OVAL



Organic Matter (humus)	3%
pH (H ₂ O 1:5)	7
Conductivity (mmhos/cm)	0.79
Total Exchange Capacity	8.6

BASE SATURATION: KEY ELEMENTS

Actuals	Actual Saturation	Ideal Saturation	Ideals
Ca 59.37%			68-72% Ca
Mg 11.82%			13-16% Mg
K 2.95%			3-5% K
Na 21.14%			<3% Na
H 0.3%			4.50% H
Other 4.42%			5% Other

COMMENTS

These numbers are to correct soil deficiencies only. Nutrient losses such as leaching or plant uptake should be considered when formulating maintenance programs.

Kg per Ha of Calcium deficient	256	Apply a total of 6.7 Kg per 100 m ² of a 38% Ca material over an appropriate number of applications.
Kg per Ha of Magnesium deficient	44	Apply a total of 2.6 Kg per 100 m ² of a 17% Mg material over an appropriate number of applications.
Kg per Ha of Potassium deficient	55	Apply a total of 1.3 Kg per 100 m ² of a 0-0-42 material over an appropriate number of applications.
Kg per Ha of Phosphorus deficient	0	

Unit B2 Lidcombe Business Park 3-9 Birnie Avenue Lidcombe NSW 2421 **T** +61 2 9395 1200 **F** +61 2 9395 1241 **W**
www.nuturf.com.au
 PO Box 6390 Silverwater NSW 1811

2 April 2019

Soil Analysis

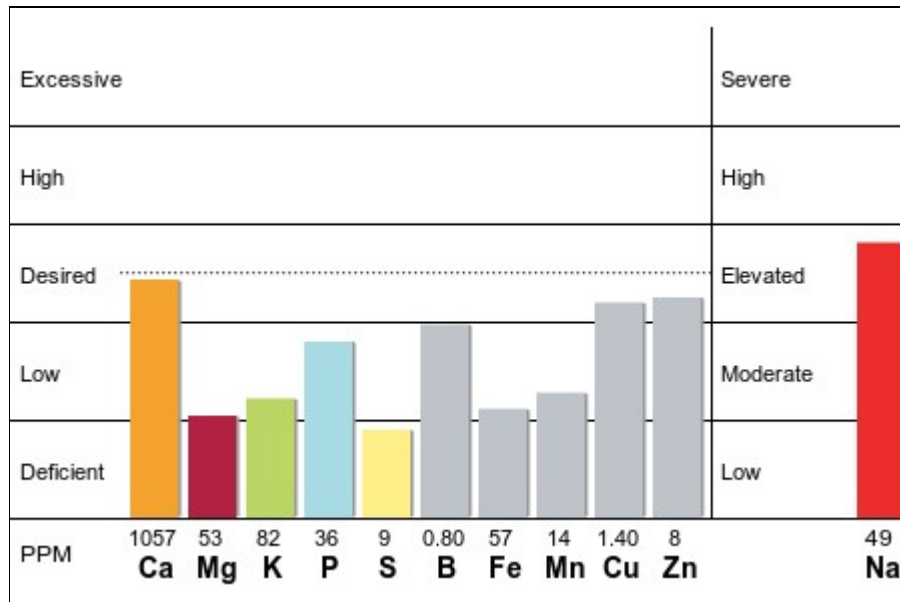
Conducted by The Ninemire Group LLC



Client: Rehoboth Christian College
Field Representative: Josh Walker
Date of Analysis: April 2, 2019

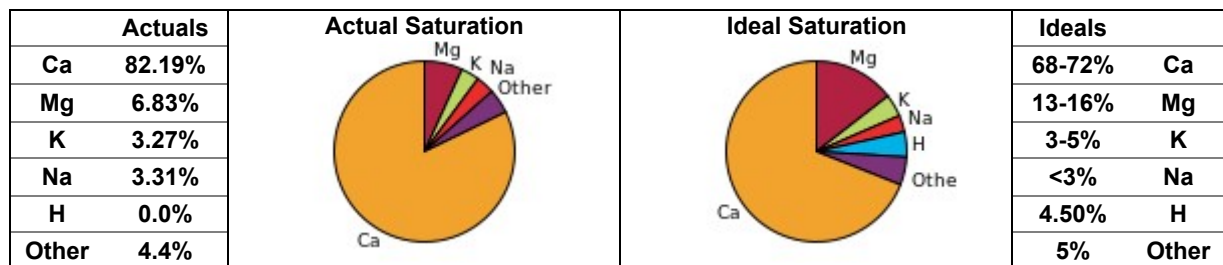


SOIL NUTRIENT STATUS: GYM LAWN OVAL



Organic Matter (humus) 2.1%
pH (H₂O 1:5) 8
Conductivity (mmhos/cm) 0.11
Total Exchange Capacity 6.4

BASE SATURATION: KEY ELEMENTS



COMMENTS

These numbers are to correct soil deficiencies only. Nutrient losses such as leaching or plant uptake should be considered when formulating maintenance programs.

Kg per Ha of Calcium deficient	0	
Kg per Ha of Magnesium deficient	89	Apply a total of 5.3 Kg per 100 m ² of a 17% Mg material over an appropriate number of applications.
Kg per Ha of Potassium deficient	27	Apply a total of 0.6 Kg per 100 m ² of a 0-0-42 material over an appropriate number of applications.
Kg per Ha of Phosphorus deficient	21	Apply a total of 1.0 Kg per 100 m ² of a 11-22-0 material over an appropriate number of applications.

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2 April 2019

Soil Comparison

Conducted by The Ninemire Group LLC



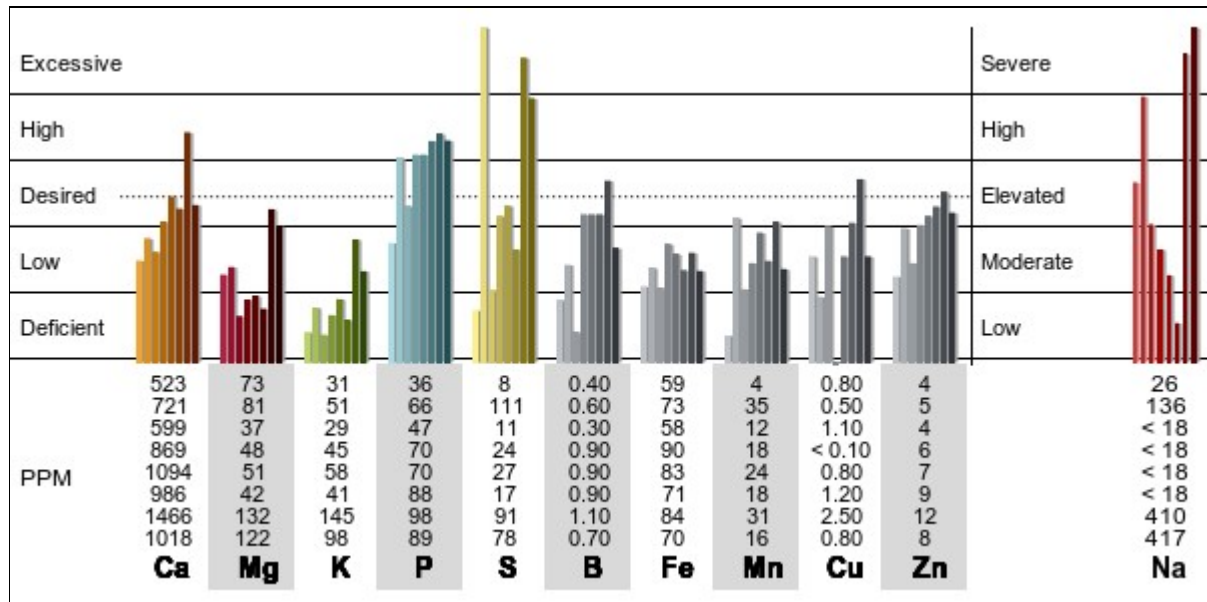
Client: Rehoboth Christian College

Field Representative: Josh Walker

Date of Analysis: September 22, 2015



COMPARISON CHART



KEY ELEMENTS

	IDEAL	MAIN OVAL 2015-09-22	MAIN OVAL 2016-03-08	MAIN OVAL 2016-11-20	MAIN OVAL 2017-06-28	MAIN OVAL 2017-11-29	MAIN OVAL 2018-09-10	MAIN OVAL 2019-01-16	MAIN OVAL 2019-04-02
Organic Matter (humus)		1.90	1.80	1.70	2.10	3.40	2.30	4.70	3.00
pH		7.50	6.20	6.90	6.60	6.90	7.30	7.20	7.00
Total Exchange Capacity		3.60	6.00	3.70	5.50	6.50	5.70	11.10	8.60
Ca	68-72%	73.26%	59.85%	81.36%	78.96%	84.30%	87.00%	66.21%	59.37%
Mg	13-16%	16.93%	11.26%	8.28%	7.25%	6.56%	6.12%	9.90%	11.82%
K	3-5%	2.22%	2.18%	1.99%	2.12%	2.30%	1.88%	3.36%	2.95%
Na	<3%	3.20%	9.84%	1.73%	1.35%	1.16%	0.61%	16.13%	21.14%
H	4.50%	0.00%	11.70%	2.10%	5.55%	1.20%	0.00%	0.00%	0.30%
Other	5%	4.40%	5.18%	4.54%	4.77%	4.48%	4.40%	4.40%	4.42%

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22 September 2015

SOIL ANALYSIS REPORT

Client: REHOBOTH CHRISTIAN COLLEGE - WA
 Sample Name: GYM AREA KIKUYU
 Crop Name: TURF
 Report Date: 26/09/2019



Sample ID: 20190925_01698

Important Nutrient Indicators

Analyte	Units	Guideline	Result
pH (1:5) in H ₂ O	pH	5.8 – 8.5	8.1
pH (1:5) in CaCl ₂	pH	5.2 – 7.9	7.0
EC (1:5) dS/m	dS/m	<1.5	0.09
CEC	meq/100g	12 – 40	10.02
Ca:Mg Ratio	ratio	2.5	18.38
Chloride (Cl)	ppm	200	24
Organic Matter (LOI)	%	3.0	1.50

Key Nutrient Cations

Analyte	Result (ppm)	Ideal (%)	Result (%)
Calcium (Ca)	1847	50 – 75	92.2
Magnesium (Mg)	60	5 – 15	5.0
Potassium (K)	48	2.0 – 5.0	1.2
Sodium (Na)	10	1.0 – 2.0	0.4
Aluminium (Al)	10	<1.0	1.1

Key Nutrient Anions

Analyte	Ideal (ppm)	Result (ppm)
Phosphorus (P)	30	4
Sulphur (S)	10 – 120	5

Trace Elements

Analyte	Ideal (ppm)	Result (ppm)
Iron (Fe)	20 – 200	16
Manganese (Mn)	5.0	2.9
Zinc (Zn)	5.0	5.4
Copper (Cu)	2.5	.5
Boron (B)	1.0	.6

Available Nitrogen

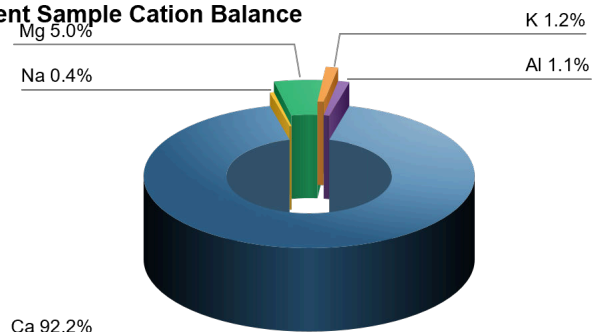
Analyte	Ideal (ppm)	Result (ppm)
NO ₃ – N	15.0	4
NH ₄ – N	–	

Soil Characteristics

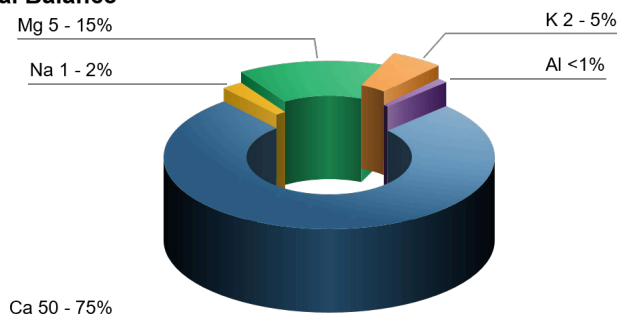
Soil Texture	
Soil Colour	
Lime Requirement	

Base Saturation

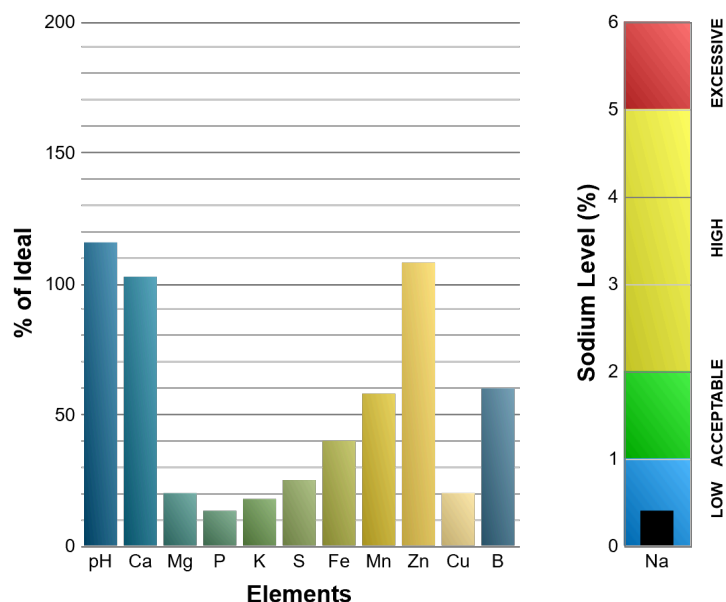
Current Sample Cation Balance



Ideal Balance



Key Nutrient Indicators



Recommendations



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SOIL ANALYSIS REPORT

Client: REHOBOTH CHRISTIAN COLLEGE - WA
 Sample Name: MAIN OVAL COUCH
 Crop Name: TURF
 Report Date: 26/09/2019



Sample ID: 20190925_01697

Important Nutrient Indicators

Analyte	Units	Guideline	Result
pH (1:5) in H ₂ O	pH	5.8 – 8.5	7.0
pH (1:5) in CaCl ₂	pH	5.2 – 7.9	6.1
EC (1:5) dS/m	dS/m	<1.5	0.05
CEC	meq/100g	12 – 40	5.18
Ca:Mg Ratio	ratio	2.5	3.79
Chloride (Cl)	ppm	200	27
Organic Matter (LOI)	%	3.0	2.70

Key Nutrient Cations

Analyte	Result (ppm)	Ideal (%)	Result (%)
Calcium (Ca)	774	50 – 75	74.7
Magnesium (Mg)	123	5 – 15	19.7
Potassium (K)	27	2.0 – 5.0	1.4
Sodium (Na)	19	1.0 – 2.0	1.6
Aluminium (Al)	12	<1.0	2.6

Key Nutrient Anions

Analyte	Ideal (ppm)	Result (ppm)
Phosphorus (P)	30	8
Sulphur (S)	10 – 120	8

Trace Elements

Analyte	Ideal (ppm)	Result (ppm)
Iron (Fe)	20 – 200	24
Manganese (Mn)	5.0	4.4
Zinc (Zn)	5.0	3.7
Copper (Cu)	2.5	.7
Boron (B)	1.0	.4

Available Nitrogen

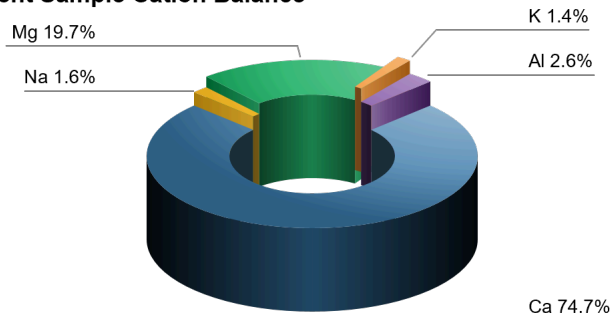
Analyte	Ideal (ppm)	Result (ppm)
NO ₃ – N	15.0	2
NH ₄ – N	–	

Soil Characteristics

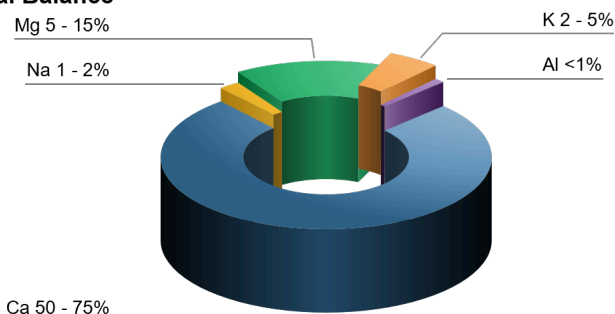
Soil Texture	
Soil Colour	
Lime Requirement	

Base Saturation

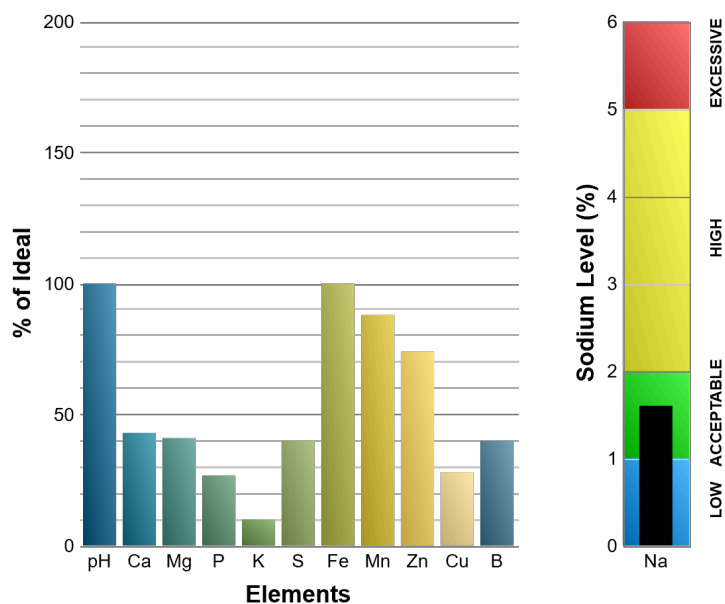
Current Sample Cation Balance



Ideal Balance



Key Nutrient Indicators



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SOIL ANALYSIS REPORT

Client: REHOBOTH CHRISTIAN COLLEGE - WA
 Sample Name: PRIMARY LAWN KIKUYU
 Crop Name: TURF
 Report Date: 26/09/2019



Sample ID: 20190925_01699

Important Nutrient Indicators

Analyte	Units	Guideline	Result
pH (1:5) in H ₂ O	pH	5.8 – 8.5	8.3
pH (1:5) in CaCl ₂	pH	5.2 – 7.9	7.2
EC (1:5) dS/m	dS/m	<1.5	0.06
CEC	meq/100g	12 – 40	7.01
Ca:Mg Ratio	ratio	2.5	14.09
Chloride (Cl)	ppm	200	27
Organic Matter (LOI)	%	3.0	2.70

Key Nutrient Cations

Analyte	Result (ppm)	Ideal (%)	Result (%)
Calcium (Ca)	1275	50 – 75	91.0
Magnesium (Mg)	54	5 – 15	6.4
Potassium (K)	28	2.0 – 5.0	1.0
Sodium (Na)	10	1.0 – 2.0	0.6
Aluminium (Al)	6	<1.0	1.0

Key Nutrient Anions

Analyte	Ideal (ppm)	Result (ppm)
Phosphorus (P)	30	5
Sulphur (S)	10 – 120	4

Trace Elements

Analyte	Ideal (ppm)	Result (ppm)
Iron (Fe)	20 – 200	14
Manganese (Mn)	5.0	1.0
Zinc (Zn)	5.0	0.9
Copper (Cu)	2.5	.4
Boron (B)	1.0	.2

Available Nitrogen

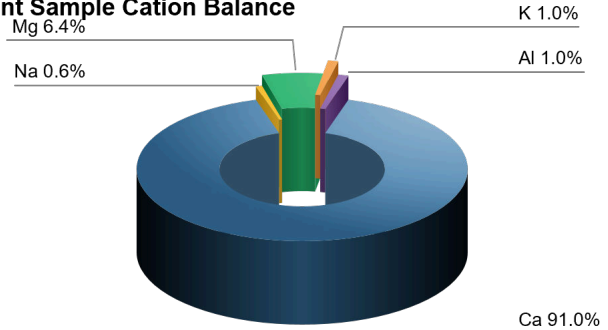
Analyte	Ideal (ppm)	Result (ppm)
NO ₃ – N	15.0	-1
NH ₄ – N	–	

Soil Characteristics

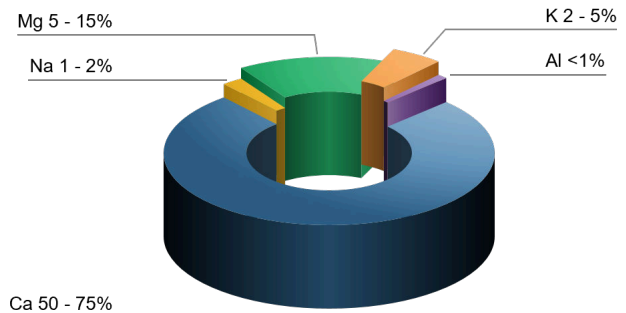
Soil Texture	
Soil Colour	
Lime Requirement	

Base Saturation

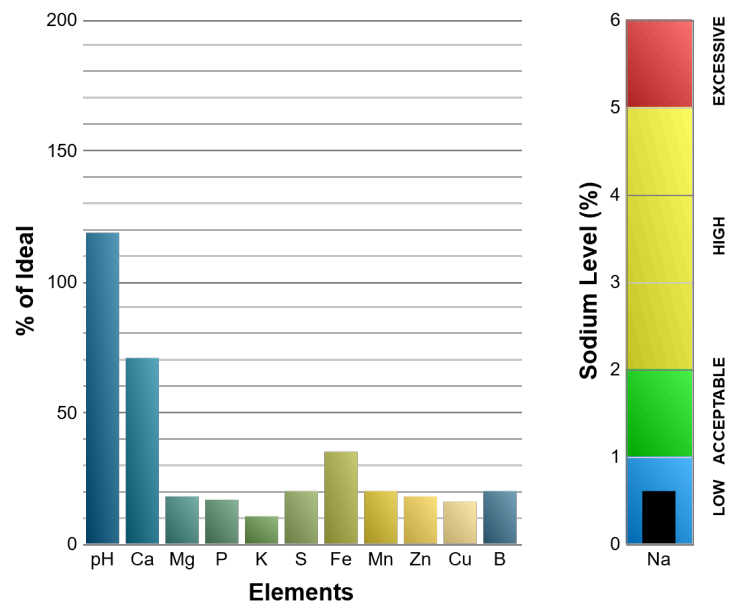
Current Sample Cation Balance



Ideal Balance



Key Nutrient Indicators



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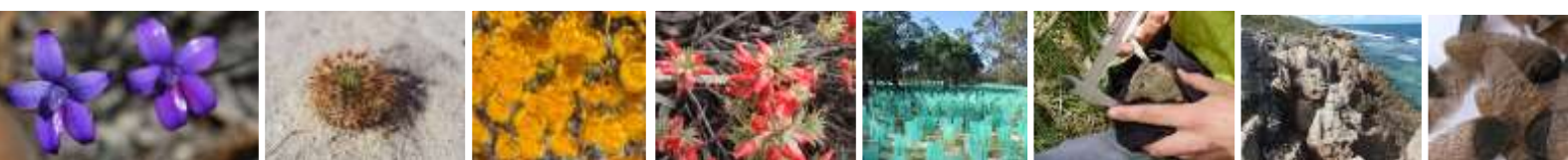
Appendix 4: Natural Area 2019 Flora and Vegetation Report



Rehoboth Christian College

2019 Flora Monitoring and Weed Mapping Report – Rehoboth Conservation Area

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Document Title		REHO-R-2019 Flora and Weed Mapping V1				
Location		Client Folders NAC/Rehoboth Christian College/Lot 105 Kenwick Road - Environmental Approvals - school addition/2019 Weed mapping/				
Draft/Version No.	Date	Changes	Prepared by	Internal review by	Approved by	Status
V1	29 Sept 2019	New document	SH	SB	BC	Final

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1.0 Introduction

Natural Area Consulting Management Services (Natural Area) was commissioned by Rehoboth Christian College to undertake follow-up flora survey and weed mapping of the Conservation Area at Lot 107 Kenwick Road, Kenwick in 2019, to comply with City of Gosnells approvals for phase 2 college development activities. Outcomes of the assessment will be compared to baseline flora monitoring and weed mapping results to ensure construction activities have not led to a reduction in vegetation condition or health, or the introduction of new weed species or further spread of weeds within the area.

1.1 Site Location

The Conservation Area within Lot 107 Kenwick Road is located approximately 14 km south-east of the Perth Central Business District, comprising a 2.7 ha area of remnant bushland and wetland located on the corner of Wanaping Road and Brixton Street, Kenwick (Map 1).

1.2 Scope of Works

Natural Area's scope of works associated with the monitoring and weed mapping included the following:

- describe the physical characteristics of the site in terms of topography, geology and hydrology
- define vegetation type and condition boundaries on site
- record native and non-native species present, including threatened and priority species
- reassess the threatened *Lepidosperma rostratum* population within the wetland
- undertake mapping of environmental weeds
- document results in this report.



2.0 Methodology

2.1 Objectives

The objective of the survey was to collect sufficient data to provide information for the future management of the site. This included undertaking a desktop review, determining flora species present, assessing vegetation type and condition and mapping of weed species present.

2.2 Desktop and Literature Review

A literature review and desktop flora and vegetation survey was undertaken to determine:

- review previous flora reports and weed mapping for the site undertaken by Natural Area
- compile flora species lists
- likely native and non-native flora and fauna species present
- current extent of native vegetation
- general floristic community types.

2.3 On-ground Flora Methodology

Natural Area Botanists Sharon Hynes and Harley Taylor traversed the site on 09 August 2019, with key GPS data recorded using a handheld Samsung tablet loaded with GIS mapping software (Mappt), including:

- identification of flora species present by walking the site
- recording vegetation type based on dominant over, middle and understorey species (Government of Western Australia, 2000)
- recording vegetation condition using the scale attributed to Keighery (Government of Western Australia, 2000)
- using a GPS to map significant species and boundaries of differing vegetation condition
- mapping weed locations and density using GPS
- determining the presence of any further threatened or priority listed flora species and/or ecological communities listed under the *Biodiversity Conservation Act 2016* (WA) and/or the *Environment Protection and Biodiversity Conservation Act 1999* (Cwlth).

The flora and vegetation survey was conducted in accordance with *Technical Guidance- Flora and Vegetation Surveys for Environmental Impact Assessment* (Environmental Protection Authority, 2016). Samples were collected, or photographs taken of unfamiliar species to enable later identification. Weed mapping was conducted in accordance with *Techniques for mapping weed distribution and cover in bushland and wetlands* (Department of Environment and Conservation, 2011).

2.3.1 Flora Species

Flora species were recorded whilst the site was being traversed. The list of potential declared rare or priority flora species (Appendix 3) was used to guide targeted searches for those species.

2.3.2 Vegetation Type

The vegetation type was determined using the structural classes described in *Bush Forever Volume 2* (Government of Western Australia, 2000), and records dominant over, middle and understorey species (Table 1).

Table 1: Vegetation structural classes

Life Form/Height Class	Canopy Percentage Cover			
	100 – 70%	70 – 30%	30 – 10%	10 – 2 %
Trees over 30 m	Tall closed forest	Tall open forest	Tall woodland	Tall open woodland
Trees 10 – 30 m	Closed forest	Open forest	Woodland	Open woodland
Trees under 10 m	Low closed forest	Low open forest	Low woodland	Low open woodland
Tree Mallee	Closed tree mallee	Tree mallee	Open tree mallee	Very open tree mallee
Shrub Mallee	Closed shrub mallee	Shrub mallee	Open shrub mallee	Very open shrub mallee
Shrubs over 2 m	Closed tall scrub	Tall open scrub	Tall shrubland	Tall open shrubland
Shrubs 1 – 2 m	Closed heath	Open heath	Shrubland	Open shrubland
Shrubs under 1 m	Closed low heath	Open low heath	Low shrubland	Low open shrubland
Grasses	Closed grassland	Grassland	Open grassland	Very open grassland
Herbs	Closed herbland	Herbland	Open herbland	Very open herbland
Sedges	Closed sedgeland	Sedgeland	Open sedgeland	Very open sedgeland

(Source: Government of Western Australia, 2000)

2.3.3 Vegetation Condition

Vegetation condition was assessed using the rating scale attributed to Keighery in *Bush Forever Volume 2* (Government of Western Australia, 2000) (Table 2).

Table 2: Vegetation condition ratings

Category	Description
1 Pristine	Pristine or nearly so, no obvious signs of disturbance.
2 Excellent	Vegetation structure intact, disturbance affecting individual species and weeds are non-aggressive species.
3 Very Good	Vegetation structure altered, obvious signs of disturbance. For example, disturbance to vegetation structure caused by repeated fires, the presence of some more aggressive weeds, dieback, logging and grazing.
4 Good	Vegetation structure significantly altered by very obvious signs of multiple disturbances. Retains basic vegetation structure or ability to regenerate it. For example, disturbance to vegetation structure caused by very frequent fires, the presence of some very aggressive weeds at high density, partial clearing, dieback and grazing.
5 Degraded	Basic vegetation structure severely impacted by disturbance. Scope for regeneration but not to a state approaching good condition without intensive management. For example, disturbance to vegetation structure caused by very frequent fires, the presence of very aggressive weeds, partial clearing, dieback and grazing.
6 Completely Degraded	The structure of the vegetation is no longer intact, and the area is completely or almost completely without native species. These areas are often described as 'parkland cleared' with the flora comprising weed or crop species with isolated native trees or shrubs.

(Source: Government of Western Australia, 2000)

2.3.4 On-ground Weed Mapping

Natural Area botanists Harley Taylor and Sharon Hynes undertook on-site weed mapping activities on 29 August 2019. The site was traversed on foot with significant weeds recorded using a tablet equipped with Mappt software and external GPS device. The following data was recorded:

- weed species
- density
- date
- collector
- additional information such as photo number, herbarium specimen number, comments.

Weed density was assessed using an approximate 2 x 2 m quadrat and assigning an appropriate coverage density. Coverage density was assigned as per the then Department of Environment and Conservation (DEC 2011, now the Department of Biodiversity, Conservation and Attractions) standard operating procedure:

- <5%
- 6 - 75%
- 76 - 100%.

If isolated individuals were noted a single point for plant presence was assigned rather than a coverage, indicated by a P.

2.3.5 Limitations

The survey was carried out in spring which is the optimal time to survey native vegetation in the South West Botanical Region. However, certain limitations for the survey works still exist, including:

- database searches only provide an indication of what flora species may be present, with on ground surveys required to confirm those present
- the differing databases are reliant on information submitted via various reporting mechanisms, so all records of a flora species or ecological community in a specified area may not be complete
- on-ground surveys indicate species present at the time of the assessment, with species flowering at different times not always able to be identified
- rainfall in months prior to the survey affect what is presenting particularly as this is a seasonally inundated site and annual species may germinate earlier or later based on the depth of the water on present
- not all species flower every year.

Despite these limitations, Natural Area believes 80 – 90% of flora species were identified.

3.0 Results

3.1 Flora and Vegetation Monitoring Results

A total of 97 flora species from 46 families were recorded during the 2019 flora survey, of which 67 were native and 30 were weeds. One new native species *Liparophyllum capitatum* and one new weed *Kikuyu (*Cenchrus clandestinus*) was recorded during the 2019 monitoring period. This brings the combined total of flora species since 2011 to 145; this includes 57 weeds and 88 natives; the compiled species list is provided in Appendix 1.



Hypocalymma angustifolium
(White Myrtle)



Utricularia multifida
(Pink Petticoats)



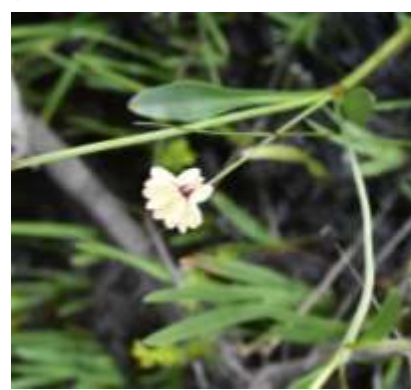
Chorizandra enodis
(Black Bristlerush)



Tribonanthes australis
(Southern Tiurndin)



Wurmbea dioica subsp. *alba*



Velleia trinervis

Figure 1: Native flora species recorded in the conservation area




3.1.1 Significant Flora

The threatened *Lepidosperma rostratum* (Beaked Lepidosperma) population was monitored and 37 individual plants were recorded (Map 2). This species is listed as threatened under the *Biodiversity Conservation Act 2016* (WA), and as Endangered under the *Environment Protection and Biodiversity Conservation Act 1999* (Cwlth). The locations and numbers are consistent with previous monitoring of the species recorded on site since Natural Area undertook surveys in 2011, showing that the population is in a stable and healthy state. Certain areas of the wetland could not be assessed due to dense vegetation so the population may be larger than recorded.

3.1.2 Vegetation Type

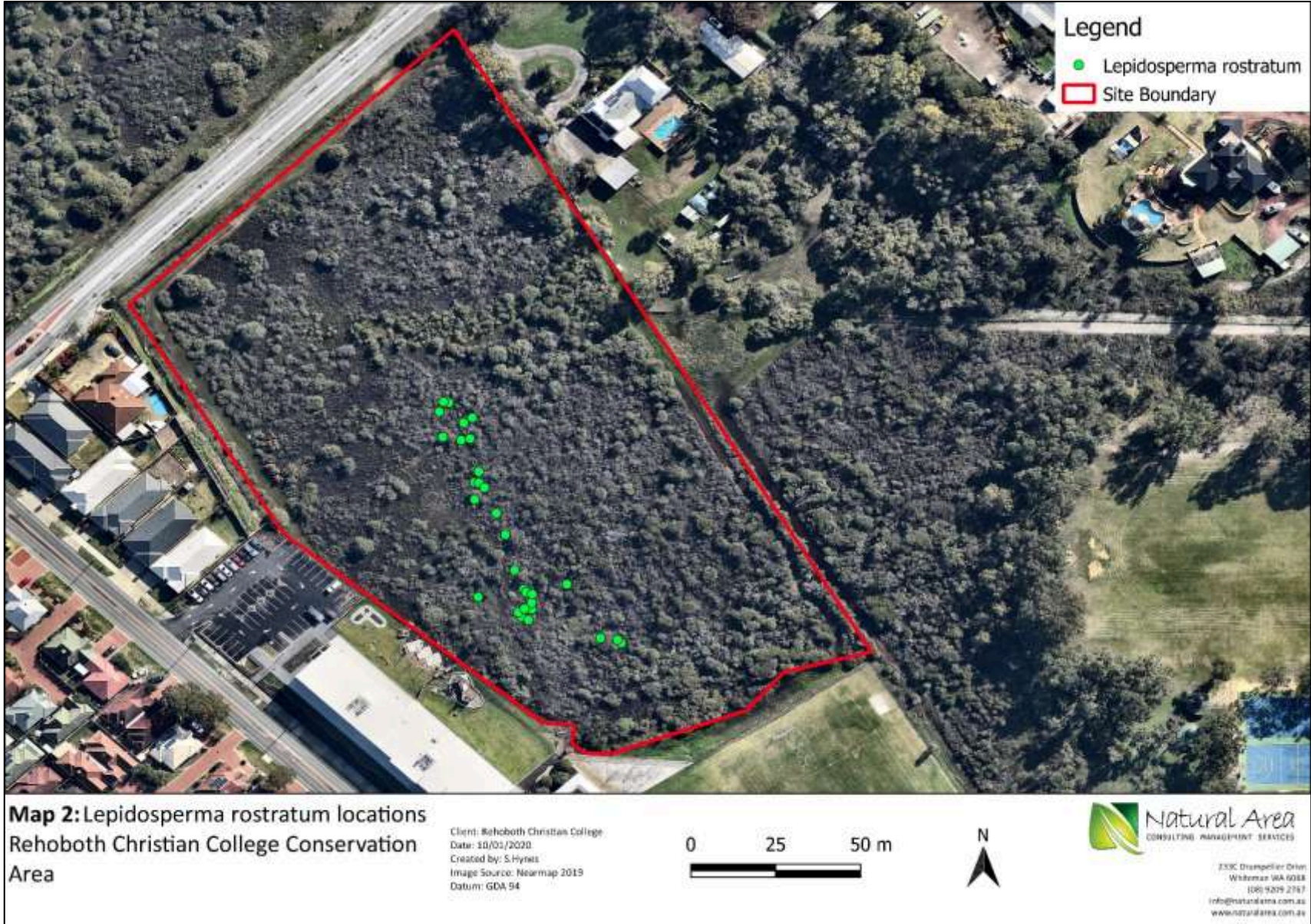
Three vegetation types are present within the conservation area, including Viminaria Shrubland in drier areas, and Melaleuca Shrubland and *Chorizandra enodis* Sedgeland in damper areas (Map 3, Table 3), this is consistent with previous monitoring.

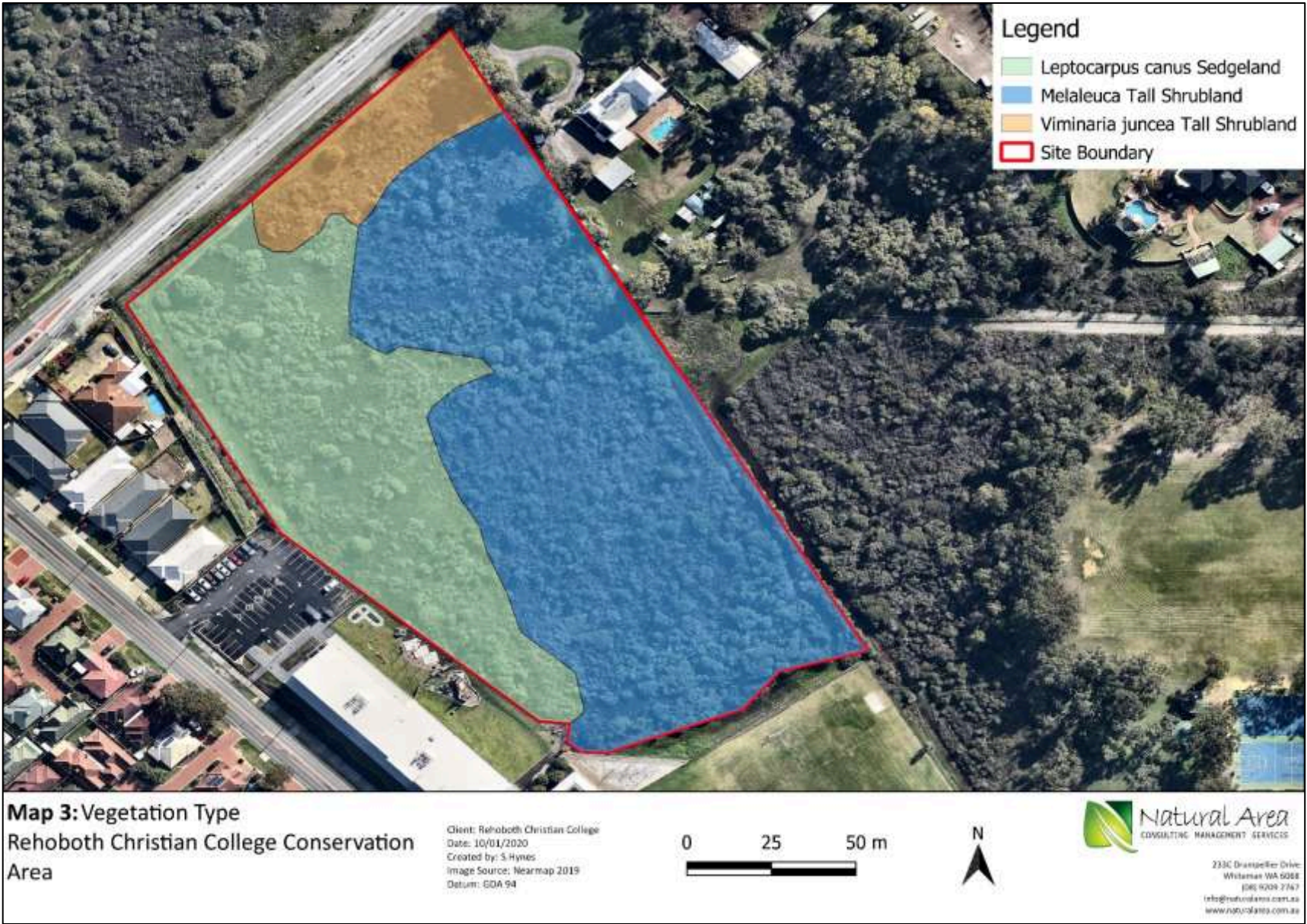
Table 3: Vegetation types descriptions within the conservation area

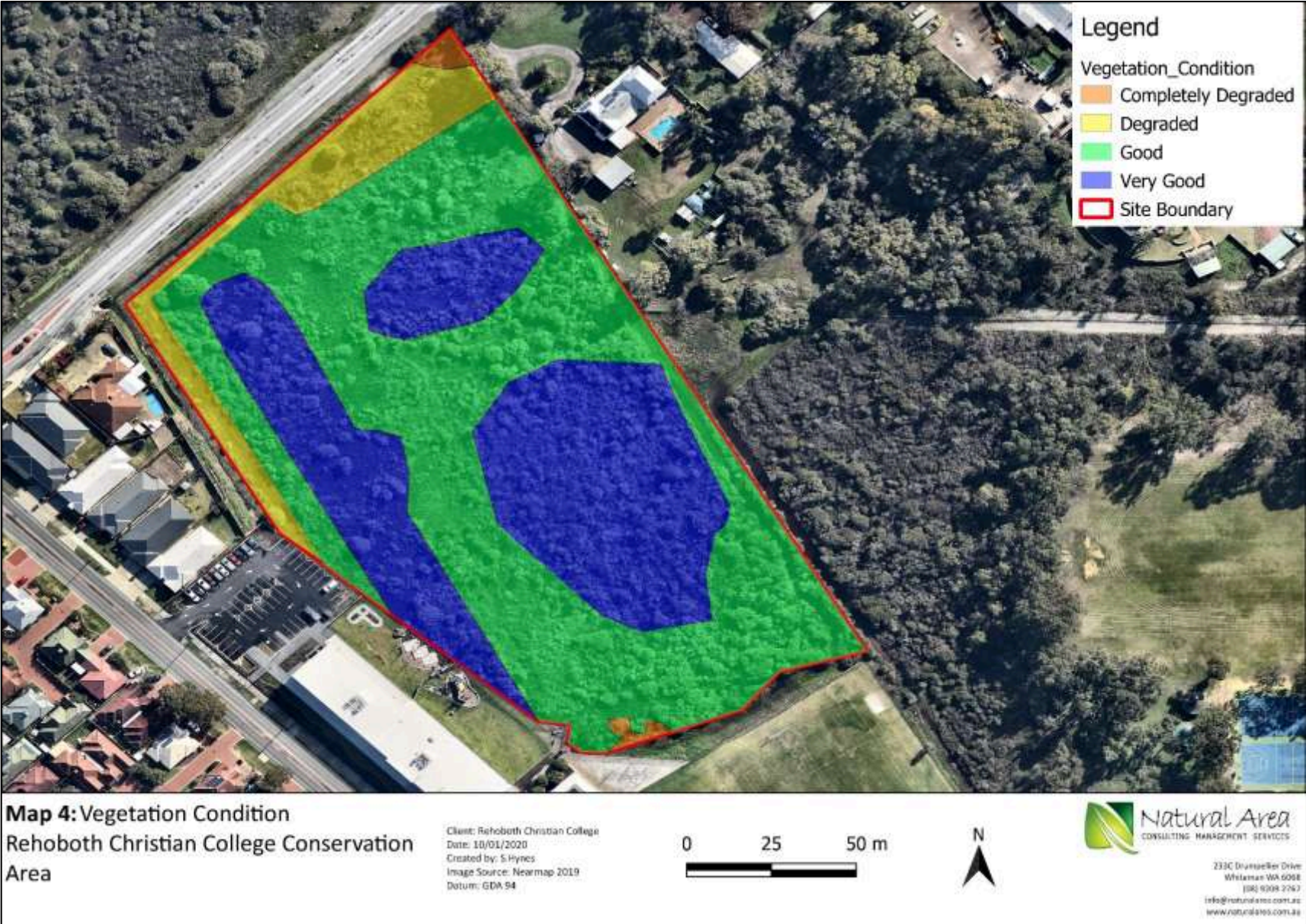
Vegetation Type	Description	Photograph
<i>Leptocarpus canus</i> Sedgeland	A sedgeland of <i>Leptocarpus canus</i> with sparse shrubs of <i>Acacia lasiocarpa</i> subsp. <i>sedifolia</i> and <i>Melaleuca</i> spp. and mixed native herbs and sedges including <i>Chorizandra enodis</i> and <i>Utricularia multifida</i>	
Melaleuca Shrubland	A shrubland of <i>Melaleuca viminea</i> , <i>Melaleuca raphiophylla</i> over <i>Hypocalymma angustifolium</i> and mixed low shrubs, over an understorey of <i>Gahnia trifida</i> and mixed sedges and herbs	
Viminaria Shrubland	<i>Viminaria juncea</i> shrubland over <i>Hypocalymma angustifolium</i> , <i>Acacia lasiocarpa</i> subsp. <i>sedifolia</i> and mixed low shrubs and an understorey of <i>*Watsonia meriana</i> subsp. <i>bulbifera</i> and mixed sedges and herbs	

3.1.3 Vegetation Condition

Vegetation condition ranges from completely degraded to Very Good. With the more degraded areas occurring along previously cleared firebreak areas on the periphery of the bushland. Very Good areas occurred in thicker remnant vegetation that have denser understorey with less weeds present. Vegetation condition within the site has improve since initial survey in 2012 due to revegetation and weed control works undertaken within from 2011 – 2013, with rehabilitated areas upgraded from Degraded to Good or Very Good.







3.2 Weed Mapping Results

A total of 23 priority weed species were noted whilst traversing the site, including six geophytes, ten grasses and six herbaceous species (Figure 1, Table 1). Species density ranged from <5% to 100%, with three species only recorded as isolated individuals. The majority of weed species were recorded on the periphery of the site, and in the north-east portion where the ground level is higher. Other isolated areas of higher ground also recorded higher weed density, such as the two areas in the southern end of the site. Both Freesia and Guildford Grass were recorded throughout.

Species diversity and density has increased from the 2018 weed mapping outcomes, which recorded 17 priority weeds. One weed recorded in 2018 was not recorded in 2019 (Red Natal Grass, *Melinis repens*), with six new weeds recorded this monitoring period (Table 1). Of the new weed species recorded for 2019 four were in low densities or as isolated individuals, with two species having moderate densities (Blowfly Grass and Cape Weed). One new species (Kikuyu – *Cenchrus clandestinus*) was observed immediately adjacent to the completed construction area and appeared to be turf offcuts that had been discarded or inadvertently made their way into the conservation area (Figure 2). These offcuts were becoming established, particularly in the areas adjacent to the retaining wall where sand has been deposited (Figure 2) and were manually removed by Natural Area personnel.

One species recorded within the site, One-leaf Cape Tulip (*Moraea flaccida*), is classified as a Declared Pest listed under the *Biosecurity and Agriculture Management Act 2007* (WA) (Figure 3). Additionally, Bridal Creeper (*Asparagus asparagoides*) was recorded in the road reserve outside of the survey site, with other individuals noted in the property bordering the north-east of the site (Figure 3). Bridal Creeper is listed as a Declared Pest in Western Australia and as a Weed of National Significance (WoNS) by the Australian Government. Arum Lily (*Zantedeschia aethiopica*) was noted as potted garden plants in the adjacent north-east property; this species is also listed as a Declared Pest.

Table 1: Weed species recorded

Common Name	Species Name	Lifeform	<5%	5-75%	76-100%
African Lovegrass	<i>Eragrostis curvula</i>	Grass	X		
Annual Veldt Grass	<i>Ehrharta longiflora</i>	Grass	X	X	X
Blowfly Grass*	<i>Briza maxima</i>	Grass	X	X	
Cape Weed*	<i>Arctotheca calendula</i>	Herbaceous	X	X	
Couch	<i>Cynodon dactylon</i>	Grass	X	X	X
Finger Leaf Oxalis	<i>Oxalis glabra</i>	Geophyte	X	X	
Freesia	<i>Freesia alba x leichtlinii</i>	Geophyte	X	X	X
Fumitory	<i>Fumaria capreolata</i>	Herbaceous	X		
Guildford Grass	<i>Romulea rosea</i>	Geophyte	X	X	
Kikuyu Grass*	<i>Cenchrus clandestinus</i>	Grass	Isolated Individuals (P)		
Long Storksbill*	<i>Erodium botrys</i>	Herbaceous	X		
Narrowleaf Trefoil	<i>Lotus angustissimus</i>	Herbaceous	X	X	

Common Name	Species Name	Lifeform	<5%	5-75%	76-100%
One-leaf Cape Tulip	<i>Moraea flaccida</i>	Geophyte	X		
Paspalum	<i>Paspalum dilatatum</i>	Grass	Isolated Individuals (P)		
Perennial Veldt Grass	<i>Ehrharta calycina</i>	Grass	X	X	
Soursob	<i>Oxalis pes-caprae</i>	Geophyte	X	X	X
Tambookie Grass	<i>Hyparrhenia hirta</i>	Grass	Isolated Individuals (P)		
Vetch	<i>Vicia sativa</i>	Herbaceous	X		
Watsonia	<i>Watsonia meriana</i> var. <i>bulbifera</i>	Geophyte	X	X	
Wild Radish*	<i>Raphanus raphanistrum</i>	Herbaceous	X		
Wimmera Ryegrass	<i>Lolium rigidum</i>	Grass	X	X	X
Yorkshire Fog*	<i>Holcus lanatus</i>	Grass	Isolated Individuals (P)		

* denotes species not recorded in 2018



Wimmera Ryegrass



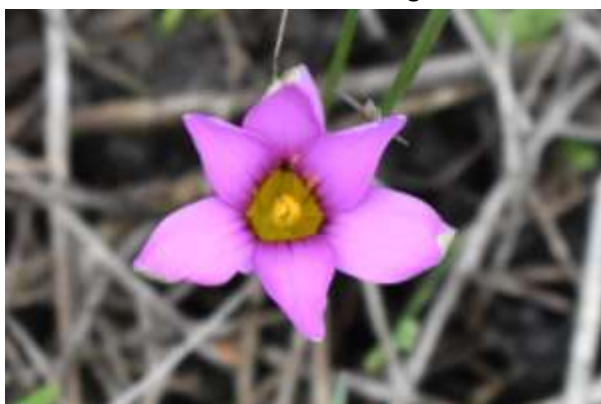
Wimmera Ryegrass on north-east firebreak



Freesia and Guildford Grass throughout site



Harlequin Flower



Guildford Grass



Annual Veldt and Blowfly Grass in high ground



Perennial Veldt and Watsonia in north-east



Wild Radish

Figure 1: Weeds within the site



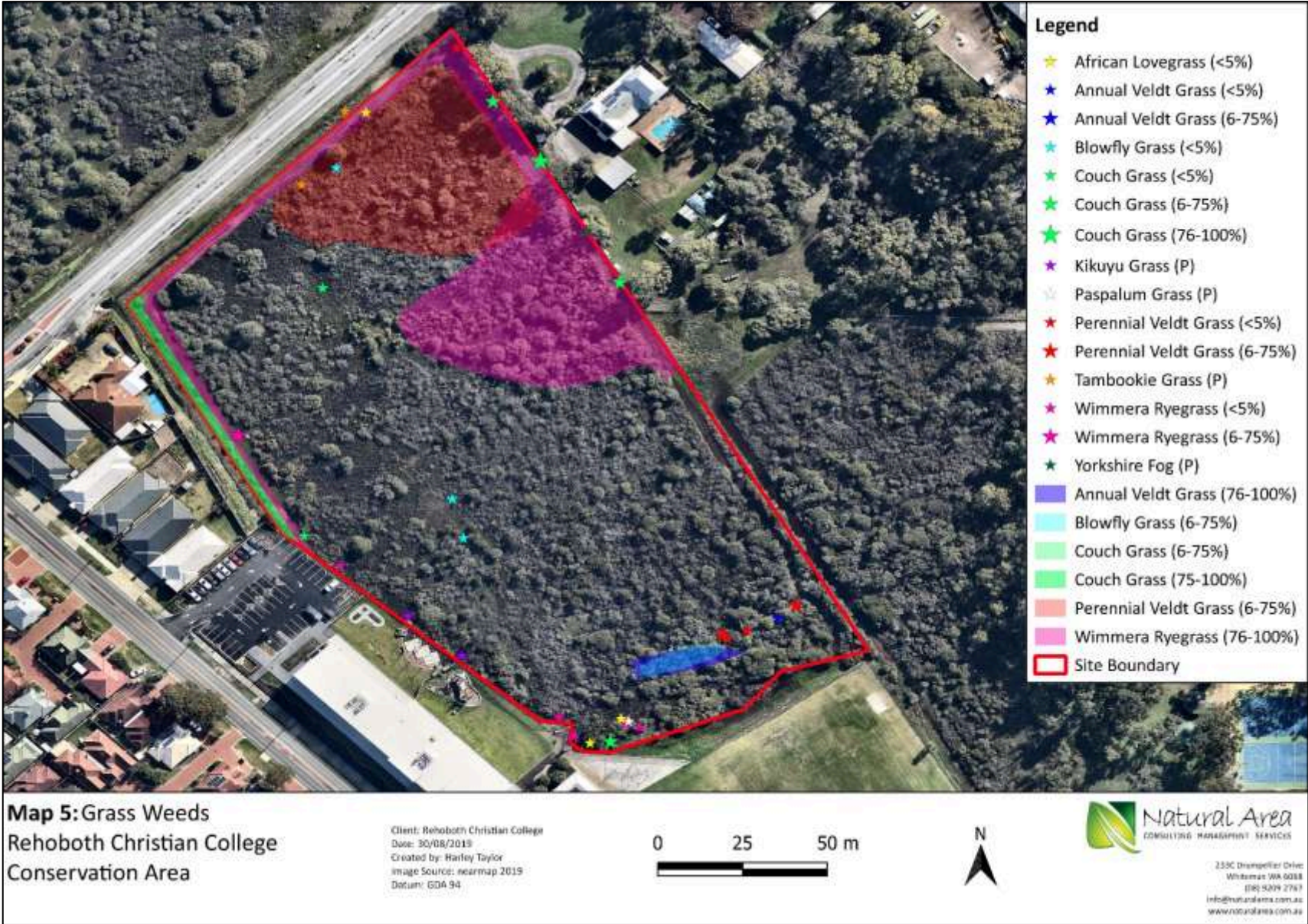
Figure 2: Kikuyu grass adjacent to the completed construction works, establishing in sand piles.

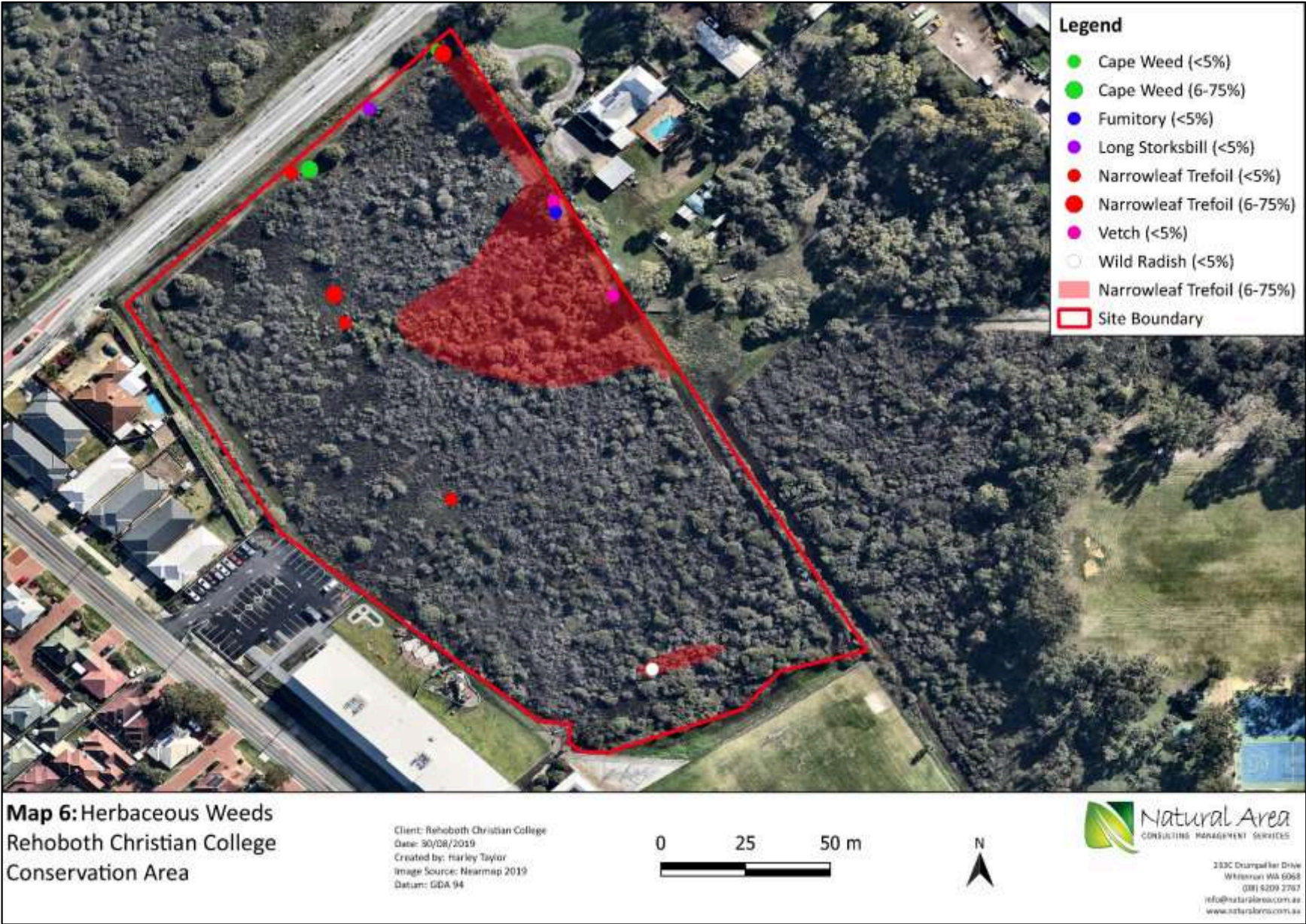


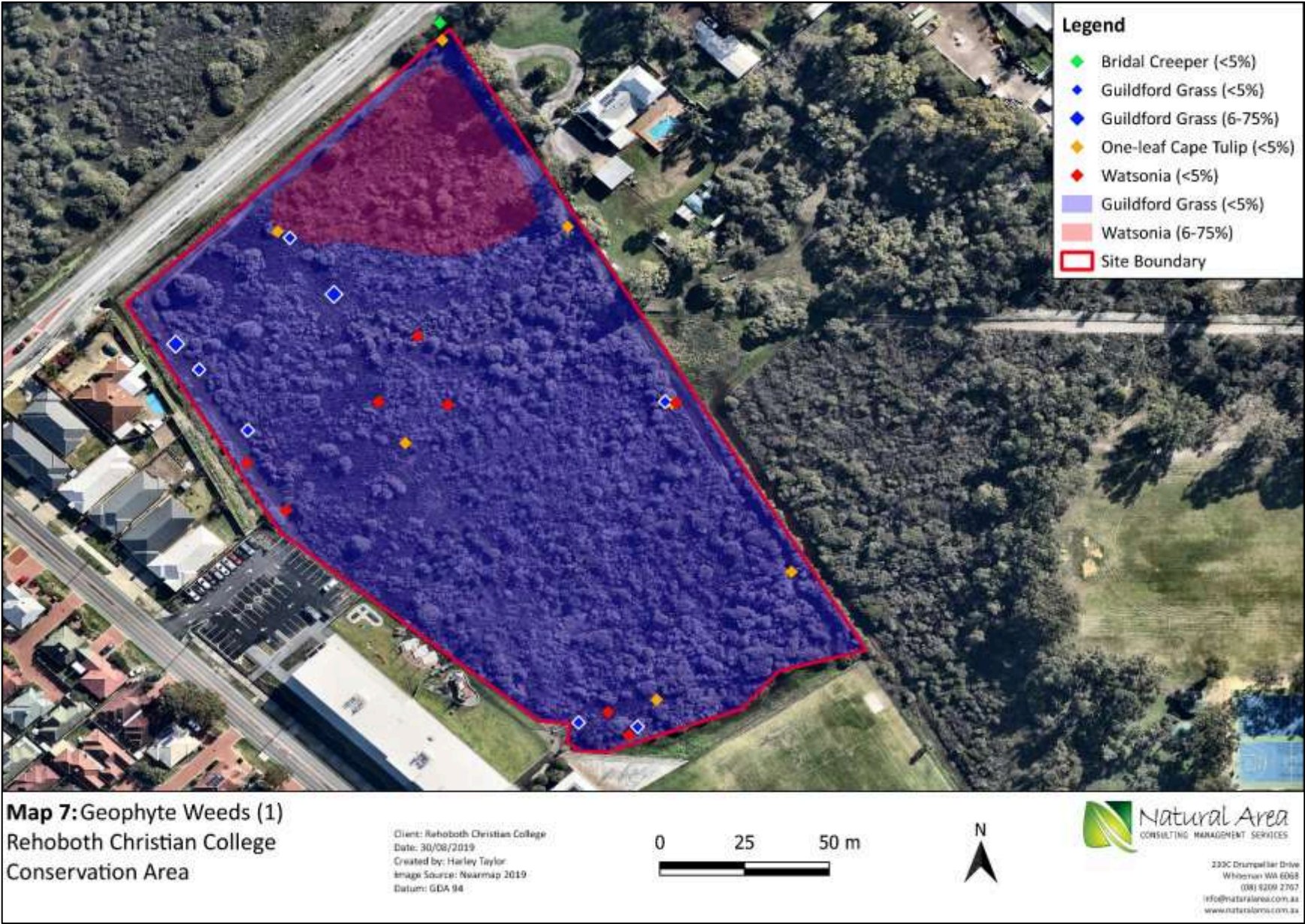
Figure 3: Declared Pests One Leaf Cape Tulip (left), Bridal Creeper (right; also a WoNS).

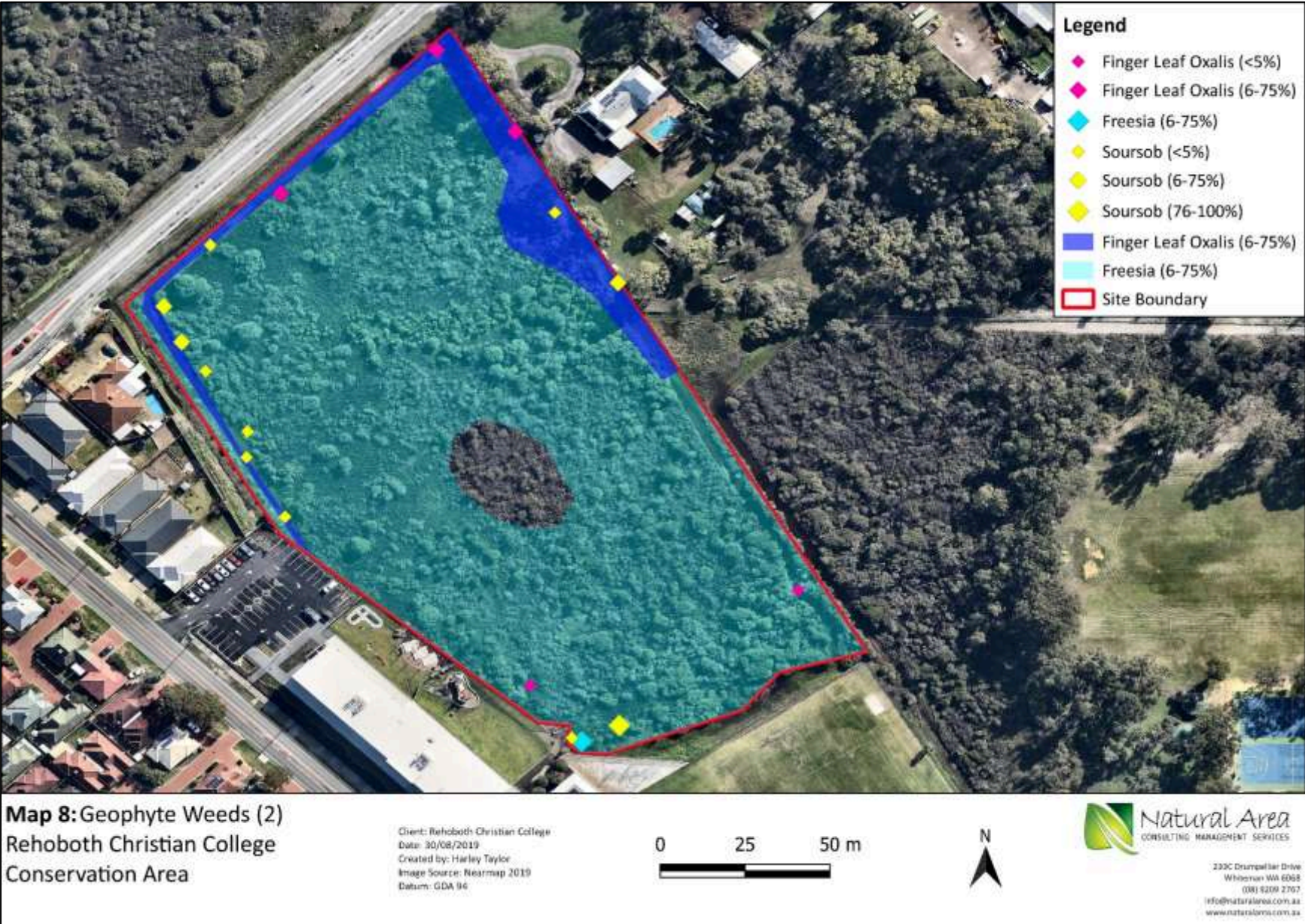
3.2.1 Weed Maps

The following maps outline the locations of the significant weeds recorded during the site visit based on lifeform. Geophytes have been separated into two maps to more clearly show weed coverage.









4.0 Conclusions and Recommendations

4.1 Flora

A total of 97 flora species including 67 natives and 30 weeds were recorded for 2019, with the total species tally for the site being 145 including 88 natives. The number of natives recorded for 2019 was consistent with previous years, with high variation noted from year to year. Given the site is a seasonally inundated wetland and annual species flowering times can vary from year to year due to seasonal rainfall patterns or variation in timings of surveys. The vegetation type has remained consistent since 2011, with the boundaries being slightly adjusted due to rehabilitation works. Vegetation condition ranged from Completely Degraded to Very Good which is consistent with previous monitoring of the wetland, with vegetation showing an overall improvement since 2011. This suggests that the construction activities undertaken have not had a negative impact on vegetation health or condition within the wetland.

The threatened *Lepidosperma rostratum* population has remained stable within the site. Plant have been found each year in the same or similar locations and the number of plants has remained stable since the 2014 monitoring period. There is a potential for the population to be larger than recorded, as some of the area on site was not assessed due to dense vegetation.

4.2 Weed Mapping

The weed mapping survey recorded 23 weed species, of which the majority were geophytes and grasses. There has been an increase in weeds, although this is typical of unmanaged bushlands in close proximity to built up areas. As the site is very seasonally dependant, the changes to weed coverage and diversity may be attributed to changes in weather. The 2018 season experienced earlier rains and the site was less inundated during weed monitoring in 2018 as compared to the 2019 weed monitoring event, despite monitoring occurring at the same time of year. One additional weed species was recorded adjacent to the new college development area which can be attributed to the development activities, with turf (*Cenchrus clandestinus*) offcuts dumped and left in the wetland areas. These offcuts had begun to establish, but has been since removed from the wetland to prevent further spread.

One Leaf Cape Tulip is listed as a Declared Pest in the Western Australian Organism List (WAOL) and as listed as a category C3 declared plant under the *Biosecurity and Agriculture Management Act 2007* (WA). This classification requires the control of the species by the landowner/manager to reduce the impact and spread of the species. It is recommended weed control is undertaken before this species spreads throughout the wetland. Areas of similar habitat (such as Forrestdale Lake) exhibit widespread, dense populations of One Leaf Cape Tulip. It is also recommended that the landholder to the north-east is consulted and informed of their obligation to manage declared pests on their land. Both Bridal Creeper and Arum Lily (noted in close proximity to the study area) are wetland weeds that can outcompete native species and create monocultures.

Appendix 1: Rehoboth Conservation Flora List

The flora list below is compiled from data collected from Rehoboth Conservation Area between 2011 – 2019 and is sorted by species.

Family	Species	Common Name	Weed	Recorded 2011	Recorded 2013	Recorded 2015	Recorded 2018	Recorded 2019
FABACEAE	<i>Acacia lasiocarpa</i> var. <i>lasiocarpa</i>			Y	Y	Y	Y	Y
FABACEAE	<i>Acacia lasiocarpa</i> var. <i>sedifolia</i>				Y	Y	Y	Y
FABACEAE	<i>Acacia saligna</i>	Orange Wattle				Y		
ASPARAGACEAE	<i>Acanthocarpus canaliculatus</i>			Y	Y	Y	Y	Y
ASTERACEAE	<i>Arctotheca calendula</i>	Capeweed	Y	Y		Y		Y
MYRTACEAE	<i>Astartea scoparia</i>					Y	Y	Y
CHENOPODIACEAE	<i>Atriplex prostrata</i>	Hastate Orache	Y				Y	
POACEAE	<i>Avena barbata</i>	Wild Oats	Y	Y	Y	Y		
BORYACEAE	<i>Borya scirpoidea</i>			Y				
ASTERACEAE	<i>Brachyscome pusilla</i>			Y		Y		Y
BRASSICACEAE	<i>Brassica</i> sp.		Y		Y			
POACEAE	<i>Briza maxima</i>	Blowfly grass	Y	Y	Y	Y	Y	Y
POACEAE	<i>Briza minor</i>		Y	Y	Y	Y	Y	
POACEAE	<i>Bromus diandrus</i>	Great Brome	Y	Y	Y			
COLCHICACEAE	<i>Burchardia multiflora</i>			Y		Y	Y	Y
LAURACEAE	<i>Cassytha glabella</i>	Tangled Dodder Laurel		Y	Y	Y		
LAURACEAE	<i>Cassytha racemosa</i>	Dodder Laurel					Y	Y
CASUARINACEAE	<i>Casuarina glauca</i>		Y				Y	

Family	Species	Common Name	Weed	Recorded 2011	Recorded 2013	Recorded 2015	Recorded 2018	Recorded 2019
POACEAE	<i>Cenchrus clandestinus</i>	Kikuyu						Y
POACEAE	<i>Cenchrus echinatus</i>	Burr Grass	Y		Y			
GENTIANACEAE	<i>Centaurium tenuiflorum</i>	Slender centaury	Y		Y			
CENTROLEPIDACEAE	<i>Centrolepis aristata</i>			Y	Y			
CENTROLEPIDACEAE	<i>Centrolepis polygyna</i>			Y				
RESTIONACEAE	<i>Chaetanthus aristatus</i>			Y	Y		Y	Y
MYRTACEAE	<i>Chamelaucium uncinatum</i>	Wembley Wax			Y			
CYPERACEAE	<i>Chorizandra enodis</i>			Y	Y	Y	Y	Y
POLYGONACEAE	<i>Comesperma virgatum</i>	Milkwort					Y	Y
HAEMODORACEAE	<i>Conostylis festucacea</i>			Y	Y	Y	Y	Y
ASTERACEAE	<i>Conyza sp.</i>	Fleabane	Y		Y			
ASTERACEAE	<i>Cotula coronopifolia</i>	Waterbuttons	Y	Y	Y	Y		
CRASSULACEAE	<i>Crassula closiana</i>					Y		
CYPERACEAE	<i>Cyathochaeta avenacea</i>			Y	Y			
POACEAE	<i>Cynodon dactylon</i>	Couch	Y	Y	Y	Y	Y	Y
GOODENIACEAE	<i>Dampiera linearis</i>			Y	Y	Y	Y	Y
ASPARAGACEAE	<i>Dichopogon preissii</i>			Y				
ASTERACEAE	<i>Dittrichia graveolens</i>	Stinkwort	Y				Y	Y
ORCHIDACEAE	<i>Diuris laxiflora</i>	Bee orchid		Y			Y	Y
DROSERACEAE	<i>Drosera glandulifera</i>			Y		Y		Y
POACEAE	<i>Ehrharta calycinus</i>	Perennial Veldt	Y	Y	Y	Y	Y	Y

Family	Species	Common Name	Weed	Recorded 2011	Recorded 2013	Recorded 2015	Recorded 2018	Recorded 2019
POACEAE	<i>Ehrharta longiflora</i>	Annual Veldt grass	Y	Y	Y			Y
POACEAE	<i>Eragrostis curvula</i>	African lovegrass	Y	Y			Y	Y
GERANIACEAE	<i>Erodium botrys</i>		Y	Y		Y		Y
APIACEAE	<i>Eryngium pinnatifidum</i>	Blue Devils				Y		
MYRTACEAE	<i>Eucalyptus</i> sp		Y			Y	Y	Y
FABACEAE	<i>Eutaxia virgata</i>			Y				
IRIDACEAE	<i>Freesia alba x leichtlinii</i>	Freesia	Y			Y		Y
FUMARIACEAE	<i>Fumaria capreolata</i>	Fumaria	Y	Y		Y		Y
CYPERACEAE	<i>Gahnia trifida</i>			Y	Y	Y	Y	Y
HAEMODORACEAE	<i>Haemodorum</i> sp.					Y		
PROTEACEAE	<i>Hakea lissocarpha</i>	Honey Bush					Y	Y
PROTEACEAE	<i>Hakea trifurcata</i>	Two-leaf Hakea		Y	Y			
PROTEACEAE	<i>Hakea undulata</i>	Wavy-leaved Hakea					Y	Y
PROTEACEAE	<i>Hakea varia</i>	Variable-leaved Hakea		Y	Y	Y	Y	Y
POACEAE	<i>Holcus lanatus</i>	Yorkshire Fog	Y					Y
APIACEAE	<i>Hydrocotyle alata</i>			Y				
POACEAE	<i>Hyparrhenia hirta</i>	Tambookie grass	Y	Y		Y	Y	Y
MYRTACEAE	<i>Hypocalymma angustatum</i>			Y	Y	Y	Y	Y
ASTERACEAE	<i>Hypochaeris glabra</i>	Flatweed	Y	Y			Y	
ASTERACEAE	<i>Hypochaeris radicata</i>		Y	Y		Y	Y	
RESTIONACEAE	<i>Hypolaena exsulca</i>					Y		
CYPERACEAE	<i>Isolepis cernua</i>			Y	Y	Y		

Family	Species	Common Name	Weed	Recorded 2011	Recorded 2013	Recorded 2015	Recorded 2018	Recorded 2019
CYPERACEAE	<i>Isolepis cyperoides</i>			Y	Y			
CYPERACEAE	<i>Isolepis marginata</i>			Y	Y			
FABACEAE	<i>Jacksonia sternbergiana</i>	Stinkwood			Y	Y	Y	Y
JUNCACEAE	<i>Juncus pallidus</i>			Y	Y		Y	Y
JUNCACEAE	<i>Juncus subsecundus</i>						Y	Y
MYRTACEAE	<i>Kunzea micrantha</i>			Y	Y	Y	Y	Y
ASTERACEAE	<i>Lactuca serriola</i>	Prickly lettuce	Y			Y		
GOODENIACEAE	<i>Lechenaultia floribunda</i>			Y				
CYPERACEAE	<i>Lepidosperma longitudinale</i>			Y	Y	Y	Y	Y
CYPERACEAE	<i>Lepidosperma rostratum</i>			Y	Y	Y	Y	Y
CYPERACEAE	<i>Lepidosperma squamatum</i>			Y	Y		Y	Y
RESTIONACEAE	<i>Leptocarpus canus</i>			Y	Y	Y	Y	Y
RESTIONACEAE	<i>Lepyrodia glauca</i>					Y		
MENYANTHACEAE	<i>Liparophyllum capitatum</i>							Y
POACEAE	<i>Lolium multiflorum</i>	Italian ryegrass	Y	Y	Y	Y	Y	
POACEAE	<i>Lolium rigidum</i>	Wimmera Ryegrass	Y				Y	Y
ASPARAGACEAE	<i>Lomandra caespitosa</i>	Tufted Mat Rush					Y	Y
ASPARAGACEAE	<i>Lomandra hermaphrodita</i>				Y		Y	Y
ASPARAGACEAE	<i>Lomandra suaveolens</i>			Y	Y	Y	Y	Y

Family	Species	Common Name	Weed	Recorded 2011	Recorded 2013	Recorded 2015	Recorded 2018	Recorded 2019
FABACEAE	<i>Lotus angustissimus</i>		Y	Y		Y		Y
FABACEAE	<i>Lotus subbiflorus</i>		Y		Y			
FABACEAE	<i>Lotus uliginosus</i>		Y	Y				
PRIMULACEAE	<i>Lysimachia arvensis</i> <i>var caerulea</i>	Blue Pimpernel	Y		Y	Y		
LYTHRACEAE	<i>Lythrum hyssopifolia</i>	Lesser loosestrife	Y		Y			
FABACEAE	<i>Medicago polymorpha</i>		Y	Y				
MYRTACEAE	<i>Melaleuca acutifolia</i>						Y	Y
MYRTACEAE	<i>Melaleuca lateritia</i>	Robin Redbreast Bush		Y	Y	Y	Y	Y
MYRTACEAE	<i>Melaleuca preissiana</i>	Moonah			Y			Y
MYRTACEAE	<i>Melaleuca raphiophylla</i>			Y	Y	Y	Y	Y
MYRTACEAE	<i>Melaleuca viminea</i>			Y	Y	Y		Y
ORCHIDACEAE	<i>Microtis media</i>	Tall Mignonette				Y		
CAMPANULACEAE	<i>Monopsis debilis</i>		Y			Y		
IRIDACEAE	<i>Moraea flaccida</i>	Cape Tulip	Y	Y				Y
AMARYLLIDACEAE	<i>Narcissus tazetta</i>	Jonquil	Y	Y				
POACEAE	<i>Neurachne alopecuroides</i>	Fox-tailed mulga grass		Y		Y	Y	Y
ALLIACEAE	<i>Nothoscordum gracile</i>	False onion weed	Y		Y			
ONAGRACEAE	<i>Oenothera stricta</i>	Common evening primrose	Y		Y	Y		
RUBIACEAE	<i>Opercularia vaginata</i>			Y	Y		Y	Y
OXALIDACEAE	<i>Oxalis glabra</i>		Y	Y		Y		Y

Family	Species	Common Name	Weed	Recorded 2011	Recorded 2013	Recorded 2015	Recorded 2018	Recorded 2019
OXALIDACEAE	<i>Oxalis pes-caprae</i>	Soursob	Y	Y				Y
SCROPHULARIACEAE	<i>Parentucellia latifolia</i>		Y	Y		Y		
OROBANCHACEAE	<i>Parentucellia viscosa</i>	Sticky Bartsia	Y		Y			
POACEAE	<i>Paspalum dilatatum</i>	Paspalum	Y					Y
IRIDACEAE	<i>Patersonia occidentalis</i>	Purple flag					Y	Y
IRIDACEAE	<i>Patersonia occidentalis</i> <i>var. occidentalis</i>	Purple flag		Y	Y	Y	Y	Y
PHILYDRACEAE	<i>Philydrella pygmaea</i>			Y				
POACEAE	<i>Phleum arenarium</i>		Y			Y		
THYMELAEACEAE	<i>Pimelea imbricata</i> <i>var. major</i>			Y		Y		Y
ASTERACEAE	<i>Podolepis gracilis</i>	Slender Podolepis			Y			
POACEAE	<i>Polypogon monspeliensis</i>	Annual Beard grass	Y		Y	Y		
AMARANTHACEAE	<i>Ptilotus manglesii</i>	Pom Poms			Y			
ASTERACEAE	<i>Quinetia urvillei</i>							
BRASSICACEAE	<i>Raphanus raphanistrum</i>	Wild Radish	Y	Y	Y			Y
IRIDACEAE	<i>Romulea rosea</i>	Guildford grass	Y	Y		Y	Y	Y
POLYGONACEAE	<i>Rumex crispus</i>	Curled Dock	Y			Y		
PRIMULACEAE	<i>Samolus junceus</i>			Y	Y	Y	Y	Y
GOODENIACEAE	<i>Scaevola lanceolata</i>			Y	Y	Y	Y	Y
CYPERACEAE	<i>Schoenus clandestinus</i>						Y	Y
CYPERACEAE	<i>Schoenus rigens</i>			Y	Y	Y	Y	Y
ASTERACEAE	<i>Siloxerus filifolius</i>					Y		

Family	Species	Common Name	Weed	Recorded 2011	Recorded 2013	Recorded 2015	Recorded 2018	Recorded 2019
SOLANACEAE	<i>Solanum nigrum</i>	Nightshade	Y		Y			
ASTERACEAE	<i>Sonchus oleraceus</i>	Common Sowthistle	Y	Y	Y	Y		Y
ASPARAGACEAE	<i>Sowerbaea laxiflora</i>			Y				
IRIDACEAE	<i>Sparaxis bulbifera</i>		Y	Y				Y
STYLIDIACEAE	<i>Stylidium divaricatum</i>					Y	Y	Y
STYLIDIACEAE	<i>Stylidium longitubum</i>					Y		Y
STYLIDIACEAE	<i>Stylidium petiolare</i>			Y				
ASTERACEAE	<i>Symphyotrichum squamatum</i>	Bushy Starwort	Y			Y		
CENTROLEPIDACEAE	<i>Tecticornia halocnemoides</i>	syn. Halosarcia halocnemoides		Y	Y	Y	Y	Y
ORCHIDACEAE	<i>Thelymitra antennifera</i>	Vanilla orchid		Y				Y
ASPARAGACEAE	<i>Thysanotus patersonii</i>			Y	Y	Y	Y	
HAEMODORACEAE	<i>Tribonanthes australis</i>			Y		Y	Y	Y
FABACEAE	<i>Trifolium angustissimus</i>	Narrowleaf clover	Y			Y		
JUNCAGINACEAE	<i>Triglochin linearis</i>			Y				Y
JUNCAGINACEAE	<i>Triglochin trichophora</i>			Y				Y
ASTERACEAE	<i>Ursinia anthemoides</i>		Y	Y	Y	Y		Y
LENTIBULARIACEAE	<i>Utricularia multifida</i>			Y				Y
GOODENIACEAE	<i>Velleia trinervis</i>			Y	Y	Y		Y
MYRTACEAE	<i>Verticordia acerosa</i>			Y		Y	Y	Y
MYRTACEAE	<i>Verticordia densiflora</i>			Y	Y	Y	Y	Y
FABACEAE	<i>Vicia sativa</i>		Y	Y				Y

Family	Species	Common Name	Weed	Recorded 2011	Recorded 2013	Recorded 2015	Recorded 2018	Recorded 2019
FABACEAE	<i>Viminaria juncea</i>	Swishbush		Y	Y	Y	Y	Y
IRIDACEAE	<i>Watsonia meriana</i> var <i>bulbifera</i>		Y	Y		Y	Y	Y
COLCHICACEAE	<i>Wurmbea dioica</i> subsp. <i>alba</i>						Y	Y