Pre-Referral Screening Report

Project: Wurrumiyanga subdivision

EcOz Environmental Consultants were engaged by the Department of Infrastructure, Planning and Logistics (DIPL) to undertake pre-referral screening of their proposed 70 lot subdivision at Wurrumiyanga on Bathurst Island, 80 km northwest of Darwin. The proposed subdivision location and layout is shown on Figure 1.

The purpose of the screening is to determine whether the development has the potential for significant environmental impact under the *Environment Protection Act 2019*. A significant environmental impact is defined by Section 11 of the *Environmental Protection Act 2019* as:

An impact of major consequence having regard to:

> *•The context and intensity of the impact*
>
> *•The sensitivity, value and quality of the environment impacted on, and the duration, magnitude and geographic extent of the impact.*

Pre-referral screening was undertaken using the tool provided in the *Guideline – Referring a Proposal to the NT EPA* https://ntepa.nt.gov.au/publications-and-advice/environmental-management. The screening tool records answers to the questions shown in Figure 4.

The following key information sources were referenced to conduct the screening:

- Typhonium Survey Report undertaken by Connect Environmental on 13 June 2023.
- T21-2263 Wurrumiyanga Environmental Assessment undertaken by EcOz Environmental Consultants in May 2022. A review of the likelihood of occurrence assessment (LOA) in the above report was undertaken as part of this referral on 20 November 2023, to identify any additional species or protected matters listings. A gap analysis was undertaken and identified seven species that required a LOA that were not included in the 2022 LOA. No additional species were identified as high or medium likelihood of occurrence.
- Darwin Cycad Survey Memo prepared by EcOz Environmental Consultants in January 2024. A Darwin Cycad density survey was undertaken in November 2023 to identify the density of the species within the proposed development area. Additional to the cycad density survey the memo provided information on the status of significant vegetation (old-growth forest) and weeds and feral animals in the proposed development area and surrounding environment. The result summarised in the memo are provided in the pre-referral screening tool under the Terrestrial Ecosystems factor.
- Report on Geotechnical Investigation for Wurrumiyanga Subdivision undertaken by Douglas Partners in November 2023.
- Report on Contamination Assessment for Wurrumiyanga Subdivision undertaken by Douglas Partners in December 2023.
- Wurrumiyanga Mosquito Borne Disease Investigation 13 – 15 April 2021 undertaken by Medical Entomology (NT Health) as a response to fatal encephalitis case in February 2021 in Wurrumiyanga.

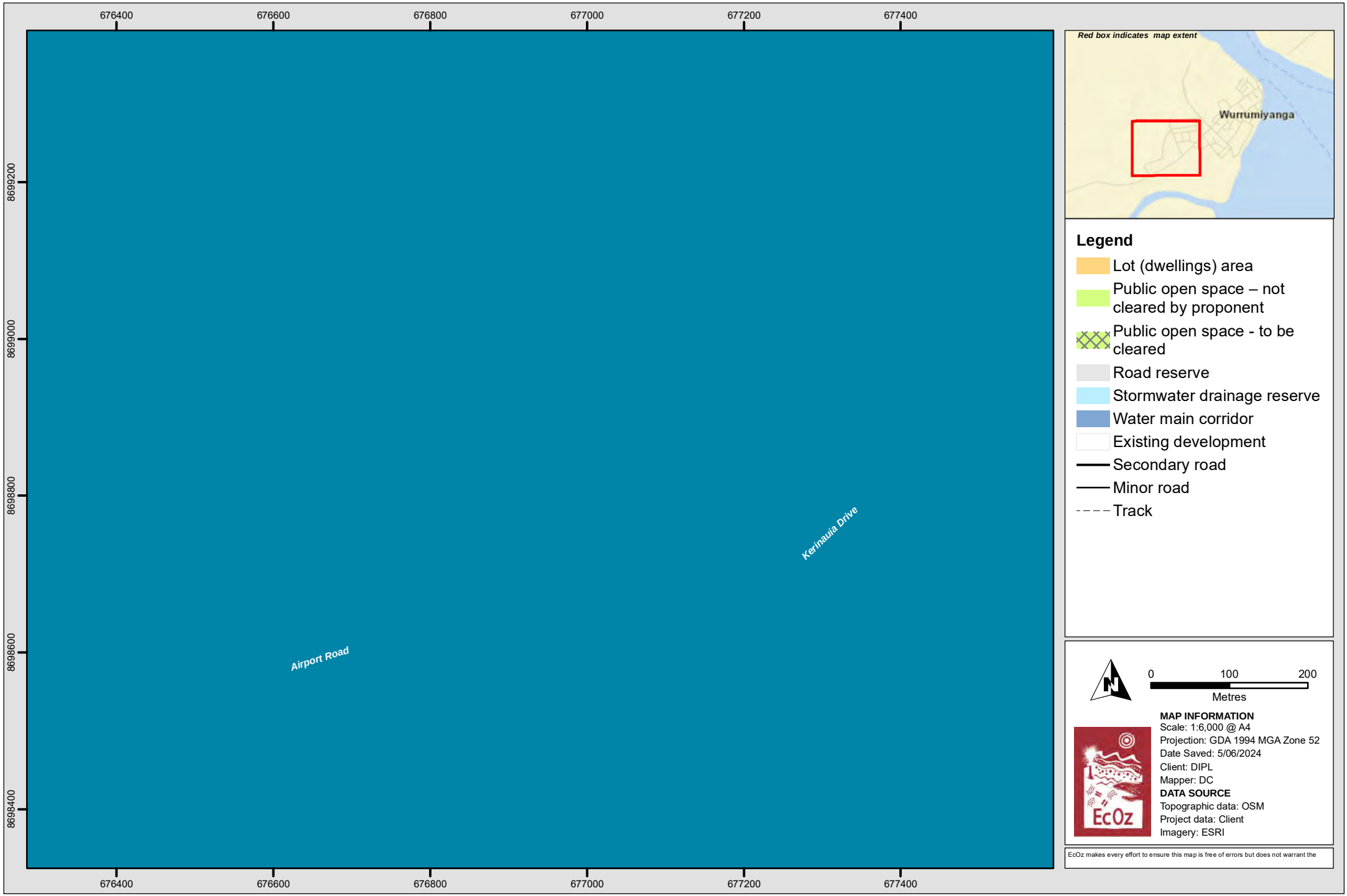

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Figure 1. Proposed development area location and design

Path: Z:\01 EcOz_Documents\04 EcOz Vantage GIS\EZ23143 - Wurrumiyanga Subdivision Referral\1. Project Files\2. Report Maps\Map of surface water drainage line and surface water flows.mxd

Figure 2. Map of surface water drainage lines and surface water flows

Figure 3. Cultural and heritage values

(redacted for public exhibition purposes)

The screening was undertaken with reference to the screening questions shown in Figure 4 and the results are documented in Table 1 below.

Figure 4. Pre-screening tool screening questions (Source: NT EPA 2021)

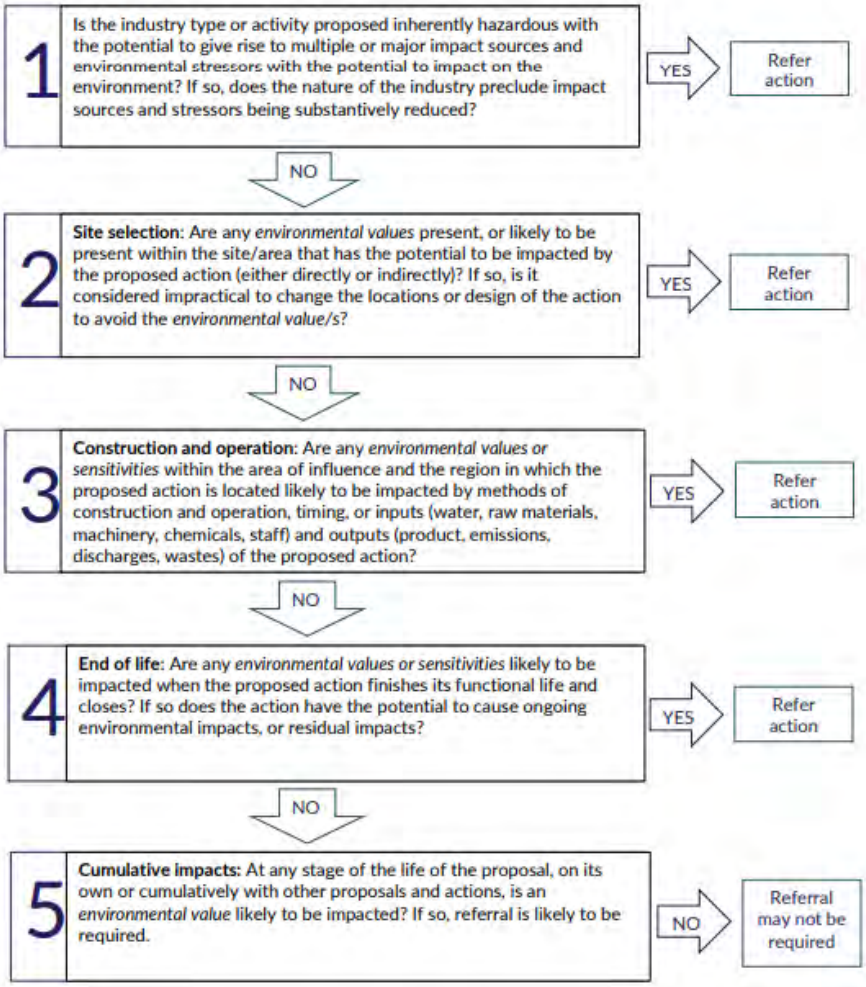

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Table 1. Pre-referral screening tool checklist prepared for Wurrumiyanga subdivision.

Theme	Factor and Objective	Background information (about the proposal)	Environmental values, sensitivities (based on desktop and/or surveys)	Pre-referral screening questions						Comments on whether or not referral required
					Q1	Q2	Q3	Q4	Q5	
				Yes No	☐ ☒					
Land	**Landforms** Objective: Conserve the variety and integrity of distinctive physical landforms.	• The proposal area is 15.25 ha of generally flat land, with a very gentle downward grade to the south (Douglas Partners 2023a).	• No distinctive natural physical landforms of cultural, ecological, or social importance are present in the proposed development area.	Yes No Uncertain N/A		☐ ☒ ☐ ☐	☐ ☒ ☐ ☐	☐ ☒ ☐ ☐	☐ ☒ ☐ ☐	Does not trigger referral assessment, because there are no distinctive natural physical landforms of cultural, ecological, or social importance are present in or adjacent to the proposed development area. • The landform environmental factor does not require further assessment.
	Terrestrial Environmental Quality Objective: Protect the quality and integrity of land and soils so that environmental values are supported and maintained.	• 15.25 ha (maximum extent) of land and soils will be disturbed by land clearing and development. • Storage of hazardous materials or chemicals will be limited to diesel and construction requirements. • No storage of hazardous materials will occur post construction. • Fill and gravel material will be sourced from existing local borrow pits on Bathurst Island, that have been previously used for other subdivision developments at Wurrumiyanga.	• Identified by the geotechnical investigation, the slope of the land is <3% across the proposal area and surface drainage is slow and subject to inundation and water logging (Douglas Partners 2023a). • No stockpiles of soil or fill were noted during the geotechnical and contamination assessment field works in the proposed development area. All soils tested were clay dominant with varying amounts of sand, silt and gravel (Douglas Partners 2023b) • No gross contamination was reported in any of the samples., • The following analytes were analysed as part of the assessment of 6 soil samples across the 43 test pits: o Metals/metalloids (arsenic, cadmium, chromium, copper, lead, mercury, nickel and zinc) o Total recoverable hydrocarbons (TRH) o Benzene, toluene, ethylbenzene and xylenes (BTEX) o Polyaromatic hydrocarbons (PAH) o Organochlorine Pesticides (OCP) o Organophosphorus Pesticides (OPP) o Polychlorinated biphenyls (PCB) o Asbestos (absence/presence). • Total chromium concentrations were elevated in soils sampled during the contamination investigation. Additional analysis determined that the concentrations of the more toxic Hexavalent Chromium (CrVI) to which the NEPM HIL-A[1] applies, were less than the limit of detection. The authors concluded that the high chromium most likely represented natural (background) soil concentrations (Douglas Partners 2023b). • Douglas Partners concluded that the site appears to be suitable for the proposed development from a contamination perspective, and a groundwater investigation was not recommended (Douglas Partners 2023b). • NRM Maps indicates there is an extremely low likelihood of Acid Sulphate Soils (ASS) within the proposed development area.	Yes No Uncertain N/A		☐ ☒ ☐ ☐	☐ ☒ ☐ ☐	☐ ☒ ☐ ☐	☐ ☒ ☐ ☐	Does not trigger referral assessment, because: • Erosion risk will be managed through an Erosion and Sediment Control Plan (ESCP) in accordance with the IECA BPESC Guidelines. • No gross contamination was identified in the contamination assessment across the test pits in the proposed development area. • During construction, hazardous materials and chemicals will be stored in accordance with Australian Standards under a site-specific Construction Environmental Management Plan (CEMP). The CEMP will be developed under the DIPL *standard specification for environmental management 2.0* (available here). • An unexpected finds procedure for ASS, large amounts of surface litter and stained/odorous soils will be included in the CEMP as a precaution. • The volume of fill and gravel material required to suitability develop the area is relatively small in quantity and will be sourced from designated existing local borrow pits on Bathurst Island. • All fill material must be virgin excavated natural material (VENM). The material must be accompanied by details of its nature, origin, volume, and transportation details. It is also recommended that the proponent takes notice of the NT EPA fact sheets How to avoid the dangers of accepting illegal fill onto your land and Illegal Dumping - What You Need To Know, available here. • This approach has been used for the development of other subdivisions at Wurrumiyanga, with no known significant impacts. • No fill outside of Bathurst Island will be sourced. The terrestrial environmental quality factor does not require further assessment.

[1] National Environment Protection (Assessment of Site Contamination) Measure 1999 (as amended 2013) Health Investigation Level (HIL-A).

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				Yes No	☐ ☒					
			• No project specific contamination investigations have occurred at the existing borrow pit locations.							
	Terrestrial Ecosystems Objective: Protect terrestrial habitats to maintain environmental values including biodiversity, ecological integrity and ecological functioning.	• 15.25 ha (maximum extent) of land will be disturbed. • Initial investigations for the subdivision area identified a potential area of 60.3 ha for the subdivision. The proposed development area subject to the pre-referral screening has been reduced to 15.25 ha. • Subdivision of the land, construction of infrastructure and provision of services will require the clearing of vegetation and earthworks. • It is known that *Typhonium* occurs on the Tiwi Islands and specifically within the proposed development. The species is listed as Endangered under the national *Environmental Protection and Biodiversity Conservation Act 1999* and the NT's *Territory Parks and Wildlife Conservation Act 1976*.	Occurrence of *Typhonium mirabile:* • An ecological assessment of the proposed development area detected 651 *Typhonium* plants (EcOz 2022). • A larger Typhonium survey commissioned by Connect Environmental (EcOz 2023) identified 8450 *Typhonium* plants within the broader surrounding area Threatened flora species • Targeted survey for Darwin Cycad (*Cycas Armstrongii*) by EcOz (November 2023) identified sparse Darwin Cycad individuals, however no high or very-high density patches were identified within the proposed area. Significant vegetation: • Presence of large hollow-bearing old growth forest trees within the broader proposal area. • One significant vegetation type (large hollow-bearing trees/old-growth forest) approximately 2ha in size occurs within the proposed development area. Weeds and feral animals: • Mission Grass was observed to be present within the subdivision area (both annual and perennial species). • Minor weed species present at borrow pit locations (EcOz 2022). • According to the NT Fauna Atlas, the following pest animals may occur in the proposal area: o Feral Cattle o Horse o Wild Dog o Feral Cat o Feral Pig (observed during cycad density survey EcOz 2024) o Asian House Gecko. • Northern Territory Government has identified the Tiwi Islands as a whole as a Site of Conservation Significance, with a significance rating of International Significance (NRETAS 2009).	Yes No Uncertain N/A	☐ ☐ ☐ ☐	☒ ☐ ☐ ☐	☐ ☒ ☐ ☐	☐ ☒ ☐ ☐	☒ ☐ ☐ ☐	Triggers referral assessment due to the presence of threatened species and old-growth forest trees and these species/ vegetation type may be impacted by: • vegetation/land clearing and habitat removal • introduction and spread of weeds The terrestrial ecosystems factor requires further assessment to determine whether impacts are likely to be significant.
Water	**Hydrological Processes** Objective: Protect the hydrological regimes of groundwater and surface water so that environmental including ecological health, land uses and the welfare	• Stormwater infrastructure will connect to existing infrastructure that has been designed to allow for the subdivision to be constructed. • In addition to the internal drainage in the proposed development area, an open drain with an average depth of 1.5m will be provided around the perimeter of the subdivision, to intercept upslope	• Identified by the geotechnical investigation, the slope of the land is <3% across the proposed development area and surface drainage is slow and subject to inundation and water logging (Douglas Partners 2023a).	Yes No Uncertain N/A		☐ ☒ ☐ ☐	☐ ☒ ☐ ☐	☐ ☒ ☐ ☐	☐ ☒ ☐ ☐	Does not trigger referral assessment because the proposal is unlikely to have a significant impact on hydrological processes for the following reasons: • The area is small in scale (15.25 ha). • Stormwater infrastructure will be designed and constructed in accordance with relevant NTG

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					Q1	Q2	Q3	Q4	Q5	
				Yes No	☐ ☒					
	and amenity of people are maintained.	surface runoff from the adjacent bushland catchment, and to intercept groundwater seepage in the topsoil strata to mitigate localised waterlogging of the soils within the subdivision area. This cut-off drain concept has been successfully utilised for the previous housing subdivision, which included the construction of a similar sized cut off drain to the rear of the housing lots along the western side of Kantilla Street. Geotechnical inspections of the existing housing subdivision during the Wet Season, confirmed that the housing lots downslope of the cut off drain did have the same waterlogging issues as the adjacent areas upslope of the drain. • Land clearing and introduction of additional impervious surfaces will increase stormwater flow and alter surface water flow paths into the stormwater system. • There is a swimming hole (man-made) present in a previously disturbed area of the proposed development area. The area contains standing water collected during the wet season from incidental rainfall, and dries up during the dry season. • The Wurrumiyanga community is serviced by groundwater, with the new residential dwellings will also access the existing groundwater source. • PowerWater Corporation (PWC) through internal consultation with the proponent have confirmed that the existing bore field and supply mains have sufficient capacity to service the proposed 70 lots to be constructed and habited (per comms, DIPL). • Commencement of vegetation clearing, and construction activities are proposed to be completed in the 2025 dry season .	• Surface water catchment data indicates that the area is within the same sub catchment as the Wurrumiyanga Township (NR Maps 2023). • Topographic data obtained from DIPL indicates the slope of the land is very minor and that section of the subdivision north of the unmaintained Airport Road drains to the north, and the area south of the unmaintained Airport Road drains east towards the existing Wurrumiyanga Township (see Figure 2). • The proposed development area is not within the designated flood zone. • No major, minor or stream type drainage lines transverse through the area (NR Maps 2023). • From the context of waterlogging and moisture content in soil that influence the hydrological processes of the proposed development area, the in-situ soil is generally classed as moderately reactive clay that is subject to shrink-swell movements with changes in moisture condition (Douglas Partners 2023a).							stormwater and drainage policy (available here). • The stormwater infrastructure will be connected to existing infrastructure that was designed with the intent that this proposed subdivision be developed for the purpose of residential use. • Risk of groundwater inflows into excavations will be managed through standard civil engineering design approaches (Douglas Partners 2023a). • The extraction of groundwater from the underlying aquifer is managed by PWC and modelling has shown that there is sufficient capacity to service the proposed subdivision (per comms, DIPL). • Issue of waterlogging and/or fluctuations in soil moisture conditions of the in-situ soils will be managed through construction of formalised site drainage infrastructure, which includes grading of the finished site levels and utilising suitable material in the top earthworks layers, to promote drainage of the finished surface and reduce risk of waterlogging. Surface runoff is captured via table drains within the road reserves that convey stormwater to the existing downstream open drainage network. • Other measure to improve soil drainage across the proposed development area include utilising engineered fill to locally raise the area above potentially saturated ground within low lying areas, and to cover the in-situ clays to maintain balanced subsurface moisture conditions.

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					Q1	Q2	Q3	Q4	Q5	
				Yes No	☐ ☒					
	Inland Water Environmental Quality Objective: Protect the quality of groundwater and surface water so that environmental values including ecological health, land uses and the welfare and amenity of people are maintained.	• Spills, leaks and inappropriate disposal of hazardous chemicals, fuel, oils, lubricants and paint during construction may degrade downstream water quality. • Stormwater runoff from the new urban area may contain contaminants such as hydrocarbons, nutrients (from fertilisers) and E. coli (animal faeces). • The land units occurring within the proposed development area indicates that soils are generally poorly drained and are typically associated with broad drainage zones, likely recharged from direct filtration. • Sewerage from the proposed subdivision will be directed to the existing Wurrumiyanga Wastewater Treatment Ponds, where it will be treated and released as per Waste Discharge License (WDL) 223-02 as licenced to PWC • PWC have advised no upgrades to the existing wastewater treatment ponds are required to service the proposed subdivision, the existing infrastructure has been designed to have sufficient capacity for future development (pers comms, DIPL).	• Desktop assessment showed no major or minor drainage lines, waterbodies, creeks or streams identified within or adjacent to the proposed development area (see Figure 2). • Although groundwater was not encountered during the geotechnical investigation, there is a risk of localised shallow groundwater occurring at the site, especially during or immediately following the wet season (Douglas Partners 2023a).	Yes No Uncertain N/A		☐ ☒ ☐ ☐	☐ ☒ ☐ ☐	☐ ☒ ☐ ☐	☐ ☒ ☐ ☐	Does not trigger referral assessment because: • The erosion risk will be managed through an ESCP in accordance with the IECA BPESC Guidelines. • Contamination risk from minor storages of fuels and other hazardous chemicals during construction will be managed through a site-specific CEMP. The CEMP developed under the DIPL *standard specification for environmental management 2.0* (available here). • Absence of major or minor drainage lines, waterbodies, creeks or streams within or adjacent to proposal area. • Stormwater runoff managed by standard development mitigation measures and will connect into existing Wurrumiyanga stormwater infrastructure. • Treated wastewater is permitted to be discharged in accordance with the WDL223-02, from the existing wastewater treatment ponds. The inland water environmental quality factor does not require further assessment.
	Aquatic Ecosystems Objective: Protect aquatic habitats to maintain environmental values including biodiversity, ecological integrity and ecological functioning.	• Proposed subdivision design to include stormwater infrastructure, to be connected to the existing Wurrumiyanga township system. • The capacity of the existing wastewater treatment ponds is sufficient to effectively treat sewage.	• No freshwater ecosystems within or directly adjacent to the proposed development area. • No major or minor streams present in or adjacent to the proposed development area	Yes No Uncertain N/A		☐ ☒ ☐ ☐	☐ ☒ ☐ ☐	☐ ☒ ☐ ☐	☐ ☒ ☐ ☐	Does not trigger referral assessment as no aquatic ecosystems identified in or downstream of the proposed development area. The aquatic ecosystems factor does not require further assessment.
Sea	**Coastal Processes** Objective: Protect the geophysical and hydrological processes that shape coastal morphology so that the environmental values of the coast are maintained.	• Proposed subdivision design to include stormwater infrastructure, to be connect to the existing Wurrumiyanga township system. • Sewerage from the proposed subdivision will be directed to the Wurrumiyanga Wastewater Treatment Ponds, where it will be treated and released as per conditions of WDL223. • No upgrades to the existing wastewater treatment ponds are required to service the proposed subdivision, the existing infrastructure has been designed to have sufficient capacity for future development.	• The closest mapped area of mangroves occurs approximately 500m to the south-east of the proposed development area, along Taradiri Creek that flows into the Beagle Gulf. • The closest area of mangroves to the north is approximately 1.5km, along tributaries that flow into the Apsley Strait. • Surface water catchment data indicates that the area is within the same sub catchment as the Wurrumiyanga Township (NR Maps 2023 and DIPE 2003). • Topographic data obtained from DIPL indicates the slope of the land is very minor and that section of the subdivision north of the unmaintained Airport Road drains to the north, and the area south of the unmaintained Airport Road drains east towards the existing Wurrumiyanga Township (see Figure 2).	Yes No Uncertain N/A		☐ ☒ ☐ ☐	☐ ☒ ☐ ☐	☐ ☒ ☐ ☐	☐ ☒ ☐ ☐	Does not trigger referral assessment because the proposal is unlikely to have a significant impact on coastal processes for the following reasons: • absence of impact pathway i.e. major or minor drainage lines, waterbodies, creeks or streams within or adjacent to proposal area that discharge into marine environment • standard engineering measures such as stormwater infrastructure will be designed and constructed in accordance with relevant NTG stormwater and drainage policy (available here). Known to be effective. The coastal processes factor does not require further assessment.
	Marine Environmental Quality Objective: Protect the quality and productivity of water, sediment and biota so that environmental values are maintained.			Yes No Uncertain N/A		☐ ☒ ☐ ☐	☐ ☒ ☐ ☐	☐ ☒ ☐ ☐	☐ ☒ ☐ ☐	Does not trigger referral assessment because the proposal is unlikely to have a significant impact on marine environmental quality for the following reasons: • absence of impact pathway i.e. major or minor drainage lines, waterbodies, creeks or streams within or adjacent to proposal area that discharge into marine environment • standard engineering measures such as stormwater infrastructure will be designed and

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					Q1	Q2	Q3	Q4	Q5	
				Yes No	☐ ☒					
										constructed in accordance with relevant NTG stormwater and drainage policy (available here). Known to be effective. The marine environmental quality factor does not require further assessment.
	Marine Ecosystems Objective: Protect marine habitats to maintain environmental values including biodiversity, ecological integrity and ecological functioning.			Yes No Uncertain N/A		☐ ☒ ☐ ☐	☐ ☒ ☐ ☐	☐ ☒ ☐ ☐	☐ ☒ ☐ ☐	Does not trigger referral assessment because the proposal is unlikely to have a significant impact on marine ecosystems for the following reasons: • absence of impact pathway i.e. major or minor drainage lines, waterbodies, creeks or streams within or adjacent to proposal area that discharge into marine ecosystems • standard engineering measures such as stormwater infrastructure will be designed and constructed in accordance with relevant NTG stormwater and drainage policy (available here), which area known to be effective. The marine environmental quality factor does not require further assessment.

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					Q1	Q2	Q3	Q4	Q5	
				Yes No	☐ ☒					
	Air Quality Objective: Protect air quality and minimise emissions and their impact so that environmental values are maintained.	• Operation of plant and machinery during pre-construction and construction works may reduce local air quality (exhaust & dust emissions). • Clearing of 15.25ha of vegetation.	• Adjacent residential properties.	Yes No Uncertain N/A		☐ ☒ ☐ ☐	☐ ☒ ☐ ☐	☐ ☒ ☐ ☐	☐ ☒ ☐ ☐	Does not trigger referral assessment because the proposal is unlikely to have a significant impact due to: • Size of proposed development area and associated clearing unlikely to trigger action associated with net zero policy. • Potential impacts of noise and dust on nearby residents' amenity will be temporary and can be managed through standard mitigation measures in accordance with a site-specific CEMP, which are known to be effective. The CEMP developed under the DIPL *standard specification for environmental management 2.0* (available here). • Post the referral consultation process, stakeholder groups will be informed during delivery of the proposal through standard remote housing communication pathways used for previous developments, such as (but not limited to): o Updates to the HRG and Housing Stakeholder meetings on planned delivery milestones, followed by progress updates during construction. o DTFHaC will inform nearby residents of the planned commencement and completion of the works. o The construction contractor will provide additional notifications to nearby residents during construction delivery where required (due to temporary closure of roads, shutdown of services etc.). The air quality factor does not require further assessment.
Air	**Atmospheric Processes** Objective: Minimise greenhouse gas emissions so as to contribute to the NT Government's aspirational target of achieving net zero greenhouse gas emissions by 2050.	• Site is identified as an appropriate location for future residential development, in proximity to existing development and associated infrastructure services. • The proposal will result in 15.25ha of vegetation clearing. • The subdivision dwellings will be connected to existing Wurrumiyanga power network, which includes solar generated energy and diesel generators. Construction of the Wurrumiyanga Solar Infill and Energy Storage Pilot Project has commenced. On completion of the solar project, it is expected that the renewable energy delivered to the township will include to almost 50% of the towns requirements (DITT 2023).	• An estimate of scope 1 emissions associated with land clearing indicate that approximately 3,909.02 tCO_2 is expected to be emitted, this is well below the 500,000 tCO_2 land use project threshold under the draft Environmental Factor: Atmospheric Processes Guideline. See attached Carbon Emissions Calculator generated report (Appendix A). The industrial project threshold is not applicable for this proposal. • Scope 2 emissions will be captured and managed under PWC operational and reporting requirements. • No relevant scope 3 emissions were identified.	Yes No Uncertain N/A		☐ ☒ ☐ ☐	☐ ☒ ☐ ☐	☐ ☒ ☐ ☐	☐ ☒ ☐ ☐	Does not trigger referral assessment because the proposal is unlikely to have a significant impact due to: • Size of proposed development area and associated clearing unlikely to trigger action associated with net zero policy. The atmospheric processes factor does not require further assessment

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					Q1	Q2	Q3	Q4	Q5	
				Yes No	☐ ☒					
People	**Communities and Economy** Objective: Enhance communities and the economy and foster resilience to a changing climate, for the welfare, amenity and benefit of current and future generations of Territorians.	• Noise and dust emissions from construction and development activities have potential to reduce amenity for neighbouring residences. • The construction of new dwellings may impact amenity and privacy for residences that immediately adjoin the new subdivision, who do not currently have neighbours along the rear of their property boundary. • Additional traffic will be limited to during construction. • Restricted access via unmaintained road to the Airport during construction (hunting/cultural values access track). • Internal roads of the subdivision will connect from Kantilla Street to the remaining section of the unmaintained road to the Airport, allowing for vehicle and walking access.	• Existing residential properties immediately adjacent to the proposal. • Concern raised through engagement with the Wurrumiyanga community that the walking access from Kantilla Street to Airport via unmaintained Airport Road will be altered.	Yes No Uncertain N/A		☐ ☒ ☐ ☐	☐ ☒ ☐ ☐	☐ ☒ ☐ ☐	☐ ☒ ☐ ☐	Does not trigger referral assessment because the proposal is unlikely to have a significant impact due to: • Benefits of the proposal action for the surrounding community. • Community support of the proposal. • No community issues have been raised during the engagement process, and Traditional Owners have been engaged with the project for since 2021 through the Housing Reference Group. • Access to the Airport via the unmaintained Airport Road will be impact temporarily for a short-term during construction and development of the proposed development area. Communication with the community through standard construction notifications will flag the closure of the area. Once completed internal roads will connect to the portion unmaintained road and vehicle and walking access be reestablished. • Potential impacts to amenity for nearby residents from noise and dust generated from construction activities will be negligible and can be managed through standard mitigation measures. The communities and economy factor does not require further assessment

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				Yes No	☐ ☒					
	Culture and Heritage Objective: Protect sacred sites, culture and heritage	• An archaeological survey has not been undertaken of the proposed development area as part of this referral process. • An AAPA certificate (C2011/219) was obtained by Department of Housing in June 2016, covering the entire footprint of the Wurrumiyanga Township (including the proposed development area). The certificate identified a number of restricted works areas (RWA), one (RWA13) located within 100m of the proposed development area. This has been avoided by the proponent, it contains sacred site 5074-26. • Condition 5 of the AAPA certificate states *this certificate shall expire five years from the date of issue, pending a review of sacred site protection conditions and the issue of an updated Authority Certificate. This certificate shall remain valid until such time as a replacement certificate is issued.* • An Abstract of Records, for due diligence was requested and received on 05 March 2024 and identified no registered or recorded sacred sites, or restricted work areas within the proposal area.	• According to initial AAPA advice from 20 June 2016, there is a Restricted Works Area 13 (RWA13) located northwest of the proposed development area (C2011/219), the initial subdivision area was refined to avoid this RWA13. • RWA13 is associated with sacred site 5074-26. As per Condition 18 of the AAPA certificate *no work shall take place or no damage shall occur* within the RWA. No works shall take place within 100m of the RWA boundary (Figure 3). • An initial request from the community consultation with Traditional Owners undertaken to date, is that a small area to the northeast of the proposal footprint be avoided due to sensitivity values (Figure 3). The proponent has committed to avoid this area, and the proposed development area has been refined to the south. • No declared heritage sites registered on the NT Heritage Register are located within the proposed development area, or within 500m proximity of the area. • Since 2019, ongoing consultation with Tiwi Islanders to consider the Tiwi Islands for inclusion within the National IPA network (administered by the Commonwealth) has occurred. Consultation for the IPA is ongoing, with plans to include 90% of the Tiwi Islands for conservation and cultural uses. • No cultural or heritage issues were raised during community engagement.	Yes No Uncertain N/A		☐ ☒ ☐ ☐	☐ ☒ ☐ ☐	☐ ☒ ☐ ☐	☐ ☒ ☐ ☐	Does not trigger referral assessment because the proposal is unlikely to have a significant impact due to: • No identified cultural or heritage values to be impacted by proposed subdivision. • Potential impacts to culture and heritage are able to be mitigated through standard CEMP practices and compliance with AAPA certificate conditions, and stakeholder engagement with the community. • Condition 18 of the AAPA certificate refers to the RWA13, *no work shall take place or no damage shall occur.* • Unexpected finds procedure, as standard for DIPL projects, will be included in the site-specific CEMP. The CEMP will be developed under the DIPL *standard specification for environmental management 2.0* (available here). The culture and heritage factor does not require further assessment.

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					Q1	Q2	Q3	Q4	Q5	
				Yes No	☐ ☒					
	Human Health Objective: Protect the health of Northern Territory population.	• No access by the public to the area permitted once clearing of vegetation commences. • Vegetation clearing and initial construction activities to commence in the dry season. • Assumes biting insect habitat is present during wet season, based on poorly drained soil in proposal area (Douglas Partners 2023a). • Biting insects within the wider area associated with known wetland areas adjacent and within Wurrumiyanga (Medical Entomology 2021). • Subdivision design to include stormwater infrastructure to connect the proposed subdivision to the existing Wurrumiyanga township system. Requirement include that drainage systems be free draining, and pooling of water is limited.	• Known biting insects breeding habitats located around the township of Wurrumiyanga including at the sewage ponds northeast of the proposal area and dominant paperbark swamp habitat 'swimming hole' located adjacent to the proposal area.	Yes No Uncertain N/A		☐ ☒ ☐ ☐	☐ ☒ ☐ ☐	☐ ☒ ☐ ☐	☐ ☒ ☐ ☐	Does not trigger referral assessment because the proposal is unlikely to have a significant impact due to: • Biting insects' management during construction activities will be managed through a site specific CEMP, developed and approved under the DIPL *standard specification for environmental management 2.0* (available here). • Standard Medical Entomology part of Centre for Disease Control (NT Health), conduct annual monitoring throughout the NT, and investigate any mosquito borne disease cases. • Vegetation clearing, and initial construction activities are proposed to occur during the dry season. • Stormwater drainage infrastructure will be designed and constructed in accordance with relevant NTG stormwater and drainage policy (available here), one of the general objective of the policy is to e*nsure all drainage structures are free flowing and do not become mosquito breeding grounds* . • Stormwater runoff managed by standard development mitigation measures and will connect into existing Wurrumiyanga stormwater drainage infrastructure. All infrastructure will be constructed to The human health factor does not require further assessment.

This pre-referral screening checklist was prepared by a suitably qualified professional who is appropriately accredited and experience in impact assessment.

Name: Britanny Crescentino

Qualifications: Batchelor of Environmental Science

International Association for Impact Assessment – Foundations of Impact Assessment

Signature: 

Date: 20 March 2024

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Pre-Referral Screening Report

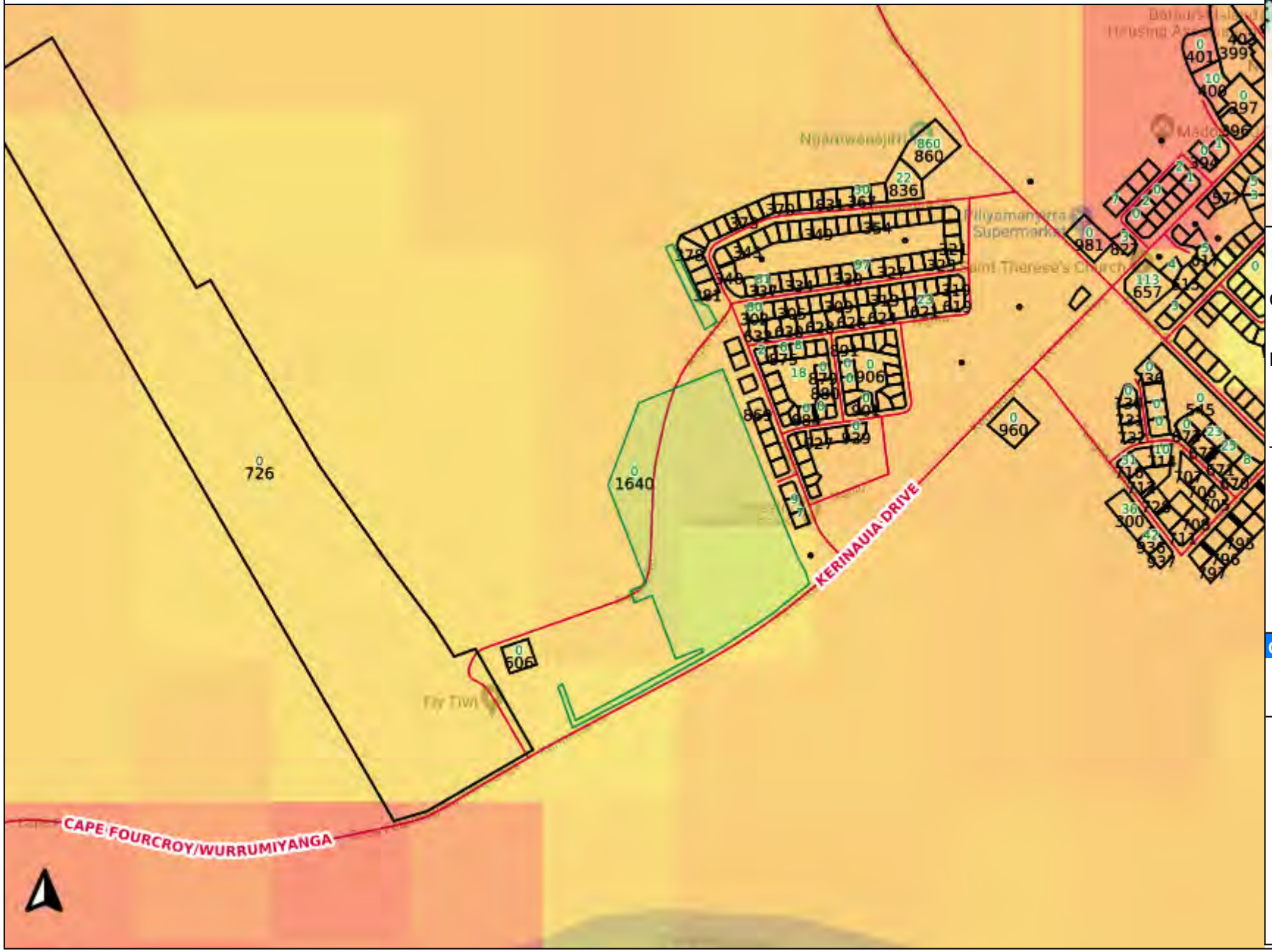
Project: Wurrumiyanga subdivision

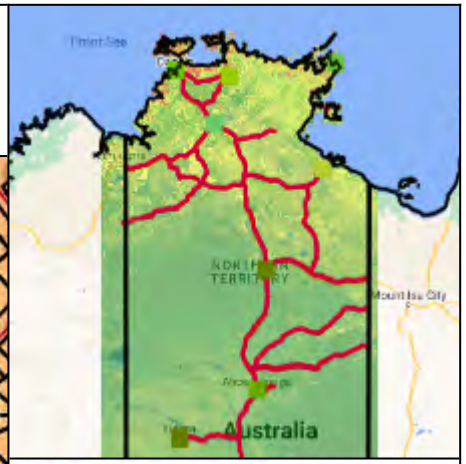
EcOz Environmental Consultants

Appendix A – GHG Emissions Carbon Calculator

Carbon Emissions Calculator - Department of Environment, Parks and Water Security

EZ23143 - Wurrumiyanga Subdivision Land Clearing Footprint





Carbon Emissions Area

Cadastre

Road Centrelines

- Highway
- Other Road

Total Emissions (tCO_2/ha)

- High : 939.131
- Low : 0.737952

Calculated Emissions	
Total Emissions (tonnes)	3,909.02
Total Area (ha)	15.18

Carbon Emissions Calculator

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Department of Environment, Parks and Water Security

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