CopperString 2.0

Concept biosecurity plan

Volume 3 Appendix U

Table of contents

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1. Concept biosecurity plan

1.1 Introduction

1.1.1 Background information

The Project involves the construction and operation of approximately 1,060 km of extra high voltage overhead electricity transmission line that will extend from Mount Isa to the Powerlink transmission network, via a new connection point near Woodstock, south of Townsville.

The Project involves construction of seven new substations at Woodstock, Hughenden, Dajarra Road (Cloncurry), Mount Isa, Selwyn, Cannington Mine and Phosphate Hill Mine.

The CopperString transmission network is divided into the following eight sections as shown in Figure 1-1:

1. Woodstock Substation
2. Renewable Energy Hub
3. CopperString Core
4. Mount Isa Augmentation
5. Southern Connection
6. Cannington Connection
7. Phosphate Hill Connection
8. Kennedy Connection (option).

1.1.2 Purpose of this plan

This Concept Biosecurity Plan (CBP) provides overarching requirements for biosecurity management (i.e. invasive plant (weed or pest plant), and invasive animal (pest), livestock diseases) for the Project that should be applied as a minimum. However, additional measures may be required specific to Project areas where mitigation is recommended within the EIS:

- Volume 2 Chapter 7 Flora and Fauna Chapter
- Volume 3 Appendix P Ecological Assessment
- Volume 3 Appendix Q Framework Environmental Management Plan

Triggers for specific biosecurity management actions may be required for the following aspects:

- Conservation significant vegetation communities or flora species
- Conservation significant fauna species habitat
- Riparian vegetation corridors or waterbodies
- Landholder Biosecurity Management Plan
- Landholder specific agreements

Specific biosecurity management plans if needed would be developed by the principle Construction Contractor(s), prior to construction commencing, in close consultation with a qualified ecologist/hygienist and with landholders.

1.1.3 Corridor selection

The baseline investigation corridor being a nominal 1,060 km long corridor transmission line alignment including a 120 m wide easement for the 330 kV transmission line from Woodstock to Dajarra Road, and 60 m wide for the 220 kV transmission lines from Dajarra Road to Mount Isa, Dajarra Road to Chumvale Substation, Dajarra Road to Selwyn, and Selwyn to Phosphate Hill and Cannington.

1.1.4 Project area

The Project area includes the 120 m wide easement and associated infrastructure. Including laydown areas, substations, CEV huts, access tracks, brake and winch sites and construction camps and works referred to in the EIS Terms of Reference (these include off-easement components).

1.1.5 Study area

The study area includes the Project area as well as the eight local government areas (LGAs) which are traversed by the Project. Additionally, a per the Volume 3 Appendix P Ecological Assessment, the study area also includes the 5 km corridor which was subject to the field and desktop assessments (up to 2.5 km either side of the corridor selection).

1.1.6 Assumptions

GHD has made the following assumptions in the development of this CBP:

- The information obtained through the desktop assessment of regional biosecurity plans are correct and reflect the site conditions within the study area.
- The information provided in Volume 3 Appendix P Ecological Assessment Report regarding desktop and field surveys are correct and reflect the site conditions within the study area.

1.1.7 Statement of limitations

This report: has been prepared by GHD for CuString Pty Ltd and may only be used and relied on by CuString Pty Ltd for the purpose agreed between GHD and the CuString Pty Ltd as set out in section 1.1.2 of this report.

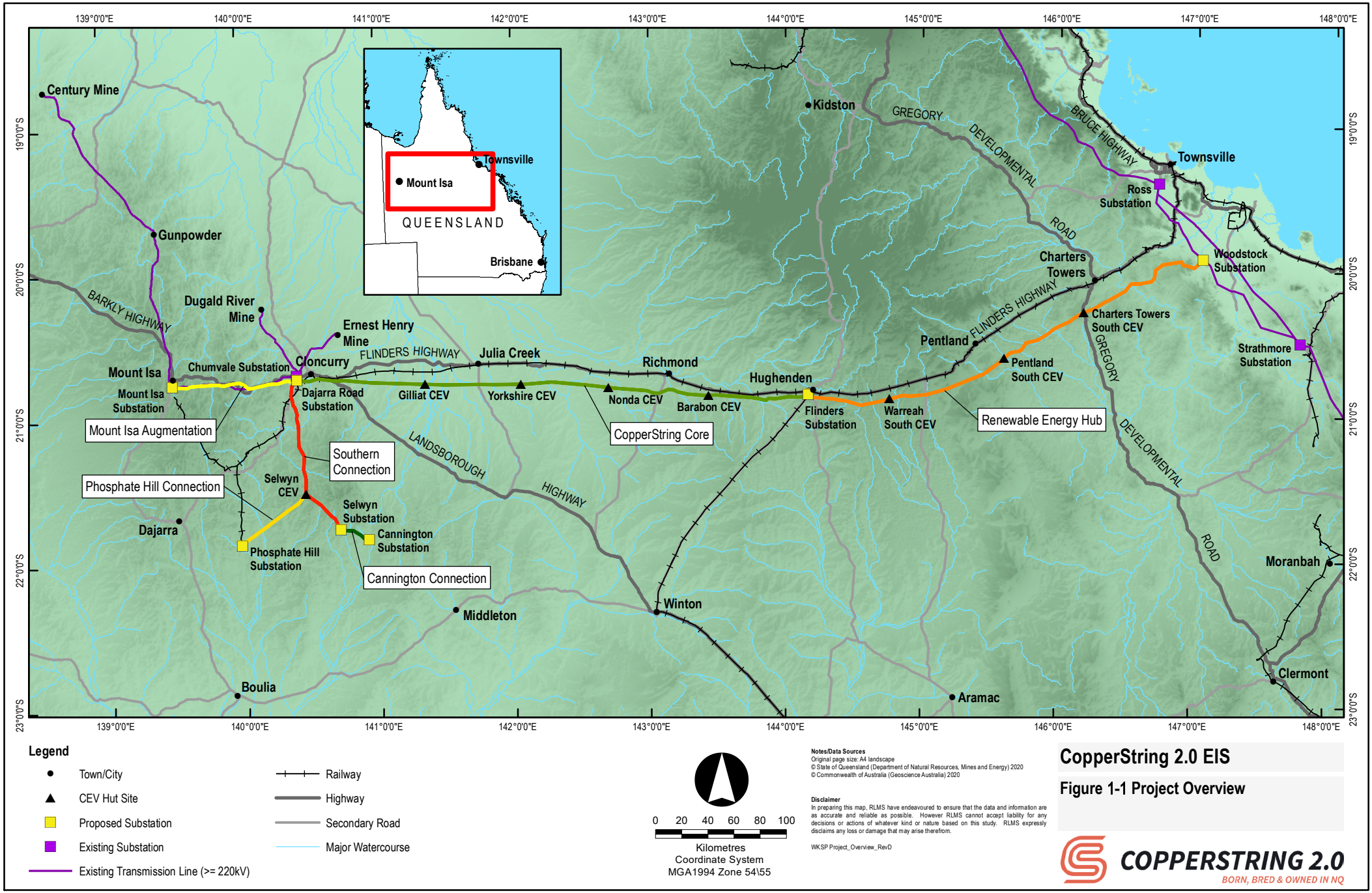
GHD otherwise disclaims responsibility to any person other than CuString Pty Ltd arising in connection with this report. GHD also excludes implied warranties and conditions, to the extent legally permissible.

The services undertaken by GHD in connection with preparing this report were limited to those specifically detailed in the report and are subject to the scope limitations set out in the report.

The opinions, conclusions and any recommendations in this report are based on conditions encountered and information reviewed at the date of preparation of the report. GHD has no responsibility or obligation to update this report to account for events or changes occurring subsequent to the date that the report was prepared.

The opinions, conclusions and any recommendations in this report are based on assumptions made by GHD described in this report (refer section 1.1.6 of this report). GHD disclaims liability arising from any of the assumptions being incorrect.

GHD has prepared this report on the basis of information provided by CuString Pty Ltd and others who provided information to GHD (including Government authorities)], which GHD has not independently verified or checked beyond the agreed scope of work. GHD does not accept liability in connection with such unverified information, including errors and omissions in the report which were caused by errors or omissions in that information.



Legend

- Town/City
- CEV Hut Site
- Proposed Substation
- Existing Substation
- Existing Transmission Line (>= 220kV)
- Railway
- Highway
- Secondary Road
- Major Watercourse

0 20 40 60 80 100

Kilometres

Coordinate System
MGA1994 Zone 54\55

Notes/Data Sources
Original page size: A4 landscape

Disclaimer
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WKSP Project_Overview_RevD

CopperString 2.0 EIS

Figure 1-1 Project Overview

COPPERSTRING 2.0
BORN, BRED & OWNED IN NQ

1.2 Approach and methodology

1.2.1 Site specific background documents

This CBP has been developed with reference to the following:

- GHD Pty Ltd, 2020. CopperString 2.0 EIS – Volume 1 – Chapter 2 – Project Description
- GHD Pty Ltd, 2020. CopperString 2.0 EIS – Volume 2 – Chapter 7 – Flora and Fauna
- GHD Pty Ltd, 2020. CopperString 2.0 EIS – Volume 2 – Chapter 8 – Biosecurity
- GHD Pty Ltd, 2020. CopperString 2.0 EIS – Volume 3 – Appendix P – Ecological Assessment
- GHD Pty Ltd, 2020. CopperString 2.0 EIS – Volume 3 – Appendix Q – Framework Environmental Management Plan.
- GHD Pty Ltd, 2020. CopperString 2.0 EIS – Volume 3 – Appendix T – Concept Rehabilitation Plan.

1.2.2 Legislative framework

The following legislative framework is relevant to the development of biosecurity (i.e. invasive plants and animals, animal diseases) management requirements:

- Queensland *Biosecurity Act 2014* (Biosecurity Act)

  The purpose of the Biosecurity Act is to provide a framework for an effective biosecurity system and manage risks associated with emerging, endemic and exotic species. All individuals and organisations have a General Biosecurity Obligation (GBO) under the Biosecurity Act, which means that they are responsible for managing biosecurity risks that are under their control and that they know about, or should reasonably be expected to know about. Under the GBO, individuals and organisation whose activities pose a biosecurity risk must:

  – Take all reasonable and practical steps to prevent or minimise each biosecurity risk
  – Minimise the likelihood of causing a biosecurity event, and limit the consequences if such an event is caused
  – Prevent or minimise the harmful effects a risk could have, and not do anything that might make any harmful effects worse.

  The Biosecurity Act takes a risk-based approach to biosecurity threats which allows greater flexibility and more responsive approaches to manage each specific circumstance focussing on biosecurity risks that are, or are likely to become, a significant problem for human health, social amenity, the economy or the environment. For example, a biosecurity risk exists where a person or organisation is moving soil, vegetation, machinery and/or equipment that could carry a weed seed or contaminant. Terms used under the Biosecurity Act are defined under legislation and can also be viewed on the Queensland Department of Agriculture and Fisheries (DAF) website. For the purpose of this CBP, key terminology includes prohibited matter and restricted matter as defined within the Biosecurity Act, as follows:

  – Prohibited Matter is biosecurity matter not currently present or known to be present in Queensland. It is prohibited because it may have a significant adverse effect on a biosecurity consideration if it did enter Queensland.
  – Restricted Matter is biosecurity matter found in Queensland that may have adverse effects on a biosecurity consideration if conditions or restrictions under the Biosecurity

Act were not imposed. Relevant Biosecurity Act restricted matter categories and requirements are shown in Table 1-1. Restricted invasive plants and animals may fall into one or a combination of Categories 1 to 7 listed below in Table 1-1.

– Invasive plants and animals that are not listed as prohibited or restricted matter are biosecurity matter and everyone is obligated to take all reasonable and practical steps to minimise the risks associated with these under their control.

Table 1-1 Relevant Biosecurity Act restricted matter categories and requirements

Category	Requirement
Category 1	The invasive plant/animal and animal disease must be reported to an inspector within 24 hours Biosecurity Queensland on 13 25 23.
Category 2	The invasive plant/animal must be reported to an inspector or authorised person within 24 hours Biosecurity Queensland on 13 25 23.
Category 3	Must not be distributed, as gift, sold, traded or released into the environment unless the distribution or disposal is authorised in a regulation or under permit.
Category 4	The invasive plan/animal must not be moved.
Category 5	The invasive plant/animal must not be kept.
Category 6	The invasive animal must not be fed.
Category 7	The noxious fish must be killed and disposed of by burying the whole carcass in the ground above high tide water mark or placing it in a waste disposal receptacle.

- Queensland *Biosecurity Regulation 2016* (Biosecurity Regulation)

  The Biosecurity Regulation sets out specific biosecurity obligations and prevention and control measures, and lists Queensland invasive plants and animals

- Queensland *Agricultural Chemicals Distribution Control Act 1966*

  The purpose of *Agricultural Chemicals Distribution Control Act 1966* is to ensure the use, distribution of agricultural chemicals is undertaken responsibly to minimise the risk of harm to agriculture, livestock, the environment, trade or human health.

- Queensland *Public Health Act 2005*

  The purpose of the *Public Health Act 2005* is to protect and promote the health pf the Queensland public by preventing, controlling and reducing public health risk. Public health risks include risks associated with designated pests. Designated pests include mosquitos, rats and mice. The *Public Health Act 2005* outlines authorised prevention and control programs for designated pests.

1.2.3 Standards and guidelines

- Vehicle and machinery cleandown procedures

  The purpose of this procedure is to provide consistent approaches across Queensland to vehicle and machinery cleandown procedures and reduce risk of invasive species spread via transportation of vehicle and machinery across Queensland (DAF 2019a).

- Australian Pest Animal Strategy 2017-2027 (APAS)

  The purpose of the APAS is to provide a national guideline, outlining the principles that underpin pest animal management in Australia. The APAS aims to guide a coordinated effort for all jurisdictions and affected stakeholders, informing plans and actions by state and local governments, industry, landholders and communities (IPAC 2016a).

- Australian Weeds Strategy 2017-2027 (AWS)

The purpose of the AWS is to provide a national guideline, outlining the principles that underpin weed management in Australia. The AWS aims to guide a coordinated effort for all jurisdictions and affected stakeholders, informing plans and actions by state and local governments, industry, landholders and communities (IPAC 2016b). The Invasive Plants and Animals Committee is responsible for reviewing the list of Weeds of National Significance (WoNS), all of which have individual national strategic management plans.

- Queensland Invasive Plants and Animals Strategy 2019-2024 (Qld IPAS)

  The Qld IPAS is a state-wide strategic planning framework that addresses the impacts caused by invasive plants and animals. The Qld IPAS aims to direct and facilitate strategic and targeted actions to reduce the impacts of invasive species and identifies the shared responsibility of state and local government, landholders, industry and community (DAF 2019b).

- Mosquito Management Code of Practice 2014

  The Mosquito Management Code of Practice provides a comprehensive guide to mosquito management in Queensland to minimise environmental impacts that may occur as a result of mosquito management methods (LGAQ 2014).

- Local Council Biosecurity Plans

  Seven local government areas are traversed by the current corridor selection with major deliveries and staging also occurring through Townsville. Each of the Local Government Areas (LGA) employs its own biosecurity plan based on the Biosecurity Act. The plans prioritise invasive animal and plant management. The prioritisation is determined by the level of national and local significance, the level of impact on the environment, economy, human health and social amenity and the capacity to manage the invasive animal species. Priorities are determined through a combination of scored risk assessments and consultations. Depending on the LGA, the plans may use differing labels for ‘high’, ‘medium’ and ‘low’ priorities. Higher priority species are primarily targeted with intense and on the ground control strategies, while low priority species will generally have education/awareness programs or no control. Proposed management techniques and control strategies are assessed for each species and include prevention, eradication, reduction, containment, education and impact/asset protection.

  – Burdekin Shire Council Biosecurity Plan 2016-2019 V2.2

    Local prioritisation for invasive plants and animals in the Burdekin LGA are scored as ‘high’, ‘medium’ or ‘low’ (Burdekin Shire Council 2016).

  – Draft Townsville Local Government Area Biosecurity Plan 2017-2021

    Local prioritisation of known or likely to occur invasive plants and animals in the Townsville LGA are scored as ‘high’, ‘medium’ or ‘low’. ‘Critical’ species are high priority species that have either an active eradication program or the impacts are considered to pose a significant risk to human health. ‘Alert’ species are species that are not currently known in the Townsville LGA (Ecosure 2017).

  – Charters Towers Regional Council Biosecurity Plan 2019-2024

    Local prioritisation for invasive plants and animals in the Charters Towers LGA are scored as ‘high’, ‘medium’ or ‘low’. An additional description, ‘public safety’ indicates invasive animals, which pose a potential threat to public safety, generally these include large invasive animal species (Charters Towers Regional Council 2019).

  – Flinders Shire Council Local Government Biosecurity Plan 2017-2020 Revision 1

Local prioritisation for invasive plants and animals in the Flinders LGA are scored as 'high', 'moderate' or 'minor', these are comparable with 'high', 'medium' or 'low' of the above local councils. The Flinders LGA have two additional categories. 'Active programs' are high priority species that already have ongoing management programs including high community engagement and established budgets. 'Strategic opportunities' are species which are localised in only some areas of Flinders LGA and have the potential to be contained and progressively reduced.

The Flinders LGA has also developed a Good Neighbour Program which encourages landholders to assess their land and share data about the invasive animals and plants present. This aids in establishing buffer zones and improves collaborated management (Flinders Shire Council 2018).

– Richmond Shire Council Biosecurity Plan 2020-2024

  Local prioritisation for invasive plants and animals in the Richmond LGA are scored out of 50 points. Scores range between 32.5 and 12.5. Species with higher scores, generally above 20 will have a range of management strategies including eradication and reduction controls on local government land, encouraging and assisting landholders to carry out controls, education, monitoring and inspection. Lower scored species will have at minimum education and monitoring as control measures. Species not currently in the Richmond LGA, that are of concern are categorised as 'watch list', this is analogous with 'alert' species in other LGA (Richmond Shire Council 2019).

– McKinlay Shire Council Biosecurity Plan 2019

  Local prioritisation for invasive plants and animals in McKinlay LGA are scored as 'A', 'B' and 'C' which are comparable with 'high', 'medium' and 'low' scores, respectively. Additionally some higher priority species are categorised as 'eradication' indicating that these species are managed by targeted eradication methods. Species not present in the LGA but potential biosecurity risks are categorised as 'prevention'. Some species either do not occur in all catchments of the McKinlay LGA or have differing distribution or density between catchments. These species have dual categorisation, for example, red fox is categorised as both 'A' and 'prevention' as it does not occur in al catchments (Gulf Catchments Biosecurity & Agribusiness Innovation 2017).

– Cloncurry Shire Biosecurity Plan 2019-2023

  Local prioritisation for invasive plants and animals in the Cloncurry LGA are scored as 'major', 'medium' or 'minor', these are comparable with 'high', 'medium' or 'low' scores of the above local councils (Cloncurry Shire 2019).

– Mount Isa City Council Biosecurity Plan 2018

  Local prioritisation for invasive plants and animals in Mount Isa LGA are scored as 'A', 'B' and 'C' which are comparable with 'high', 'medium' and 'low' scores, respectively. Additionally, some higher priority species are categorised as 'eradication' indicating that these species are managed by targeted eradication method (Gulf Catchments Biosecurity & Agribusiness Innovation 2017).

1.2.4 Contractor responsibilities

This CBP does not prescribe biosecurity management requirements in detail, but provides standard biosecurity management methods that may be applied to relevant Project activities. The Construction Contractor(s) would be responsible for developing site and phase-specific biosecurity management plans and associated declarations that vehicles and equipment have been cleaned down (for example development of a Biosecurity Declaration). The plans shall

take into consideration detailed staging of works and local environmental and landholder requirements, and relevant conditions of approvals.

1.3 Existing environment

1.3.1 Invasive plant and animal presence (desktop and field surveys

Invasive plants

Desktop assessments were undertaken as part of Volume 3 Appendix P Ecological Assessment. Based on the PMST reports, 16 introduced plant species are predicted to occur within the Project area. Wildlife Online records were retrieved to provide information on confirmed introduced plant species previously recorded within the study area. Wildlife Online records confirmed the presence of 214 introduced flora species, including 14 Weeds of National Significance (WoNS) and 27 species classed as restricted invasive plants under the Biosecurity Act (refer to Table 1-2). One additional restricted invasive plant species, *Bryophyllum delagoense* (Mother of millions) was recorded during the 2011 SEIS surveys. A total of eight restricted invasive plant species were recorded during the field surveys including an additional restricted invasive species, *Sphagneticola trilobata* (Singapore daisy). The recorded invasive plant species were primarily found around river frontages and alluvial flats of major river systems supported the greatest infestations of invasive plants (refer to Table 1-3). An additional 33 species of environmental invasive plants were also identified. Additional species may be identified during future works and shall be managed according to this CBP and legislative requirements.

Detailed information on identified invasive plants is located within Volume 3 Appendix P Ecological Assessment. Spatial representations of invasive plant risk incorporating the below are shown on Figure 1-2 through Figure 1-25 for species identified as high risk (WoNS or Restricted Invasive Plant species).

Table 1-2 Invasive plants likely to be present (from Volume 3 Appendix P Ecological Assessment)

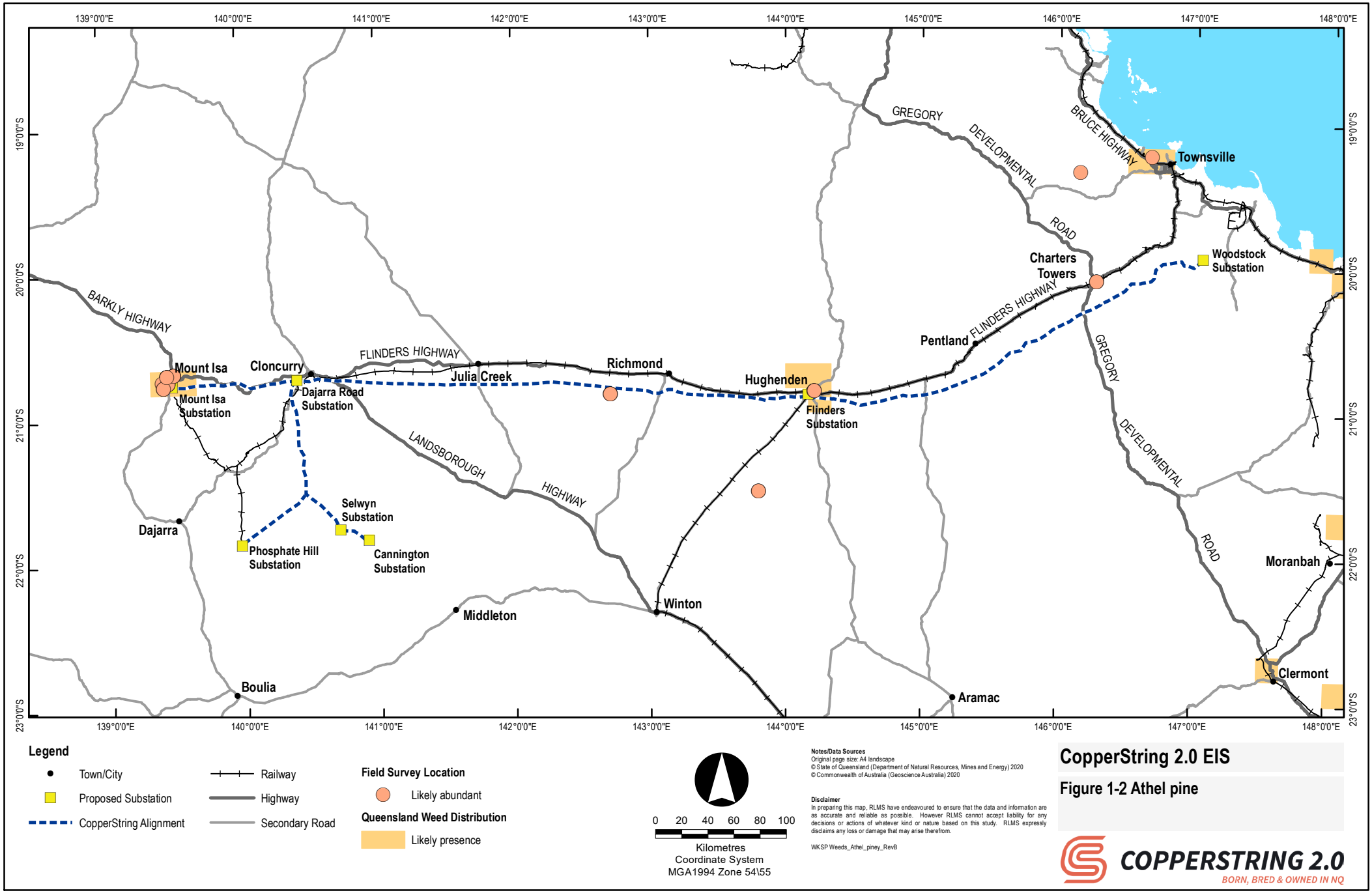
Scientific name	Common name	Management Level	
		WoNS	Restricted Invasive Plant
Bryophyllum delagoense	Mother of millions	-	Category 3
Cascabela thevetia	Yellow oleander	-	Category 3
Cabomba caroliniana	Cabomba	-	Category 3
Cenchrus ciliaris	Buffel grass	-	-
Chromolaena odorata	Siam weed	-	Category 3
Cryptostegia grandiflora	Rubber vine	Y	Category 3
Cryptostegia madagascariensis	Ornamental rubber vine	-	Category 3
Cylindropuntia fulgida	Coral cactus	-	Category 3
Cylindropuntia fulgida var. mamillata	Prickly pear	Y	Category 3
Cyperus brevifolius	Mullumbimby couch	-	-
Eichhornia crassipes	Water hyacinth	Y	Category 3
Harrisia martini	Harrisia cactus	-	Category 3
Hymenachne amplexicaulis	Hymenachne	-	Category 3
Jatropha gossypiifolia	Bellyache bush	Y	Category 3
Lantana camara	Lantana	Y	Category 3
Lycium ferocissimum	African boxthorn	-	-
Opuntia monacantha	Dropping tree pear	Y	Category 3
Opuntia stricta	Prickly pear	Y	Category 3
Opuntia tomentosa	Velvety tree pear	Y	Category 3

Scientific name	Common name	Management Level	
		WoNS	Restricted Invasive Plant
Parkinsonia aculeata	Parkinsonia	Y	Category 3
Parthenium hysterophorus	Parthenium weed	Y	Category 3
Prosopis pallida	Mesquite	Y	Category 3
Salvinia molesta	Salvinia	Y	Category 3
Senna obtusifolia	Sicklepod	-	Category 3
Sphagneticola trilobata	Singapore daisy	-	Category 3
Sporobolus jacquemontii	America rat's tail grass	-	Category 3
Sporobolus pyramidalis	Giant rat's tail grass	-	Category 3
Tamarix aphylla	Athel pine	Y	Category 3
Tecoma stans	Yellow bells	-	Category 3
Thunbergia grandiflora	Thunbergia	-	Category 3
Vachellia nilotica	Prickly acacia	Y	Category 3
Ziziphus mauritiana	Chinee apple	-	Category 3

"-" indicates that the species is not declared a WoNs or restricted matter.

Table 1-3 Restricted invasive plant species recorded during field surveys (from Volume 3 Appendix P Ecological Assessment)

Species		KP	Habitat type
Scientific name	Common name		
Cryptostegia grandiflora	Rubber vine	8WD 105WD	Can be dense in association with watercourses and alluvial plains, can occur sparsely across most other vegetation types. Not usually found on low nutrient soil types.
Parkinsonia aculeata	Parkinsonia	117WD 151WD 380WD 670WD	Recorded primarily in association with riparian zones.
Prosopis pallida	Mesquite	44DM 42DM	Recorded on a dry minor watercourse within the Mount Isa Augmentation.
Vachellia nilotica	Prickly acacia	339WD 348WD 380WD 441WD	Recorded in high densities across the Mitchell Grass Downs but also in association with alluvial soils across other areas.
Ziziphus mauritiana	Chinee apple	66WD 116WD	Recorded primarily in association with riparian zones and alluvial plains within the Renewable Energy Hub
Parthenium hysterophorus	Parthenium	117WD	Recorded primarily in association with riparian zones. Recorded within the Renewable Energy Hub section. This weed is considered likely to be present throughout many drainage lines within pastoral country.
Jatropha gossypiifolia	Bellyache bush	66WD	Recorded primarily in association with riparian zones within the Renewable Energy Hub section.
Sphagneticola trilobata	Singapore daisy	339WD 338WD	Recorded instream of Sloane Creek (previously Eastern creek).



Legend

- Town/City
- Proposed Substation
- CopperString Alignment
- Railway
- Highway
- Secondary Road

Field Survey Location

- Likely abundant

Queensland Weed Distribution

- Likely presence

0 20 40 60 80 100

Kilometres

Coordinate System
MGA1994 Zone 54\55

Notes/Data Sources
Original page size: A4 landscape
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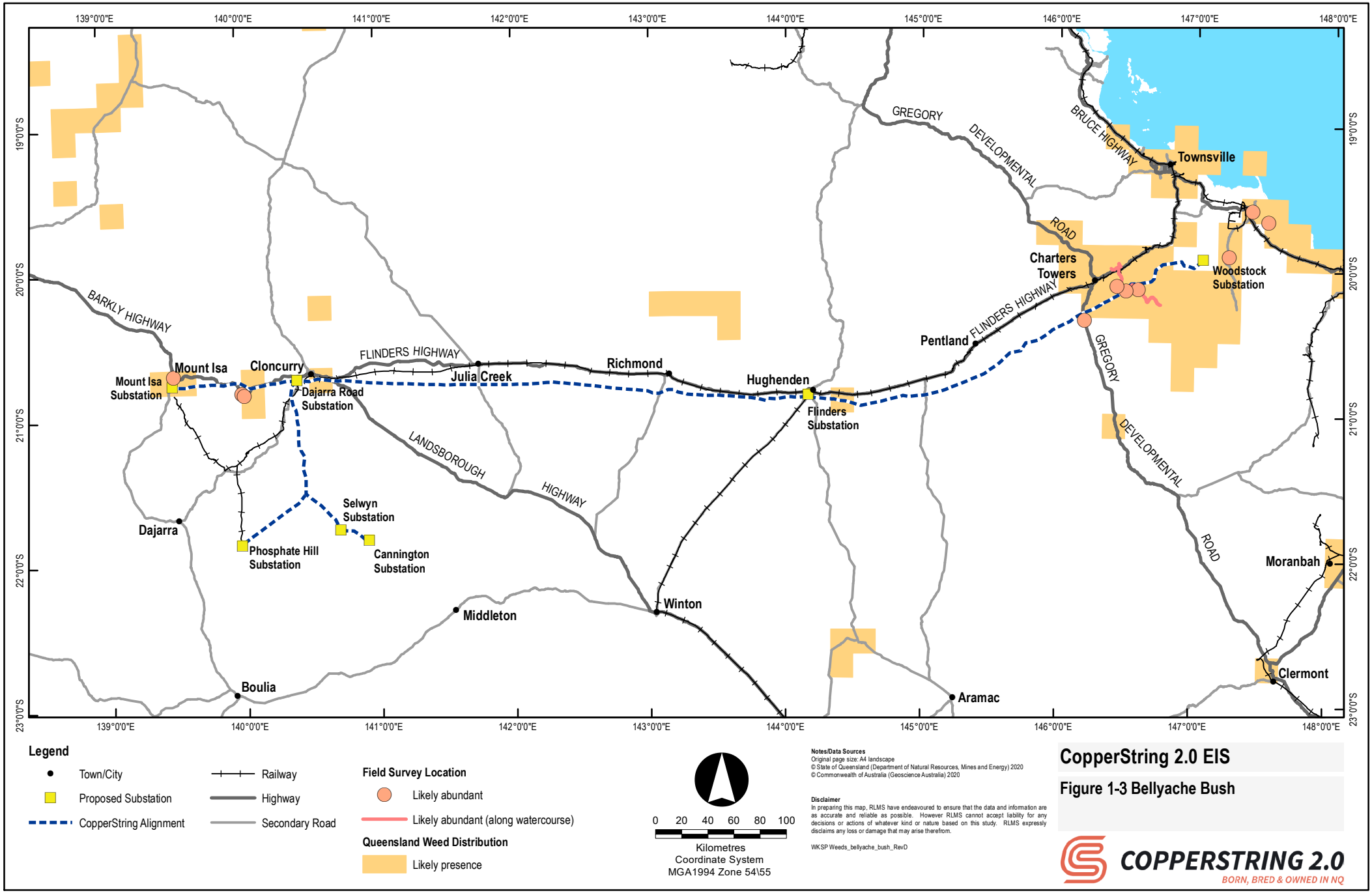
WKSP Weeds_Athel_piney_RevB

CopperString 2.0 EIS

Figure 1-2 Athel pine

COPPERSTRING 2.0
BORN, BRED & OWNED IN NQ



Legend

- Town/City
- Proposed Substation
- CopperString Alignment
- Railway
- Highway
- Secondary Road

Field Survey Location

- Likely abundant
- Likely abundant (along watercourse)

Queensland Weed Distribution

- Likely presence

0 20 40 60 80 100
Kilometres
Coordinate System
MGA1994 Zone 54\55

Notes/Data Sources
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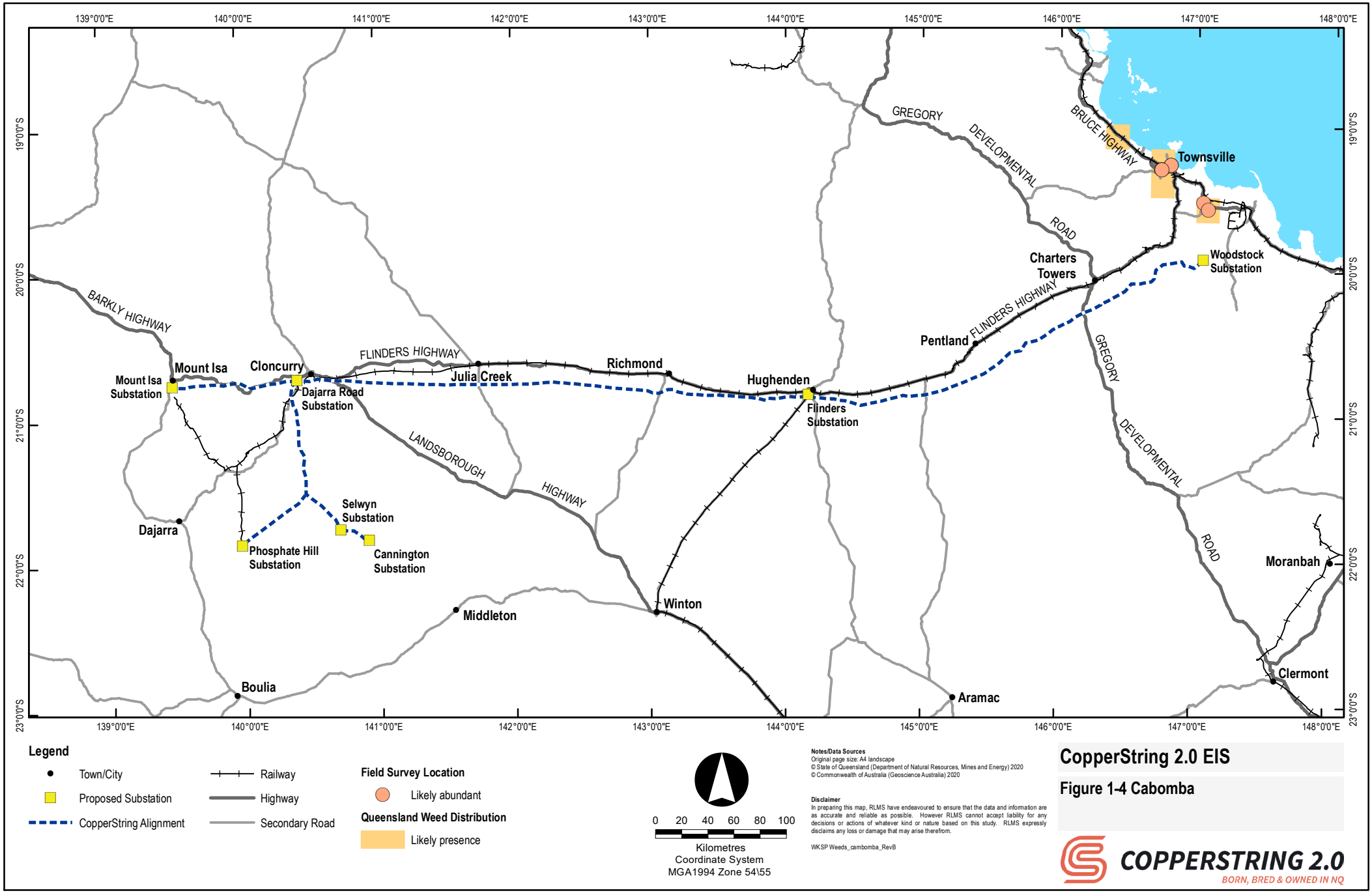
WKSP Weeds_bellyache_bush_RevD

CopperString 2.0 EIS

Figure 1-3 Bellyache Bush

COPPERSTRING 2.0
BORN, BRED & OWNED IN NQ



Legend

- Town/City
- Proposed Substation
- CopperString Alignment
- Railway
- Highway
- Secondary Road

Field Survey Location

- Likely abundant

Queensland Weed Distribution

- Likely presence

0 20 40 60 80 100

Kilometres

Coordinate System
MGA1994 Zone 54\55

Notes/Data Sources
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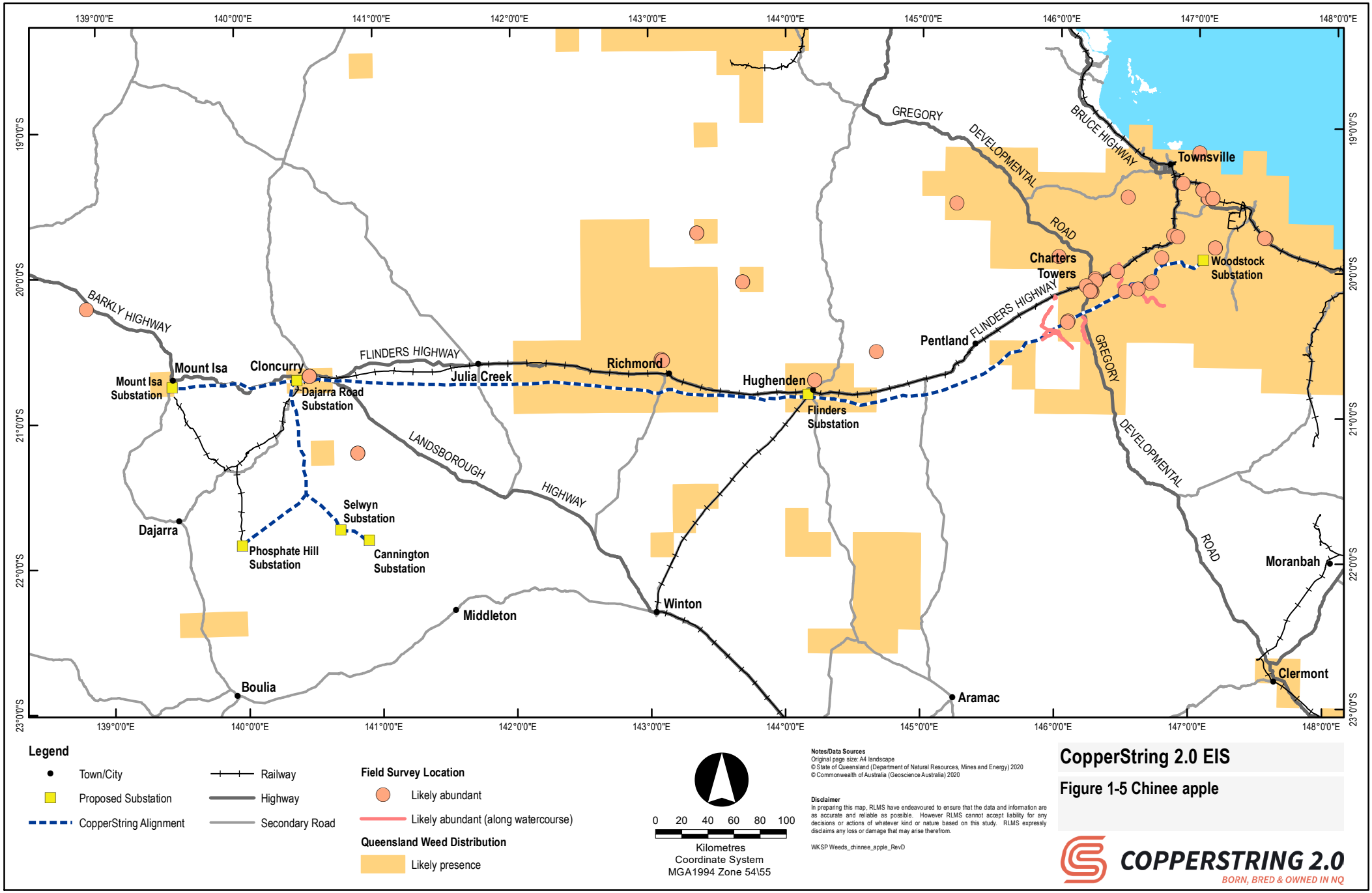
WKSP Weeds_cambomba_RevB

CopperString 2.0 EIS

Figure 1-4 Cabomba

COPPERSTRING 2.0
BORN, BRED & OWNED IN NQ



Legend

- Town/City
- Proposed Substation
- CopperString Alignment
- Railway
- Highway
- Secondary Road

Field Survey Location

- Likely abundant
- Likely abundant (along watercourse)

Queensland Weed Distribution

- Likely presence

0 20 40 60 80 100
Kilometres
Coordinate System
MGA1994 Zone 54\55

Notes/Data Sources
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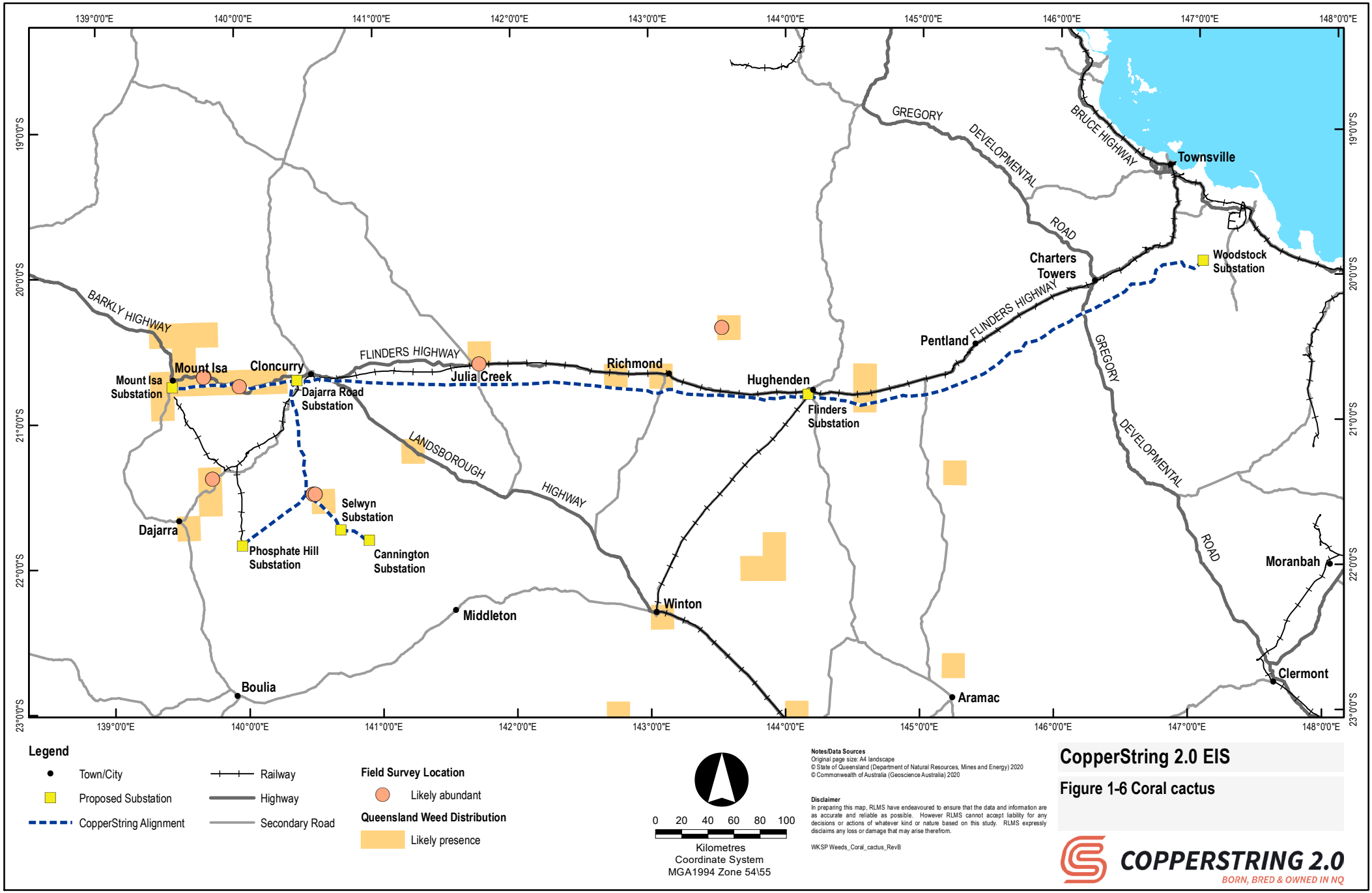
WKSP Weeds_chinnee_apple_RevD

CopperString 2.0 EIS

Figure 1-5 Chinee apple

COPPERSTRING 2.0
BORN, BRED & OWNED IN NQ



Legend

- Town/City
- Proposed Substation
- CopperString Alignment
- Railway
- Highway
- Secondary Road

Field Survey Location

- Likely abundant

Queensland Weed Distribution

- Likely presence

0 20 40 60 80 100

Kilometres

Coordinate System
MGA1994 Zone 54\55

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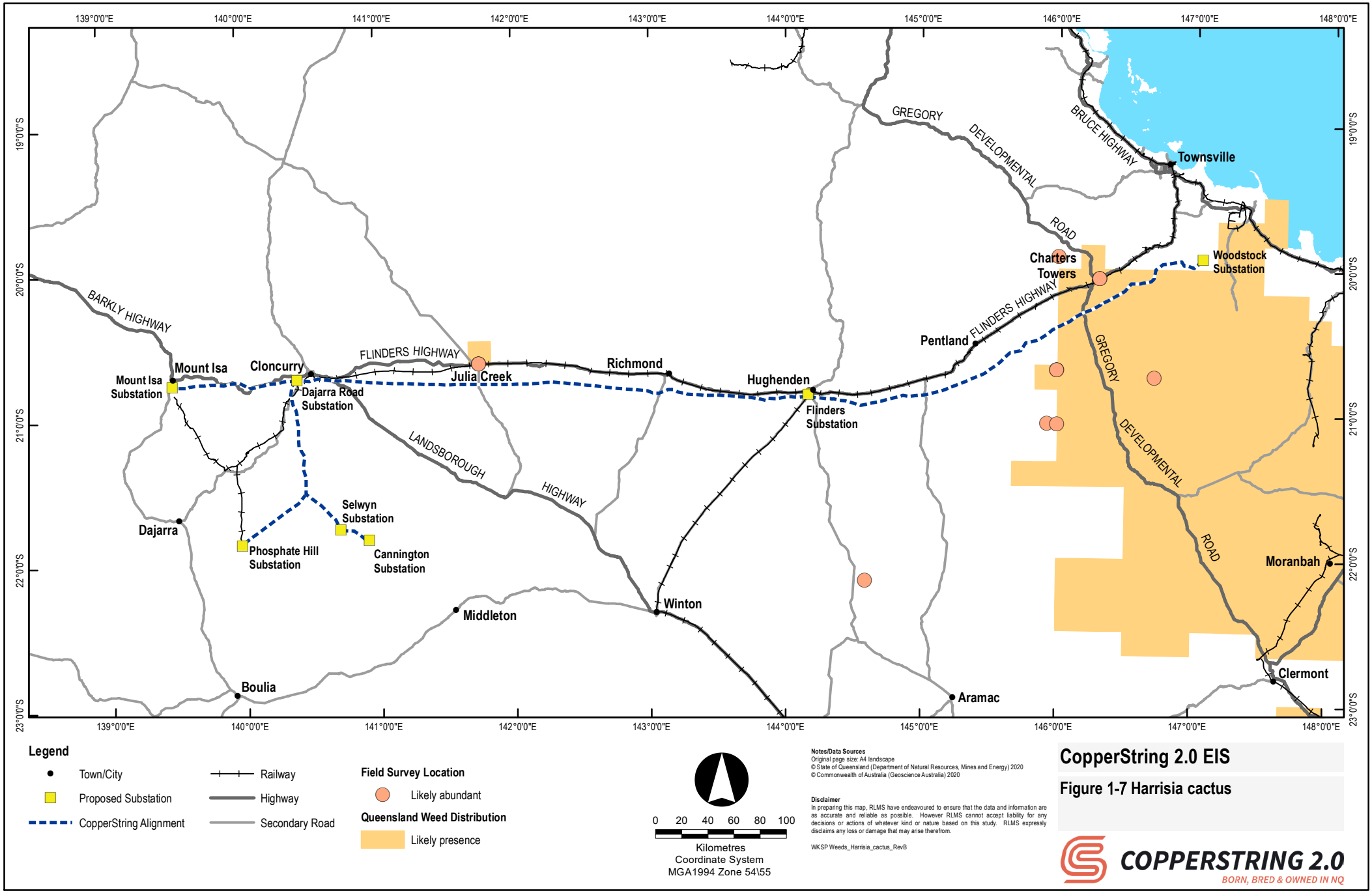
WKSP Weeds_Coral_cactus_RevB

CopperString 2.0 EIS

Figure 1-6 Coral cactus

COPPERSTRING 2.0
BORN, BRED & OWNED IN NQ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20°0'0"S
21°0'0"S
22°0'0"S
23°0'0"S
BARKLY HIGHWAY
FLINDERS HIGHWAY
LANDSBOROUGH HIGHWAY
GREGORY DEVELOPMENTAL ROAD
BRUCE HIGHWAY
Mount Isa
Mount Isa Substation
Cloncurry
Dajarra Road Substation
Julia Creek
Richmond
Hughenden
Flinders Substation
Pentland
Townsville
Charters Towers
Woodstock Substation
Dajarra
Phosphate Hill Substation
Selwyn Substation
Cannington Substation
Middleton
Winton
Boulia
Aramac
Moranbah
Clermont
Legend
Town/City
Proposed Substation
CopperString Alignment
Railway
Highway
Secondary Road
Field Survey Location
Likely abundant
Queensland Weed Distribution
Likely presence
0 20 40 60 80 100
Kilometres
Coordinate System
MGA1994 Zone 54\55
Notes/Data Sources
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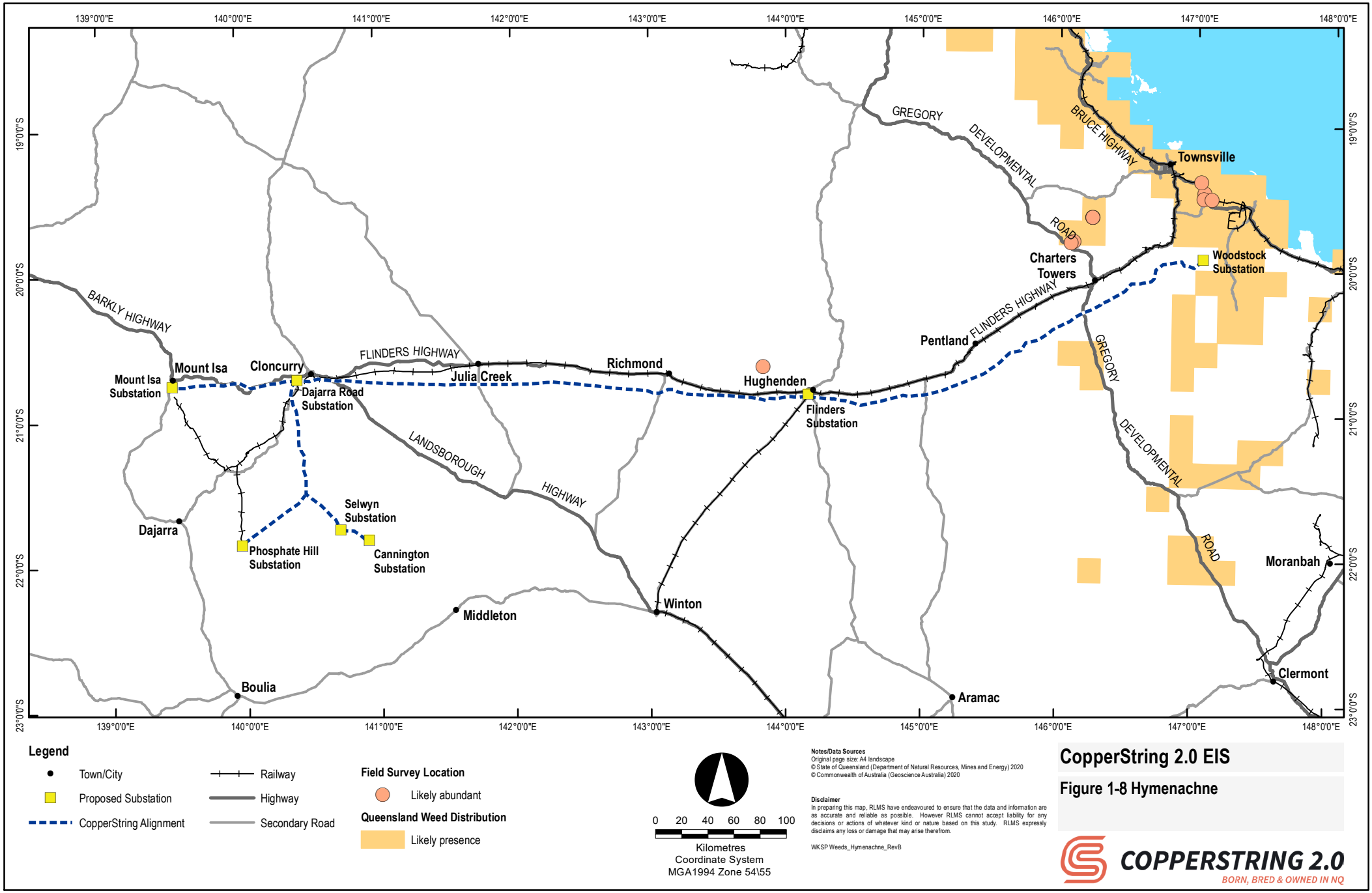
WKSP Weeds_Harrisia_cactus_RevB
CopperString 2.0 EIS
Figure 1-7 Harrisia cactus
COPPERSTRING 2.0
BORN, BRED & OWNED IN NQ



Legend

- Town/City
- Proposed Substation
- CopperString Alignment
- Railway
- Highway
- Secondary Road

Field Survey Location

- Likely abundant

Queensland Weed Distribution

- Likely presence

0 20 40 60 80 100
Kilometres
Coordinate System
MGA1994 Zone 54\55

Notes/Data Sources
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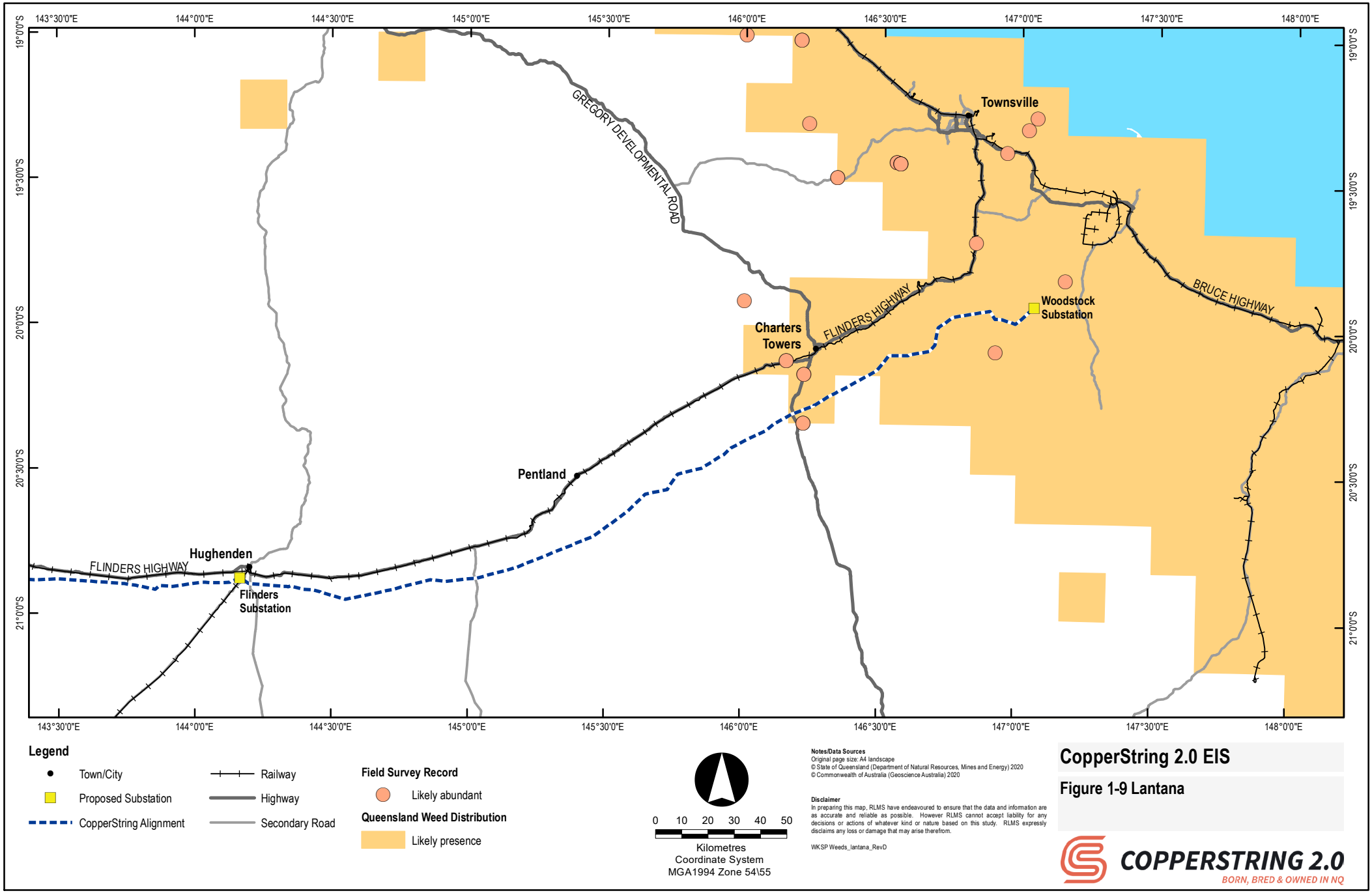
WKSP Weeds_Hymenachne_RevB

CopperString 2.0 EIS

Figure 1-8 Hymenachne

COPPERSTRING 2.0
BORN, BRED & OWNED IN NQ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20°0'0"S
20°30'0"S
21°0'0"S
GREGORY DEVELOPMENTAL ROAD
Townsville
FLINDERS HIGHWAY
Charters Towers
Woodstock Substation
BRUCE HIGHWAY
Pentland
Hughenden
FLINDERS HIGHWAY
Flinders Substation
Legend
Town/City
Proposed Substation
CopperString Alignment
Railway
Highway
Secondary Road
Field Survey Record
Likely abundant
Queensland Weed Distribution
Likely presence
0 10 20 30 40 50
Kilometres
Coordinate System
MGA1994 Zone 54\55
Notes/Data Sources
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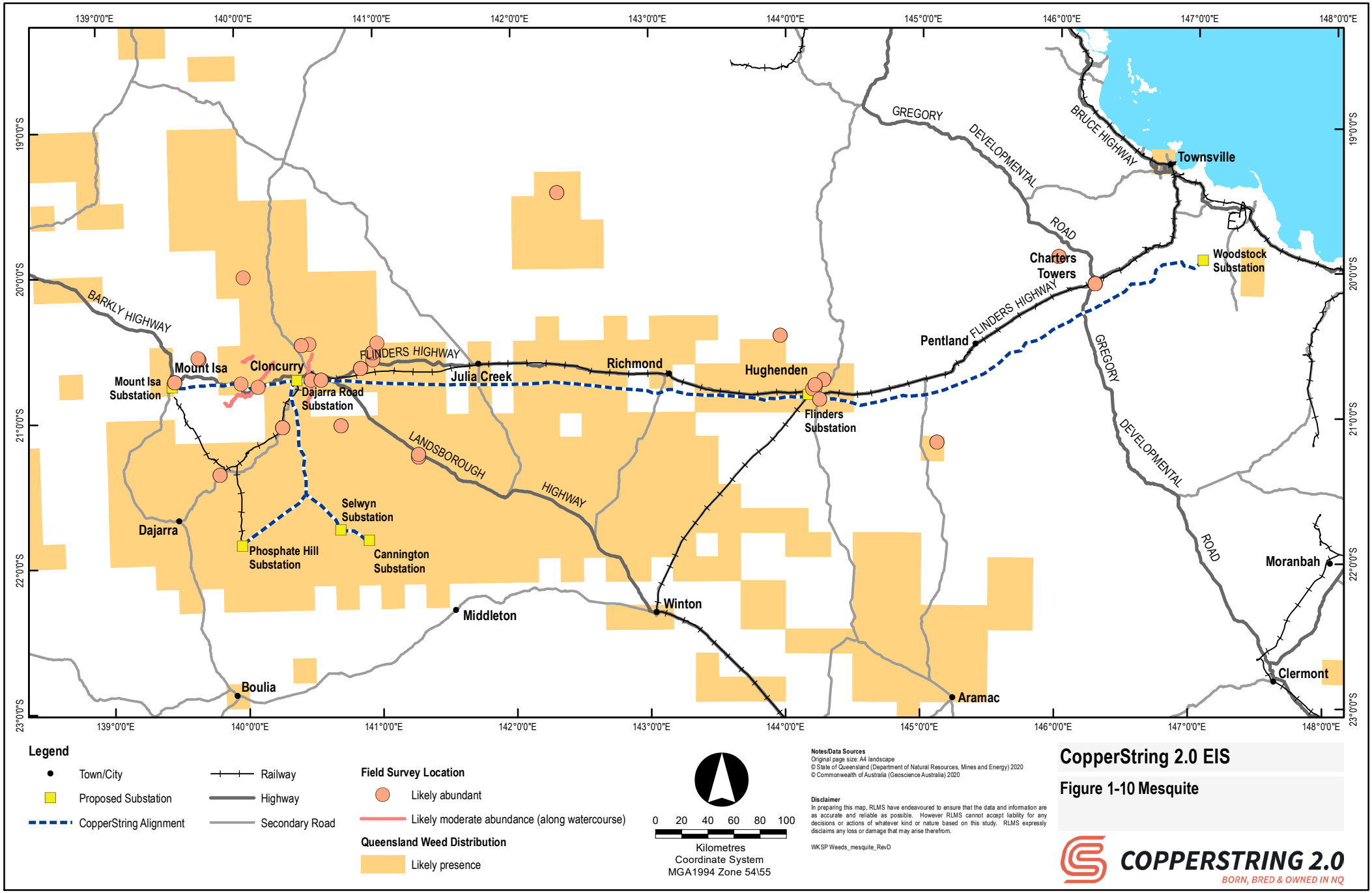
WKSP Weeds_lantana_RevD
CopperString 2.0 EIS
Figure 1-9 Lantana
COPPERSTRING 2.0
BORN, BRED & OWNED IN NQ



Legend

- Town/City
- Proposed Substation
- CopperString Alignment
- Railway
- Highway
- Secondary Road

Field Survey Location

- Likely abundant
- Likely moderate abundance (along watercourse)

Queensland Weed Distribution

- Likely presence

0 20 40 60 80 100

Kilometres

Coordinate System
MGA1994 Zone 54\55

Notes/Data Sources
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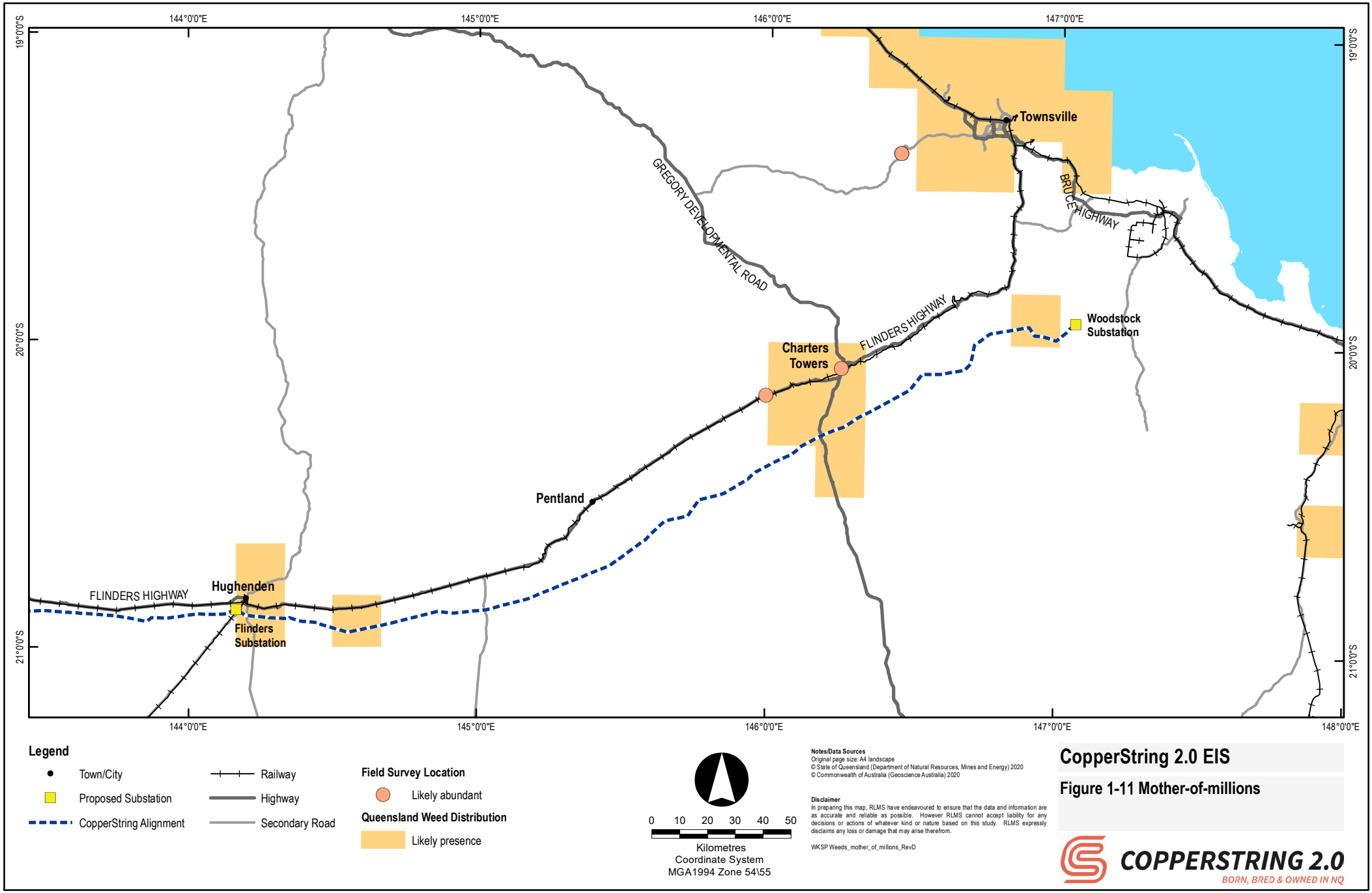
WKSP Weeds_mesquite_RevD

CopperString 2.0 EIS

Figure 1-10 Mesquite

COPPERSTRING 2.0
BORN, BRED & OWNED IN NQ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21°0'0"S
Townsville
GREGORY DEVELOPMENTAL ROAD
BRUCE HIGHWAY
FLINDERS HIGHWAY
Charters Towers
Woodstock Substation
Pentland
Hughenden
FLINDERS HIGHWAY
Flinders Substation
Legend
Town/City
Proposed Substation
CopperString Alignment
Railway
Highway
Secondary Road
Field Survey Location
Likely abundant
Queensland Weed Distribution
Likely presence
0 10 20 30 40 50
Kilometres
Coordinate System
MGA1994 Zone 54\55
Notes/Data Sources
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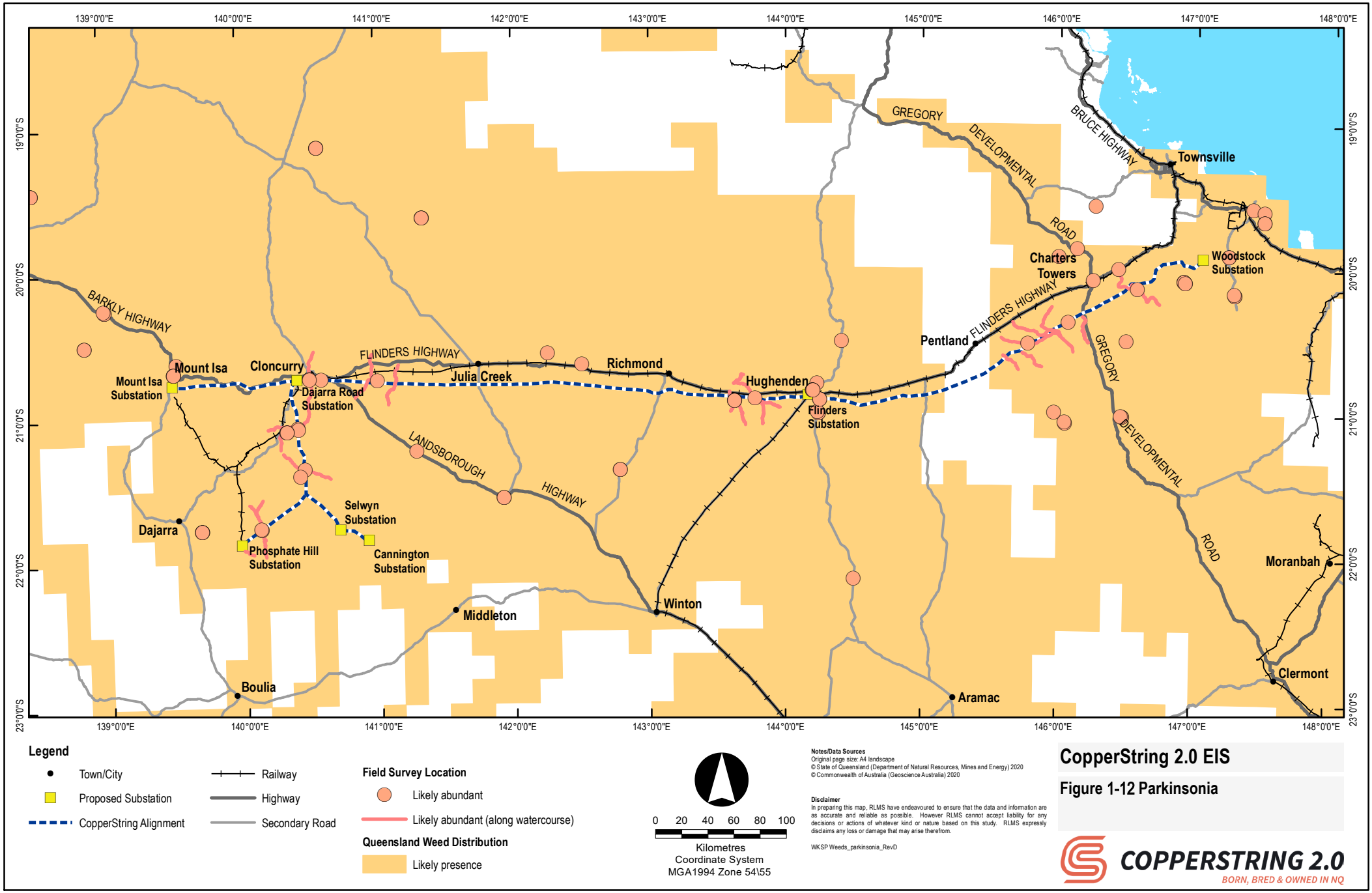
WKSP Weeds_mother_of_millions_RevD
CopperString 2.0 EIS
Figure 1-11 Mother-of-millions
COPPERSTRING 2.0
BORN, BRED & OWNED IN NQ



Legend

- Town/City
- Proposed Substation
- CopperString Alignment
- Railway
- Highway
- Secondary Road

Field Survey Location

- Likely abundant
- Likely abundant (along watercourse)

Queensland Weed Distribution

- Likely presence

0 20 40 60 80 100

Kilometres

Coordinate System
MGA1994 Zone 54\55

Notes/Data Sources
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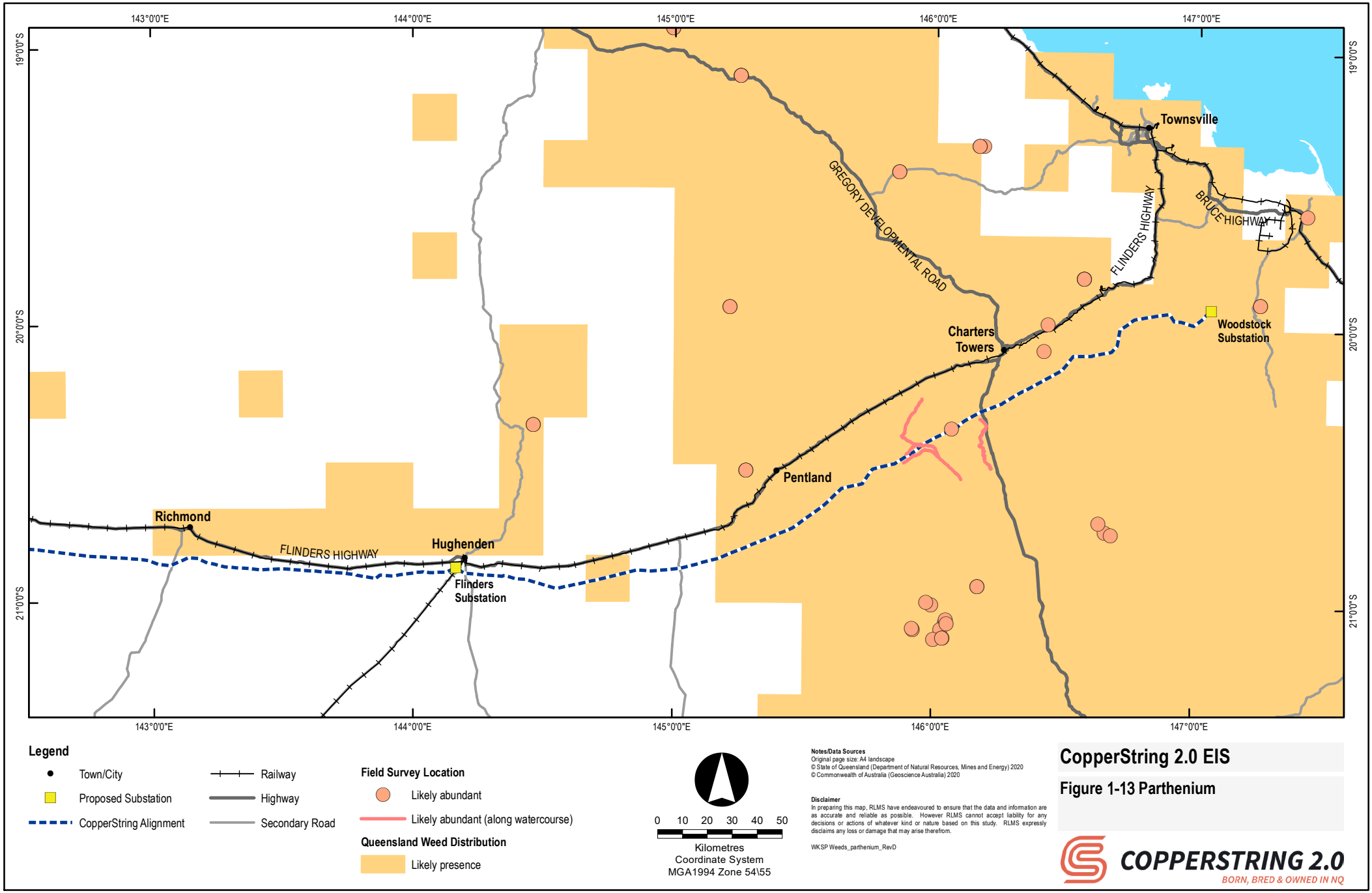
WKSP Weeds_parkinsonia_RevD

CopperString 2.0 EIS

Figure 1-12 Parkinsonia

COPPERSTRING 2.0
BORN, BRED & OWNED IN NQ



Legend

- Town/City
- Proposed Substation
- CopperString Alignment
- Railway
- Highway
- Secondary Road

Field Survey Location

- Likely abundant
- Likely abundant (along watercourse)

Queensland Weed Distribution

- Likely presence

0 10 20 30 40 50
Kilometres
Coordinate System
MGA1994 Zone 54\55

Notes/Data Sources
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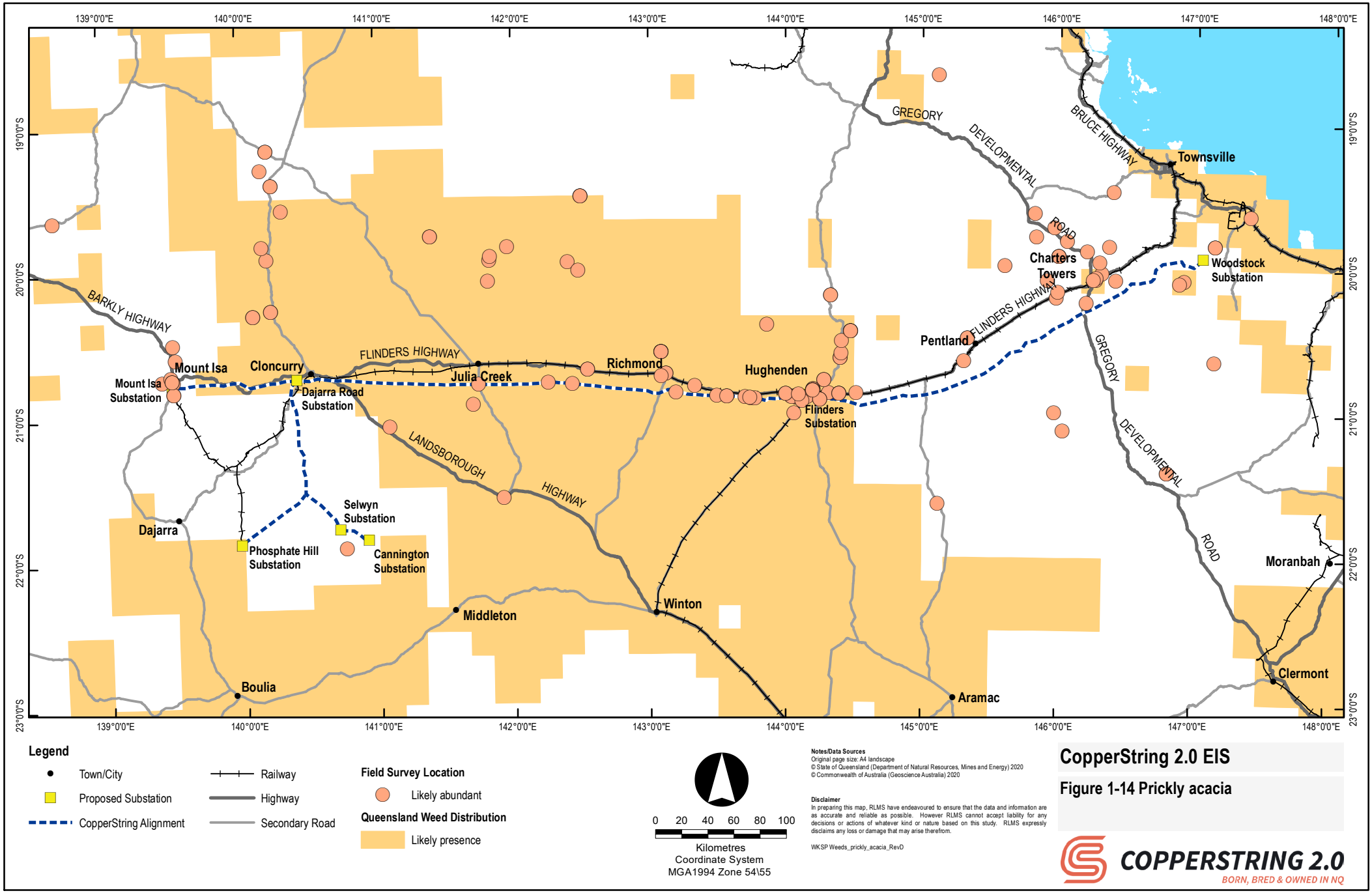
WKSP Weeds_parthenium_RevD

CopperString 2.0 EIS

Figure 1-13 Parthenium

COPPERSTRING 2.0
BORN, BRED & OWNED IN NQ



Legend

- Town/City
- Proposed Substation
- CopperString Alignment
- Railway
- Highway
- Secondary Road

Field Survey Location

- Likely abundant

Queensland Weed Distribution

- Likely presence

0 20 40 60 80 100

Kilometres

Coordinate System
MGA1994 Zone 54\55

Notes/Data Sources
Original page size: A4 landscape

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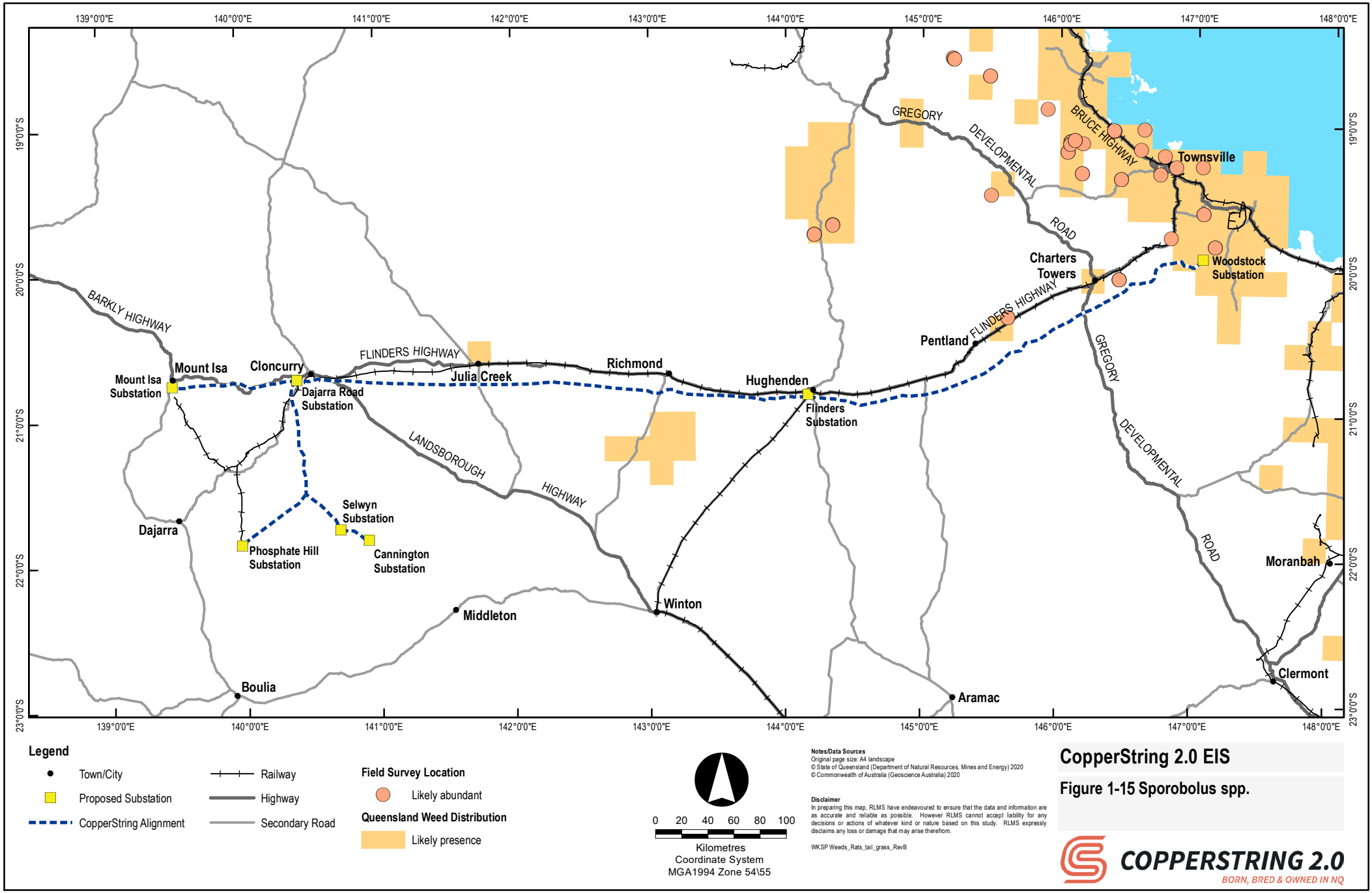
WKSP Weeds_prickly_acacia_RevD

CopperString 2.0 EIS

Figure 1-14 Prickly acacia

COPPERSTRING 2.0
BORN, BRED & OWNED IN NQ



Legend

- Town/City
- Proposed Substation
- CopperString Alignment
- Railway
- Highway
- Secondary Road

Field Survey Location

- Likely abundant

Queensland Weed Distribution

- Likely presence

0 20 40 60 80 100

Kilometres

Coordinate System
MGA1994 Zone 54\55

Notes/Data Sources
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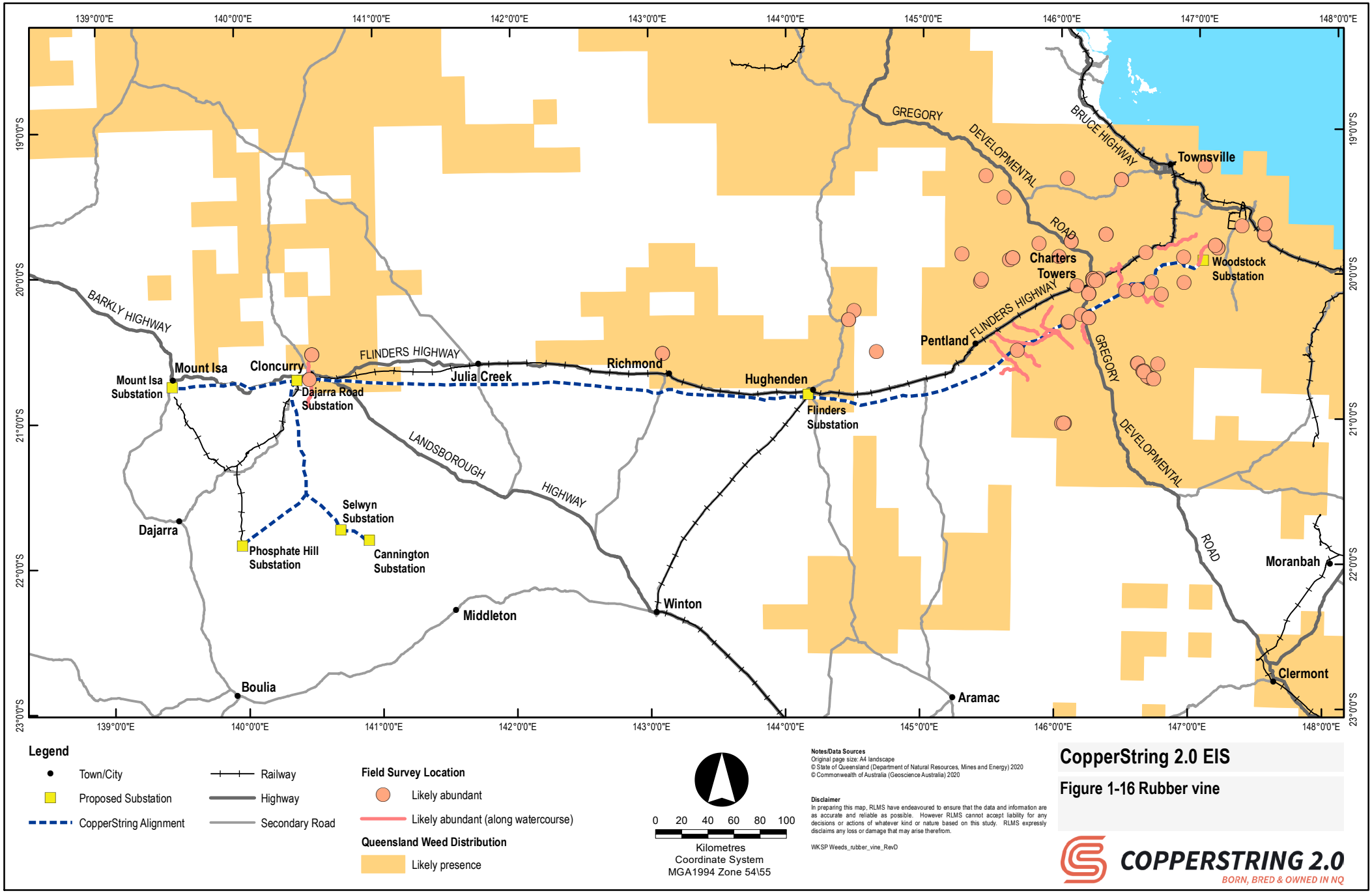
WKSP Weeds_Rats_tail_grass_RevB

CopperString 2.0 EIS

Figure 1-15 Sporobolus spp.

COPPERSTRING 2.0
BORN, BRED & OWNED IN NQ



Legend

- Town/City
- Proposed Substation
- CopperString Alignment
- Railway
- Highway
- Secondary Road

Field Survey Location

- Likely abundant
- Likely abundant (along watercourse)

Queensland Weed Distribution

- Likely presence

0 20 40 60 80 100

Kilometres

Coordinate System
MGA1994 Zone 54\55

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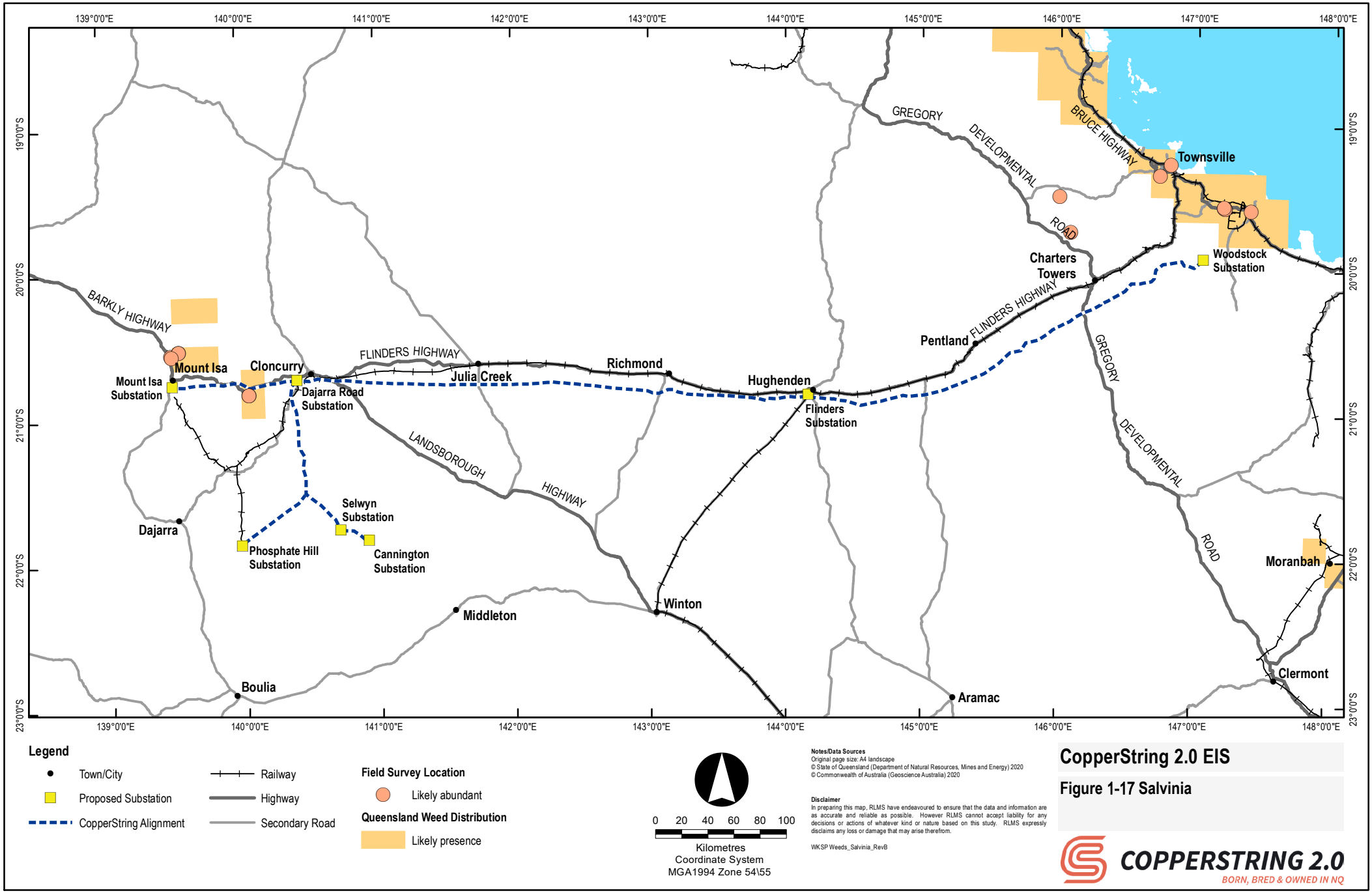
WKSP Weeds_rubber_vine_RevD

CopperString 2.0 EIS

Figure 1-16 Rubber vine

COPPERSTRING 2.0
BORN, BRED & OWNED IN NQ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BARKLY HIGHWAY
FLINDERS HIGHWAY
LANDSBOROUGH HIGHWAY
GREGORY DEVELOPMENTAL ROAD
BRUCE HIGHWAY
Mount Isa
Mount Isa Substation
Cloncurry
Dajarra Road Substation
Julia Creek
Richmond
Hughenden
Flinders Substation
Pentland
Charters Towers
Townsville
Woodstock Substation
Dajarra
Phosphate Hill Substation
Selwyn Substation
Cannington Substation
Middleton
Winton
Boulia
Aramac
Moranbah
Clermont
Legend
Town/City
Proposed Substation
CopperString Alignment
Railway
Highway
Secondary Road
Field Survey Location
Likely abundant
Queensland Weed Distribution
Likely presence
0 20 40 60 80 100
Kilometres
Coordinate System
MGA1994 Zone 54\55
Notes/Data Sources
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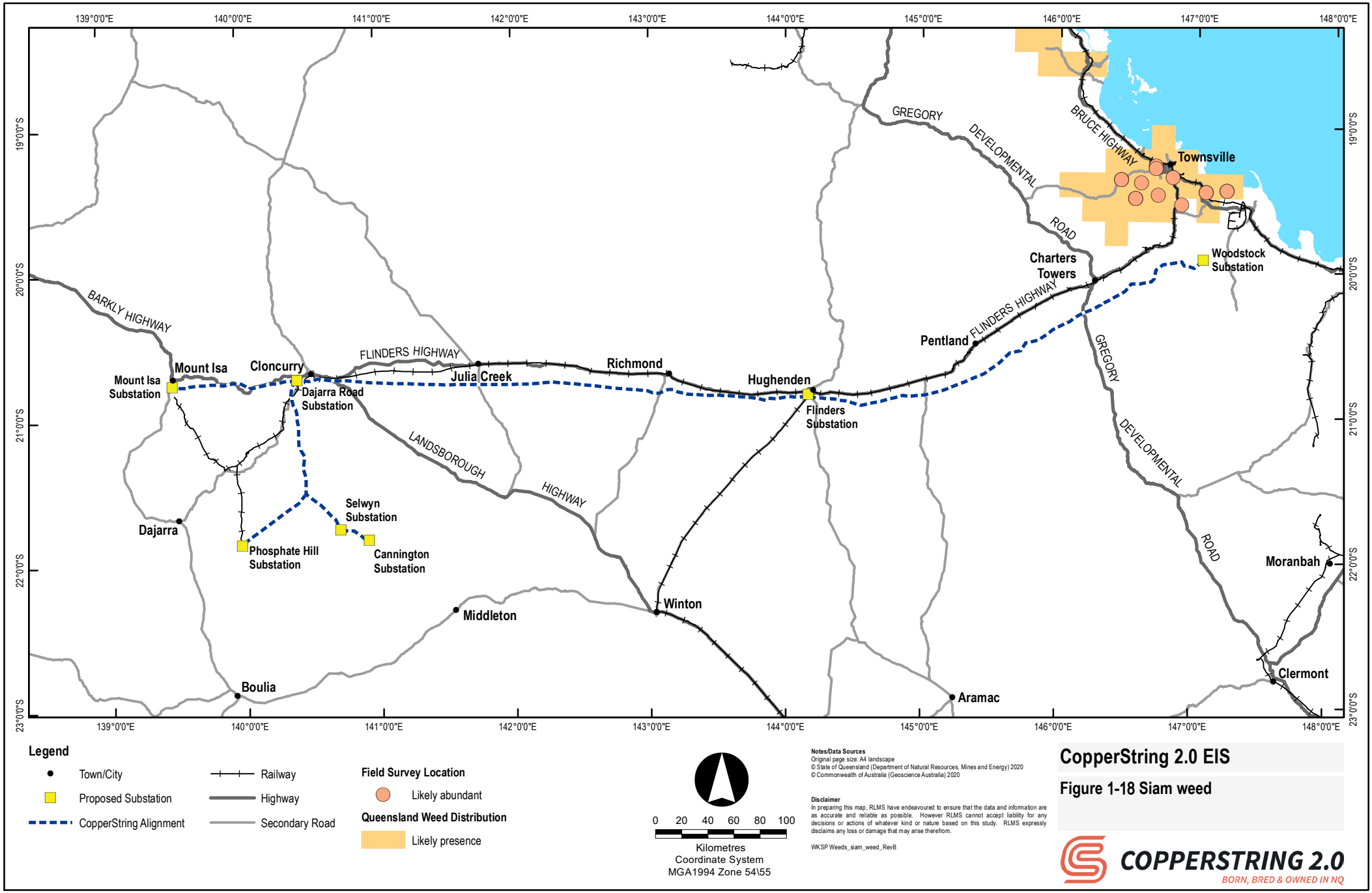
WKSP Weeds_Salvinia_RevB
CopperString 2.0 EIS
Figure 1-17 Salvinia
COPPERSTRING 2.0
BORN, BRED & OWNED IN NQ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BARKLY HIGHWAY
FLINDERS HIGHWAY
LANDSBOROUGH HIGHWAY
GREGORY DEVELOPMENTAL ROAD
BRUCE HIGHWAY
Mount Isa
Mount Isa Substation
Cloncurry
Dajarra Road Substation
Julia Creek
Richmond
Hughenden
Flinders Substation
Pentland
Charters Towers
Townsville
Woodstock Substation
Dajarra
Phosphate Hill Substation
Selwyn Substation
Cannington Substation
Middleton
Winton
Boulia
Aramac
Moranbah
Clermont
Legend
Town/City
Proposed Substation
CopperString Alignment
Railway
Highway
Secondary Road
Field Survey Location
Likely abundant
Queensland Weed Distribution
Likely presence
0 20 40 60 80 100
Kilometres
Coordinate System
MGA1994 Zone 54\55
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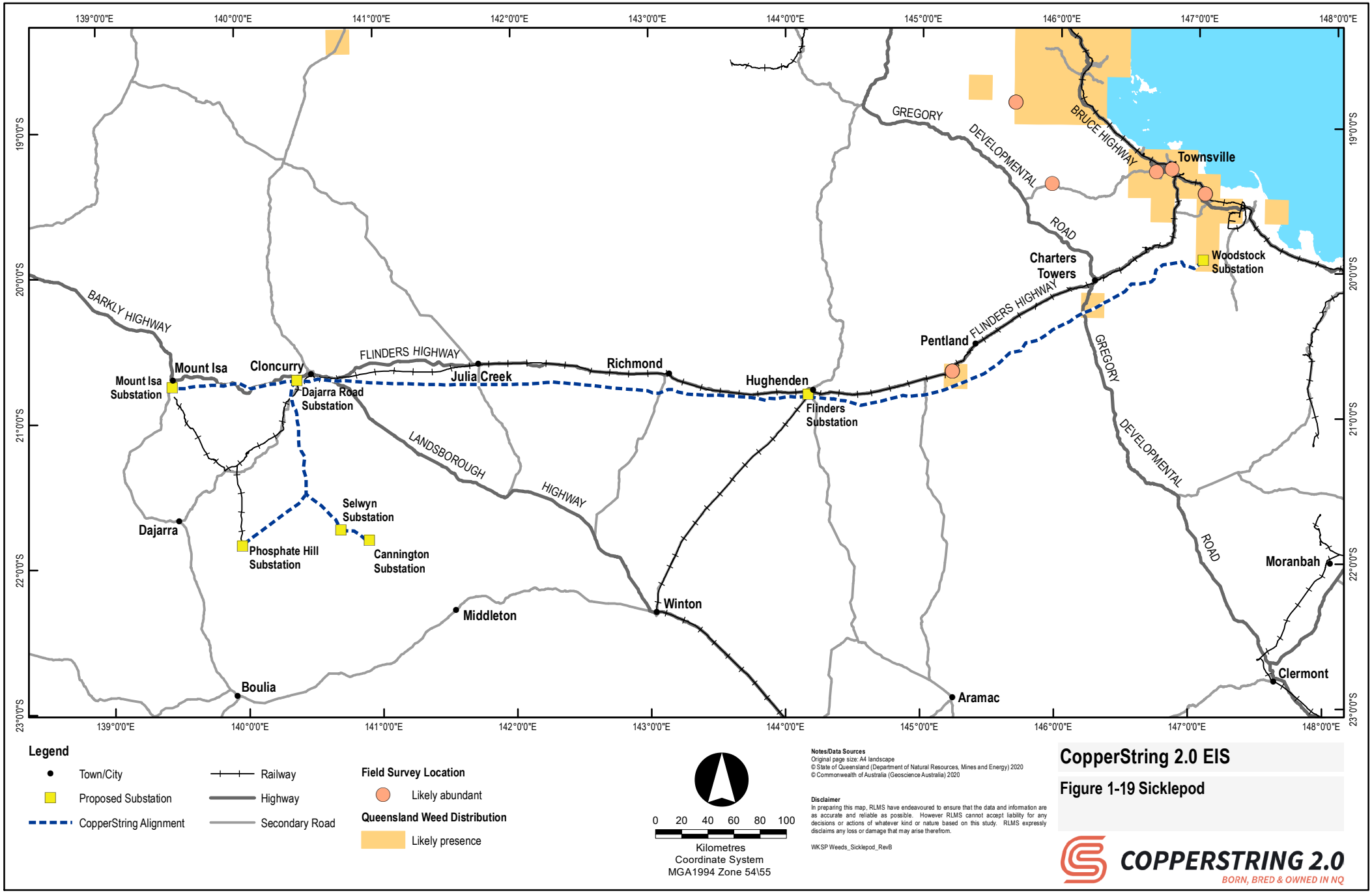
WKSP Weeds_siam_weed_RevB
CopperString 2.0 EIS
Figure 1-18 Siam weed
COPPERSTRING 2.0
BORN, BRED & OWNED IN NQ



Legend

- Town/City
- Proposed Substation
- CopperString Alignment
- Railway
- Highway
- Secondary Road

Field Survey Location

- Likely abundant

Queensland Weed Distribution

- Likely presence

0 20 40 60 80 100

Kilometres

Coordinate System
MGA1994 Zone 54\55

Notes/Data Sources
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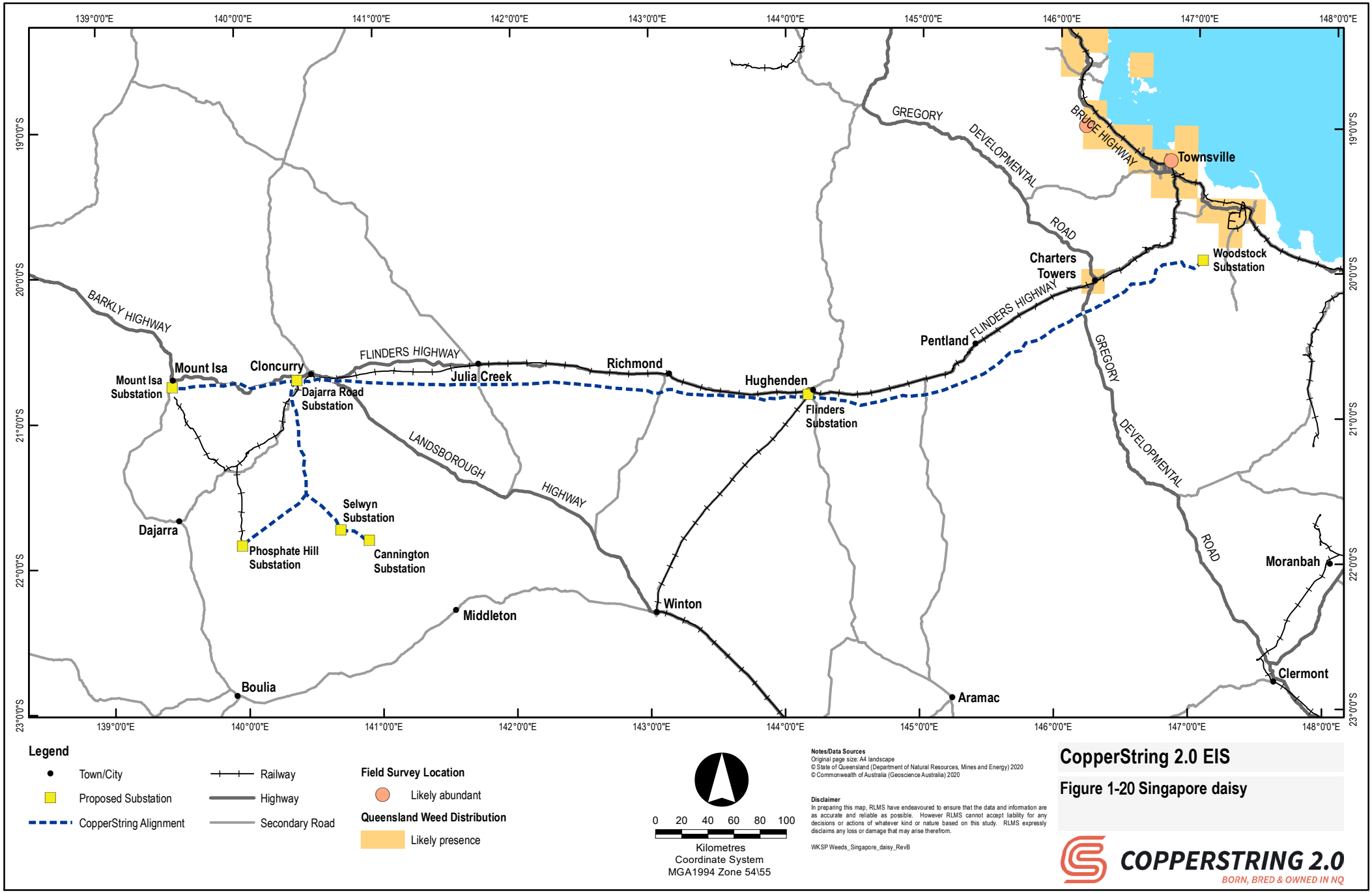
WKSP Weeds_Sicklepod_RevB

CopperString 2.0 EIS

Figure 1-19 Sicklepod

COPPERSTRING 2.0
BORN, BRED & OWNED IN NQ



Legend

- Town/City
- Proposed Substation
- CopperString Alignment
- Railway
- Highway
- Secondary Road

Field Survey Location

- Likely abundant

Queensland Weed Distribution

- Likely presence

0 20 40 60 80 100

Kilometres

Coordinate System
MGA1994 Zone 54\55

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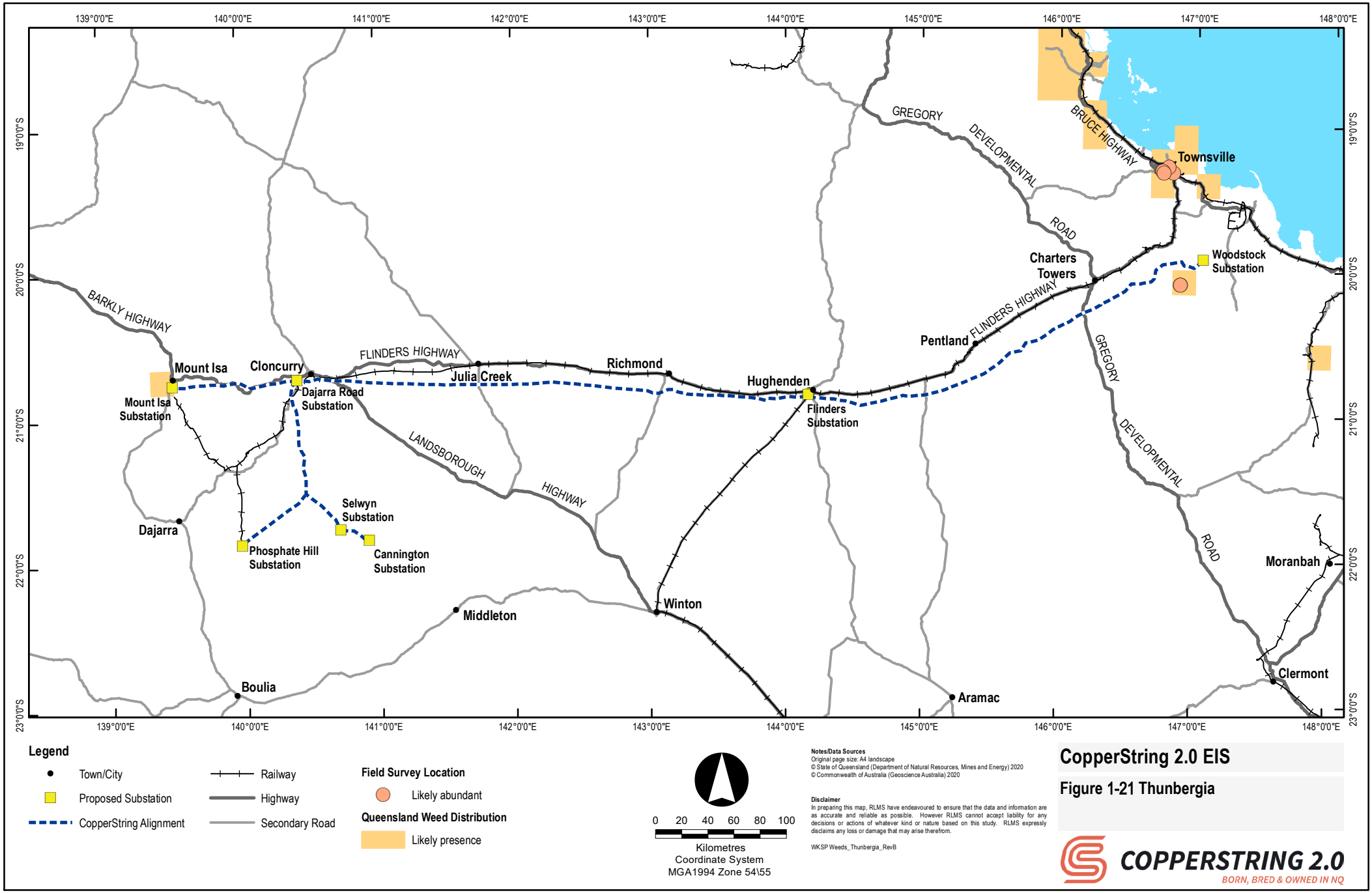
WKSP Weeds_Singapore_daisy_RevB

CopperString 2.0 EIS

Figure 1-20 Singapore daisy

COPPERSTRING 2.0
BORN, BRED & OWNED IN NQ



Legend

- Town/City
- Proposed Substation
- CopperString Alignment
- Railway
- Highway
- Secondary Road

Field Survey Location

- Likely abundant

Queensland Weed Distribution

- Likely presence

0 20 40 60 80 100

Kilometres

Coordinate System
MGA1994 Zone 54\55

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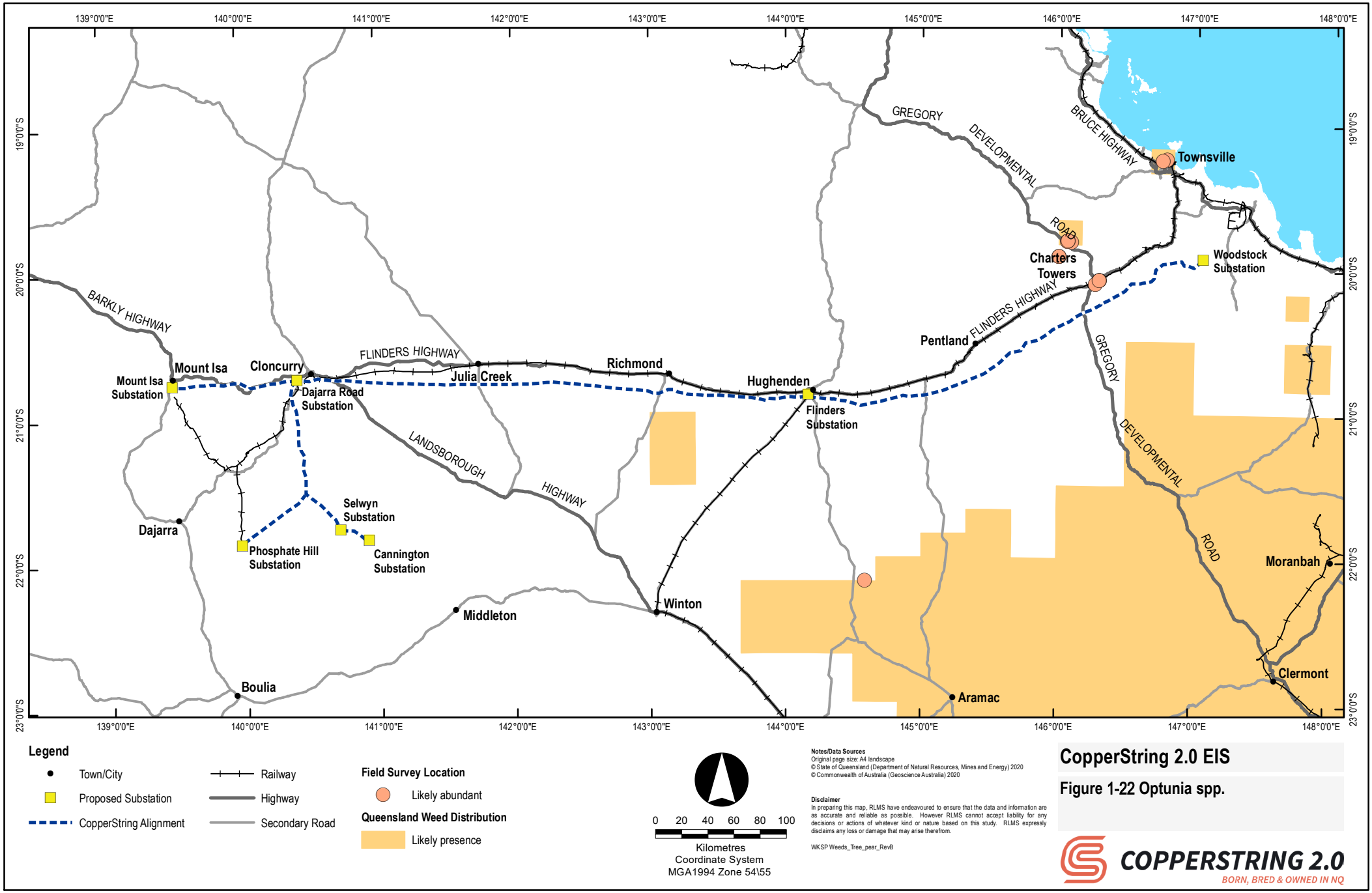
WKSP Weeds_Thunbergia_RevB

CopperString 2.0 EIS

Figure 1-21 Thunbergia

COPPERSTRING 2.0
BORN, BRED & OWNED IN NQ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BARKLY HIGHWAY
FLINDERS HIGHWAY
LANDSBOROUGH HIGHWAY
GREGORY DEVELOPMENTAL ROAD
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Clermont
Legend
Town/City
Proposed Substation
CopperString Alignment
Railway
Highway
Secondary Road
Field Survey Location
Likely abundant
Queensland Weed Distribution
Likely presence
0 20 40 60 80 100
Kilometres
Coordinate System
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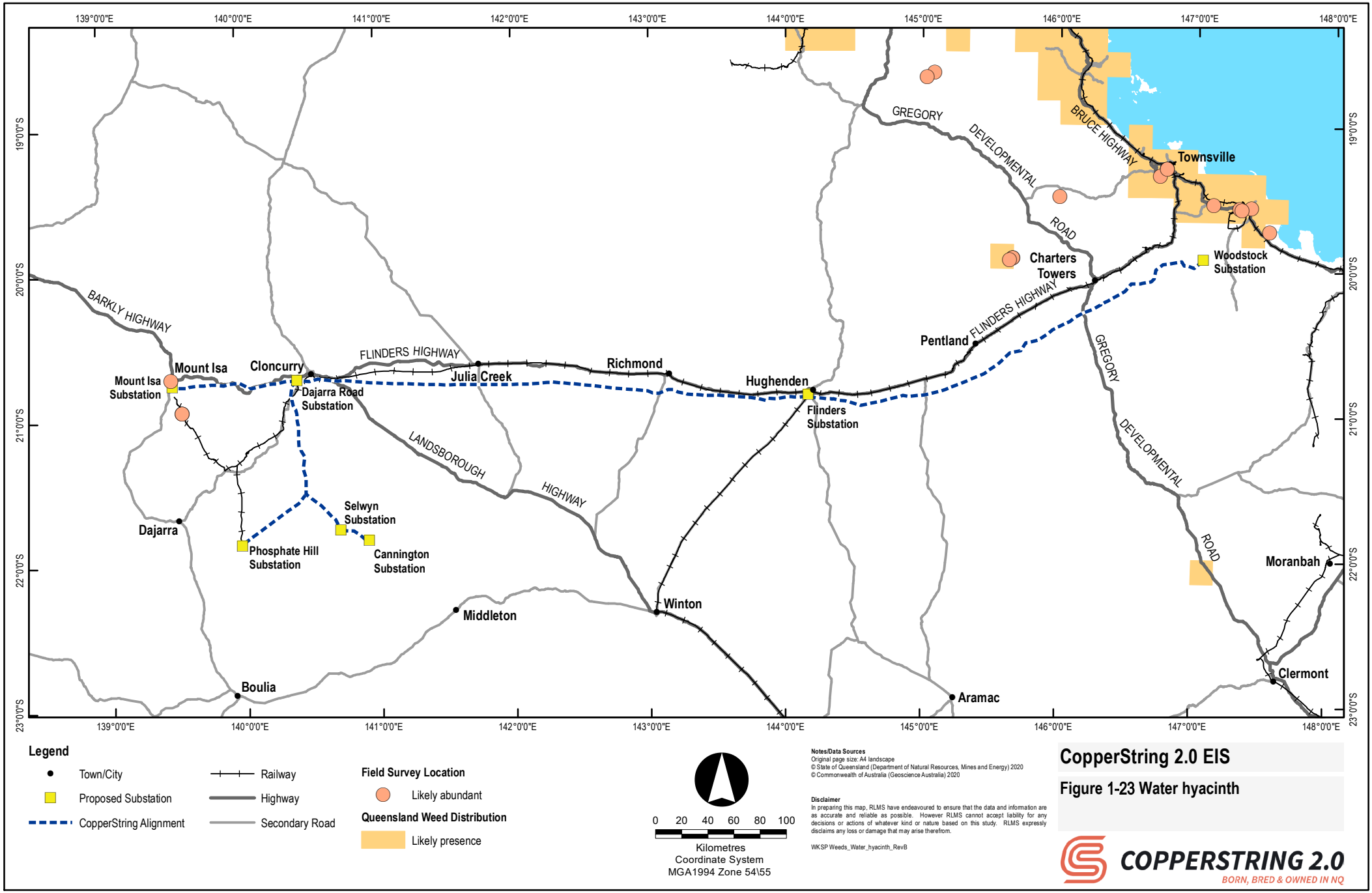
WKSP Weeds_Tree_pear_RevB
CopperString 2.0 EIS
Figure 1-22 Optunia spp.
COPPERSTRING 2.0
BORN, BRED & OWNED IN NQ



Legend

- Town/City
- Proposed Substation
- CopperString Alignment
- Railway
- Highway
- Secondary Road

Field Survey Location

- Likely abundant

Queensland Weed Distribution

- Likely presence

0 20 40 60 80 100

Kilometres

Coordinate System
MGA1994 Zone 54\55

Notes/Data Sources
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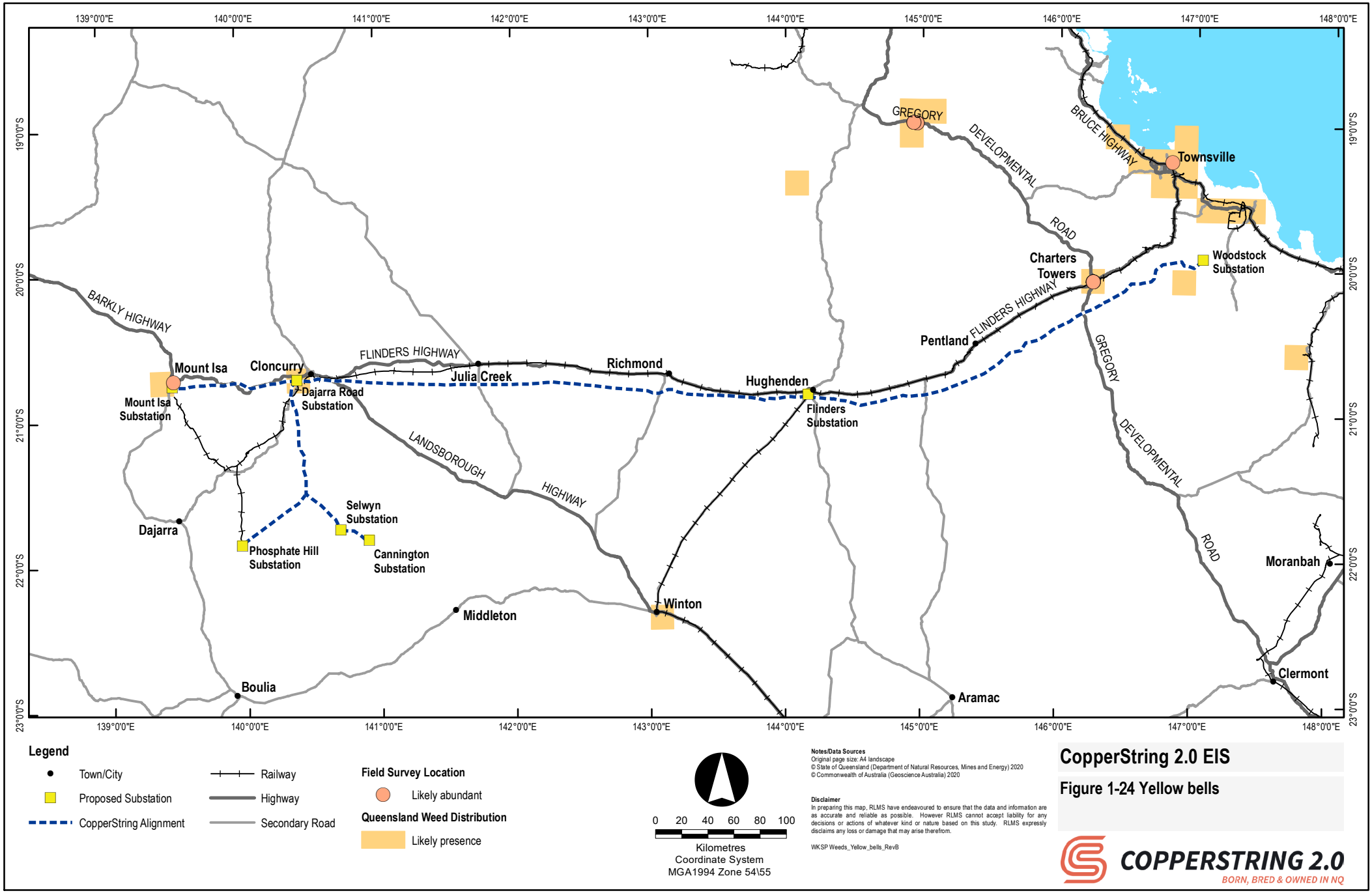
WKSP Weeds_Water_hyacinth_RevB

CopperString 2.0 EIS

Figure 1-23 Water hyacinth

COPPERSTRING 2.0
BORN, BRED & OWNED IN NQ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FLINDERS HIGHWAY
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Hughenden
Flinders Substation
LANDSBOROUGH HIGHWAY
Dajarra
Phosphate Hill Substation
Selwyn Substation
Cannington Substation
Winton
Middleton
Boulia
Aramac
Legend
Town/City
Proposed Substation
CopperString Alignment
Railway
Highway
Secondary Road
Field Survey Location
Likely abundant
Queensland Weed Distribution
Likely presence
0 20 40 60 80 100
Kilometres
Coordinate System
MGA1994 Zone 54\55
Notes/Data Sources
Original page size: A4 landscape
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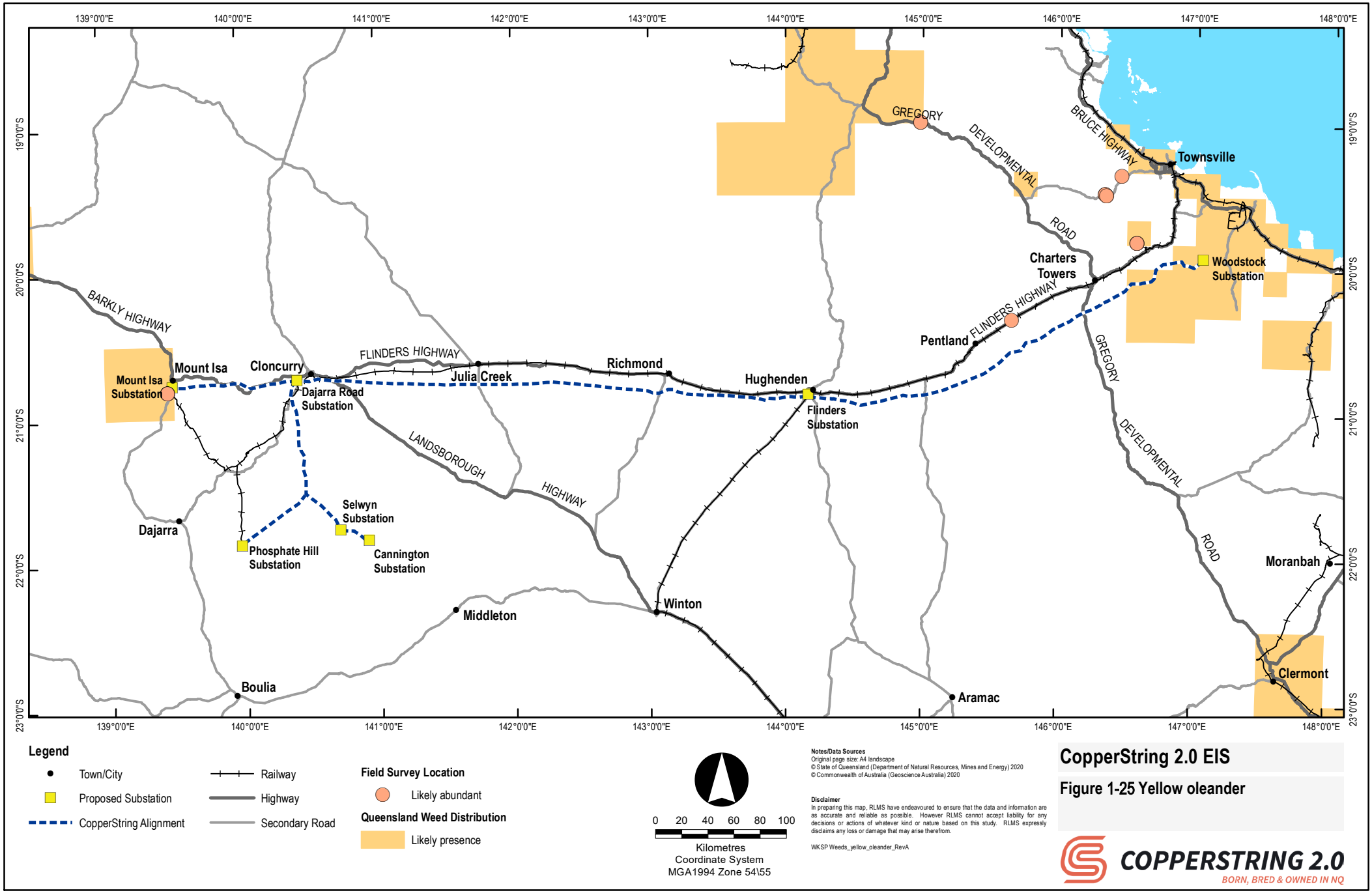
WKSP Weeds_Yellow_bells_RevB
CopperString 2.0 EIS
Figure 1-24 Yellow bells
COPPERSTRING 2.0
BORN, BRED & OWNED IN NQ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GREGORY DEVELOPMENTAL ROAD
BRUCE HIGHWAY
Townsville
Charters Towers
Woodstock Substation
FLINDERS HIGHWAY
Pentland
GREGORY DEVELOPMENTAL ROAD
BARKLY HIGHWAY
Mount Isa
Mount Isa Substation
Cloncurry
Dajarra Road Substation
FLINDERS HIGHWAY
Julia Creek
Richmond
Hughenden
Flinders Substation
LANDSBOROUGH HIGHWAY
Dajarra
Selwyn Substation
Phosphate Hill Substation
Cannington Substation
Middleton
Winton
Boulia
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WKSP Weeds_yellow_oleander_RevA
CopperString 2.0 EIS
Figure 1-25 Yellow oleander
COPPERSTRING 2.0
BORN, BRED & OWNED IN NQ

Invasive animals

A total of 24 introduced fauna species were identified in desktop searches within 5 km of the Project (Table 1-4). Of these, 18 species were recorded in both the PMST and Wildlife Online database. Two species, the black rat (*Rattus rattus*) and the feral deer were recorded in the PMST database only, and two species, the goat (*Capra hircus*) and the Indian peafowl (*Pavo cristatus*), were recorded in the Wildlife Online search only. Nine introduced mammal species and one amphibian species were recorded during the 2010 and 2019 field surveys. Two introduced fish species were recorded during the 2010 field surveys. Nine species are listed as restricted invasive matter under the Biosecurity Act however, the GBO still applies to non-restricted invasive animals. Additionally, local governments may have specific control actions for non-restricted invasive animals, which may be required under local law.

Detailed information on the identified invasive animals is located within the Volume 3 Appendix P Ecological Assessment. Spatial representations of invasive animals risk incorporating the below are shown Figure 1-26. The invasive animals included on Figure 1-26 have restricted distributions and may be a risk of further spreading, other invasive species that a wide spread across the corridor selection include feral dogs, cats and pigs.

Table 1-4 Invasive animal species likely to be present (from Volume 3 Appendix P Ecological Assessment)

Scientific name	Common Name	Restricted matter category	Source
Canis lupus familiaris	Domestic dog	Category 3, 4, 6	PMST, WO
Felis catus	Cat	Category 3, 4, 6	PMST, WO
Oryctolagus cuniculus	European rabbit	Category 3, 4, 5, 6	PMST, WO
Sus scrofa	Pig	Category 3, 4, 6	PMST, WO
Vulpes vulpes	Red fox	Category 3, 4, 5, 6	PMST, WO
Rhinella marina	Cane toad	-	PMST, WO
Acridotheres tristis	Common myna	-	PMST, WO
Anas platyrhynchos	Northern mallard	-	PMST, WO
Bos taurus	Cattle	-	PMST, WO
Camelus dromedarius	One-humped camel	-	PMST, WO
Columba livia	Rock dove	-	PMST, WO
Hemidactylus frenatus	House gecko	-	PMST, WO
Lonchura punctulata	Nutmeg mannikin	-	PMST, WO
Mus musculus	House mouse	-	PMST, WO
Pavo cristatus	Indian peafowl	-	WO
Passer domesticus	House sparrow	-	PMST, WO
Spilopelia chinensis	Spotted dove	-	PMST, WO
Equus caballus	Horse	-	PMST, WO
Sturnus vulgaris	Common starling	-	PMST, WO
Rattus rattus	Black rat	-	PMST
Capra hircus	Goat	Category 3, 4, 6	WO
N/A	Feral deer	Category 3, 4, 6	PMST
Gambusia holbrooki	Mosquitofish	Category 6 and 7	WO
Oreochromis mossambica	Tipalia	Category 6 and 7	WO

"-" indicates that the species is not declared restricted matter

Insects

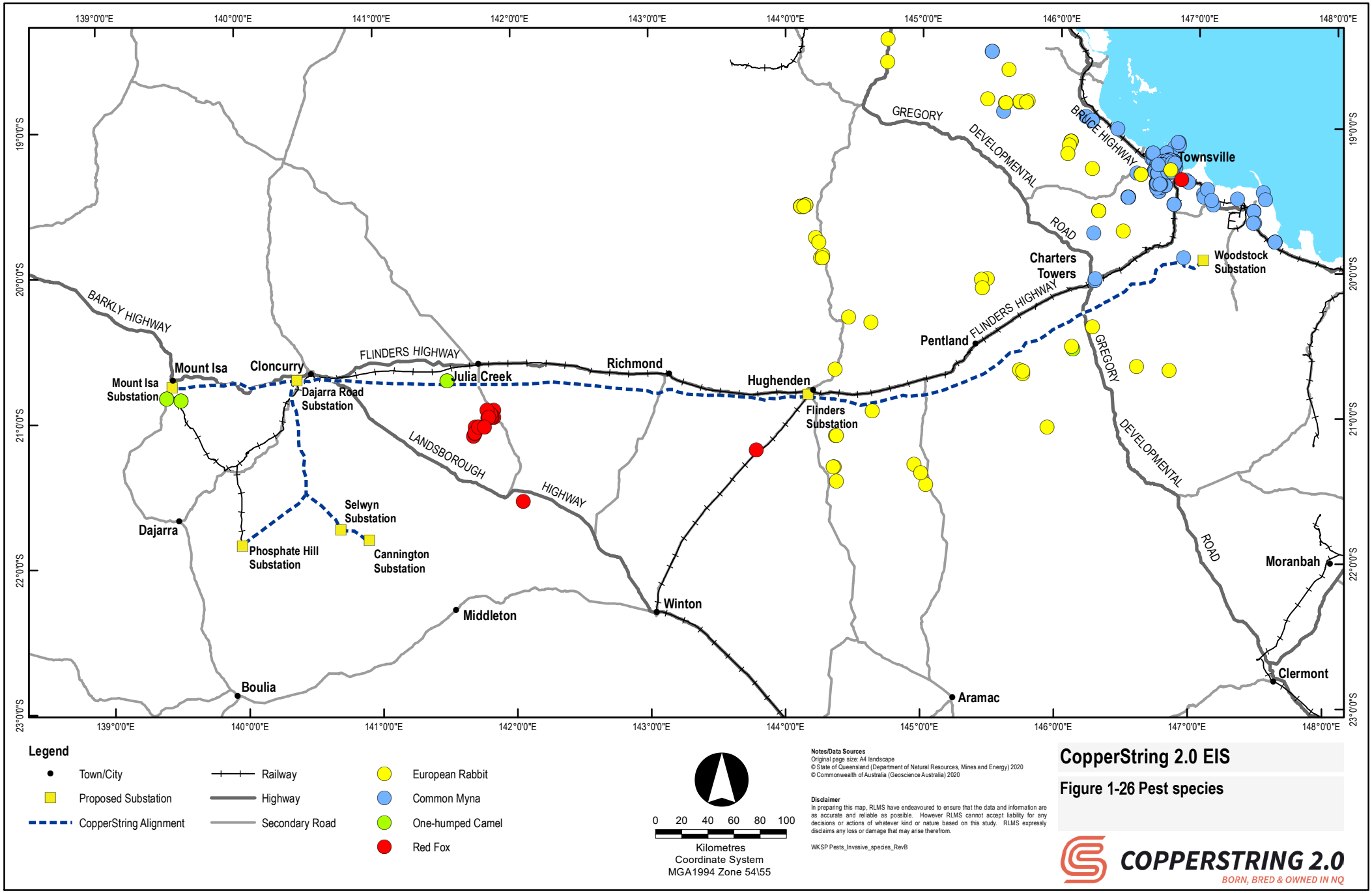
There are four invasive ant species known within Queensland (refer Table 1-5), which have the potential to spread to the Project area via material or machinery movement. Townsville City Council consider yellow crazy ants as a 'critical priority' species (refer Table 1-7).The Singapore ant is not restricted matter under the Biosecurity Act however is present in the urban districts of the McKinlay LGA and is locally declared. Under local laws a person must not introduce, propagate, breed or provide harbour to locally declared invasive animals. Other insects that are not introduced but considered pests include mosquitoes and biting midges.

Spatial representations of invasive ants risk incorporating the below are shown on Figure 1-27. No invasive ant species were recorded along the corridor selection during field surveys (refer Volume 3 Appendix P Ecological Assessment).

Table 1-5 Invasive ants of Queensland

Scientific Name	Common Name	Restricted Matter Category	Location
Wasmannia auropunctata	Electric ant	Category 1	Far North QLD
Solenopsis invicta	Red imported fire ant	Category 1	South-east QLD
Anoplolepis gracilipes	Yellow crazy ant	Category 3	Townsville, Cairns, Brisbane
Monomorium destructor (also known as *Trichomyrmex destructor*)	Singapore ant	-	McKinlay LGA urban districts (Julia Creek, McKinlay, Kynuna and Nelia Townships)

"-" indicates that the species is not declared restricted matter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23°0'0"S
BARKLY HIGHWAY
FLINDERS HIGHWAY
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GREGORY DEVELOPMENTAL ROAD
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Selwyn Substation
Cannington Substation
Middleton
Winton
Boulia
Aramac
Moranbah
Clermont
Legend
Town/City
Proposed Substation
CopperString Alignment
Railway
Highway
Secondary Road
European Rabbit
Common Myna
One-humped Camel
Red Fox
0 20 40 60 80 100
Kilometres
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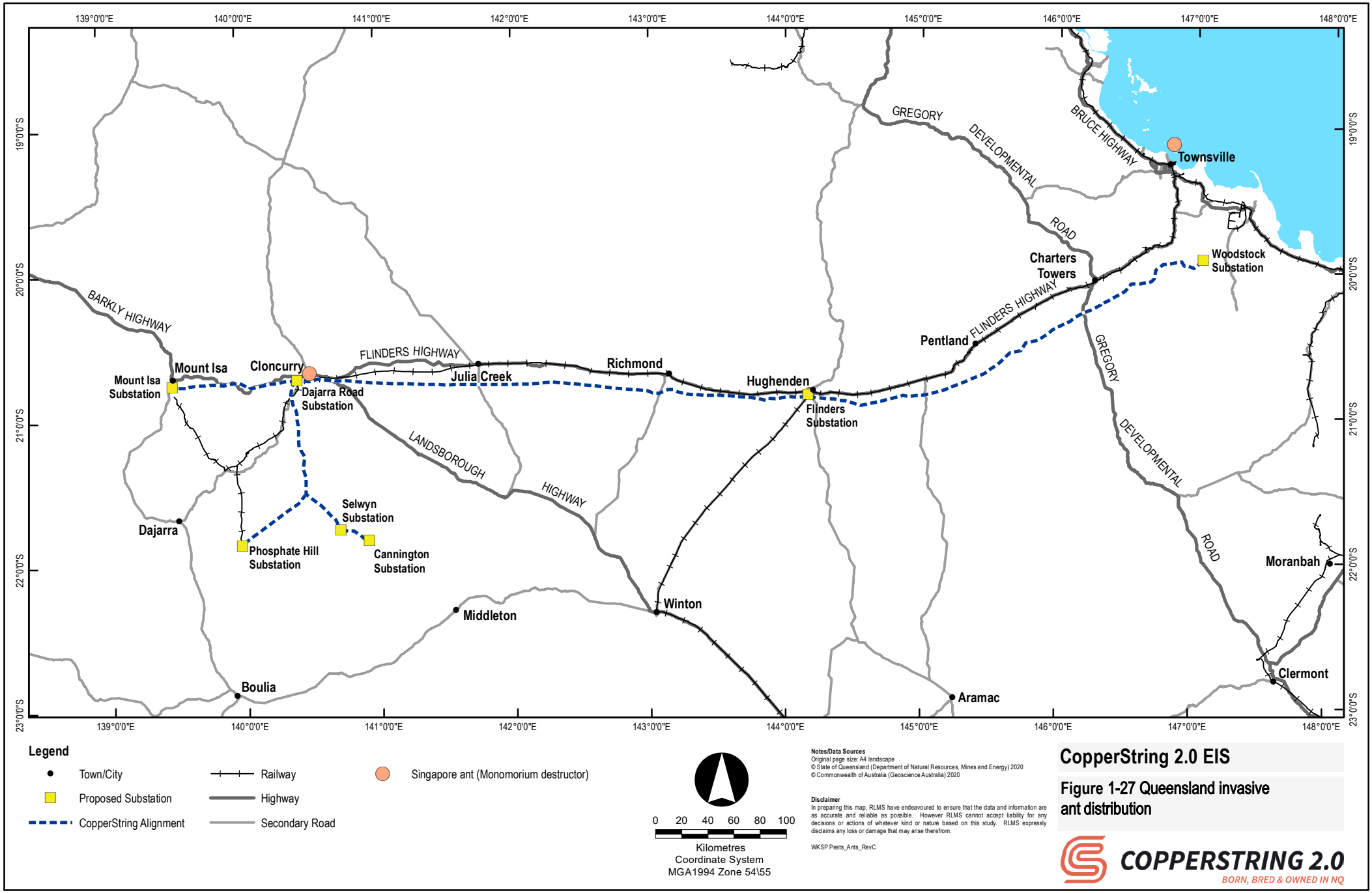
WKSP Pests_Invasive_species_RevB
CopperString 2.0 EIS
Figure 1-26 Pest species
COPPERSTRING 2.0
BORN, BRED & OWNED IN NQ



Notes/Data Sources
Original page size: A4 landscape
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WKSP Pests_Ants_RevC

CopperString 2.0 EIS

Figure 1-27 Queensland invasive ant distribution

COPPERSTRING 2.0
BORN, BRED & OWNED IN NQ

1.3.2 Local government priorities

Review of local government biosecurity plans identified the management priority for each of the introduced plant and animal species likely or known to occur within the study area (refer Table 1-6 and Table 1-7 respectively). Species considered higher priority area targeted with intensive management often with goals aiming for significant reductions or eradication, however methods are ultimately species specific. Management Methods include eradication, reduction, containment, education and impact/asset protection. Species prioritisation can guide future specific biosecurity management plans.

Table 1-6 Local government prioritisation for invasive plant species of significance

Species		Local Government/Council Priority							
Scientific Name	Common Name	Burdekin	Townsville	Charters Towers	Flinders	Richmond	McKinlay	Cloncurry	Mt Isa
Bryophyllum delagoense	Mother of millions	-	Medium	Low/Medium	Moderate	Watch list	-	Minor	B
Cascabela thevetia	Yellow oleander	Medium	Medium	-	-	-	-	-	-
Cabomba caroliniana	Cabomba	Medium	High	-	-	-	-	-	-
Cenchrus ciliaris	Buffel grass	-	Low	-	-	-	-	-	-
Chromolaena odorata	Siam weed	High	High	High	High	-	-	-	Prevention
Cryptostegia grandiflora	Rubber vine	Medium	High	Medium	High	26	A/B/ Prevention	Major	A/B
Cryptostegia madagascariensis	Ornamental rubber vine	-	High	-	-	-	-	-	-
Cylindropuntia fulgida	Coral cactus	-	Medium	-	Strategic opportunities	28	A/ Prevention	Medium	A
Cylindropuntia fulgida var. mamillata	Prickly pear	-	Medium	-	Strategic opportunities	-	-	-	-
Cyperus brevifolius	Mullumbimby couch						-		
Eichhornia crassipes	Water hyacinth	Medium	High	-	-	-	-	-	Prevention
Harrisia martini	Harrisia cactus	High	Alert (all species)	-	-	-	A/Prevention	-	-
Hymenachne amplexicaulis	Hymenachne	Medium	High	Medium	-		-	-	-
Jatropha gossypiifolia	Bellyache bush	Medium	High	High	Strategic opportunities	29.5	Prevention	-	A/B
Lantana camara	Lantana	Medium	High	-	-	-	-	-	Eradication
Lycium ferocissimum	African boxthorn						-		

Species		Local Government/Council Priority							
Scientific Name	Common Name	Burdekin	Townsville	Charters Towers	Flinders	Richmond	McKinlay	Cloncurry	Mt Isa
Opuntia monacantha	Dropping tree pear	-	Medium	Medium	-	-	A/Prevention	-	-
Opuntia stricta	Prickly pear	-	Medium	Medium	Strategic opportunities	-	A/Prevention	-	A
Opuntia tomentosa	Velvety tree pear	-	Medium	Medium		-	A/Prevention	-	-
Parkinsonia aculeata	Parkinsonia	Medium	High	High	High	24	A/B	Medium	B
Parthenium hysterophorus	Parthenium weed	High	High	Medium/ High	High	31.5	A/Prevention	Major	-
Prosopis pallida	Mesquite	-	High	Alert	High	15	A/B/ Prevention	Medium	A
Salvinia molesta	Salvinia	Medium	High	-	-	-	Prevention	-	A
Senna obtusifolia	Sicklepod	High	High	Low/ Medium	-	-	-	-	-
Sphagneticola trilobata	Singapore daisy	-	Medium	Low	-	-	-	-	-
Sporobolus jacquemontii	America rat's tail grass	Medium	Medium		-			-	-
Sporobolus pyramidalis	Giant rat's tail grass	High	High	High	High	Watch list	Prevention	-	Prevention
Tamarix aphylla	Athel pine	-	High	-	-	20	B/Prevention	-	B
Tecoma stans	Yellow bells	-	Low	-	-	-	-	-	B
Thunbergia grandiflora	Thunbergia	-	High	-	-	-	-	-	-
Vachellia nilotica	Prickly acacia	High	High	High	Active program	30.5	B/C	Major	A
Ziziphus mauritiana	Chinee apple	Medium	High	High	High	18	-	Minor	A

"-" indicates that the species was not included in the LGA biosecurity plans.

Table 1-7 Local government prioritisation for invasive animal species of significance

Species		Local Government/Council Priority							
Scientific Name	Common Name	Burdekin	Townsville	Charters Towers	Flinders	Richmond	McKinlay	Cloncurry	Mt Isa
Acridotheres tristis	Common myna	-	-	-	-	-	-	-	-
Anas platyrhynchos	Northern mallard	-	-	-	-	-	-	-	-
Anoplolepis gracilipes	Yellow crazy ant	-	Critical	-	-	-	-	-	-
Bos taurus	Cattle	-	-	Low/ med(public safety)	-	-	-	-	-
Camelus dromedarius	One-humped camel	-	-	Low/ med(public safety)	-	-	-	-	A
Canis lupus familiaris	Feral dog	High	Critical	High	Active program	23	A/C	High	C
Capra hircus	Feral Goat	-	-	Low	Minor	-	-	-	B
Columba livia	Rock dove	-	-	-	-	-	-	-	-
Equus caballus	Wild Horse	-	Critical	Low/ med(public safety	-	-	-	-	B
Felis catus	Feral Cat	-	High	Medium	High	30	C	High	B
Gambusia holbrooki	Mosquitofish	-	Medium	-	-	-	-	-	-
Hemidactylus frenatus	House gecko	-	-	-	-	-	-	-	-
Lonchura punctulata	Nutmeg mannikin	-	-	-	-	-	-	-	-
Monomorium destructor (also known as	Singapore ant	-	-	-	-	-	C	-	-

Species		Local Government/Council Priority							
Scientific Name	Common Name	Burdekin	Townsville	Charters Towers	Flinders	Richmond	McKinlay	Cloncurry	Mt Isa
Trichomyrmex destructor)									
Mus musculus	House mouse	-	-	-	-	-	-	-	-
N/A	Feral deer	High	High	Med/high	-	18	B/Prevention	-	-
Oreochromis mossambica	Tipalia	-	Medium	Low	-	-	-	-	-
Oryctolagus cuniculus	European rabbit	-	High	Medium	Minor	19	A/Prevention	-	Prevention
Passer domesticus	House sparrow	-	-	-	-	-	-	-	-
Pavo cristatus	Indian peafowl	-	Low	-	-	-	-	-	-
Rattus rattus	Black rat	-	-	-	-	-	-	-	-
Rhinella marina	Cane toad	-	Medium	-	Minor	-	-	-	-
Spilopelia chinensis	Spotted dove	-	-	-	-	-	-	-	-
Sturnus vulgaris	Common starling	-	-	-	-	-	-	-	-
Sus scrofa	Feral Pig	High	High	Medium	High	32.5	A/C	High	A
Vulpes vulpes	Red fox	-	High	High	Moderate	18	A/Prevention	-	Prevention

“-“ indicates that the species was not included in the LGA biosecurity plans.

1.4 Biosecurity management

1.4.1 Framework Environmental Management Plan

The Volume 3 Appendix Q Framework Environmental Management Plan establishes the following for the Project:

- An environmental management strategy including requirements for:
  - Environmental risk assessment and management
  - Identification of approvals and legal requirements
  - Allocation of roles and responsibilities
  - Contractor management
  - Communications and environmental reporting
  - Training, awareness and inductions
  - Emergency contacts and procedures
  - Monitoring, inspections and audits (including continuous improvement)
  - Incidents and complaints
  - Non-conformity, corrective and preventative actions.
- Environmental values, performance objectives, monitoring and management requirements.

The Construction Contractor(s) would be required to prepare additional, site specific environmental management documentation as part of a Construction Environmental Management Plan. Procedures, protocols and Environmental and Safe Work Method Statement (ESWMS), compliant with biosecurity requirements shall also be prepared.

The following sets the concept level management objectives, management strategies, performance criteria and monitoring and reporting requirements as they relate to biosecurity management.

1.4.2 Biosecurity management objectives

- To not introduce new invasive plant and animal species
- To not spread existing invasive species to neighbouring areas
- Identify and control all invasive plant and animal species listed under National, State and/or Local Government legislation and policies.

1.4.3 Biosecurity management strategies

The minimum requirements for discharging the GBO associated with Project construction and operation are as follows.

Establish biosecurity risk

- Management strategies with reference to biosecurity shall be developed to reflect the level of risk proposed for construction activities and construction zones.
- Conduct a formal survey prior to clearing activities to determine invasive plant presence within the Project area. The surveys shall be staged to align with work fronts and shall be undertaken during an appropriate time of the year in order to capture accurate data (invasive plant species and distribution). The targeted survey area shall include relevant easement areas, substation sites and associated access track routes. All captured data shall be uploaded into a dedicated Project GIS management system.

- Prior to commencing work, a detailed assessment of biosecurity risks associated with specific work activities and construction methods shall be carried out by the Construction Contractor(s) with biosecurity risk areas defined for the Project area. Data collected during landholder discussions shall be used to further inform the biosecurity risk assessment. The biosecurity risk assessment shall consider the following:
  - The consequence or degree of harm that may result from the hazard
  - The likelihood of the hazard occurring
  - What the person knows or ought reasonably to know about the hazard or risk (per reasonable and practical steps under the GBO)
  - The availability and suitability of ways to minimise the risk
  - Relevant industry, community, and Natural Resource Management groups for how cleandown locations shall link in with any broader biosecurity management strategies.

Management strategies as further defined below shall be implemented as required to reflect the biosecurity risk level.

Induction and training

- All personnel working in the field shall receive an induction regarding biosecurity matters and management requirements relevant to their specific work activities and construction zones.
- Specific training sessions for personnel on invasive plant species identification, invasive plant management and reporting requirements for identified or suspected invasive plants.
- A Project-specific significant invasive flora and fauna identification guide shall be developed and be provided and promoted to all relevant Project personnel in general training and awareness sessions (e.g. pre-starts, toolboxes etc.).
- Personnel required to self-certify or certify vehicles, plant, equipment and machinery as being weed free (Biosecurity Declarations) shall follow appropriate procedures (e.g. Vehicle and Machinery Inspection Procedure (DAFF 2013)). Competency and experience requirements shall be defined in the position description of the role. Competency and training records shall be maintained for no less than seven years. Competent personnel shall be able to perform the tasks outlined in Table 1-8.

Table 1-8 Competencies required for satisfactory cleandowns

Element	Performance criteria
Check vehicles, plant, equipment and machinery	• Vehicles, plant, equipment and machinery are checked for contamination according to written guidelines and legislative requirements. • Vehicles, plant, equipment and machinery are made safe for checking, supported safely, with free moving parts pinned or supported as required. • Covers and guards removed safely. • All points identified in legislation or operating procedures are identified and inspected for contamination.
Clean vehicles, plant, equipment and machinery	• Vehicles, plant, equipment and machinery is made safe for cleaning, supported safely, with free moving parts pinned or supported as required. • Correct equipment for cleaning selected. • Points listed in appropriate regulations, checklists or enterprise procedures are cleaned • Areas on other equipment likely to accumulate contaminants identified, inspected and cleaned.

Element	Performance criteria
Recheck vehicles, plant, equipment and machinery	• Points listed in appropriate regulations, checklists or enterprise procedures are rechecked. • Guards replaced safely and checked.
Complete cleaning work	• Waste materials are disposed of according to enterprise operating procedures and relevant legislative requirements. • Records of cleaning are recorded on appropriate forms according to enterprise policy and procedures

Cleandown facilities (type and site selection)

- The biosecurity risk assessment shall define biosecurity risk areas and determine the location, frequency, type and longevity of cleandown facilities (temporary or permanent) and appropriate method of cleandown (i.e. brush and vacuum, high pressure air, high pressure low volume water, low pressure high volume water, disinfection wash or spray). Cleandown procedures shall be developed in consultation with landholders to ensure land access requirements are appropriately addressed.
- Temporary or permanent cleandown facility selection and site location selection shall consider the following:
  - Cleandown sites should be located in the following preferential order (in consultation with the relevant stakeholders):
    - use of existing commercial cleandown facilities first if possible
    - on corridor selection
    - on road reserve
    - on existing and agreed access (off corridor selection on private property).
  - Cleandown sites should not be located on invasive plant free property, but rather on the way out of a property affected by invasive plants.
  - Cleandown sites should not be located in environmentally sensitive locations unless required for appropriate invasive plant management.
  - Cleandown sites should be located as close as possible to invasive plant infested areas to prevent further invasive plant spread.
  - Runoff shall be managed to ensure that sediment, grease, oil and viable plant material does not pollute adjacent land or waterways.
  - Cleandown equipment shall be maintained in a serviceable and usable condition as per the manufacture's specifications and operating procedures.
  - Temporary cleandown sites shall be decommissioned at end of construction, when no longer required, with geofabric and contaminated materials disposed of at a licensed disposal facility and the site rehabilitated.
- Cleandown facilities shall be designed and constructed with consideration to safety, cost, effectiveness, ease of implementation, risk, flexibility, environmental considerations and compliance. Cleandown facility design shall be undertaken by a suitably qualified and experience person and / or reputable manufacturer.
- Temporary cleandown facilities shall be designed and constructed to ensure adequate separation of vehicle treads with the material being washed down, an adequate drainage system to contain all cleandown materials as well as enabling cleandown material to be periodically cleaned out and disposed.
- Cleandown facilities shall include a log book to record all movements and cleandowns of all vehicles, plant, equipment and machinery through the facility.

- Cleandown material potentially contaminated with biosecurity matter shall be disposed in accordance with Biosecurity Act and Biosecurity Regulation requirements.

Land access, mobilisation, movements and demobilisation

- At least two weeks prior to mobilisation to site, a consolidated inventory of all vehicles, plant, equipment and machinery planned to be used in construction shall be developed and submitted to the Construction Contractor(s) HSE representative (or equivalent). The vehicle, plant, equipment and machinery inventory shall identify the assets point of origin (including if from a fire ant, yellow crazy ant, electric ant or Singapore ant regions), where cleandown has occurred and the location of the accompanying and completed Biosecurity Declaration Form.
- Prior to leaving their point of origin for access to the Project area, all vehicles, plant, equipment and machinery shall undergo cleandown and be accompanied by a current and certified Biosecurity Declaration Form from the entity responsible for that cleandown. Cleandown should be undertaken in accordance with the Vehicle and Machinery Cleandown Procedures (DAF 2019a), DAFF 2013, Vehicle and Machinery Inspection Procedure Persons signing Biosecurity Declarations shall follow the Machinery Inspection Procedure (DAFF 2013).
- Prior to leaving a construction zone, or workfronts or biosecurity risk areas, all vehicles, plant, equipment and machinery shall undergo cleandown at designated cleandown facilities and a new Biosecurity Declaration Form completed.
- All vehicles, plant, equipment and machinery shall maintain a log book to record all movements through cleandown facilities.
- Personnel shall comply with any land access requirements (e.g. cleandown before entry, sign-on/off) documented within the land access policy. Construction Contract(s) shall obtain any landholder Biosecurity Management Plans prepared in accordance with Section 94G of the Biosecurity Regulation. Personnel shall comply with any landholder Biosecurity Management Plan prepared in accordance with Section 94G of the Biosecurity Regulation. Where a conflict with land access requirements exist with this document, this shall be referred to the relevant Construction Contractor(s) HSE representative for clarification.
- A movement control plan shall be developed.
- Vehicle shall be confined to designated access roads (unless unsafe to do so).
- Vehicle journey planning shall be undertaken, as far as practicable, in order to visit risk free biosecurity areas first, before travelling to areas with biosecurity risks.
- Boots and clothes shall be clean of mud, seed and plant material before entering vehicles.

Material management

- Topsoil stockpiles contaminated with invasive plants shall be quarantined from clean topsoil stockpiles, with clear signage, and shall be identified on a site plan during construction. Spatial data, including GPS coordinates shall be recorded within a dedicated Project GIS.
- Cleared vegetation which is heavily infested with invasive plants shall only be placed within similarly infested areas to prevent the further spread of invasive plants, or shall be burnt (in accordance with conditions of a Permit to Light Fire from the relevant District Fire Warden).
- Biosecurity Declarations shall be provided for all imported material (i.e. sand, soil, mulch etc.), from suppliers of these products. Quantities of soil/gravel obtained from a landholders borrow pit shall have a self-certifying Biosecurity Declaration.

- Any loads of plant material or soil (that may contain biosecurity matter) shall be covered during transport.

Procurement

- Reputable suppliers shall be used for the procurement and delivery of construction materials requiring transportation to the Project site from other regions of the state, country or from overseas. Where there is a risk of introduction or spread of restricted invasive plant, suppliers shall provide a Biosecurity Declaration. This shall be a requirement of contract documentation and be a necessary component of procurement.

Invasive animal management

- Fences may be installed to exclude stock and invasive animals from construction and accommodation sites (if required). This shall be undertaken in consultation with landholders.
- All food wastes shall be appropriately managed onsite, with a focus on reducing food supply to invasive animal species such as feral cats and dogs. Personnel shall not feed animals food scraps.
- Vermin-proof bin lids for all food waste shall be used.
- Vermin traps shall be used in offices and accommodation camps, as required.
- Personnel shall use appropriate PPE to discourage mosquito and midge bites (long-sleeve shirts, pants, insect sprays (if required)).
- Project personnel shall not be permitted pets or animals on site.

Treatments

- Construction areas (access roads, substations, tower, accommodation and laydown/delivery site) shall be kept free from invasive plant infestations through mechanical or chemical treatment as appropriate.
- Species-specific control procedures shall be developed based on published Biosecurity Queensland advice and information from landholders, natural resource management groups and local councils).
- Landholders shall be consulted prior to using herbicides.
- Construction Contractor(s) using herbicide distribution equipment shall hold (or supervised by) the holder of a commercial operator's license or under the authority of a licenced ground distribution contractor.
- All methods and rates of chemical application must comply with label conditions (or a permit for off label use).
- Records are to be made for each ground distribution of herbicides in accordance with section 26 of the *Agricultural Chemicals Distribution Control Act 1966*. Records shall be submitted to CuString at the completion of works under contract. Records shall be kept for a period of seven years after such distribution. Locations shall be recorded in the Project GIS.

1.4.4 Performance criteria

- Discharging CuString's GBO as defined under the Biosecurity Act and Biosecurity Regulation.
- All personnel inducted prior to commencement of construction works.

- Invasive Plant Survey conducted before clearing.
- Construction Contractor(s) Construction Environment Management Plant containing specific biosecurity management measures shall be developed and implemented prior to construction.
- Cleandown facilities established prior to commencement of biosecurity risk activities.
- All vehicles, plant, equipment and machinery maintain current Biosecurity Declarations.
- All imported materials maintain current Biosecurity Declarations.
- No unresolved non-vexatious complaints regarding the introduction of invasive plant species from landholders.
- No introduction of new invasive plant and animal species.
- No spread of existing invasive species to neighbouring areas.
- No unauthorised use of herbicides.
- No complaints received regarding use of herbicides.

1.4.5 Monitoring and reporting

- Post rehabilitation monitoring in accordance with Volume 3 Appendix T Concept Rehabilitation Plan inclusive of pre and post wet season monitoring for a period of two years.
- Site inspections undertaken by Contractor personnel (e.g. Supervisors and HSE representatives) shall incorporate biosecurity aspects as required under this CBP e.g. vehicles, plant, equipment and machinery Biosecurity Declaration spot checks, cleandown facility spot checks, etc.
- Suspected weed outbreaks or other biosecurity matters and coordinates of their location (in MGA2020) shall be reported to the Contractor HSE representative and investigated and actioned as appropriate.
- Post rehabilitation completion reporting in accordance with Volume 3 Appendix R Concept Rehabilitation Plan inclusive of confirmation that temporary construction areas have been rehabilitated to be self-sustaining and resilient i.e. require no ongoing weed management.
- Copies of all Biosecurity Declarations shall be reported to the Contractor HSE representative (or equivalent) as soon as reasonably practicable, but no later than one month from issue.

1.5 References

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GHDDocId/Document1

Document Status

Revision	Author	Reviewer		Approved for Issue		
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