GHD COPPERSTRING 2.0

CopperString 2.0

Executive summary

Volume 1

Contents

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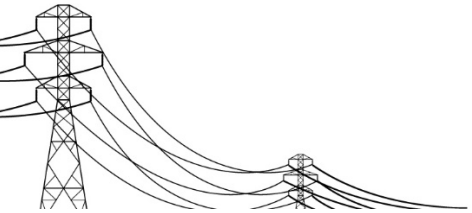


Executive summary

Introduction

Project overview

The CopperString 2.0 Project (the Project) involves the construction and operation of approximately 1,060 km of extra high voltage overhead electricity transmission line that would extend from Mount Isa to the Powerlink transmission network, via a new connection point near Woodstock, south-west of Townsville (Figure ES-1). The Project traverses seven local government areas, as shown in Figure ES-2.

The Project involves construction of seven new substations near Woodstock, Hughenden, Dajarra Road (Cloncurry), Mount Isa, Selwyn, Cannington Mine, and Phosphate Hill Mine, and will be constructed across seven local government areas (

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

1. Woodstock Substation

   The Woodstock Substation will connect the CopperString transmission network to the existing 275 kV Powerlink transmission network and will transform voltage between 275 kV and 330 kV.

2. Renewable Energy Hub

   The first 342 km of the Project from the Woodstock Substation, consisting of a dual circuit 330 kV transmission line and the Flinders Substation (south-west of Hughenden) to which it connects, forms the Renewable Energy Hub.

3. CopperString Core

   Moving further westward, the next 395 km of the Project, consisting of a dual circuit 330 kV transmission line and the Dajarra Road Substation to which it connects, forms the CopperString Core. The CopperString Core connects the eastern-most bulk supply substation of the NWPS 220 kV network, at Cloncurry, to the Flinders Substation.

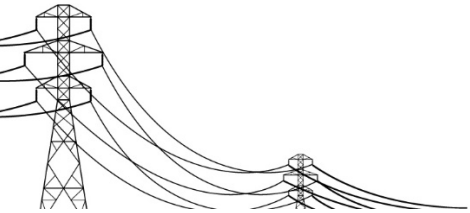
   The Dajarra Road Substation will transform the voltage between 330 kV and 220 kV (the NWPS transmission voltage) for connections to the Ergon Energy Chumvale Substation, Dugald River Mine, Ernest Henry Mine, and the Southern Connection.

4. Mount Isa Augmentation

   The Mount Isa Augmentation will upgrade and supplement the transfer capacity between the Chumvale Substation and the Mica Creek Complex at Mount Isa. The Mount Isa Augmentation will consist of a new substation south of Mount Isa, near the Mica Creek complex, with a dual circuit 220 kV transmission line connection the Dajarra Road Substation.

5. Southern Connection

   The Southern Connection will consist of a dual circuit 220 kV transmission line connecting the Dajarra Road Substation to the Selwyn Substation. The Southern Connection will enable connection of the southern mines, such as Cannington Mine, Mount Dore Mine and Phosphate Hill Mine that are presently not connected to the NWPS. The Selwyn Substation will include distribution equipment to connect the Mount Dore Mine.



6. Cannington Connection

   The Cannington Connection will consist of the Cannington Substation and a single circuit 220 kV transmission line connection from the Selwyn Substation. The Cannington Substation will include distribution equipment to connect the Cannington Mine.

7. Phosphate Hill Connection

   The Phosphate Hill Connection will consist of the Phosphate Hill Substation and a single circuit 220 kV transmission line that connects to the Southern Connection at KP 90.33DS. The Phosphate Hill Substation will include distribution equipment to connect the Phosphate Hill Mine.

8. Kennedy Connection (option)

   The Kennedy Connection option will be a dual circuit 330 kV transmission line connection to the proposed Kennedy Wind Farm (Phase 2 of the Kennedy Energy Park), approximately 80 km north of Hughenden, to the Flinders Substation. The proposed Kennedy Connection has not been assessed as part of this EIS.

Project proponent

The Project is being developed by CuString Pty Ltd (CuString), an Australian private company, based in Townsville with a long history in the energy supply industry in North Queensland, broader Queensland, and Australia. CuString has partnered with several businesses located in North Queensland to deliver key project services, with more than $3 million of pre-construction work expected to be awarded to North Queensland businesses in the coming year.

CuString places the highest value on environmental performance and will be responsible for achieving environmental compliance as part of its corporate governance as the developer/owner of the Project. CuString is committed to ensuring environmental harm and pollution is minimised, resources are used efficiently, and that compliance is maintained with relevant legislation, regulations, and standards.

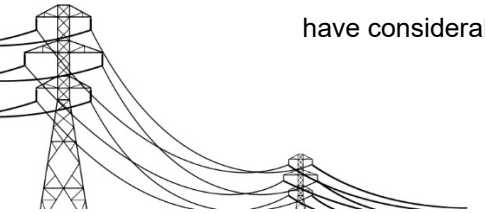
Project rationale

The Project will connect the North West Power System (NWPS) and foundation customers at isolated mine sites along the Project route to the State electricity grid, enabling their participation in the National Electricity Market (NEM). This will provide substantial, sustainable, and long-lasting economic benefits to the region through the provision of reliable and more competitively priced electricity.

Electricity consumers who are connected to the NWPS, which covers Mount Isa, Cloncurry, Gunpowder and Century Mine, do not currently have access to the NEM. Within the NWPS, electricity is supplied through bi-lateral agreements between generators and consumers.

The North West Minerals Province (NWMP) is the dominant source of base metals in Queensland and an extremely prospective, mineral rich area. Many of the mines in the NWMP, such as Phosphate Hill Mine, Mount Dore Mine and Cannington Mine, currently generate their own electricity. Electricity generation for the NWPS and isolated mines typically relies on gas or diesel for fuel.

Current energy prices in the NWMP are high by national and international standards and supply options are limited. The Project will provide access to competitively priced electricity through a connector with the capacity to both import and export electricity. This will significantly contribute to the prolonged economic development of the region, by facilitating substantial growth in the resources sector by reducing the cost of mining and minerals processing. This will subsequently have considerable social benefits for local communities.



The Project will also pass through the southern extent of the North Queensland Clean Energy Hub, a renewable energy zone containing both 'A' class wind and solar resources. A major substation will be constructed south-west of Hughenden that can facilitate NEM participation of future renewable energy based generation from this resource. The Project's access to the State electricity grid will be provided via connection to the Powerlink transmission network at a location near Woodstock.

Project schedule

The construction scheduling will consider the linear nature of the Project, its remote location, and the prevalent weather patterns applicable to the region. Following four months of pre-construction activities, construction is expected to take approximately 31 months to complete.

The proposed construction staging is outlined in Table 1.

Table 1 Proposed construction staging

Project milestone	Proposed Dates
Preliminary design via early contractor involvement	Q1 2021
Completion of the EIS Process	Q2 2021
Detailed design	Q3 2021
Financial close/notice to proceed for construction phase	Q3 2021
Commissioning of connection to the Renewable Energy Hub, CopperString Core and Southern Connection	Q1 2024
Commissioning of Mount Isa Augmentation	Q2 2024

The construction staging schedule has been developed with reference to the seasonal rainfall anticipated during the summer months.

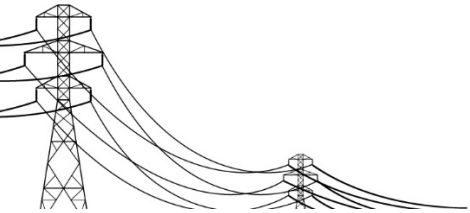
Areas at high risk of flooding and erosion will be targeted for construction during the dry months. For example, construction activities in the Mitchell Grass Downs areas stretching from east of Hughenden to west of Julia Creek will be limited during December-March.

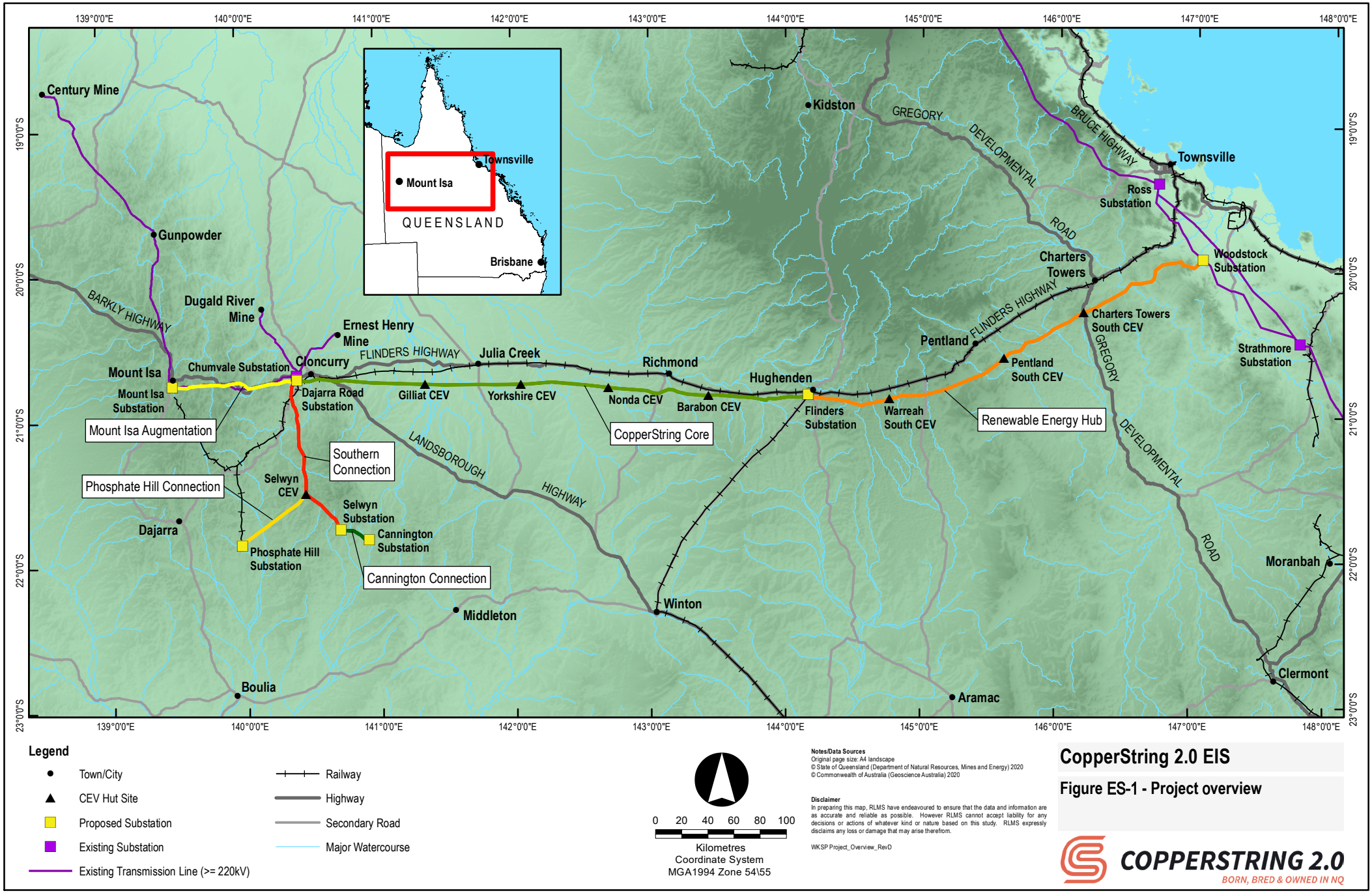
Project workforce

The Project will provide direct employment opportunities during construction and operation. It is anticipated that 750 people will be employed during the construction of the Project and 30 people will be required to operate and maintain the infrastructure.

Most of the Project workforce will be accommodated in purpose-built temporary construction camps near Woodstock, Charters Towers, Pentland, Hughenden, Richmond, Julia Creek, Cloncurry, Mount Isa, and Selwyn.

The construction workforce will be deployed on a combination of fly-in fly-out (FIFO) and bus-in bus-out (BIBO) to construction zones, with Townsville being the FIFO/BIBO hub servicing the camps.





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
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WKSP Project_Overview_RevD

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Figure ES-1 - Project overview

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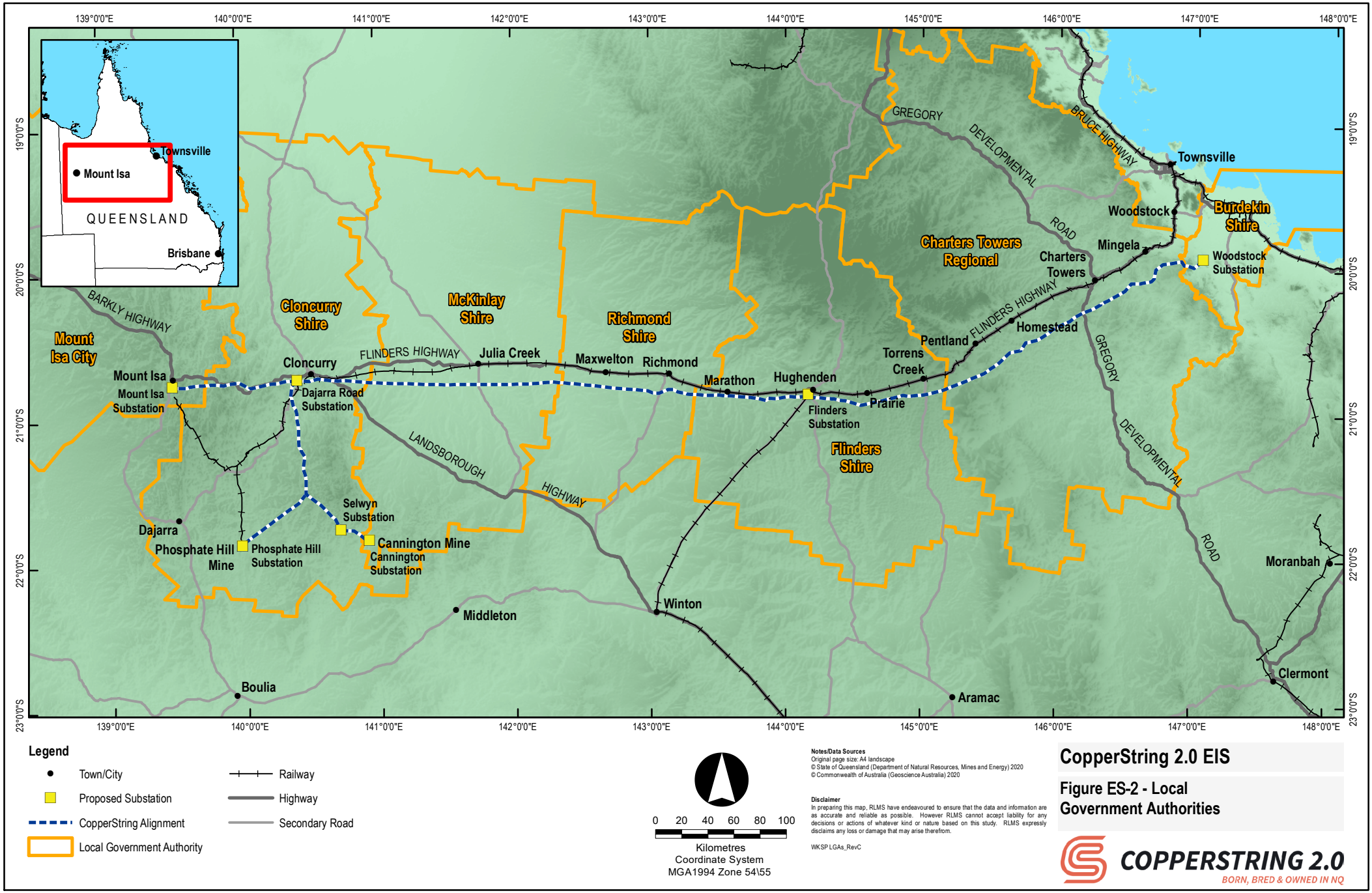

Legend

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

0 20 40 60 80 100

Kilometres

Coordinate System
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WKSP LGAs_RevC

CopperString 2.0 EIS

Figure ES-2 - Local Government Authorities

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Regulatory framework

This EIS has been prepared for the Project using the environmental assessment process under the Queensland *State Development and Public Works Organisation Act 1971* (SDPWO Act). The assessment process will culminate in an evaluation report being issued by the Coordinator-General who administers the SDPWO Act.

Coordinated project

The Coordinator-General declared the Project a 'coordinated project' under the SDPWO Act on 26 April 2019. This declaration requires an EIS to be prepared to assess the potential impacts of the Project.

Controlled action

The Delegate for the Commonwealth Minister for the Environment decided that the Project is a 'controlled action' on 26 May 2019. This requires the Project to be assessed under the assessment bilateral agreement with the Queensland Government. The Project must be assessed and approved under the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) before it can proceed, due to potential impacts to listed threatened species, threatened ecological communities, and listed migratory species.

Terms of Reference

The draft Terms of Reference (ToR) for the Project was placed on public exhibition, together with an initial advice statement in July 2019. The Final ToR for the EIS was issued by the Coordinator-General on 4 September 2019.

Legislation and approvals

A range of statutory Commonwealth, State and local government approvals are applicable to the construction and operation of the Project. The overarching legislative approval pathway is to have the EIS approved under the SDPWO Act and the EPBC Act under the bilateral agreement between the Queensland and Commonwealth Governments.

The approvals being sought as part of the EIS process under the SDPWO Act as part of the Coordinator-General's evaluation report include:

- Stated Conditions regarding the total impact area for each of the prescribed matters.
- Imposed Conditions regarding Social, Economic and Consultation requirements.
- Recommended Conditions relating to the Commonwealth relating to MNES.
- Recommended Conditions and requirements for an Infrastructure Designation under the Planning Act 2016 (Planning Act).
- General Recommendations relating to approvals under other legislation to be obtained post the EIS process.

On the basis that the Project is given EIS approval to proceed, CuString will seek an Infrastructure Designation. An Infrastructure Designation is an approval pathway under the Queensland *Planning Act 2016* (Planning Act) allows a wide range of post EIS permits and approvals to be obtain across all seven local government areas in a single application.

It is acknowledged that further information (in the form of detailed site layout designs and final site-based management material) to support post EIS approvals will be provided prior to formal lodgement of applications with the relevant assessment manager/s. This process is not expected to commence until after the Coordinator-General has issued an evaluation report

under the SDPWO Act. The primary approvals required for the Project to proceed are shown in Table ES-2. It is acknowledged that additional secondary approvals will be required to support the construction of the Project.

Table ES-2 Key approvals

Approval	Legislation	Assessment Authority
Coordinated Project	*SDPWO Act*	*Office of the Coordinator General*
EPBC Act Approval	*Commonwealth EPBC Act*	*Commonwealth Department of Agriculture, Water and Environment*
Infrastructure Designation	*Planning Act*	*Queensland Treasury Department*
Transmission authority	*Electricity Act*	*Department of Natural Resources Mines and Energy*

Environmental values

Land

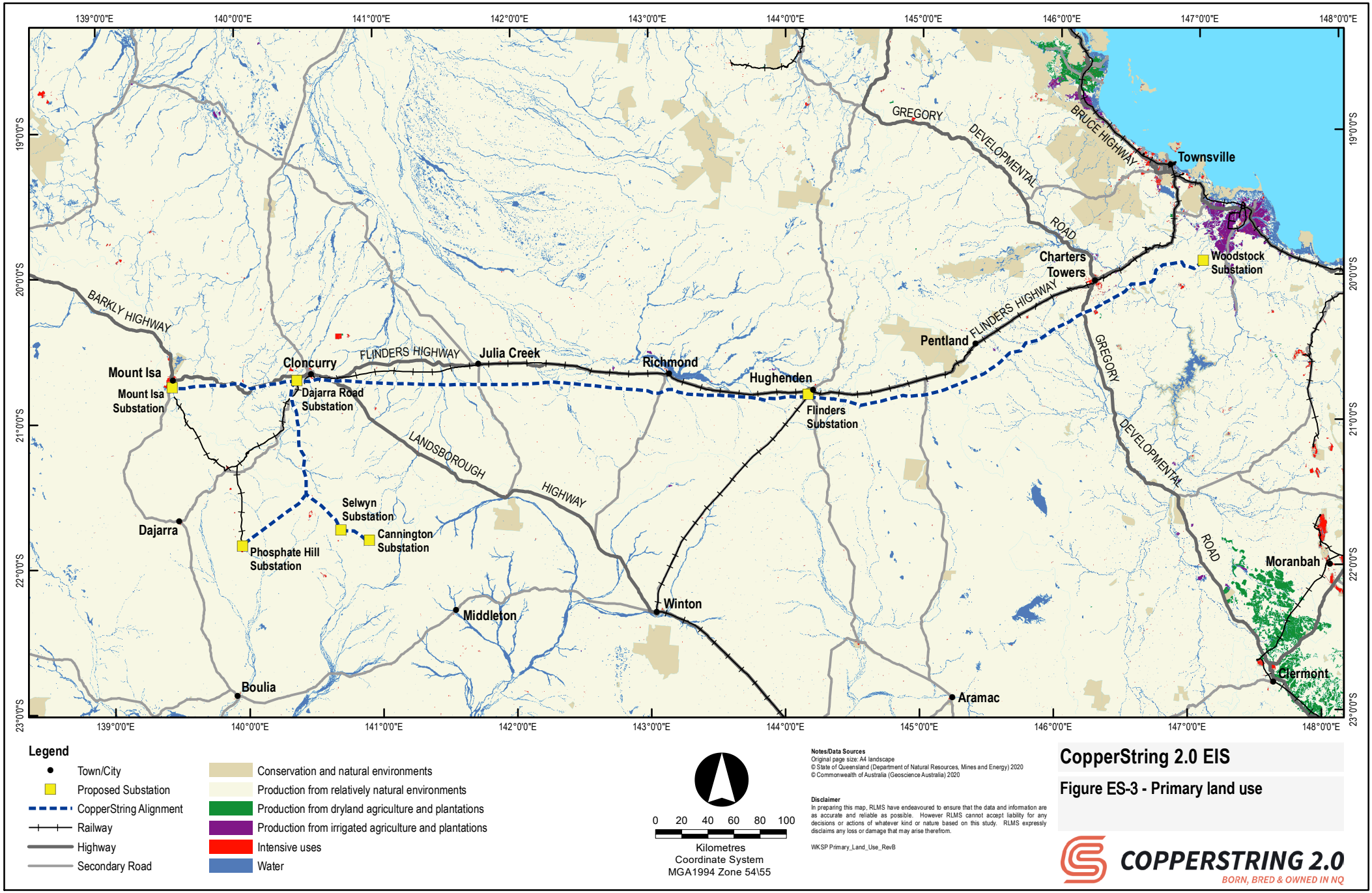
The Project corridor selection traverses seven local government areas (LGAs) and intersects a range of existing land uses. These include areas of agricultural production, resource extraction and Native Title. A desktop assessment of the land uses and constraints was undertaken as part of the EIS.

The Project is expected to directly impact 139 land parcels in total (130 lot on plans and 9 land parcels are USL) primarily rural land parcels. The predominant land uses on the impacted land parcels is rural grazing and cattle breeding. Accordingly, there is a potential conflict with each of the planning schemes as the project relates to the development of rural land.

The Project corridor selection also encompasses numerous mining and exploration activities including:

- Petroleum activities
- Exploration permits and applications for exploration permits
- Mineral development licences and applications for mineral development licences
- Mining leases and applications for mining leases
- Economic resources (extractive resources)
- Active, disused and abandoned workings.

The area between Mount Isa and Woodstock is dotted with several small cities, townships and rural localities that are relatively close to the project area. Mount Isa, located in far north west Queensland, is considered the region's largest city outside Townsville. The larger centres of Richmond and Charters Towers also serve as major service and administration centres for the surrounding area. These cities, townships and rural localities include populations ranging from 70 people to tens of thousands of people. The primary land use across these cities, townships and rural localities is predominantly beef farming and production, with the exception of Mount Isa which predominantly supports resource activities. Land uses are shown on Figure ES-3.



Legend

- Town/City
- Proposed Substation
- CopperString Alignment
- Railway
- Highway
- Secondary Road
- Conservation and natural environments
- Production from relatively natural environments
- Production from dryland agriculture and plantations
- Production from irrigated agriculture and plantations
- Intensive uses
- Water

0 20 40 60 80 100

Kilometres

Coordinate System
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Notes/Data Sources
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WKSP Primary_Land_Use_RevB

CopperString 2.0 EIS

Figure ES-3 - Primary land use

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The Project corridor selection traverses predominantly leasehold land (82.57%), followed by freehold lots (14.21%), with the remainder being road parcels, reserves, State land, and other tenure as shown on Figure ES-3.

The Project corridor selection also intersects several, predominantly minor, stock routes. These routes form part of the Queensland stock route network, which is primarily used for moving stock, emergency pasture and grazing by pastoralist and graziers. Several key service infrastructure crossings also exist within the Project corridor selection. These include major and secondary roads, minor roads and tracks, railway crossings and gas pipeline crossings.

Contaminated land refers to areas that contain hazardous substances that may pose a risk to human health or the environment. A review of properties within the Project area found none listed on the Contaminated Land Register; however 17 properties are listed on the Environmental Management Register due to notifiable activities that have the potential to cause land contamination. Most of these activities are livestock dips or spray races.

Unexploded ordinance (UXO) is defined as ammunition such as artillery shells, mortar bombs and grenades that did not explode when originally used. The presence of UXO represents a potential safety risk because it may detonate, if disturbed. It may also release chemicals that pose risks to human health and the environment.

In Queensland, UXO is typically found on land formerly used by Australian and Allied Defence Forces for the live firing of explosive ordnance, particularly during World War II. A review of the Defence UXO mapping reveals seven properties intersecting the Project corridor selection where UXO have the potential to be present. Seven properties within the corridor selection have been identified as potentially containing UXO. These properties are located east of Charters Towers and are associated with the Macrossan Stores Depot, which was established as a base for fighter squadrons in World War II and later became a store depot for the Royal Australian Air Force. Since 1956, the site has been the Australian Army's major northern bulk stores depot.

The Project corridor selection is of potential interest to six Aboriginal parties. Table ES-3 lists the relevant Aboriginal parties and the native title claimant status.

Table ES-3 Aboriginal parties identified in corridor selection

Aboriginal party	Native title party status
Birriah People	Determined native title exists
Jangga People #2	Native Title Claimant – accepted for registration and registered 22 November 2019
Yirendali People Core Country Claim	Determined native title does not exist
Wanamara People Core Country Claim	Previous Native Title Claimant – claim discontinued 9 April 2010
Mitakoodi People #3	Dismissed 4 January 2010
Mitakoodi People #5	Native Title Claimant – claim accepted for registration 21 February 2020
Kalkadoon People #4	Determined native title exists in parts of the determination area
Yulluna People	Determined native title exists in parts of the determination area

Native title has been extinguished in relation to freehold grants along the corridor selection. Consequently, no native title compliance is required in relation to any project activities carried out within the boundaries of freehold land. Similarly, where native title has been extinguished in offsite areas (e.g. declared road or public construction works), no native title compliance is required with respect to project activities. Native title has not however been extinguished on leasehold land. Consequently, given the primary tenure of the corridor selection is leasehold land, native title compliance in relation to any project activity will be required.

The assessment of land use indicated that the Project may be constructed and operated without significant impacts, provided that appropriate mitigation and management practices are implemented. The construction and operational impacts that may occur from the Project may be related to:

- Disruption to existing land use activities
- Impacts to landholders and native titles
- Conflicts to regional, State, and local planning instruments.

Construction activities have the greatest potential for impact given the greater disturbance area, although, these impacts can be minimised by liaising/negotiating with the relevant stakeholders and shortening the duration of construction. Operational land use impacts are expected to be manageable through maintaining activities within the Project easement.

Given that the identified impacts on contamination are insignificant, residual impacts are then inexistent. Residual impacts can be considered as those that remain significant following application of mitigation measures. It is however acknowledged, that accidental spill can pose a negative impacts (even though it is low) as a result of the construction and operation.

Geology and soils

The Project traverses a large linear area that includes a diverse range of geology, soils and landforms associated with five different bioregions, from the high topography in the Northwest Highlands and Einasleigh Uplands, to the vast tracts of flat grasslands of the Gulf Plains, Mitchell Grass Downs and Desert Uplands.

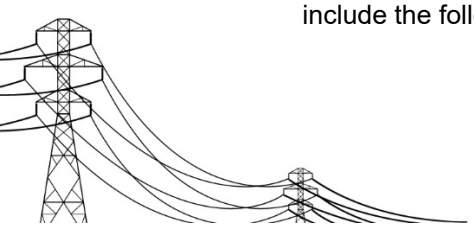
Landform features include several significant river systems and extensive areas of floodplains; steep slopes and dissecting gullies, gilgais and tors.

Dominant soil types in the Project area include sodosols, rudosols, chromosols, kandosols, vertosols and ferrosols. Many soils in the Project area are susceptible to varying types of erosion, which may be further exacerbated during construction activities. Impacts to soils can be mitigated through the preparation and implementation of an Erosion and Sediment Control Plan.

The corridor selection was refined to avoid areas of topographical constraint and design parameters to avoid other high constraint areas will be considered during geotechnical investigations and detailed design. Constraints that may be present include:

- Sourcing quarry materials
- Providing suitable foundations
- Steep slopes and dissecting gullies
- Watercourse crossings
- 185 km of floodplain.

Residual impacts that are likely to be caused by the Project and cannot be controlled or avoided include the following short-term impacts during construction:



- Increased dust generation
- Compaction in areas of soft soil – particularly in the Gulf Plains bioregion
- Increased erosion – particularly in the Gulf Plains and Einasleigh Uplands
- Potential disturbance of fossils – particularly in the eastern section of the Gulf Plains within limestone deposits.

The only potential long-term impact likely to occur over the Project life is the compaction and erosion of soils along access tracks and easements from ongoing maintenance activities. This is considered a minor impact due to the limited intensity and frequency of these maintenance activities. Despite the variability of ground conditions and impacts, provided the recommended management and mitigation measures are successfully implemented, the residual impacts can be limited to tolerable levels.

Overall, the Project is interpreted to have a negligible impact on the geology and low physical impact on the landform (geomorphological processes) or soils where appropriate mitigation measures are implemented.

Flora and fauna

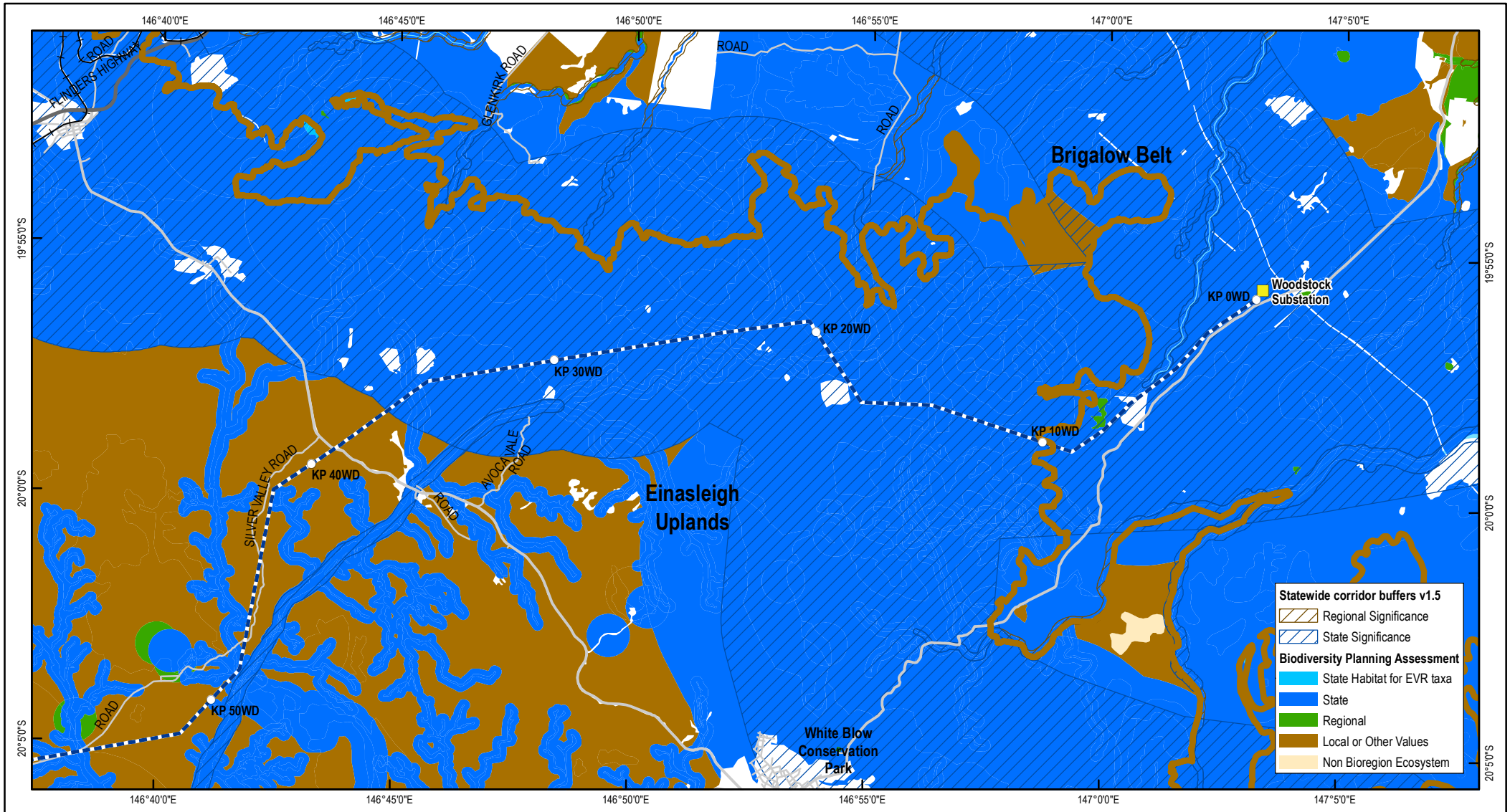
To provide current information on the existing environment, a comprehensive desktop assessment was undertaken. Historical records from the area were also used to supplement findings from the field investigation. The desktop search extent included the final corridor selection plus a 30 km buffer. The desktop assessment involved searching a variety of literature and publicly available database sources for information on the terrestrial and aquatic ecological values of the study area.

Targeted field surveys were also undertaken for selected sites within the corridor that had not previously been accessed (and that may contain significant habitat or species) or where required for legislative approvals. These surveys identified the characteristics and attributes of representative habitats and the diversity and abundance of terrestrial and aquatic flora and fauna species. This field data supplemented and verified information gathered during the desktop assessment.

The proposed corridor selection intersects multiple State and regionally-significant terrestrial and riparian landscape corridors (as shown in Figure ES-4). Within the study area, riparian corridors are generally associated with major rivers and their tributaries, including the Burdekin River, Kirk River, Campaspe River, Cape River, Reid River, Haughton River and Broughton River. Several significant terrestrial corridors are also intersected by the proposed corridor selection, namely, the Great Artesian Basin Rim, the Gulf to Grasslands and the Wet Tropics – Einasleigh Uplands corridors(as shown in Figure ES-5).

Major rivers in the Einasleigh Uplands represent additional areas of State significance, including riparian vegetation along the banks of the Kirk, Burdekin and Broughton Rivers and their accompanying tributaries. These riparian ecosystems are characterised by high nutrient levels, well-developed vegetation and high moisture availability and function as an import refuge for fauna and fauna amongst a region comprised of open vegetation on shallow or skeletal soils. These areas are of ‘very high’ State significance for wildlife refugia, species richness and significant breeding and roosting sites, and as ‘high’ for high density of hollow-bearing trees.

The Project impacts an environment that is already highly fragmented by decades of broadscale vegetation clearing. Within that context, habitat fragmentation resulting from the Project is unlikely to have a regional impact on fauna diversity. However, it is likely to cause localised impacts, by intersecting corridors that are important for local wildlife movement (e.g. along watercourses) and isolating and reducing the size of individual habitat patches.



Legend

- Town/City
- Proposed Substation
- Kilometre Post
- CopperString Alignment
- Railway
- Highway
- Local Connector Road
- Street
- Major Waterway
- Watercourse Area/Lake/Reservoir
- Biogeographic Region

Protected Estates

- Other

0 1 2 3 4 5

Kilometres

Coordinate System
MGA1994 Zone 54\55

Notes/Data Sources
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WKSP Regionally_Significant_Areas_RevB

CopperString 2.0 EIS

Figure ES-4A - Regionally Significant Areas

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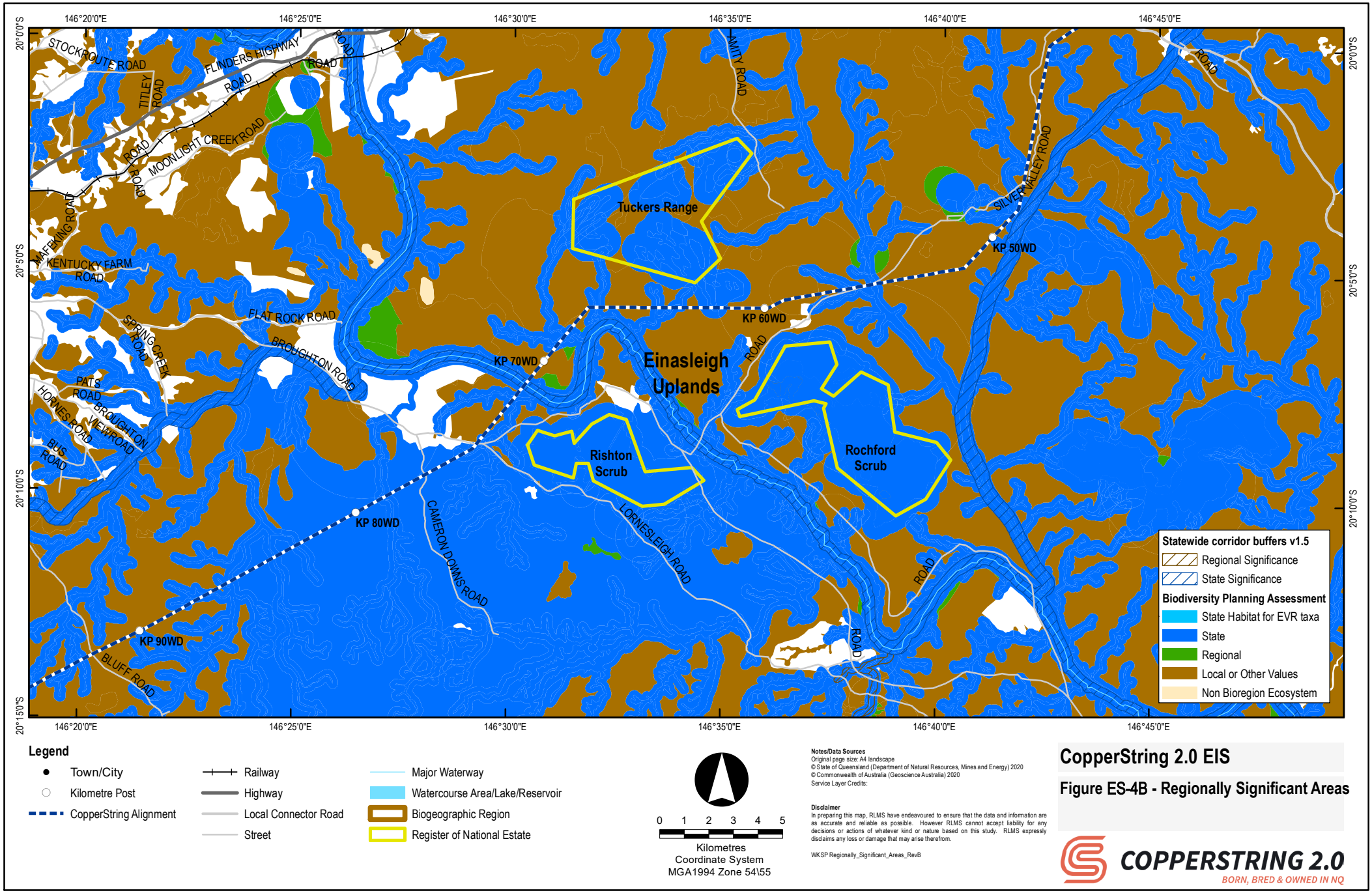
BORN, BRED & OWNED IN NQ



Legend

- Town/City
- Kilometre Post
- CopperString Alignment
- Railway
- Highway
- Local Connector Road
- Street
- Major Waterway
- Watercourse Area/Lake/Reservoir
- Biogeographic Region
- Register of National Estate

0 1 2 3 4 5
Kilometres
Coordinate System
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WKSP Regionally_Significant_Areas_RevB

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Figure ES-4B - Regionally Significant Areas

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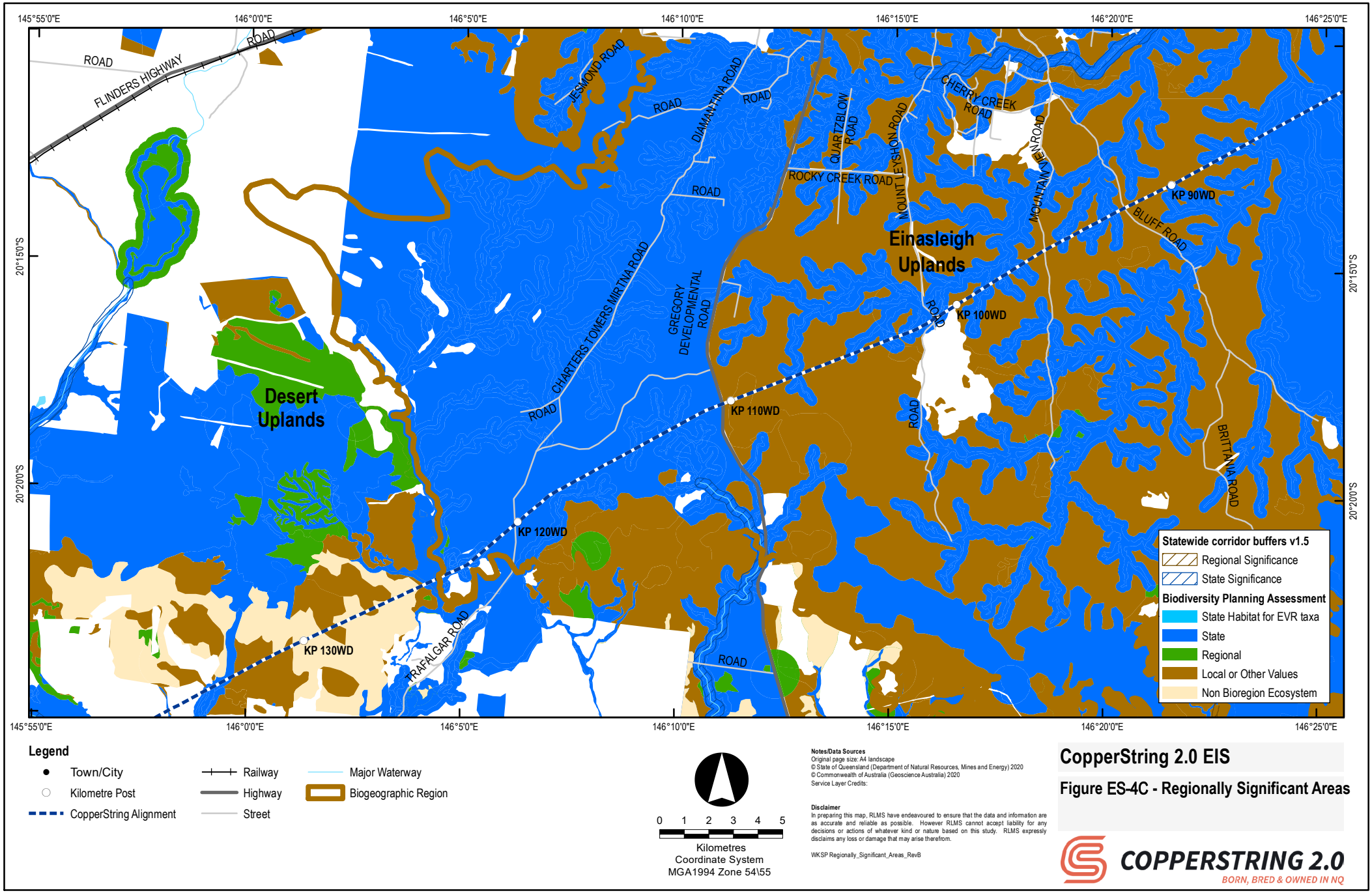

Legend

- Town/City
- Kilometre Post
- CopperString Alignment
- Railway
- Highway
- Street
- Major Waterway
- Biogeographic Region

0 1 2 3 4 5

Kilometres

Coordinate System
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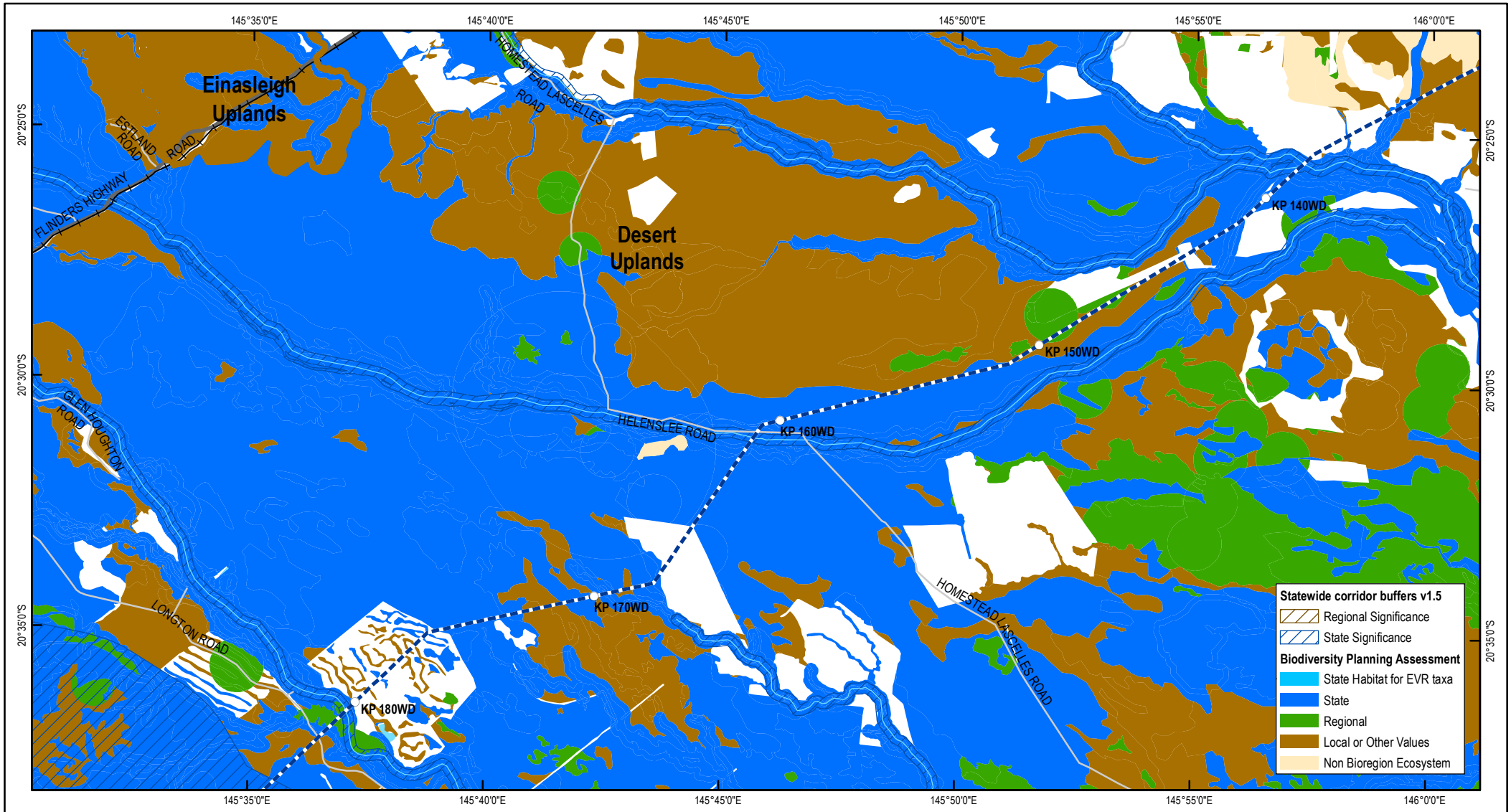
WKSP Regionally_Significant_Areas_RevB

CopperString 2.0 EIS

Figure ES-4C - Regionally Significant Areas

COPPERSTRING 2.0
BORN, BRED & OWNED IN NQ



Legend

- Town/City
- Kilometre Post
- CopperString Alignment
- Railway
- Highway
- Street
- Major Waterway
- Watercourse Area/Lake/Reservoir
- Biogeographic Region

0 1 2 3 4 5
Kilometres
Coordinate System
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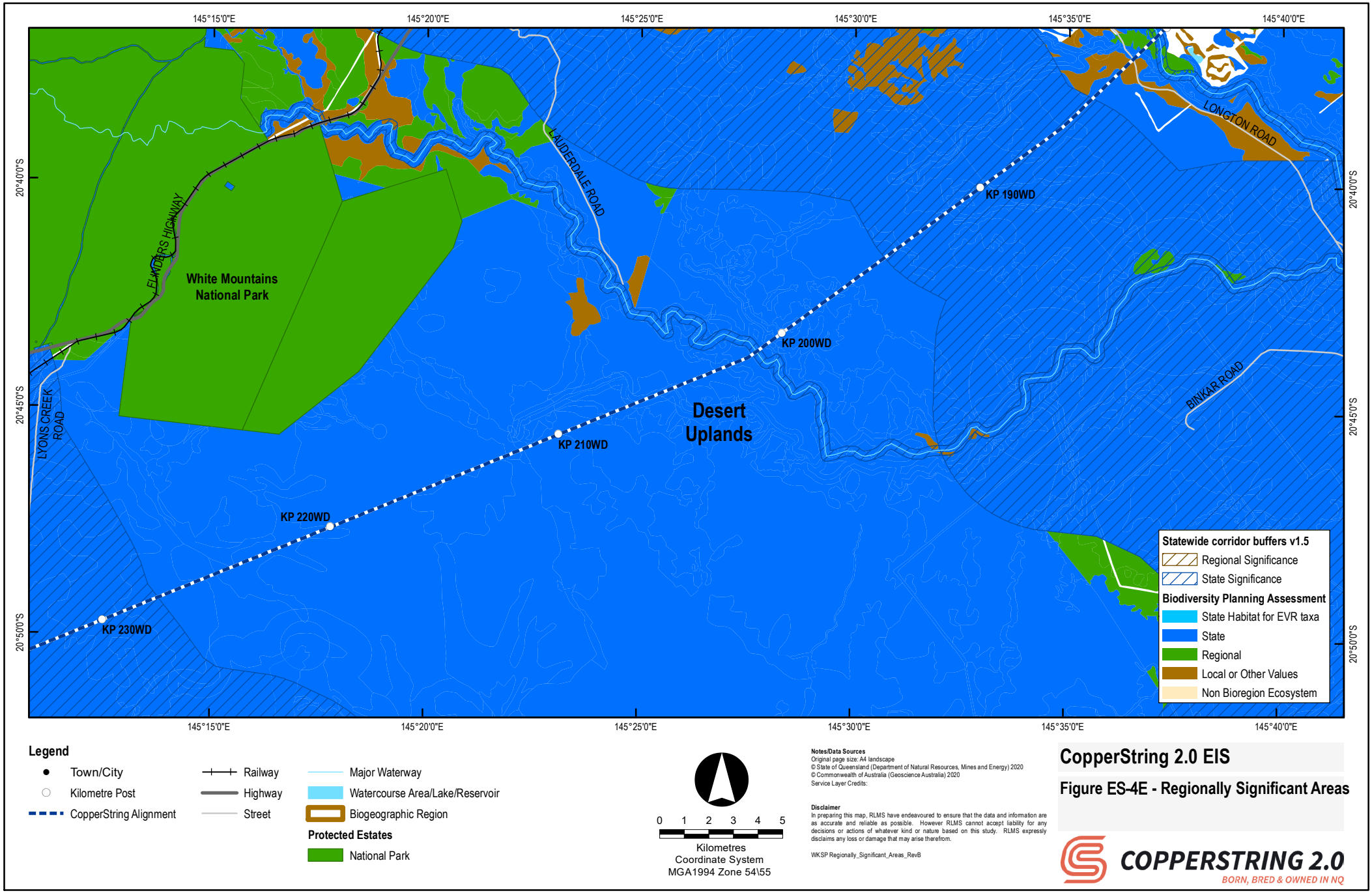
WKSP Regionally_Significant_Areas_RevB

CopperString 2.0 EIS

Figure ES-4D - Regionally Significant Areas

COPPERSTRING 2.0
BORN, BRED & OWNED IN NQ



Legend

- Town/City
- Kilometre Post
- CopperString Alignment
- Railway
- Highway
- Street
- Major Waterway
- Watercourse Area/Lake/Reservoir
- Biogeographic Region

Protected Estates

- National Park

0 1 2 3 4 5

Kilometres

Coordinate System
MGA1994 Zone 54\55

Notes/Data Sources
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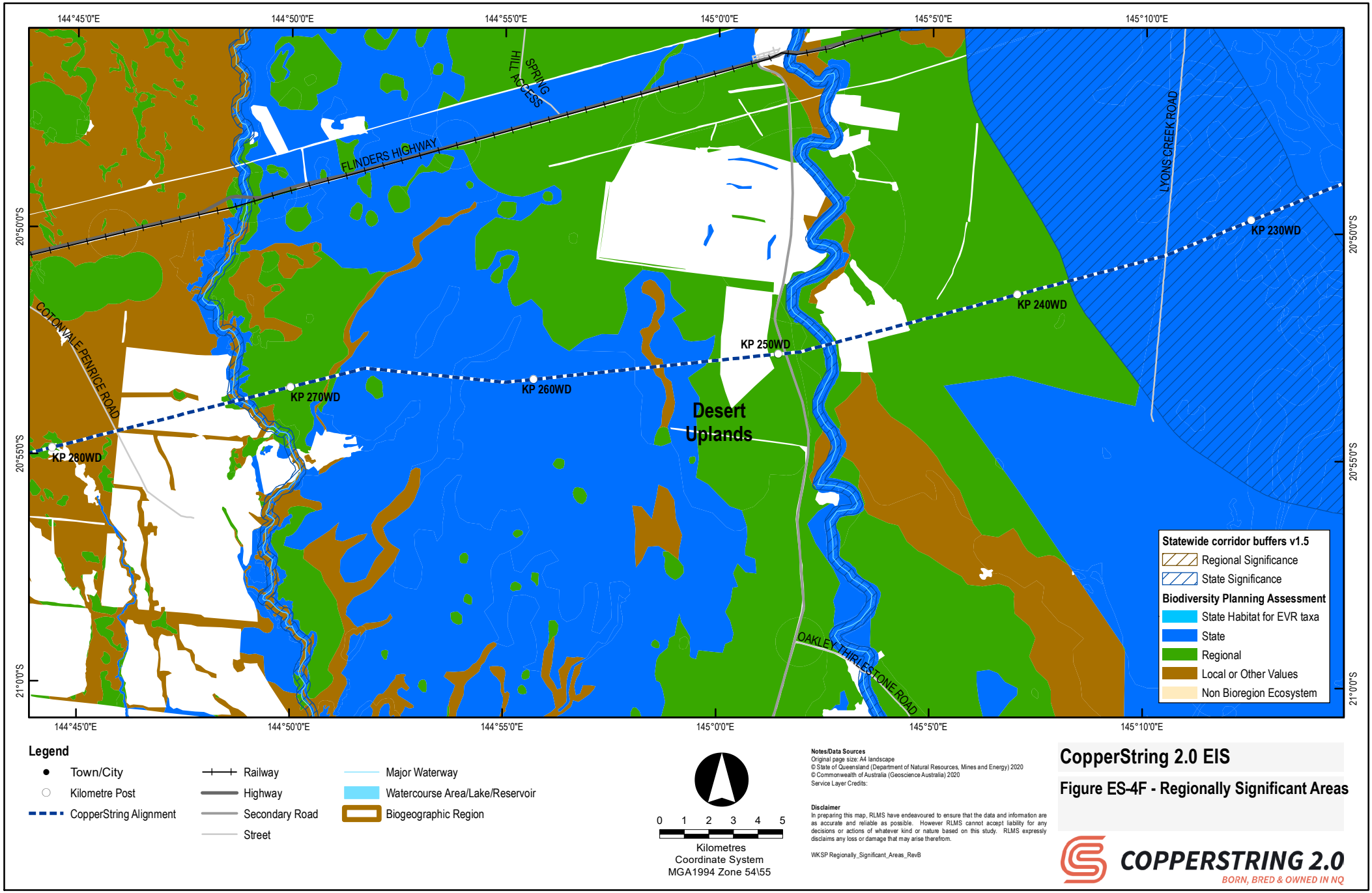
WKSP Regionally_Significant_Areas_RevB

CopperString 2.0 EIS

Figure ES-4E - Regionally Significant Areas

COPPERSTRING 2.0
BORN, BRED & OWNED IN NQ



Legend

- Town/City
- Kilometre Post
- CopperString Alignment
- Railway
- Highway
- Secondary Road
- Street
- Major Waterway
- Watercourse Area/Lake/Reservoir
- Biogeographic Region

0 1 2 3 4 5

Kilometres

Coordinate System
MGA1994 Zone 54\55

Notes/Data Sources
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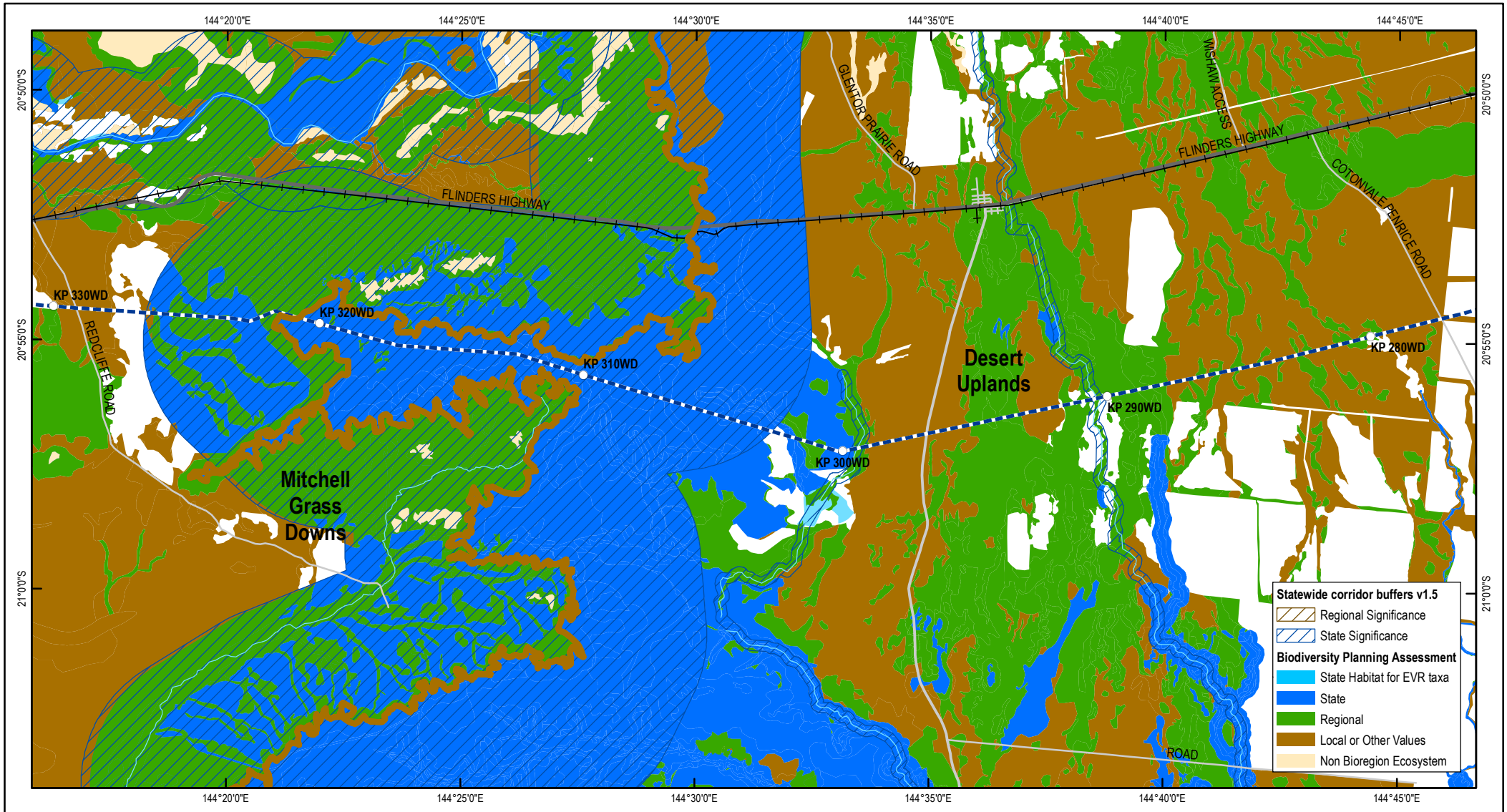
WKSP Regionally_Significant_Areas_RevB

CopperString 2.0 EIS

Figure ES-4F - Regionally Significant Areas

COPPERSTRING 2.0
BORN, BRED & OWNED IN NQ



Legend

- Town/City
- Kilometre Post
- CopperString Alignment
- Railway
- Highway
- Local Connector Road
- Street
- Major Waterway
- Watercourse Area/Lake/Reservoir
- Biogeographic Region

0 1 2 3 4 5

Kilometres
Coordinate System
MGA1994 Zone 54\55

Notes/Data Sources
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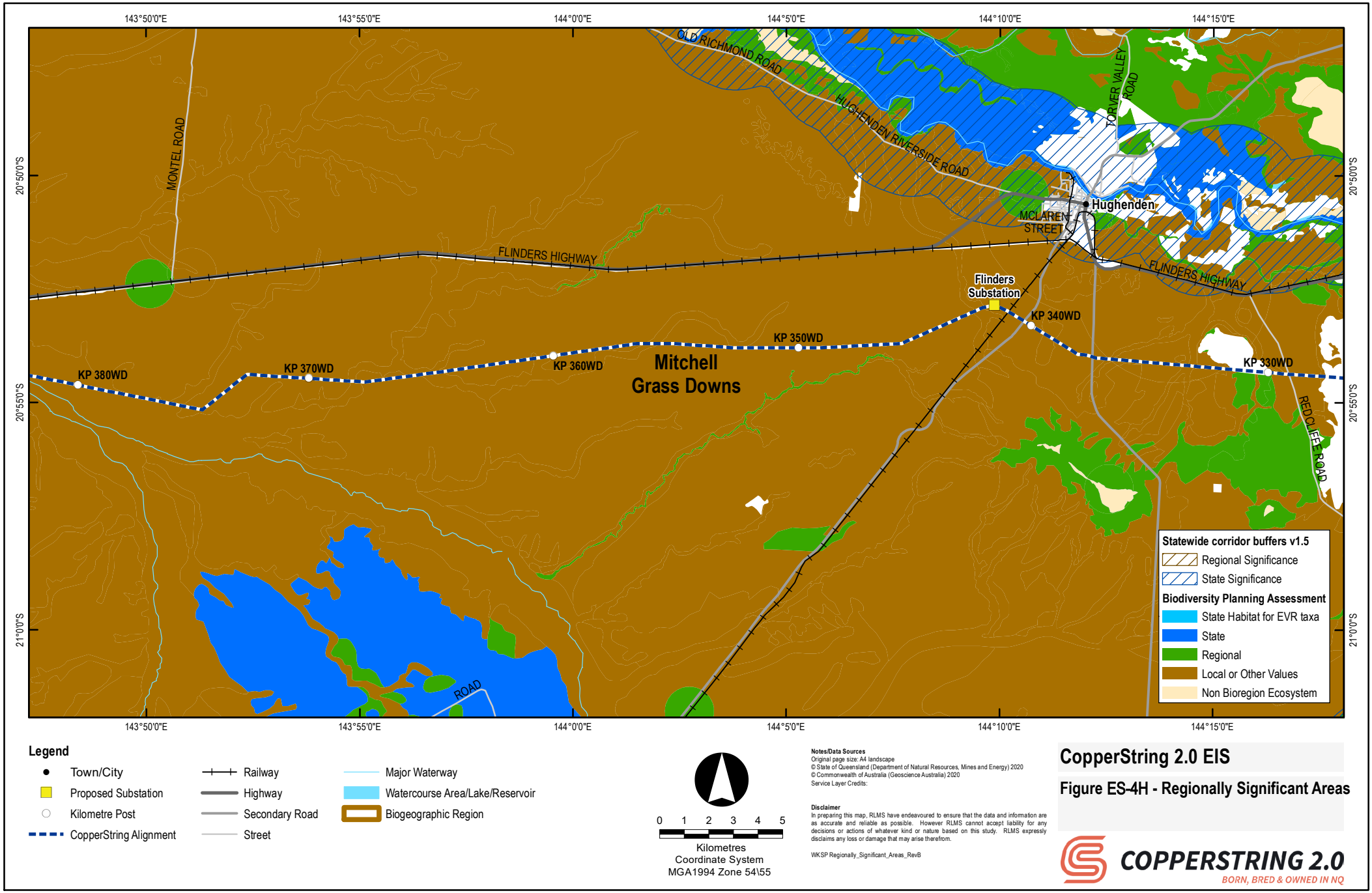
WKSP Regionally_Significant_Areas_RevB

CopperString 2.0 EIS

Figure ES-4G - Regionally Significant Areas

COPPERSTRING 2.0
BORN, BRED & OWNED IN NQ



Legend

- Town/City
- Proposed Substation
- Kilometre Post
- CopperString Alignment
- Railway
- Highway
- Secondary Road
- Street
- Major Waterway
- Watercourse Area/Lake/Reservoir
- Biogeographic Region

0 1 2 3 4 5
Kilometres
Coordinate System
MGA1994 Zone 54\55

Notes/Data Sources
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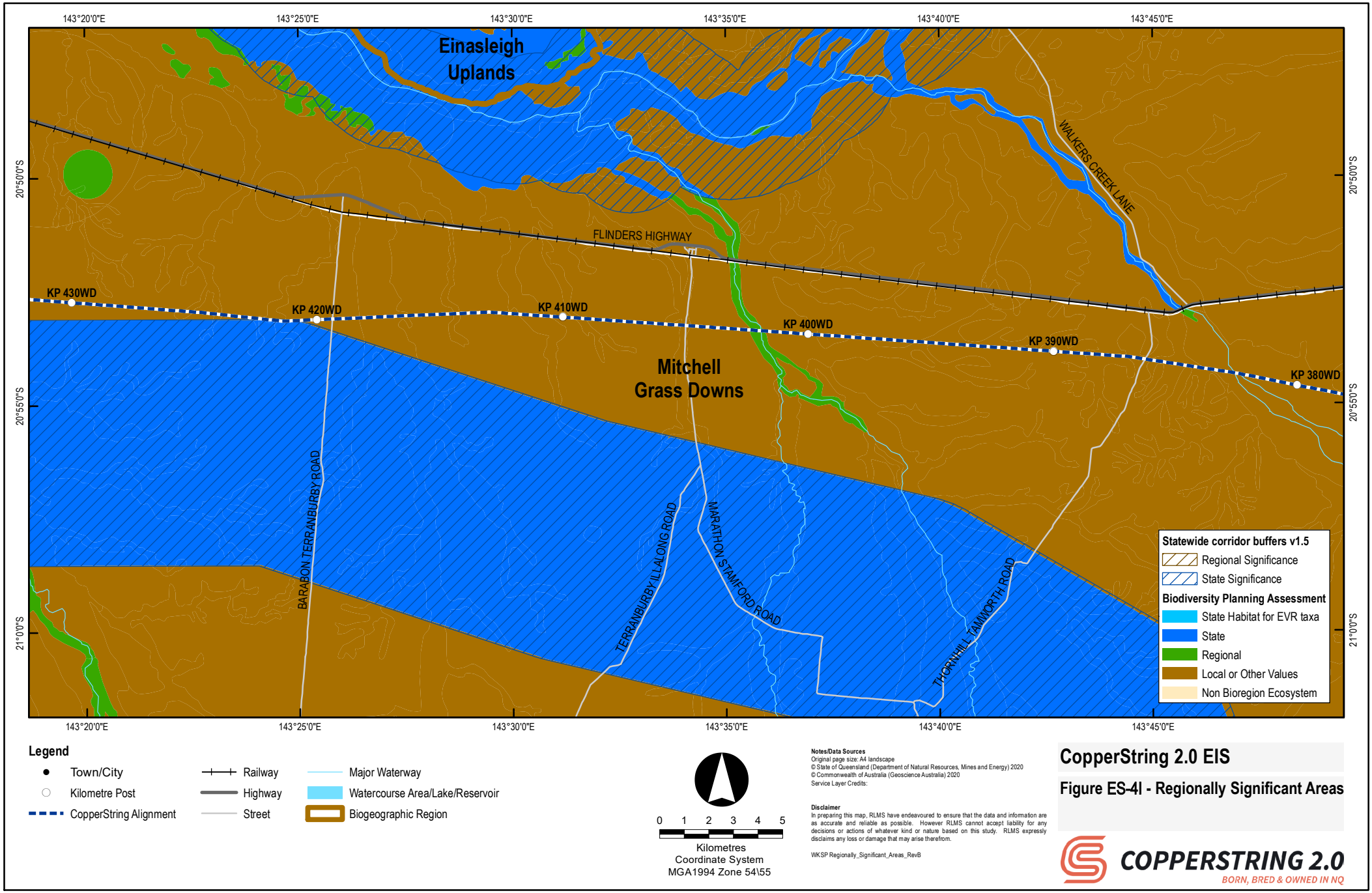
WKSP Regionally_Significant_Areas_RevB

CopperString 2.0 EIS

Figure ES-4H - Regionally Significant Areas

COPPERSTRING 2.0
BORN, BRED & OWNED IN NQ



Legend

- Town/City
- Kilometre Post
- CopperString Alignment
- Railway
- Highway
- Street
- Major Waterway
- Watercourse Area/Lake/Reservoir
- Biogeographic Region

0 1 2 3 4 5

Kilometres

Coordinate System
MGA1994 Zone 54\55

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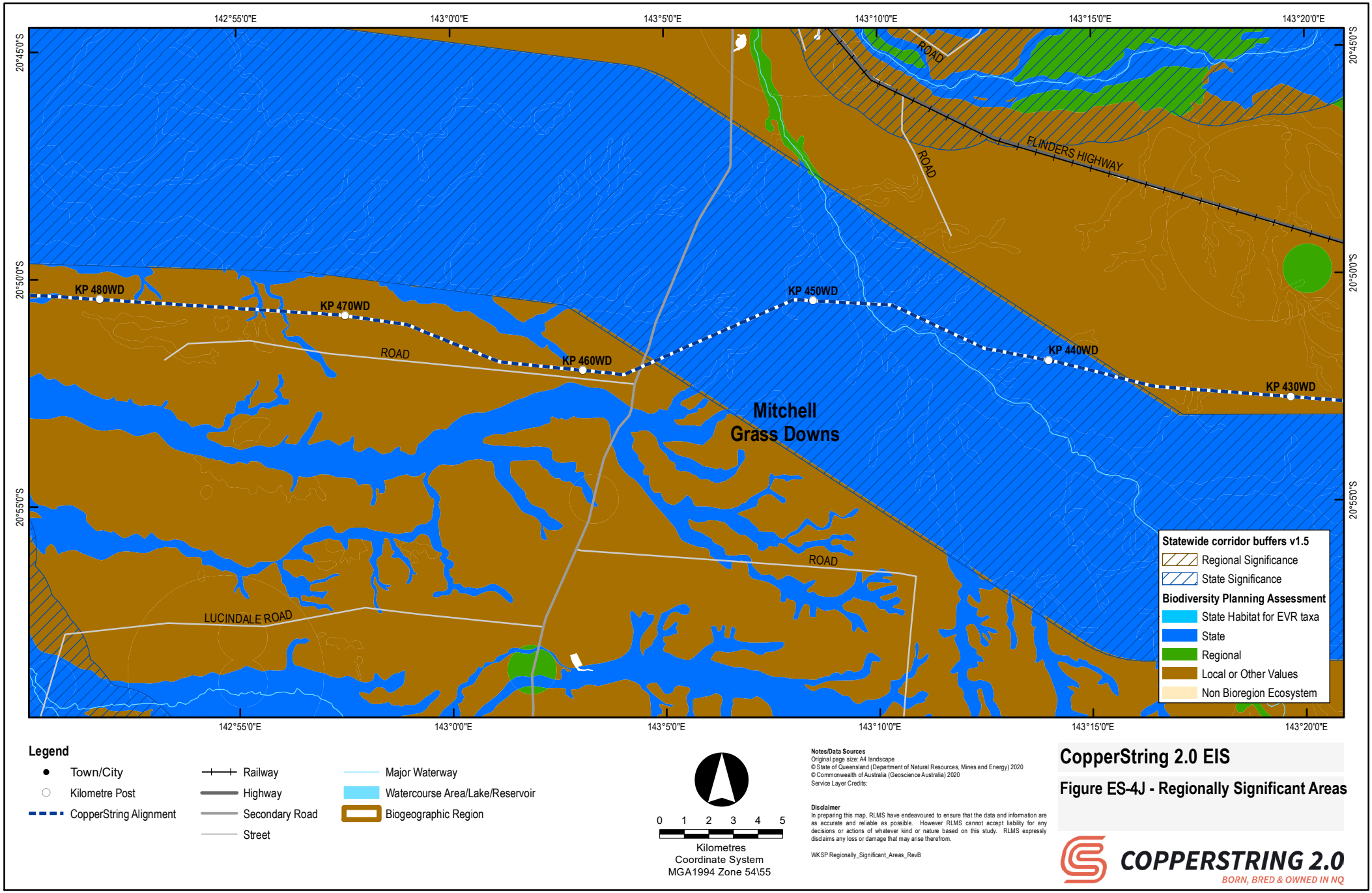
WKSP Regionally_Significant_Areas_RevB

CopperString 2.0 EIS

Figure ES-4l - Regionally Significant Areas

COPPERSTRING 2.0
BORN, BRED & OWNED IN NQ



Legend

- Town/City
- Kilometre Post
- CopperString Alignment
- Railway
- Highway
- Secondary Road
- Street
- Major Waterway
- Watercourse Area/Lake/Reservoir
- Biogeographic Region

0 1 2 3 4 5
Kilometres
Coordinate System
MGA1994 Zone 54\55

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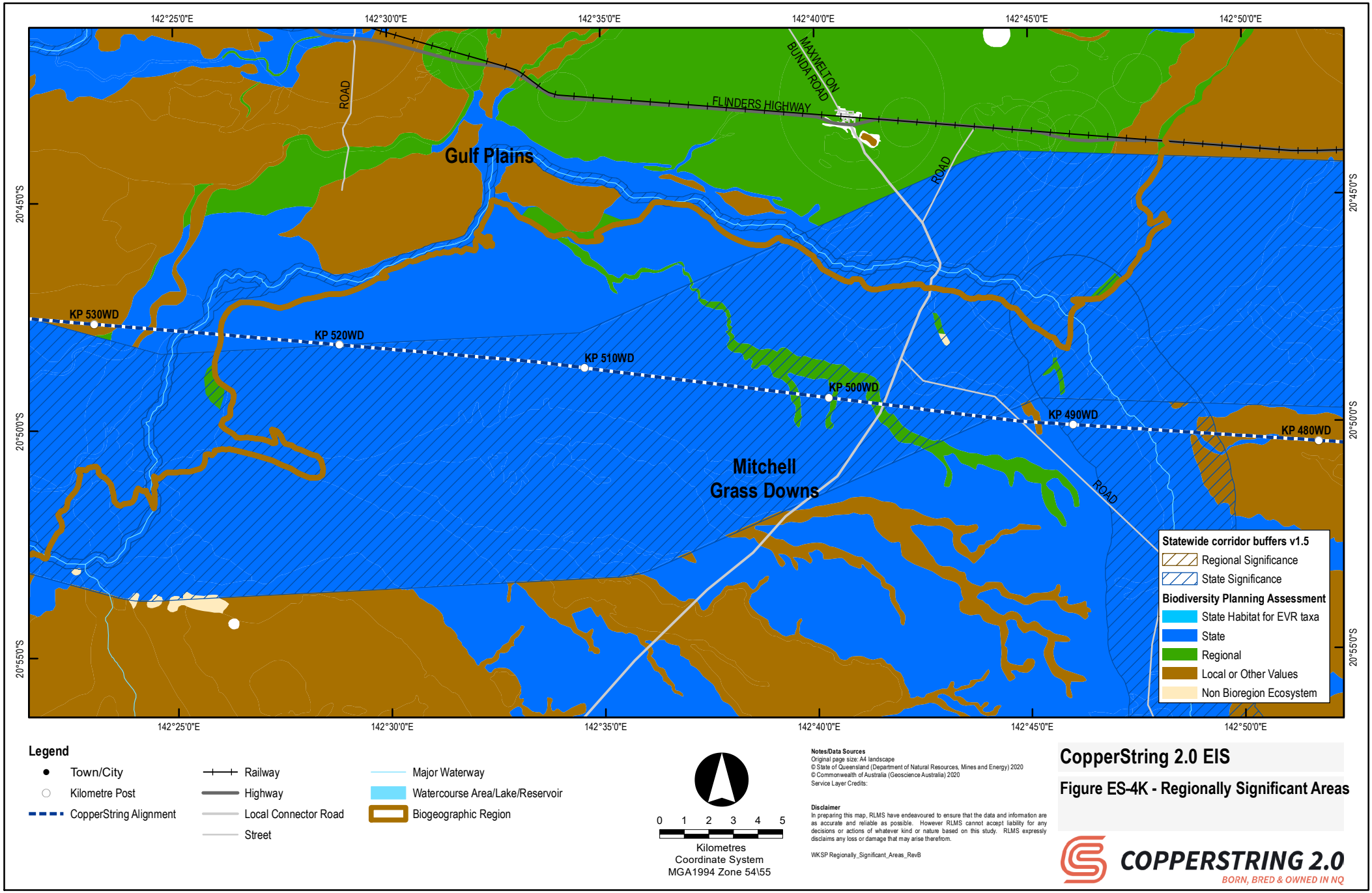
WKSP Regionally_Significant_Areas_RevB

CopperString 2.0 EIS

Figure ES-4J - Regionally Significant Areas

COPPERSTRING 2.0
BORN, BRED & OWNED IN NQ



Legend

- Town/City
- Kilometre Post
- CopperString Alignment
- Railway
- Highway
- Local Connector Road
- Street
- Major Waterway
- Watercourse Area/Lake/Reservoir
- Biogeographic Region

0 1 2 3 4 5
Kilometres
Coordinate System
MGA1994 Zone 54\55

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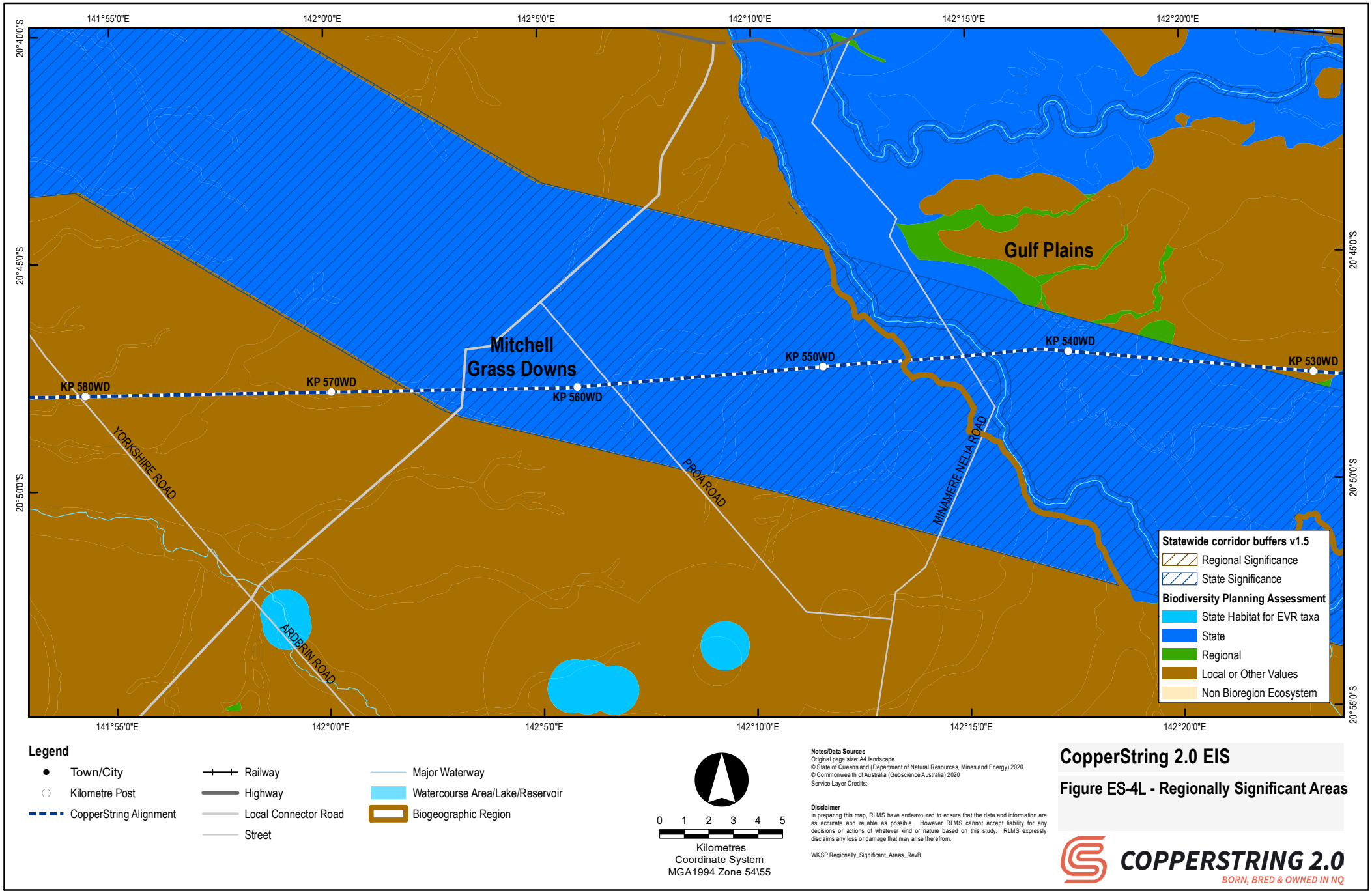
WKSP Regionally_Significant_Areas_RevB

CopperString 2.0 EIS

Figure ES-4K - Regionally Significant Areas

COPPERSTRING 2.0
BORN, BRED & OWNED IN NQ



Legend

- Town/City
- Kilometre Post
- CopperString Alignment
- Railway
- Highway
- Local Connector Road
- Street
- Major Waterway
- Watercourse Area/Lake/Reservoir
- Biogeographic Region

0 1 2 3 4 5

Kilometres

Coordinate System
MGA1994 Zone 54\55

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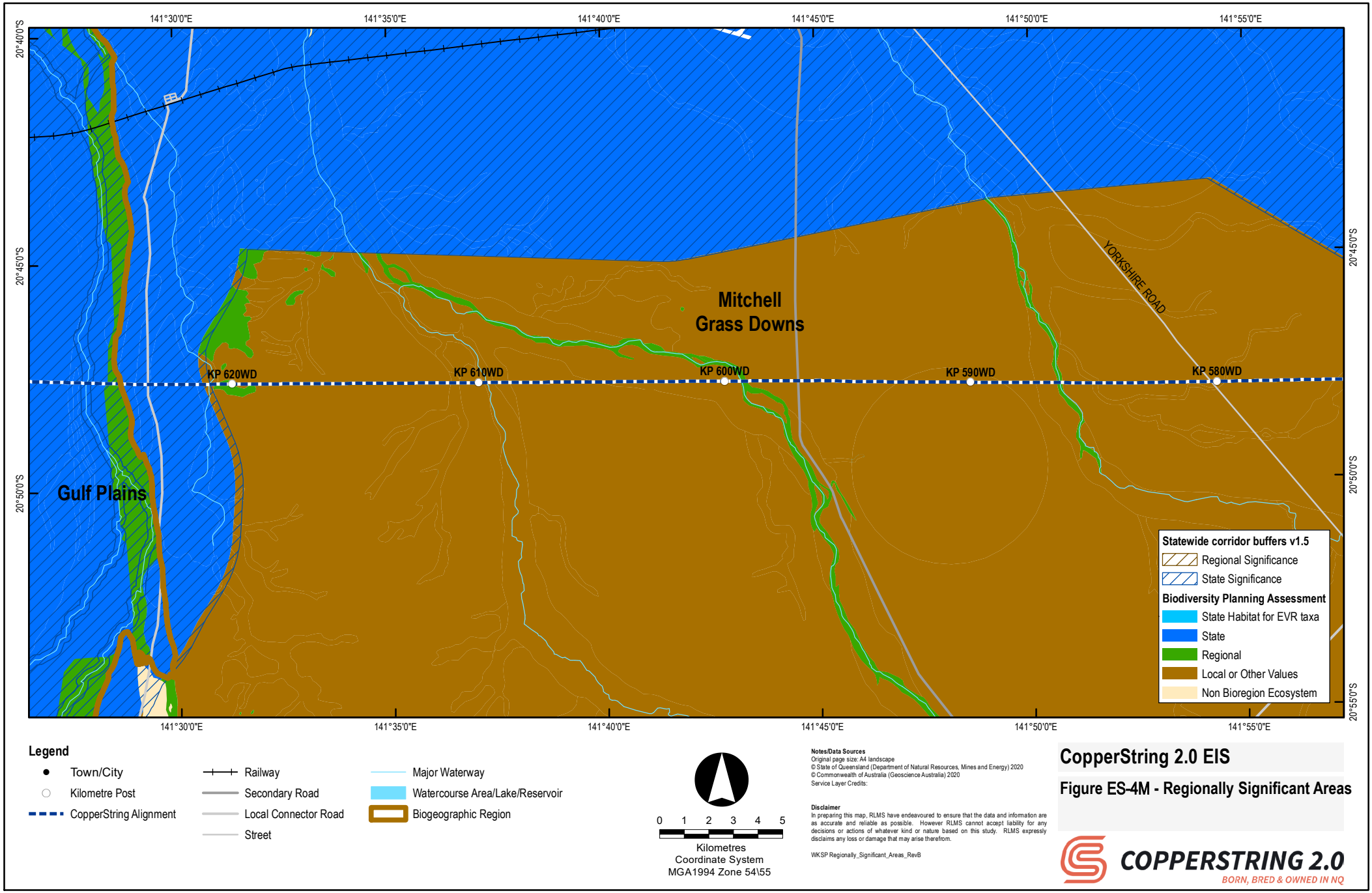
WKSP Regionally_Significant_Areas_RevB

CopperString 2.0 EIS

Figure ES-4L - Regionally Significant Areas

COPPERSTRING 2.0
BORN, BRED & OWNED IN NQ



Legend

- Town/City
- Kilometre Post
- CopperString Alignment
- Railway
- Secondary Road
- Local Connector Road
- Street
- Major Waterway
- Watercourse Area/Lake/Reservoir
- Biogeographic Region

0 1 2 3 4 5
Kilometres
Coordinate System
MGA1994 Zone 54\55

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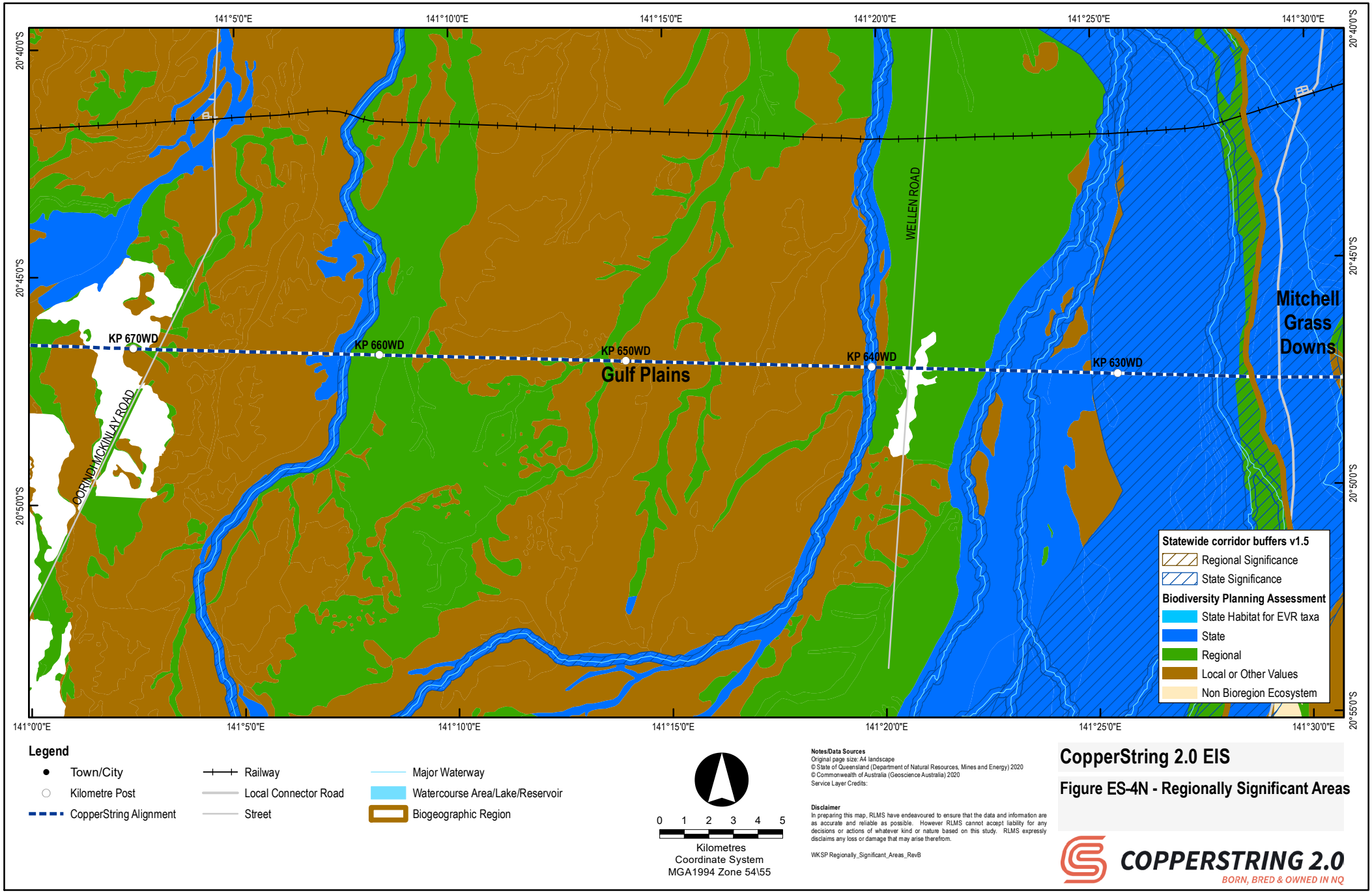
WKSP Regionally_Significant_Areas_RevB

CopperString 2.0 EIS

Figure ES-4M - Regionally Significant Areas

COPPERSTRING 2.0
BORN, BRED & OWNED IN NQ



Legend

- Town/City
- Kilometre Post
- CopperString Alignment
- Railway
- Local Connector Road
- Street
- Major Waterway
- Watercourse Area/Lake/Reservoir
- Biogeographic Region

0 1 2 3 4 5
Kilometres
Coordinate System
MGA1994 Zone 54\55

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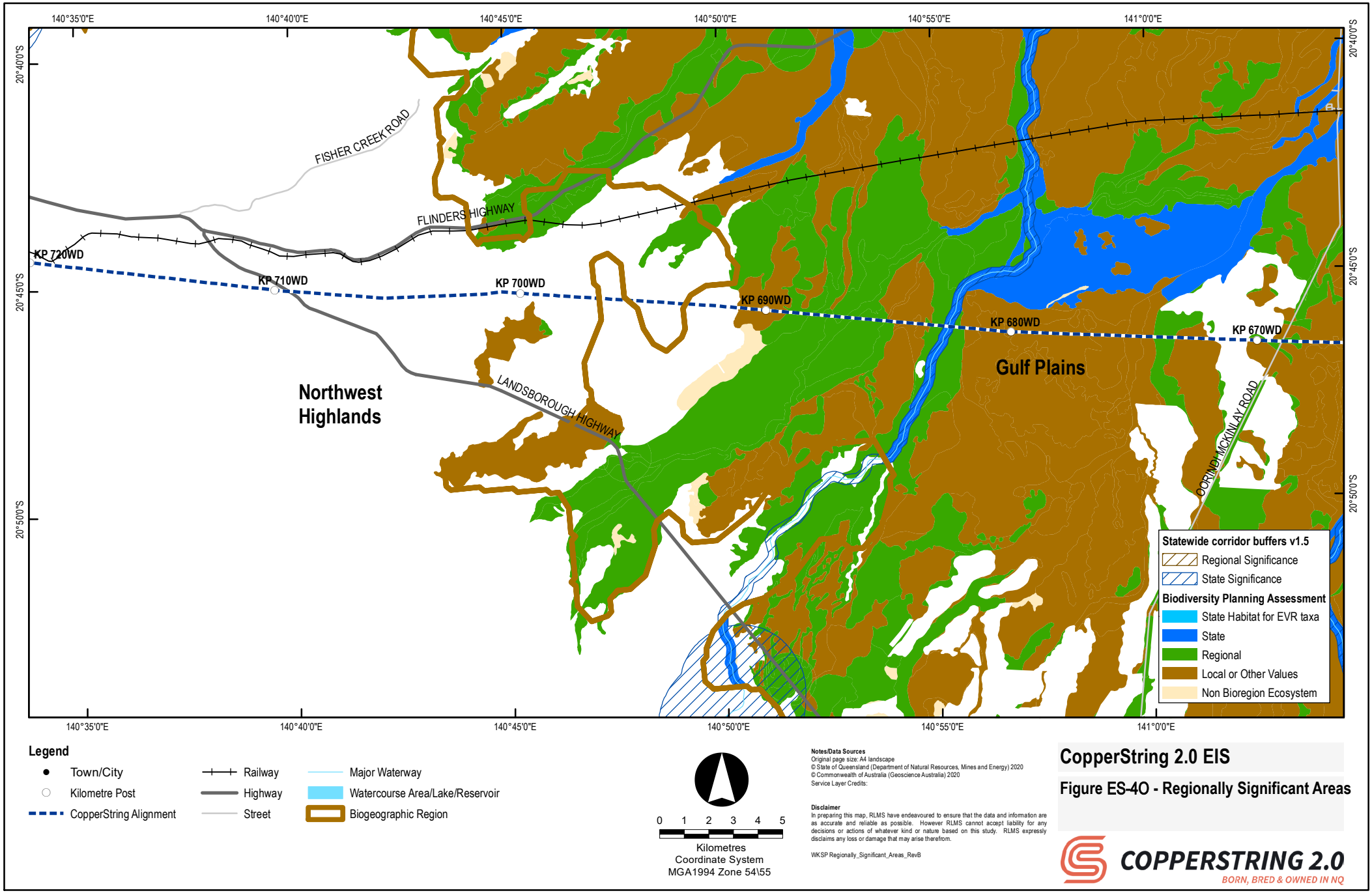
WKSP Regionally_Significant_Areas_RevB

CopperString 2.0 EIS

Figure ES-4N - Regionally Significant Areas

COPPERSTRING 2.0
BORN, BRED & OWNED IN NQ



Legend

- Town/City
- Kilometre Post
- CopperString Alignment
- Railway
- Highway
- Street
- Major Waterway
- Watercourse Area/Lake/Reservoir
- Biogeographic Region

0 1 2 3 4 5

Kilometres

Coordinate System
MGA1994 Zone 54\55

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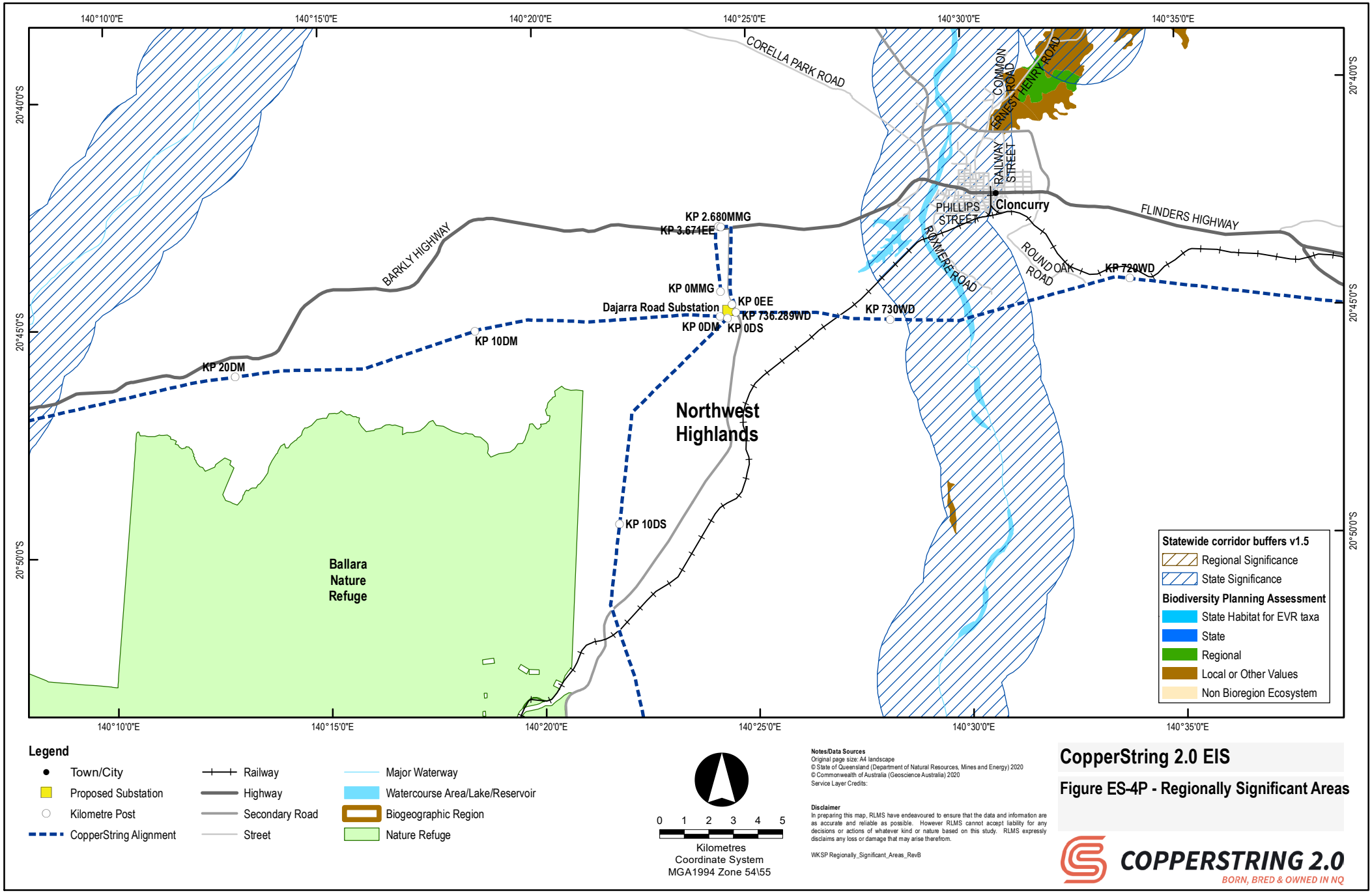
WKSP Regionally_Significant_Areas_RevB

CopperString 2.0 EIS

Figure ES-40 - Regionally Significant Areas

COPPERSTRING 2.0
BORN, BRED & OWNED IN NQ



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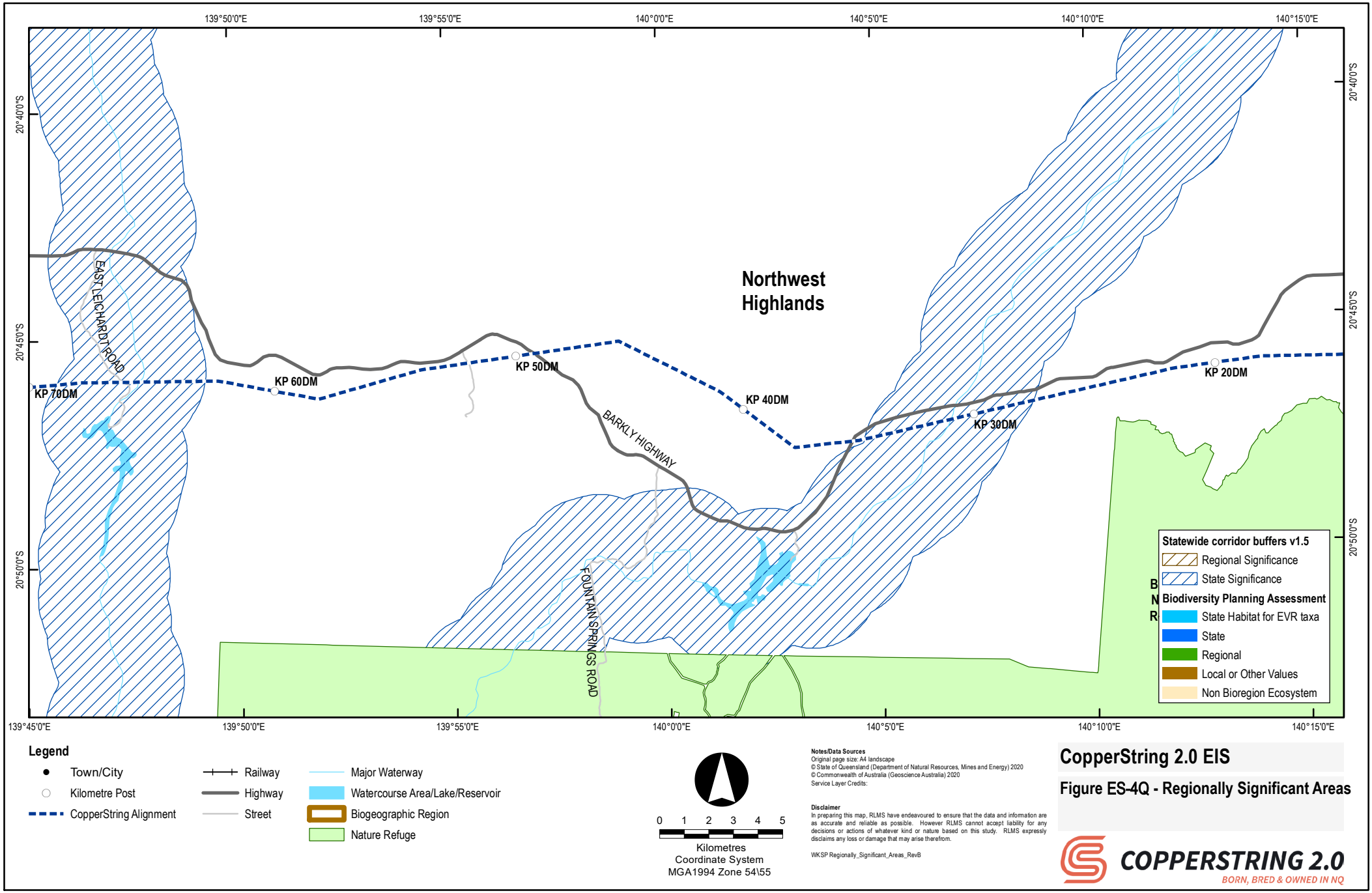
WKSP Regionally_Significant_Areas_RevB

CopperString 2.0 EIS

Figure ES-4P - Regionally Significant Areas

COPPERSTRING 2.0
BORN, BRED & OWNED IN NQ



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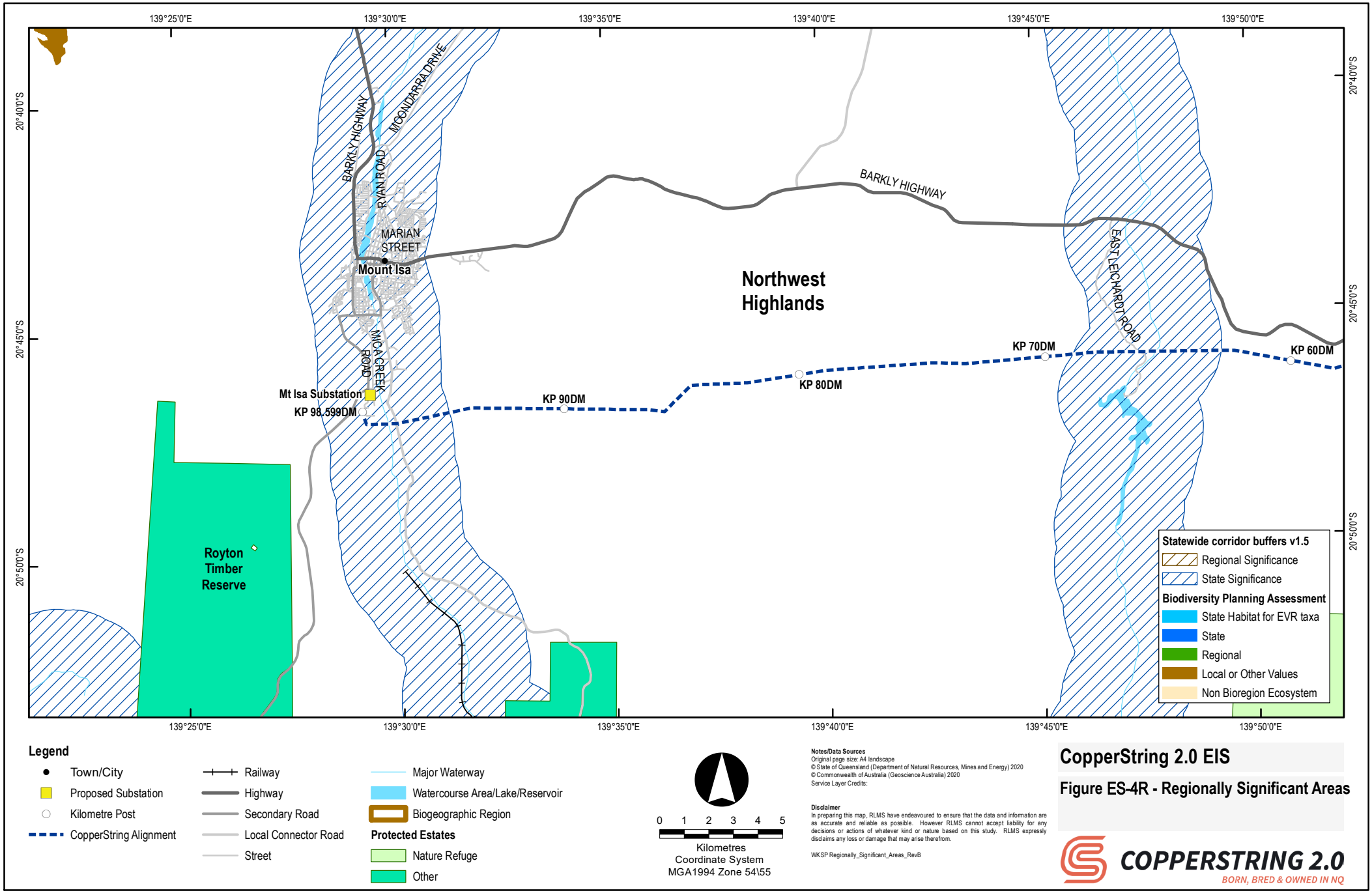
WKSP Regionally_Significant_Areas_RevB

CopperString 2.0 EIS

Figure ES-4Q - Regionally Significant Areas

COPPERSTRING 2.0
BORN, BRED & OWNED IN NQ



Legend

- Town/City
- Proposed Substation
- Kilometre Post
- CopperString Alignment
- Railway
- Highway
- Secondary Road
- Local Connector Road
- Street
- Major Waterway
- Watercourse Area/Lake/Reservoir
- Biogeographic Region

Protected Estates

- Nature Refuge
- Other

0 1 2 3 4 5
Kilometres
Coordinate System
MGA1994 Zone 54\55

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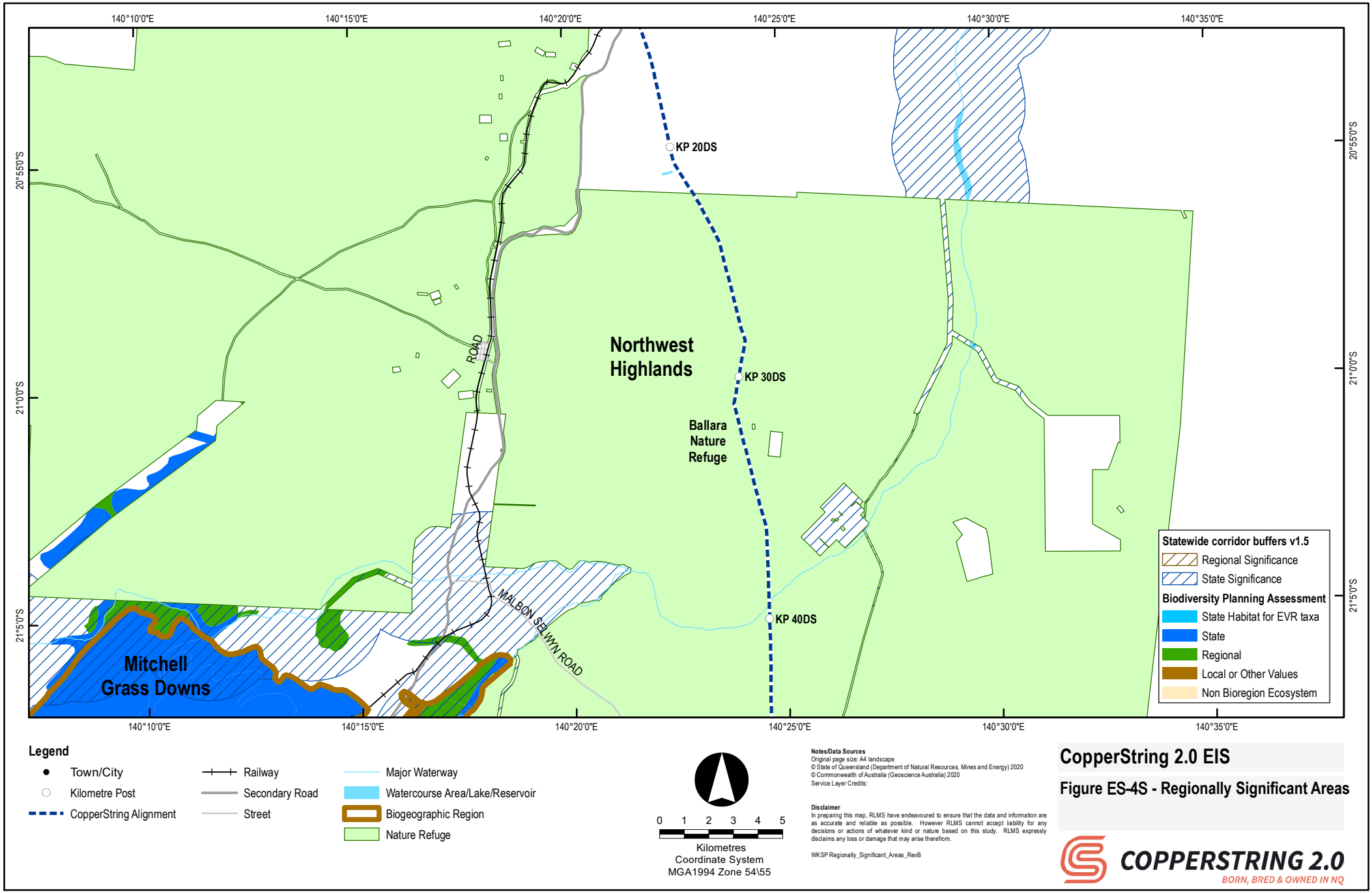
WKSP Regionally_Significant_Areas_RevB

CopperString 2.0 EIS

Figure ES-4R - Regionally Significant Areas

COPPERSTRING 2.0
BORN, BRED & OWNED IN NQ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140°35'0"E
20°55'0"S
21°0'0"S
21°5'0"S
KP 20DS
KP 30DS
KP 40DS
Northwest Highlands
Ballara Nature Refuge
Mitchell Grass Downs
MALBON SELWYN ROAD
ROAD
Statewide corridor buffers v1.5
Regional Significance
State Significance
Biodiversity Planning Assessment
State Habitat for EVR taxa
State
Regional
Local or Other Values
Non Bioregion Ecosystem
Legend
Town/City
Kilometre Post
CopperString Alignment
Railway
Secondary Road
Street
Major Waterway
Watercourse Area/Lake/Reservoir
Biogeographic Region
Nature Refuge
0 1 2 3 4 5
Kilometres
Coordinate System
MGA1994 Zone 54\55
Notes/Data Sources
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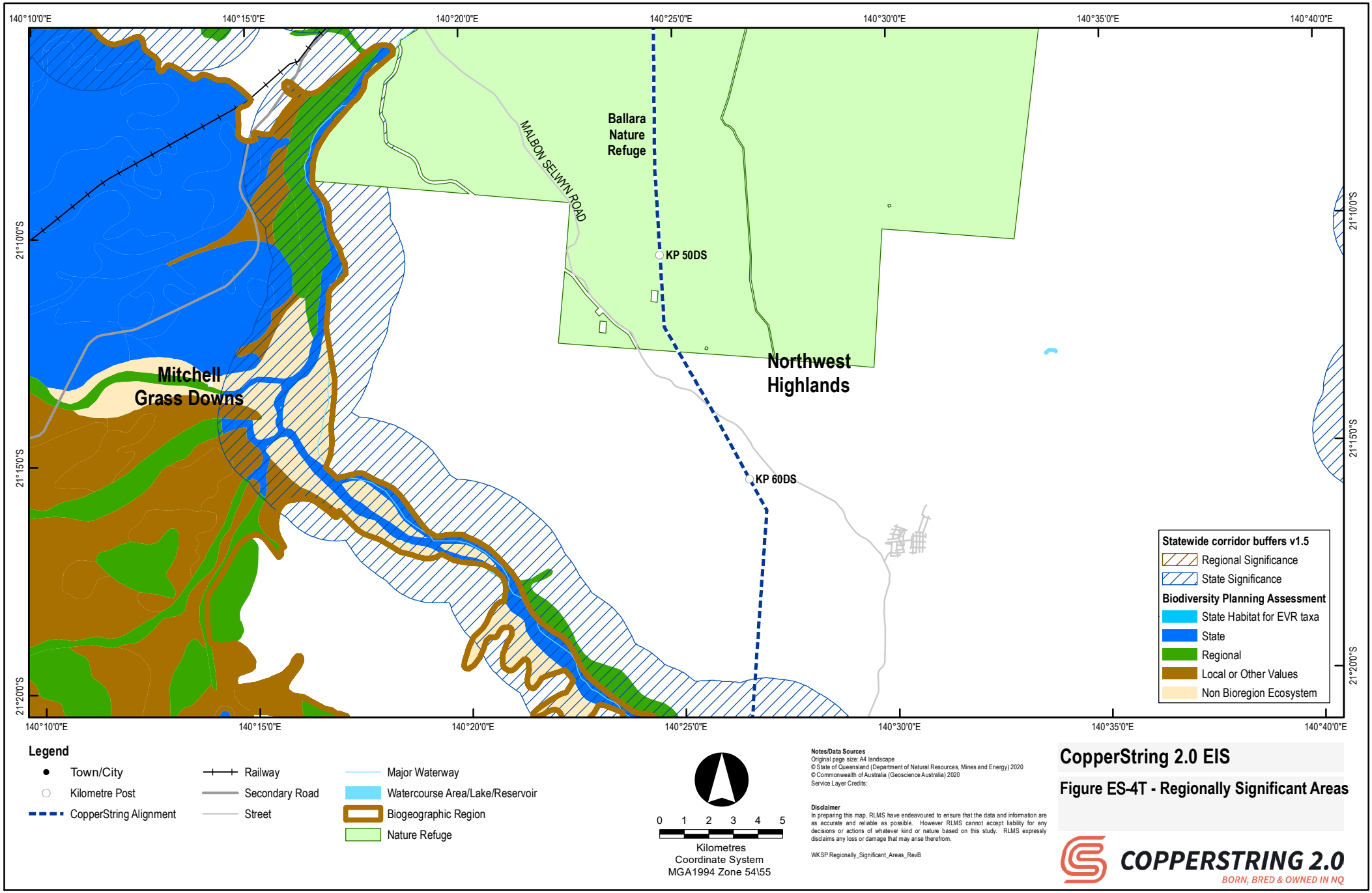
WKSP Regionally_Significant_Areas_RevB
CopperString 2.0 EIS
Figure ES-4S - Regionally Significant Areas
COPPERSTRING 2.0
BORN, BRED & OWNED IN NQ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21°10'0"S
21°15'0"S
21°20'0"S
Ballara Nature Refuge
MALBON SELWYN ROAD
KP 50DS
KP 60DS
Mitchell Grass Downs
Northwest Highlands
Statewide corridor buffers v1.5
Regional Significance
State Significance
Biodiversity Planning Assessment
State Habitat for EVR taxa
State
Regional
Local or Other Values
Non Bioregion Ecosystem
Legend
Town/City
Kilometre Post
CopperString Alignment
Railway
Secondary Road
Street
Major Waterway
Watercourse Area/Lake/Reservoir
Biogeographic Region
Nature Refuge
0 1 2 3 4 5
Kilometres
Coordinate System
MGA1994 Zone 54\55
Notes/Data Sources
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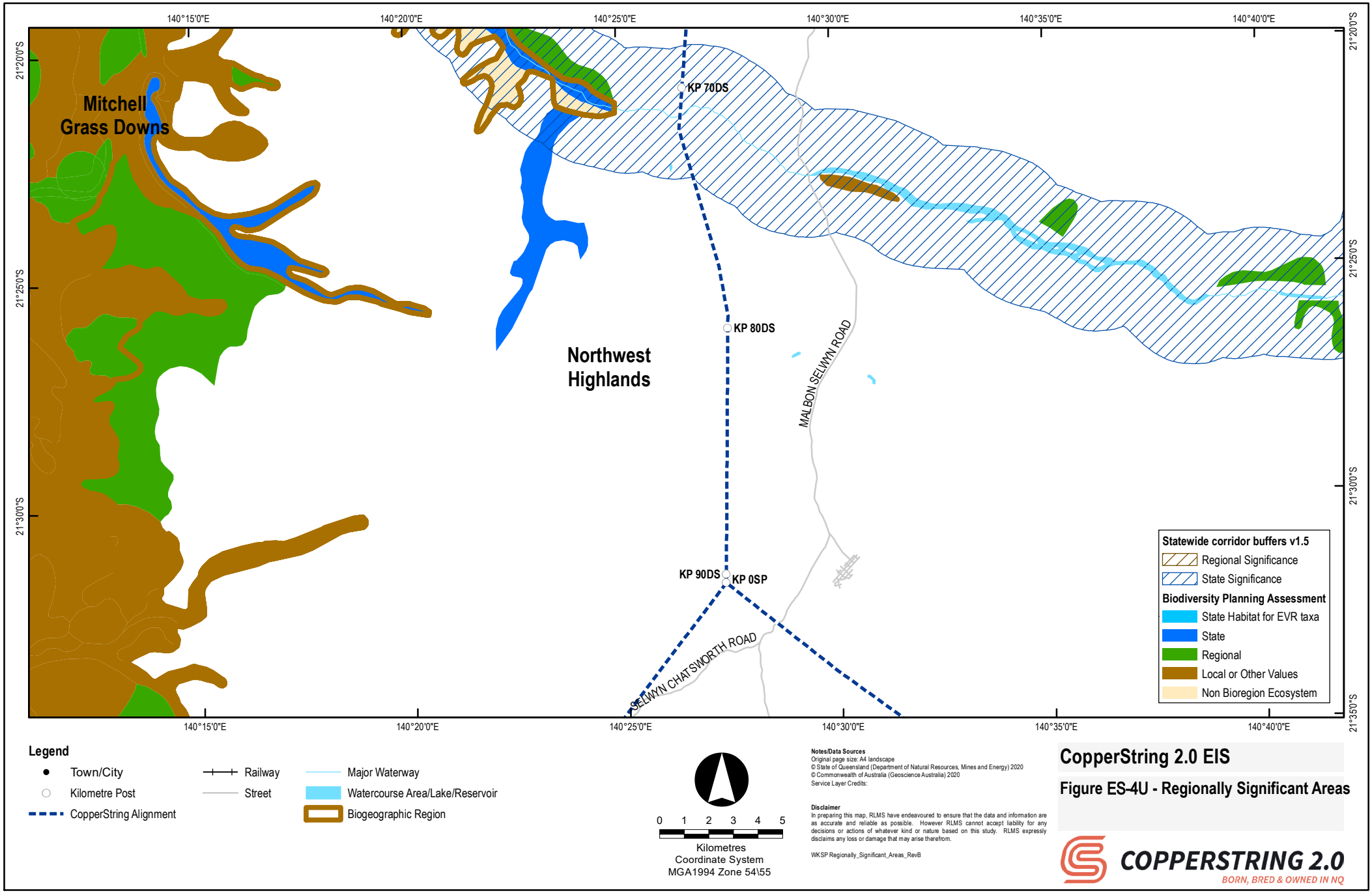
WKSP Regionally_Significant_Areas_RevB
CopperString 2.0 EIS
Figure ES-4T - Regionally Significant Areas
COPPERSTRING 2.0
BORN, BRED & OWNED IN NQ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140°35'0"E
140°40'0"E
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21°25'0"S
21°30'0"S
21°35'0"S
Mitchell Grass Downs
Northwest Highlands
KP 70DS
KP 80DS
KP 90DS
KP 0SP
MALBON SELWYN ROAD
SELWYN CHATSWORTH ROAD
Statewide corridor buffers v1.5
Regional Significance
State Significance
Biodiversity Planning Assessment
State Habitat for EVR taxa
State
Regional
Local or Other Values
Non Bioregion Ecosystem
Legend
Town/City
Kilometre Post
CopperString Alignment
Railway
Street
Major Waterway
Watercourse Area/Lake/Reservoir
Biogeographic Region
0 1 2 3 4 5
Kilometres
Coordinate System
MGA1994 Zone 54\55
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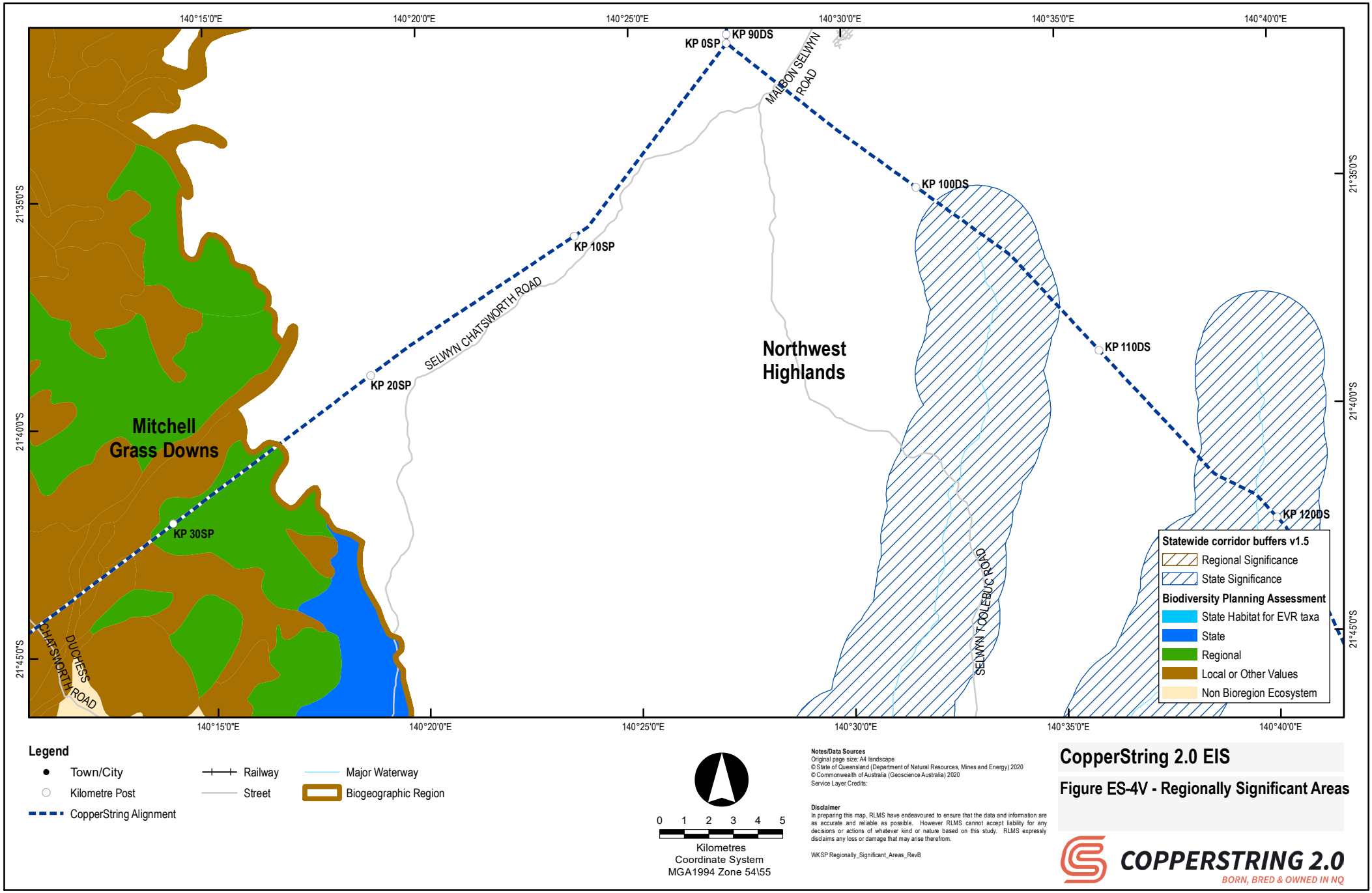
WKSP Regionally_Significant_Areas_RevB
CopperString 2.0 EIS
Figure ES-4U - Regionally Significant Areas
COPPERSTRING 2.0
BORN, BRED & OWNED IN NQ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140°40'0"E
21°35'0"S
21°40'0"S
21°45'0"S
KP 0SP
KP 90DS
KP 10SP
KP 20SP
KP 30SP
KP 100DS
KP 110DS
KP 120DS
MALBON SELWYN ROAD
SELWYN CHATSWORTH ROAD
SELWYN TOOLEBUC ROAD
CHATSWORTH DUCHESS ROAD
Mitchell Grass Downs
Northwest Highlands
Statewide corridor buffers v1.5
Regional Significance
State Significance
Biodiversity Planning Assessment
State Habitat for EVR taxa
State
Regional
Local or Other Values
Non Bioregion Ecosystem
Legend
Town/City
Kilometre Post
CopperString Alignment
Railway
Street
Major Waterway
Biogeographic Region
0 1 2 3 4 5
Kilometres
Coordinate System
MGA1994 Zone 54\55
Notes/Data Sources
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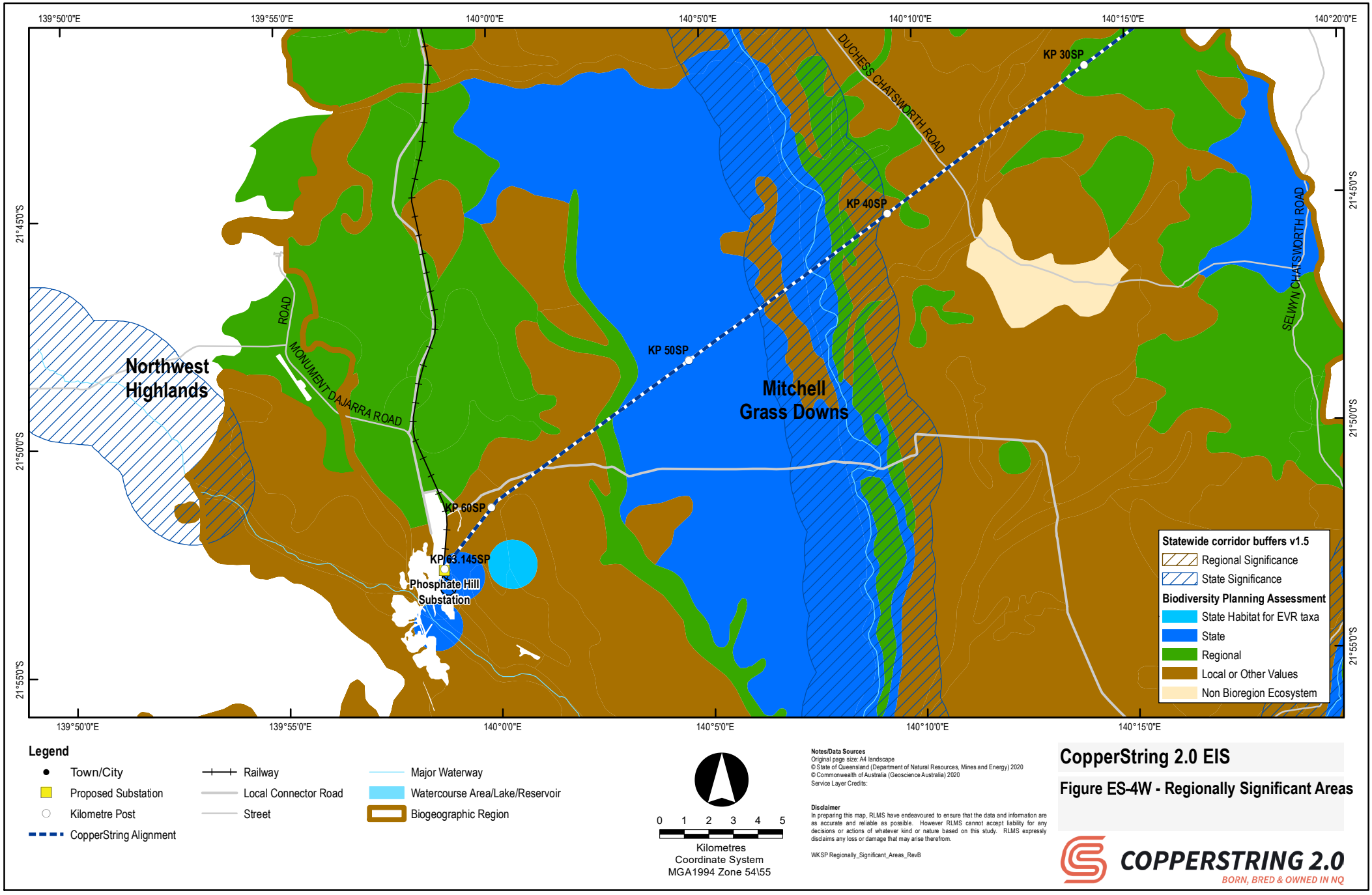
WKSP Regionally_Significant_Areas_RevB
CopperString 2.0 EIS
Figure ES-4V - Regionally Significant Areas
COPPERSTRING 2.0
BORN, BRED & OWNED IN NQ



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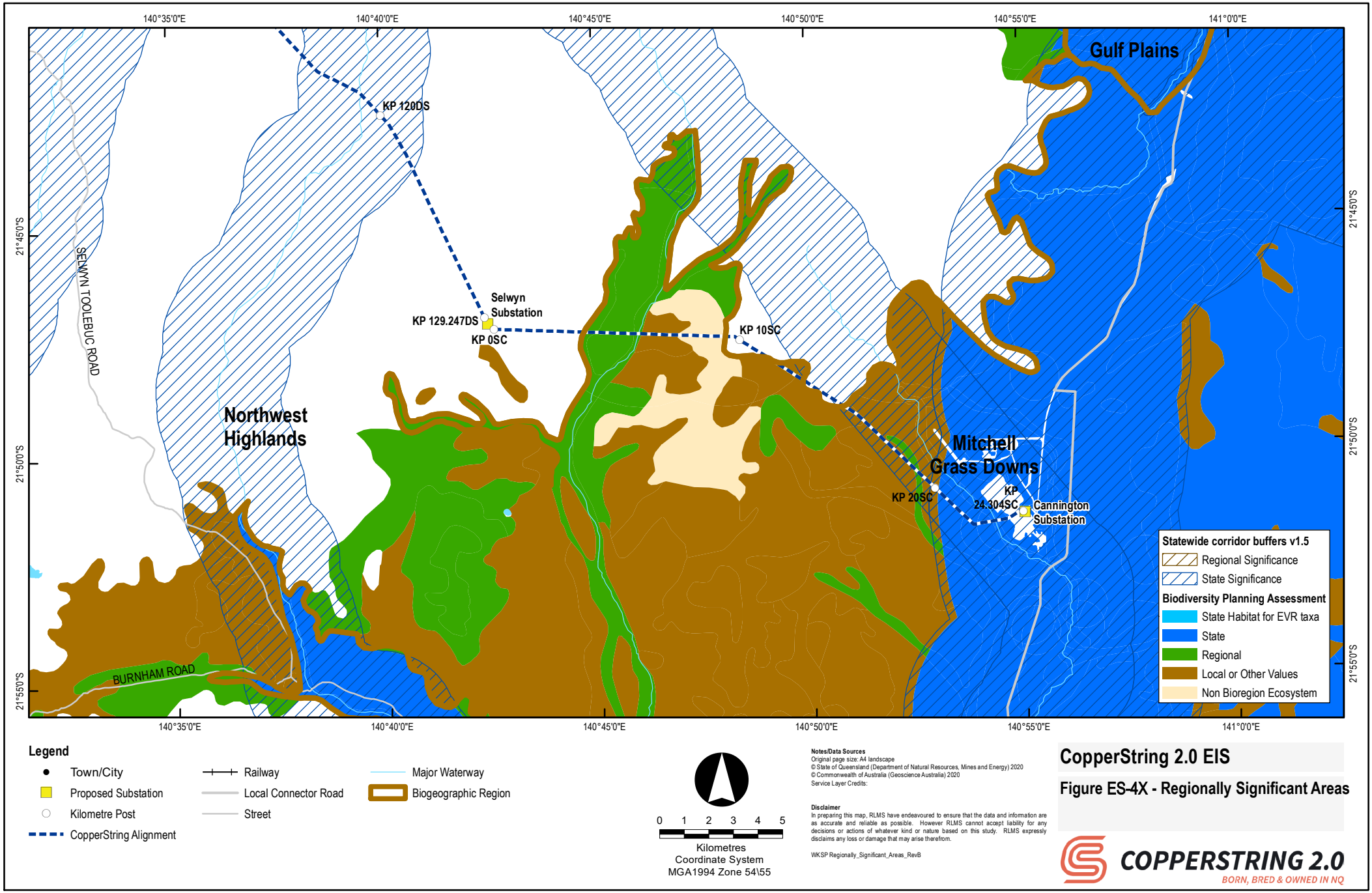
WKSP Regionally_Significant_Areas_RevB

CopperString 2.0 EIS

Figure ES-4W - Regionally Significant Areas

COPPERSTRING 2.0
BORN, BRED & OWNED IN NQ



Legend

- Town/City
- Proposed Substation
- Kilometre Post
- CopperString Alignment
- Railway
- Local Connector Road
- Street
- Major Waterway
- Biogeographic Region

0 1 2 3 4 5

Kilometres
Coordinate System
MGA1994 Zone 54\55

Notes/Data Sources
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WKSP Regionally_Significant_Areas_RevB

CopperString 2.0 EIS

Figure ES-4X - Regionally Significant Areas

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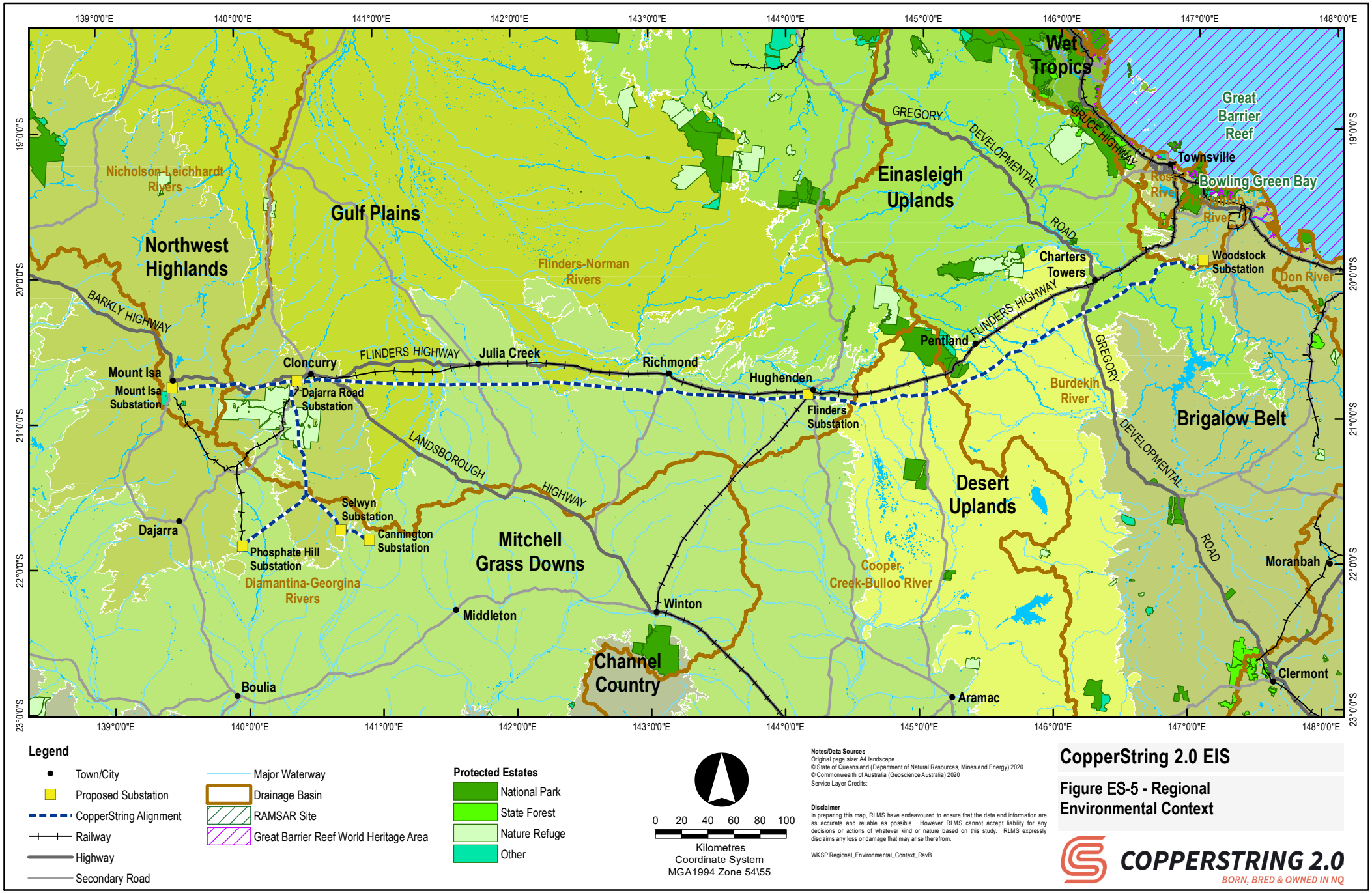

Legend

- Town/City
- Proposed Substation
- CopperString Alignment
- Railway
- Highway
- Secondary Road
- Major Waterway
- Drainage Basin
- RAMSAR Site
- Great Barrier Reef World Heritage Area

Protected Estates

- National Park
- State Forest
- Nature Refuge
- Other

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

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WKSP Regional_Environmental_Context_RevB

CopperString 2.0 EIS

Figure ES-5 - Regional Environmental Context

COPPERSTRING 2.0
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Biosecurity

The Project will potentially impact biosecurity by providing an increased opportunity for invasive plant infestation and resultant negative impacts to biodiversity and loss of land productivity. This may be the spread of known weed infestations or through the introduction of new invasive plant or animal species to some areas, notably yellow crazy ants.

There is a high risk that vegetation clearing and transport activities could facilitate weed infestations. Invasive plants pose a threat to the environment and can have costly impacts to native vegetation and agriculture, while increases in pest animal species populations can increase the risk of injury or disease to personnel from contact with invasive animal species.

The construction phase has the greatest potential for impacts to biosecurity, particularly through the transportation of materials and operation of construction camps. Materials can carry pest plants and animals, potentially introducing them into new environments. Construction camps can attract a range of invasive animals.

Management strategies can be general and involve the use of cleandown procedures for all vehicles, plant, equipment, and materials. Construction camps would require specific strategies such as ensuring waste is kept in closed containers.

Invasive plant prevention primarily involves following cleandown procedures for vehicles, clothes and boots in conjunction with frequent monitoring. These strategies reduce the risk of primary invasive plant movement and increase the ability to react quickly to invasive plant introductions. Invasive plant treatment is a specialist field requiring trained operators and species specific treatment methods.

The Project will potentially cause localised impacts to biosecurity, through the movement of people, equipment and materials but these are likely to be low residual impacts where appropriate mitigation measures are implemented.

Water resources and water quality

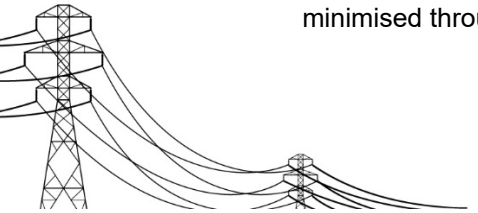
The Project crosses several large catchment areas, with large river systems draining from these catchment areas. Water plan areas for surface water covered by the corridor selection include:

- Burdekin Basin
- Cooper Creek Basin
- Gulf Basin
- Georgina and Diamantina Basin.

Most of the major watercourses in the study area are non-perennial in nature (Figure ES-6). For these watercourses, flows are only experienced during the wet season, which generally spans about four to five months of the year. For the remaining seven to eight months of the year, these waterways are virtually dry, with minimal flow recorded.

The Project requires 62 watercourse crossings over name water features identified on Geoscience Australia (2006) 1:250,000 Topographic data. It is expected most watercourses will be dry when crossed, as the bulk of the works within these areas are programmed for the dry season. Where this is not the case and for larger water crossings the access to tower sites will use only existing crossings and no new watercourse crossings will be constructed except for safety reasons.

Potential impacts to water resources and water quality include erosion and sedimentation, contamination, and altered surface and groundwater flow regimes. These impacts can be minimised through siting of transmission infrastructure outside of active water features,



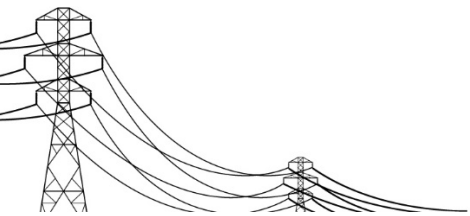
minimising vegetation clearing and land disturbance, and implementation of an erosion and sediment control plan.

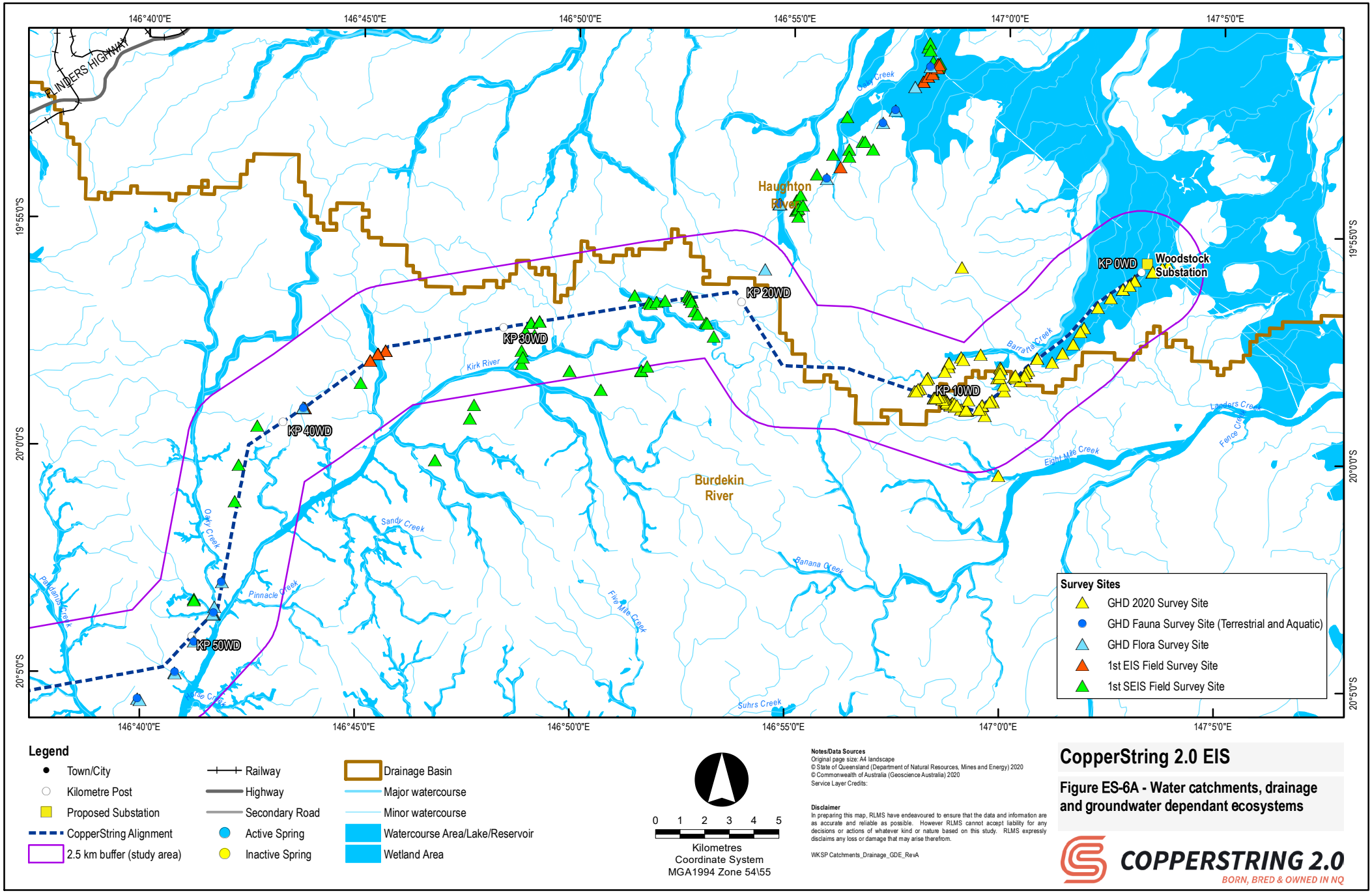
Groundwater resources within the Project area predominantly consist of the Great Artesian Basin (GAB). The GAB underlies nearly 50 percent of the alignment from Pentland to Cloncurry. The western areas of the GAB (i.e. from Cloncurry to Mount Isa) and the western diverging sections are subartesian groundwater resources. Groundwater is consequently an important resource for pastoral, domestic and small municipal requirements. Key issues pertaining to groundwater are likely to occur during the construction phase through the use of groundwater resources for construction activities and camp utilisation.

Assessment of existing town water supplies has indicated that the use of town water is expected to have minimal impacts to existing groundwater resources.

An additional impact is the potential for stormwater to impact substation sites and other project infrastructure. Detailed flood analysis will be completed in the detailed design phase to confirm the required flood immunity/protection is provided for all project infrastructure.

The likelihood of measurable impacts of the Project on water resources is low. Most of the impacts are identified to occur during the construction phase, which can be mitigated through properly implemented mitigation measures.

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146°45'0"E
146°50'0"E
146°55'0"E
147°0'0"E
147°5'0"E
19°55'0"S
20°0'0"S
20°5'0"S
FLINDERS HIGHWAY
Haughton River
Burdekin River
Woodstock Substation
KP 0WD
KP 10WD
KP 20WD
KP 30WD
KP 40WD
KP 50WD
Kirk River
Barratta Creek
Eight Mile Creek
Landers Creek
Fence Creek
Sandy Creek
Oaky Creek
Pinnacle Creek
Five Mile Creek
Banana Creek
Suhrs Creek
Survey Sites
GHD 2020 Survey Site
GHD Fauna Survey Site (Terrestrial and Aquatic)
GHD Flora Survey Site
1st EIS Field Survey Site
1st SEIS Field Survey Site
Legend
Town/City
Kilometre Post
Proposed Substation
CopperString Alignment
2.5 km buffer (study area)
Railway
Highway
Secondary Road
Active Spring
Inactive Spring
Drainage Basin
Major watercourse
Minor watercourse
Watercourse Area/Lake/Reservoir
Wetland Area
0 1 2 3 4 5
Kilometres
Coordinate System
MGA1994 Zone 54\55
Notes/Data Sources
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WKSP Catchments_Drainage_GDE_RevA
CopperString 2.0 EIS
Figure ES-6A - Water catchments, drainage and groundwater dependant ecosystems
COPPERSTRING 2.0
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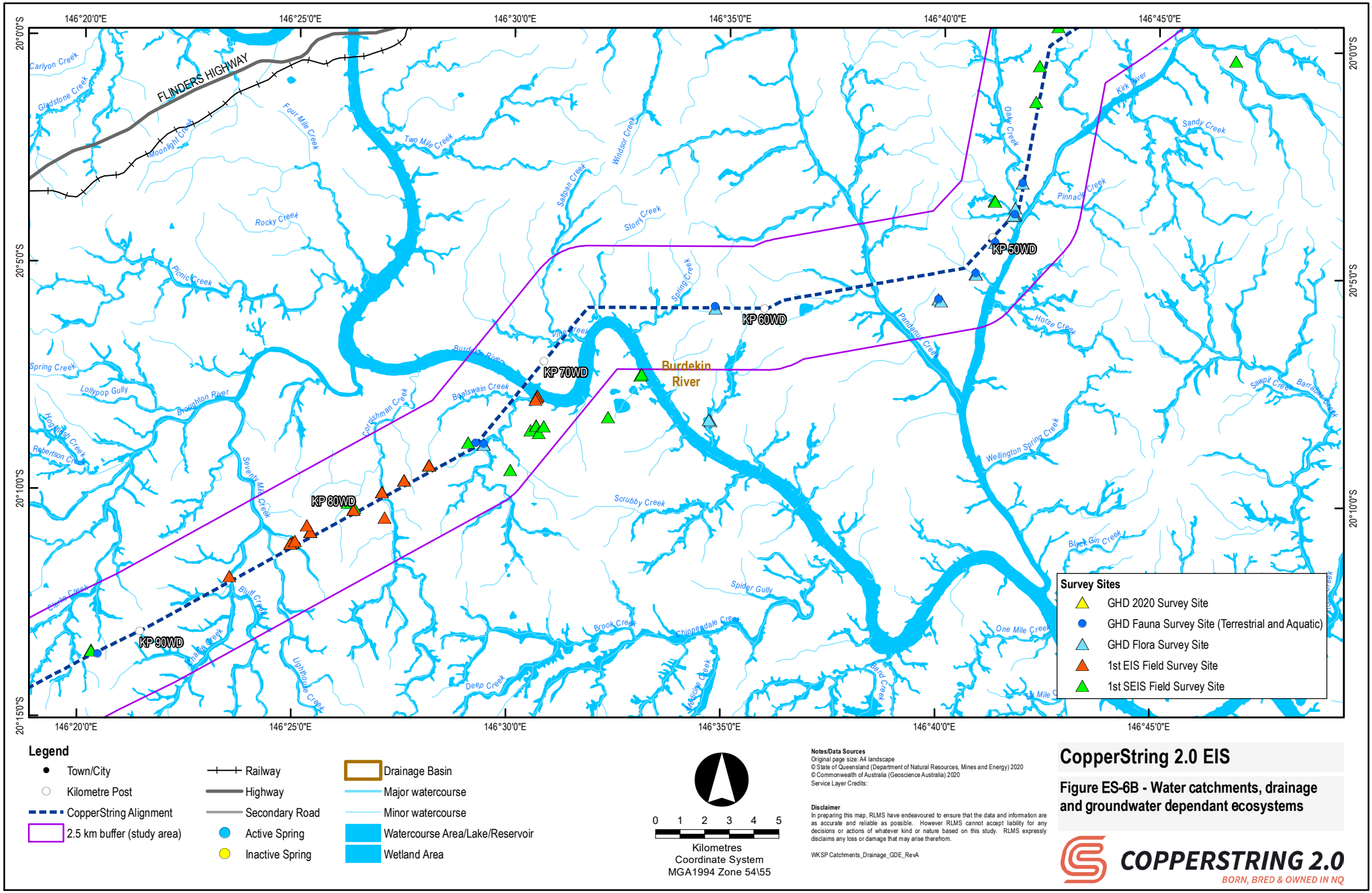

Legend

- Town/City
- Kilometre Post
- CopperString Alignment
- 2.5 km buffer (study area)
- Railway
- Highway
- Secondary Road
- Active Spring
- Inactive Spring
- Drainage Basin
- Major watercourse
- Minor watercourse
- Watercourse Area/Lake/Reservoir
- Wetland Area

0 1 2 3 4 5

Kilometres
Coordinate System
MGA1994 Zone 54\55

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WKSP Catchments_Drainage_GDE_RevA

CopperString 2.0 EIS

Figure ES-6B - Water catchments, drainage and groundwater dependant ecosystems

COPPERSTRING 2.0
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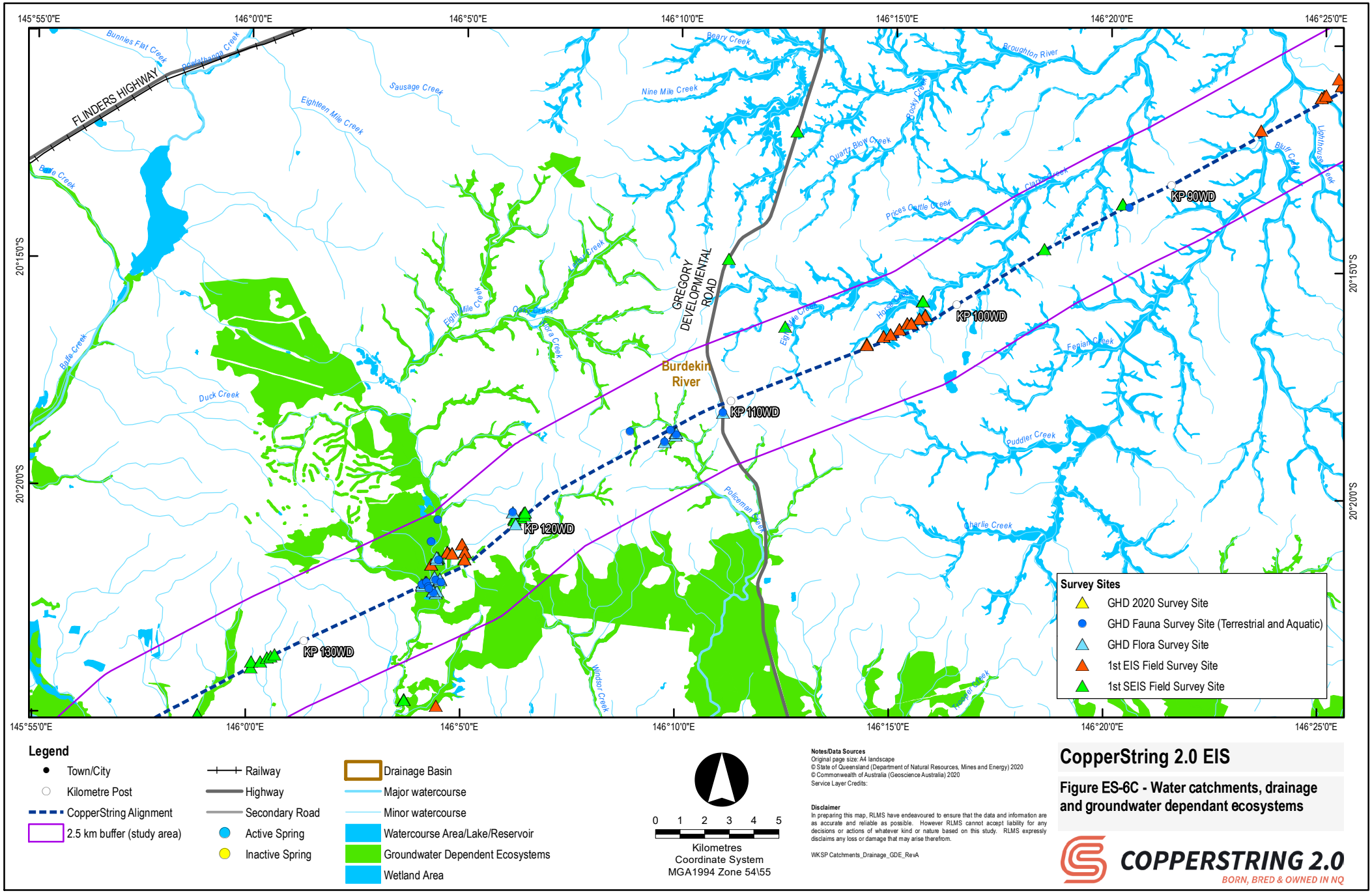

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WKSP Catchments_Drainage_GDE_RevA

CopperString 2.0 EIS

Figure ES-6C - Water catchments, drainage and groundwater dependant ecosystems

COPPERSTRING 2.0
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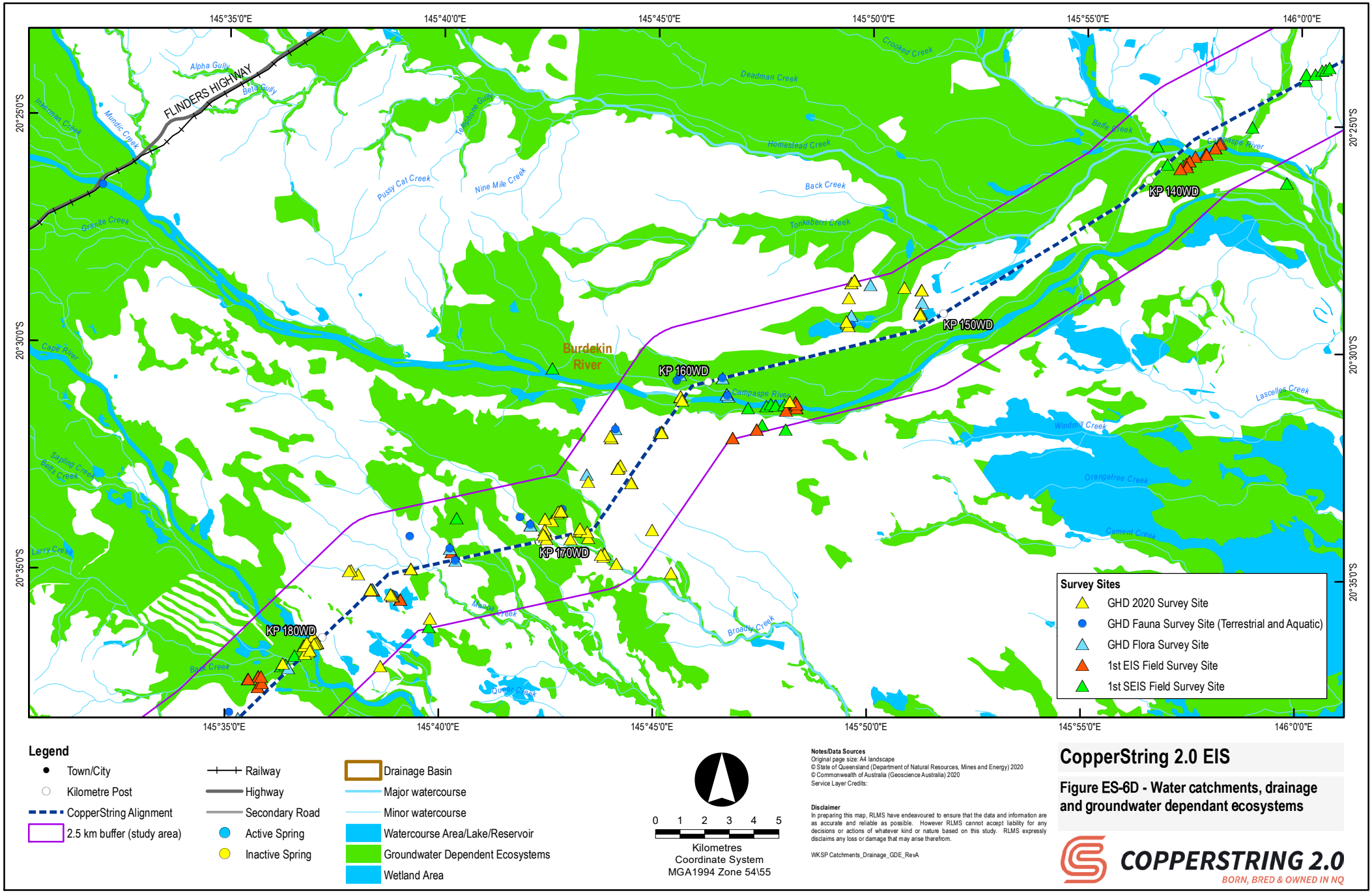

Legend

- Town/City
- Kilometre Post
- CopperString Alignment
- 2.5 km buffer (study area)
- Railway
- Highway
- Secondary Road
- Active Spring
- Inactive Spring
- Drainage Basin
- Major watercourse
- Minor watercourse
- Watercourse Area/Lake/Reservoir
- Groundwater Dependent Ecosystems
- Wetland Area

0 1 2 3 4 5

Kilometres
Coordinate System
MGA1994 Zone 54\55

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WKSP Catchments_Drainage_GDE_RevA

CopperString 2.0 EIS

Figure ES-6D - Water catchments, drainage and groundwater dependant ecosystems

COPPERSTRING 2.0
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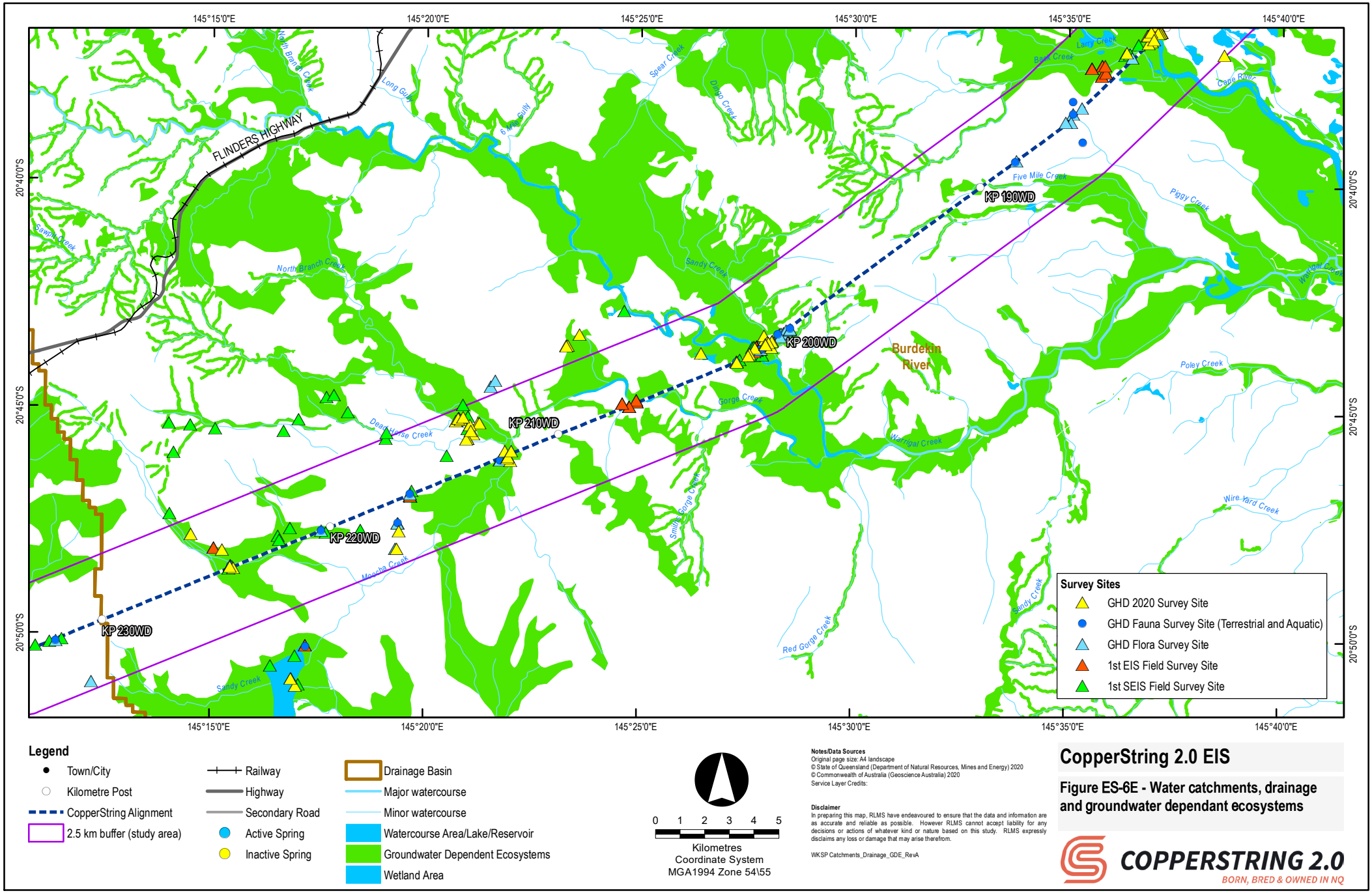

Legend

- Town/City
- Kilometre Post
- CopperString Alignment
- 2.5 km buffer (study area)
- Railway
- Highway
- Secondary Road
- Active Spring
- Inactive Spring
- Drainage Basin
- Major watercourse
- Minor watercourse
- Watercourse Area/Lake/Reservoir
- Groundwater Dependent Ecosystems
- Wetland Area

0 1 2 3 4 5

Kilometres
Coordinate System
MGA1994 Zone 54\55

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WKSP Catchments_Drainage_GDE_RevA

CopperString 2.0 EIS

Figure ES-6E - Water catchments, drainage and groundwater dependant ecosystems

COPPERSTRING 2.0
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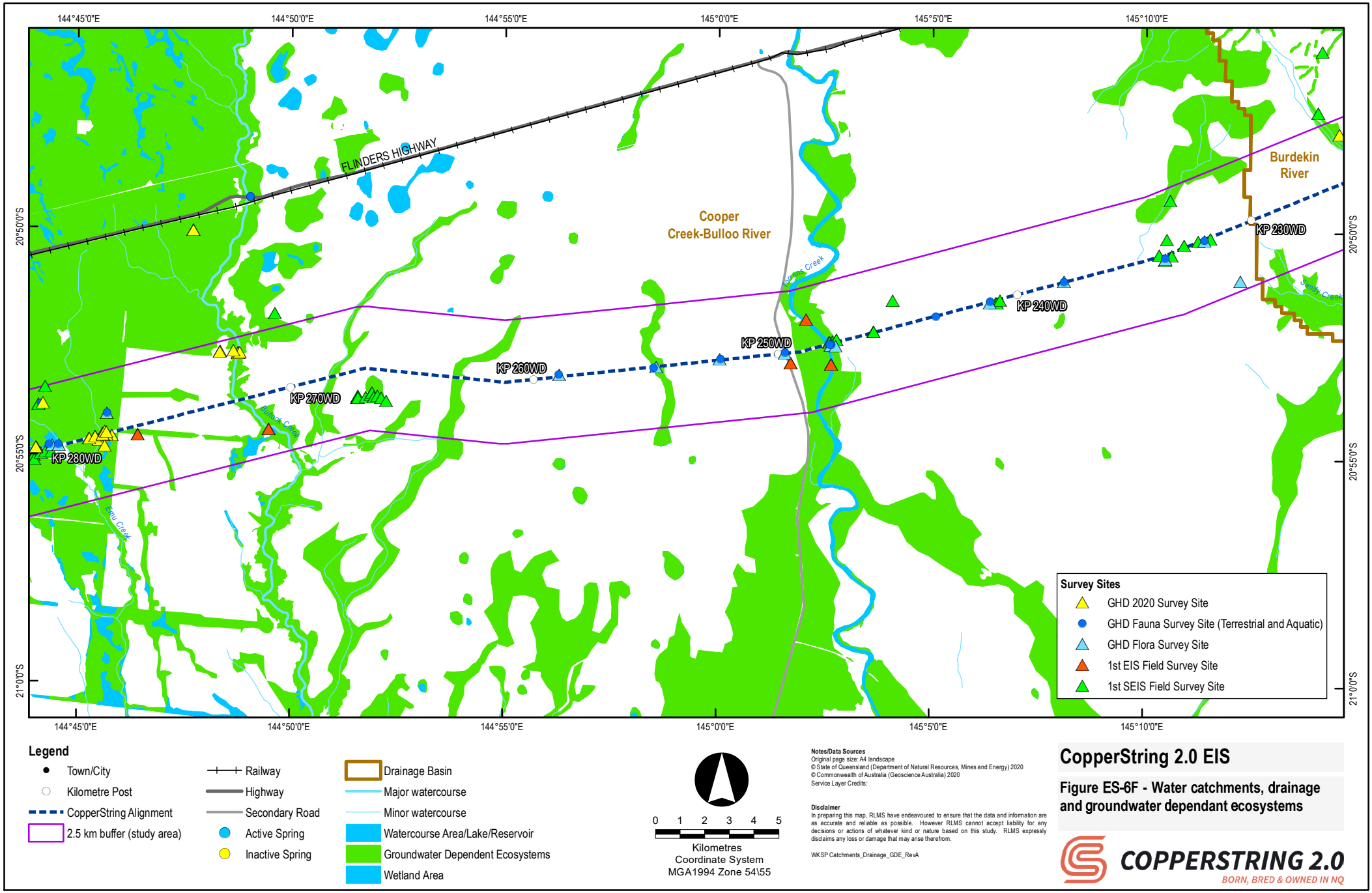
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144°55'0"E
145°0'0"E
145°5'0"E
145°10'0"E
20°50'0"S
20°55'0"S
21°0'0"S
FLINDERS HIGHWAY
Cooper Creek-Bulloo River
Burdekin River
KP 230WD
KP 240WD
KP 250WD
KP 260WD
KP 270WD
KP 280WD
Survey Sites
GHD 2020 Survey Site
GHD Fauna Survey Site (Terrestrial and Aquatic)
GHD Flora Survey Site
1st EIS Field Survey Site
1st SEIS Field Survey Site
Legend
Town/City
Kilometre Post
CopperString Alignment
2.5 km buffer (study area)
Railway
Highway
Secondary Road
Active Spring
Inactive Spring
Drainage Basin
Major watercourse
Minor watercourse
Watercourse Area/Lake/Reservoir
Groundwater Dependent Ecosystems
Wetland Area
0 1 2 3 4 5
Kilometres
Coordinate System
MGA1994 Zone 54\55
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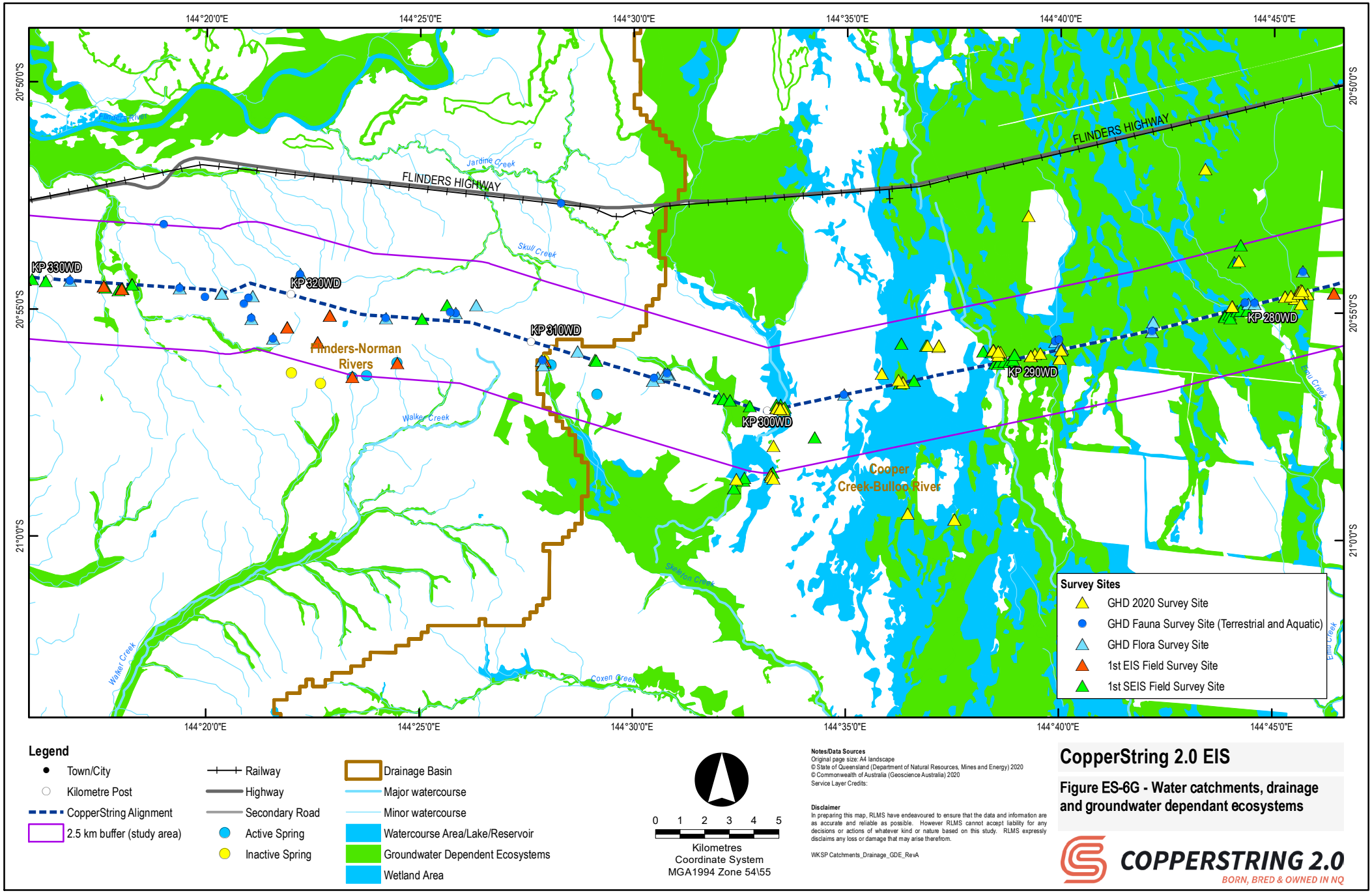
WKSP Catchments_Drainage_GDE_RevA
CopperString 2.0 EIS
Figure ES-6F - Water catchments, drainage and groundwater dependant ecosystems
COPPERSTRING 2.0
BORN, BRED & OWNED IN NQ



Legend

- Town/City
- Kilometre Post
- CopperString Alignment
- 2.5 km buffer (study area)
- Railway
- Highway
- Secondary Road
- Active Spring
- Inactive Spring
- Drainage Basin
- Major watercourse
- Minor watercourse
- Watercourse Area/Lake/Reservoir
- Groundwater Dependent Ecosystems
- Wetland Area

0 1 2 3 4 5
Kilometres
Coordinate System
MGA1994 Zone 54\55

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WKSP Catchments_Drainage_GDE_RevA

CopperString 2.0 EIS

Figure ES-6G - Water catchments, drainage and groundwater dependant ecosystems

COPPERSTRING 2.0
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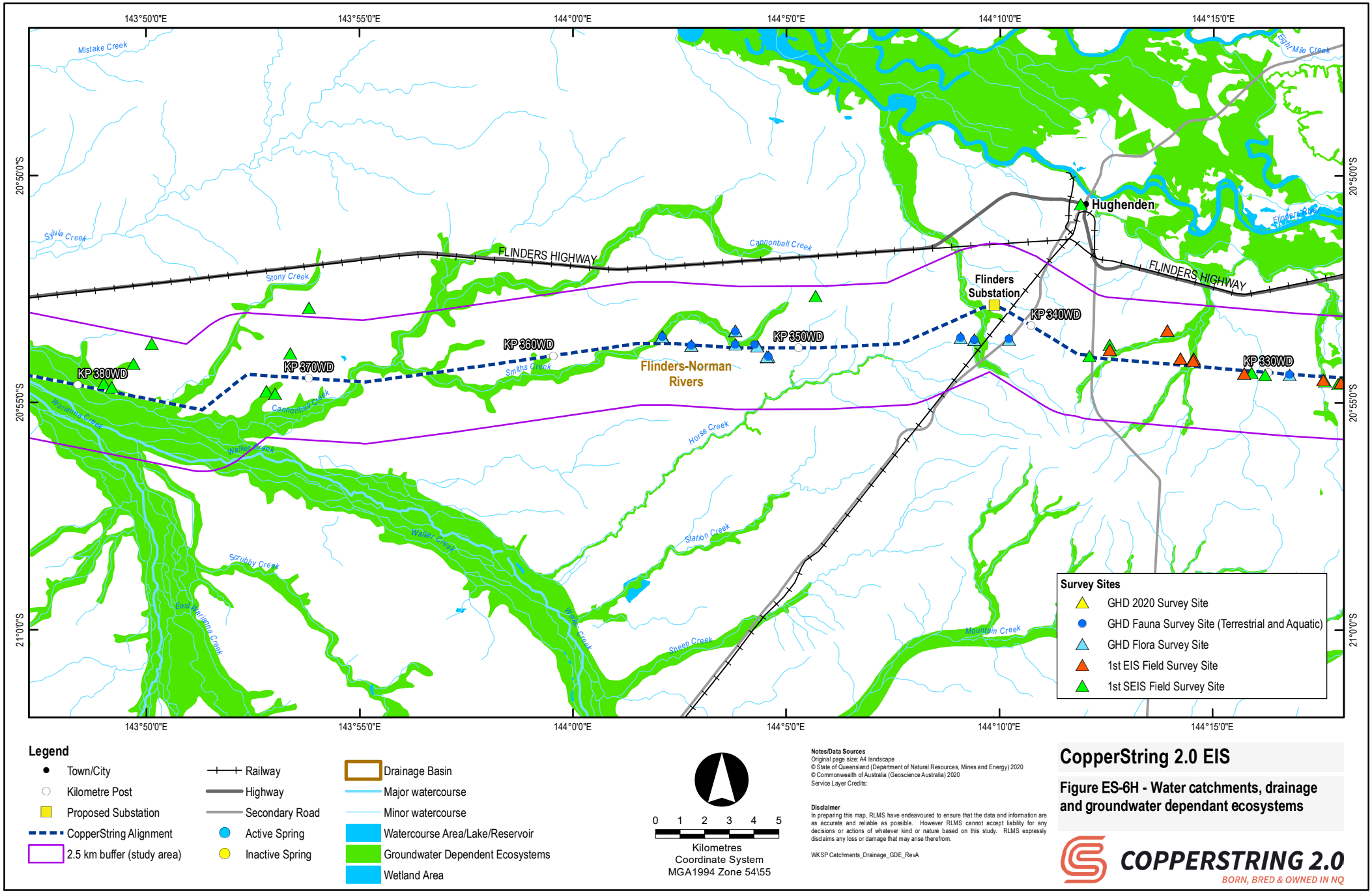

Legend

- Town/City
- Kilometre Post
- Proposed Substation
- CopperString Alignment
- 2.5 km buffer (study area)
- Railway
- Highway
- Secondary Road
- Active Spring
- Inactive Spring
- Drainage Basin
- Major watercourse
- Minor watercourse
- Watercourse Area/Lake/Reservoir
- Groundwater Dependent Ecosystems
- Wetland Area

0 1 2 3 4 5

Kilometres
Coordinate System
MGA1994 Zone 54\55

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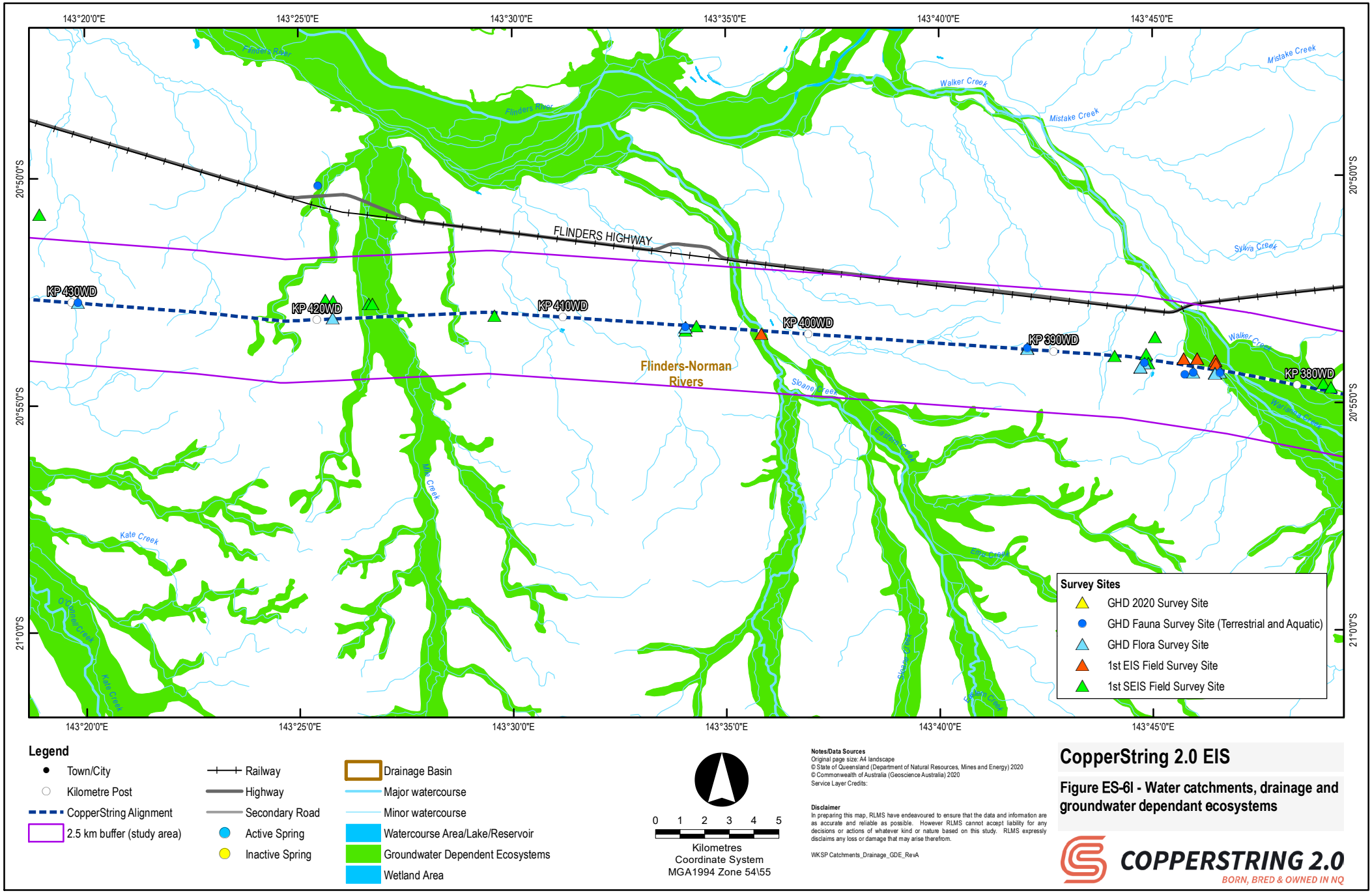
WKSP Catchments_Drainage_GDE_RevA

CopperString 2.0 EIS

Figure ES-6H - Water catchments, drainage and groundwater dependant ecosystems

COPPERSTRING 2.0
BORN, BRED & OWNED IN NQ



Legend

- Town/City
- Kilometre Post
- CopperString Alignment
- 2.5 km buffer (study area)
- Railway
- Highway
- Secondary Road
- Active Spring
- Inactive Spring
- Drainage Basin
- Major watercourse
- Minor watercourse
- Watercourse Area/Lake/Reservoir
- Groundwater Dependent Ecosystems
- Wetland Area

0 1 2 3 4 5

Kilometres
Coordinate System
MGA1994 Zone 54\55

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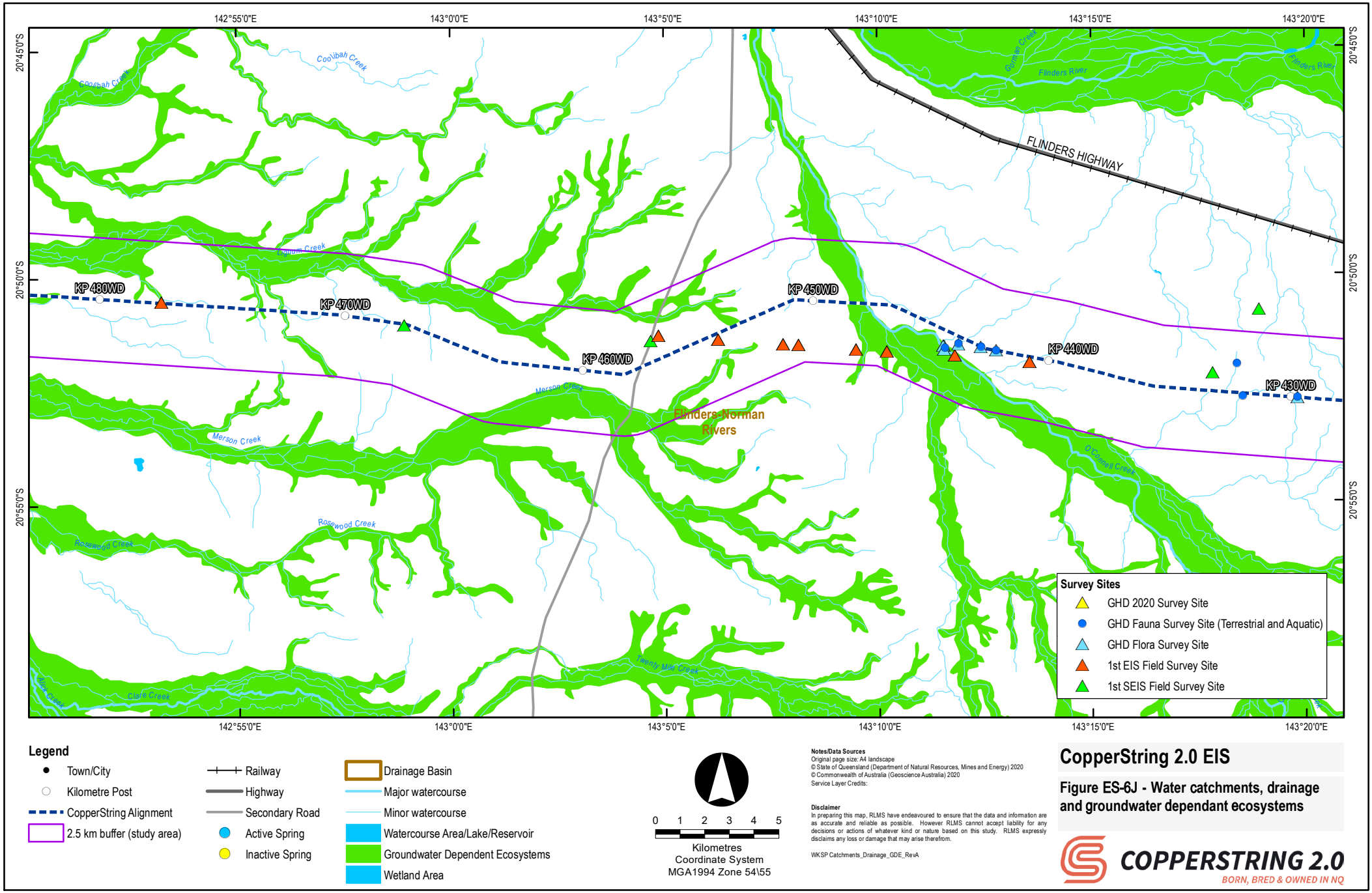
WKSP Catchments_Drainage_GDE_RevA

CopperString 2.0 EIS

Figure ES-6l - Water catchments, drainage and groundwater dependant ecosystems

COPPERSTRING 2.0
BORN, BRED & OWNED IN NQ



Legend

- Town/City
- Kilometre Post
- CopperString Alignment
- 2.5 km buffer (study area)
- Railway
- Highway
- Secondary Road
- Active Spring
- Inactive Spring
- Drainage Basin
- Major watercourse
- Minor watercourse
- Watercourse Area/Lake/Reservoir
- Groundwater Dependent Ecosystems
- Wetland Area

0 1 2 3 4 5

Kilometres
Coordinate System
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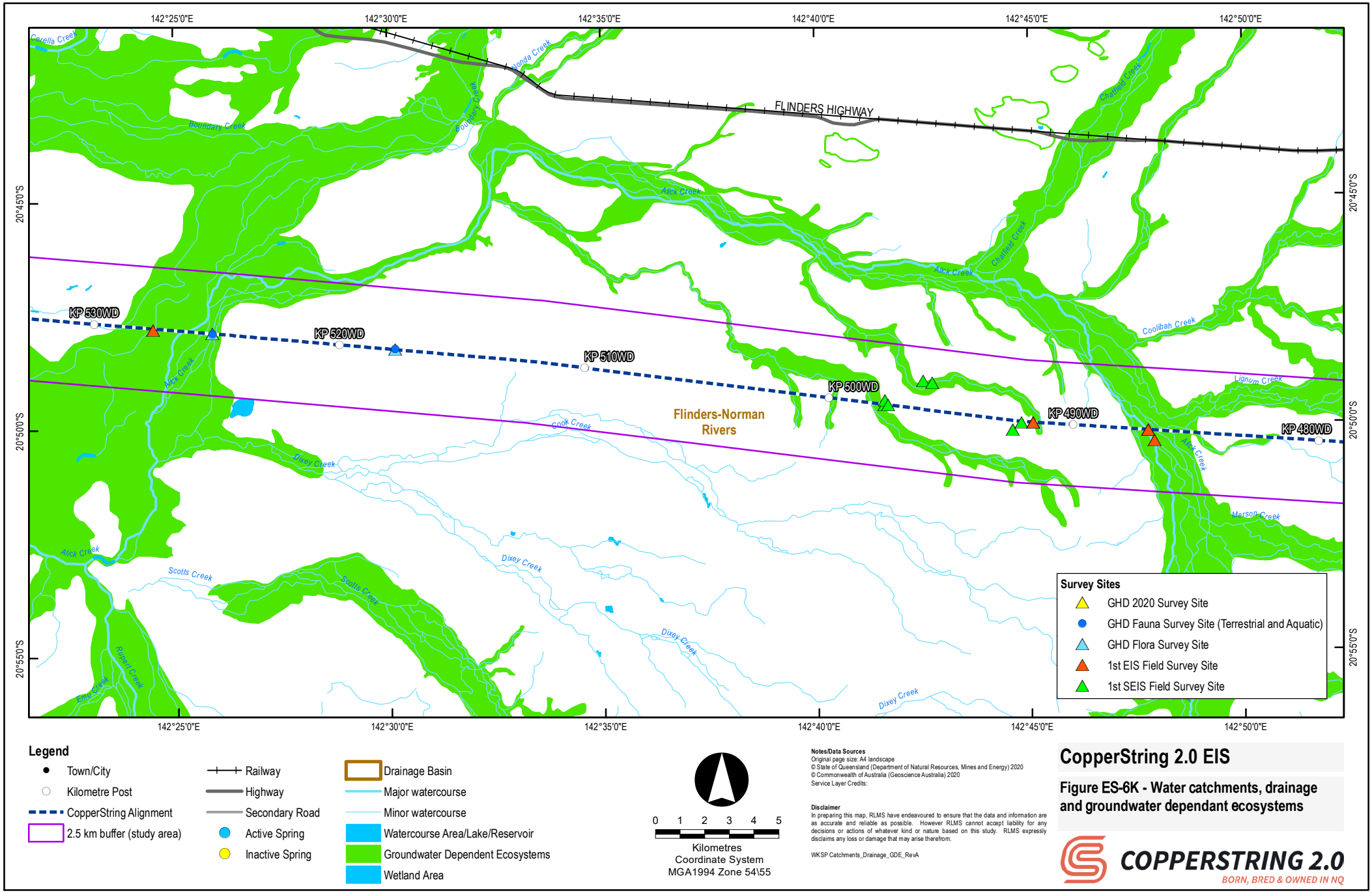
WKSP Catchments_Drainage_GDE_RevA

CopperString 2.0 EIS

Figure ES-6J - Water catchments, drainage and groundwater dependant ecosystems

COPPERSTRING 2.0
BORN, BRED & OWNED IN NQ



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WKSP Catchments_Drainage_GDE_RevA

CopperString 2.0 EIS

Figure ES-6K - Water catchments, drainage and groundwater dependant ecosystems

COPPERSTRING 2.0
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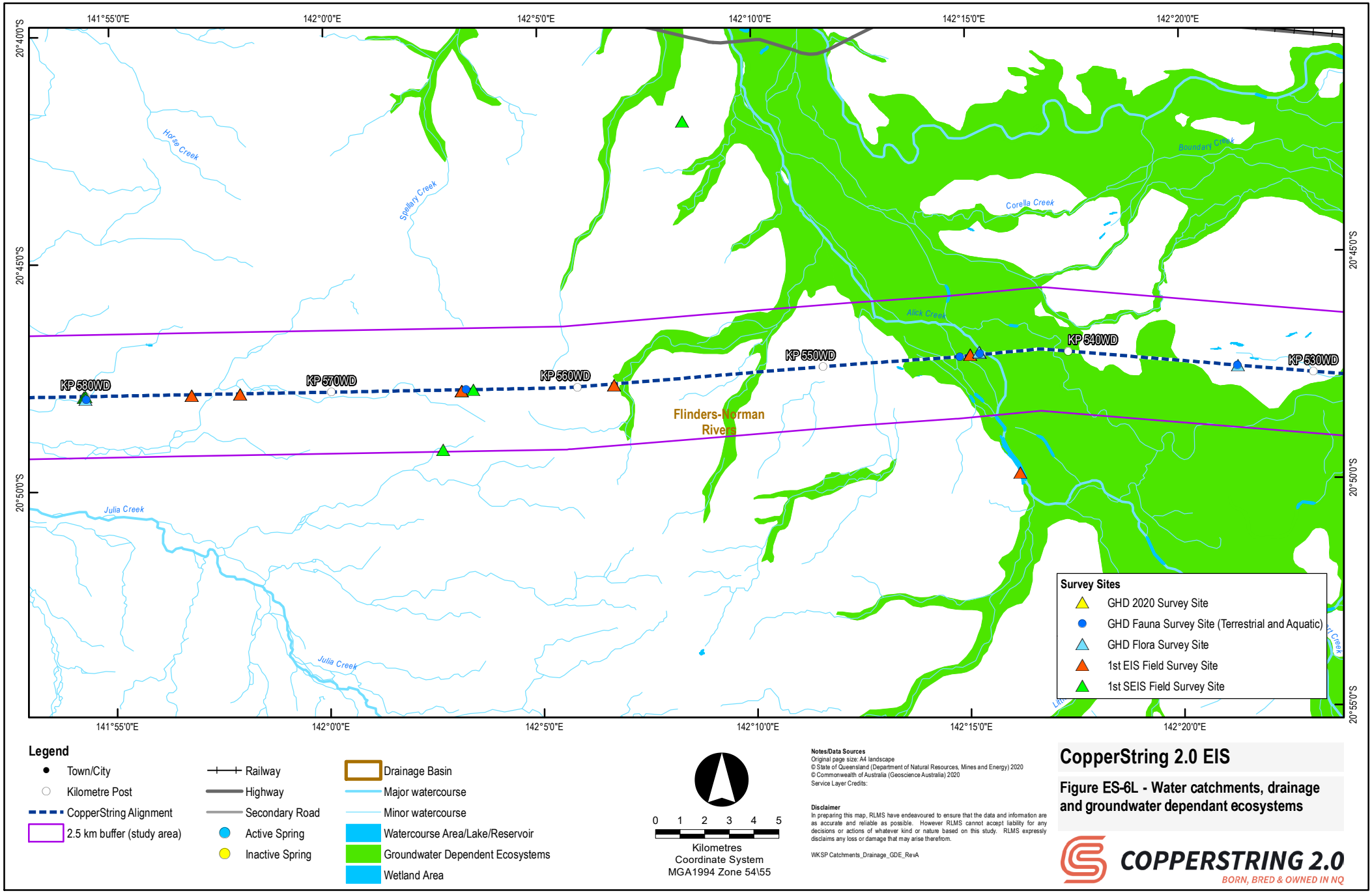

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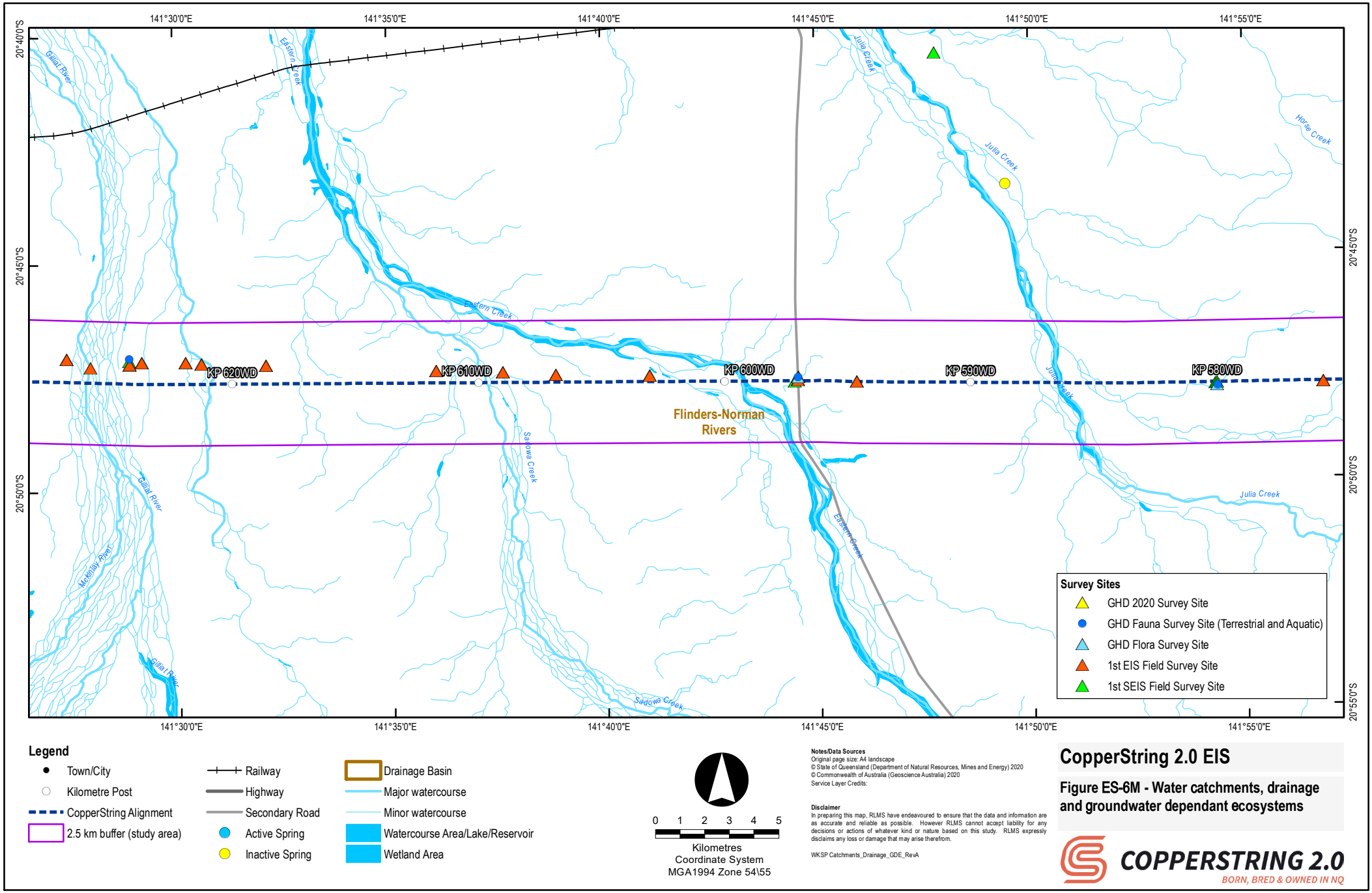
WKSP Catchments_Drainage_GDE_RevA

CopperString 2.0 EIS

Figure ES-6L - Water catchments, drainage and groundwater dependant ecosystems

COPPERSTRING 2.0
BORN, BRED & OWNED IN NQ



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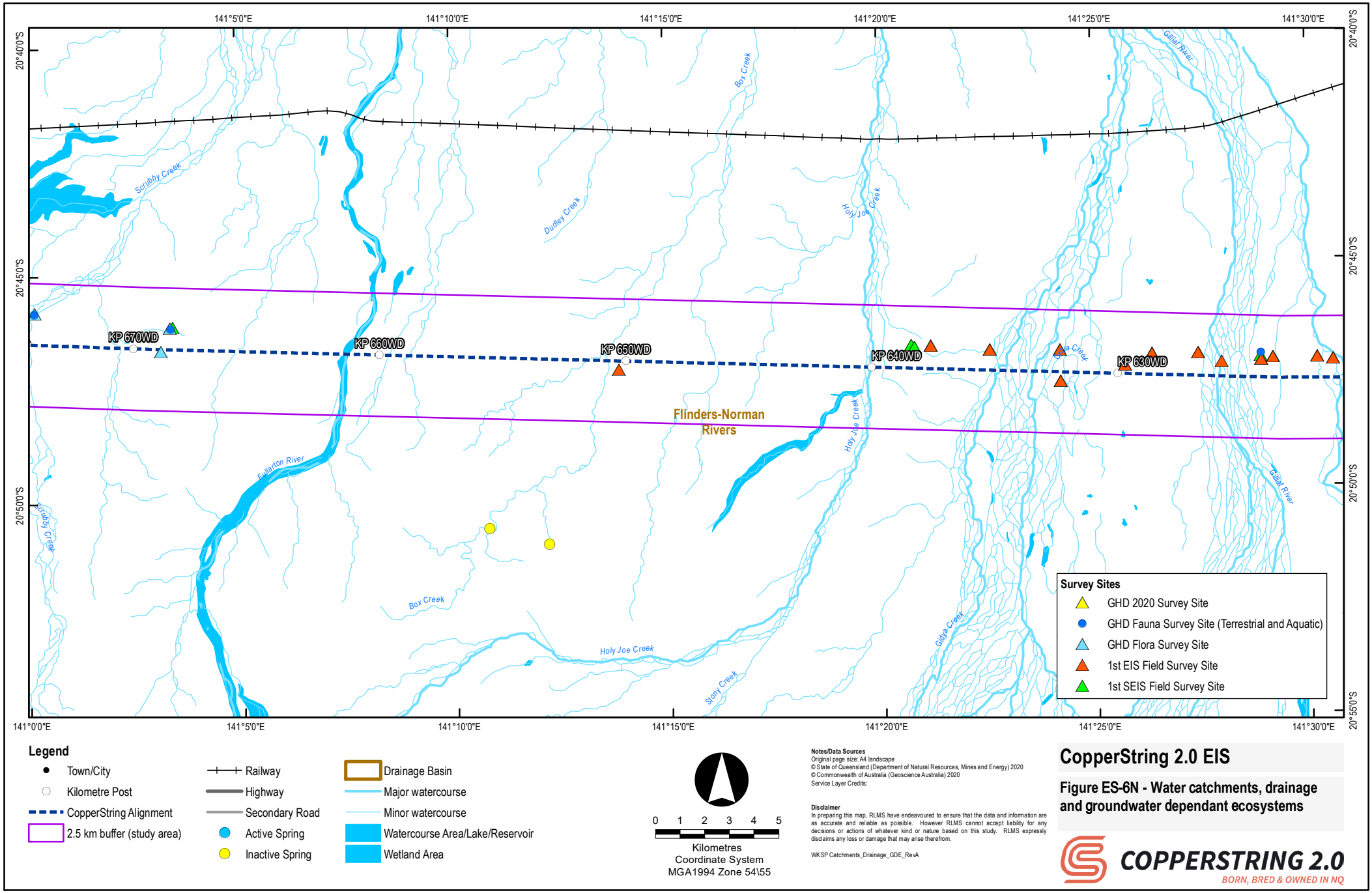
WKSP Catchments_Drainage_GDE_RevA

CopperString 2.0 EIS

Figure ES-6M - Water catchments, drainage and groundwater dependant ecosystems

COPPERSTRING 2.0
BORN, BRED & OWNED IN NQ



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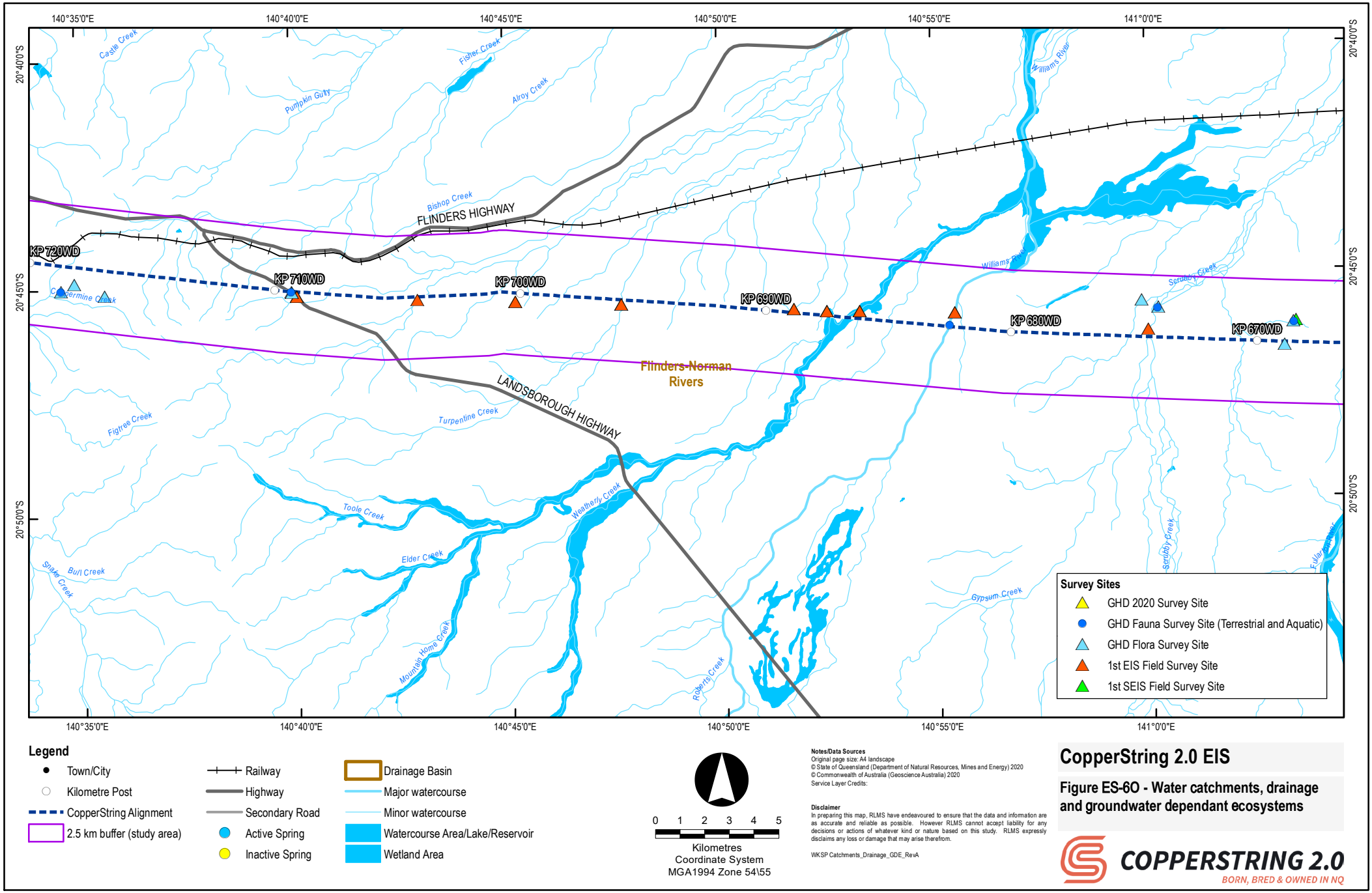
WKSP Catchments_Drainage_GDE_RevA

CopperString 2.0 EIS

Figure ES-6N - Water catchments, drainage and groundwater dependant ecosystems

COPPERSTRING 2.0
BORN, BRED & OWNED IN NQ



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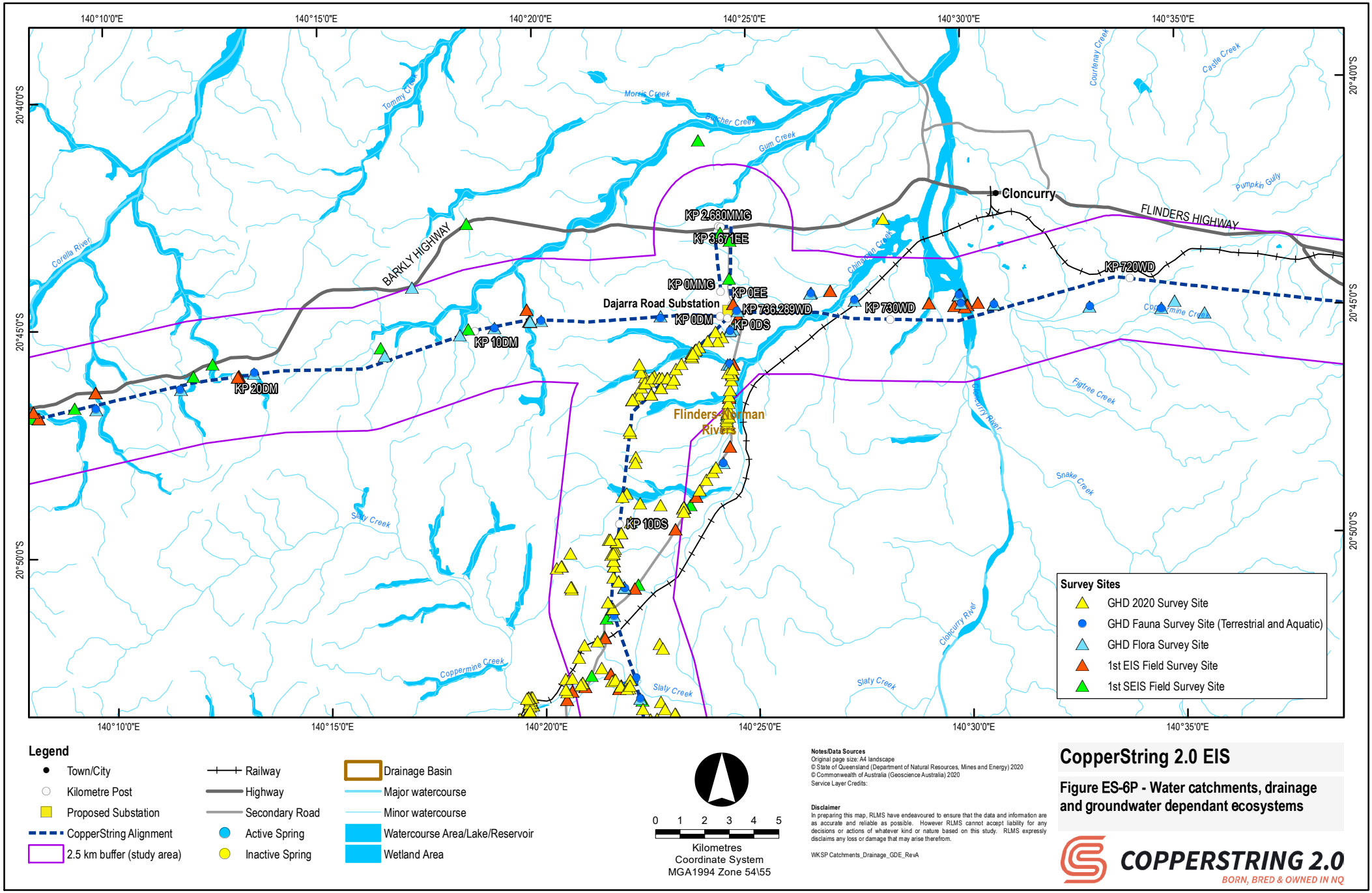
WKSP Catchments_Drainage_GDE_RevA

CopperString 2.0 EIS

Figure ES-60 - Water catchments, drainage and groundwater dependant ecosystems

COPPERSTRING 2.0
BORN, BRED & OWNED IN NQ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20°45'0"S
20°50'0"S
20°40'0"S
20°45'0"S
20°50'0"S
Cloncurry
FLINDERS HIGHWAY
BARKLY HIGHWAY
KP 2.680MMG
KP 3.671EE
KP 0MMG
KP 0EE
Dajarra Road Substation
KP 736.289WD
KP 0DM
KP 0DS
KP 730WD
KP 720WD
KP 10DM
KP 20DM
KP 10DS
Flinders-Norman Rivers
Tommy Creek
Morris Creek
Butcher Creek
Gum Creek
Courtenay Creek
Castle Creek
Pumpkin Gully
Corella River
Chimney Creek
Coppermine Creek
Figtree Creek
Cloncurry River
Snake Creek
Slaty Creek
Survey Sites
GHD 2020 Survey Site
GHD Fauna Survey Site (Terrestrial and Aquatic)
GHD Flora Survey Site
1st EIS Field Survey Site
1st SEIS Field Survey Site
Legend
Town/City
Kilometre Post
Proposed Substation
CopperString Alignment
2.5 km buffer (study area)
Railway
Highway
Secondary Road
Active Spring
Inactive Spring
Drainage Basin
Major watercourse
Minor watercourse
Watercourse Area/Lake/Reservoir
Wetland Area
0 1 2 3 4 5
Kilometres
Coordinate System
MGA1994 Zone 54\55
Notes/Data Sources
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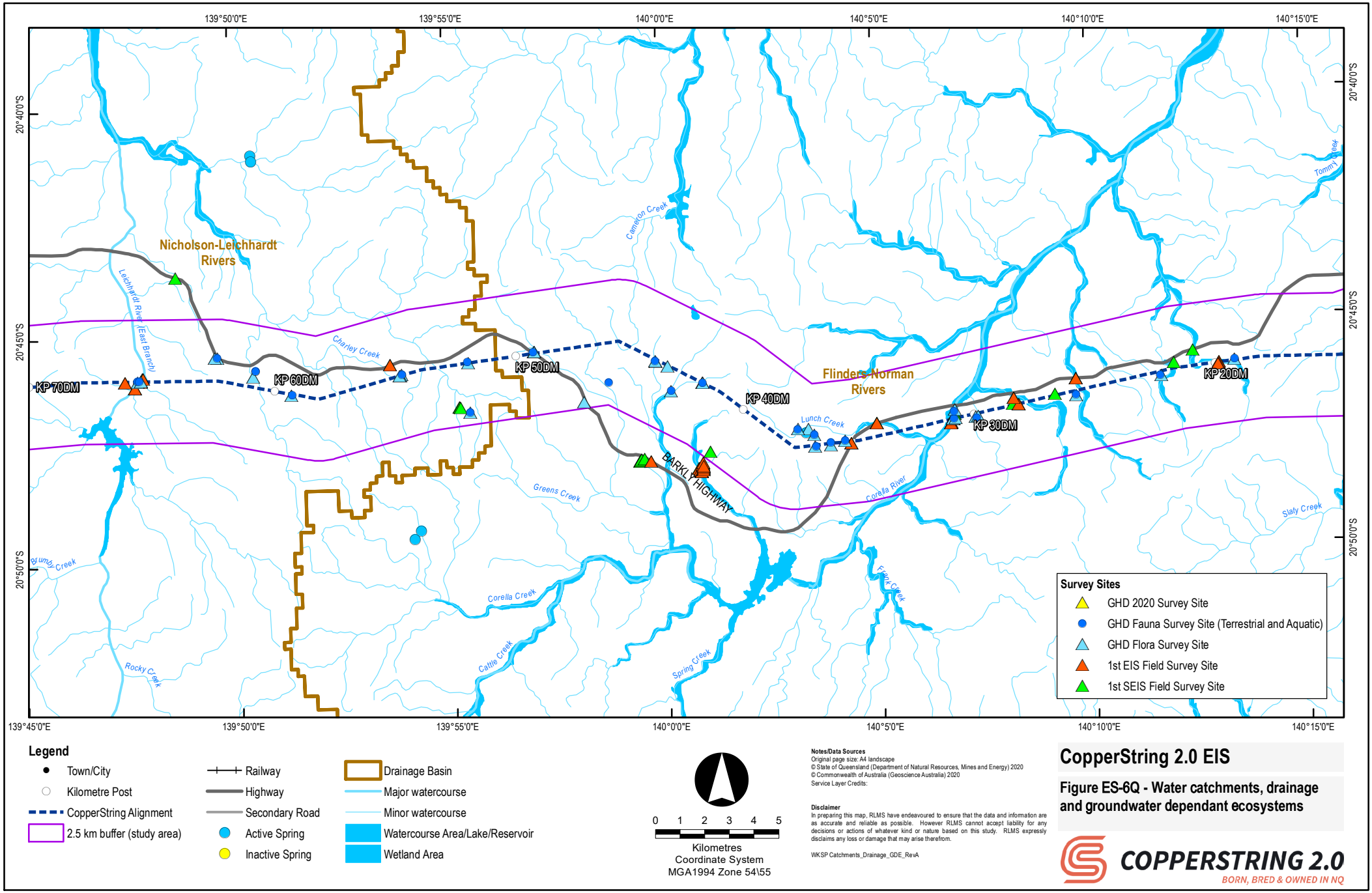
WKSP Catchments_Drainage_GDE_RevA
CopperString 2.0 EIS
Figure ES-6P - Water catchments, drainage and groundwater dependant ecosystems
COPPERSTRING 2.0
BORN, BRED & OWNED IN NQ



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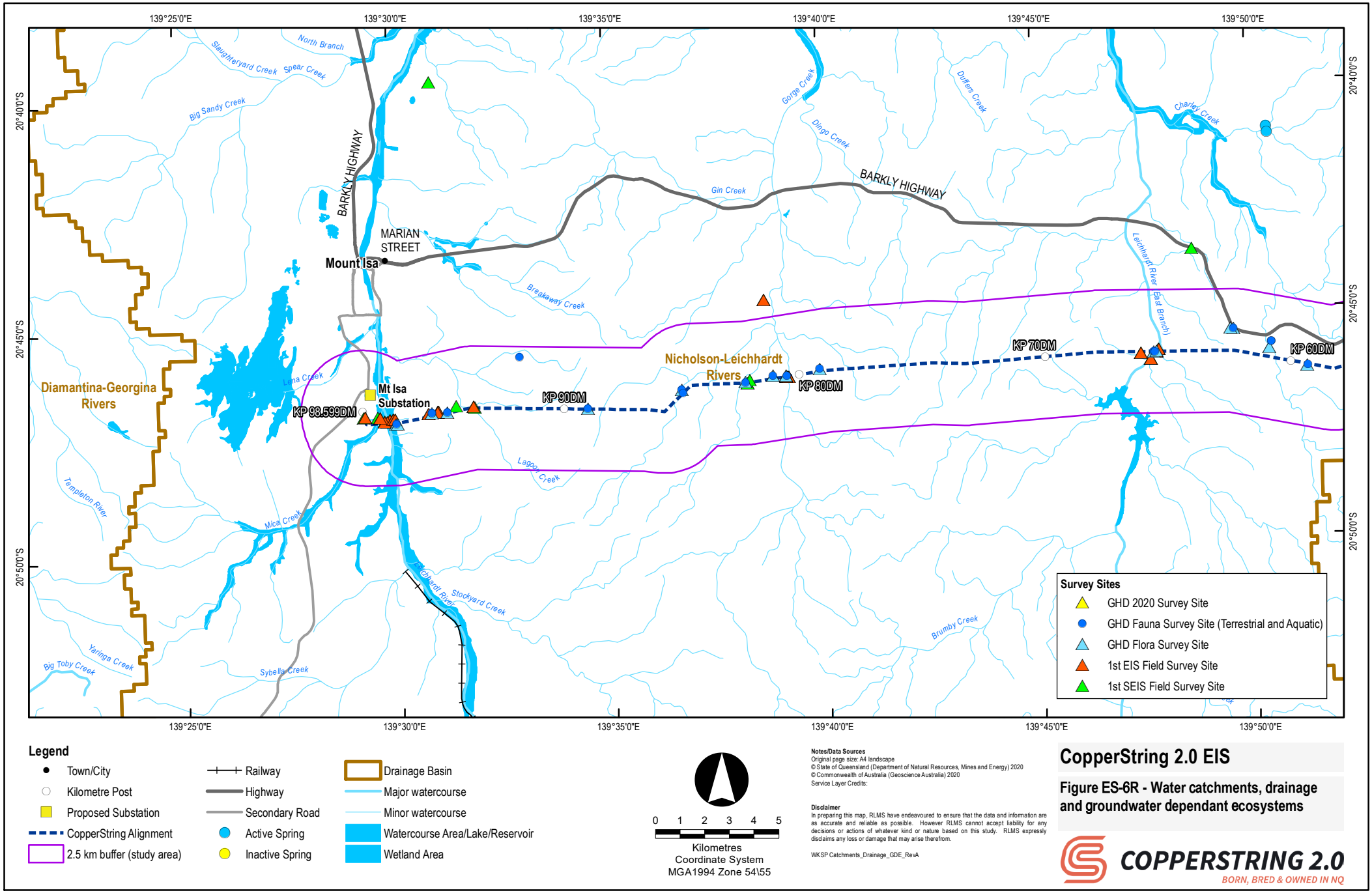
WKSP Catchments_Drainage_GDE_RevA

CopperString 2.0 EIS

Figure ES-6Q - Water catchments, drainage and groundwater dependant ecosystems

COPPERSTRING 2.0
BORN, BRED & OWNED IN NQ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139°45'0"E
139°50'0"E
20°40'0"S
20°45'0"S
20°50'0"S
North Branch
Slaughteryard Creek
Spear Creek
Big Sandy Creek
BARKLY HIGHWAY
MARIAN STREET
Mount Isa
Gorge Creek
Duffers Creek
Dingo Creek
Charley Creek
Gin Creek
Breakaway Creek
Leichhardt River (East Branch)
Diamantina-Georgina Rivers
Lena Creek
Mt Isa Substation
KP 98.599DM
KP 90DM
Nicholson-Leichhardt Rivers
KP 80DM
KP 70DM
KP 60DM
Lagoon Creek
Templeton River
Mica Creek
Leichhardt River
Stockyard Creek
Brumby Creek
Yaringa Creek
Big Toby Creek
Sybella Creek
Survey Sites
GHD 2020 Survey Site
GHD Fauna Survey Site (Terrestrial and Aquatic)
GHD Flora Survey Site
1st EIS Field Survey Site
1st SEIS Field Survey Site
Legend
Town/City
Kilometre Post
Proposed Substation
CopperString Alignment
2.5 km buffer (study area)
Railway
Highway
Secondary Road
Active Spring
Inactive Spring
Drainage Basin
Major watercourse
Minor watercourse
Watercourse Area/Lake/Reservoir
Wetland Area
0 1 2 3 4 5
Kilometres
Coordinate System
MGA1994 Zone 54\55
Notes/Data Sources
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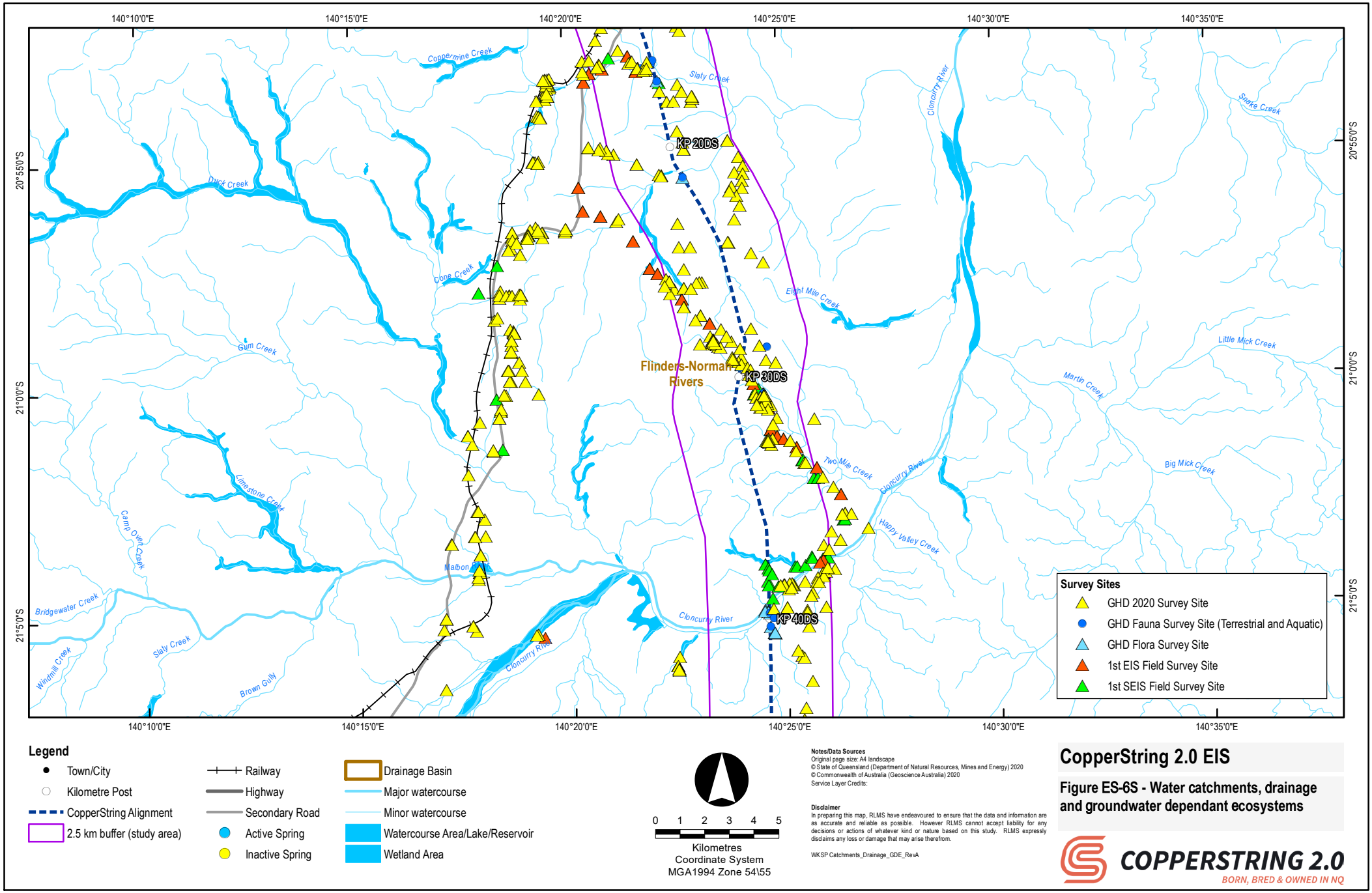
WKSP Catchments_Drainage_GDE_RevA
CopperString 2.0 EIS
Figure ES-6R - Water catchments, drainage and groundwater dependant ecosystems
COPPERSTRING 2.0
BORN, BRED & OWNED IN NQ



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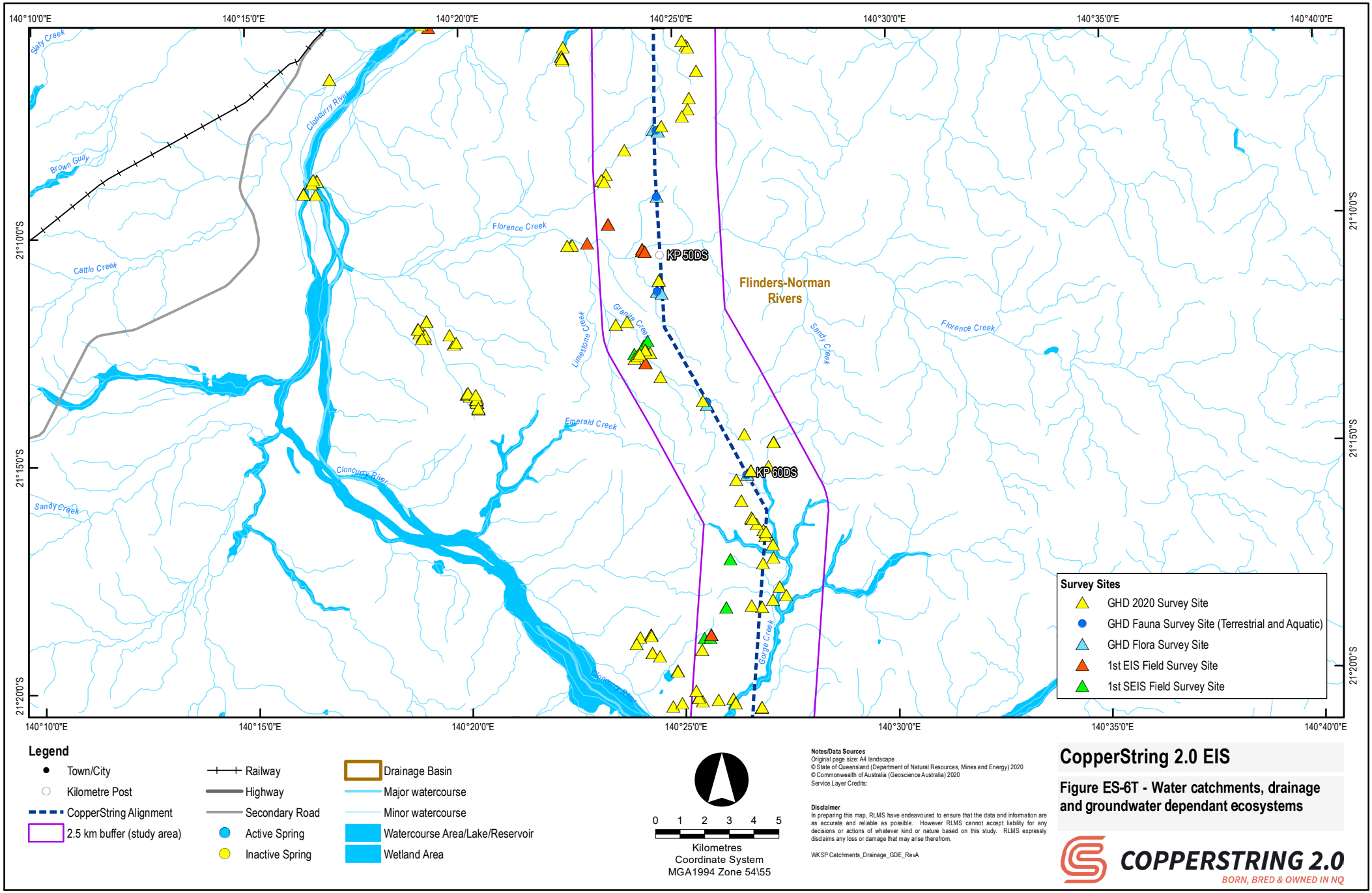
WKSP Catchments_Drainage_GDE_RevA

CopperString 2.0 EIS

Figure ES-6S - Water catchments, drainage and groundwater dependant ecosystems

COPPERSTRING 2.0
BORN, BRED & OWNED IN NQ



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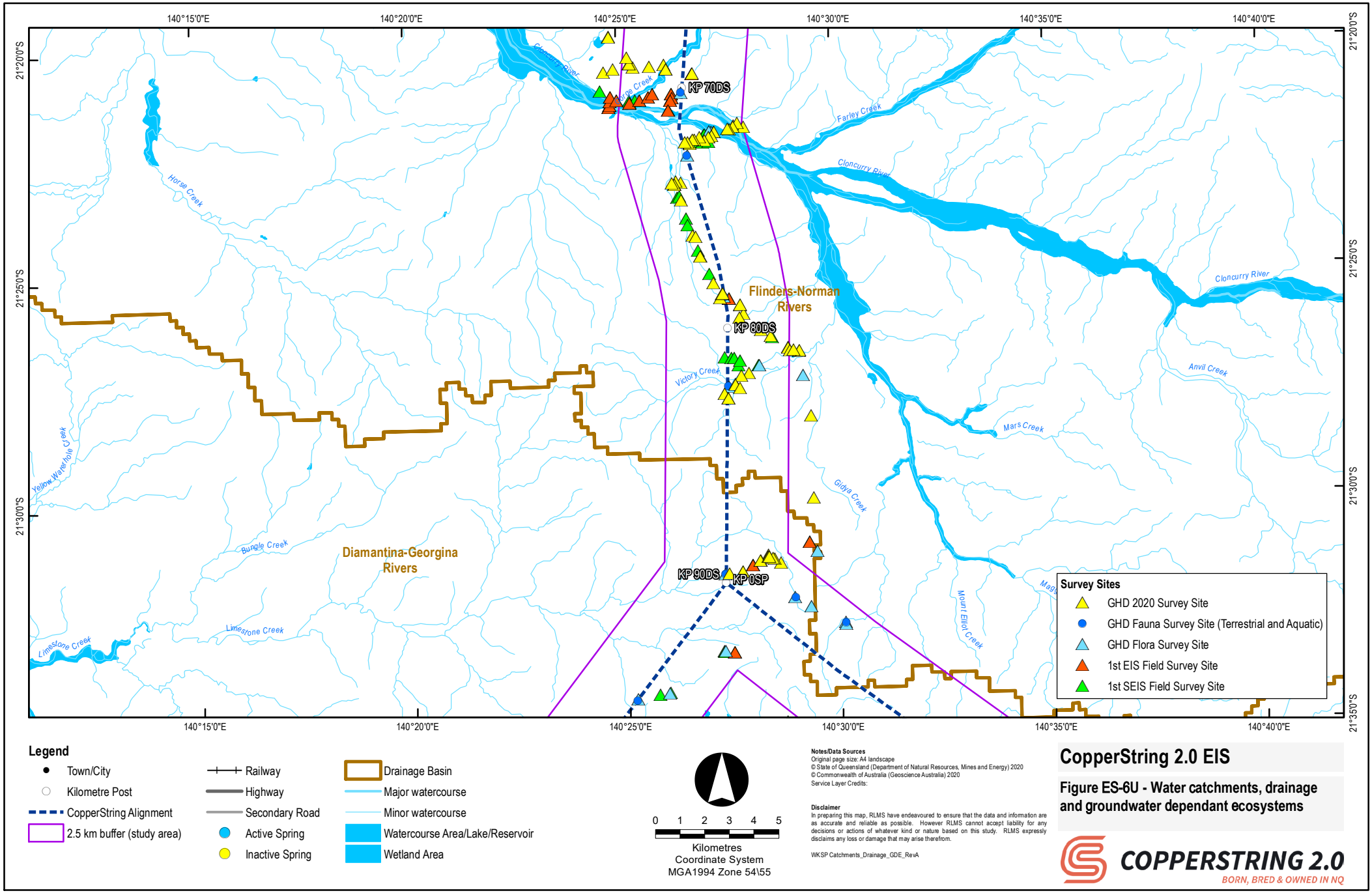
WKSP Catchments_Drainage_GDE_RevA

CopperString 2.0 EIS

Figure ES-6T - Water catchments, drainage and groundwater dependant ecosystems

COPPERSTRING 2.0
BORN, BRED & OWNED IN NQ



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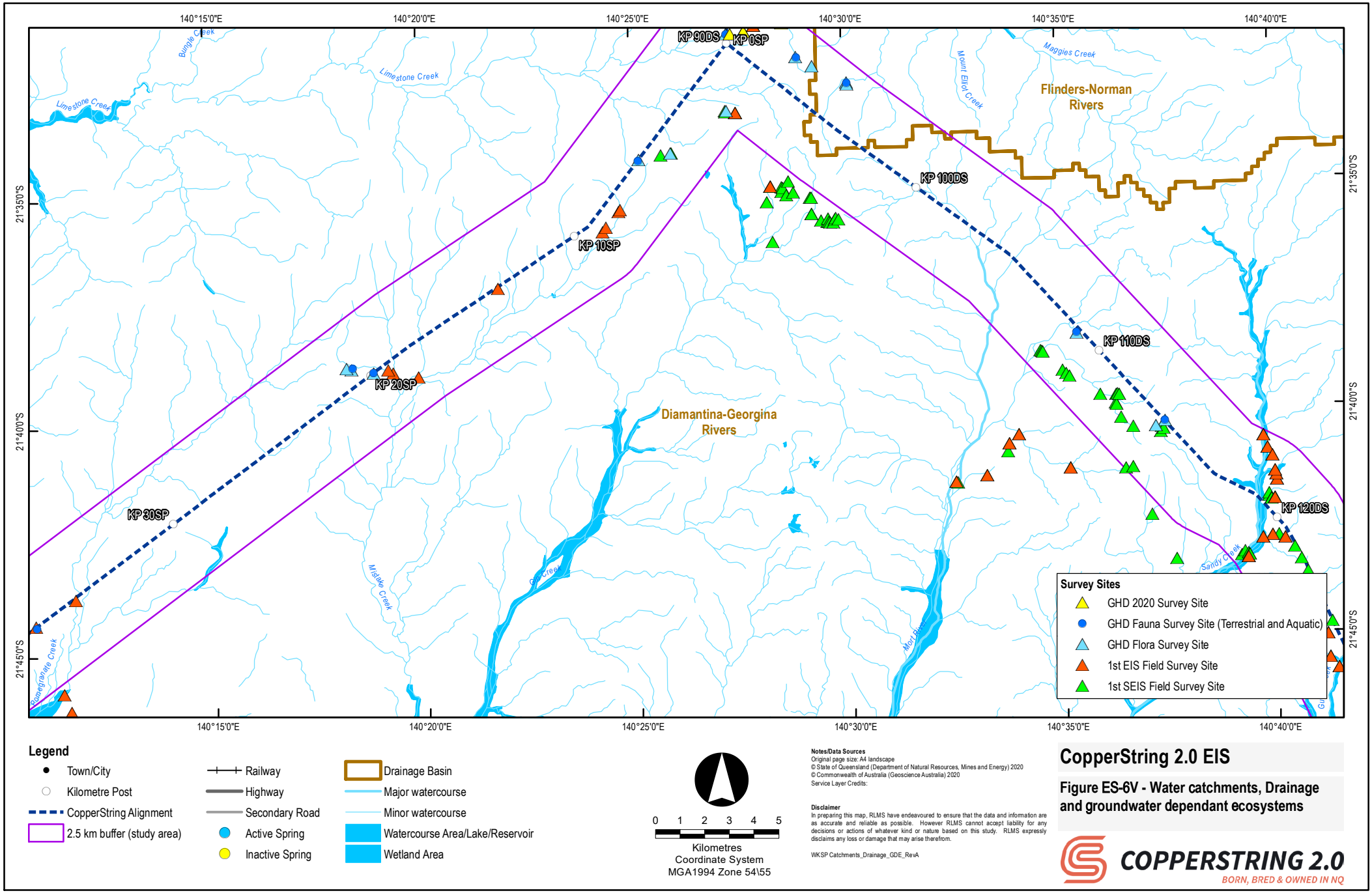
WKSP Catchments_Drainage_GDE_RevA

CopperString 2.0 EIS

Figure ES-6U - Water catchments, drainage and groundwater dependant ecosystems

COPPERSTRING 2.0
BORN, BRED & OWNED IN NQ



Legend

- Town/City
- Kilometre Post
- CopperString Alignment
- 2.5 km buffer (study area)
- Railway
- Highway
- Secondary Road
- Active Spring
- Inactive Spring
- Drainage Basin
- Major watercourse
- Minor watercourse
- Watercourse Area/Lake/Reservoir
- Wetland Area

0 1 2 3 4 5
Kilometres
Coordinate System
MGA1994 Zone 54\55

Notes/Data Sources
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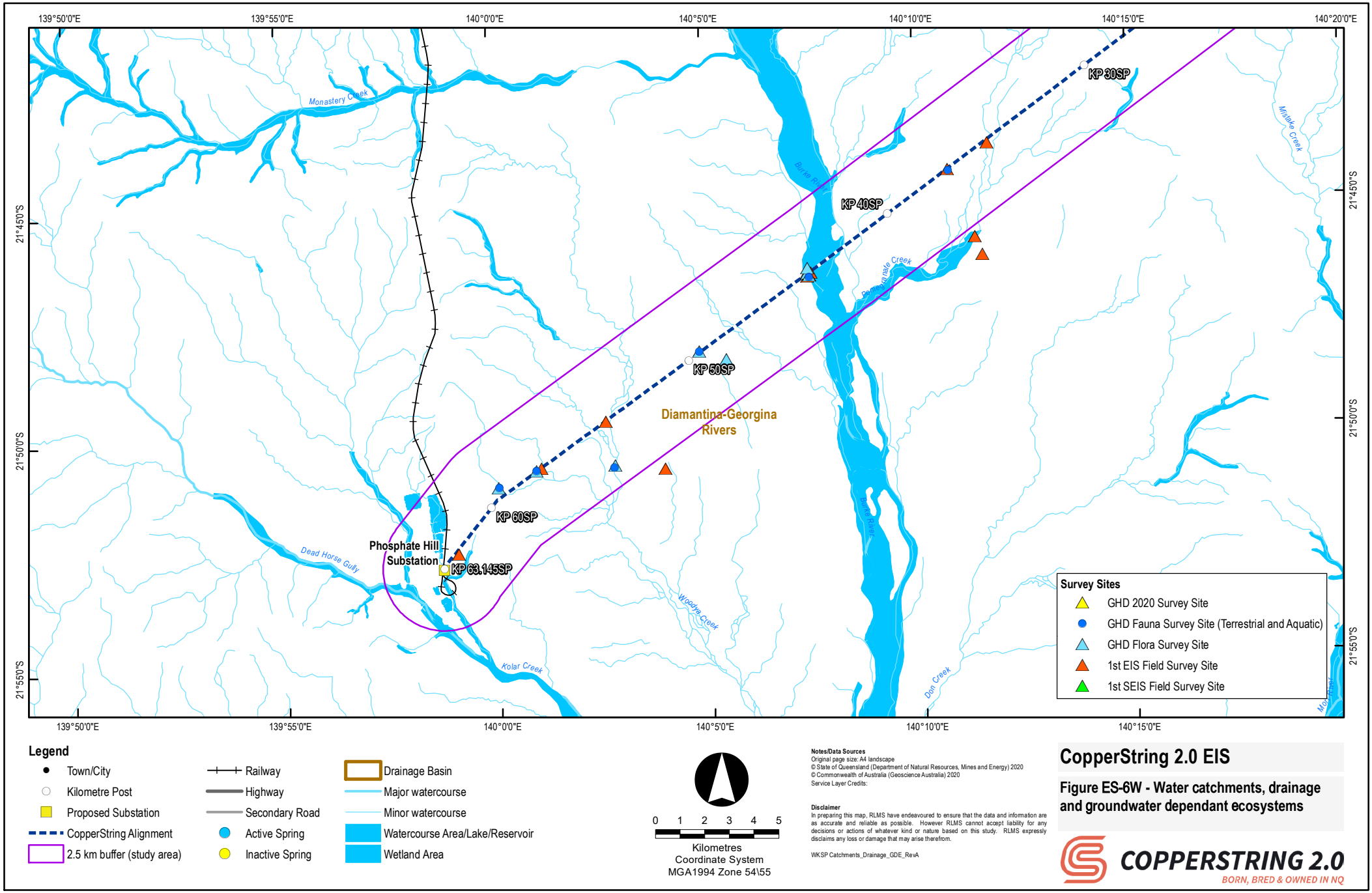
WKSP Catchments_Drainage_GDE_RevA

CopperString 2.0 EIS

Figure ES-6V - Water catchments, Drainage and groundwater dependant ecosystems

COPPERSTRING 2.0
BORN, BRED & OWNED IN NQ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140°20'0"E
21°45'0"S
21°50'0"S
21°55'0"S
KP 30SP
KP 40SP
KP 50SP
KP 60SP
KP 63.145SP
Phosphate Hill Substation
Diamantina-Georgina Rivers
Monastery Creek
Mistake Creek
Burke River
Pennsylvania Creek
Dead Horse Gully
Woodyra Creek
Kolar Creek
Don Creek
Survey Sites
GHD 2020 Survey Site
GHD Fauna Survey Site (Terrestrial and Aquatic)
GHD Flora Survey Site
1st EIS Field Survey Site
1st SEIS Field Survey Site
Legend
Town/City
Kilometre Post
Proposed Substation
CopperString Alignment
2.5 km buffer (study area)
Railway
Highway
Secondary Road
Active Spring
Inactive Spring
Drainage Basin
Major watercourse
Minor watercourse
Watercourse Area/Lake/Reservoir
Wetland Area
0 1 2 3 4 5
Kilometres
Coordinate System
MGA1994 Zone 54\55
Notes/Data Sources
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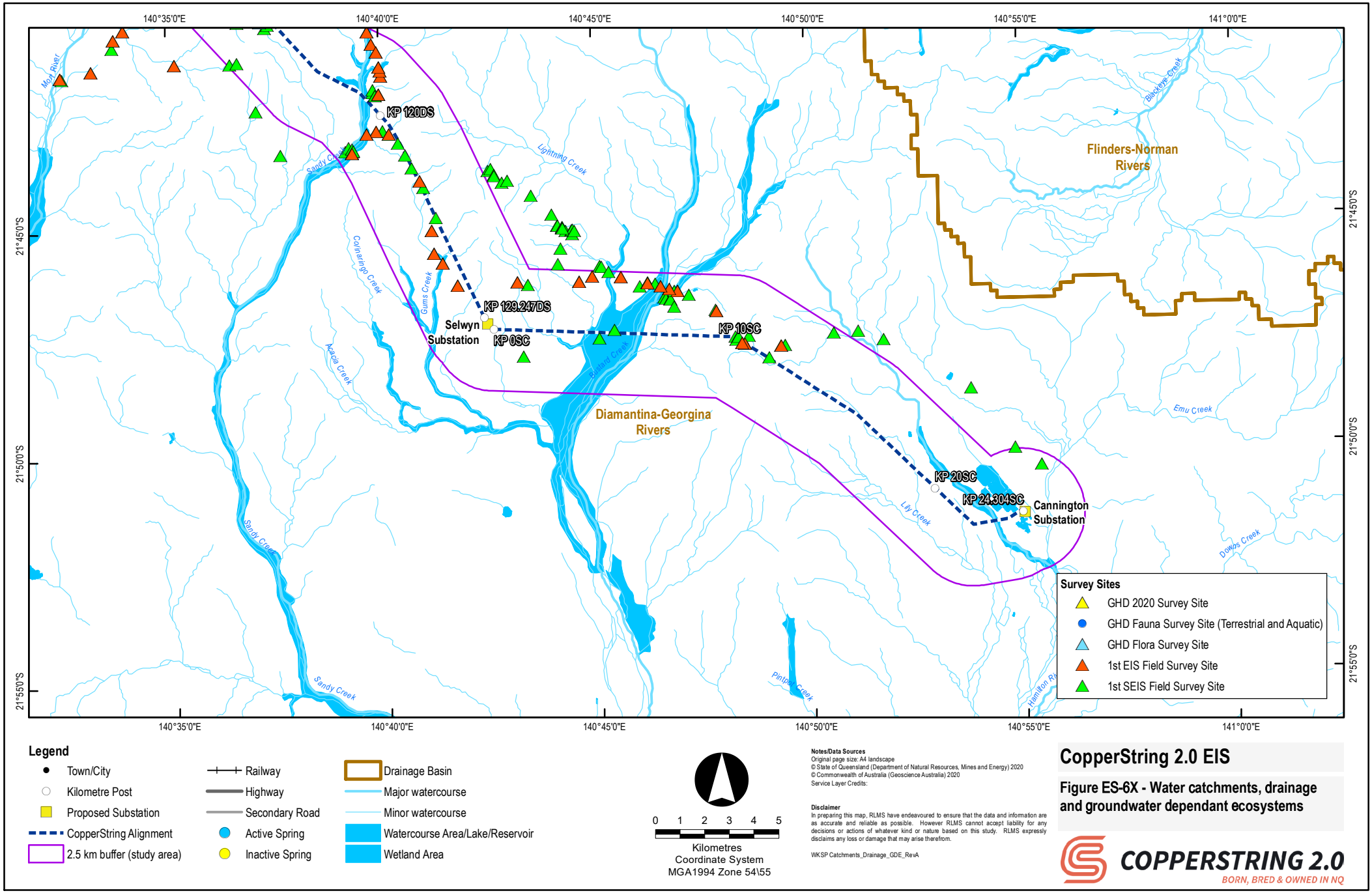
WKSP Catchments_Drainage_GDE_RevA
CopperString 2.0 EIS
Figure ES-6W - Water catchments, drainage and groundwater dependant ecosystems
COPPERSTRING 2.0
BORN, BRED & OWNED IN NQ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21°50'0"S
21°55'0"S
KP 120DS
KP 129.247DS
Selwyn Substation
KP 0SC
KP 10SC
KP 20SC
KP 24.304SC
Cannington Substation
Flinders-Norman Rivers
Diamantina-Georgina Rivers
Mort River
Sandy Creek
Lightning Creek
Corriangpo Creek
Gums Creek
Acacia Creek
Mistard Creek
Blackeye Creek
Emu Creek
Lily Creek
Dowas Creek
Pintpin Creek
Survey Sites
GHD 2020 Survey Site
GHD Fauna Survey Site (Terrestrial and Aquatic)
GHD Flora Survey Site
1st EIS Field Survey Site
1st SEIS Field Survey Site
Legend
Town/City
Kilometre Post
Proposed Substation
CopperString Alignment
2.5 km buffer (study area)
Railway
Highway
Secondary Road
Active Spring
Inactive Spring
Drainage Basin
Major watercourse
Minor watercourse
Watercourse Area/Lake/Reservoir
Wetland Area
0 1 2 3 4 5
Kilometres
Coordinate System
MGA1994 Zone 54\55
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WKSP Catchments_Drainage_GDE_RevA
CopperString 2.0 EIS
Figure ES-6X - Water catchments, drainage and groundwater dependant ecosystems
COPPERSTRING 2.0
BORN, BRED & OWNED IN NQ

Air quality and greenhouse gas

Potentially affected sensitive receptors include residential premises and other buildings which are in the vicinity of the corridor selection. For the study of the air quality impact assessment, residences within two kilometres of the centre line of the corridor selection or substation site were considered. The review identified 57 sensitive receptors, 55 of these being residential premises, for the purposes of the air quality assessment (Figure ES-7). 46 of the 57 identified sensitive receptors are greater than 750 m from the proposed transmission line. The exceptions to this include 11 premises, which are existing workers accommodation located between approximately 150 m and 350 m of the existing Mount Isa power stations and electrical substations.

There are two distinct seasons in the Project area, the wet season (October to May) and the dry season through the middle of the year. Rainfall peaks at most BoM stations in January or February and is relatively low from April to September, before increasing again in October.

During the wet season, dust impacts from construction of the Project may be mitigated by the natural wetting of open areas or other dust sources from seasonal rain. During the dry season however, mitigation measures may be required to reduce dust impacts associated with construction of the Project.

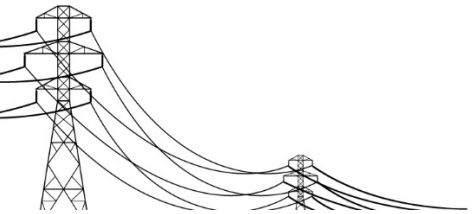
No significant risk areas have been identified in terms of air quality. Although the background air quality in Mount Isa is demonstrably high at times, the Project is expected over its lifetime to reduce overall emissions associated with power generation.

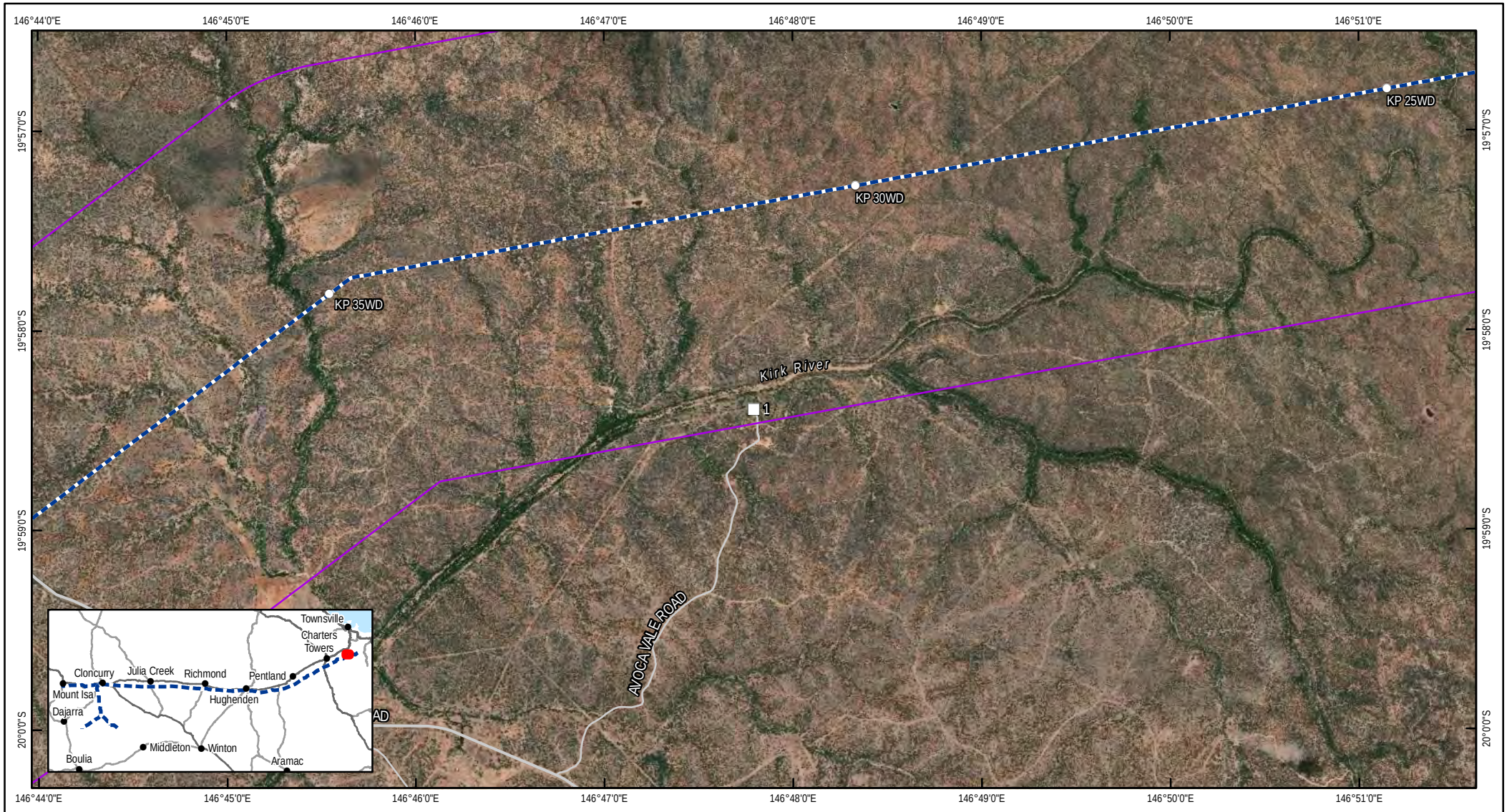
The assessment of air quality indicated that the Project may be constructed and operated without significant impact on sensitive receptors as long as appropriate routine management practices are implemented and siting studies for consolidated construction actives (such as at laydown areas) are completed.

The placement of concrete batching plants at laydown areas should consider the proximity of sensitive receptors and ensure that adequate buffer distances are maintained or other air quality mitigation measures are adopted during strong wind conditions.

Construction activities have the greatest potential for impact, although this is mitigated by the duration of construction in any particular location. Operation is not expected to result in any impacts on the environmental values of receptors near the corridor selection or substations.

Decommissioning would be expected to be similar to construction of the transmission line and substations. Routine mitigation activities to reduce the impact of dust and air emissions during demolition / disassembly would apply where dust emissions are expected to occur.





Legend

- Sensitive Receptor within 2km
- Kilometre Post
- CopperString Alignment
- 2 km buffer
- Railway
- Highway
- Secondary Road
- Local Connector Road
- Street

0 500 1,000 1,500

Metres

Coordinate System
GDA 1994 MGA Zone 55

Notes/Data Sources
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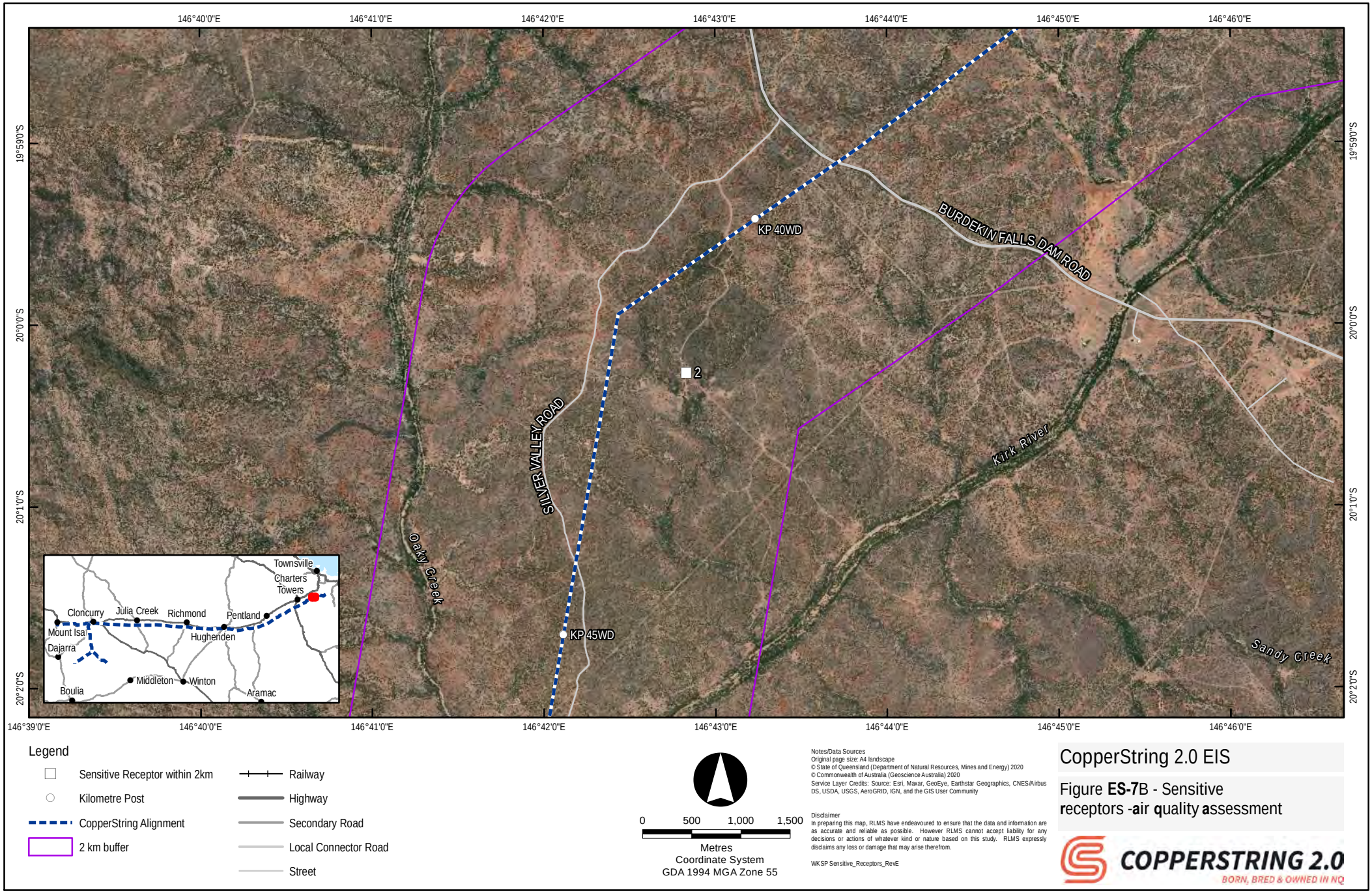
WKSP Sensitive_Receptors_RevE

CopperString 2.0 EIS

Figure **ES-7**A - Sensitive **r**eceptors -**a**ir **q**uality **a**ssessment

COPPERSTRING 2.0
BORN, BRED & OWNED IN NQ



Legend

- Sensitive Receptor within 2km
- Kilometre Post
- CopperString Alignment
- 2 km buffer
- Railway
- Highway
- Secondary Road
- Local Connector Road
- Street

0 500 1,000 1,500

Metres

Coordinate System
GDA 1994 MGA Zone 55

Notes/Data Sources
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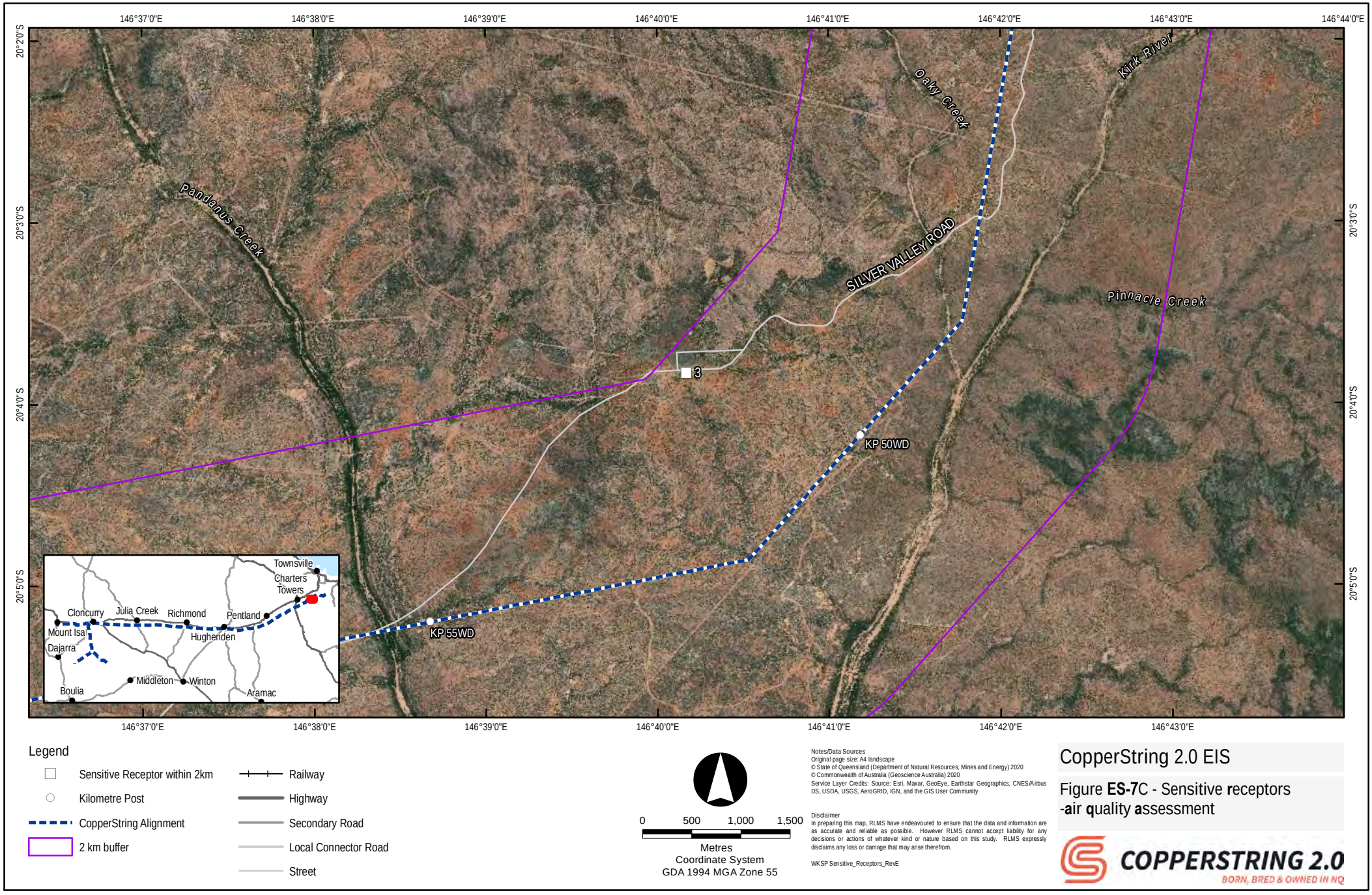
WKSP Sensitive_Receptors_RevE

CopperString 2.0 EIS

Figure **ES-7**B - Sensitive receptors -**a**ir **q**uality **a**ssessment

COPPERSTRING 2.0
BORN, BRED & OWNED IN NQ



Legend

- Sensitive Receptor within 2km
- Kilometre Post
- CopperString Alignment
- 2 km buffer
- Railway
- Highway
- Secondary Road
- Local Connector Road
- Street

0 500 1,000 1,500

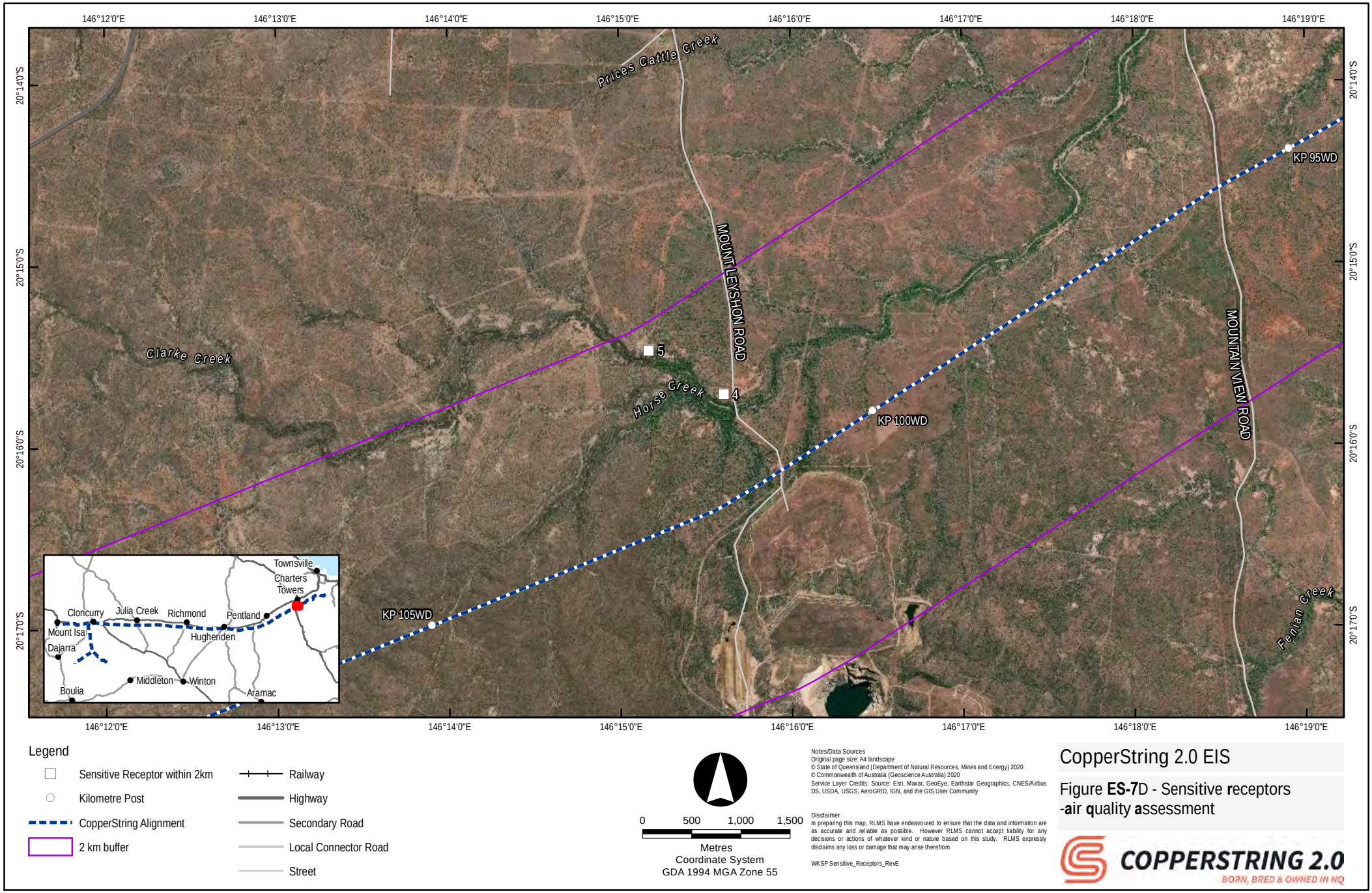
Metres
Coordinate System
GDA 1994 MGA Zone 55

WKSP Sensitive_Receptors_RevE

CopperString 2.0 EIS

Figure **ES-7**C - Sensitive **r**eceptors **-a**ir **q**uality **a**ssessment

COPPERSTRING 2.0
BORN, BRED & OWNED IN NQ



Legend

- Sensitive Receptor within 2km
- Kilometre Post
- CopperString Alignment
- 2 km buffer
- Railway
- Highway
- Secondary Road
- Local Connector Road
- Street

0 500 1,000 1,500

Metres
Coordinate System
GDA 1994 MGA Zone 55

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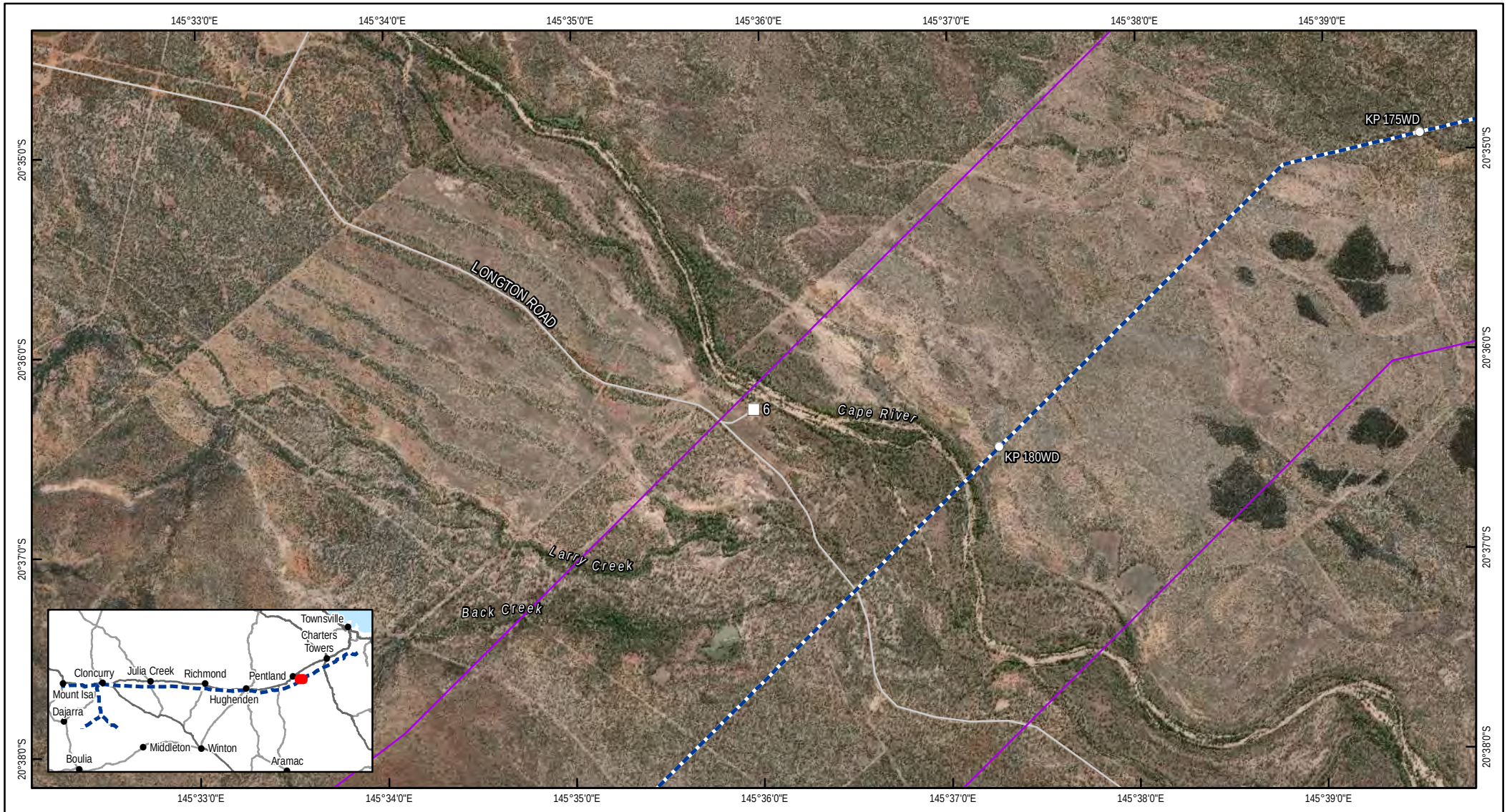
WKSP Sensitive_Receptors_RevE

CopperString 2.0 EIS

Figure **ES-7**D - Sensitive **r**eceptors **-a**ir **q**uality **a**ssessment

COPPERSTRING 2.0
BORN, BRED & OWNED IN NQ



Legend

- Sensitive Receptor within 2km
- Kilometre Post
- CopperString Alignment
- 2 km buffer
- Railway
- Highway
- Secondary Road
- Local Connector Road
- Street

0 500 1,000 1,500

Metres

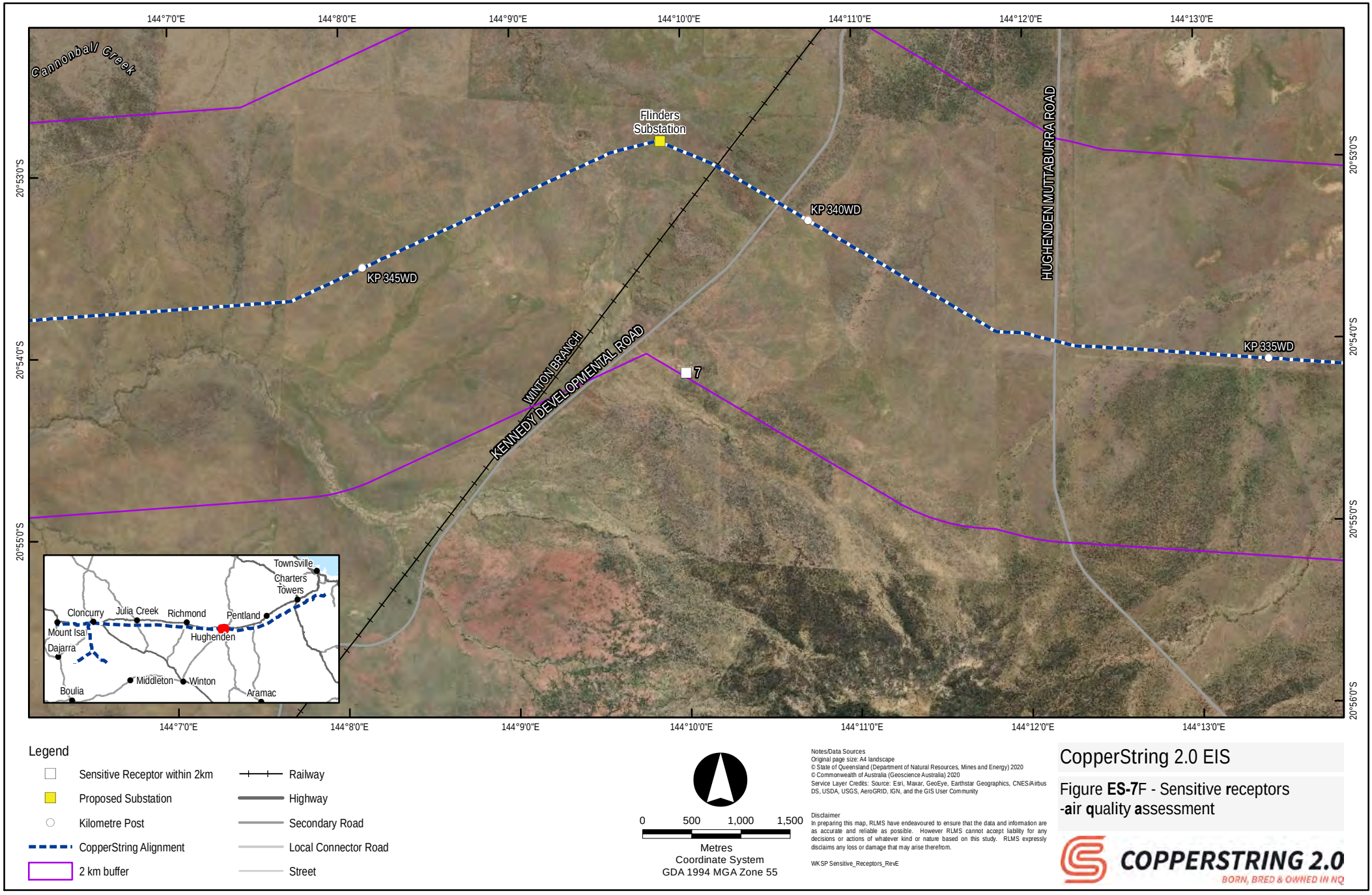
Coordinate System
GDA 1994 MGA Zone 55

WKSP Sensitive_Receptors_RevE

CopperString 2.0 EIS

Figure **ES-7**E - Sensitive **r**eceptors **-a**ir **q**uality **a**ssessment

COPPERSTRING 2.0
BORN, BRED & OWNED IN NQ



Legend

- Sensitive Receptor within 2km
- Proposed Substation
- Kilometre Post
- CopperString Alignment
- 2 km buffer
- Railway
- Highway
- Secondary Road
- Local Connector Road
- Street

0 500 1,000 1,500

Metres

Coordinate System

GDA 1994 MGA Zone 55

Notes/Data Sources

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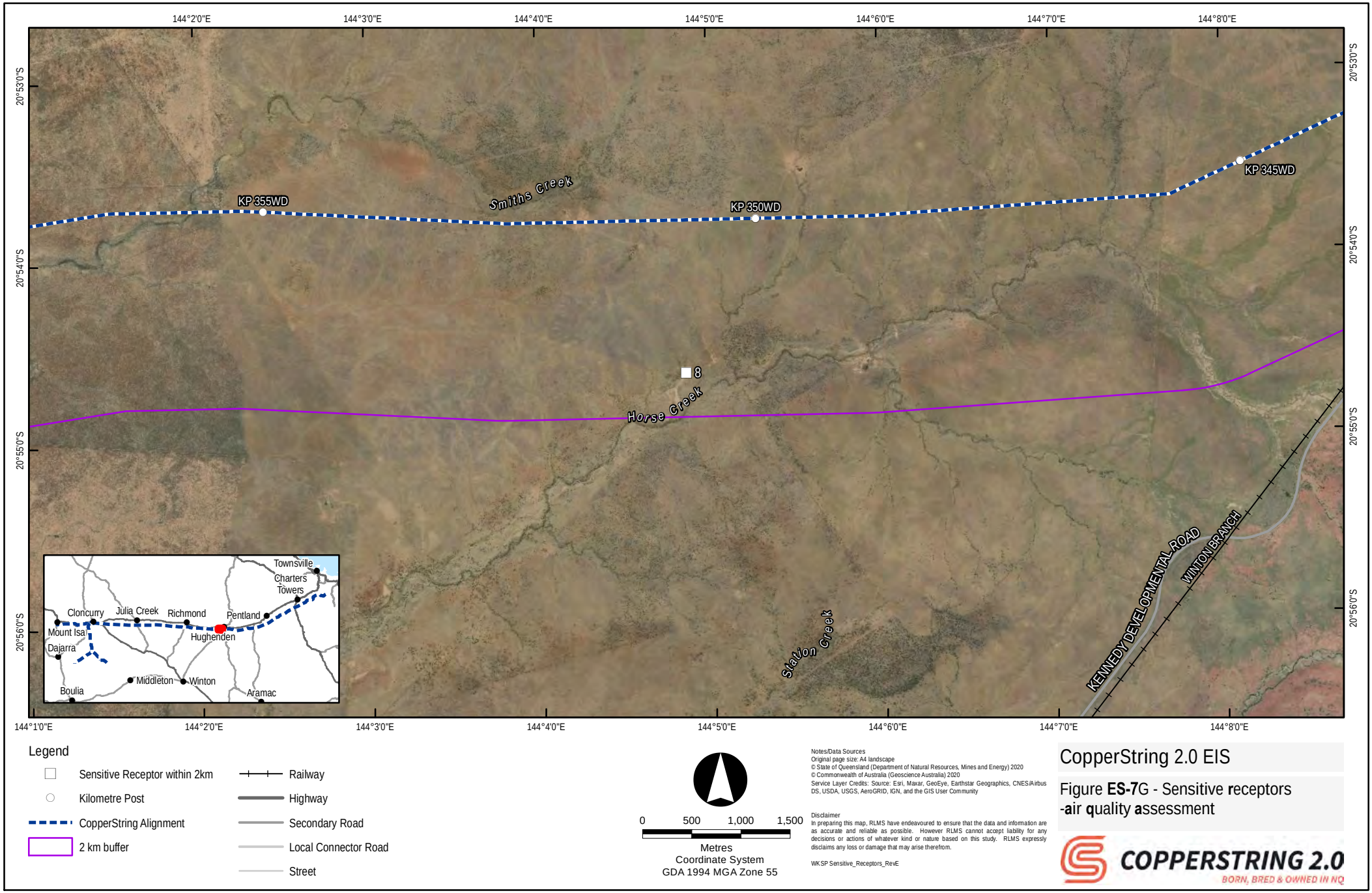
WKSP Sensitive_Receptors_RevE

CopperString 2.0 EIS

Figure **ES-7**F - Sensitive **r**eceptors -**a**ir **q**uality **a**ssessment

COPPERSTRING 2.0

BORN, BRED & OWNED IN NQ



Notes/Data Sources
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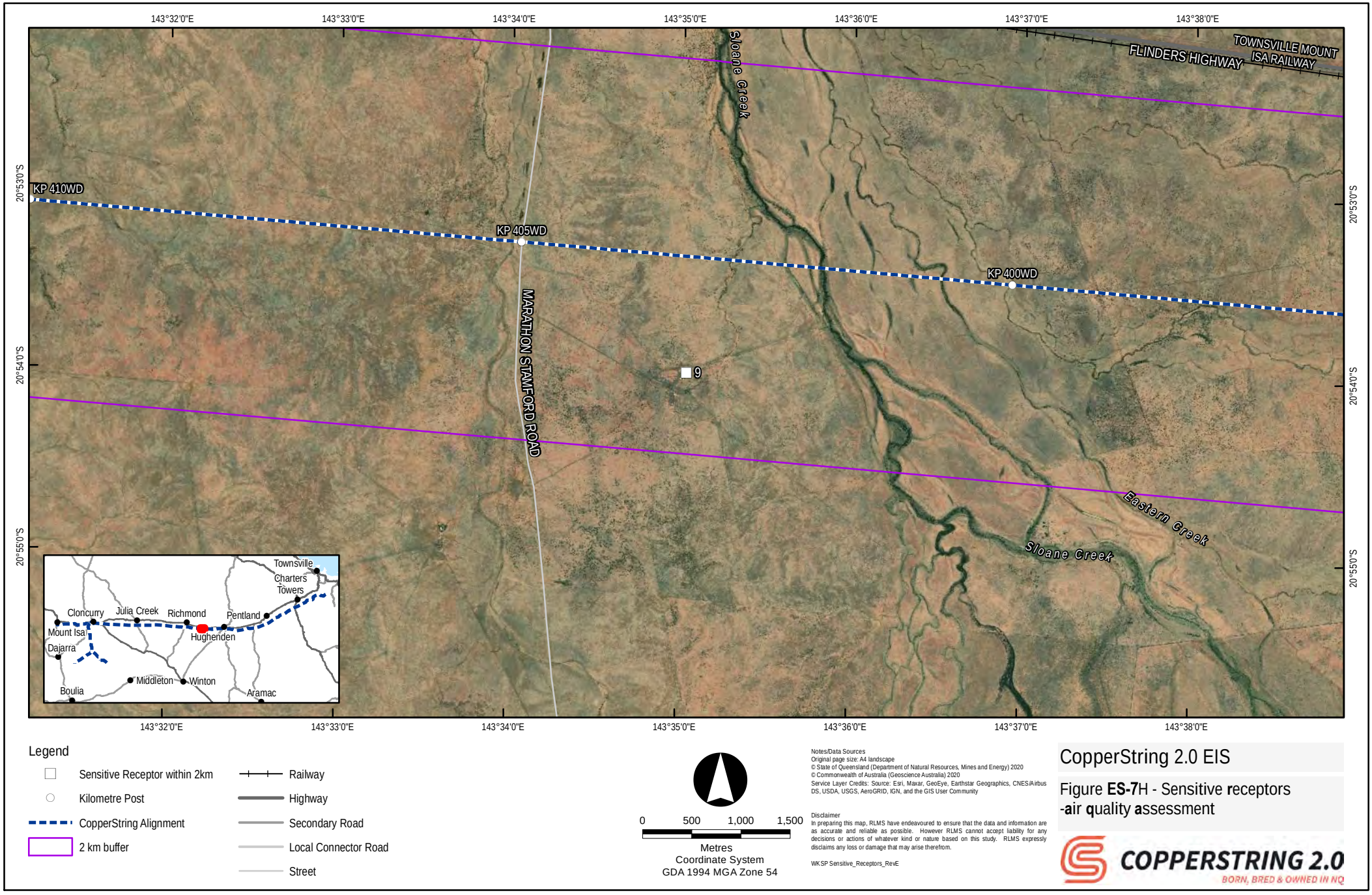
WKSP Sensitive_Receptors_RevE

CopperString 2.0 EIS

Figure **ES-7**G - Sensitive **r**eceptors -**a**ir **q**uality **a**ssessment

COPPERSTRING 2.0
BORN, BRED & OWNED IN NQ



Legend

- Sensitive Receptor within 2km
- Kilometre Post
- CopperString Alignment
- 2 km buffer
- Railway
- Highway
- Secondary Road
- Local Connector Road
- Street

0 500 1,000 1,500

Metres

Coordinate System
GDA 1994 MGA Zone 54

Notes/Data Sources
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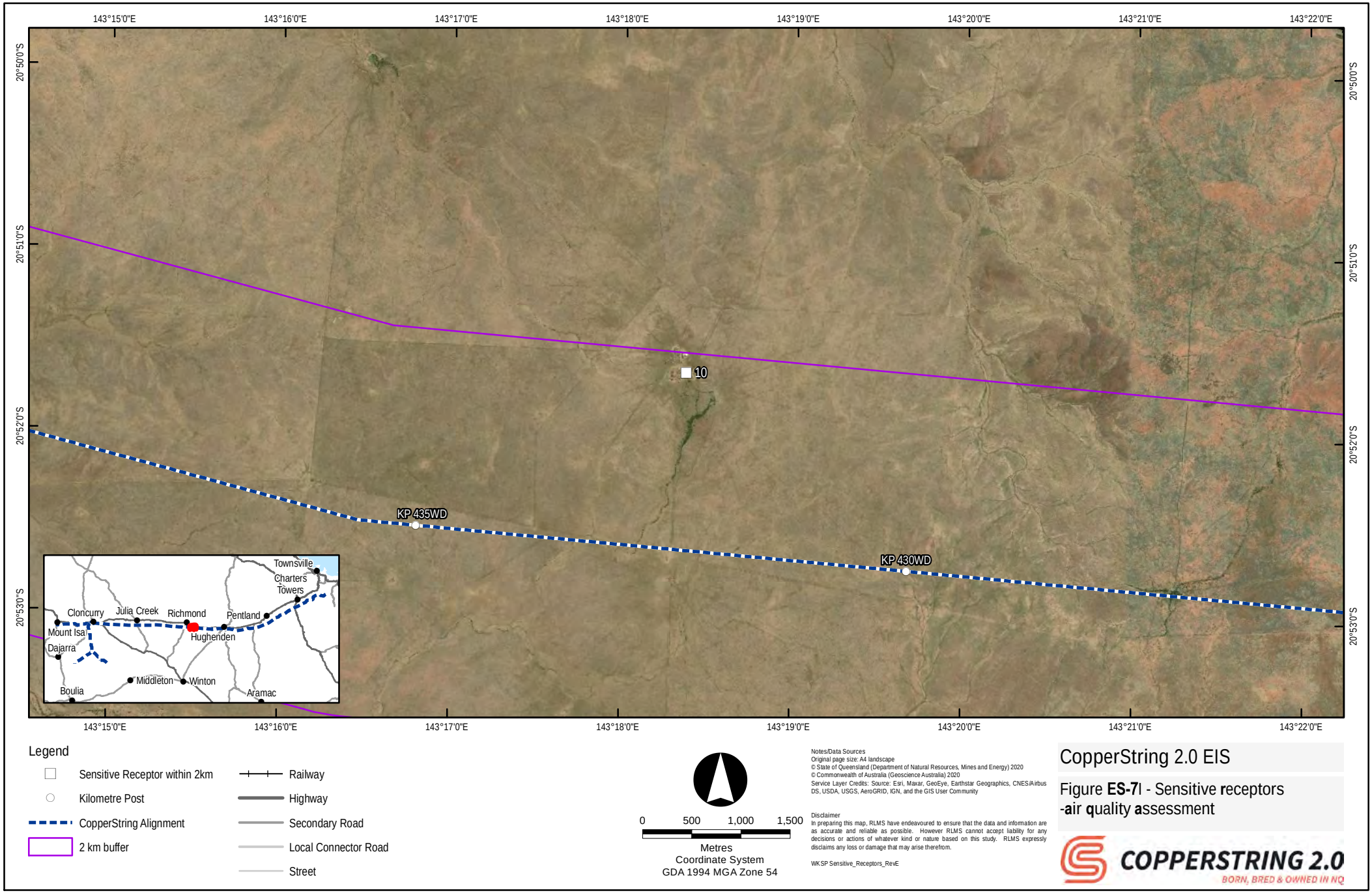
WKSP Sensitive_Receptors_RevE

CopperString 2.0 EIS

Figure **ES-7**H - Sensitive **r**eceptors **-a**ir **q**uality **a**ssessment

COPPERSTRING 2.0
BORN, BRED & OWNED IN NQ



Legend

- Sensitive Receptor within 2km
- Kilometre Post
- CopperString Alignment
- 2 km buffer
- Railway
- Highway
- Secondary Road
- Local Connector Road
- Street

0 500 1,000 1,500

Metres

Coordinate System
GDA 1994 MGA Zone 54

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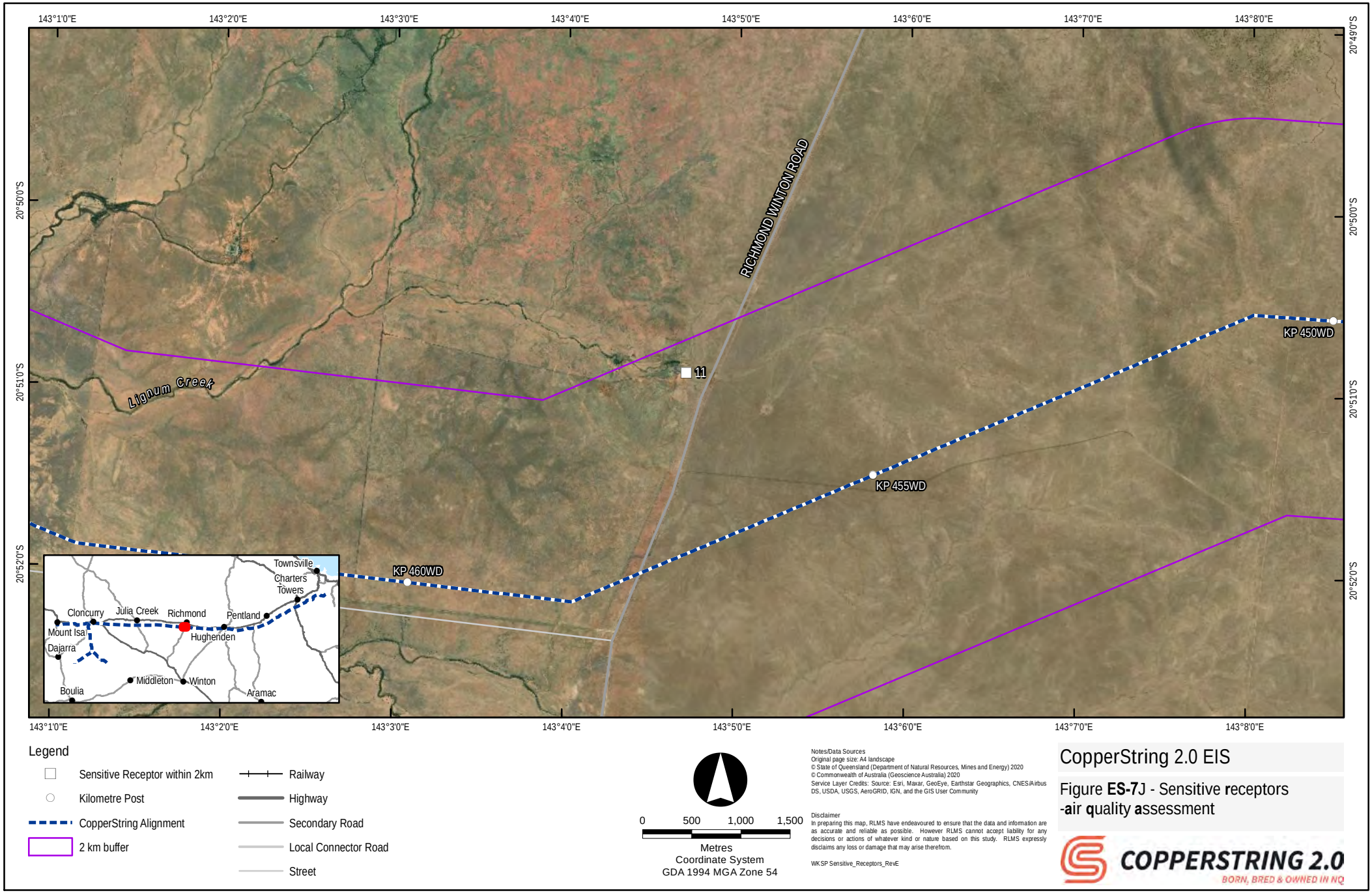
WKSP Sensitive_Receptors_RevE

CopperString 2.0 EIS

Figure **ES-7**I - Sensitive **r**eceptors -**a**ir **q**uality **a**ssessment

COPPERSTRING 2.0
BORN, BRED & OWNED IN NQ



Legend

- Sensitive Receptor within 2km
- Kilometre Post
- CopperString Alignment
- 2 km buffer
- Railway
- Highway
- Secondary Road
- Local Connector Road
- Street

0 500 1,000 1,500

Metres

Coordinate System
GDA 1994 MGA Zone 54

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WKSP Sensitive_Receptors_RevE

CopperString 2.0 EIS

Figure **ES-7**J - Sensitive **r**eceptors -**a**ir **q**uality **a**ssessment

COPPERSTRING 2.0
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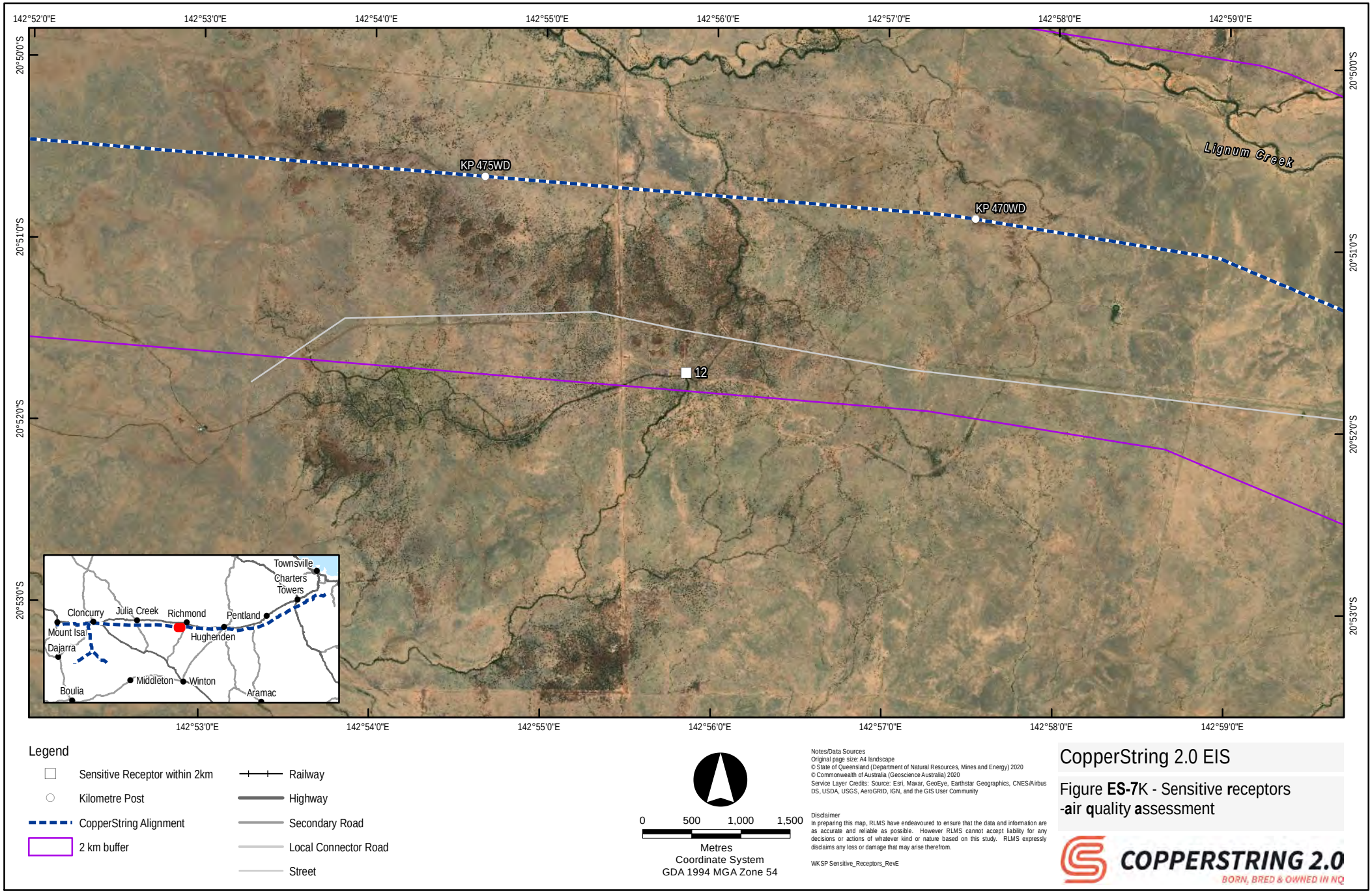

Legend

- Sensitive Receptor within 2km
- Kilometre Post
- CopperString Alignment
- 2 km buffer
- Railway
- Highway
- Secondary Road
- Local Connector Road
- Street

0 500 1,000 1,500

Metres

Coordinate System
GDA 1994 MGA Zone 54

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WKSP Sensitive_Receptors_RevE

CopperString 2.0 EIS

Figure **ES-7**K - Sensitive **r**eceptors -**a**ir **q**uality **a**ssessment

COPPERSTRING 2.0
BORN, BRED & OWNED IN NQ

Legend

- Sensitive Receptor within 2km
- Kilometre Post
- CopperString Alignment
- 2 km buffer
- Railway
- Highway
- Secondary Road
- Local Connector Road
- Street

0 500 1,000 1,500

Metres

Coordinate System
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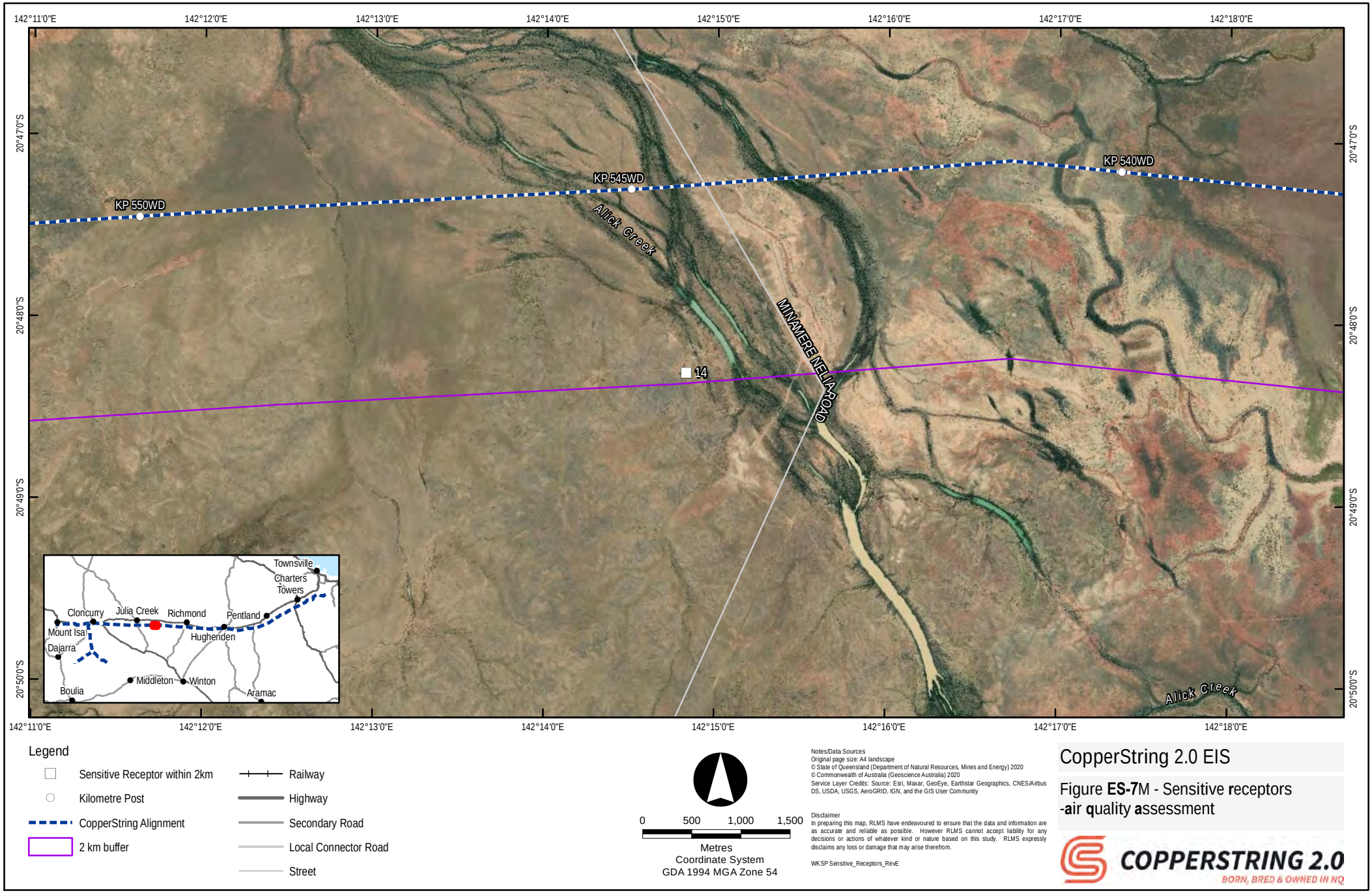
WKSP Sensitive_Receptors_RevE

CopperString 2.0 EIS

Figure **ES-7**L - Sensitive **r**eceptors -**a**ir **q**uality **a**ssessment

COPPERSTRING 2.0
BORN, BRED & OWNED IN NQ



Legend

- Sensitive Receptor within 2km
- Kilometre Post
- CopperString Alignment
- 2 km buffer
- Railway
- Highway
- Secondary Road
- Local Connector Road
- Street

0 500 1,000 1,500

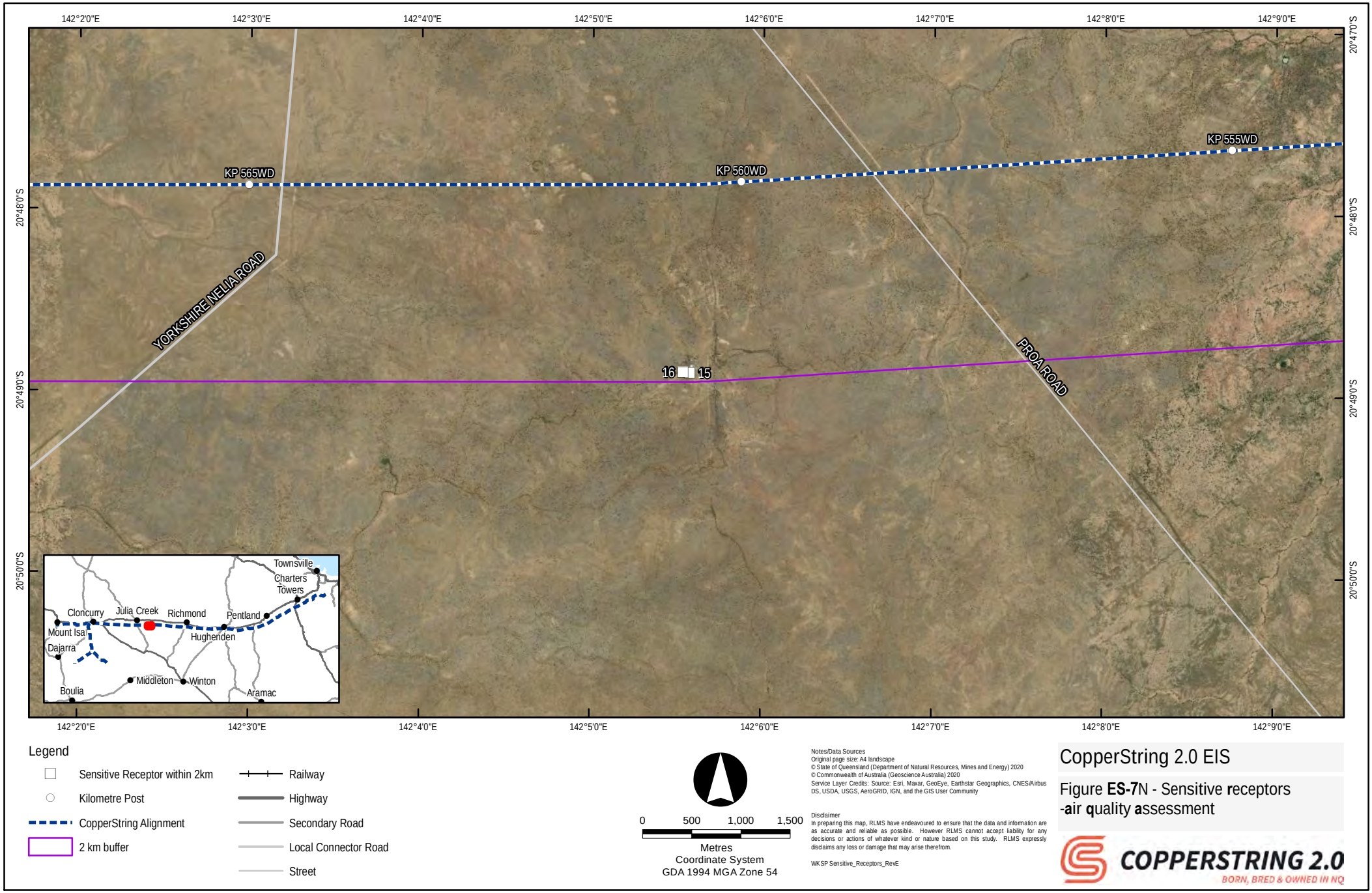
Metres

Coordinate System
GDA 1994 MGA Zone 54

CopperString 2.0 EIS

Figure **ES-7**M - Sensitive **r**eceptors **-a**ir **q**uality **a**ssessment

COPPERSTRING 2.0
BORN, BRED & OWNED IN NQ



Legend

- Sensitive Receptor within 2km
- Kilometre Post
- CopperString Alignment
- 2 km buffer
- Railway
- Highway
- Secondary Road
- Local Connector Road
- Street

0 500 1,000 1,500

Metres

Coordinate System
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WKSP Sensitive_Receptors_RevE

CopperString 2.0 EIS

Figure **ES-7**N - Sensitive **r**eceptors -**a**ir **q**uality **a**ssessment

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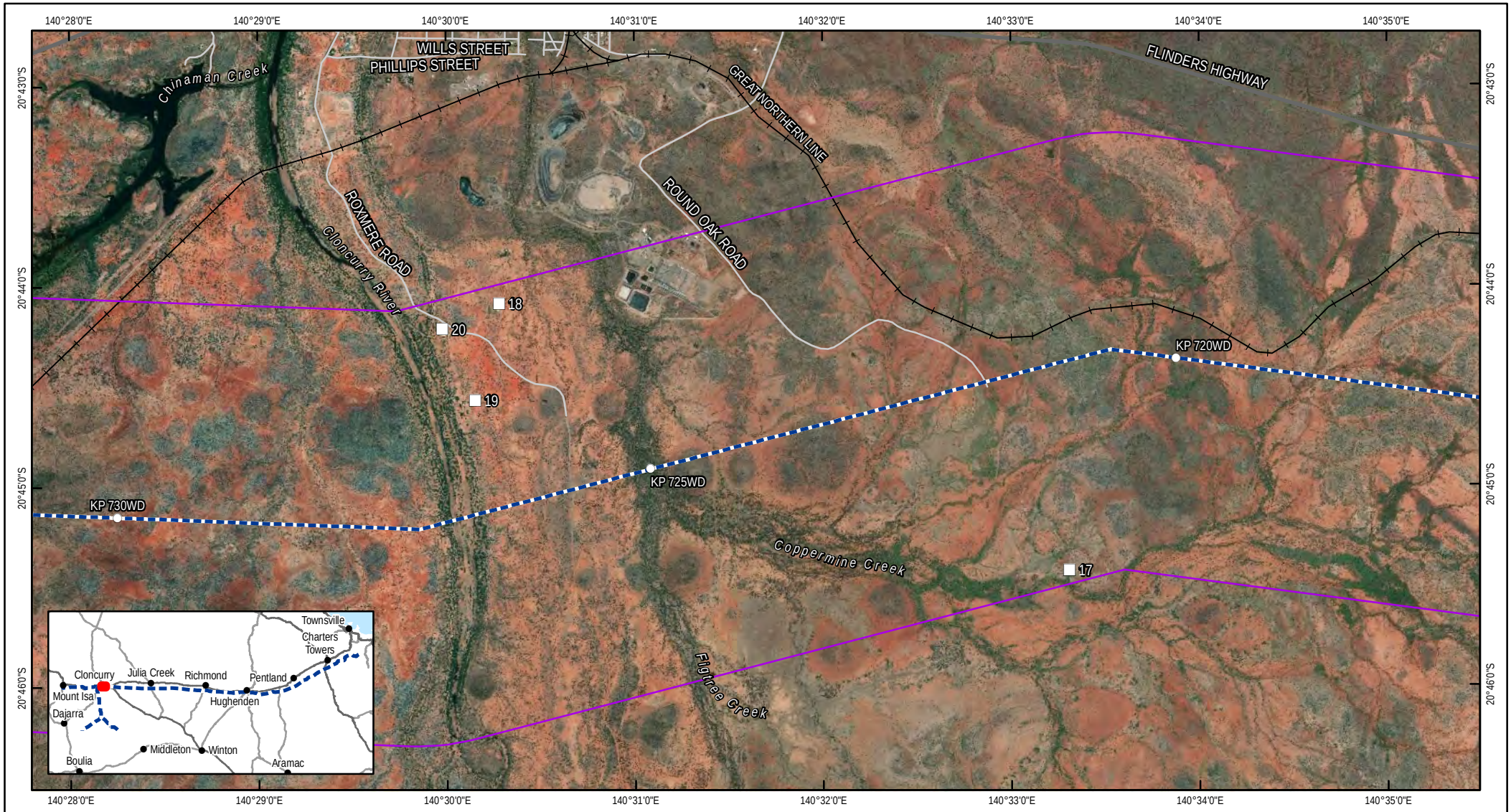
BORN, BRED & OWNED IN NQ



Legend

- Sensitive Receptor within 2km
- Kilometre Post
- CopperString Alignment
- 2 km buffer
- Railway
- Highway
- Secondary Road
- Local Connector Road
- Street

0 500 1,000 1,500

Metres

Coordinate System
GDA 1994 MGA Zone 54

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WKSP Sensitive_Receptors_RevE

CopperString 2.0 EIS

Figure **ES-7**O - Sensitive **r**eceptors **-air q**uality **a**ssessment

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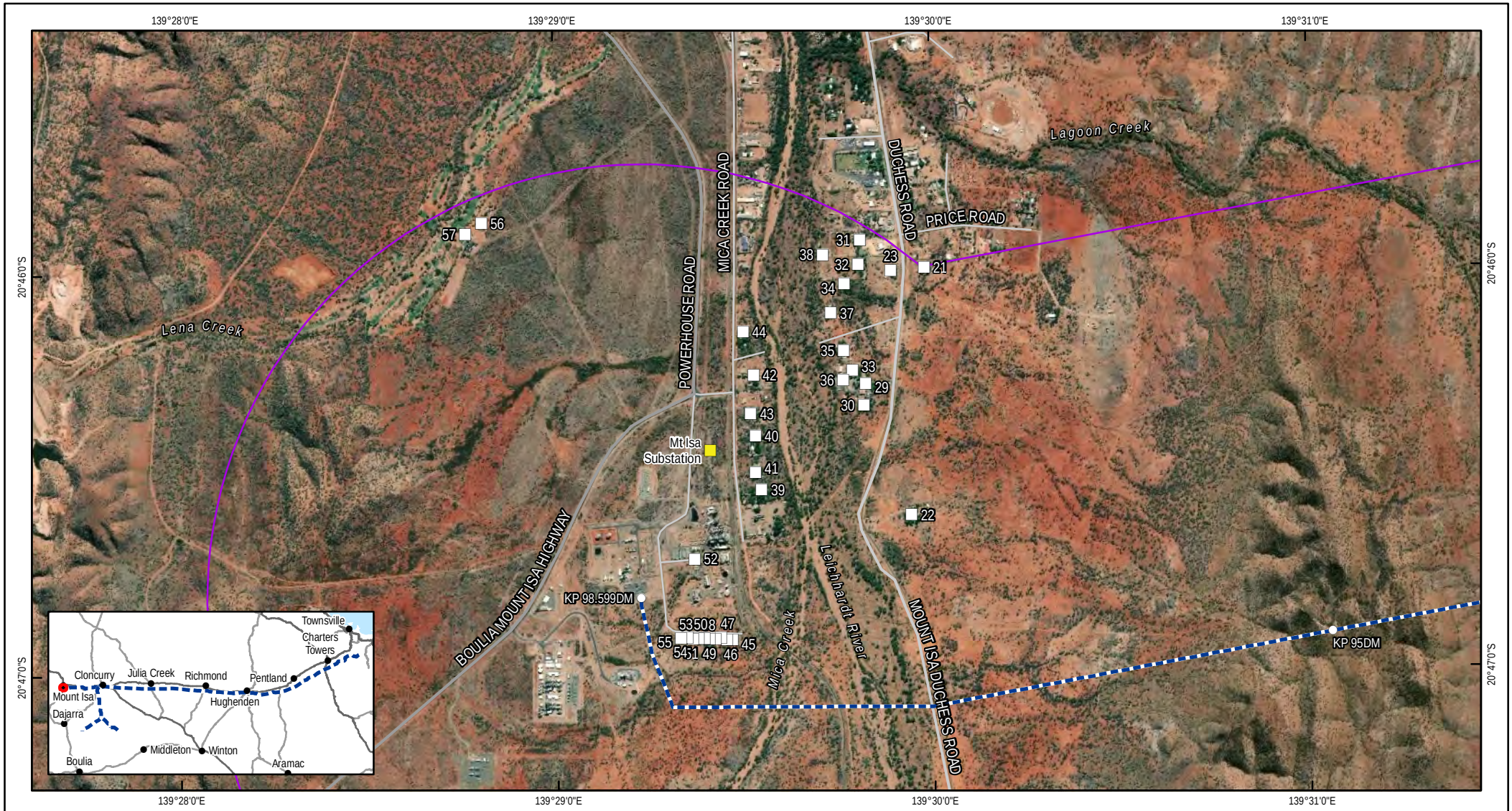
BORN, BRED & OWNED IN NQ



Legend

- Sensitive Receptor within 2km
- Proposed Substation
- Kilometre Post
- CopperString Alignment
- 2 km buffer
- Railway
- Highway
- Secondary Road
- Local Connector Road
- Street

0 250 500 750

Metres

Coordinate System
GDA 1994 MGA Zone 54

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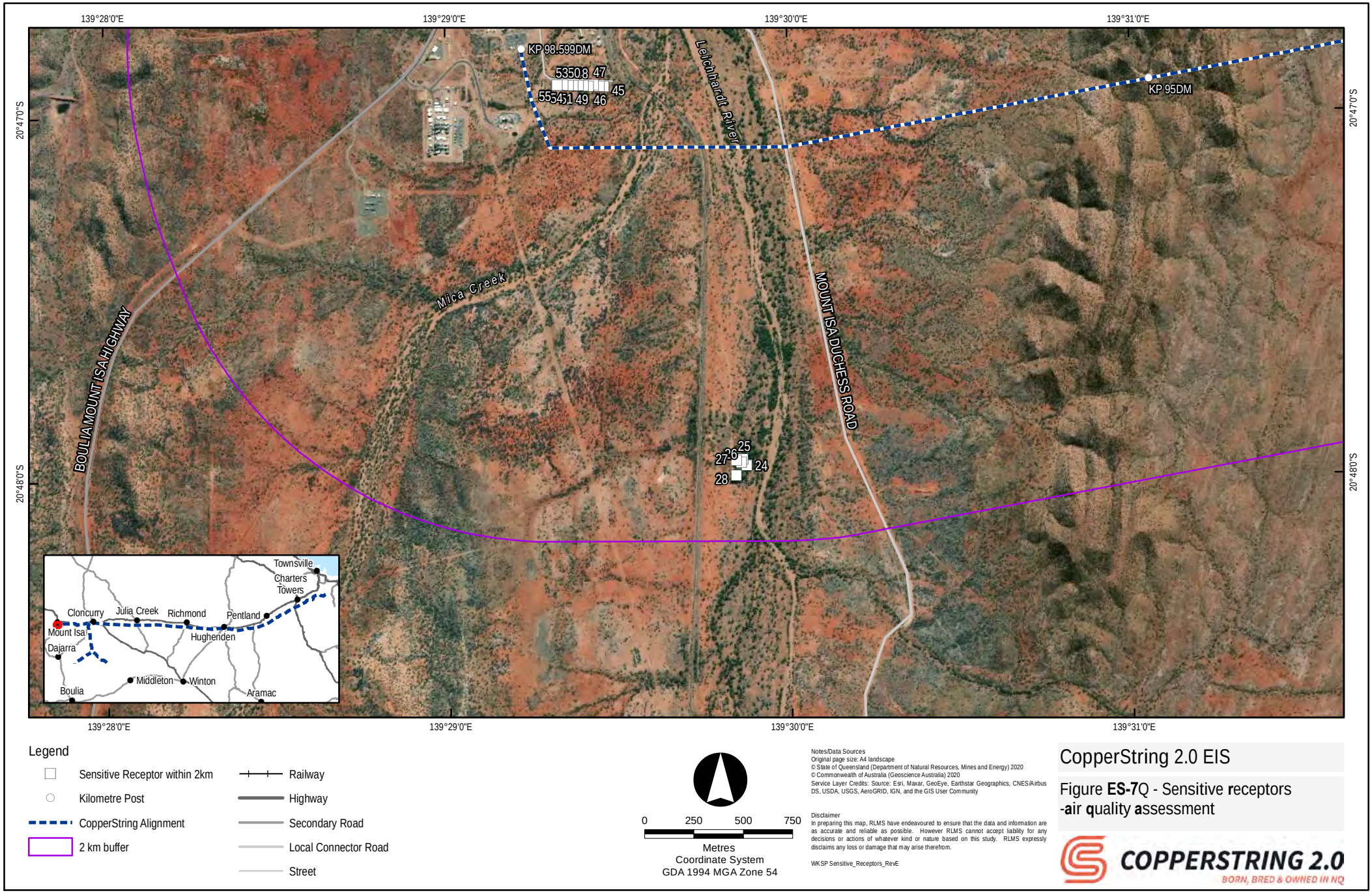
WKSP Sensitive_Receptors_RevE

CopperString 2.0 EIS

Figure **ES-7**P - Sensitive **r**eceptors -**a**ir **q**uality **a**ssessment

COPPERSTRING 2.0
BORN, BRED & OWNED IN NQ



Legend

- Sensitive Receptor within 2km
- Kilometre Post
- CopperString Alignment
- 2 km buffer
- Railway
- Highway
- Secondary Road
- Local Connector Road
- Street

0 250 500 750

Metres

Coordinate System
GDA 1994 MGA Zone 54

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WKSP Sensitive_Receptors_RevE

CopperString 2.0 EIS

Figure **ES-7**Q - Sensitive **r**eceptors -**a**ir **q**uality **a**ssessment

COPPERSTRING 2.0
BORN, BRED & OWNED IN NQ

Noise and vibration

In general, the landscape in which the corridor selection is located is rural, with low levels of background noise. Some areas are affected by industrial noise sources (in Mount Isa near the power stations) while others are affected by mining activities such as sensitive receptors near Cloncurry.

Potentially affected sensitive receptors (Figure ES-7) include residential premises and building points which are in the vicinity of the corridor selection. For the study of the noise and vibration impact assessment, residences within two kilometres of the centre line of the proposed corridor selection or substation site were considered. The review identified 55 sensitive receptors for the purposes of the noise and vibration assessment. There are no significant sources of vibration near the existing sensitive receptors, beyond distant mining activities in some areas such as Cloncurry and small amounts generated by heavy vehicles on local roads.

The primary risk of impacts on the ambient noise environment is associated with the immediate construction of the transmission line. There are residences adjacent to the corridor selection that will be affected by noise from machinery operating in the area, and by vehicles traversing the access tracks during construction. Blasting is considered unlikely in order to construct foundations for the tower structures. If blasting is required, this will be matted and capped: however it is likely to produce noise and vibration, which may affect the surrounding environment. Once in operation, the transmission lines may, during humid or lightly raining conditions, generate a hum that is audible generally only up to 100 m from the transmission line. With this exception, noise along the corridor selection during operation is commensurate with a rural environment, and is limited to wind effects on conductors and structures.

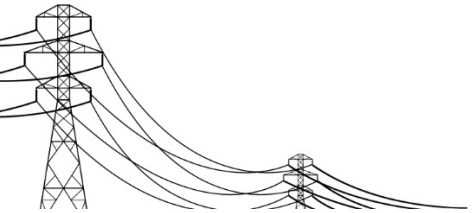
Noise during construction has the greatest potential to impact on livestock. Landholders will be consulted as part of the construction scheduling process to manage stock access and potential impacts. Noises associated with drilling, small scale blasting (dependent on rock foundation type) and in particular helicopter stringing may impact on stock. Noise will also be generated during the vegetation clearing phase of construction. Chainsaws and other high-pitched motor noises have a significant localised impact on wildlife. Many species of wildlife are highly mobile and will exhibit avoidance behaviour if there are loud and persistent noises. With the cessation of activity and noise wildlife will return to the affected area and noise impacts are temporary.

Selective baseline background noise monitoring will be undertaken prior to construction to verify the findings from the 2010 study and as required by landholders. Results will be used to set trigger levels at sensitive receptors in accordance with the EPP (Noise). The noise and vibration objectives would be monitored and maintained by use of a suitable complaint register. Should noise complaints be received, noise monitoring would be undertaken at the locations concerned. Reasonable and feasible measures would need to be implemented to reduce noise impacts if the noise and vibration objectives were not achieved.

The assessment of noise indicated that the Project may be constructed and operated without significant impact on sensitive receptors as long as appropriate management practices are implemented and siting studies are completed.

The placement of concrete batching plants and laydown areas should consider the proximity of sensitive receptors and ensure that adequate buffer distances are maintained or other noise mitigation measures are adopted.

Construction activities have the greatest potential for impact, although this is mitigated by the duration of construction in any particular location. Operational noise is not expected to result in any impacts on the environmental values of receptors near the line.



Decommissioning noise would be expected to be similar to construction of the transmission lines and substations. Mitigation activities to reduce the impact of construction noise would apply to decommissioning actions.

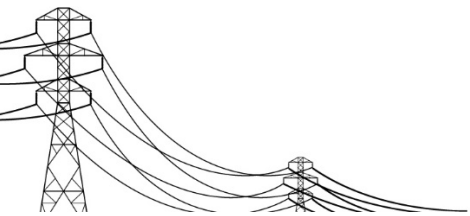
Waste management

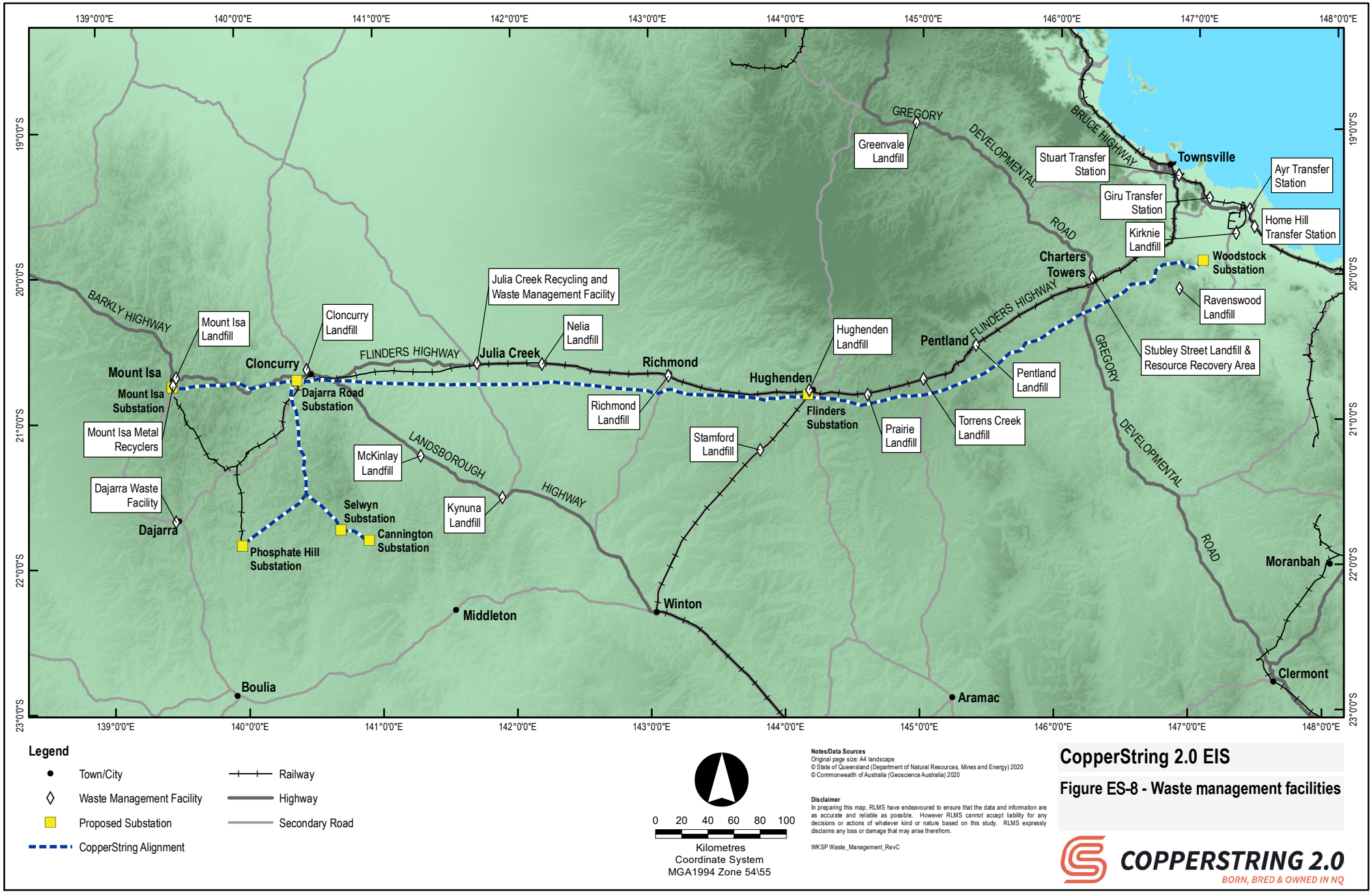
The Project traverses a large linear area that includes seven regional councils, each with their own waste management facilities (Figure ES-8). Several of these facilities have the capacity to assist with the waste management of the Project.

The construction phase will be the primary source of waste generation throughout the life of the Project. Large increases in waste generation and improper disposal methods are the primary impacts associated with waste during the Project.

Waste will be dealt with following the waste management hierarchy, where avoidance of waste generation is the most desirable course of action and disposal of waste is the least desirable course of action. Many types of waste are able to be reused or recycled and disposal should only be undertaken once all other avenues are exhausted.

Impacts from waste are expected to be low and will be managed by the construction contractor through a waste management plan as part of the Construction Environmental Management Plan.

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BARKLY HIGHWAY
FLINDERS HIGHWAY
LANDSBOROUGH HIGHWAY
GREGORY DEVELOPMENTAL ROAD
BRUCE HIGHWAY
Mount Isa
Mount Isa Substation
Mount Isa Landfill
Mount Isa Metal Recyclers
Cloncurry
Cloncurry Landfill
Dajarra Road Substation
Dajarra
Dajarra Waste Facility
Phosphate Hill Substation
Selwyn Substation
Cannington Substation
McKinlay Landfill
Kynuna Landfill
Julia Creek
Julia Creek Recycling and Waste Management Facility
Nelia Landfill
Richmond
Richmond Landfill
Middleton
Boulia
Winton
Stamford Landfill
Hughenden
Hughenden Landfill
Flinders Substation
Prairie Landfill
Torrens Creek Landfill
Pentland
Pentland Landfill
Greenvale Landfill
Charters Towers
Stubley Street Landfill & Resource Recovery Area
Ravenswood Landfill
Woodstock Substation
Kirknie Landfill
Townsville
Stuart Transfer Station
Giru Transfer Station
Ayr Transfer Station
Home Hill Transfer Station
Moranbah
Clermont
Aramac
Legend
Town/City
Waste Management Facility
Proposed Substation
CopperString Alignment
Railway
Highway
Secondary Road
0 20 40 60 80 100
Kilometres
Coordinate System
MGA1994 Zone 54\55
Notes/Data Sources
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WKSP Waste_Management_RevC
CopperString 2.0 EIS
Figure ES-8 - Waste management facilities
COPPERSTRING 2.0
BORN, BRED & OWNED IN NQ

Transport

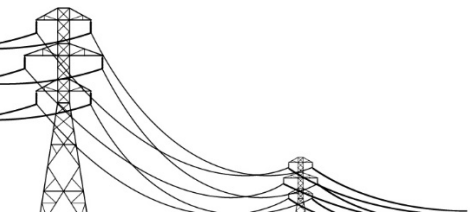
The major State Controlled Roads (SCRs) servicing the Project include the Flinders and Barkly Highways, both of which are managed by the Department of Transport and Main Roads (DTMR) (Figure ES-9). Access to the corridor selection will be provided through other SCRs, local government roads and private roads.

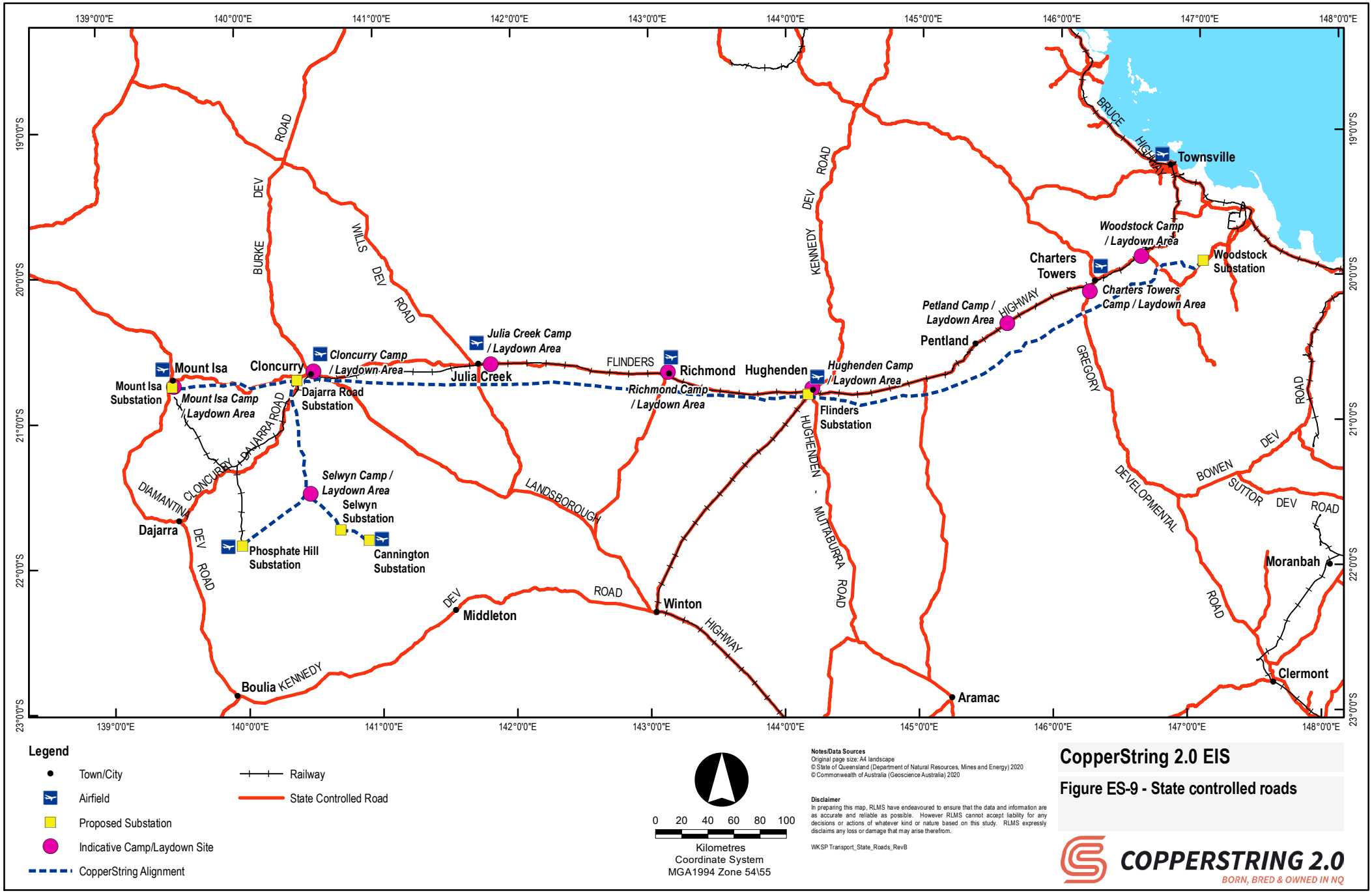
A review of the existing condition of potential access roads was undertaken by GHD in February and March 2020. The assessment also included major intersections that may service construction laydown areas, resources and/or camps and other intersections that may be used to access the corridor selection.

Rail remains a competitive mode of transport for the supply of construction, materials for the construction phase of the Project. However, non-bulk freight enables more diverse distribution networks. Road transport dominates the movement of non-bulk freight on all major corridors in Australia. The direct movements (point to point) associated with road transportation increases quality of service. Transportation of non-bulk materials via rail typically requires transhipment between road and rail at one or both ends, consequently adding freight cost and time. Figure ES-10 shows an overview of the regional transport network

Due to the structure of the Project, point to point service is considered more favourable than line haul transport. Transportation of materials via rail involves intermodal transport to Project sites via road. Due to the time inefficiencies and costs associated with rail and intermodal transportation, the modal choice for the Project will be road.

The Transport Impact Assessment demonstrates the impact that the traffic, generated during the Project construction and operation, is projected to have on the road network. Due to the existing low volumes of daily traffic within the region and sparsity of communities, the impacts outlined above are considered to be manageable through liaison with stakeholders. Early liaison is recommended with DTMR, local government authorities and private access landholders. Discussions with stakeholders should involve information of the projected traffic volumes, agreement of maintenance programs, determination of alternative routes and information regarding rain events and potential road closures.





Legend

- Town/City
- Airfield
- Proposed Substation
- Indicative Camp/Laydown Site
- CopperString Alignment
- Railway
- State Controlled Road

0 20 40 60 80 100

Kilometres

Coordinate System
MGA1994 Zone 54\55

Notes/Data Sources
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WKSP Transport_State_Roads_RevB

CopperString 2.0 EIS

Figure ES-9 - State controlled roads

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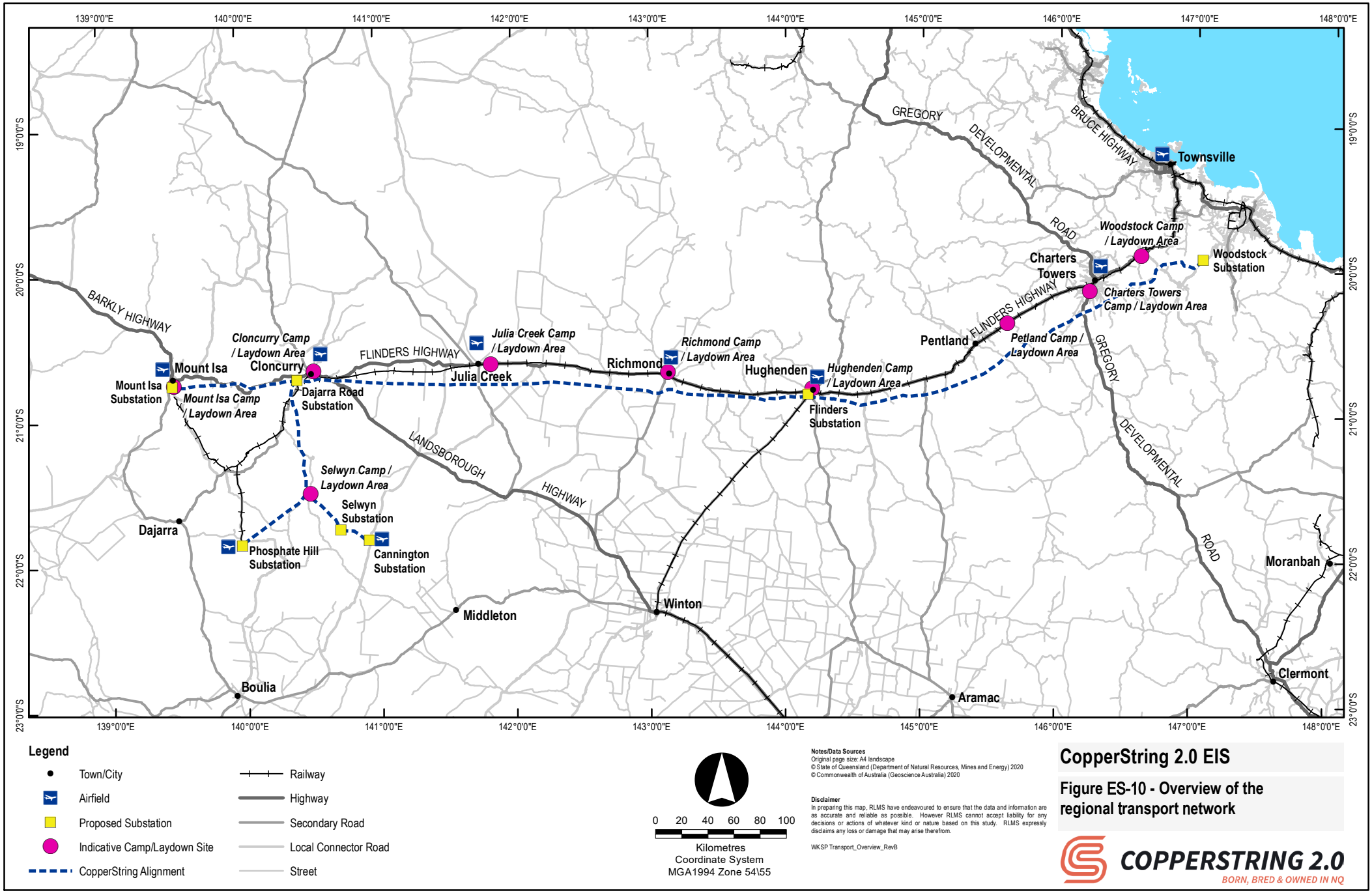
BORN, BRED & OWNED IN NQ



Legend

- Town/City
- Airfield
- Proposed Substation
- Indicative Camp/Laydown Site
- CopperString Alignment
- Railway
- Highway
- Secondary Road
- Local Connector Road
- Street

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

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WKSP Transport_Overview_RevB

CopperString 2.0 EIS

Figure ES-10 - Overview of the regional transport network

COPPERSTRING 2.0
BORN, BRED & OWNED IN NQ

Social

Although the Project is projected to deliver regional, state, and national economic benefits, the Project's impacts on regional social values will generally be short-term, applying primarily during the Project's construction phase.

Construction of the Project has the potential to result in several changes to property management and infrastructure for landholders such as vegetation clearing, introduction of weeds, restricting use of construction area for grazing and damage to property. These changes are likely to result in increased requirements for property management by the landholders. Most of the land disturbed during the Project's construction would ultimately be reinstated during the Project's operation and would be available to return to use by landholders.

The Project's planning and construction will also require landholders to engage with Project staff and manage Project activities on their properties. This may reduce the time available for regular agricultural or property maintenance activities and result in flow on reduction in property productivity. To mitigate the impacts a corridor selection process was undertaken to limit the impacts of the Project through route selection, and took into consideration current farm infrastructure, environmental constraints, and places of cultural heritage.

The Project's construction would involve vegetation removal, foundation installation, construction of the transmission towers, conductor stringing, and rehabilitation. Construction activities are likely to result in temporary changes in air quality and noise amenity, including increased dust, noise, and traffic. Depending on the location of the construction works relevant to the activities of landholders, changes in air quality and noise amenity may be noticeable and be perceived as intrusive, given that many landholders currently enjoy remote and very rural environments, which are isolated from other activities.

Similarly, the presence of the Project's construction workforce may result in a loss of privacy for landholders. The sensitivity to this change would be felt differently depending on the landholder and the value placed on privacy. It was noted during consultation that privacy from others was highly regarded by several landholders. The changes in amenity and privacy are expected to be minimised for most landholders, based on the separation distances between dwellings and the Project alignment. However, the Project's Social Impact Assessment (SIA) recognises that the underlying sensitivity of landholders is personal in nature and the level of intrusion and change of amenity would be influenced by the activities undertaken on the property in proximity to the Project and viewpoints from dwellings.

The Public Consultation that has occurred during the EIS development has impacted aspects of the Project design and the EIS development including, but not limited to:

- Social Impact Assessment
- Corridor Selection
- Hazards, Health and Safety
- Biosecurity
- Waste Management
- Transport
- Rehabilitation
- Field Development.

The overall feedback from the regional community has been support. The general sentiment is that the Project will provide a community benefit through, for example the provision of a reliable power supple and further economic efficiencies and opportunities in the local area due to the

connection to the North Western Minerals Province and the renewables energy hub, some negative responses were received, mainly associated with personal impacts. The community would like to see the Project support the local area through using local businesses and employment of local individuals.

The broader group of stakeholders that were consulted as part of the Public Consultation process could ascertain the benefits of the Project on a broader scale including how it provided the North West Minerals Province a reliable power source, connection to the renewables energy hub and advancing the local communities through construction and employment opportunities. All stakeholders consulted provided feedback in relation to the scope of their interests.

The public consultation process will be ongoing and will respond to the needs of the community and stakeholders as the Project progresses through to detailed design and construction.

The time required by landholders to engage with CuString for land access negotiation, and the construction of the Project has the potential to result in feelings of stress, anxiety, and frustration for landholders, particularly those who do not wish to host Project infrastructure. These emotions may continue through to and during the construction of the Project. Consultation found that many landholders reported low levels of stress and frustration associated with the Project.

Management strategies can be implemented to reduce potential negative social impacts, and enhancement strategies can be implemented to maximise opportunities. It is expected that the Social Impact Management Plan would be updated and approved by the Coordinator-General prior to the Project's construction.

Cultural heritage

The cultural heritage assessment has identified several Indigenous and non-Indigenous cultural heritage sites within proximity of the corridor selection. However, identified non-Indigenous sites are unlikely to be impacted by the Project due to their distance from the corridor selection. Indigenous cultural heritage sites will be managed through avoidance of known sites and development of a Cultural Heritage Management Plan (CHMP) in consultation with relevant Aboriginal parties.

For the management and mitigation of impacts on Indigenous cultural heritage, CuString will use a range of cultural heritage management processes and proven procedures that have previously been implemented effectively throughout Queensland. The overall strategy for the management of Indigenous cultural heritage will be to avoid harm where reasonably possible. Mitigation measures will be employed where harm cannot be reasonably avoided.

If appropriate and with the consent of the relevant Aboriginal parties, previously unrecorded Indigenous cultural heritage may be nominated to appropriate State and Commonwealth cultural heritage registers. Cultural heritage standards in Queensland generally require that cultural heritage items recovered prior to construction and objects identified and salvaged during construction be managed in consultation with the relevant Aboriginal party. This is often achieved through agreement of a safe keeping place between parties.

The main strategy for the management of non-Indigenous cultural heritage is to develop a procedure for dealing with unexpected archaeological finds. This requires the inclusion of cultural heritage awareness training in inductions and procedures for managing archaeological finds in the CEMP.

There is potential for significant cultural heritage items, both Indigenous and non-Indigenous, to be uncovered during the construction phase, particularly where earthworks and vegetation clearing is required. Strategies for managing these situations will be developed and included in the CHMP and Construction Environmental Management Plan (CEMP), with procedures for stopping work until a suitably qualified cultural heritage practitioner can assess the item or site,

and follow a process of identification and recording. In addition, all contractors will be required to undergo cultural heritage inductions to ensure awareness of obligations in preserving significant cultural heritage.

Economic impacts

The NWMP is the dominant source of base metals in Queensland and an extremely prospective, mineral rich area. After several decades of significant mining activity, the province still holds about 75 percent of Queensland's base metal mineral endowment including copper, lead and zinc as well as major silver and phosphate deposits. The province is also becoming increasingly popular in the exploration for rare earths as global demand grows for the use of these materials in advanced and renewables-based technologies.

The region also has significant energy resource potential including geothermal and non-traditional (tight shale) resources. The province is also rich in a diverse range of other commodities with recent discoveries of the world's largest molybdenum-rhenium deposit and a high-grade graphite resource.

In addition to the province's well-developed areas, the Queensland Government and industry is currently undertaking further mineral geophysics and geochemistry studies to better understand the highly prospective area east of Mount Isa known as the Eastern Succession (see Figure 13). Initial studies have uncovered deposits with promising potential for significant iron-oxide-copper-gold development.

Given the opportunities for development and growth in the region's mining sector, concern has been raised about the region's ability to meet the increased demand for electricity. Over the long term, mining activity in the province will potentially be influenced by power prices. Options which help contain, and even reduce power prices, will increase the competitiveness of Queensland mines compared to their competitors in other jurisdictions.

In this context, the Project is projected to make a substantial contribution to regional, State and national economic outcomes. Over the period to 2050, for example, CopperString 2.0 is projected to increase the real economic output of:

- North-West Queensland by a cumulative total of $142.6 billion relative to the Reference Case (with a net present value of $81.0 billion, using a 3 percent real discount rate)
- Queensland as a whole (i.e. real Gross State Product, or GSP) by a cumulative total of $139.5 billion relative to the Reference Case (with a net present value of $79.3 billion, using a 3 percent real discount rate)
- Australia as a whole (i.e. real Gross Domestic Product) by a cumulative total of $131.8 billion relative to the Reference Case (with a net present value of $75.0 billion, using a 3 percent real discount rate).

To place the projected changes in economic output estimates in perspective, the discounted present value (using a 3 percent discount rate) is equivalent to approximately 21 percent of Queensland's current GSP. This is a significant potential impact to be unlocked by a single project. The Australian Government will be a major beneficiary of the Project through higher collections of company tax and personal income tax. Around 30 percent of the revenues that are generated from the company taxes will be payable by the Project's proponents.

Over the life of the Project, it is projected that around 19,834 employee years of full time equivalent direct and indirect jobs will be created nationally (annual average of 640 FTE jobs). More specifically, it is projected that the Project will increase employment in:

- North-West Queensland by 110,395 employee years (average annual increase of 3,561 FTE jobs)

- Queensland as a whole by 83,539 employee years (average annual increase of 2,695 FTE jobs)
- Australia as a whole by 19,834 employee years (average annual increase of 640 FTE jobs).

The Project will favour employment of local residents. In compliance with government policy, the project will include a Training Policy and an Indigenous Economic Opportunities Plan to maximise local employment, training and business supply opportunities for Aboriginal and Torres Strait Islander Queenslanders. For example, at least 15 percent of the total man-hours will be undertaken by apprentices and/or trainees and through other workforce training.

Ecologically sustainable development represents one of the greatest challenges facing Australia's governments, industry, business and community in the coming years. The core objectives of the *National Strategy for Ecologically Sustainable Development 1992* are to enhance individual and community well-being; to provide equity within and between generations; and to protect biological diversity and ecological processes.

Assessment of the impacts of the Project against these objectives indicates that the Project satisfies the criteria presented in the National Strategy on Sustainable Development. The Project will provide a net positive benefit to the local, regional and national economies. The beneficial impact can be determined through the Project's influence as an enabler of development of the NWMP, and also renewable energy. The under supply of energy in the NWMP or the prohibitive cost of connection between identified renewable resources and the NEM acts as a constraint on potential development of these resources. The Project lifts this constraint and enables development of resources to proceed.

Development, particularly of renewable energy, has the greatest potential to address issues such as climate change and the emissions intensity of the NEM which are key performance indicators of the achievement of the National Strategy on Sustainable Development.

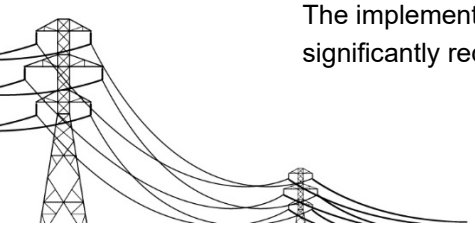
The Project will have a positive benefit on the community and community well-being, both through the employment opportunities during construction and the provision of stable energy to remote communities, townships and locations. There is predicted to be a net positive environmental benefit from the Project, which may be achieved through the minimisation of impacts during the construction period, low to very low operational impacts and the facilitation of otherwise constrained resources and renewable energy projects to connect to the NEM.

Hazards, health and safety

Project hazards are those that may affect the Project itself, as well as Project activities and hazardous substances that pose a risk to the health and safety of people and property. The Preliminary Hazard Analysis focuses on unplanned events that may result in impacts on identified sensitive receptors and property. The hazard identification process applied to the Project assumes compliance with regulatory requirements and does not consider deliberate exposure of hazards, for example, planned releases of pollutants.

A total of 52 individual hazards were identified within 12 categories. For each identified potential hazard, a risk assessment was undertaken which includes consideration of the likelihood and consequence of the hazard occurring, to feed into appropriate preventative and responsive measures. Following the implementation of proposed mitigation measures, nineteen hazards remain ranked with a high residual risk and nine remain medium risk. Twelve of the high residual risks fall within the power lines and towers hazard category and include persons, vehicles or aircraft contacting the live wires or towers or electrical interactions with other third party services. Three high risks involved fire hazards.

The implementation of a risk management plan within the scope of the Project will serve to significantly reduce the likelihood of such events occurring.



Matters of national environmental significance

Matters of National Environmental Significance are controlled under the EPBC Act. The Commonwealth Minister for the Environment determined that the CopperString 2.0 Project is a 'controlled action' under the EPBC Act on 14 May 2019, due to potential impacts on threatened species and threatened ecological communities.

The nature of the Project, being a long, linear infrastructure project with Species-specific and general avoidance, minimisation and mitigation measures have been proposed to reduce the potential for significant residual impacts to MNES resulting from the Project.

The significant impact assessments found that the Project will not have any significant residual impacts on any MNES. The delivery of environmental offsets for significant residual impacts is therefore not required for the Project.

The proposed avoidance and mitigation of any significant residual impacts to MNES from the Project is considered to also avoid and mitigate potential cumulative impacts on MNES at the local and regional scales. Therefore no significant cumulative impacts to MNES are likely to result from the Project.

Environmental management

CuString places the highest value on environmental performance and will be responsible for achieving environmental compliance as part of their corporate governance as owners of the project. CuString is committed to ensuring that:

- Environmental harm and pollution is minimised through the active identification and management of environmental risks
- Use of resources, recycling of materials and reduction of waste occurs efficiently
- Compliance is maintained with relevant environmental legislation, regulation and standards as well as project approval conditions
- An environmental management system is implemented that is developed in accordance with AS/NZS ISO 14001
- Regular review and analysis of environmental performance is undertaken to identify and implement continual improvement.

CuString will ensure that the principal construction contractor's environmental record and policy aligns with these corporate values to achieve compliance with legislation and approval conditions. This policy will be updated as necessary prior to subsequent project phases to ensure the policy reflects CuString's commitments to environmental mitigation and management.

The Project's Framework Environmental Management Plan (FEMP) provides overarching environmental objectives and performance criteria to be achieved throughout the life of the Project and incorporates the management measures from the EIS which are to be implemented during the planning and design of the Project. Additional studies will be undertaken during the design phase to inform the EMP (Construction) including site specific assessments of the potential impacts associated with key construction areas such as laydowns and accommodation footprints, and finalising the location footprints of permanent infrastructure.

These management measures will ensure that the Project is designed to minimise adverse impacts to the environment during construction and operations phases. Where significant impacts are expected to occur, further management and monitoring programs have been identified for the construction and operations phases. These management measures are

outlined in the Project FEMP and will be subsequently incorporated into the development of the EMP (Construction) and EMP (Operations).

CuString has conducted field surveys along the corridor selection in accordance with relevant regulatory requirements. CuString has not been prosecuted for any breaches under relevant environmental Commonwealth, Queensland or international laws during the previous ten years.

Cumulative impacts

A cumulative impact assessment undertaken for the Project considered the mitigated residual impacts of the Project combined with the likely impacts from other proposed or planned development in NWQ. Consideration was given to the magnitude, spatial extent and duration of residual impacts on natural environmental and built environmental values in the Project area.

Cumulative impacts is defined as ‘combined impacts from all relevant sources’. The purpose of the assessment is to identify pressures on environmental values combined pressures from other projects and consider how or where the Project impacts have the potential to compete, conflict or contribute. The Project is initially to be assessed in its own right followed by an assessment cumulatively with those of other proposed projects which may have a similar duration and spatial boundary relevant to that environmental value.

It is considered that mitigation and management measures incorporated into the Project would effectively avoid or otherwise manage potential cumulative impacts such that residual consequences result in a low risk rating. The preliminary identification of the corridor selection location aimed to minimise intersections with current farm infrastructure, mapped areas of environmental sensitivity and cultural heritage places in addition to considering distance from the Flinders Highway.

No cumulative impacts were identified for land, geology and soils, water resources and quality, air quality and GHG, noise and vibration, social and cultural heritage.

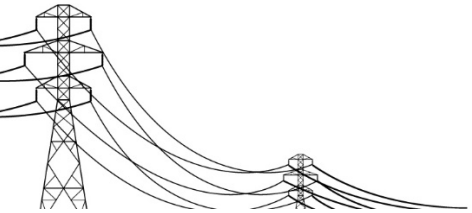
The unavoidable residual impacts with the greatest potential to result in longer term cumulative impacts involved the disturbance of conservation values associated with flora and fauna. Cumulative impacts associated with biosecurity, transport and waste are expected to be short-term, occurring only during the construction phase of the Project.

Environmental offsets

The term ‘environmental offset’ refers to measures that compensate for the residual adverse impacts of an action on the environment. Offsets provide environmental benefits to counterbalance the impacts that remain after the implementation of avoidance and mitigation measures. These remaining, unavoidable impacts are termed ‘residual impacts’.

An assessment of significant residual impact was undertaken in accordance with the Environmental Offsets Act 2014 (QLD), *Commonwealth matters of national environmental significance: significant impact guidelines 1.1* and Queensland Significant Residual Impact (SRI) Guidelines. The residual impact on the matters of national environmental significance confirmed present or likely to occur in the Project area was assessed as unlikely to be significant. Therefore no potential offset requirements under the EPBC Act are anticipated for the Project.

All conservation significant flora and fauna species (MSES) confirmed present or considered likely to occur within the Project area were assessed as unlikely to be significantly impacted by the Project. However, the SRI assessment undertaken for relevant MSES regulated vegetation and connectivity areas determined there is potential for a SRI for Of Concern REs, remnant vegetation within a defined distance of a watercourse and essential habitat.



Final impact areas will be further refined through pre-clearance surveys to identify areas to avoid, with consideration of the proposed avoidance strategies, to occur during pre-clearance design and siting of infrastructure, these SRIs are anticipated to be unlikely. If offsets are deemed to be required following the design phase, further desktop and field assessments will be undertaken to identify potential offset areas which have been identified in proximity to the Project area.