

KRA Reports and Maps

Key Resource Area reports and maps 41 to 80

April 2016

KHOLO CREEK KEY RESOURCE AREA – KRA 41

LOCAL GOVERNMENT AREA: Brisbane and Ipswich City Councils

LOCATION:

The resource is located about 4 kilometres north of Mount Crosby (see map KRA 41).

EXTRACTIVE RESOURCE: Quarry Rock

EXTRACTIVE RESOURCE DESCRIPTION:

The resource includes large volumes of andesite and quartz diorite, with subsidiary rhyolite, hornfels and quartzite, occurring in elevated terrain northeast of Mount Crosby.

SIGNIFICANCE:

The resource has not been quantified in detail and the available resource depends on an acceptable quarry design. However it is estimated that several decades of supply would be available. It is the largest resource of quarry rock within Brisbane City and adjacent areas.

SEPARATION AREA:

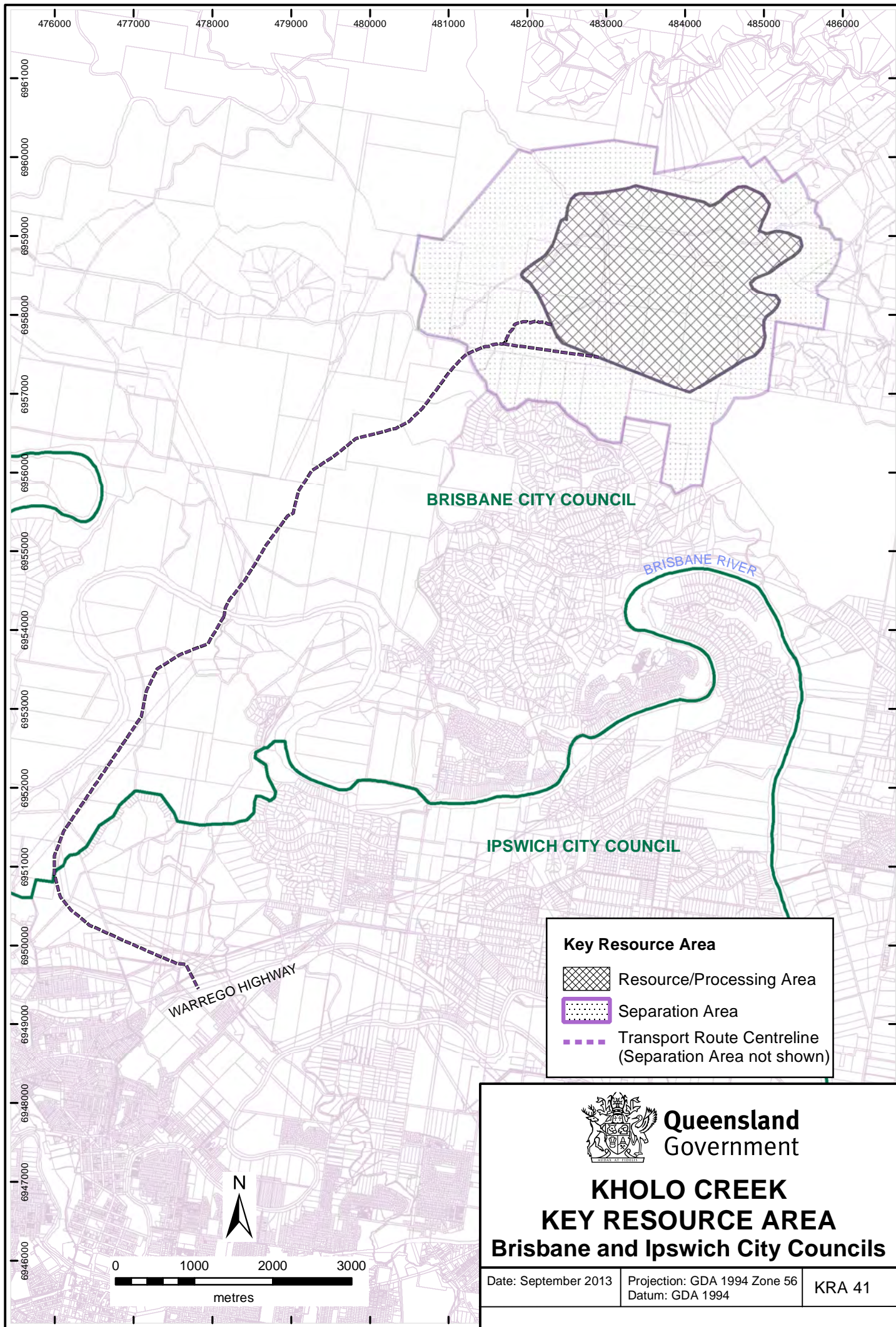
The full separation distance of 1000 metres has been adopted for the majority of the resource in the southern, western and northern sectors. However, the distance is constrained to less than 500 metres on the northern and southeastern sides by small-lot rural subdivisions that are partly screened by high ridges. A separation distance of 500 metres has been adopted where larger rural subdivisions occur to the east.

TRANSPORT ROUTE:

The transport route from the resource/processing area has been subject to extensive investigations in recent years. The route is shown as a dedicated corridor that will avoid the settled areas of Mount Crosby by heading west then southwest to cross the Brisbane River and lead onto the Warrego Highway.

SPECIAL CONSIDERATIONS:

The KRA contains sizeable areas of ‘of concern’ vegetation under the *Vegetation Management Act 1999*, areas having regional biodiversity significance under the Department of Environment and Heritage Protection’s Biodiversity Planning Assessment and encompasses three cultural heritage sites of State significance. These areas will be given due consideration as part of any development assessment for extractive industries that may occur in the future.



MOUNT COOT-THA KEY RESOURCE AREA – KRA 42

LOCAL GOVERNMENT AREA: Brisbane City Council

LOCATION:

The resource is located at the foot of Mount Coot-tha between Sir Samuel Griffiths Drive and the Brisbane Botanic Gardens (see map KRA 42).

EXTRACTIVE RESOURCE: Quarry Rock

EXTRACTIVE RESOURCE DESCRIPTION:

The resource consists of hornfels within the Bunya Phyllite, which extends into the Brisbane Forest Park to the west. The rock appears to be the product of metamorphosed sediments from an underlying granite.

A large quarry is operated by the Brisbane City Council at the northeastern end of a ridge, east of the present location of Sir Samuel Griffiths Drive.

SIGNIFICANCE:

The resource is sufficient for another 12-16 years based on current production rates. The Mount Coot-tha resource currently supplies the Brisbane City Council exclusively with material suitable for most construction applications.

SEPARATION AREA:

The boundary of the available resource is constrained to the limit of planned extraction according to the Mount Coot-tha Local Plan. Because the quarry is to be concealed from the surrounding land by retention of the outer flanks of the ridge, a separation distance of 500 metres is applied over the areas to the south and west. The southeastern boundary is set along the nearest edge of the Western Freeway. It is constrained by existing buildings within the grounds of the Botanic Gardens.

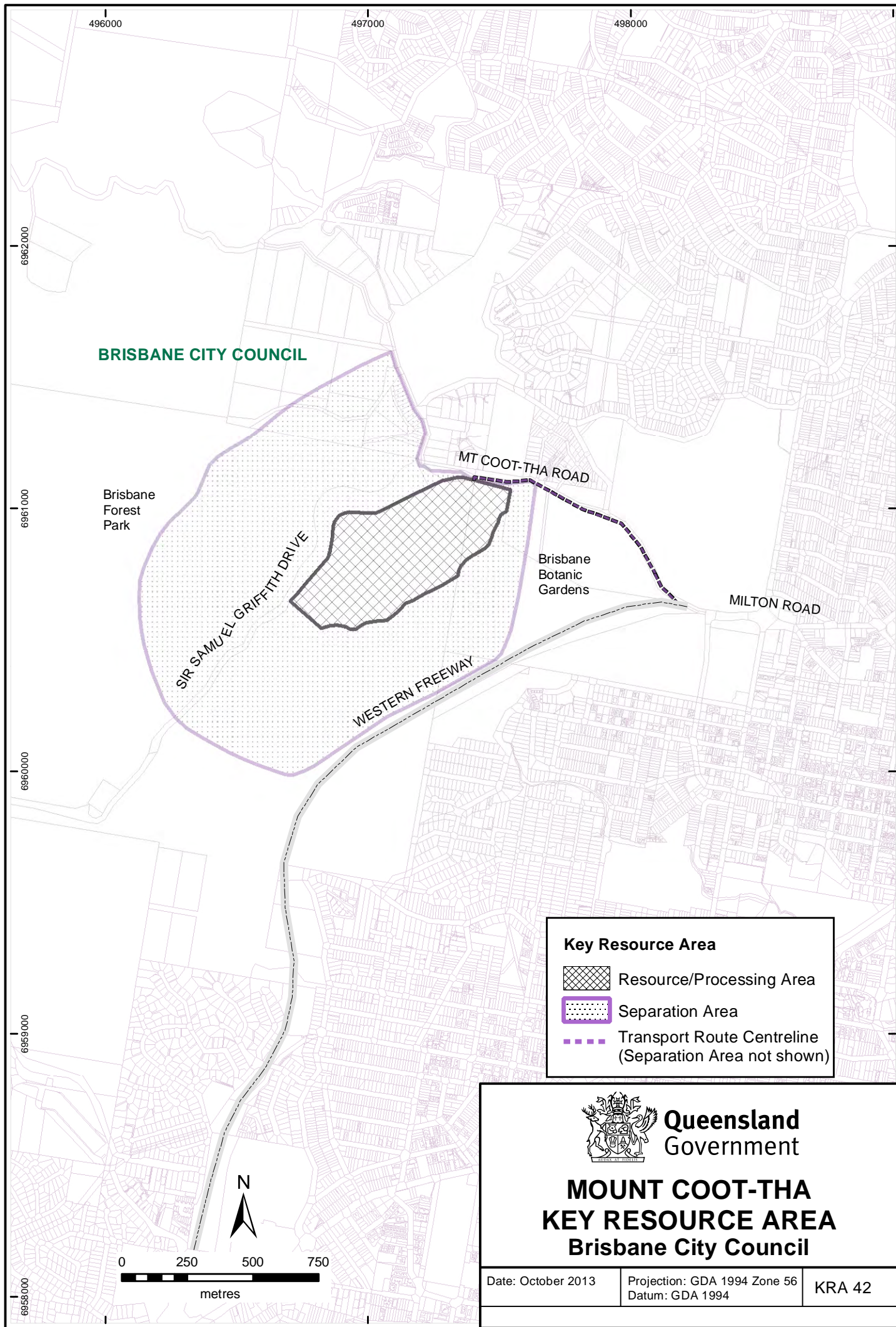
The extent of the separation area north of Mount Coot-tha Road is constrained by small residential lots. The boundary of the Key Resource Area lies along Mount Coot-tha Road and extends to the north along Sir Samuel Griffiths Drive for 500 metres.

TRANSPORT ROUTE:

The transport of materials is directly onto the Mount Coot-tha Road at an exit near the boundary of the Botanic Gardens and onto the Western Freeway or to the east along Milton Road via the Toowong roundabout. Trucks enter the quarry at Mount Coot-tha Road near the intersection with Sir Samuel Griffiths Drive.

SPECIAL CONSIDERATIONS:

The resource/processing area is adjacent to the Brisbane Forest Park.



BRISBANE CITY COUNCIL

Brisbane Forest Park

Brisbane Botanic Gardens




SIR SAMUEL GRIFFITH DRIVE

MT COOT-THA ROAD

MILTON ROAD

WESTERN FREEWAY

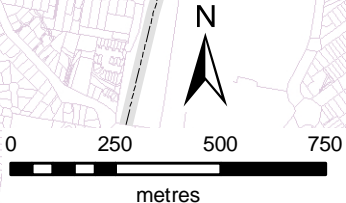
Key Resource Area

-  Resource/Processing Area
-  Separation Area
-  Transport Route Centreline (Separation Area not shown)



Queensland Government

**MOUNT COOT-THA
KEY RESOURCE AREA
Brisbane City Council**



Date: October 2013

Projection: GDA 1994 Zone 56
Datum: GDA 1994

KRA 42

BEACHMERE KEY RESOURCE AREA – KRA 43

LOCAL GOVERNMENT AREA: Moreton Bay Regional Council

LOCATION:

The resource occurs north of the Caboolture-Beachmere Road on Wallace Road, 2 kilometres northwest of the coastline of Beachmere township, some 10 kilometres southeast of Caboolture (see map KRA 43).

EXTRACTIVE RESOURCE: Sand

EXTRACTIVE RESOURCE DESCRIPTION:

The resource consists of dune sand occurring as beach accretion ridges, and occupies a broad band trending northeast, sub-parallel to the present coastline. The sand is light to mid brown, becoming pale to mid grey with depth, mainly fine to medium grained, with some coarse grained at depth. In places, there are concentrations of shell material. The material ranges from 3 metres to over 9 metres in depth.

SIGNIFICANCE:

The resource currently supplies a large proportion of construction material requirements in the north Brisbane and the Sunshine Coast markets. The resource is held under mining lease as it is capable of supplying specialist silica sand markets, as well as concrete and asphalt aggregate for construction projects.

SEPARATION AREA:

A maximum separation area of 200 metres has been adopted around the resource where there is Rural zoning. This is constrained in the northeastern corner to less than 100 metres by Residential zoning. Where there is a Mining Lease or a Mineral Development Licence boundary in rural residential zoning, the resource extent is limited to within 40 metres of the boundary by setback requirements under the *Mineral Resources Act 1989*.

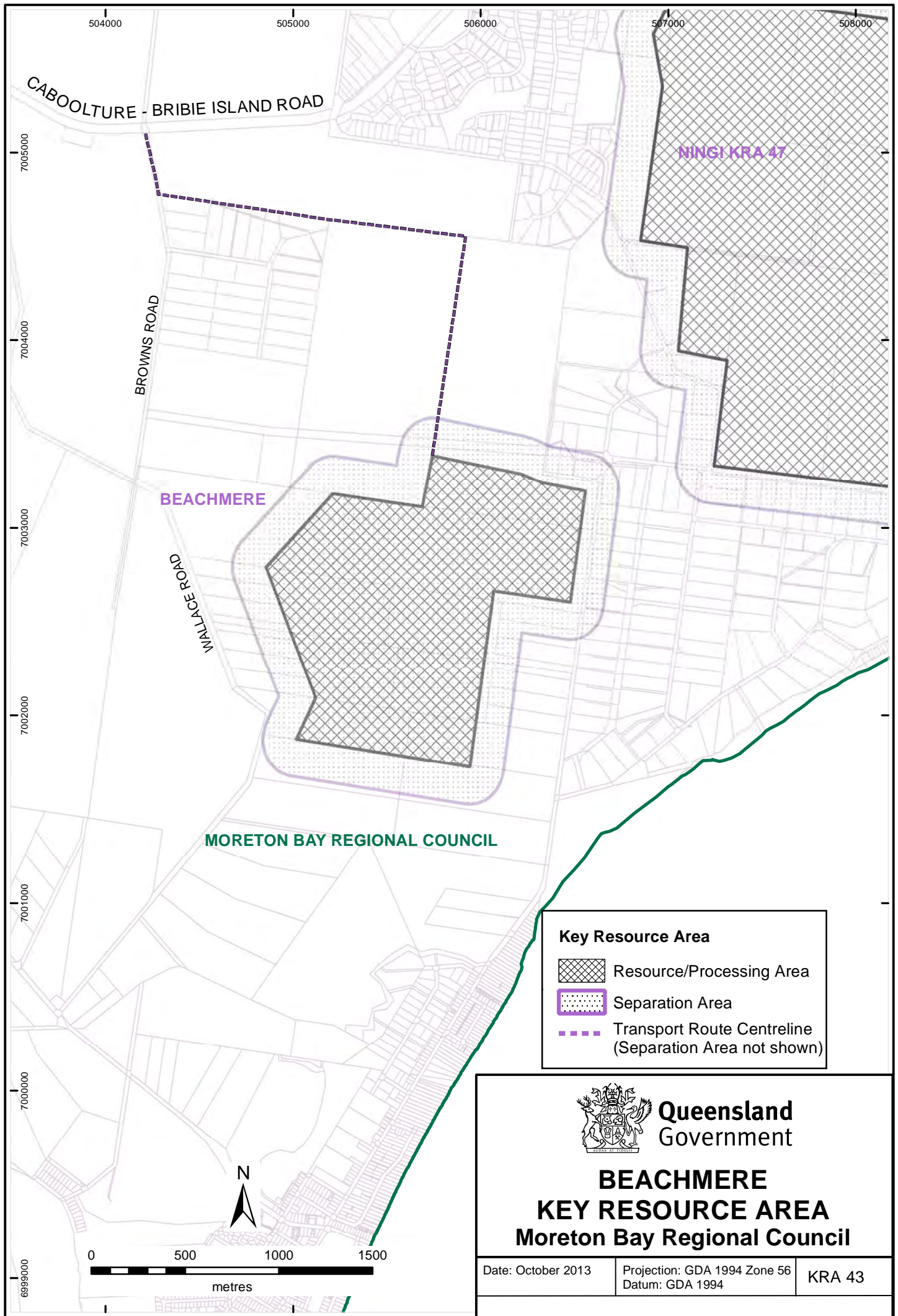
TRANSPORT ROUTE:

An access route from the north is shown through company-owned land, west along a State Forest access road, onto Browns Road, then onto the Caboolture-Bribie Island Road. Material may also be transport over company land to the Ningi site.




SPECIAL CONSIDERATIONS:

An area of 'essential habitat' occurs in the southwest of the resource/processing area and contains areas of State biodiversity significance under Biodiversity Planning Assessment administered by the Department of Environment and Heritage. Small areas of 'not of concern' vegetation under the *Vegetation Management Act 1999* exist in the resource/processing area.

Some parts of the resource/processing and separation area are covered by Strategic Cropping Land Trigger Mapping under the *Strategic Cropping Land Act 2011* administered by the Department of Natural Resources and Mines. This indicates the location of potential SCL and further on-ground assessment against the SCL criteria is required to confirm whether the area is or is not an SCL.



Key Resource Area

-  Resource/Processing Area
-  Separation Area
-  Transport Route Centreline (Separation Area not shown)



**Queensland
Government**

**BEACHMERE
KEY RESOURCE AREA
Moreton Bay Regional Council**

Date: October 2013

Projection: GDA 1994 Zone 56
Datum: GDA 1994

KRA 43

BRACALBA KEY RESOURCE AREA – KRA 44

LOCAL GOVERNMENT AREA: Moreton Bay Regional Council

LOCATION:

The resource is located approximately 17 kilometres west of Caboolture on the D'Aguilar Highway (see map KRA 44).

EXTRACTIVE RESOURCE: Quarry Rock

EXTRACTIVE RESOURCE DESCRIPTION:

The rock resource consists of fresh, hard, greenstone, hornfelsed greenstone and granite (tonalite) occurring at the base of the D'Aguilar Range. Overburden is minimal over much of the site. Quarries are sited in greenstone and tonalite in the south, and in tonalite to the northeast of the D'Aguilar Highway.

SIGNIFICANCE:

The resource is sufficient for at least 50 years supply. A wide range of concrete aggregates, road bases, rip rap and other coarse aggregates is supplied from the existing quarries. The resource is of State significance.

SEPARATION AREA:

The southern perimeter of the southern resource forms a northeasterly trending ridge, allowing a separation distance of 500 metres. As the country to the east has no intervening ridges, the full separation distance of 1000 metres has been applied. The northern resource is surrounded by open country zoned as rural to the northeast and east, thus the full 1000 metre separation distance is applied, except along the crest of the D'Aguilar Range to the northwest.

The western boundary is set at 500 metres southwest and west of the southern resource as this area is shielded by spurs extending from the D'Aguilar Range. The easement of McLeod's Road coincides with the crest of the D'Aguilar Range. This road is designated as the boundary of the Key Resource Area in the northwestern direction.

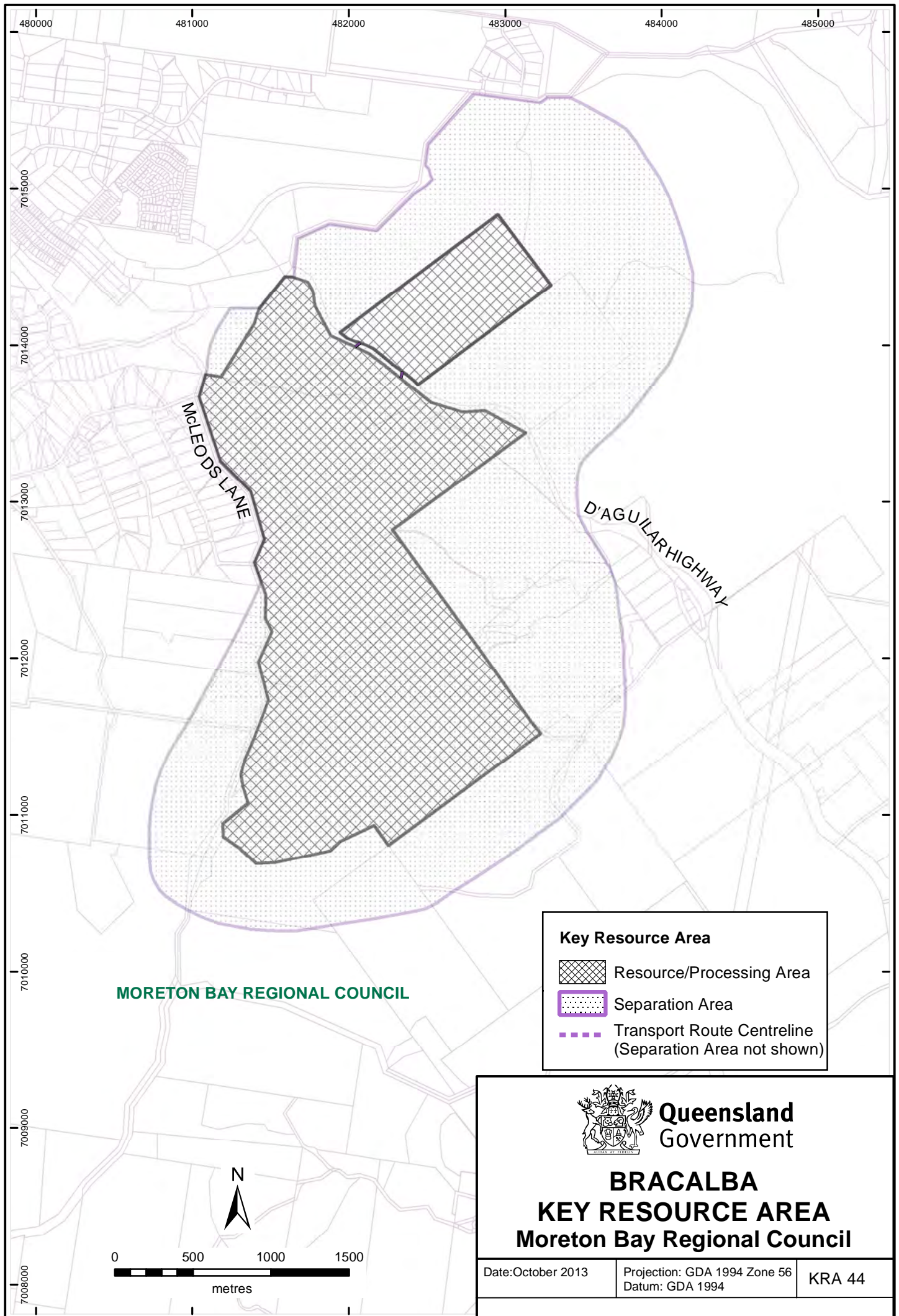
TRANSPORT ROUTE:

Materials are transported directly on to the D'Aguilar Highway within the KRA via specially constructed slip roads.

SPECIAL CONSIDERATIONS:




The northern end of the resource/processing area contains areas identified with 'Regional' significance in the Biodiversity Planning Assessment administered by the department of Environment and Heritage Protection.

Some parts of the resource/processing and separation areas are covered by Strategic Cropping Land Trigger Mapping under the *Strategic Cropping Land Act 2011* administered by the Department of Natural Resources and Mines. This indicates the location of potential SCL and further on-ground assessment against the SCL criteria is required to confirm whether the area is or is not an SCL.



MORETON BAY REGIONAL COUNCIL

Key Resource Area

-  Resource/Processing Area
-  Separation Area
-  Transport Route Centreline (Separation Area not shown)



**Queensland
Government**

**BRACALBA
KEY RESOURCE AREA
Moreton Bay Regional Council**

Date: October 2013

Projection: GDA 1994 Zone 56
Datum: GDA 1994

KRA 44

MELDALE / DONNYBROOK KEY RESOURCE AREA – KRA 45

LOCAL GOVERNMENT AREA: Moreton Bay Regional Council

LOCATION:

The resource occurs some 13 kilometres northeast of Caboolture on the north side of Elimbah Creek near the intersection of Meldale and Donnybrook Roads in Donnybrook. It is bordered on the northeast by the tidal area of Bullock Creek (see map KRA 45).

EXTRACTIVE RESOURCE: Sand

EXTRACTIVE RESOURCE DESCRIPTION:

The resource comprises alluvium of Elimbah and Bullock Creeks and consists of a mainly fine to coarse grained sand with a silty and clayey overburden and in places, a similar interburden. The resource occupies some 65 hectares and there is a current extractive operation within the KRA.

SIGNIFICANCE:

The resource contains sufficient material for well over 10 years at the proposed extraction rate, and can produce a large proportion of supply requirements in the north side of Brisbane City, and Moreton Bay and Sunshine Coast markets. The resource is of State significance.

SEPARATION AREA:

The full separation distance of 200 metres is adopted around the resource.

TRANSPORT ROUTE

The transport route is along Donnybrook Road, and then onto Pumicestone Road to the Bruce Highway.

SPECIAL CONSIDERATIONS:

The KRA is located adjacent to the Pumicestone Channel Fish Habitat Area B to the north east.

Most of the KRA is covered by Strategic Cropping Land Trigger Mapping under the *Strategic Cropping Land Act 2011* administered by the Department of Natural Resources and Mines. This indicates the location of potential SCL and further on-ground assessment against the SCL criteria is required to confirm whether the area is or is not an SCL.

MORETON BAY REGIONAL COUNCIL




DONNYBROOK ROAD

PUMICESTONE ROAD

MELDALE ROAD

TO BRUCE
HIGHWAY

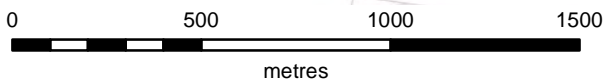
Key Resource Area

-  Resource/Processing Area
-  Separation Area
-  Transport Route Centreline
(Separation Area not shown)



**Queensland
Government**

**MELDALE/DONNYBROOK
KEY RESOURCE AREA
Moreton Bay Regional Council**



Date: October 2013

Projection: GDA 1994 Zone 56
Datum: GDA 1994

KRA 45

NARANGBA KEY RESOURCE AREA – KRA 46

LOCAL GOVERNMENT AREA: Moreton Bay Regional Council

LOCATION:

The resource is located 35 km north west of Brisbane and 12 km south west of Caboolture (see map KRA 46).

EXTRACTIVE RESOURCE: Quarry Rock

EXTRACTIVE RESOURCE DESCRIPTION:

The extractive resource comprises rocks of the Rocksberg Greenstone, tonalite and hornfels associated with the tonalite intrusion. The rock units occur in a northwesterly trending zone between Petrie and Mount Mee.

The resource is currently worked by one major quarry and supplies a wide range of crushed rock products. Land is held by another company to the west of the existing quarry. There are also two potential resource areas, one to the north and the other to the south-east of the main resource which require further investigation. A proposal to develop a quarry in the southern resource is in the application stage.

SIGNIFICANCE:

There are substantial resources present which are conveniently situated to supply the northern Brisbane area and the Sunshine Coast markets for many decades. The potential to support much larger rates of extraction is thus considerable. The resource is therefore of State significance.

SEPARATION AREA:

A separation distance of 500 metres on the southwestern side of the known resource is considered adequate, as high ridges in the separation area screen the resource area. The separation area covers the western slopes of the ridges, and encroaches only slightly onto the lower country. In the northwestern corner 600 metres has been adopted due to the probable use of this part of the site for stockpiling only. The southern side of the separation area for the southern resource is extended up to the power line easement providing a minimum of 500 metres.

The boundary to the north and east is mostly set at 1000 metres from the resource, being closer where ridge lines are less than 1000 metres distant.

TRANSPORT ROUTE:

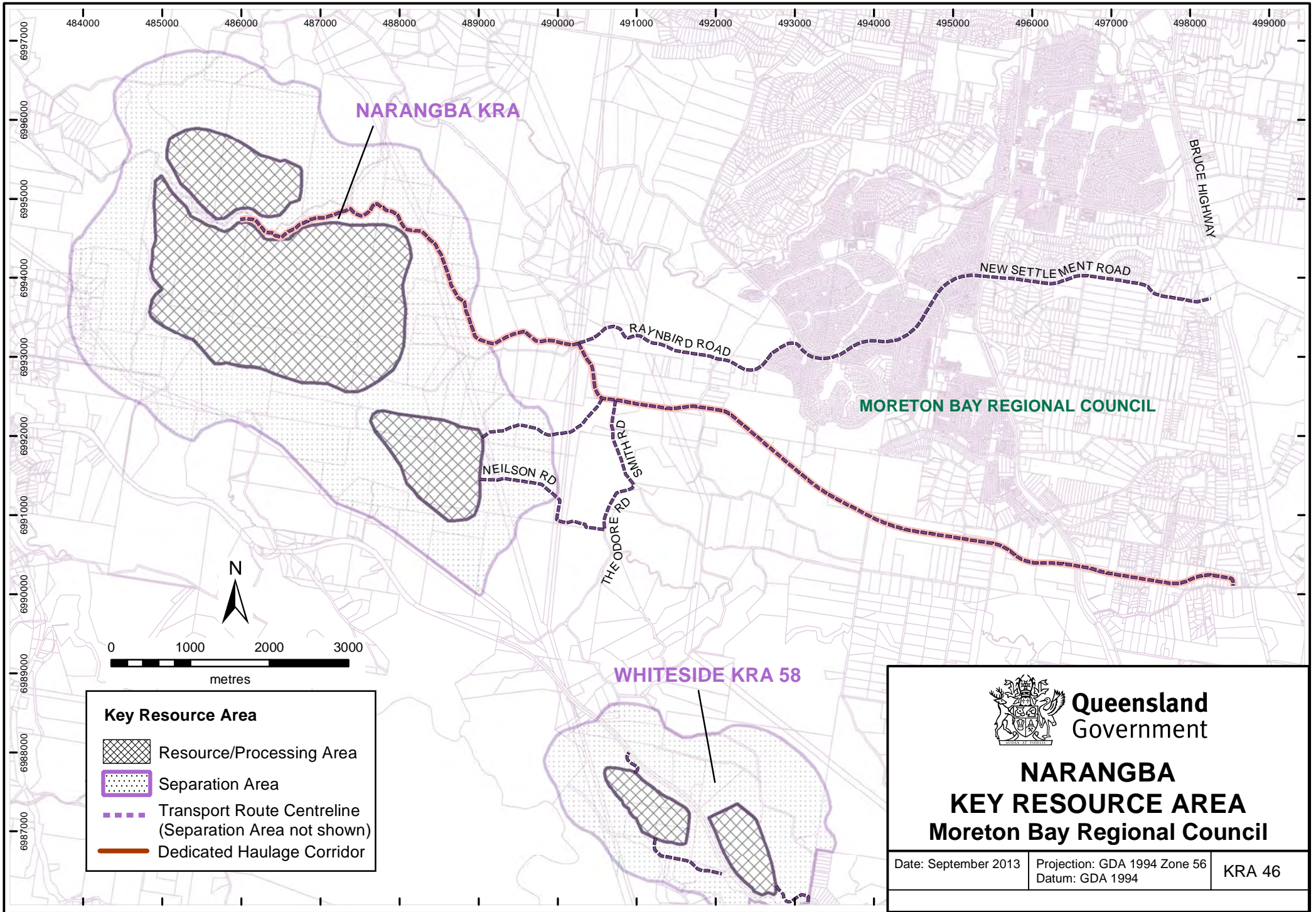
The transport of materials is currently along Raynbird and New Settlement Roads to the Bruce Highway. However, a Dedicated Haulage Corridor has been recommended for future use in a major study commissioned by the former Department of State Development and Innovation, and has been endorsed as a matter of State interest. The shortest transport route from the southern resource would be provided by Neilson, Theodore and Smith Roads. There is also a proposal for constructing a sealed access road from the site directly onto Roberts road and thence Raynbird road for transport of materials.

SPECIAL CONSIDERATIONS:





The KRA contains areas of 'of concern' vegetation under the *Vegetation Management Act 1999* and areas having regional biodiversity significance under the Department of Environment and Heritage Protection's Biodiversity Planning Assessment. A wildlife corridor supports seasonal east - west raptor migration.

Based on State Planning Policy (2/10): Koala Conservation in South East Queensland. (SEQ Koala Protection Area - Koala Habitat Values mapping) small areas of 'high value' bushland is contained within the resource area. The KRA is also partly within the Pine Rivers Priority Koala Assessable development area defined under the South East Queensland Conservation State Planning Regulatory Provisions.

Small portions of the resource/processing and separation area are covered by Strategic Cropping Land Trigger Mapping under the *Strategic Cropping Land Act 2011* administered by the Department of Natural Resources and Mines. This indicates the location of potential SCL and further on-ground assessment against the SCL criteria is required to confirm whether the area is or is not an SCL.



Key Resource Area

-  Resource/Processing Area
-  Separation Area
-  Transport Route Centreline (Separation Area not shown)
-  Dedicated Haulage Corridor



**Queensland
Government**

**NARANGBA
KEY RESOURCE AREA
Moreton Bay Regional Council**

| | | |
|----------------------|---|--------|
| Date: September 2013 | Projection: GDA 1994 Zone 56 Datum: GDA 1994 | KRA 46 |
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NINGI KEY RESOURCE AREA – KRA 47

LOCAL GOVERNMENT AREA: Moreton Bay Regional Council

LOCATION:

The resource occurs south of the Caboolture-Bribie Island Road, and between Bestmann Road and Peel Road at Ningi, and the coastline of Godwin Beach, from 12 to 15 kilometres east of Caboolture (see map KRA 47).

EXTRACTIVE RESOURCE: Sand

EXTRACTIVE RESOURCE DESCRIPTION:

The resource is comprised of sand dunes of varying ages occurring as beach accretion ridges, and occupies a broad band trending east-northeast to northeast, sub-parallel to the present coastline. The younger sand is light to mid brown, becoming pale to mid grey with depth, mainly fine to medium grained, with some coarse grained at depth. The older dune sand is white, fine to medium grained, and well leached. The material ranges from 3 metres to over 9 metres in depth.

SIGNIFICANCE:

The resource is sufficient to meet a large proportion of supply requirements in the north Brisbane, Moreton Bay and Sunshine Coast concrete and bituminous aggregate markets. The remainder under mining lease would be able to supply specialist sands markets, as well as being capable of supply into regional aggregate markets.

SEPARATION AREA:

A maximum separation area of 200 metres is maintained around the resource, including areas with mining tenements. Residential lots in the northeastern corner constrain the separation distance to the resource boundary.

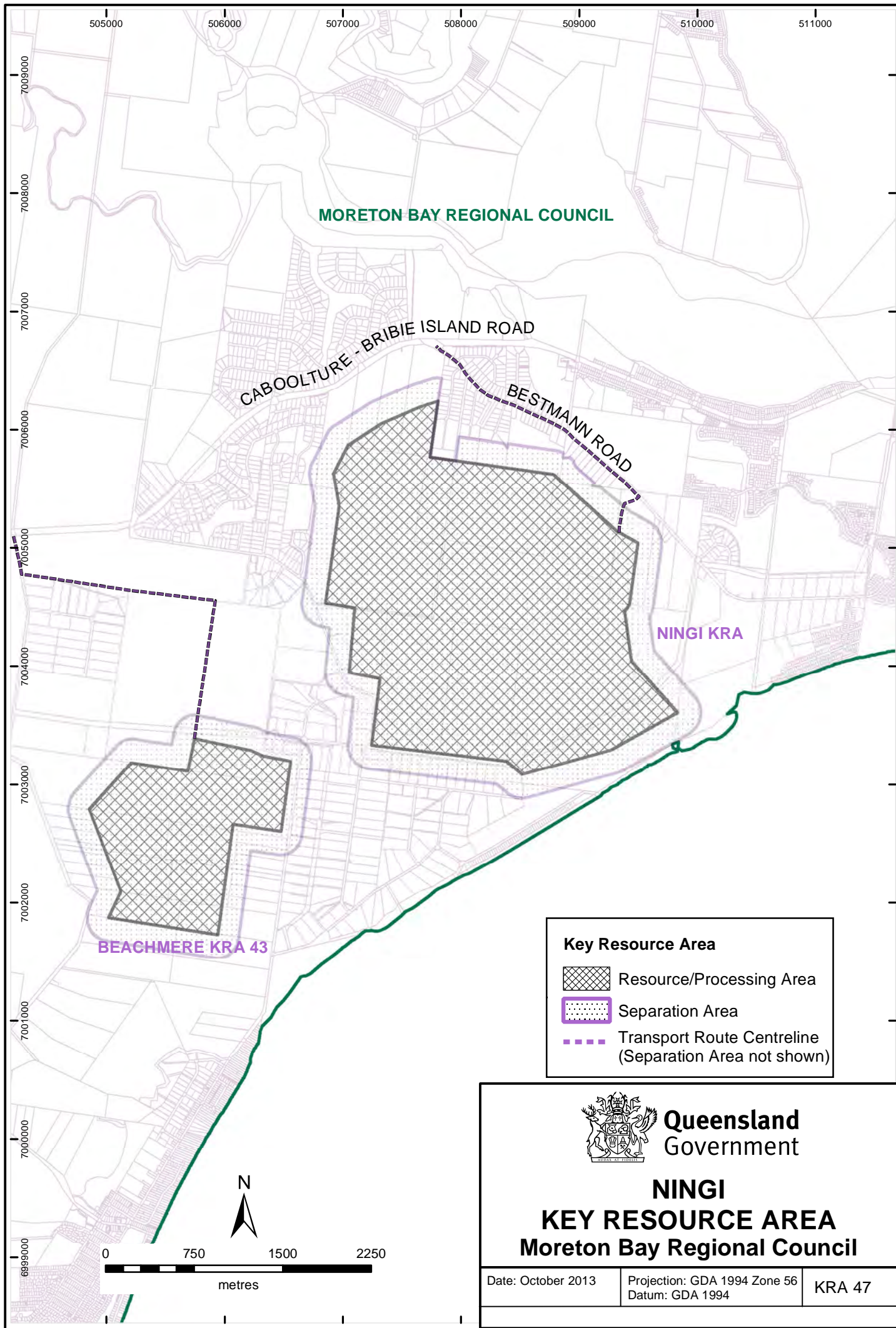
TRANSPORT ROUTE:

The route is from the current site on to Bestmann Road and to the Caboolture-Bribie Island Road. Future access from the northerly part of the resource, which is covered by mining lease, could be directly onto the Caboolture-Bribie Island Road.

SPECIAL CONSIDERATIONS:

The KRA contains areas of ‘of concern’ vegetation under the *Vegetation Management Act 1999*, areas having State biodiversity significance under the Environmental Protection Agency's Biodiversity Planning Assessment, and encompasses some cultural heritage sites of State significance.

The southern half of the KRA is covered by Strategic Cropping Land (SCL) Trigger Mapping under the *Strategic Cropping Land Act 2011* administered by the Department of Natural Resources and Mines. This indicates the location of potential SCL and further on-ground assessment against the SCL criteria is required to confirm whether the area is or is not an SCL.”



MORETON BAY REGIONAL COUNCIL




CABOOLTURE - BRIBIE ISLAND ROAD

BESTMANN ROAD

NINGI KRA

BEACHMERE KRA 43

Key Resource Area

-  Resource/Processing Area
-  Separation Area
-  Transport Route Centreline (Separation Area not shown)



**Queensland
Government**

**NINGI
KEY RESOURCE AREA
Moreton Bay Regional Council**

Date: October 2013

Projection: GDA 1994 Zone 56
Datum: GDA 1994

KRA 47

GLASSHOUSE KEY RESOURCE AREA – KRA 48

LOCAL GOVERNMENT AREA: Sunshine Coast Regional Council

LOCATION:

The resource is located approximately 4 kilometres southwest of the township of Glasshouse Mountains on the North Coast Railway line, and is accessed via Coonowrin Road (see map KRA 48).

EXTRACTIVE RESOURCE: Quarry Rock

EXTRACTIVE RESOURCE DESCRIPTION:

The resource comprises hard, welded, crystal-lithic tuff of the North Arm Volcanics. It occurs as a window beneath younger, overlying sandstone. Overburden depth varies from 1 to 12 metres, and averages about 4.5 metres. A major quarry is established in the resource.

SIGNIFICANCE:

At the present rate of production there are at least 50 years of supply available. A wide range of concrete and asphalt aggregates, manufactured sand, road bases, rip rap and other coarse aggregates is supplied to a primary market extending from northern Brisbane to the southern Sunshine Coast.

SEPARATION AREA:

The resource is largely surrounded by low ridges, and is being extracted by the retreating skyline method. The lowest points are at the entrance near the intersection of Old Gympie and Mt Beerwah Roads, and a low gully in the northeastern corner.

Consequently the boundary of the separation distance is set at 500 metres from the final position of the planned quarry faces, wherever a ridge line shields the working quarry from the surrounding land. It has been increased to 1000 metres where the surrounding land is not screened by an intervening ridge.

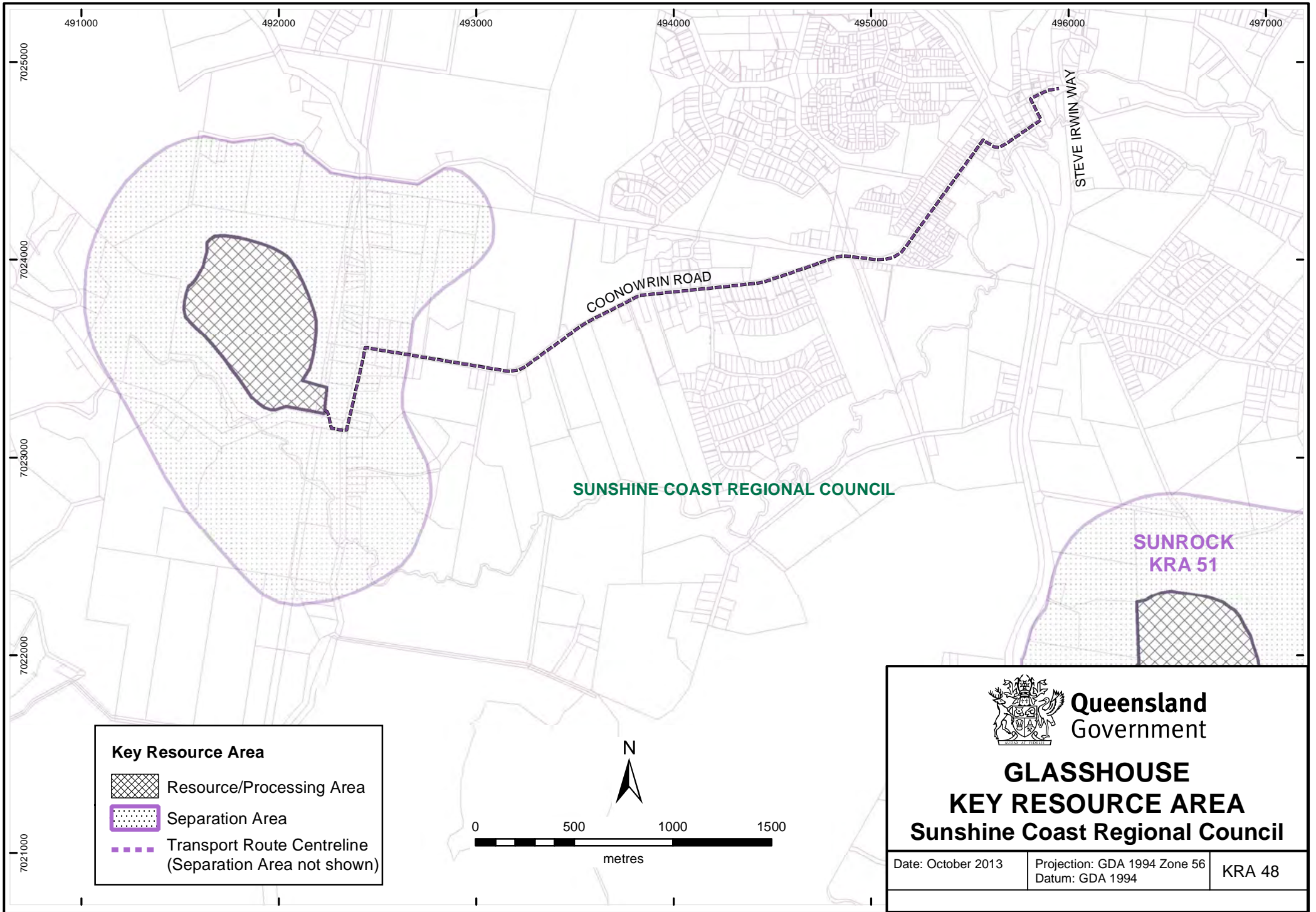
TRANSPORT ROUTE:

Materials are transported via Coonowrin Road through the township of Glasshouse Mountains onto the Steve Irwin Way.




SPECIAL CONSIDERATIONS:

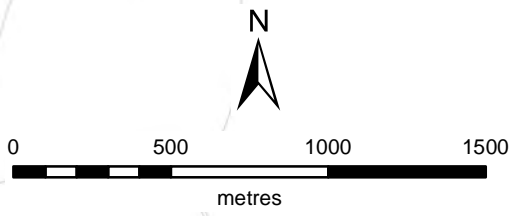
The KRA contains areas of 'endangered' vegetation (RE12.5.6) under the *Vegetation Management Act 1999*, and areas having regional biodiversity significance under the Biodiversity Planning Assessment managed by the Department of Environment and Heritage Protection. This is covered by a pre-existing approval for extractive industry.


Some parts of the separation area are covered by Strategic Cropping Land (SCL) Trigger Mapping under the *Strategic Cropping Land Act 2011* administered by the Department of Natural Resources and Mines. This indicates the location of potential SCL and further on-ground assessment against the SCL criteria is required to confirm whether the area is or is not an SCL.



Key Resource Area

-  Resource/Processing Area
-  Separation Area
-  Transport Route Centreline (Separation Area not shown)



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|  Queensland Government | | |
| GLASSHOUSE KEY RESOURCE AREA | | |
| Sunshine Coast Regional Council | | |
| Date: October 2013 | Projection: GDA 1994 Zone 56 Datum: GDA 1994 | KRA 48 |

MERIDAN PLAINS KEY RESOURCE AREA – KRA 49

LOCAL GOVERNMENT AREA: Sunshine Coast Regional Council

LOCATION:

The resource is located downstream of the Bruce Highway along the floodplain of the Mooloolah River (see map KRA 49).

EXTRACTIVE RESOURCE: Sand

EXTRACTIVE RESOURCE DESCRIPTION:

The resource consists of over 100 million tonnes of construction sand occurring in the alluvial flats of the Mooloolah River east of the Bruce Highway and north of Caloundra Road, known as Meridan Plains. The material consists primarily of fine to coarse grained quartz sand and some fine gravel, with some sections of clayey sand, sandy clay and thin clay bands, with an overburden of mainly stiff clay. Average thickness of the sand resource is 10 metres under overburden ranging from 0.5 to 7 metres thick.

SIGNIFICANCE:

The resource is significant as it has the potential to supply the Sunshine Coast and markets on the northside of Brisbane over the long term, which on current trends will be otherwise deficient in sources of construction sand. The resource is therefore of State significance.

SEPARATION AREA:

A full separation distance of 200 metres has generally been applied around the workable sand resource. This is constrained by rural residential property boundaries along Laxton Road on the northwestern boundary, and the Bruce Highway in the west.

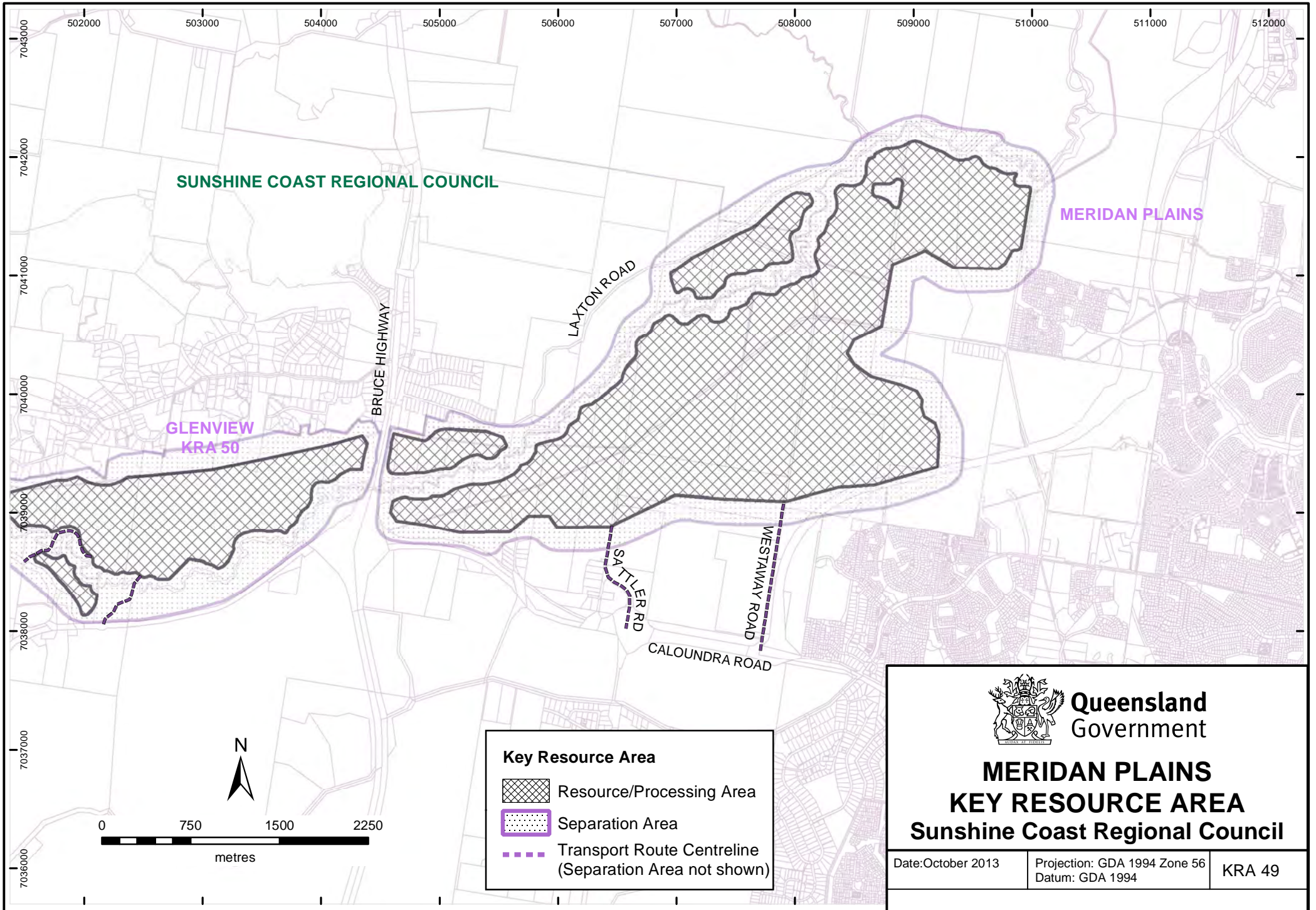
TRANSPORT ROUTE:

The existing Sattler's Road (Honey Farm Road) will be used to access the Caloundra Road in the immediate future. Transport routes from operations in the middle to eastern part of the resource may need to access Sattler's Road directly or via the part of Westaway's Road included in the resource area. Any operations in the far northeastern area, north of the water storage, may need to access major roads via routes not yet identified.

SPECIAL CONSIDERATIONS:

The KRA contains land classified as good quality agricultural land. The resource/processing area may contain an Indigenous cultural heritage site of State significance. As the potential for sediment run-off and damage to riparian vegetation exists, a minimum buffer width of 50 metres from the resource/processing area to the Mooloolah River has been established. The presence of acid sulfate soils is possible at depth.

The KRA is covered by Strategic Cropping Land (SCL) Trigger Mapping under the *Strategic Cropping Land Act 2011* administered by the Department of Natural Resources and Mines. This indicates the location of potential SCL and further on-ground assessment against the SCL criteria is required to confirm whether the area is or is not an SCL.



SUNSHINE COAST REGIONAL COUNCIL

MERIDAN PLAINS

GLENVIEW
KRA 50

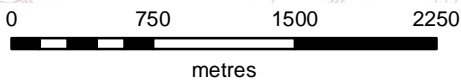
BRUCE HIGHWAY

LAXTON ROAD

SATTLE RD

WESTAWAY ROAD

CALOUNDRA ROAD



Key Resource Area

- Resource/Processing Area
- Separation Area
- Transport Route Centreline (Separation Area not shown)



Queensland
Government

**MERIDAN PLAINS
KEY RESOURCE AREA
Sunshine Coast Regional Council**

| | | |
|--------------------|---|--------|
| Date: October 2013 | Projection: GDA 1994 Zone 56 Datum: GDA 1994 | KRA 49 |
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GLENVIEW KEY RESOURCE AREA – KRA 50

LOCAL GOVERNMENT AREA: Sunshine Coast Regional Council

LOCATION:

The resource is within the alluvial flats of the Mooloolah River west of the Bruce Highway, north of the Steve Irwin Way and the Mooloolah Connection Road, and east of Stephens Road, and south of Glenview Road (see map KRA 50).

EXTRACTIVE RESOURCE: Sand

EXTRACTIVE RESOURCE DESCRIPTION:

The resource occurs in open agricultural land supporting cattle grazing and turf farming, as well as two working sand operations. It consists of fine to coarse grained quartzose alluvial sand averaging about 10 metres thickness with overburden of clay, sandy clay and loam from 4 to 5 metres thick. The northern boundary of the resource is limited by the trunk water pipeline from Ewen Maddock Dam.

SIGNIFICANCE:

The remaining resource is estimated to be sufficient for about 30 years supply to existing markets in the Sunshine Coast region and south towards Brisbane. It is of regional significance.

SEPARATION AREA:

A separation distance of 200 metres from the edge of the resource has been adopted over rural land. The separation to the Bruce Highway is less than 200 metres on the eastern side. To the northwest, the separation area is constrained to the south side of Glenview Road near the Primary School reserve. On the north side, it is constrained by the small rural and rural residential lots south of Glenview Road.

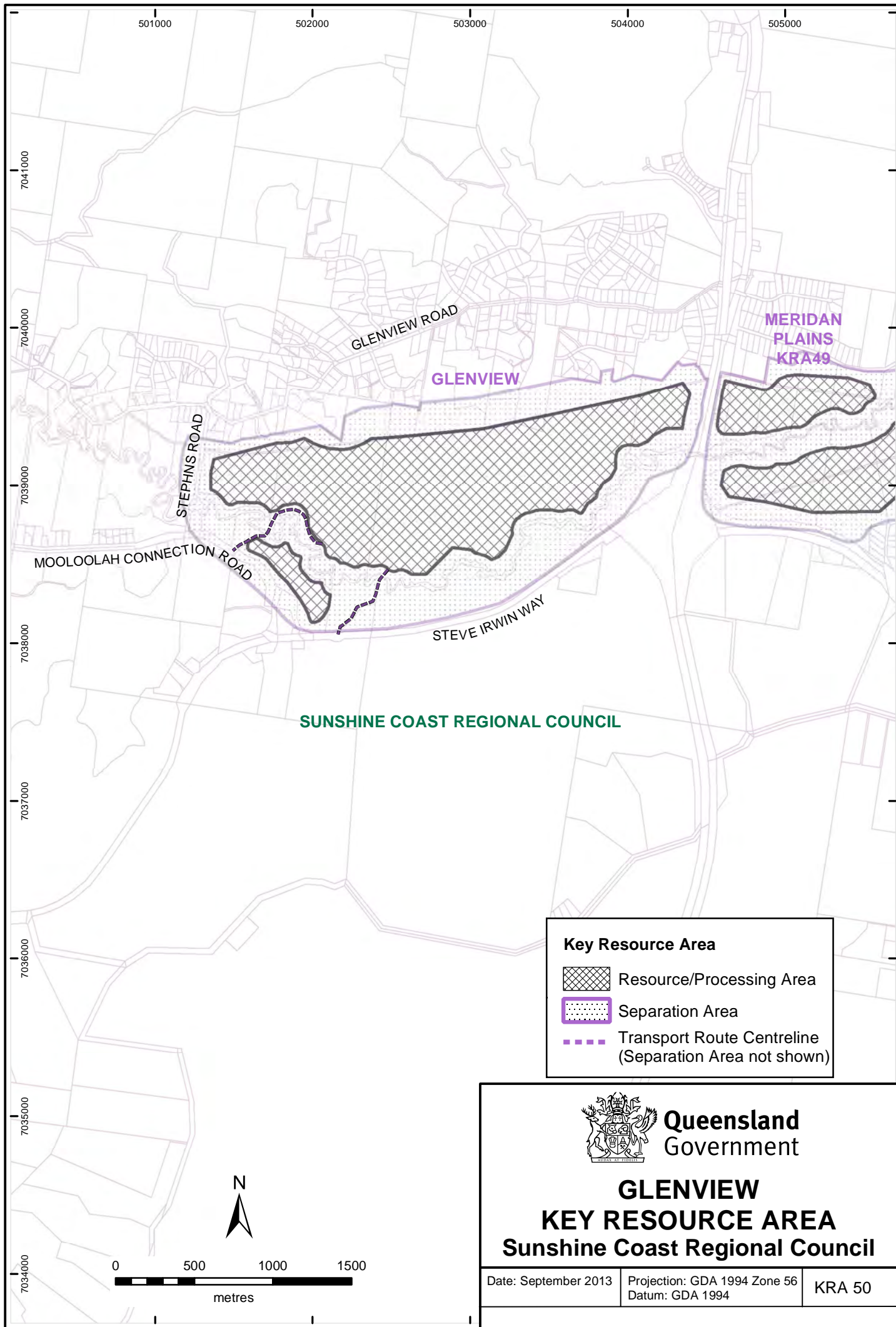
TRANSPORT ROUTE:

The current workings have direct access to the adjacent main roads, the Steve Irwin Way and the Mooloolah Connection Road.




SPECIAL CONSIDERATIONS:

The resource/processing area is situated within the alluvial flats of the Mooloolah River. A minimum buffer width of 50 metres has been established from the resource/processing area to the river.

The KRA is covered by Strategic Cropping Land (SCL) Trigger Mapping under the *Strategic Cropping Land Act 2011* administered by the Department of Natural Resources and Mines. This indicates the location of potential SCL and further on-ground assessment against the SCL criteria is required to confirm whether the area is or is not an SCL.



Key Resource Area

-  Resource/Processing Area
-  Separation Area
-  Transport Route Centreline
(Separation Area not shown)



**Queensland
Government**

**GLENVIEW
KEY RESOURCE AREA
Sunshine Coast Regional Council**

Date: September 2013

Projection: GDA 1994 Zone 56
Datum: GDA 1994

KRA 50

SUNROCK KEY RESOURCE AREA – KRA 51

LOCAL GOVERNMENT AREA: Sunshine Coast Regional Council

LOCATION:

The resource is located approximately 3 kilometres northeast of Beerburrum on Nursery Road, east of the Steve Irwin Way within Beerburrum East State Forest (see map KRA 51).

EXTRACTIVE RESOURCE: Quarry Rock

EXTRACTIVE RESOURCE DESCRIPTION:

The resource consists of an olivine trachyte plug with minimal overburden. It is the site of a major quarry supplying a wide range of crushed rock products.

SIGNIFICANCE:

The remaining resource will meet expected demand for a number of decades. A wide range of products is supplied to a primary market extending from northern Brisbane to the southern Sunshine Coast.

SEPARATION AREA:

The quarry is being widened and deepened by reducing the height of the surrounding ridgeline and a bund of spoil material is being developed on the western side to screen the operations from that direction. As this area is zoned Rural in the current Caloundra City Planning Scheme, a separation distance of 500 metres has been adopted around this part of the resource, being constrained by the Steve Irwin Way.

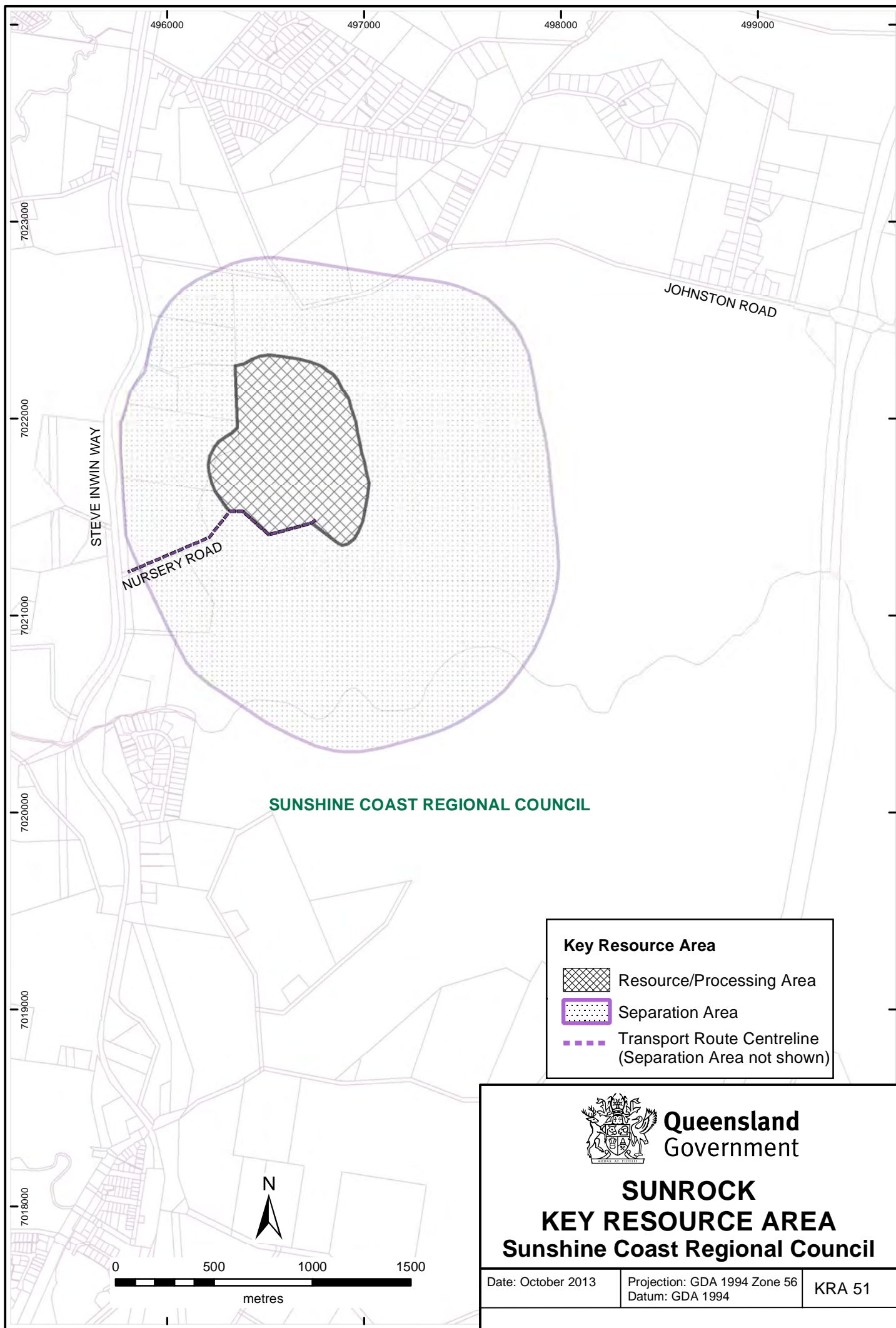
The processing area, including crushers and screening plant, is situated on the eastern side of the resource. This boundary is accordingly set at 1000 metres from the plant as there are no intervening ridges to the south and east of the quarry. This part of the separation area is within Beerburrum East State Forest.

TRANSPORT ROUTE:

The rock is transported via Nursery Road onto the Steve Irwin Way.




SPECIAL CONSIDERATIONS:

Some parts of the western and northern side of the separation area are covered by Strategic Cropping Land (SCL) Trigger Mapping under the *Strategic Cropping Land Act 2011* administered by the Department of Natural Resources and Mines. This indicates the location of potential SCL and further on-ground assessment against the SCL criteria is required to confirm whether the area is or is not an SCL.



SUNSHINE COAST REGIONAL COUNCIL

Key Resource Area

-  Resource/Processing Area
-  Separation Area
-  Transport Route Centreline (Separation Area not shown)



**Queensland
Government**

**SUNROCK
KEY RESOURCE AREA
Sunshine Coast Regional Council**

Date: October 2013

Projection: GDA 1994 Zone 56
Datum: GDA 1994

KRA 51

BLI BLI KEY RESOURCE AREA – KRA 52

LOCAL GOVERNMENT AREA: Sunshine Coast Regional Council

LOCATION:

The resource is located about 3 kilometres northeast of Nambour on the eastern side of the Bruce Highway (see map KRA 52).

EXTRACTIVE RESOURCE: Quarry Rock

EXTRACTIVE RESOURCE DESCRIPTION:

The resource consists of andesite and other volcanic rocks. A major extension to the east has been approved, increasing the life of the quarry.

The quarry supplies a wide range of crushed rock products.

SIGNIFICANCE:

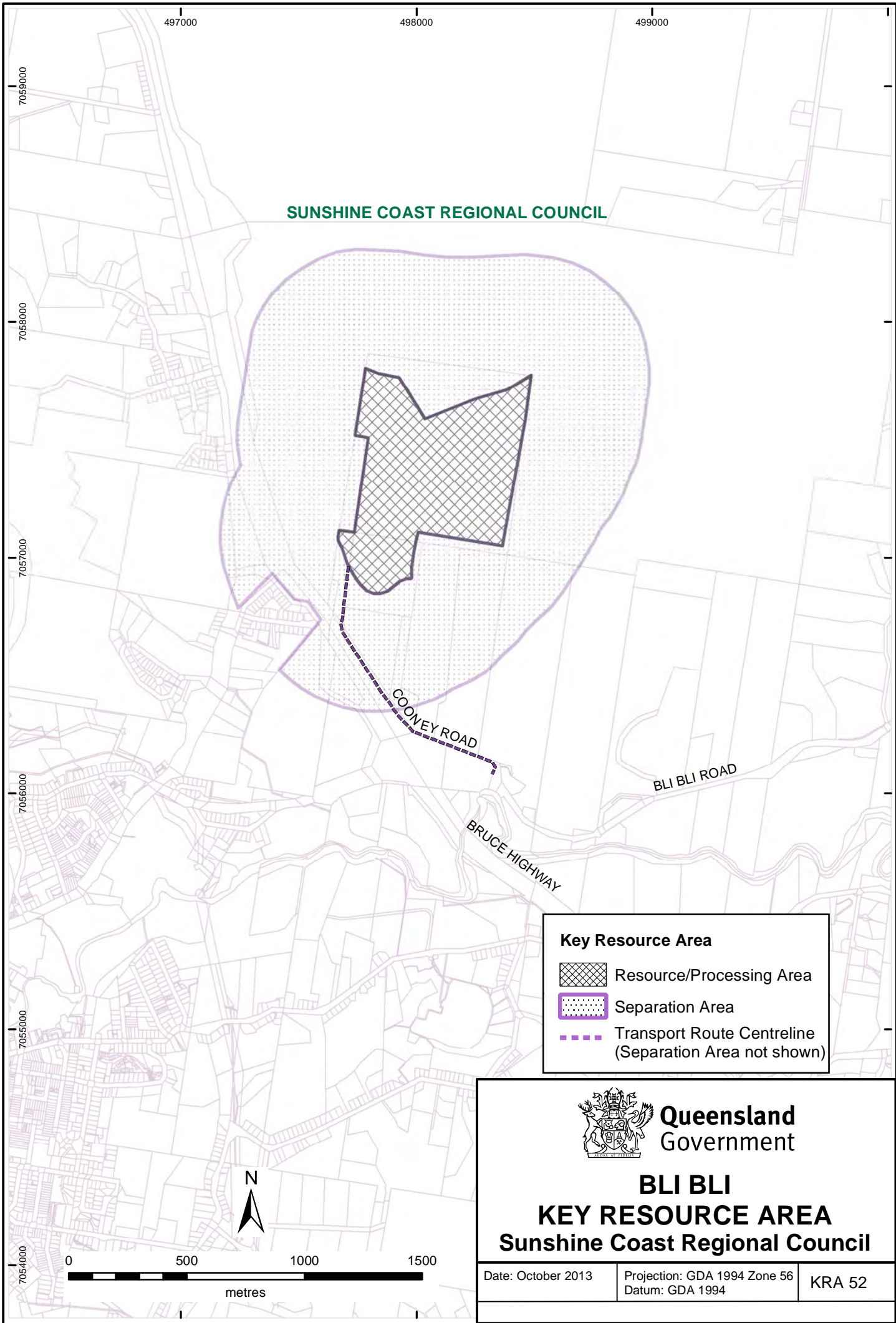
The resource is sufficient for about 40 years of supply. A wide range of products is supplied to a market extending throughout the central and southern Sunshine Coast and hinterland areas. The resource meets the criteria for State significance.

SEPARATION AREA:

The separation area boundary is set at approximately 500 metres from the limits of the resource, as ridge lines shield the resource from the surrounding countryside.




TRANSPORT ROUTE:

Materials are transported directly onto Cooney Road and then southwards to a large roundabout on the Bli Bli Road.



SUNSHINE COAST REGIONAL COUNCIL

Key Resource Area

-  Resource/Processing Area
-  Separation Area
-  Transport Route Centreline (Separation Area not shown)



**Queensland
Government**

**BLI BLI
KEY RESOURCE AREA
Sunshine Coast Regional Council**

Date: October 2013

Projection: GDA 1994 Zone 56
Datum: GDA 1994

KRA 52

IMAGE FLAT KEY RESOURCE AREA – KRA 53

LOCAL GOVERNMENT AREA: Sunshine Coast Regional Council

LOCATION:

The resource is located approximately 3 kilometres northwest of Nambour, and is accessed via Image Flat Road (see map KRA 53).

EXTRACTIVE RESOURCE: Quarry Rock

EXTRACTIVE RESOURCE DESCRIPTION:

The resource comprises flow-banded rhyolite. The rhyolite varies from distinctly weathered in the upper faces to slightly weathered in the lower faces.

SIGNIFICANCE:

At the present rate of production there are at least 10 years of resources available. A wide range of products is supplied to markets extending throughout the central and southern Sunshine Coast.

SEPARATION AREA:

The boundary of the separation area is set at 500 metres from the outer limits of the resource as ridge lines shield much of the resource from the surrounding countryside. This is in accordance with the existing Maroochy Shire Planning Scheme.

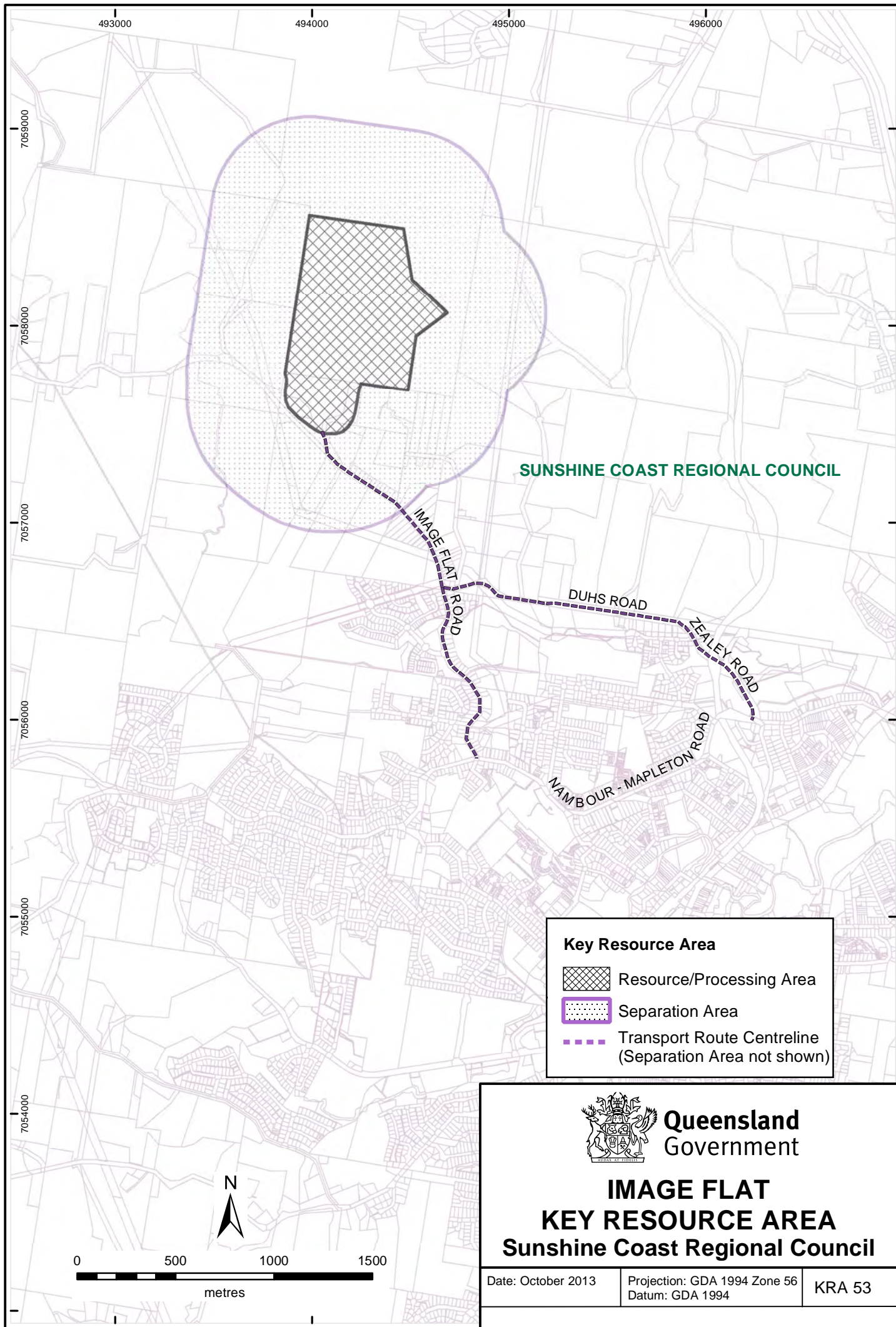
TRANSPORT ROUTE:

The transport route passes directly onto Image Flat Road. It then reaches the Nambour - Mapleton Road. An alternate route to Nambour – Mapleton Road can be used via Duhs Road and Zealey Road.

SPECIAL CONSIDERATIONS:




The KRA overlaps the Wappa State Forest, which contains areas of State and regionally significant biodiversity values under the Department of Environment and Heritage Protection's (DEHP) Biodiversity Planning Assessment. The Wappa State Forest is the subject of an agreement between the DEHP and the Department of Agriculture, Fisheries and Forestry to remain as state forest tenure for local government extractive industry purposes, and therefore has not been transferred to protected area under the *Nature Conservation Act 1992* as part of the SEQ Forest Agreement. On the northern and eastern side of the KRA is the Mapleton Conservation Park.

Some parts of the separation area and a small portion of the resource/processing area at the southern end are covered by Strategic Cropping Land Trigger Mapping under the *Strategic Cropping Land Act 2011* administered by the Department of Natural Resources and Mines. This indicates the location of potential SCL and further on-ground assessment against the SCL criteria is required to confirm whether the area is or is not an SCL.



SUNSHINE COAST REGIONAL COUNCIL

Key Resource Area

-  Resource/Processing Area
-  Separation Area
-  Transport Route Centreline (Separation Area not shown)



**Queensland
Government**

**IMAGE FLAT
KEY RESOURCE AREA
Sunshine Coast Regional Council**

Date: October 2013

Projection: GDA 1994 Zone 56
Datum: GDA 1994

KRA 53

YANDINA CREEK KEY RESOURCE AREA – KRA 54

LOCAL GOVERNMENT AREA: Sunshine Coast Regional Council

LOCATION:

The resource lies 9 kilometres west of Coolum and is located west of McCord's Road and Yandina Creek Road (see map KRA 54).

EXTRACTIVE RESOURCE: Quarry Rock

EXTRACTIVE RESOURCE DESCRIPTION:

The extractive resource comprises hard intrusive diorite and rhyolite flows, which crop out as numerous slabs and bluffs around the low hills between McCords Road, Pryor Road and Yandina Creek northwest of the Toolborough Road quarry. The resource is currently undeveloped.

SIGNIFICANCE:

The Yandina Creek resource is strategically placed to provide construction aggregates and armour stone for a large part of the northern Sunshine Coast. It meets the criteria for State significance.

SEPARATION AREA:

The full extent of the resource has not yet been defined by subsurface investigations. The resource limit is determined by the hills that would need to be retained to screen operations from adjacent lots to the north, west and south. This allows a separation distance of 500 metres. The separation area on the east is set at the toe of the adjacent ridge slope at about 500 metres.

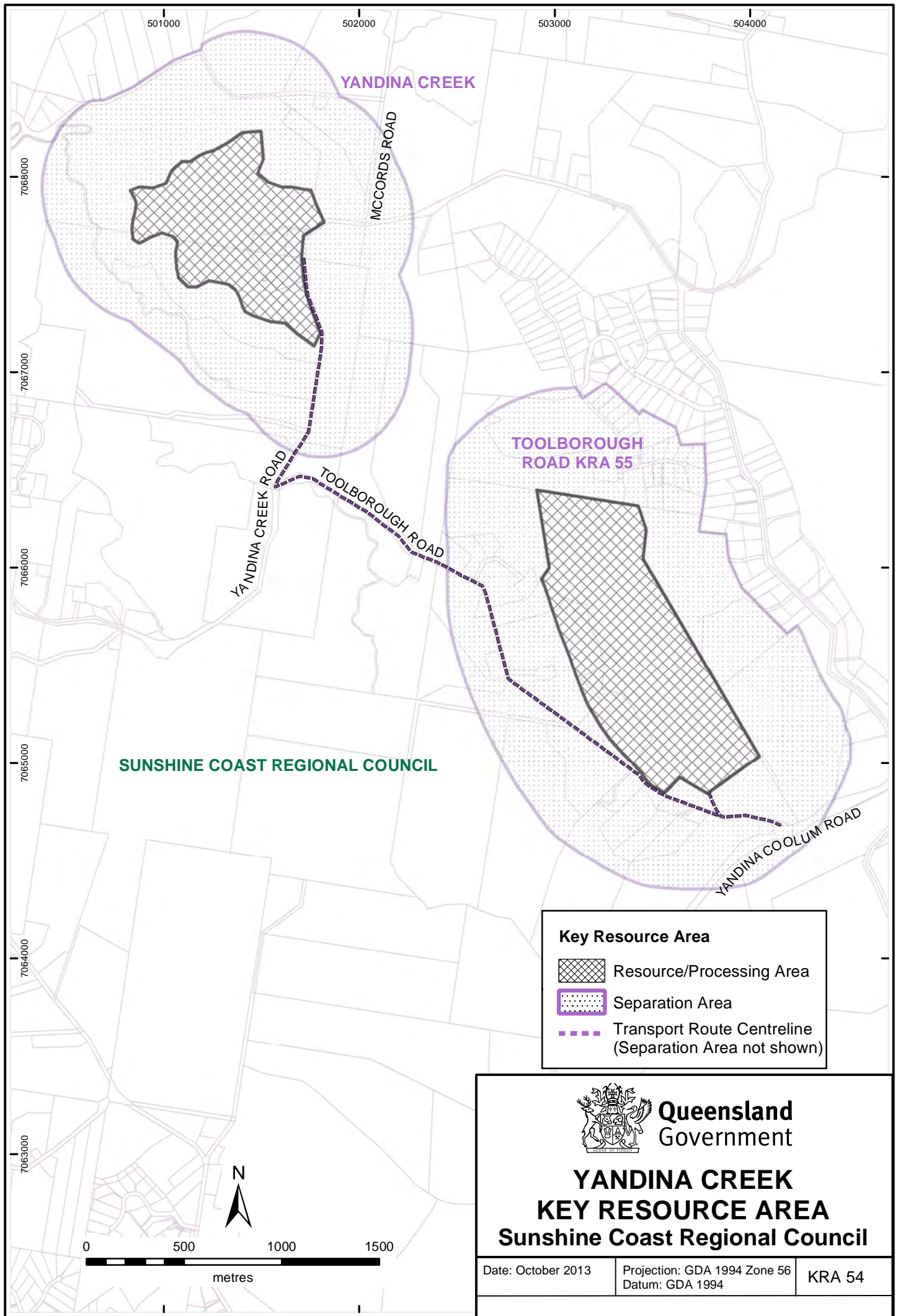
TRANSPORT ROUTE:

The entry point of the transport route to the adjacent roads is most likely to be on the eastern side of the resource entering McCords Road and Yandina Creek Road and then onto Toolborough Road to the Yandina-Coolum Road. This is the shortest route to the Sunshine Coast Motorway and enters the Yandina-Coolum Road at an established truck entry point.

SPECIAL CONSIDERATIONS:

The KRA contains areas of vegetation having State biodiversity significance under the Biodiversity Planning Assessment administered by the Department of Environment and Heritage Protection and forms part of a bioregional wildlife corridor. It also contains records of flora and fauna species of significance under the *Nature Conservation Act 1992* and the *Commonwealth Environmental Protection and Biodiversity Conservation Act 1999*, including migratory bird species.

Some parts of the separation area and a small portion of the resource/processing area are covered by Strategic Cropping Land Trigger Mapping under the *Strategic Cropping Land Act 2011* administered by the Department of Natural Resources and Mines. This indicates the location of potential SCL and further on-ground assessment against the SCL criteria is required to confirm whether the area is or is not an SCL.



YANDINA CREEK

MCCORDS ROAD

TOOLBOROUGH ROAD KRA 55




YANDINA CREEK ROAD

TOOLBOROUGH ROAD

SUNSHINE COAST REGIONAL COUNCIL

YANDINA COOLUM ROAD

Key Resource Area

-  Resource/Processing Area
-  Separation Area
-  Transport Route Centreline (Separation Area not shown)



**Queensland
Government**

**YANDINA CREEK
KEY RESOURCE AREA
Sunshine Coast Regional Council**

Date: October 2013

Projection: GDA 1994 Zone 56
Datum: GDA 1994

KRA 54

TOOLBOROUGH ROAD KEY RESOURCE AREA – KRA 55

LOCAL GOVERNMENT AREA: Sunshine Coast Regional Council

LOCATION:

The resource is located approximately 5 kilometres west of Coolum on the Sunshine Coast (see map KRA 55).

EXTRACTIVE RESOURCE: Quarry Rock

EXTRACTIVE RESOURCE DESCRIPTION:

The extractive resource comprises welded volcanic tuff of moderately to slightly weathered trachyandesite composition. Some variation in texture to agglomeratic type rocks occur in the lower part of the resource.

It is the site of a very large quarry sited within the southern end of the resource adjacent to Toolborough Road.

SIGNIFICANCE:

There are substantial resources remaining in the deposit and it is conveniently situated to supply the markets of the Sunshine Coast hinterland. It is understood that subject to resource quality, the resource is sufficient for 20 years of supply at current levels of extraction.

SEPARATION AREA:

The boundary of the separation area is 500 metres from the property boundary of the block held by the quarry. This is adequate for areas to the north and east as there is a continuous intervening ridge line.

To the west and south a greater separation distance would be required unless the western flank of the ridge is left intact or worked by the retreating tree line method. The presently worked faces on the eastern side of the quarry are being extended eastwards and then northwards within the quarry. The distance from these faces to the southern boundary is over 1000 metres.

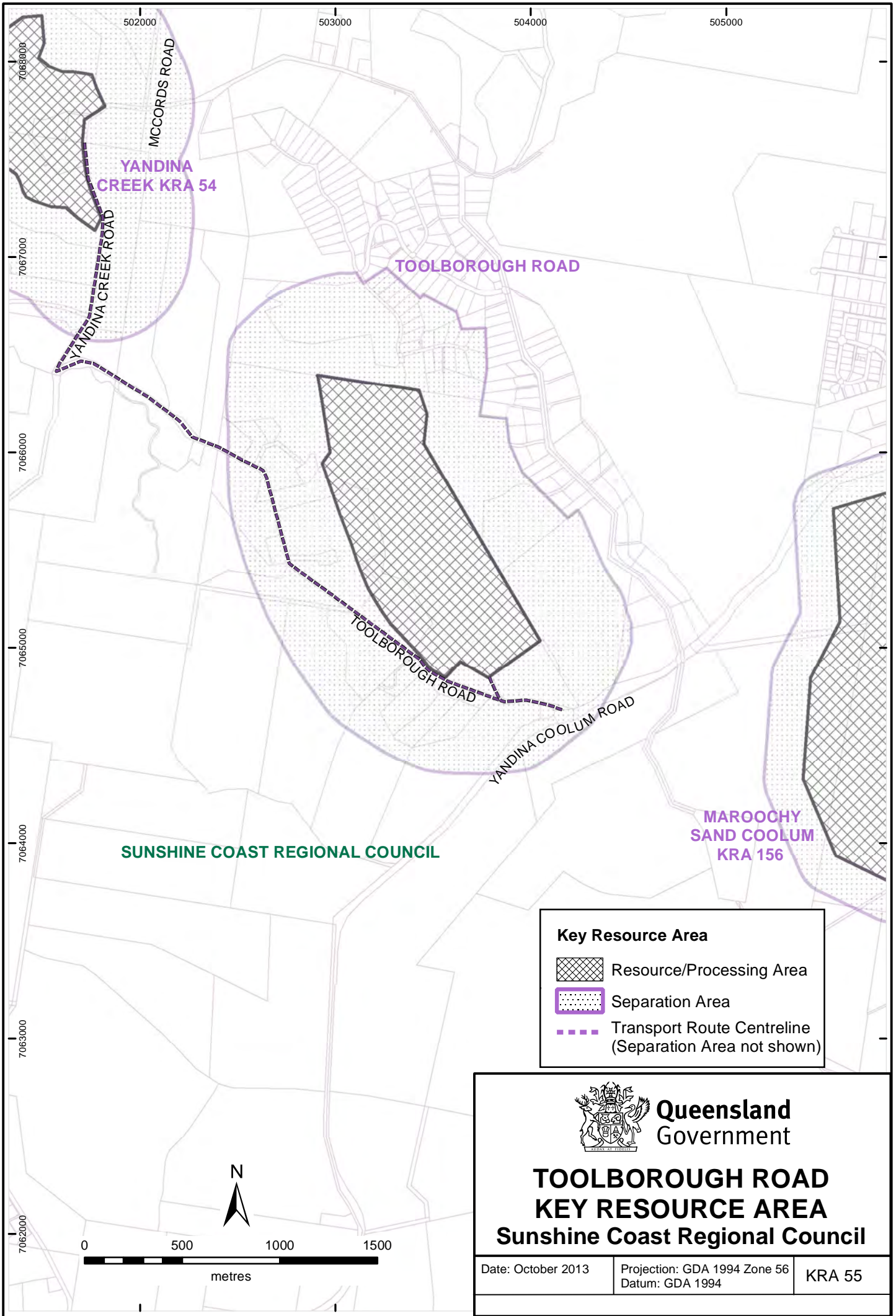
TRANSPORT ROUTE:

The transport route is along Toolborough Road to the intersection with the Yandina to Coolum Road.




SPECIAL CONSIDERATIONS:

The KRA contains an area with State biodiversity significance under the Biodiversity Planning Assessment administered by the Department of Environment and Heritage Protection, containing Special Biodiversity Values and forming part of a bioregional wildlife corridor.

Some parts of the separation area and a small portion of the resource/processing area are covered by Strategic Cropping Land Trigger Mapping under the *Strategic Cropping Land Act 2011* administered by the Department of Natural Resources and Mines. This indicates the location of potential SCL and further on-ground assessment against the SCL criteria is required to confirm whether the area is or is not an SCL.



Key Resource Area

-  Resource/Processing Area
-  Separation Area
-  Transport Route Centreline
(Separation Area not shown)



**Queensland
Government**

**TOOLBOROUGH ROAD
KEY RESOURCE AREA
Sunshine Coast Regional Council**

| | | |
|--------------------|---|--------|
| Date: October 2013 | Projection: GDA 1994 Zone 56 Datum: GDA 1994 | KRA 55 |
|--------------------|---|--------|

RINGTAIL CREEK KEY RESOURCE AREA – KRA 56

LOCAL GOVERNMENT AREA: Noosa Shire Council

LOCATION:

The resource is located approximately 10 kilometres northwest of Tewantin, and is accessed via McKinnon Drive from Tewantin (see map KRA 56).

EXTRACTIVE RESOURCE: Quarry Rock

EXTRACTIVE RESOURCE DESCRIPTION:

The resource consists of a wide, slightly to moderately weathered trachyte dyke or sill. The dyke is partly exposed in an old Forestry pit on Ringtail Creek Road. The intrusion forms a broad gently sloping ridge elongated along a northwesterly direction. It is partly forested.

SIGNIFICANCE:

Although present production levels are small, the location of the resource close to a major growth area and the shortage of alternative sources will ensure its strategic significance, given the considerable distance to quarry rock resources in adjacent regional Councils. The resource could extend to a considerable depth, as it is an intrusive body, allowing considerable deepening.

SEPARATION AREA:

The boundary of the separation area is set at 1000 metres from the western, southwestern and northern sides of the resource held within Council land. The proximity of small subdivisions to the southeast constrains the separation distance to 500 metres in that area. The southeastern flank of the ridge would need to be retained to screen operations from that direction.

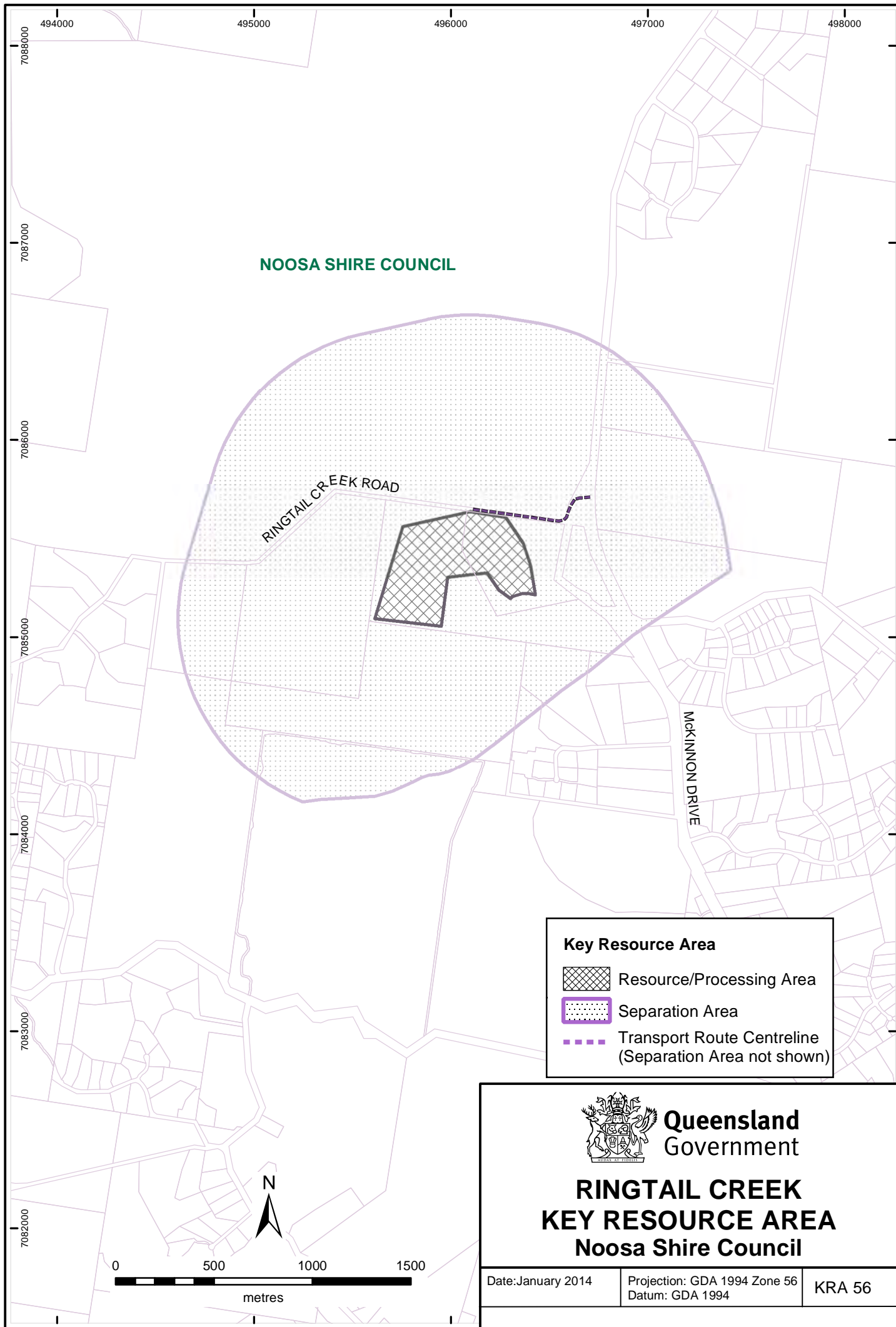
TRANSPORT ROUTE:

The transport route is along Ringtail Creek Road onto McKinnon Drive and then to the Noosa market area.

SPECIAL CONSIDERATIONS:

The KRA contains areas of 'of concern' vegetation under the *Vegetation Management Act 1999*, an area of endangered, vulnerable or rare species under the Biodiversity Planning Assessment administered by the Department of Environment and Heritage Protection and forms part of the state significant Diaper State Forest – Peregian bioregional wildlife corridor. The resource/processing area is adjacent to a site of indigenous cultural significance which includes a ceremonial ground.

Some parts of the separation area and a small portion of the resource/processing area are covered by Strategic Cropping Land Trigger Mapping under the *Strategic Cropping Land Act 2011* administered by the Department of Natural Resources and Mines. This indicates the location of potential SCL and further on-ground assessment against the SCL criteria is required to confirm whether the area is or is not an SCL.



WAHPUNGA RANGE KEY RESOURCE AREA – KRA 57

LOCAL GOVERNMENT AREA: Noosa Shire Council

LOCATION:

The resource is located approximately one kilometre east of Kin Kin, and is accessed via Sheppersons Lane via the Gympie to Kin Kin Road (see map KRA 57).

EXTRACTIVE RESOURCE: Quarry Rock

EXTRACTIVE RESOURCE DESCRIPTION:

A large elongate body of fresh to moderately weathered intrusive andesite occurs in the Wahpunga Range east of Kin Kin. The deposit occurs as a ridge extending southeast from the Gympie to Kin Kin road onto private property. The intrusion is 150 metres wide. Drilling and testing indicated suitability for bitumen screenings and road-pavement gravels.

Suitability for concrete aggregate has not been confirmed.

SIGNIFICANCE:

Although present production levels are small, the scarcity of other resources close to major growth areas in the Sunshine Coast and Gympie Regional Council areas means it will be of strategic significance for many years. Significant resources are present and the deposit is considered to be the most important in the Noosa area, although disadvantaged by distance from markets. The resource meets the criteria for State significance.

SEPARATION AREA:

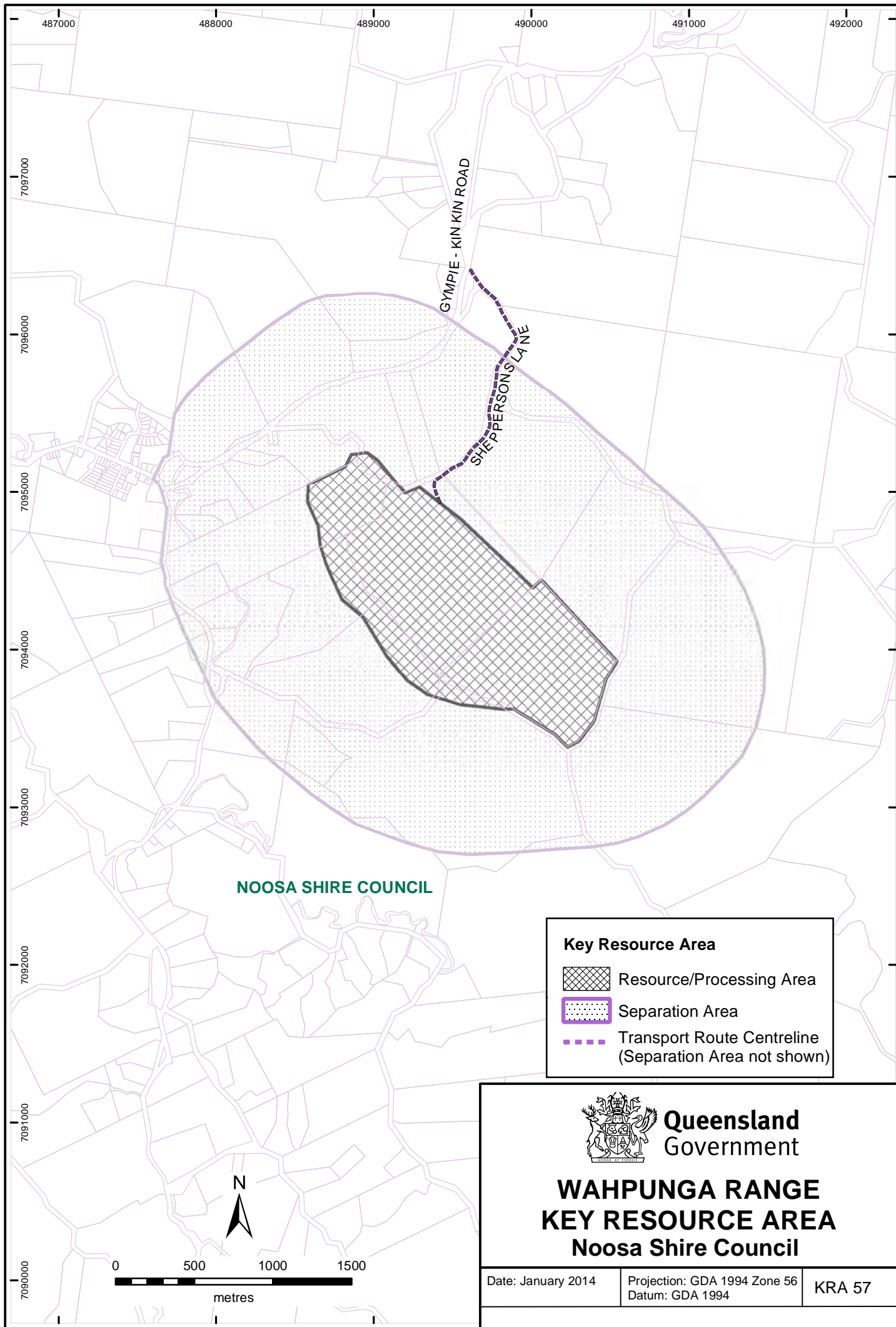
The resource is sited on a high ridge, and will need to be worked by the retreating tree line method to optimise extraction from the intrusive dyke. The residential areas of Kin Kin lie about 1000 metres west of the northern end of the resource, so the full distance has been adopted for the whole separation area. The surrounding country is zoned as Rural therefore a separation distance of 1000 metres around the resource is adopted.

TRANSPORT ROUTE:

The proposed transport route uses the eastern part of Shepperson's Lane and then onto the Gympie to Kin Kin Road. This is the council approved transport route.




SPECIAL CONSIDERATIONS:


Some parts of the separation area and a small portion of the resource/processing area are covered by Strategic Cropping Land Trigger Mapping under the *Strategic Cropping Land Act 2011* administered by the Department of Natural Resources and Mines. This indicates the location of potential SCL and further on-ground assessment against the SCL criteria is required to confirm whether the area is or is not an SCL.



NOOSA SHIRE COUNCIL

Key Resource Area

-  Resource/Processing Area
-  Separation Area
-  Transport Route Centreline (Separation Area not shown)



**Queensland
Government**

**WAHPUNGA RANGE
KEY RESOURCE AREA
Noosa Shire Council**

| | | |
|--------------------|---|--------|
| Date: January 2014 | Projection: GDA 1994 Zone 56 Datum: GDA 1994 | KRA 57 |
|--------------------|---|--------|

WHITESIDE KEY RESOURCE AREA – KRA 58

LOCAL GOVERNMENT AREA: Moreton Bay Regional Council

LOCATION:

The resource is located about 10 kilometres west of Petrie, north of Lake Samsonvale (see map KRA 58).

EXTRACTIVE RESOURCE: Quarry Rock

EXTRACTIVE RESOURCE DESCRIPTION:

The two extractive resources are part of a northwesterly elongated deposit of greenstone forming a prominent ridge crossed by the Dayboro Road a short distance west of the outskirts of Petrie.

Two major quarries, one in each resource, supply a wide range of crushed rock products. There is also a considerable resource present in the intervening area under separate ownership.

SIGNIFICANCE:

There are substantial resources remaining, which are conveniently situated to supply the north Brisbane urban area and north coast districts. The parts of the resource held under permit are sufficient for between 20 and 50 years of supply. The existing quarries supply over 20 percent of the northern Brisbane market.

SEPARATION AREA:

A separation distance of 500 metres has been adopted on the southwestern side of the known resource, as high ridges screen the resource area on that side. On the northern and eastern sides the full 1000 metres is considered necessary due to exposure of the resource to adjoining land. At the southeastern end, the separation area is constrained by the residential blocks between Lake Samsonvale and the Dayboro Road and rural residential blocks on Dunlop Lane.

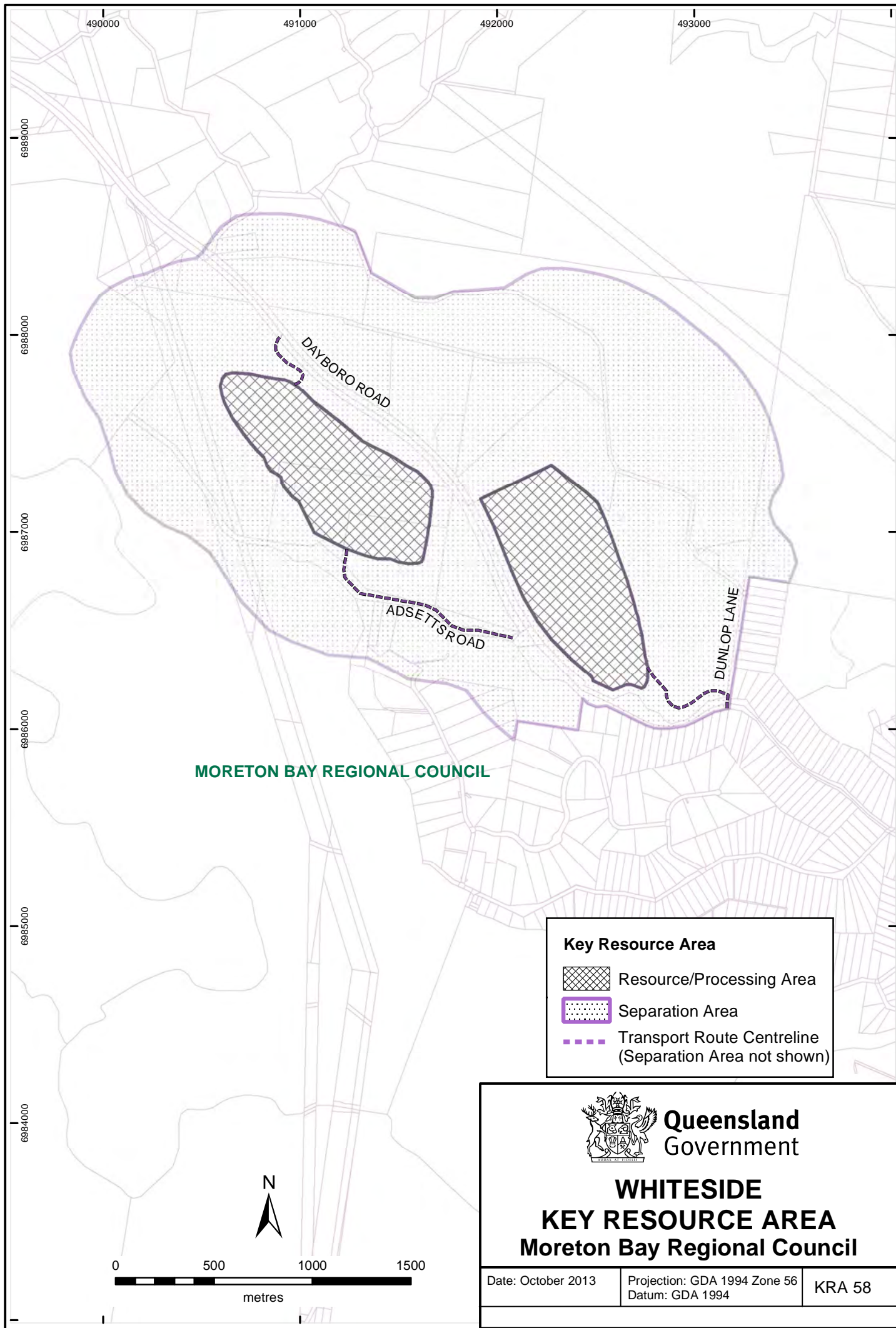
TRANSPORT ROUTE:

The transport of materials from the eastern quarry is onto Dunlop Lane and then the Dayboro Road. Transport from the western quarry is directly onto the Dayboro Road.

An additional route from the undeveloped middle part of the resource would be provided by Adsetts Road (the original Dayboro Road) to avoid transport of materials from this part of the resource through the existing quarry to the west.




SPECIAL CONSIDERATIONS:

The KRA contains areas of 'of concern' vegetation under the *Vegetation Management Act 1999*.



MORETON BAY REGIONAL COUNCIL

Key Resource Area

-  Resource/Processing Area
-  Separation Area
-  Transport Route Centreline
(Separation Area not shown)



**Queensland
Government**

**WHITESIDE
KEY RESOURCE AREA
Moreton Bay Regional Council**

Date: October 2013

Projection: GDA 1994 Zone 56
Datum: GDA 1994

KRA 58

PINE RIVERS NORTH KEY RESOURCE AREA – KRA 59

LOCAL GOVERNMENT AREA: Moreton Bay Regional and Brisbane City Councils

LOCATION:

The resource is located east of Strathpine-Lawnton and north of Bald Hills between the North Pine River and Gympie Road, Lawnton. It extends south to the Bald Hills flats-along the South Pine River (see map KRA 59).

EXTRACTIVE RESOURCE: Sand and Gravel

EXTRACTIVE RESOURCE DESCRIPTION:

The resource comprises fine to coarse sand and gravel up to 15 metres thick beneath 1 to 4 metres of overburden of mainly loam and silty clay. Three areas of resource have been delineated to allow for riparian set-backs along the North and South Pine Rivers and tributaries intersecting the deposit.

SIGNIFICANCE:

Resources are sufficient to meet a large proportion of supply requirements in the Pine Shire and north side of Brisbane markets for over 10 years. Their proximity to major growth areas is of regional significance.

SEPARATION AREA:

The separation distance surrounding the delineated resource is mostly 200 metres except where the nearest boundary of Urban lots is less than 200 metres from the resource. Such locations are north of Grahams Road and Learmonth Street in the southwestern part of the KRA.

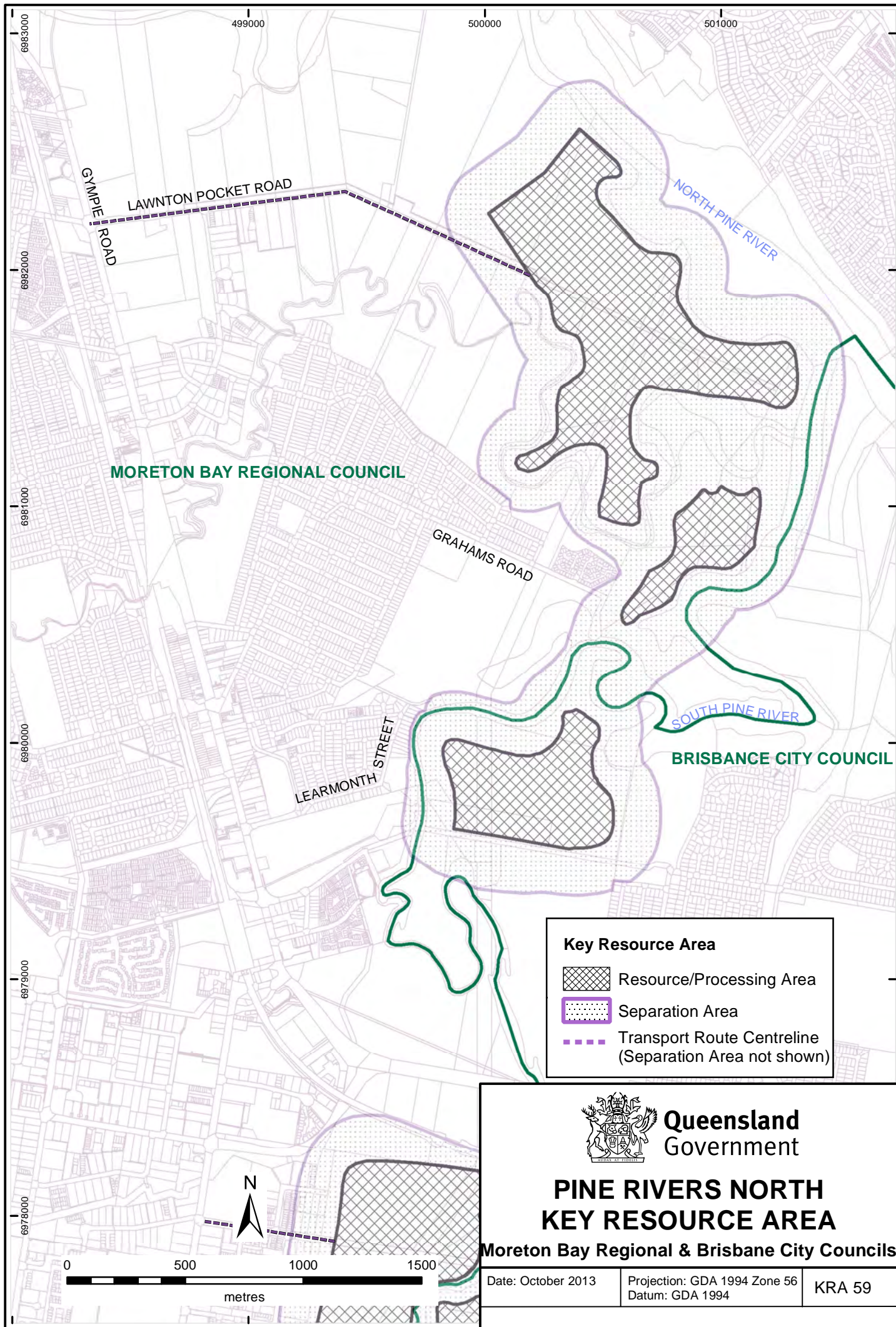
TRANSPORT ROUTE:

The transport route is along Lawnton Pocket Road to Gympie Road. Transport for the material in the other parts of the resource, between Four Mile Creek and the South Pine River, and in Brisbane City, has not yet been considered, but would be within the KRA.

SPECIAL CONSIDERATIONS:

The KRA contains an area with State and regionally significant biodiversity values under the Biodiversity Planning Assessment administered by the Department of Environment and Heritage Protection, including habitat for bird species of significance under the *Nature Conservation Act 1992* and the Commonwealth *Environmental Protection and Biodiversity Conservation Act 1999* and forms part of a bioregional wildlife corridor identified for raptors. A cultural heritage site of State significance (scarred tree) occurs in the vicinity.

A small area of endangered vegetation under the *Vegetation Management Act 1999*, located near the southern end of the northern section of the resource/processing area, is under a pre-existing extractive industry approval. The resource/processing area is situated adjacent to the North and South Pine Rivers and buffer widths ranging from 40 to 100 metres have been established from the resource/processing area to the river.



PINE RIVERS SOUTH KEY RESOURCE AREA – KRA 60

LOCAL GOVERNMENT AREA: Moreton Bay Regional and Brisbane City Councils

LOCATION:

The resource is located south of the North Coast Railway bridge crossing of the South Pine River flats west of Bald Hills within the alluvial plain of the South Pine River. The western extent is upstream of Scouts Crossing Road in Brendale (see map KRA 60).

EXTRACTIVE RESOURCE: Sand and Gravel

EXTRACTIVE RESOURCE DESCRIPTION:

The resource consists of mainly fine to coarse grained sand and gravel. It is up to 15 metres thick with some substantial clay interbeds beneath 1 to 4 metres of overburden of mainly loam and silty clay. Various rehabilitation and other operational activities are continuing in the western part of the mined out resource area.

SIGNIFICANCE:

The resource would be able to supply a large proportion of requirements in the Moreton Bay region and north Brisbane markets. Resources sufficient for over 30 years at current production levels have been reported for the site, which now mainly lie east of the river (in Brisbane City).

SEPARATION AREA:

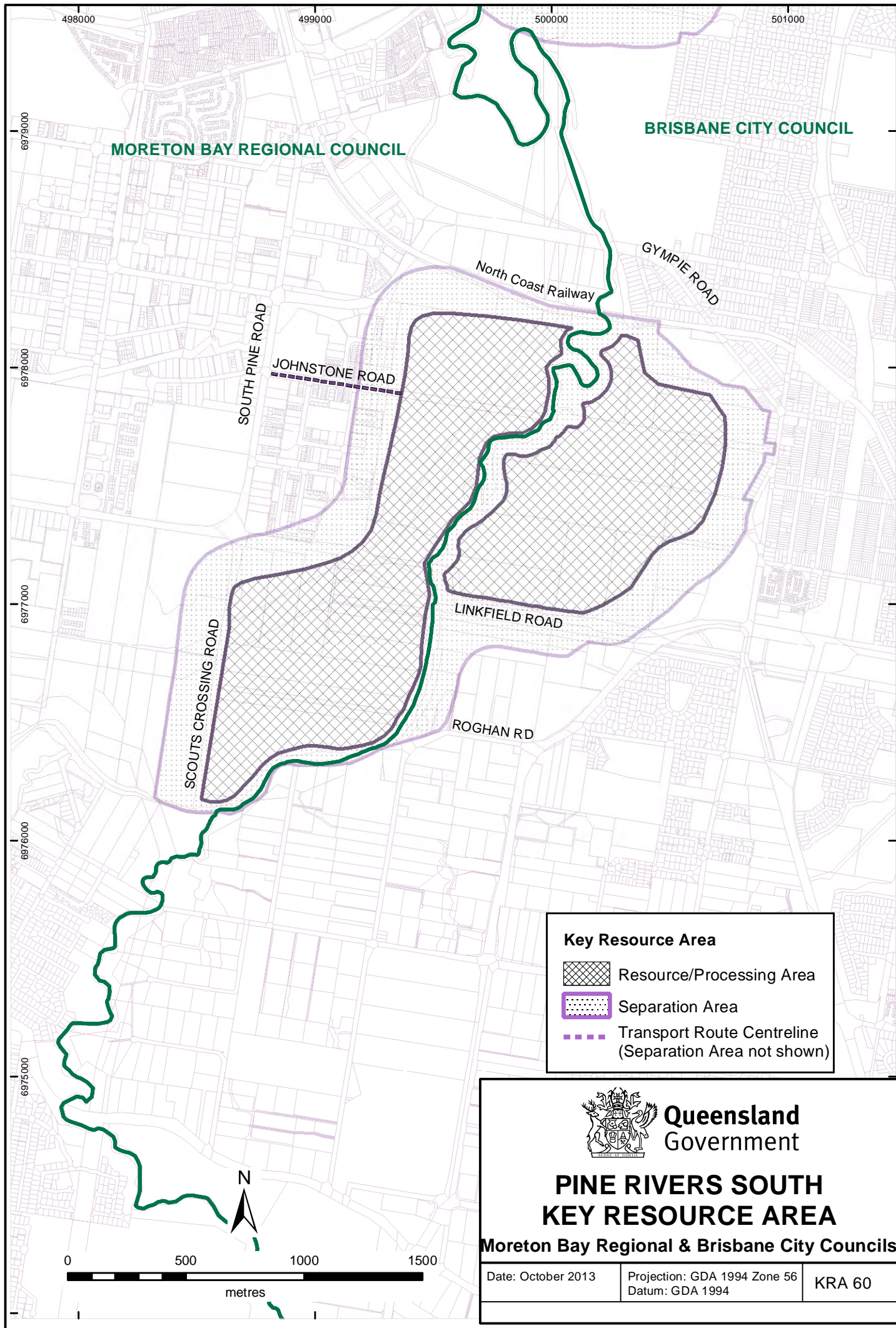
The separation distance from the boundary of the delineated resource is 200 metres over rural land. It is constrained to the railway reserve corridor to the north, along parts of Gympie Road to the northeast and east, and on Roghan Road and along the southern boundary of the South Pine River to the southeast and south.

TRANSPORT ROUTE:

The transport route is along Johnstone Road to the west onto South Pine Road.

SPECIAL CONSIDERATIONS:

A minimum buffer width of 35 metres has been established from the resource/processing area on the western side of the River (Moreton Bay Regional) and a minimum buffer width of 50 metres has been established from the resource/processing area on the eastern side of the River (Brisbane City Council). In addition, a set-back of 20 metres from Linkfield Road has been applied at the southern end of the section east of the South Pine River.



MORETON BAY REGIONAL COUNCIL

BRISBANE CITY COUNCIL

North Coast Railway

GYMPIE ROAD

JOHNSTONE ROAD




SOUTH PINE ROAD

SCOUTS CROSSING ROAD

LINKFIELD ROAD

ROGHAN RD

Key Resource Area

-  Resource/Processing Area
-  Separation Area
-  Transport Route Centreline (Separation Area not shown)



**Queensland
Government**

**PINE RIVERS SOUTH
KEY RESOURCE AREA**

Moreton Bay Regional & Brisbane City Councils

Date: October 2013

Projection: GDA 1994 Zone 56
Datum: GDA 1994

KRA 60



BROMELTON KEY RESOURCE AREA – KRA 61

LOCAL GOVERNMENT AREA: Scenic Rim Regional Council

LOCATION:

This resource, which forms a broad flat-topped hill, is located 5 kilometres west of Beaudesert. The Sydney to Brisbane railway line passes immediately to the west of the resource (see map KRA 61).

EXTRACTIVE RESOURCE: Quarry Rock

EXTRACTIVE RESOURCE DESCRIPTION:

The resource consists of a thick basalt flow forming a broad flat-topped hill west of the Logan River. Two large quarries are sited in the resource.

The resource comprises high quality basalt 33 to 65 metres thick. This overlies a weathered basalt of poor quality. Total inferred resources are about 100 million tonnes.

SIGNIFICANCE:

The resource is conveniently situated to supply the Scenic Rim and Logan, Ipswich and Brisbane City markets by either road or rail transport for up to 100 years at the planned rates of extraction. The resource meets the criteria for State significance.

SEPARATION AREA:

The surrounding country is lower than the resource and is mostly zoned as Rural, thus the 1000 metre separation distance has been adopted. The full 1000 metre separation distance from the resource also applies over the industrial estate on the western side of the railway line, and 700 to 1000 metres over rural land to the north.

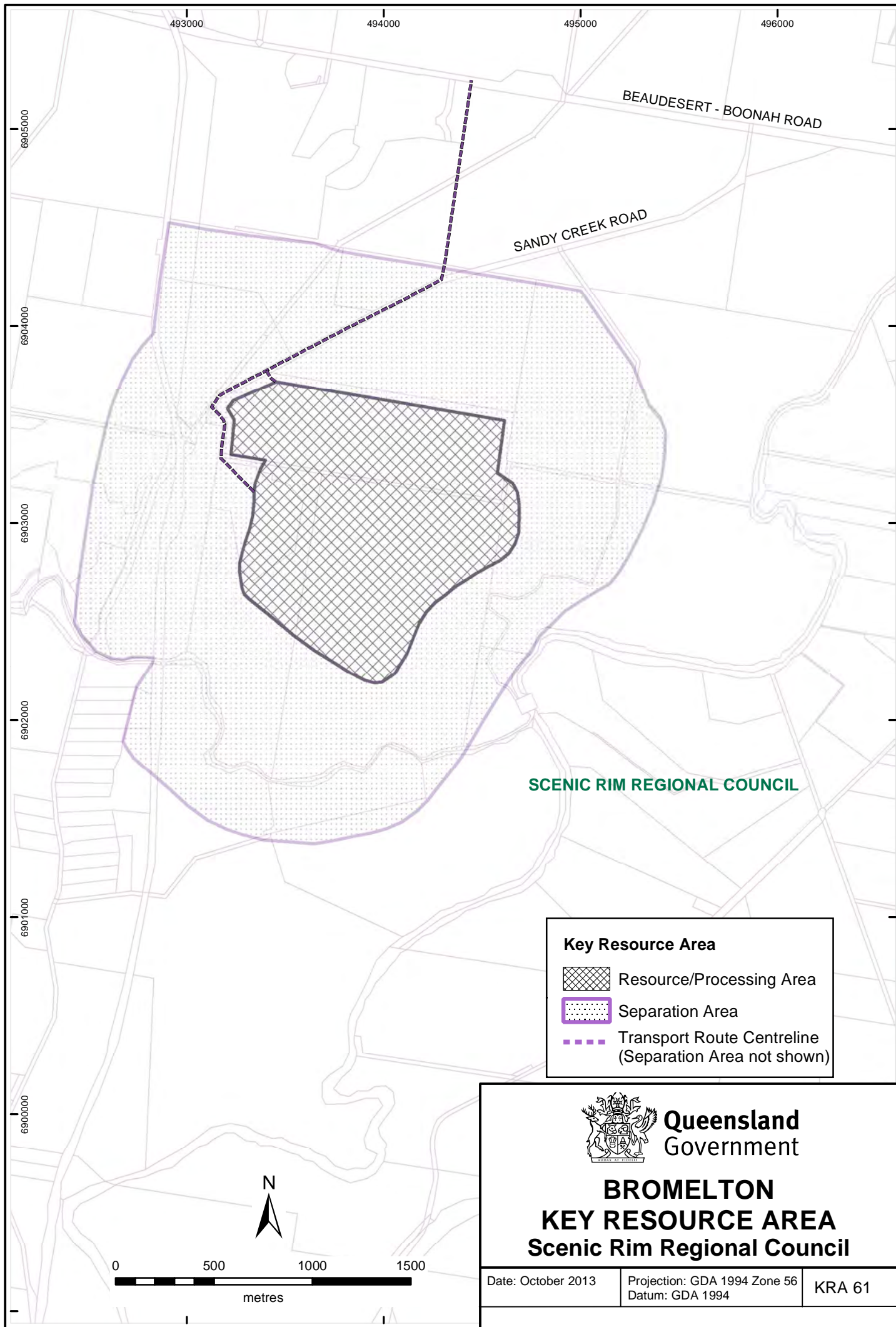
The separation area is constrained by Rural Residential lots to the southwest, which are less than 1000 metres from the resource. The southwest flank of the hill will partly screen the operations from these Rural Residential lots.

TRANSPORT ROUTE:




Two access points to Sandy Creek Road are used. The southern operation uses a road entering Sandy Creek Road east of the railway overpass. The northern operation will utilise a new access point to Sandy Creek road 300 metres north of the other quarry road. Most materials will be transported northwards along Sandy Creek Road to the Beaudesert - Boonah Road. A rail siding has been constructed from the Sydney rail line to transport larger volumes.

SPECIAL CONSIDERATIONS:

Small areas of 'endangered' vegetation under the *Vegetation Management Act 1999* occur throughout the resource/processing area. All but one of these is covered by pre-existing approvals.



Key Resource Area

-  Resource/Processing Area
-  Separation Area
-  Transport Route Centreline
(Separation Area not shown)



**Queensland
Government**

**BROMELTON
KEY RESOURCE AREA
Scenic Rim Regional Council**

Date: October 2013

Projection: GDA 1994 Zone 56
Datum: GDA 1994

KRA 61

BLUE ROCK KEY RESOURCE AREA – KRA 62

LOCAL GOVERNMENT AREA: Gold Coast City Council

LOCATION:

The resource is located about 10 kilometres southwest of Beenleigh along the Beaudesert to Beenleigh Road (see map KRA 62).

EXTRACTIVE RESOURCE: Quarry Rock

EXTRACTIVE RESOURCE DESCRIPTION:

The Blue Rock resource consists of greenstone and greywacke is located in the head of the valley of a minor tributary of the Albert River, north of Cedar Creek.

A large quarry is sited on the resource.

SIGNIFICANCE:

Sufficient resources remain for over 50 years of supply at current production rates. The resource is centrally located between the major urban centres of Brisbane and the northern Gold Coast, with a market area encompassing all or part of the Gold Coast, Redland, Logan, Ipswich Cities and, Moreton Bay and Scenic Rim Regional Council areas.

SEPARATION AREA:

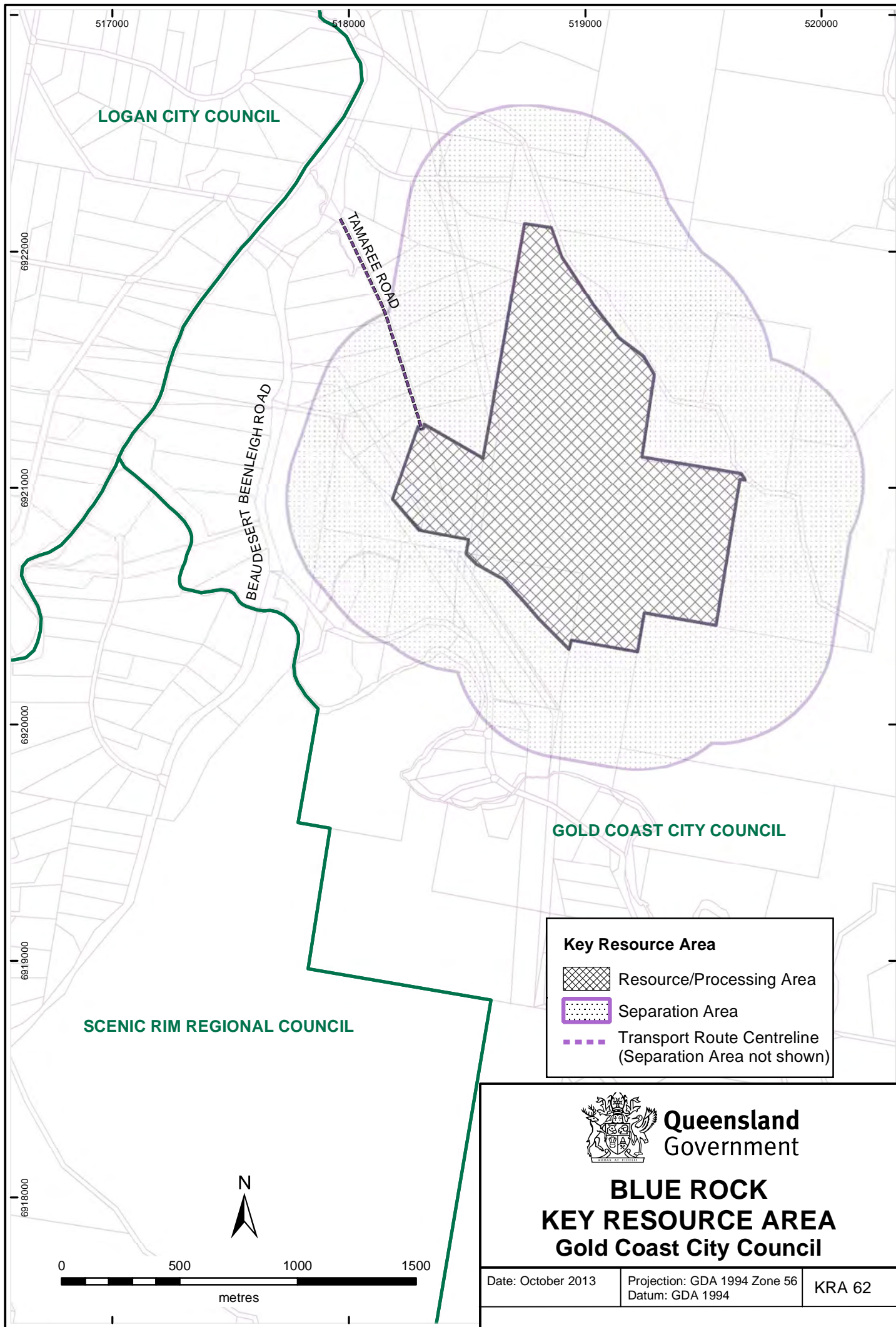
A separation distance of 500 metres around the boundary of the resource and the processing area sited on the southwestern side of the resource is considered adequate, as the operations are screened from the surrounding area by steep ridges.

TRANSPORT ROUTE:

The transport route is along Tamaree Road to the west and then onto the Beaudesert to Beenleigh Road. The preferred transport route to reach the Pacific Highway is via Stanmore Road, which is also used by quarries in the Northern Darlington Range.

SPECIAL CONSIDERATIONS:

The KRA contains areas of State and regional biodiversity significance under the Biodiversity Planning Assessment administered by the Department of Environment and Heritage Protection.



LOGAN CITY COUNCIL




SCENIC RIM REGIONAL COUNCIL

GOLD COAST CITY COUNCIL

BEAUDESERT BEENLEIGH ROAD

TAMARIE ROAD

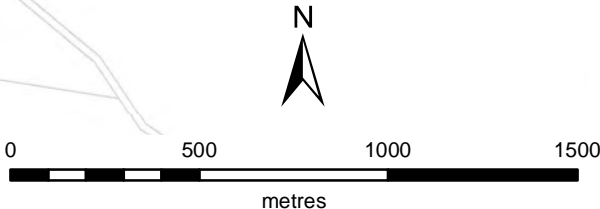
Key Resource Area

-  Resource/Processing Area
-  Separation Area
-  Transport Route Centreline (Separation Area not shown)



**Queensland
Government**

**BLUE ROCK
KEY RESOURCE AREA
Gold Coast City Council**



Date: October 2013

Projection: GDA 1994 Zone 56
Datum: GDA 1994

KRA 62

CARBROOK / EAGLEBY KEY RESOURCE AREA – KRA 63

LOCAL GOVERNMENT AREA: Logan and Gold Coast City Councils

LOCATION:

The resource is located on the northern and southern banks of the Logan River south of the Beenleigh – Redland Bay Road at Carbrook. The processing area is sited with the original workings on the northern bank of the river. On the south side of the river, the resource is located within the river's alluvial terrace at Eagleby (see map KRA 63).

EXTRACTIVE RESOURCE: Sand

EXTRACTIVE RESOURCE DESCRIPTION:

The resource of mainly fine to medium grained quartzose sand is within the alluvium of the Logan River. The sand is up to 10 metres thick beneath 3 to 4 metres of mainly loam and silty clay overburden. The material is dredged on the south side of the Logan River, and pumped to the processing plant through a pipeline buried in the bed of the river.

SIGNIFICANCE:

The resource is sufficient for several years to meet a large proportion of demand in the south Brisbane and Gold Coast markets, as well as export markets for specialist sand products.

SEPARATION AREA:

A full separation distance of 200 metres is designated around the entire perimeter of the resource and processing area, except where urban zoning constrains the boundary at the northwestern extremity in Logan City.

TRANSPORT ROUTE:

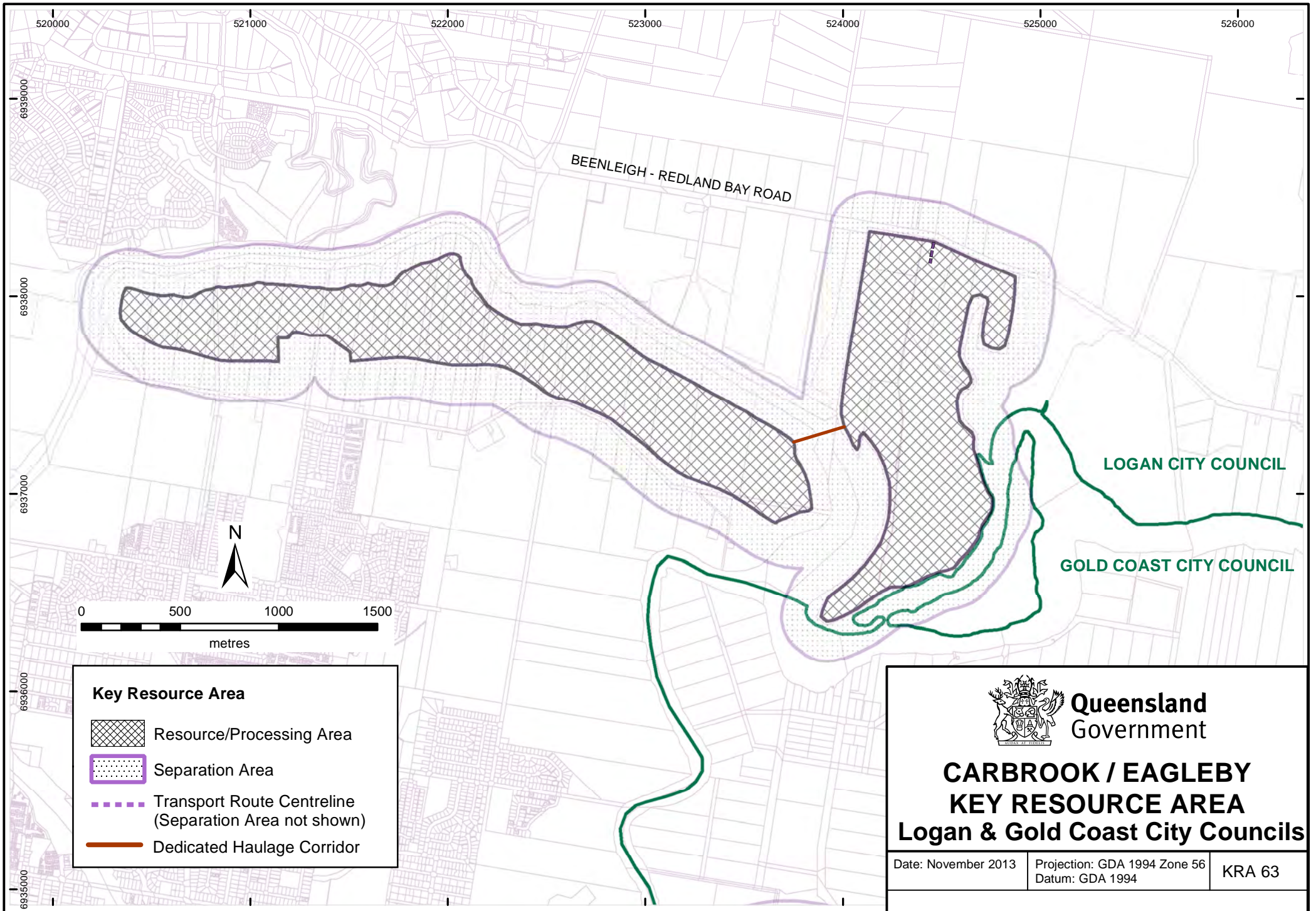
Sand is transported directly onto the Beenleigh – Redland Bay Road. Raw sand feed is pumped from the Eagleby site through a pipeline under the river to the Carbrook processing site.

SPECIAL CONSIDERATIONS:

The KRA is located directly adjacent to the Logan River, which contains fish habitats, and the riverbank in this location is likely to be vegetated with protected marine plants. As a result, the resource/processing area reflects a minimum riparian buffer width of 100 metres on the southern side of the river.

Some 'of concern' vegetation under the *Vegetation Management Act 1999* occurs within the pre-existing approval on the southern side of the Logan River. Other areas of 'of concern' vegetation are immediately adjacent to the resource/processing area to the west of the approved area.

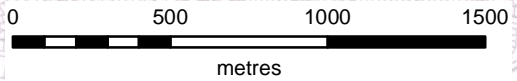
Most of the KRA in the southern side of the Logan River is covered by Strategic Cropping Land Trigger Mapping under the *Strategic Cropping Land Act 2011* administered by the Department of Natural Resources and Mines. This indicates the location of potential SCL and further on-ground assessment against the SCL criteria is required to confirm whether the area is or is not an SCL.







BEENLEIGH - REDLAND BAY ROAD

LOGAN CITY COUNCIL

GOLD COAST CITY COUNCIL



Key Resource Area

-  Resource/Processing Area
-  Separation Area
-  Transport Route Centreline (Separation Area not shown)
-  Dedicated Haulage Corridor



**Queensland
Government**

**CARBROOK / EAGLEBY
KEY RESOURCE AREA
Logan & Gold Coast City Councils**

| | | |
|---------------------|---|--------|
| Date: November 2013 | Projection: GDA 1994 Zone 56 Datum: GDA 1994 | KRA 63 |
|---------------------|---|--------|

JACOBS WELL KEY RESOURCE AREA – KRA 65

LOCAL GOVERNMENT AREA: Gold Coast City Council

LOCATION:

The resource area is within the extensive estuarine/ alluvial plain, and comprises five resources (See map KRA 65, Deposits A to E) extending from the Logan River (Deposit A) to south of the Pimpama River (Deposit E).

EXTRACTIVE RESOURCE: Sand

EXTRACTIVE RESOURCE DESCRIPTION:

The resources consist of mainly fine grained rounded quartzose sand of estuarine and marine origin with an overburden of organic-rich topsoil, clay, sandy clay and loam. Deposit A contains up to 25.5metres of sand (average 7 metres), with an overburden of 0.9 to 1.2 metres. Two Extractive Industry Permits are being operated in this section.

Deposit B contains sand averaging 8 metres thick, with an overburden of 0.6 to 1.1 metres. One extractive operation is currently producing sand for concrete aggregate.

Deposit C contains sand ranging from 1 to 11 metres thick (averaging 4.7 metres), with overburden about 1.7 metres thick.

Deposit D contains sand from 2 to 11 metres in thickness, with clayey sand overburden averaging 1.4 metres thick.

Deposit E contains sand 1 to 11 metres thick, with an overburden 0.5 metres thick.

SIGNIFICANCE:

The resource represents the Brisbane to Gold Coast market's major on-shore source of fine sand for concrete and asphalt. It is particularly important as a source of fine natural sand for blending with 'manufactured sand' produced by fine-crushing of quarry hardrock.

SEPARATION AREA:

The separation area of 200 metres width has been applied around the resource.

TRANSPORT ROUTES:

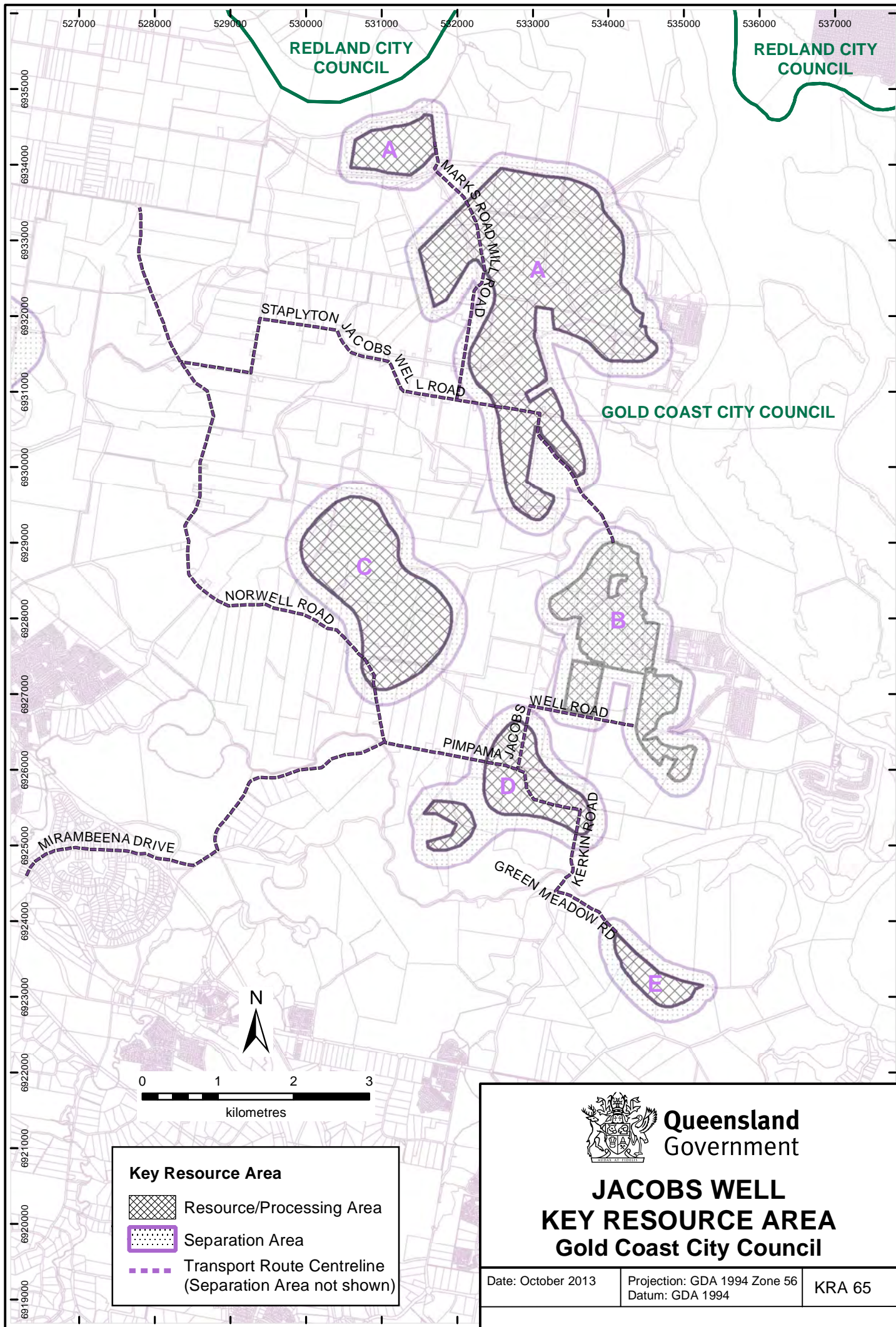
Deposits A and B access the Stapylton–Jacobs Well Road via Marks Road and Mill Road. Deposit C would access the Stapylton–Jacobs Well Road via Norwell Road, or the Pacific Motorway via Norwell Road, Pimpama –Jacobs Well Road and Mirambeena Drive. Deposits D and E would access the Pacific Motorway along Mirambeena Drive via the Pimpama –Jacobs Well Road, and Green Meadows Road/Kerkin Roads.

SPECIAL CONSIDERATIONS:




Deposits A and B are adjacent to significant wetlands of State significance under the Biodiversity Planning Assessment administered by the Department of Environment and Heritage. Deposit A abuts the Logan River and sensitive fish habitats such as the Jumpinpin-Broadwater Fish Habitat Area. A 100 metre buffer has been established between the resource/processing area and the Logan River. Deposit B contains 'of concern' vegetation under the *Vegetation Management Act 1999*, and areas having


regional biodiversity significance. Localised heath at Jacobs Well is the only known habitat in Queensland of the Swordgrass Brown Butterfly. An area of 'of concern' vegetation in Area B is covered by pre-existing approvals. Much of the area currently produces sugar cane and is covered by the Strategic Cropping Land Trigger Mapping under the Strategic Cropping Land Act 2011 administered by the Department of Natural Resources and Mines.

Most of the resource/processing and separation area of the KRA are covered by Strategic Cropping Land Trigger Mapping under the *Strategic Cropping Land Act 2011* administered by the Department of Natural Resources and Mines. This indicates the location of potential SCL and further on-ground assessment against the SCL criteria is required to confirm whether the area is or is not an SCL.



Key Resource Area

-  Resource/Processing Area
-  Separation Area
-  Transport Route Centreline (Separation Area not shown)



**Queensland
Government**

**JACOBS WELL
KEY RESOURCE AREA
Gold Coast City Council**

| | | |
|--------------------|---|--------|
| Date: October 2013 | Projection: GDA 1994 Zone 56 Datum: GDA 1994 | KRA 65 |
|--------------------|---|--------|

NERANG KEY RESOURCE AREA – KRA 66

LOCAL GOVERNMENT AREA: Gold Coast City Council

LOCATION:

The resource is located about 4 kilometres northwest of Nerang (see map KRA 66).

EXTRACTIVE RESOURCE: Quarry Rock

EXTRACTIVE RESOURCE DESCRIPTION:

The resource consists of metagreywacke, quartzite and argillite of the Neranleigh-Fernvale Beds. The northern end of the resource is the site of a large quarry. The rock deposit extends southeast into the Nerang State Forest along a prominent ridge. It is constrained by the easement of an electricity power line.

The rock types are suitable for the production of construction aggregates including manufactured coarse sand.

SIGNIFICANCE:

The remaining resource is sufficient for more than 30 years supply at the current rate of extraction. The resource is strategically located for the major markets of the Gold Coast.

SEPARATION AREA:

As ridges surround the resource, a separation distance of 500 metres has been adopted over the forested areas of the Nerang National Park to the west and the Nerang State Forest to the south.

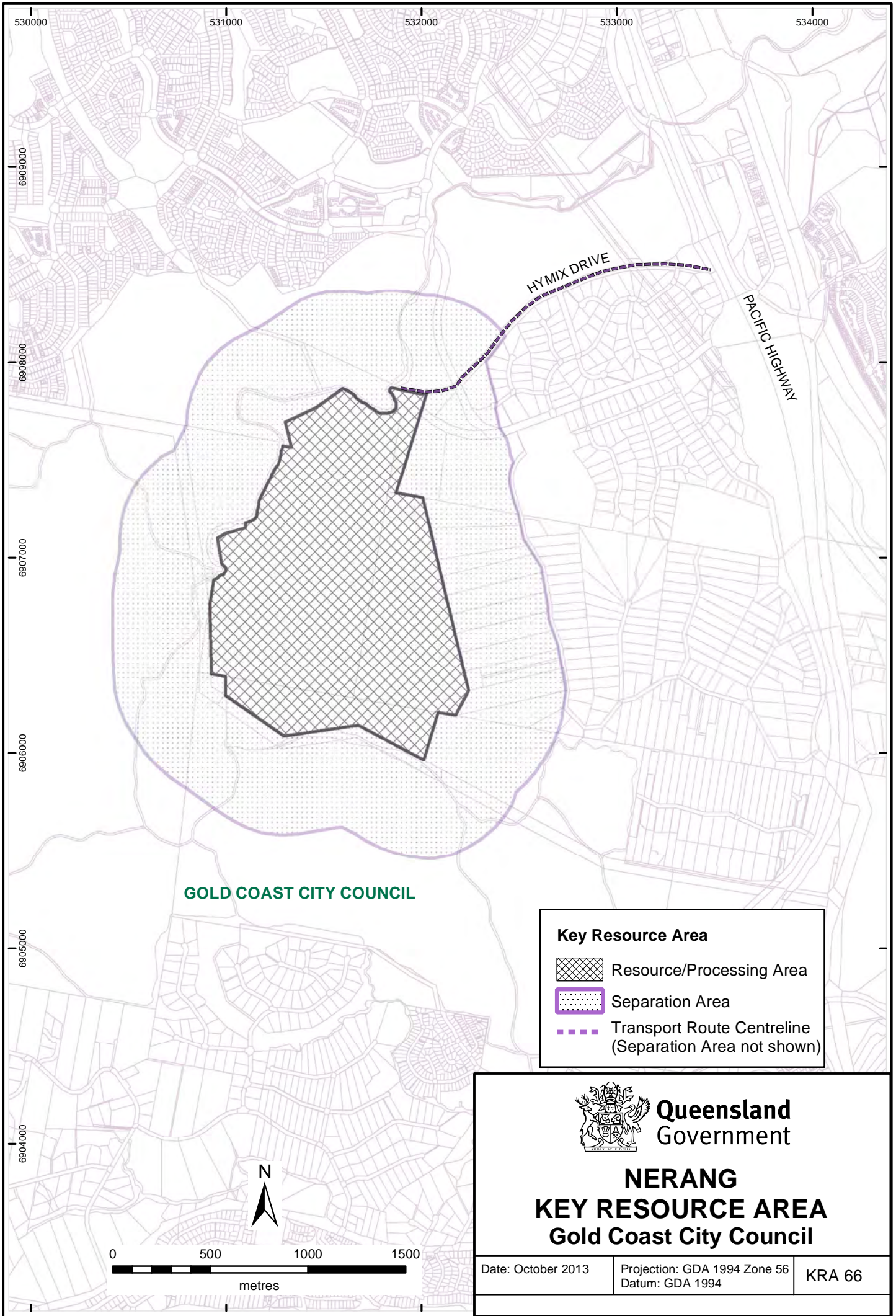
Low ridges shield the northern side of the resource, so that a 500 metre separation distance covering rural land owned by the quarry operator is sufficient to screen operations from urban zones further north. On the northeast, a separation distance of 500 metres has been adopted between the resource/processing area and the existing urban zone adjacent to Smith Street.

TRANSPORT ROUTE:

Materials are transported via Hymix Drive and Heslop Road to the Pacific Motorway and the Smith Street entrance to the Motorway.




SPECIAL CONSIDERATIONS:

The KRA is adjacent to the Nerang National Park to the west and the Nerang State Forest to the south.



GOLD COAST CITY COUNCIL

Key Resource Area

-  Resource/Processing Area
-  Separation Area
-  Transport Route Centreline (Separation Area not shown)



**Queensland
Government**

**NERANG
KEY RESOURCE AREA
Gold Coast City Council**

Date: October 2013

Projection: GDA 1994 Zone 56
Datum: GDA 1994

KRA 66

NORTHERN DARLINGTON RANGE KEY RESOURCE AREA – KRA 67

LOCAL GOVERNMENT AREA: Gold Coast City Council

LOCATION:

The resource is located west of the Pacific Motorway 5 to 8 kilometres south of Beenleigh and 40 kilometres southeast of Brisbane (see map KRA 67).

EXTRACTIVE RESOURCE: Quarry Rock

EXTRACTIVE RESOURCE DESCRIPTION:

The resource consists of resistant metagreywacke, quartzite and greenstone, and forms hilly terrain at the northern end of the Darlington Range. The resource area extends for about 6 kilometres in a northerly direction and is up to 4 kilometres wide.

Four large quarries are established in the northern Darlington Range. The rock is used for concrete and asphalt aggregates and crushed road base. Manufactured sand is also produced in substantial volumes.

SIGNIFICANCE:

The resource in the northern Darlington Range will provide the main long-term source of aggregates for markets in the Brisbane-Gold Coast growth corridor. The existing or proposed quarries cover most of the resource, which has an estimated life of about 100 years at the current rate of production. The resource is of State significance.

SEPARATION AREA:

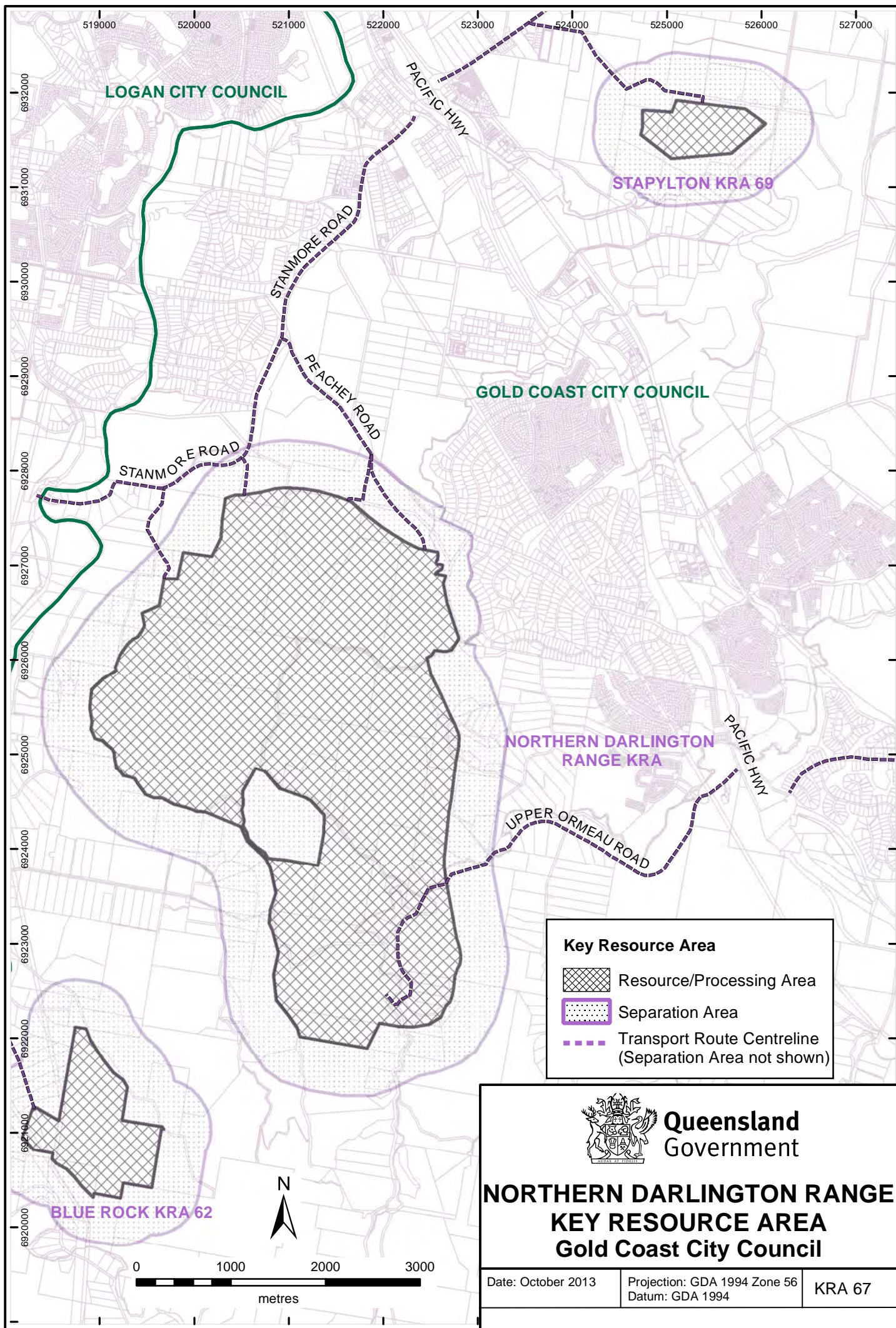
A 500 metre wide separation distance has been adopted from the outermost boundary of the available resource, which is defined as the edge of land parcels currently zoned for extractive industry.

TRANSPORT ROUTES:




Transport from the northern part of the resource is either to Stanmore Road via Harts Road or Peachey Road, then to the Pacific Highway. Some transport takes place westward to the Beaudesert-Beenleigh Road via Stanmore Road. Transportation of materials from the eastern side of the resource is via Upper Ormeau Road to the Pacific Highway.

SPECIAL CONSIDERATIONS:

The majority of the KRA contains areas of State significance as well as identified habitat for endangered, vulnerable or rare species under the Biodiversity Planning Assessment administered by the Department of Environment and Heritage Protection and the Regional Nature Conservation Strategy for Southeast Queensland. The area may also contain watercourses. A small area of 'of concern' vegetation under the *Vegetation Management Act 1999* lies along the boundary between two approved operations, and is protected by the boundary buffer zones required by permit conditions.



Key Resource Area

-  Resource/Processing Area
-  Separation Area
-  Transport Route Centreline (Separation Area not shown)

 **Queensland Government**

**NORTHERN DARLINGTON RANGE
KEY RESOURCE AREA
Gold Coast City Council**

Date: October 2013

Projection: GDA 1994 Zone 56
Datum: GDA 1994

KRA 67

OXENFORD KEY RESOURCE AREA – KRA 68

LOCAL GOVERNMENT AREA: Gold Coast City Council

LOCATION:

The resource is located in northwestern Gold Coast, about 3 kilometres southwest of Oxenford (see map KRA 68).

EXTRACTIVE RESOURCE: Quarry Rock

EXTRACTIVE RESOURCE DESCRIPTION:

The resource consists of greywacke that forms steep ridges southeast of the Tamborine – Oxenford Road.

A major quarry is located between two of the steeper ridges southeast of the intersection of the Tamborine – Oxenford Road and Oxenford – Coomera Gorge Road. This quarry supplies a wide range of crushed rock products.

SIGNIFICANCE:

The remaining resource is sufficient for 30 to 40 years supply, and it is conveniently situated to supply the Gold Coast urban area and the southern Brisbane region markets. Large deposits of greywacke occur south of the existing quarry.

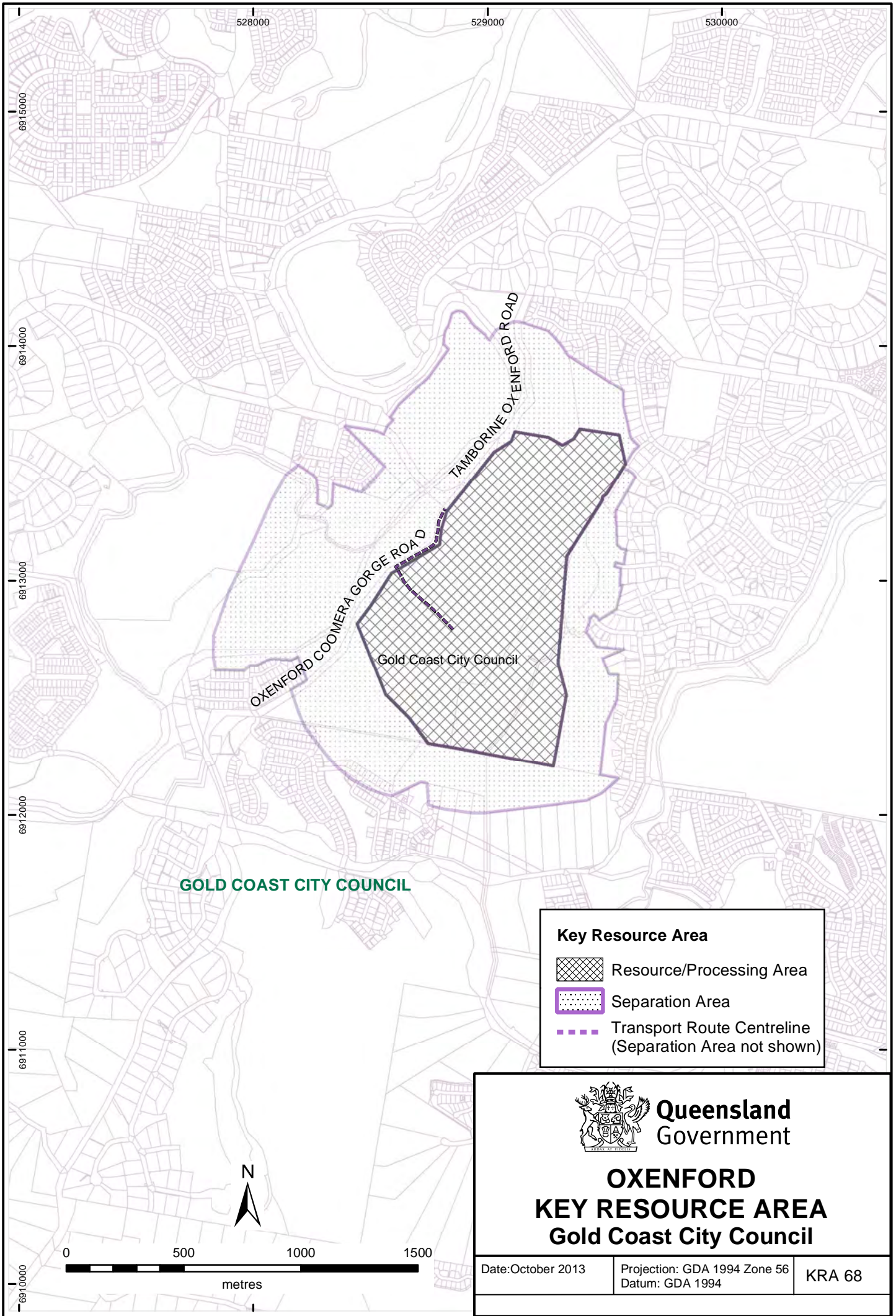
SEPARATION AREA:

On the western and northern sides of the ridge where the face and operations are visible from surrounding Rural land, the full 1000 metres separation distance is adopted. On the northwestern side, the boundary is constrained by the limit of the urban blocks along Oxenford – Coomera Gorge Road on the south side of the Coomera River.




On the northeast, the boundary follows the edge of the urban blocks around to the eastern side of the ridge. On the eastern and southern sides, the distance is constrained by urban zones. It increases progressively to the southeast corner to a maximum of 700 metres over rural land. It is set at 500 metres over the northern part of small rural lots along Bakers Ridge Drive, as the quarry face will be hidden by the ridge of forested land. To the south and southwest, retention by the quarry operator of urban-zoned land as open space permits a separation distance of over 500 metres from the crushing plant.

TRANSPORT ROUTE:

The products are transported directly onto Oxenford – Coomera Gorge Road, then east along the Tamborine – Oxenford Road to the Pacific Motorway. The majority of the rock is transported to the Gold Coast, but some is transported to southern parts of Brisbane and Logan City.



Key Resource Area

-  Resource/Processing Area
-  Separation Area
-  Transport Route Centreline (Separation Area not shown)



**Queensland
Government**

**OXENFORD
KEY RESOURCE AREA
Gold Coast City Council**

| | | |
|--------------------|---|--------|
| Date: October 2013 | Projection: GDA 1994 Zone 56 Datum: GDA 1994 | KRA 68 |
|--------------------|---|--------|

STAPYLTON KEY RESOURCE AREA – KRA 69

LOCAL GOVERNMENT AREA: Gold Coast City Council

LOCATION:

The resource is located about 7 kilometres southeast of Beenleigh on the southern flank of Mount Stapylton (see map KRA 69).

EXTRACTIVE RESOURCE: Quarry Rock

EXTRACTIVE RESOURCE DESCRIPTION:

The resource consists of hard quartzite that occurs in thick layers forming resistant ridges.

Currently two moderate to large-sized quarries are located at the northern and southern ends of the resource. The southern quarry is nearing exhaustion and will be converted to a land-fill facility within the next ten years. The northern quarry may be able to extend into adjacent greywacke resources to the northeast.

SIGNIFICANCE:

The remaining overall resource is estimated to be sufficient for 15 to 20 years. The resource is well situated to supply both the Gold Coast and southern Brisbane markets with crushed rock products, in particular road base and concrete aggregate.

SEPARATION AREA:

As the resource at each active operation is screened from the surrounding land by ridges, a separation distance of 500 metres from the boundary of the resource has been adopted over Rural or Future Urban Zones.

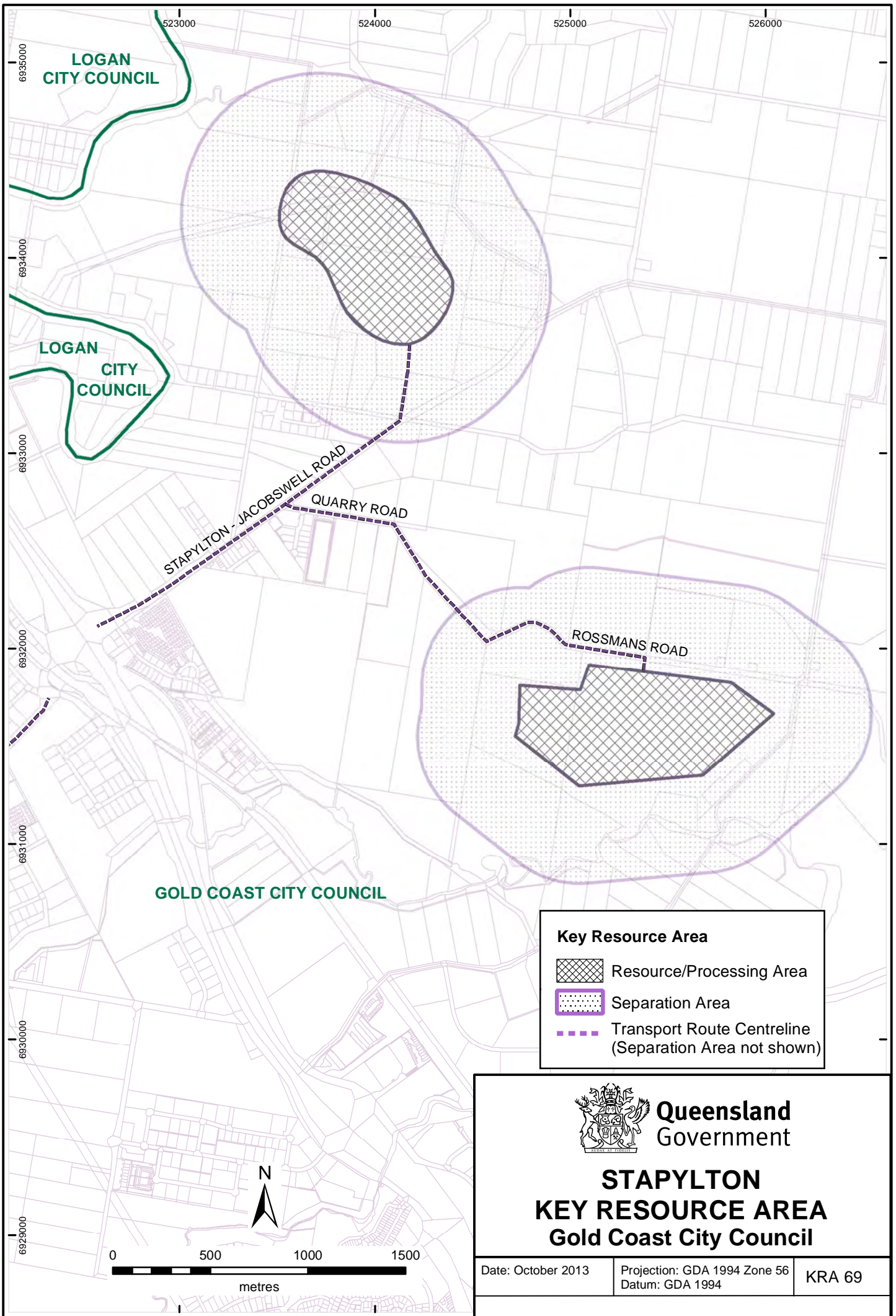
TRANSPORT ROUTE:




The transport route for the northern quarry is via Stonemaster Drive onto Stapylton-Jacobs Well Road.

The transport route from the southern quarry is along Rossmans Road and Quarry Road and onto Stapylton-Jacobs Well Road.

SPECIAL CONSIDERATIONS:

A small portion of the separation area is covered by Strategic Cropping Land Trigger Mapping under the *Strategic Cropping Land Act 2011* administered by the Department of Natural Resources and Mines. This indicates the location of potential SCL and further on-ground assessment against the SCL criteria is required to confirm whether the area is or is not an SCL.



- Key Resource Area**
-  Resource/Processing Area
 -  Separation Area
 -  Transport Route Centreline
(Separation Area not shown)



**Queensland
Government**

**STAPYLTON
KEY RESOURCE AREA
Gold Coast City Council**

Date: October 2013

Projection: GDA 1994 Zone 56
Datum: GDA 1994

KRA 69

WEST BURLEIGH KEY RESOURCE AREA – KRA 70

LOCAL GOVERNMENT AREA: Gold Coast City Council

LOCATION:

The resource is located about 3.5 kilometres southwest of Burleigh, adjacent to the Pacific Motorway (see Map KRA 70).

EXTRACTIVE RESOURCE: Quarry Rock

EXTRACTIVE RESOURCE DESCRIPTION:

The resource is composed of major greywacke and quartzite bands. The greywacke is moderately weathered to fresh with some interbedded argillite. The quartzite is also interbedded with argillite.

A major quarry in the greywacke resource on the northern side of the Pacific Highway has operated for many years. Other quarries have closed due to exhaustion of the resource.

SIGNIFICANCE:

The remaining portion of the resource contains substantial volumes of quarry rock. It remains the most conveniently situated resource to supply the Gold Coast urban market and surrounding district. It may have sufficient resources to produce at the current rate for up to another 10 years.

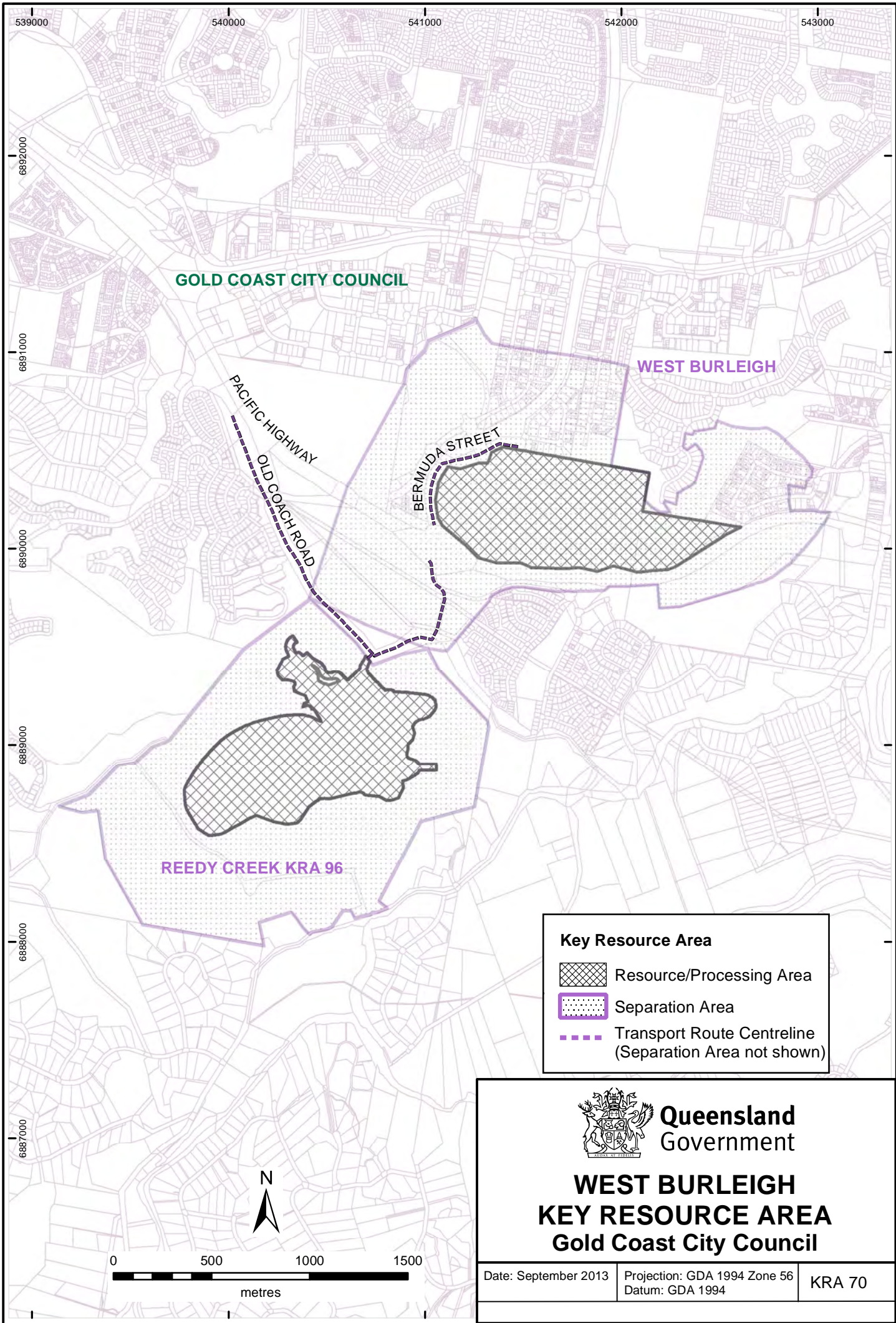
SEPARATION AREA:

The boundaries of the separation area are based on the boundaries of the extractive licence. The maximum separation distance adopted is 500 metres over surrounding land zoned as General Industrial, Recreational Parkland and Rural, as low ridges or constructed bunds are retained around the quarry. However, Special Residential or Residential A Zones on the southern side of the Pacific Highway constrain the separation distance to less than 500 metres in that direction.




TRANSPORT ROUTE: Materials are transported from the quarry along Bermuda Street directly onto the Pacific Highway.

SPECIAL CONSIDERATIONS:

The KRA forms part of the State significant Burleigh Heads-Great Dividing Range bioregional wildlife corridor, including areas identified as having State biodiversity significance under the Biodiversity Planning Assessment administered by the Department of Environment and Heritage Protection and the Regional Nature Conservation Strategy for Southeast Queensland. The KRA contains indigenous cultural heritage artefact scatters.



Key Resource Area

-  Resource/Processing Area
-  Separation Area
-  Transport Route Centreline (Separation Area not shown)



**Queensland
Government**

**WEST BURLEIGH
KEY RESOURCE AREA
Gold Coast City Council**

| | | |
|----------------------|---|--------|
| Date: September 2013 | Projection: GDA 1994 Zone 56 Datum: GDA 1994 | KRA 70 |
|----------------------|---|--------|

MOUNT COTTON KEY RESOURCE AREA – KRA 71

LOCAL GOVERNMENT AREA: Redland and Logan City Councils

LOCATION:

The resource is located to the west of Mount Cotton Road at Mount Cotton and forms part of the north-northwest trending ridge known as the Mount Cotton “range” as well as an area of more subdued topography to the west of the ridge (see map KRA 71).

EXTRACTIVE RESOURCE: Quarry Rock

EXTRACTIVE RESOURCE DESCRIPTION:

The northeastern resource is primarily a steeply dipping quartzite bed that trends north-northwest and forms the spine of the ridge. A medium-sized quarry is located within this part of the resource. The quartzite is quarried for production of aggregates with a range of uses. Poorer quality phyllite/argillite materials adjacent to the quartzite are also quarried and used for fill or blended with the better quality quartzite aggregates for use in road base products. This resource is depleted.

The southwestern resource comprises a thick sequence of hard greywacke beds with minor interbeds of finer-grained rock (argillite). This large resource is also suitable for production of a wide variety of aggregate products

SIGNIFICANCE:

The resource is large and conveniently located to supply the Brisbane, Logan, Redlands and northern Gold Coast markets for many years. The Mount Cotton hardrock resource is also strategically important because of the scarcity of alternative resources in this part of southeast Queensland.

The resource meets the criteria for State significance.

SEPARATION AREA:

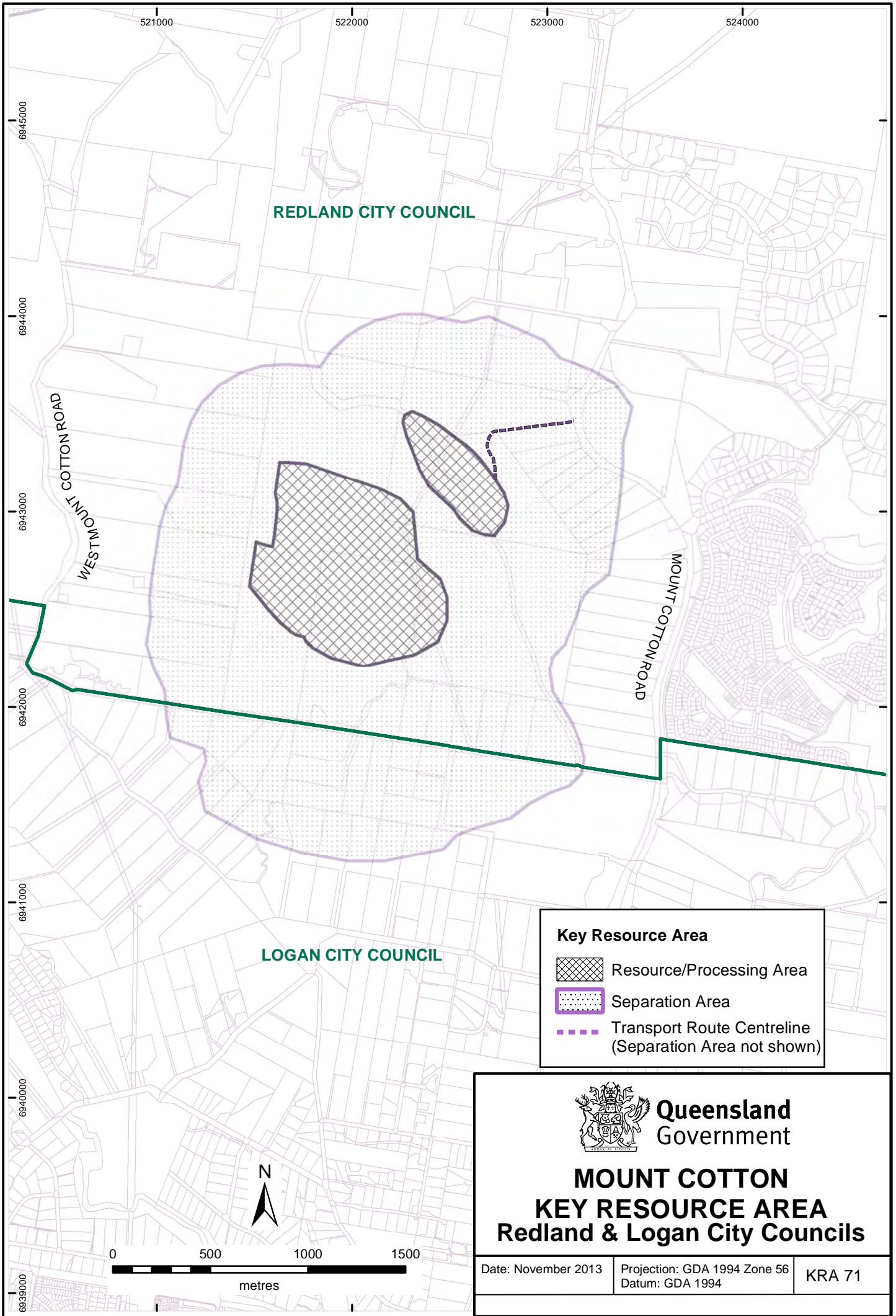
Much of the resource is surrounded by ridges allowing the outer boundary of the separation distance to be set between 500 metres and 700 metres from the resource. It is set at the full 1000 metres on the southern side of the resource, where there are no ridges to provide screening from the surrounding area.

TRANSPORT ROUTE:

Transport of all materials is via an easement onto Mount Cotton Road.

SPECIAL CONSIDERATIONS:




The Key Resource Area is located within koala habitat in the SEQ Regional Plan. The resource/processing area has generally been set back 100 metres in the vegetated area and 40 metres in the non-vegetated area along the greywacke resource area’s western boundary. This boundary was designed to exclude as much remnant vegetation as possible.



REDLAND CITY COUNCIL

LOGAN CITY COUNCIL

Key Resource Area

-  Resource/Processing Area
-  Separation Area
-  Transport Route Centreline (Separation Area not shown)



**Queensland
Government**

**MOUNT COTTON
KEY RESOURCE AREA
Redland & Logan City Councils**

Date: November 2013

Projection: GDA 1994 Zone 56
Datum: GDA 1994

KRA 71

WEST MOUNT COTTON KEY RESOURCE AREA – KRA 72

LOCAL GOVERNMENT AREA: Redland and Logan City Councils

LOCATION:

The resource is located at Sheldon, between West Mount Cotton Road and Avalon Road (see map KRA 72).

EXTRACTIVE RESOURCE: Quarry Rock

EXTRACTIVE RESOURCE DESCRIPTION:

The resource comprises quartzite and greywacke, interbedded with lesser amounts of low strength rocks. Weathered overburden also forms part of the resource. A large quarry in the resource produces aggregates and road bases. The weathered overburden and low strength rocks are extracted for use as fill. The resource/processing area has been set back 20 metres adjacent to the property boundaries.

SIGNIFICANCE:

The greywacke resource is sufficient for 50-100 years supply. The quartzite resource continues beyond the area outlined and would be sufficient for 20-30 years if all the area with an extractive licence is used. The two resources are strategically located to supply markets in the southeastern Brisbane, Redlands and Port of Brisbane areas.

SEPARATION AREA:

The separation area retains a 400 metres minimum distance from the resource limit where intervening topography would provide adequate screening of quarrying operations. Where such screening does not occur, the separation distance is up to 1000 metres.

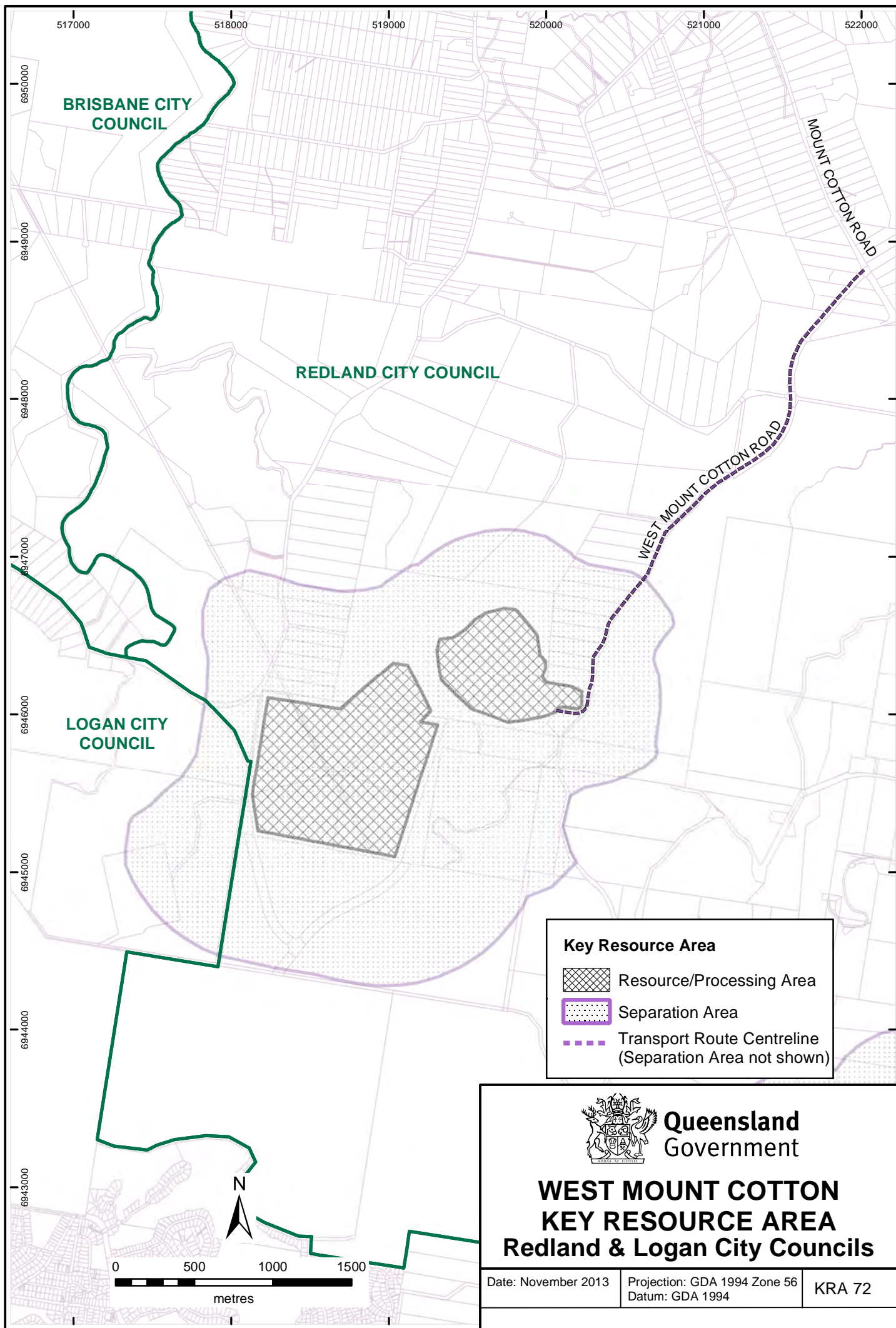
TRANSPORT ROUTE:

Transport of all materials is via West Mount Cotton Road connecting with the Mount Cotton Road.




SPECIAL CONSIDERATIONS:


The Key Resource Area is located within koala habitat area in the SEQ Regional Plan, adjacent to the Koala Bushland Coordinated Conservation Area designated under the *Nature Conservation Act 1992*. The separation distance encompasses parts of the Koala Bushland Coordinated Conservation Area including the Venman Bushland National Park to the south, a Nature Refuge managed by the Logan City Council and the Don and Christine Burnett Conservation Area to the west. The intent of the separation area is consistent with the conservation aims for these areas.

A small area of 'endangered' vegetation under the *Vegetation Management Act 1999* lies on the northwest margin of the resource/processing area. This is included within the pre-existing approval area.



Key Resource Area

-  Resource/Processing Area
-  Separation Area
-  Transport Route Centreline (Separation Area not shown)



**Queensland
Government**

**WEST MOUNT COTTON
KEY RESOURCE AREA
Redland & Logan City Councils**

| | | |
|---------------------|---|--------|
| Date: November 2013 | Projection: GDA 1994 Zone 56 Datum: GDA 1994 | KRA 72 |
|---------------------|---|--------|

DINGYARRA KEY RESOURCE AREA – KRA 73

LOCAL GOVERNMENT AREA: Somerset Regional Council

LOCATION:

The southern end of the resource lies 1 kilometre east of Toogoolawah, and it extends for 2 kilometres northwest of this point (see map KRA 73).

EXTRACTIVE RESOURCE: Sand and Gravel

EXTRACTIVE RESOURCE DESCRIPTION:

A broad lower alluvial terrace on the eastern (right) bank of Cressbrook Creek is underlain by up to 12 to 14 metres of alluvium. The uppermost 4 metres to 9.5 metres consist of sandy to silty clay. The resource below consists of varying sand, silty or clayey sand and clayey to clean gravel, ranging from 3.5 metres to 6 metres in thickness. The lowest gravel tends to be very clayey. The lateral variability of the sand and gravel layer is considerable.

SIGNIFICANCE:

The deposit is strategically located to supply the western Brisbane, Ipswich, Somerset and Lockyer Valley region markets. Transport to the South Burnett region and the Moreton Bay region is also feasible. It contains sufficient material for several decades of supply at the projected rate of consumption and is thus of State significance.

SEPARATION AREA:

The full 200 metres separation distance is adopted around the entire perimeter of the resource. This is due to the generally level and cleared condition of the terrace.

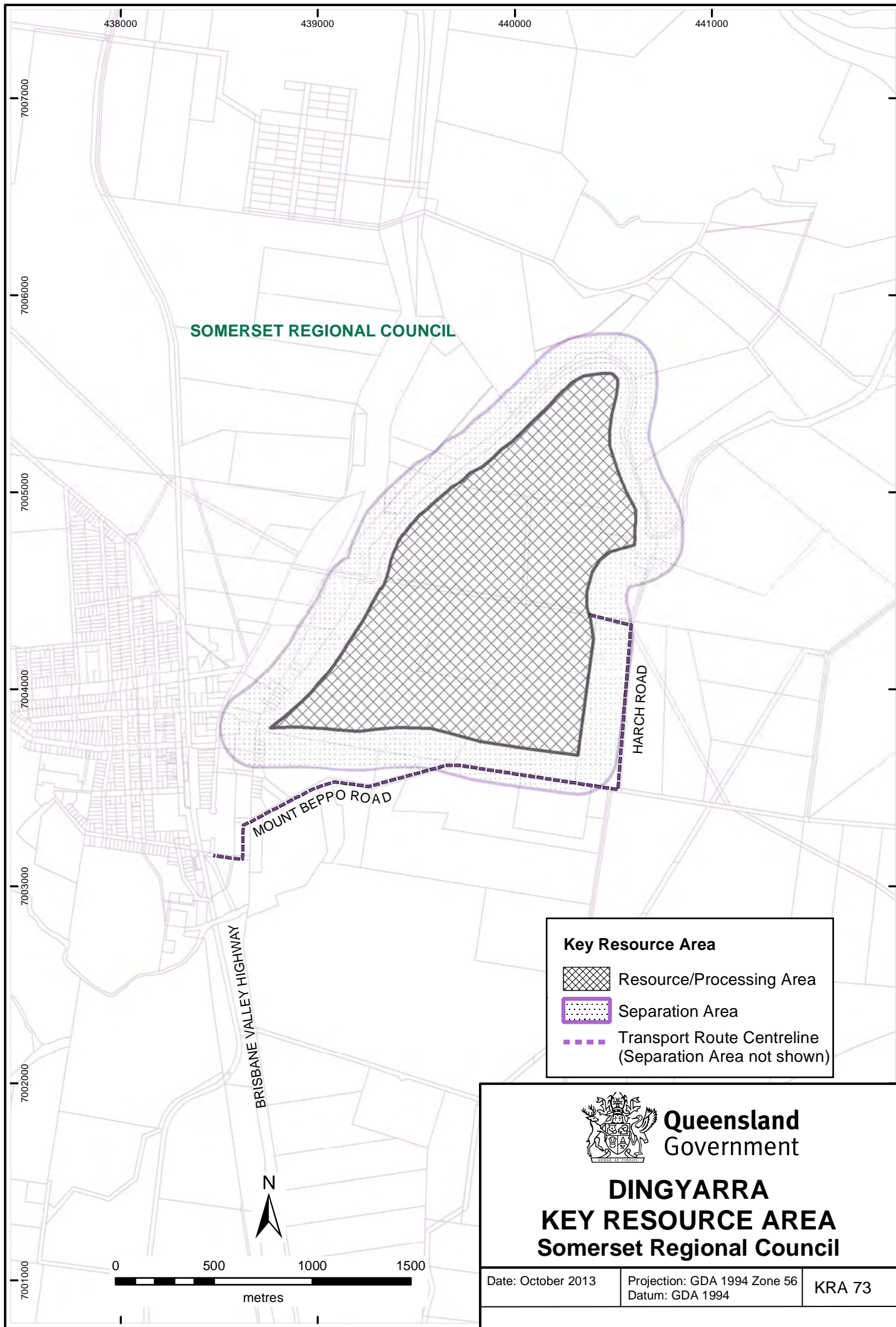
TRANSPORT ROUTE:

The likely transport route will be from the 'Dingyarra' property onto Harch Road southwards onto Mount Beppo Road and then to the Brisbane Valley Highway at Toogoolawah to the west.

SPECIAL CONSIDERATIONS:




Most of the KRA is covered by Strategic Cropping Land Trigger Mapping under the *Strategic Cropping Land Act 2011* administered by the Department of Natural Resources and Mines. This indicates the location of potential SCL and further on-ground assessment against the SCL criteria is required to confirm whether the area is or is not an SCL.

The resource/processing area is adjacent to Cressbrook Creek and a minimum buffer width of 50 metres from the resource/processing area to the creek has been established.



SOMERSET REGIONAL COUNCIL

Key Resource Area

-  Resource/Processing Area
-  Separation Area
-  Transport Route Centreline (Separation Area not shown)



**Queensland
Government**

**DINGYARRA
KEY RESOURCE AREA
Somerset Regional Council**

Date: October 2013

Projection: GDA 1994 Zone 56
Datum: GDA 1994

KRA 73

GLEN ARDEN KEY RESOURCE AREA – KRA 74

LOCAL GOVERNMENT AREA: Somerset Regional Council

LOCATION:

The resource lies inside a horseshoe bend on the left bank of the Brisbane River 11 kilometres east-southeast of Toogoolawah (see map KRA 74). It lies between the river and Cooeimbardi Road, which runs parallel to the trend of the river to link with the Esk-Kilcoy Road.

EXTRACTIVE RESOURCE: Sand and Gravel

EXTRACTIVE RESOURCE DESCRIPTION:

An elevated alluvial terrace on the eastern (left) bank of the Brisbane River is underlain by up to 21 metres of alluvium. The uppermost 8 to 10 metres consist of sandy to silty clay overburden. Beneath this, the resource comprises an upper layer of fine to medium sand, underlain by variably clayey to clean fine to very coarse gravel, ranging between 12 metres to 15 metres in thickness. Clay layers up to 2 metres thick occur within the sand and gravel. The northern parts of the terrace are underlain by clay directly over rock, with no sand or gravel present.

SIGNIFICANCE:

There are substantial resources available and it is conveniently situated to supply the western Brisbane, Ipswich, Somerset and Lockyer Valley regions. It contains sufficient material for several decades of supply to those markets at the projected rate of consumption. The resource is of State significance.

SEPARATION AREA:

Owing to the generally level and cleared condition of the terrace, the full 200 metre separation distance is adopted around the entire perimeter of the resource. The resource availability is restricted by the buffer zone for Lake Wivenhoe reservoir. Therefore, the outer limit of the separation area is set at the boundary of the water reservoir.

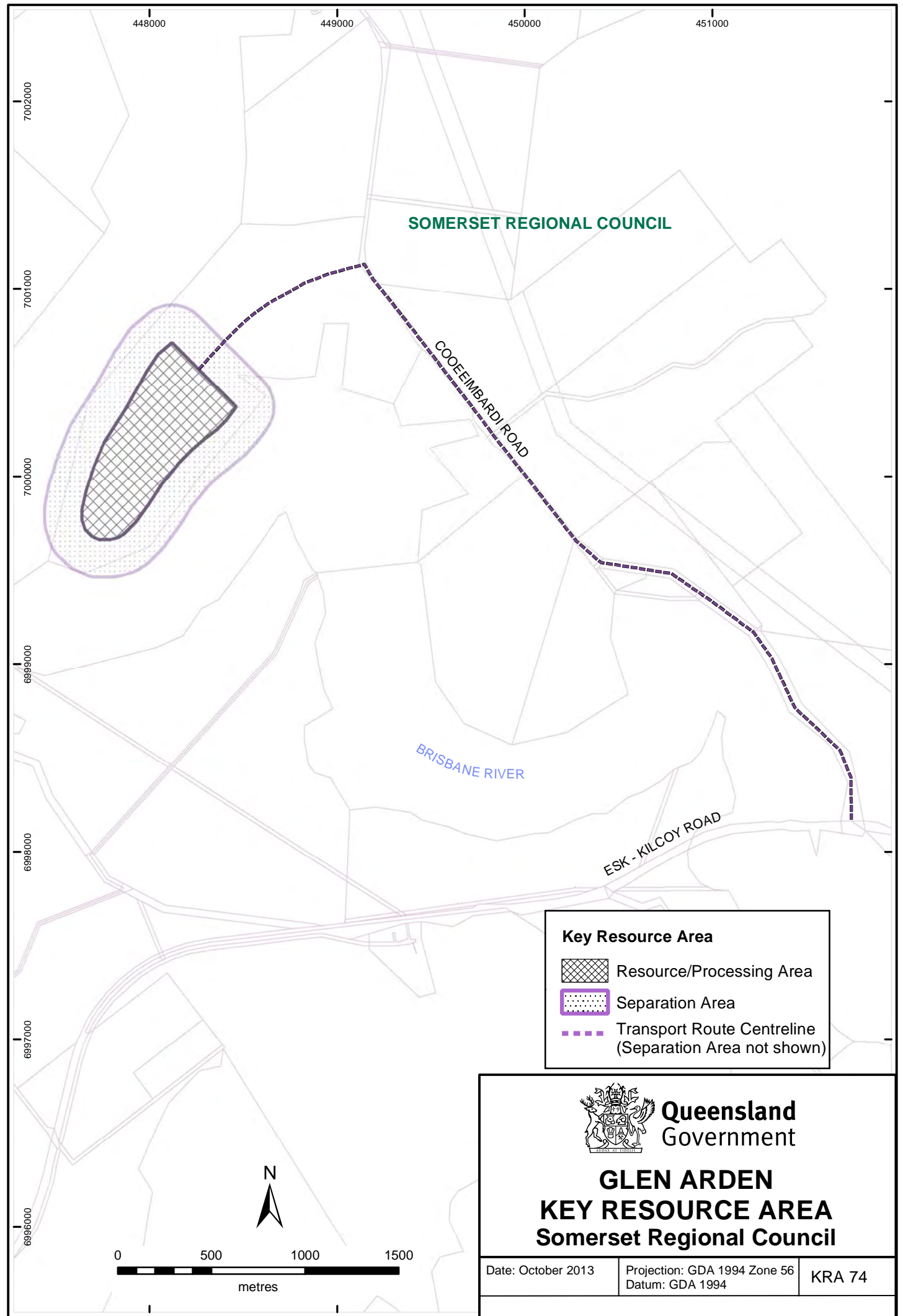
TRANSPORT ROUTE:

The probable transport route will be through the 'Glen Arden' property onto the Cooeimbardi Road, which leads to the Esk-Kilcoy Road to the south, and then onto the Brisbane Valley Highway to the west.

SPECIAL CONSIDERATIONS:

The KRA is located within the Wivenhoe Declared Catchment Area and contains land classified as good quality agricultural land (1994 Esk DPI Agricultural Land Classes Map; Brisbane Valley Area-Esk Sheet Land Suitability). The resource/processing area is adjacent to the Brisbane River and a minimum buffer width of 50 metres from the resource/processing area to the river has been established.

Some parts of the resource/processing and separation area are covered by Strategic Cropping Land Trigger Mapping under the *Strategic Cropping Land Act 2011* administered by the Department of Natural Resources and Mines. This indicates the location of potential SCL and further on-ground assessment against the SCL criteria is required to confirm whether the area is or is not an SCL.






SOMERSET REGIONAL COUNCIL

CODEIMBARDI ROAD

BRISBANE RIVER

ESK - KILCOY ROAD

Key Resource Area

-  Resource/Processing Area
-  Separation Area
-  Transport Route Centreline (Separation Area not shown)



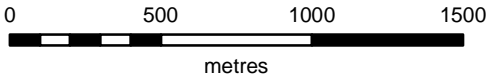
**Queensland
Government**

**GLEN ARDEN
KEY RESOURCE AREA
Somerset Regional Council**

Date: October 2013

Projection: GDA 1994 Zone 56
Datum: GDA 1994

KRA 74



HARRIS TERRACE KEY RESOURCE AREA – KRA 75

LOCAL GOVERNMENT AREA: Somerset Regional Council

LOCATION:

The resource is located on the western bank of the Brisbane River about 4 kilometres southeast of Fernvale near the eastern end of Harris Road (see map KRA 75).

EXTRACTIVE RESOURCE: Sand and Gravel

EXTRACTIVE RESOURCE DESCRIPTION:

The resource comprises part of an alluvial terrace and contains several million tonnes of sand and gravel beneath relatively thin overburden.

The area is approved for extraction.

SIGNIFICANCE:

The resource is sufficient to supply the western Brisbane, Ipswich, Somerset and Lockyer Valley regional markets for at least a decade at current rates of consumption. The resource is of State significance.

SEPARATION AREA:

The full separation distance of 200 metres has been applied around the alluvial terrace containing the resource due to the absence of any intervening natural features to buffer quarry impacts.

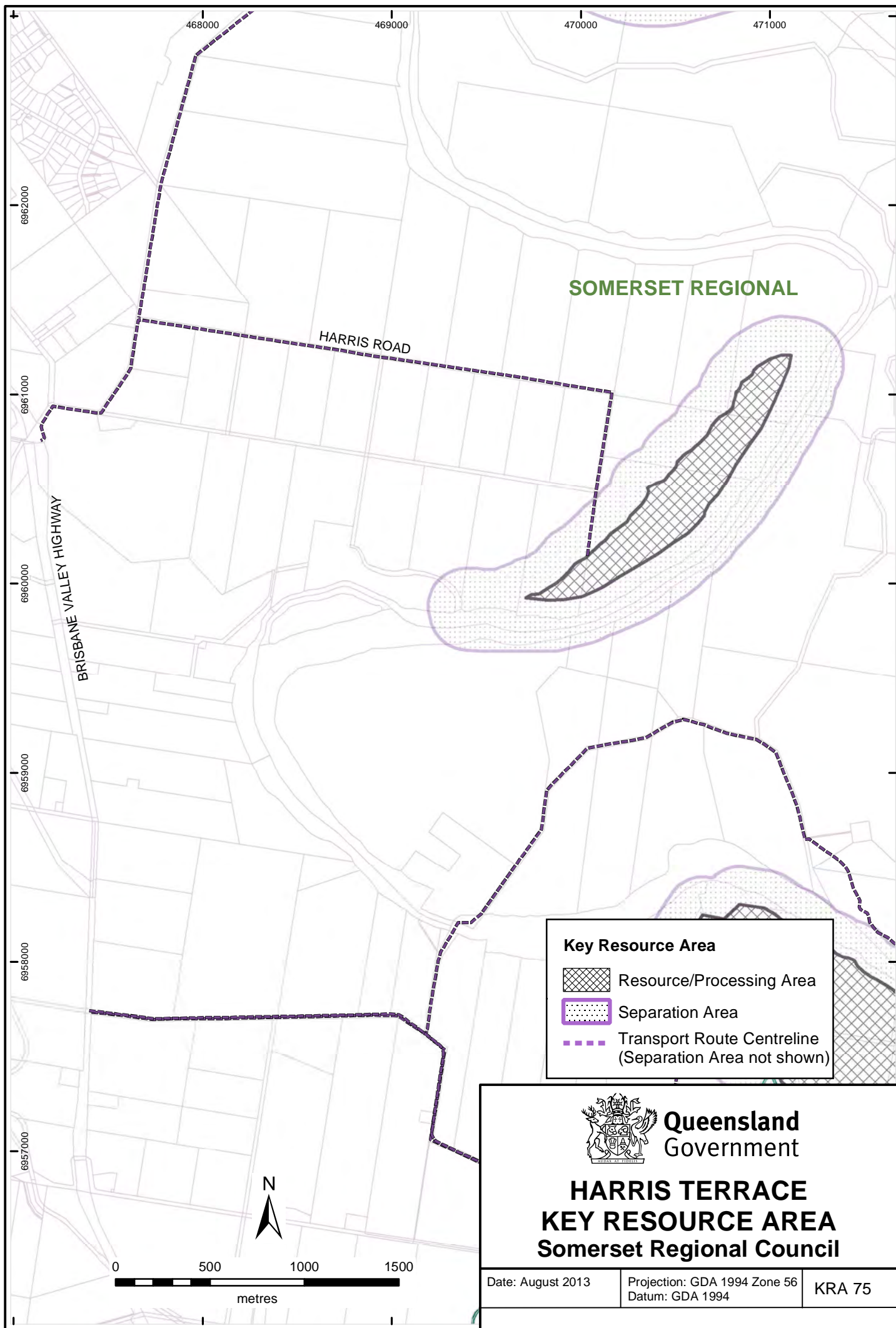
TRANSPORT ROUTE:

The transport route is along Harris Road onto the Brisbane Valley Highway.

SPECIAL CONSIDERATIONS:

The KRA contains land classified as good quality agricultural land (1994 Esk DPI Agricultural Land Classes Map). The resource/processing area is adjacent to the Brisbane River and a minimum buffer width of 50 metres from the resource/processing area to the river has been established. Restrictions on interference with the water table as applied under the *Water Act 2000* are applicable to extractive industry.

Most of the resource/processing area and some parts of the separation area are covered by Strategic Cropping Land Trigger Mapping under the *Strategic Cropping Land Act 2011* administered by the Department of Natural Resources and Mines. This indicates the location of potential SCL and further on-ground assessment against the SCL criteria is required to confirm whether the area is or is not an SCL.






SOMERSET REGIONAL

HARRIS ROAD

BRISBANE VALLEY HIGHWAY

Key Resource Area

-  Resource/Processing Area
-  Separation Area
-  Transport Route Centreline (Separation Area not shown)



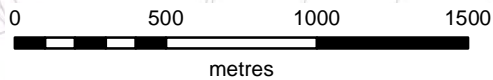
**Queensland
Government**

**HARRIS TERRACE
KEY RESOURCE AREA
Somerset Regional Council**

Date: August 2013

Projection: GDA 1994 Zone 56
Datum: GDA 1994

KRA 75



SCHMIDT'S TERRACE KEY RESOURCE AREA – KRA 76

LOCAL GOVERNMENT AREA: Somerset Regional Council

LOCATION:

The resource lies 2 kilometres north of Fernvale in alluvial flats above both banks of the Brisbane River (see map KRA 76).

EXTRACTIVE RESOURCE: Sand and Gravel

EXTRACTIVE RESOURCE DESCRIPTION:

This resource comprises deposits underlying the lower and intermediate terraces on both sides of the Brisbane River from near the Fernvale Bridge on the Brisbane Valley Highway to within a kilometre of the northern outskirts of Fernvale. Existing extractive licences cover the deposits under the lower terrace on the southern side of the river.

SIGNIFICANCE:

The resource has the potential to supply the western Brisbane, Ipswich, Somerset and Lockyer Valley markets for at least two decades.

SEPARATION AREA:

The full separation distance of 200 metres has been applied around the sand and gravel resource due to the absence of any intervening natural features to buffer quarry impacts.

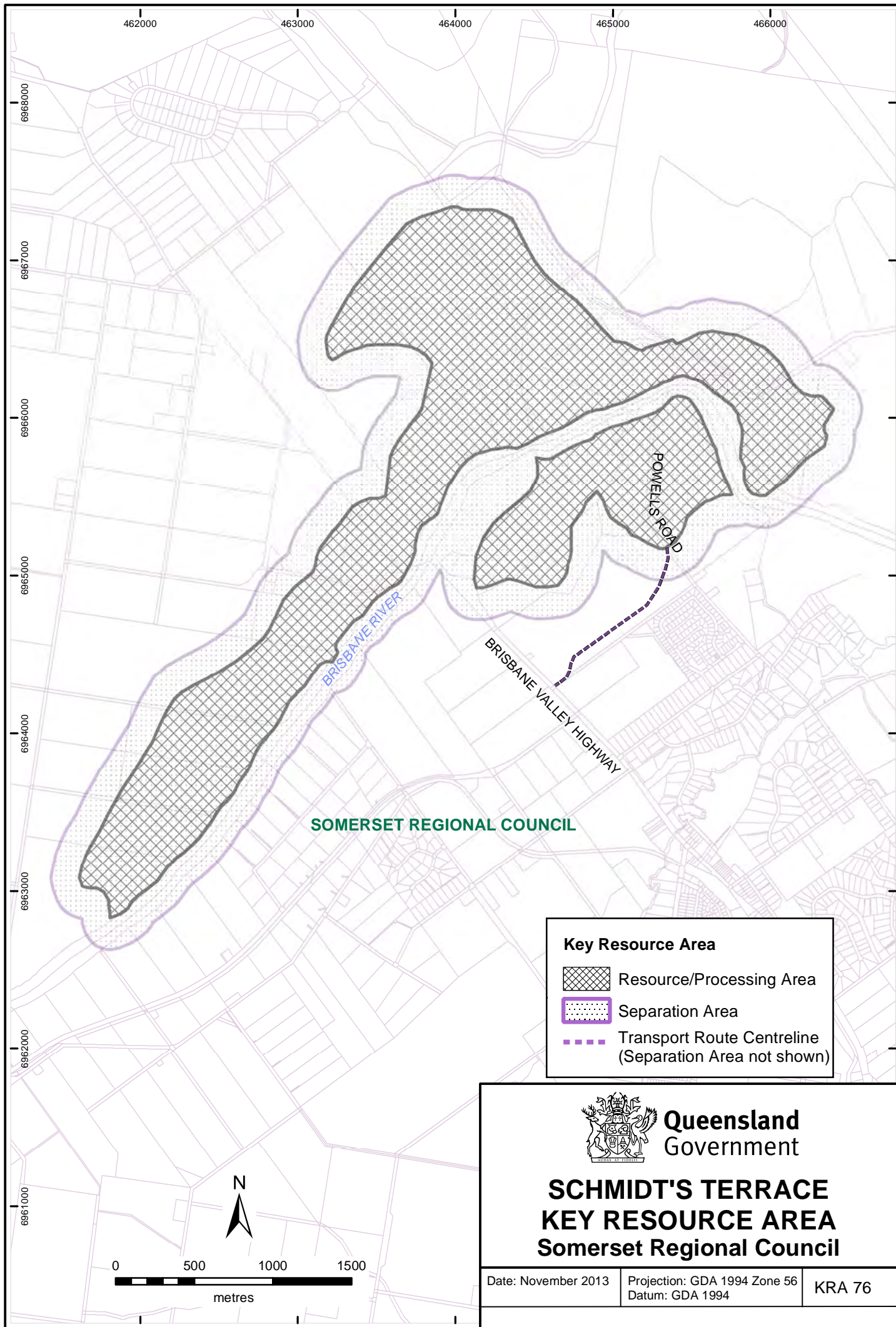
TRANSPORT ROUTE:

The existing transport route is partly along Powells Road and then through private property and then via an unnamed road for a short distance before entering the Brisbane Valley Highway.

SPECIAL CONSIDERATIONS:

The resource/processing area is adjacent to the Brisbane River and a minimum buffer width of 40 metres from the resource/processing area to the river has been established.

Most of the KRA is covered by Strategic Cropping Land Trigger Mapping under the *Strategic Cropping Land Act 2011* administered by the Department of Natural Resources and Mines. This indicates the location of potential SCL and further on-ground assessment against the SCL criteria is required to confirm whether the area is or is not an SCL.



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SOMERSET REGIONAL COUNCIL

BRISBANE RIVER

BRISBANE VALLEY HIGHWAY

POWELL'S ROAD

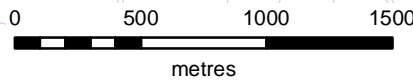
Key Resource Area

-  Resource/Processing Area
-  Separation Area
-  Transport Route Centreline (Separation Area not shown)



**Queensland
Government**

**SCHMIDT'S TERRACE
KEY RESOURCE AREA
Somerset Regional Council**



Date: November 2013

Projection: GDA 1994 Zone 56
Datum: GDA 1994

KRA 76

HILLS TERRACE KEY RESOURCE AREA – KRA 77

LOCAL GOVERNMENT AREA: Somerset Regional and Ipswich City Councils

LOCATION:

The resource is situated on the southern side of the Brisbane River about 6 kilometres southeast of Fernvale (see map KRA 77).

EXTRACTIVE RESOURCE: Sand and Gravel

EXTRACTIVE RESOURCE DESCRIPTION:

The resource consists of a deposit of fine to coarse sand and gravel, which occurs in an alluvial terrace of the Brisbane River downstream of Fernvale. Potential resources of up to 5.5 million tonnes are indicated, which as yet are unworked.

SIGNIFICANCE:

The resource has the potential to supply the western Brisbane, Ipswich, Somerset and Lockyer Valley markets for several decades.

SEPARATION AREA:

The full separation distance of 200 metres has been applied around the identified resource boundary due to the absence of any intervening natural features to buffer quarry impacts.

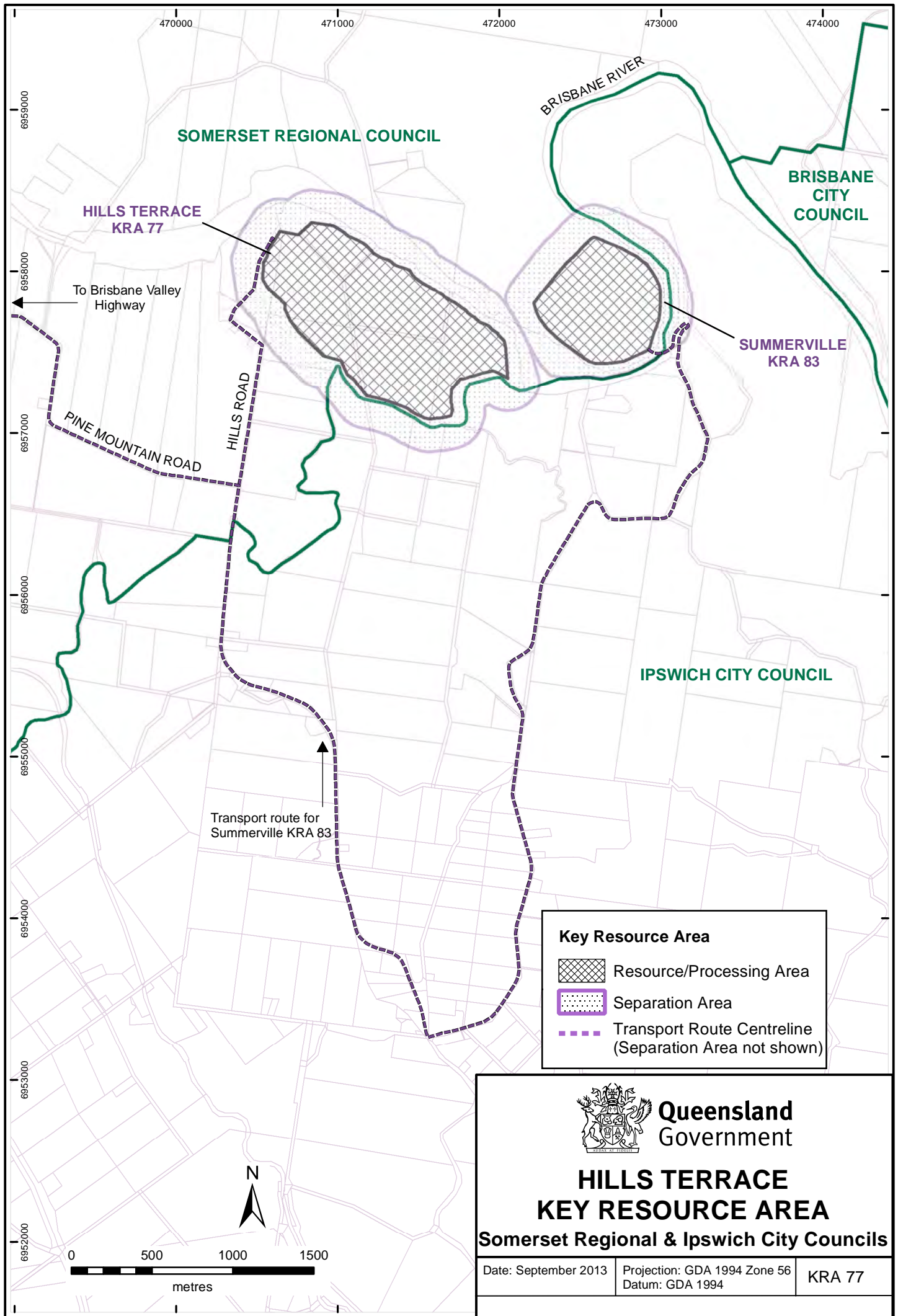
TRANSPORT ROUTE:

The transport route utilises existing roads along Hills Road and the western part of Pine Mountain Road to reach the Brisbane Valley Highway.

SPECIAL CONSIDERATIONS:

The KRA contains land classified as good quality agricultural land (1994 Esk DPI Agricultural Land Classes Map). The resource/processing area is adjacent to the Brisbane River and a minimum buffer width of 50 metres from the resource/processing area to the river has been established.

Most of the resource/processing area and a small portion of the separation are covered by Strategic Cropping Land Trigger Mapping under the *Strategic Cropping Land Act 2011* administered by the Department of Natural Resources and Mines. This indicates the location of potential SCL and further on-ground assessment against the SCL criteria is required to confirm whether the area is or is not an SCL.



WIRALEE KEY RESOURCE AREA – KRA 78

LOCAL GOVERNMENT AREA: Somerset Regional Council

LOCATION:

The resource is located about 2 kilometres southwest of Toogoolawah on the southern side of Cressbrook Creek (see map KRA 78).

EXTRACTIVE RESOURCE: Sand and Gravel

EXTRACTIVE RESOURCE DESCRIPTION:

A significant resource of sand and gravel occurs in the alluvial terrace of Cressbrook Creek between one and two kilometres upstream of Toogoolawah. The deposit lies below the intermediate terrace of Cressbrook Creek west of the Brisbane Valley Highway under relatively shallow overburden.

SIGNIFICANCE:

The resource is significant as it is strategically located to supply the western Brisbane, Ipswich, Somerset and Lockyer Valley markets. There may be prospects for transport to the South Burnett region and the Moreton Bay region. It contains sufficient material for several decades of supply.

SEPARATION AREA:

Cressbrook Creek forms a natural control on encroachment so the boundary of the separation area is along the eastern bank of Cressbrook Creek to the west and north, and encompasses rural land on the eastern and southern sides of the resource s.

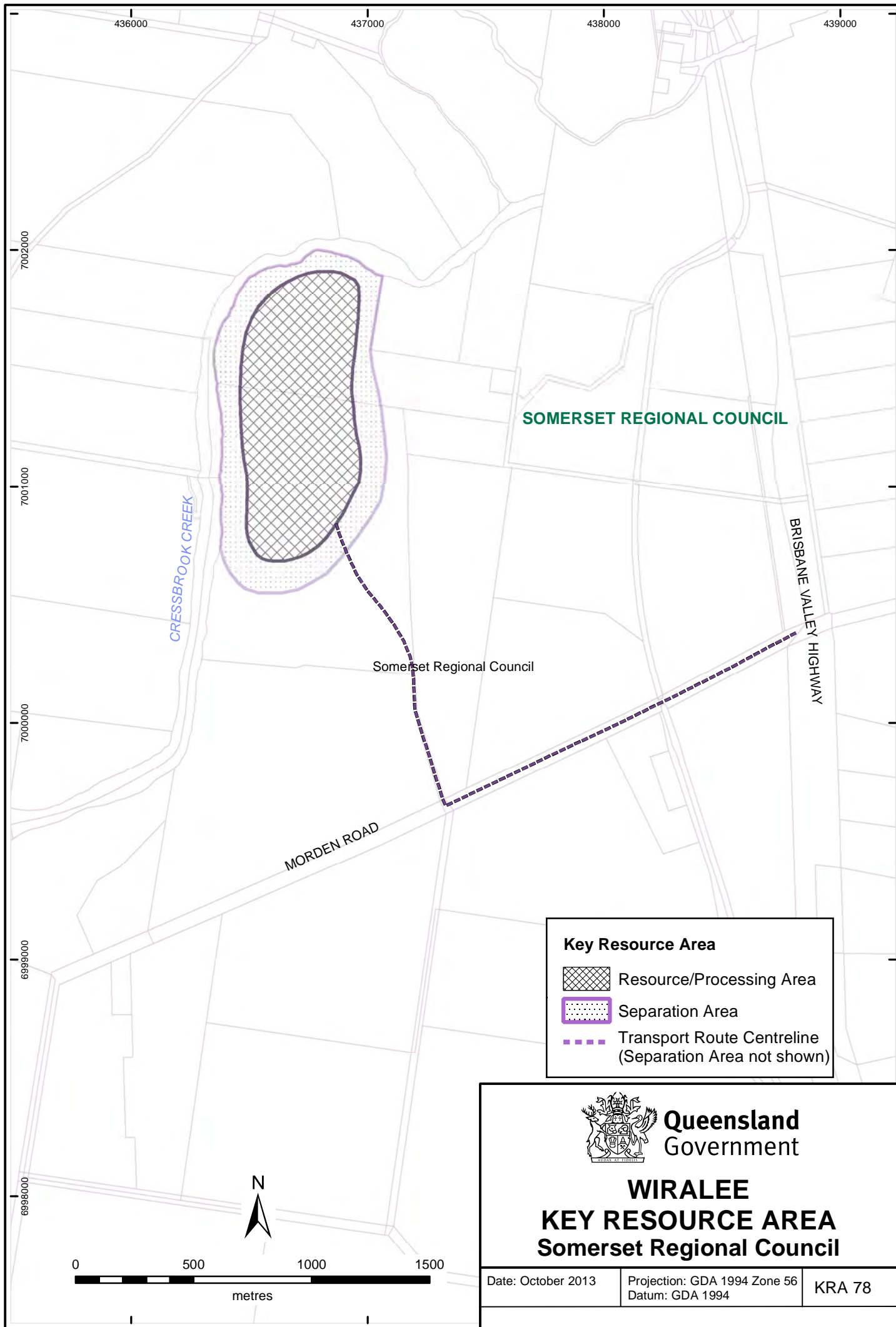
TRANSPORT ROUTE:

The most convenient transport route onto the Brisbane Valley Highway is through private land connecting onto Morden Road.

SPECIAL CONSIDERATIONS:

The KRA contains land classified as good quality agricultural land. The resource/processing area is adjacent to Cressbrook Creek and a minimum buffer width of 50 metres from the resource/processing area to the creek has been established.

Most of the KRA is covered by Strategic Cropping Land Trigger Mapping under the *Strategic Cropping Land Act 2011* administered by the Department of Natural Resources and Mines. This indicates the location of potential SCL and further on-ground assessment against the SCL criteria is required to confirm whether the area is or is not an SCL.



SOMERSET REGIONAL COUNCIL




Somerset Regional Council

CRESSBROOK CREEK

BRISBANE VALLEY HIGHWAY

MORDEN ROAD

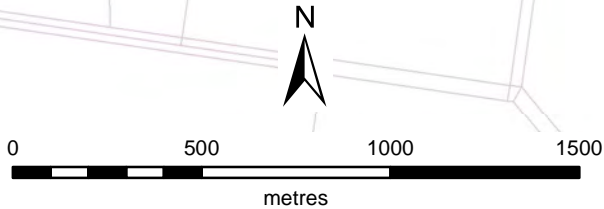
Key Resource Area

-  Resource/Processing Area
-  Separation Area
-  Transport Route Centreline (Separation Area not shown)



**Queensland
Government**

**WIRALEE
KEY RESOURCE AREA
Somerset Regional Council**



Date: October 2013

Projection: GDA 1994 Zone 56
Datum: GDA 1994

KRA 78

MOUNT CROSS KEY RESOURCE AREA – KRA 79

LOCAL GOVERNMENT AREA: Lockyer Valley Regional Council

LOCATION:

The resource is located adjacent to Seventeen Mile Road about 16 kilometres northeast of Helidon (see map KRA 79).

EXTRACTIVE RESOURCE: Quarry Rock

EXTRACTIVE RESOURCE DESCRIPTION:

The extractive resource consists of a deposit of greenstone, which occurs adjacent to Seventeen Mile Road northeast of Helidon. Only a limited proportion of the resource area has been investigated in detail to date but large resources are likely to be present. Testing indicates the rock to be suitable for good quality aggregates for the full range of applications from road bases, road sealing aggregates and concrete aggregates. The greenstone deposit has not been worked to date.

SIGNIFICANCE:

The resource is sufficiently large and of such quality that it represents a regionally significant resource for the long-term future.

SEPARATION AREA:

The separation area is largely defined on the basis of a full separation distance of 1000 metres from the resource boundary. The separation distance has been reduced where intervening ridges or high relief allow a lesser distance from the resource boundary than the 1000 metres.

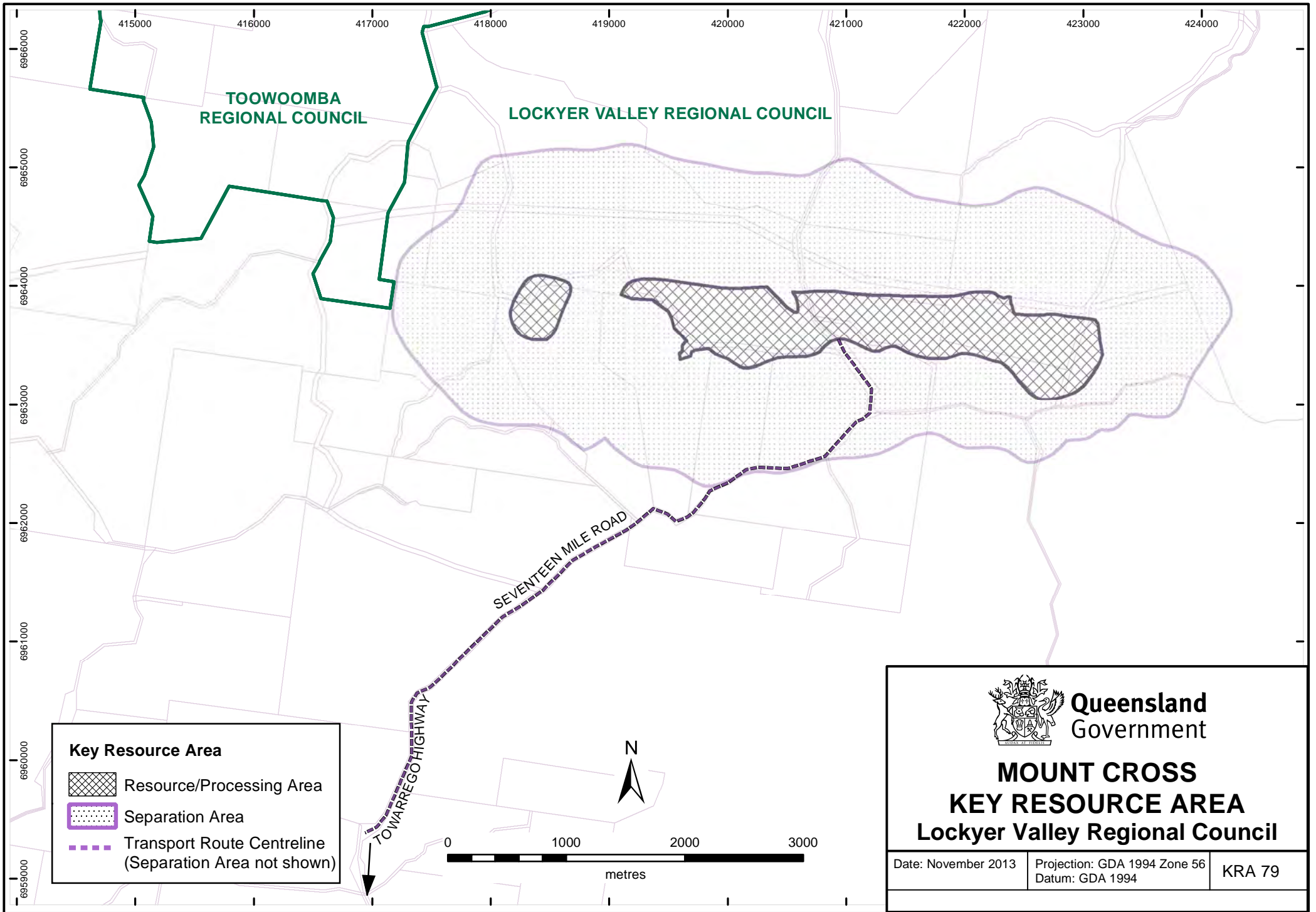
TRANSPORT ROUTE:

Seventeen Mile Road is already used to transport sand and building stone from several sandstone mines closer to Helidon onto the Warrego Highway at Helidon. The use of the part of the road north of the sandstone quarries for the transport of extractive materials would be consistent with this designation.




SPECIAL CONSIDERATIONS:

The KRA contains areas having State biodiversity significance under the Biodiversity Planning Assessment administered by the Department of Environment and Heritage Protection and encompasses three cultural heritage sites of State significance. The Xanthorrhoea Nature Refuge is adjacent to the western end of the resource/processing area. The eastern end of the KRA is adjacent to the Lockyer National Park.

The KRA contains land classified as good quality agricultural land (mostly Class C1 improved pastures, with small areas of Class B and Class D non agricultural land).



Key Resource Area

-  Resource/Processing Area
-  Separation Area
-  Transport Route Centreline
(Separation Area not shown)



**Queensland
Government**

**MOUNT CROSS
KEY RESOURCE AREA
Lockyer Valley Regional Council**

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| Date: November 2013 | Projection: GDA 1994 Zone 56 Datum: GDA 1994 | KRA 79 |
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