

Sensitivities

The ratings mentioned above in the site description are derived from the level of conservation of that specific vegetation type. This is useful for an overview perspective, but for detailed sensitivities the focus moves to red/orange data species. Due to the endangered status of the plants, their specific occurrence is kept confidential by the GDACE. For guidance, the department has issued the Conservation Plan (CPlan) data which provides an indication as to the locality of red/orange data fauna or flora. Figure 52 illustrates the areas identified by CPlan as being sensitive. These areas have been investigated in detail for sensitive flora. It was found that the areas highlighted in Figure 52 are mostly wetlands, the Bronkhorstspuit Dam and ridges. All of these areas could provide habitat to sensitive species.

7.1.9 Fauna

Data Collection

A literature review of the faunal species that could occur in the area was conducted. C-Plan data provided from the Mpumalanga provincial department was used to conduct a desktop study of the area. This data consists of terrestrial and aquatic components, ratings provide an indication as to the importance of the area with respect to biodiversity. Additionally, all fauna were noted during the site visit conducted on the 10th-14th March and 18th – 20th November 2008.

Regional Description

As a consequence of mining and farming in the area, it appears that only small animals are to be found at the site. Small mammals known to occur in the area include hedgehog, rabbits, polecat, meerkat and the ubiquitous rats and mice. Given the habitat, it is likely that korhaans, larks, longclaws, species of Euplectes (bishops and widows), weavers, starlings and sparrows occur in the grassland.

The area surrounding the proposed power line does include areas of terrestrial and aquatic habitats. These areas should be treated as sensitive and should therefore be managed accordingly; if feasible they should be avoided.

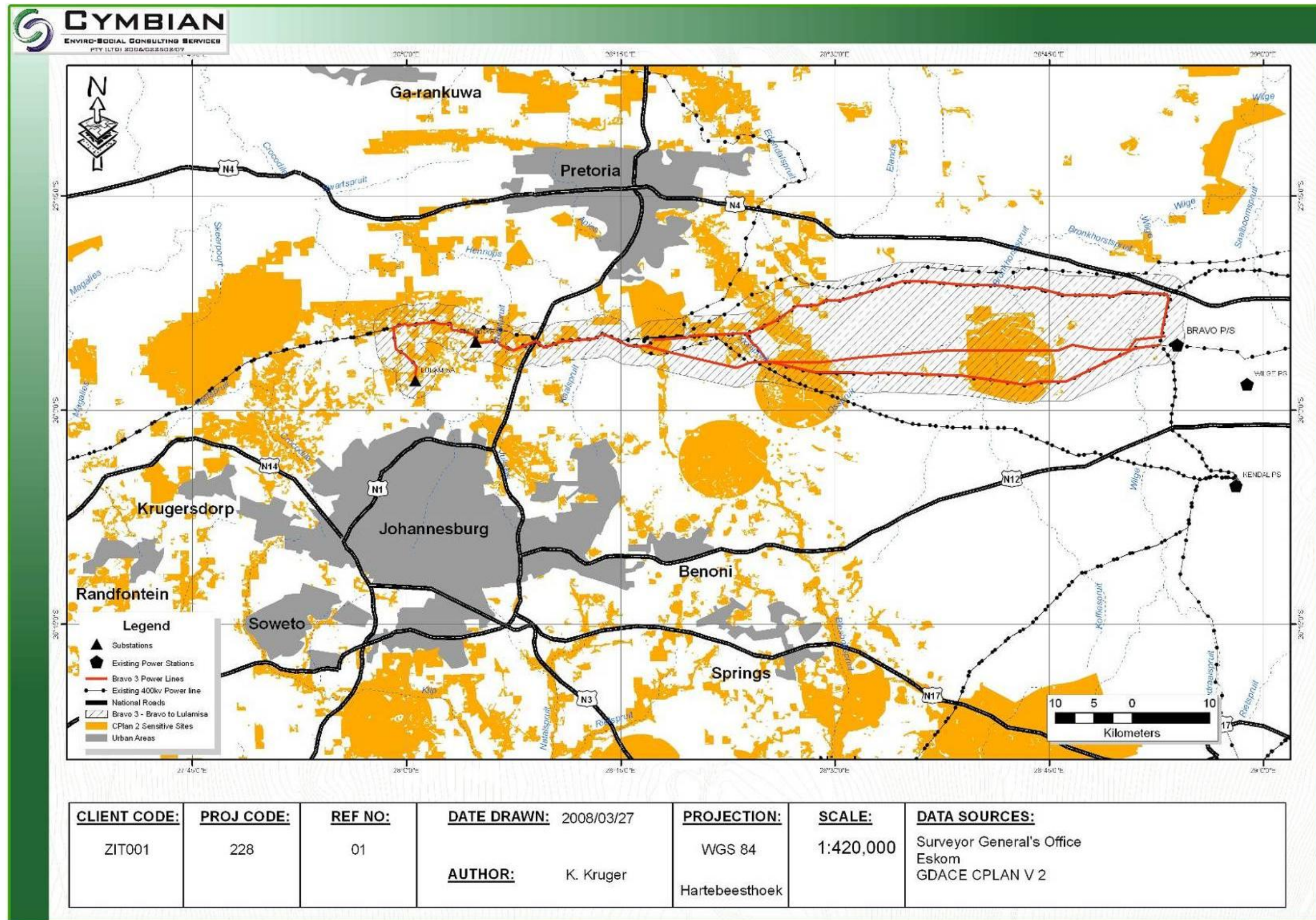


FIGURE 52: SENSITIVE VEGETATION UNITS FOUND ON SITE

Site Description

The scope of work indicated that an avifauna assessment was required. An avifaunal assessment was undertaken and the report is attached.. All herpetofauna and mammals observed on site were noted during the site visit.

Habitat

The habitat on site is described in the vegetation site description in Section 7.1.8 above. All of the vegetation types identified have been disturbed to a certain extent, as the main land use in the area is grazing of livestock. Disturbed Grasslands, Riparian and Wetland areas were found on site. All of these are suitable habitat to a number of protected species found in the region.

Species potentially occurring on site

A detailed list of the species potentially occurring on site is attached in Appendix Q.

Herpetofauna

Herpetofauna could potentially occur in all the habitat types. The Riparian and Wetland zones could potentially support amphibians representative of the region, specifically *Pyxicephalus adspersus* (African Bullfrog) which is a species rated as “near threatened” and is a protected species in South Africa.

The area can potentially contain *Geochelone pardalis* (Leopard tortoise), *Aparallactus capensis* (Cape Centipede Eater), *Atractaspis bibronii* (Southern or Bibron’s Burrowing Asp), *Causus rhombeatus* (Common Night Adder), *Crotaphopeltis hotamboeia* (Herald or Red-lipped Snake), *Dasypeltis scabra* (Common or Rhombic Egg Eater), *Hemachatus haemachatus* (Rinkhals), *Lycodonomorphus rufulus* (Common Brown Water Snake), *Naja annulifera annulifera* (Snouted Cobra), *Psammophylax tritaeniatus* (Striped Skaapsteker), *Agama atra* (Southern Rock Agama), *Bitens arietans* (Puff Adder), *Cordylus vittifer* (Transvaal Girdled Lizard), *Gerrhosaurus flavigularis* (Yellow Throated Plated Lizard), *Lygodactylus ocellatus* (Spotted Dwarf Gecko), *Pachydactylus affinis* (Transvaal Thick-toed Gecko), *Telescopus semiannulatus semiannulatus* (Eastern Tiger Snake), *Psammophis brevirostris brevirostris* (Leopard or Short-snouted Grass Snake) and *Varanus niloticus* (Water Monitor). *Hemachatus haemachatus* (Rinkhals), *Psammophis brevirostris brevirostris* (Leopard or Short-snouted Grass Snake) and *Cordylus vittifer* (Transvaal Girdled Lizard) are endemic to Southern Africa, while *Lygodactylus ocellatus* (Spotted Dwarf Gecko) and *Pachydactylus affinis* (Transvaal Thick-toed Gecko) are endemic to South Africa.

None of the above mentioned Herpetofauna were encountered on site during the site visit that took place from the 10th-14th March and 18th to 20th November 2008.

Avifauna

A number of power line sensitive, Red Data species could potentially occur along any of the corridors in small densities, mostly in the remaining natural grassland (Refer to Table 11). The biggest potential risk that the proposed power line will pose, unless mitigated, is bird collisions with the earth wire of the proposed line. Other potential risks are the destruction of sensitive habitat through the construction of access roads, and disturbance of breeding birds during construction operations. The proposed corridors run through very

similar habitat, which means that the potential bird impacts are likely to be similar in nature (but not in extent) along all the proposed corridors. The preferred corridor would be one that strives to avoid natural grassland or wetlands, or alternatively, is situated within the zone of influence of factors that lessen the risk of interactions for example, close to existing transmission lines or within urban areas. There is reason to believe that the impact of existing power lines may have been a major contributory factor to the low density and/or absence of power line sensitive grassland species such as cranes in the study area..

TABLE 11: AVIFAUNA RED DATA SPECIES LIST

Species	Common Name	Conservation Status
<i>Mycteria ibis</i>	Yellow-Billed Stork	Near Threatened
<i>Leptoptilos crumeniferus</i>	Marabou Stork	Near Threatened
<i>Gyps coprotheres</i>	Cape Vulture	Vulnerable
<i>Gyps africanus</i>	White-Backed Vulture	Vulnerable
<i>Aquila rapax</i>	Tawny Eagle	Vulnerable
<i>Aquila ayresii</i>	Ayre's Hawk-Eagle	Near Threatened
<i>Polemaetus bellicosus</i>	Martial Eagle	Vulnerable
<i>Falco peregrinus</i>	Peregrine Falcon	Near Threatened
<i>Falco biarmicus</i>	Lanner Falcon	Near Threatened
<i>Bugeranus carunculatus</i>	Wattled Crane	Critically Endangered
<i>Crex crex</i>	Corn Crake	Near Threatened
<i>Podica senegalensis</i>	African Finfoot	Vulnerable
<i>Eupodotis caerulescens</i>	Blue Korhaan	Near Threatened
<i>Rostratula benghalensis</i>	Greater Painted Snipe	Near Threatened
<i>Glareola nordmanni</i>	Black-Winged Pratincole	Near Threatened
<i>Alcedo semitorquata</i>	Half-Collared Kingfisher	Near Threatened
<i>Mirafra cheniana</i>	Melodious Lark	Near Threatened
<i>Ciconia nigra</i>	Black Stork	Near Threatened
<i>Sagittarius serpentarius</i>	Secretarybird	Near Threatened
<i>Eupodotis senegalensis</i>	White-Bellied Korhaan	Vulnerable
<i>Phoenicopterus minor</i>	Lesser Flamingo	Near Threatened
<i>Phoenicopterus ruber</i>	Greater Flamingo	Near Threatened
<i>Falco naumanni</i>	Lesser Kestrel	Vulnerable
<i>Tyto capensis</i>	African Grass-Owl	Vulnerable

<i>Anthropoides paradiseus</i>	Blue Crane	Vulnerable
<i>Sterna caspia</i>	Caspian Tern	Near Threatened
<i>Circus ranivorus</i>	African Marsh-Harrier	Vulnerable

Mammals

Large mammals have to a large extent been removed from the area and the only indication of large mammal species that could have previously occurred in the area are re-introduced mammals found on a few game farms and lodges encountered during the site visit. Such game farms can be found around the Apollo sub station. These include Springbok (*Antidorcas marsupialis*), Blesbok (*Damaliscus dorcas phillipsi*), Blue Wildebeest (*Connochaetes taurinus*) and Burchell's Zebra (*Equus burchelli*). During the site visit, Yellow Mongoose (*Cynictis pencilata*) was spotted as well as signs of other small mammals such as droppings. Other small mammals known to occur in the area include Hedgehog (*Atelerix frontalis*), Striped Polecat (*Ictonyx striatus*), Suricate / Meerkat (*Suricata suricatta*), Aardvark / Antbear (*Orycteropus afer*) and the ubiquitous rats and mice. Sensitive mammal species that could occur in the quarter degree square 2529CD include *Genetta tigrina* (Large-spotted Genet), *Lepus saxatilis* (Scrub hare), *Hyaena brunnea* (Brown Hyaena), *Sylvicapra grimmia* (Common/Grey Duiker), *Tragelaphus scriptus* (Bushbuck), *Vulpes chama* (Cape Fox). None of these species were identified on site.

7.1.10 Wetland and Riparian Zone Delineation

Riparian Zones vs. Wetlands

Wetlands

The riparian zone and wetlands were delineated according to the Department of Water Affairs and Forestry (DWAF) guideline, 2003: A practical guideline procedure for the identification and delineation of wetlands and riparian zones. According to the DWAF guidelines a wetland is defined by the National Water Act as:

“land which is transitional between terrestrial and aquatic systems where the water table is usually at or near surface, or the land is periodically covered with shallow water, and which land in normal circumstances supports or would support vegetation typically adapted to life in saturated soil.”

In addition the guidelines indicate that wetlands must have one or more of the following attributes:

- Wetland (hydromorphic) soils that display characteristics resulting from prolonged saturation;
- The presence, at least occasionally, of water loving plants (hydrophytes); and
- A high water table that results in saturation at or near surface, leading to anaerobic conditions developing in the top 50 centimetres of the soil.

During the site investigation the following indicators of potential wetlands were identified:

- Terrain unit indicator;
- Soil form Indicator;
- Soil wetness indicator; and
- Vegetation indicator.

Riparian Areas

According to the DWAF guidelines a riparian area is defined by the National Water Act as:

“Riparian habitat includes the physical structure and associated vegetation of the areas associated with a watercourse which are commonly characterised by alluvial soils, and which are inundated or flooded to an extent and with a frequency sufficient to support vegetation of species with a composition and physical structure distinct from those of adjacent land areas”

The difference between Riparian Areas and Wetlands

According to the DWAF guidelines the difference between a wetland and a riparian area is:

“Many riparian areas display wetland indicators and should be classified as wetlands. However, other riparian areas are not saturated long enough or often enough to develop wetland characteristics, but also perform a number of important functions, which need to be safeguarded... Riparian areas commonly reflect the high-energy conditions associated with the water flowing in a water channel, whereas wetlands display more diffuse flow and are lower energy environments.”

Delineation

The site was investigated for the occurrence of wetlands and riparian areas, using the methodology described above and described in more detail in the DWAF guidelines.

Terrain Unit Indicator

The terrain on site varies from 1 520 mamsl to 1 420 mamsl as illustrated in Figure 13, Figure 14 and Figure 15. From the figures it can be seen that the site is located in an area of undulating hills with the dominant terrain units on site being the midslope, footslope and valley bottom units. According to the DWAF guidelines the valley bottom is the terrain unit where wetlands are most likely to occur, but they are not excluded from any of the other terrain units.

Soil Form Indicator

The majority of the site can be described as a typical Highveld plinthic catena. In the top parts of the slopes you find the rocky soils and then as the soil weathers and moves down the slope you start finding you agricultural soils. From here the action of water movement through the slope typifies the soils of the largest part of the site (eluvial and plinthic soils). Closer to the valley bottom terrain unit the soils gradually deepen due to the down-slope transport of soil (colluvium). In addition these soils have gradually higher percentages

of clays that over time have been washed down-slope and accumulate at the valley bottom where the slope angle reduces.

During the site visit the soils on site were identified and mapped (Refer to Section 7.1.5). Of the soils identified on site the Katspruit, Willobrook, Arcadia and Rensburg soil form is indicative of the permanent wetland zone, while the Wasbank Longlands Kroonstad and Westleigh soil forms are indicative of the temporary wetland zone. There is also a possibility that the Avalon soil form can be indicative of the temporary zone.

Soil Wetness Indicator

The soils on site were subjected to a soil wetness assessment. If soils showed signs of wetness within 50 cm of the soil surface, it was classified as a hydromorphic soil and divided into the following groups:

Temporary Zone

- Minimal grey matrix (<10%);
- Few high chroma mottles; and
- Short periods of saturation.

Seasonal Zone

- Grey matrix (>10%);
- Many low chroma mottles present; and
- Significant periods of wetness (>3 months / annum).

Permanent Zone

- Prominent grey matrix;
- Few to no high chroma mottles;
- Wetness all year round; and
- Sulphuric odour.

The Katspruit, Wasbank, Willobrook, Arcadia; Rensburg and Longlands soil forms have signs of wetness in the soil profile. The Avalon soil form however did not have any signs of wetness. The Katspruit soil form was classified as the permanent zone, while the Wasbank and Longlands were classified as the temporary and seasonal zone. The soil forms are illustrated in Figure 17.

Vegetation Indicator

The vegetation units on site are described in Section 7.1.8 above and illustrated in. Figure 42, Figure 43 and Figure 44. The vegetation found in the moist grassland and the seepage zone vegetation units both have species present to indicate the presence of wetlands.

Wetlands and Buffer Zones

According to the methodology that was followed for delineation of wetlands by DWAF, there are wetlands present on site. It should however be noted that several of the so-called wetlands could also be classified as riparian zones as they follow the drainage path of the non-perennial streams on site. All the areas identified above perform critical ecosystem functions and also provide habitat for sensitive species. It is suggested that a 100m buffer be placed from the edge of the seasonal zone in order to sufficiently protect the wetlands and riparian zones. Alternative 2 is the best alignment, as it avoids most the sensitive wetlands as well as the buffer zones.

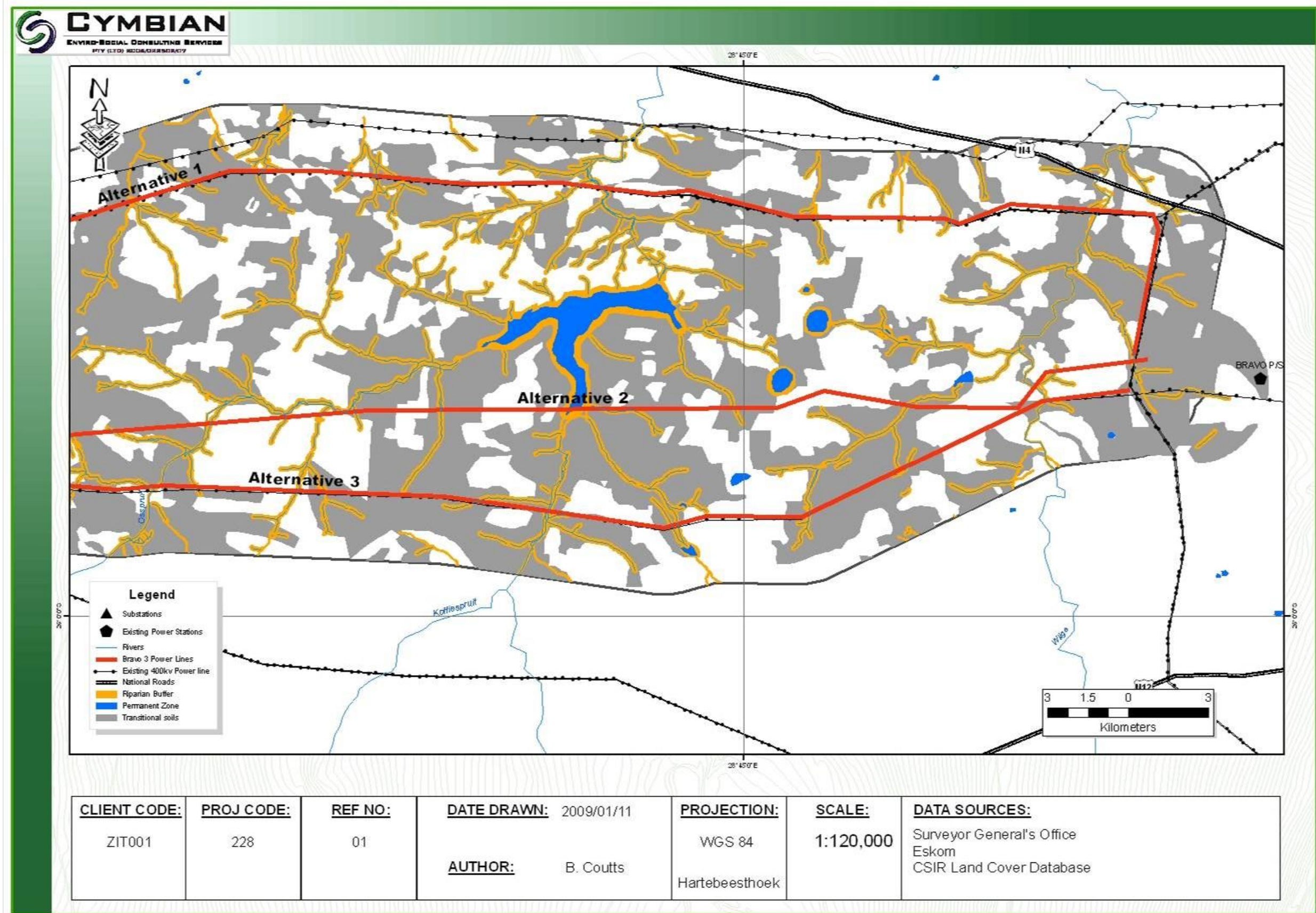


FIGURE 53: RIPARIAN AND WETLAND DELINEATION MAP OF THE EASTERN SECTION

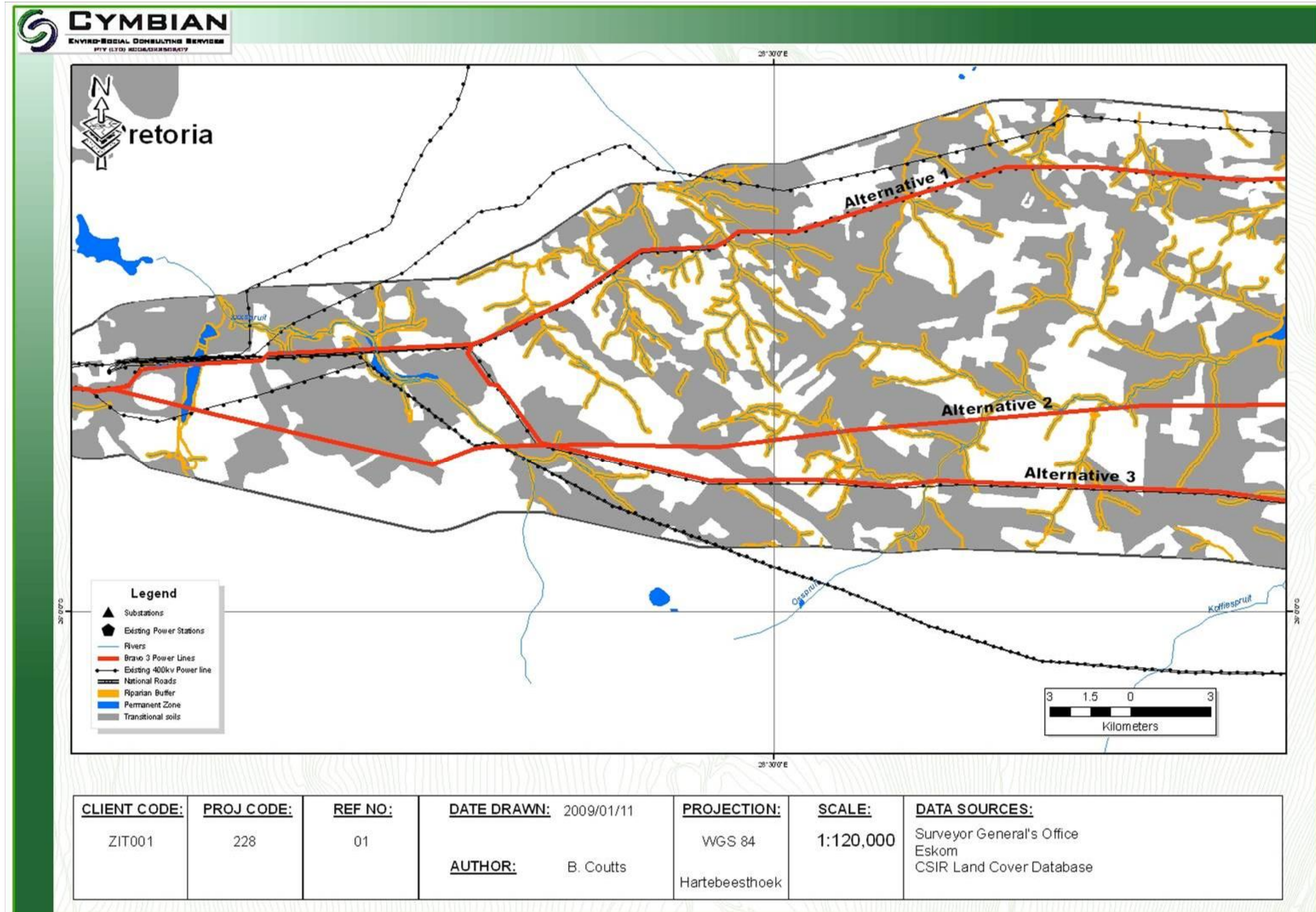


FIGURE 54: RIPARIAN AND WETLAND DELINEATION MAP OF THE CENTRAL SECTION

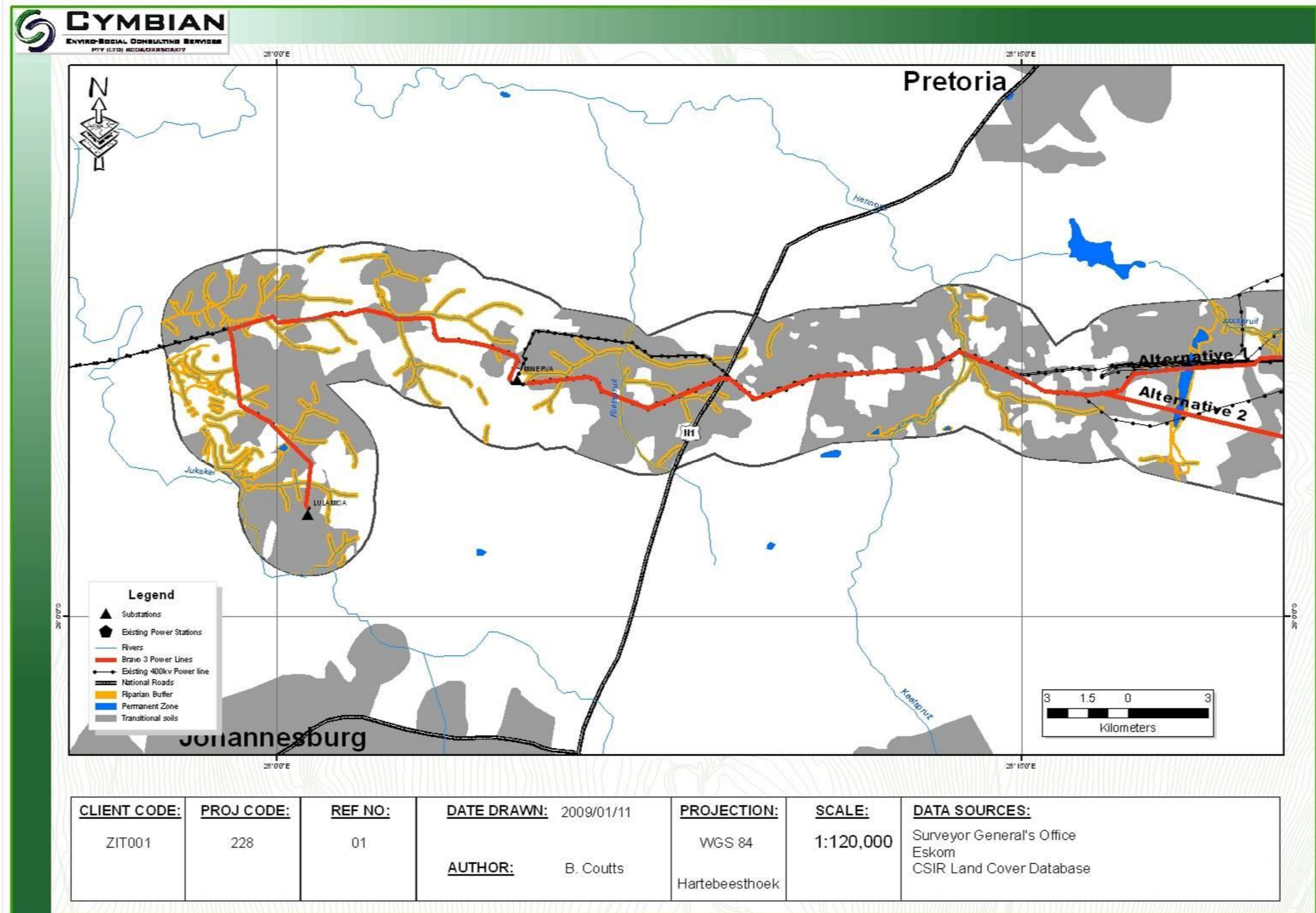


FIGURE 55: RIPARIAN AND WETLAND DELINEATION MAP OF THE WESTERN SECTION