Rutidosis heterogama* – 'Vulnerable' *TSC Act 1995* and *EPBC Act 1999

R. heterogama has been recorded within the adjacent HEZ lands. Recent targeted searches for this species throughout the HEZ lands have found that it generally occurs in areas west of the disused Richmond Main Railway line. The closest known occurrences of *R. heterogama* to the study area are approximately 1km to the west of the western boundary. Similar habitat to the areas within the HEZ lands that the species occurs is found within the Pelaw Main By-pass study area. Targeted surveys for this species have been undertaken in parts of the study area during periods when the species was known to be flowering in the locality. No specimens have been found in any part of the study area.

Detailed surveys were also carried out along the proposed road alignment, undertaken concurrently with targeted surveys within the HEZ lands at a time when the species was known to be flowering. Careful cross-checking was made with morphologically similar species encountered (such as *Brachycome* and *Helichrysum* spp.). No sign of this species could be noted along or within the vicinity of the proposed alignment.

Callistemon linearifolius* – 'Vulnerable' *TSC Act 1995

C. linearifolius has been recorded within the HEZ in areas proximate to the western boundary of the study area. Despite careful cross-checking with the morphologically similar *C. rigidus,* no specimens of *C. linearifolius* were located anywhere within the study area. Specimens of *C. rigidus* were found to occur in various locations throughout the LHSGIF community within the study area. Some confusion exists between the identification of this species and *C. linearifolius*, although the specimens in question were differentiated by the raised oil-dots on the leaves, lack of pronounced venation, leaf shape and other characteristics that are typical of *C. rigidus*. The Royal Botanic Gardens Sydney has confirmed other similar specimens taken from within the HEZ study area as *C. rigidus* (Inquiry No: 7148) (Harper Somers O'Sullivan 2002b). Further confusion may also occur with the juvenile leaves of *C. linearis*, which superficially resemble *C. linearifolius* (authors pers. obs.). *C. linearis* was also confirmed to exist within the study area.

It should also be noted that *C. linearifolius* was recorded tentatively from two locations within the study area as part of the initial Ecological Constraints Study, undertaken in 2002 (Harper Somers O'Sullivan 2002a). With an increased knowledge of the morphology of these species since the production of that report, recent ground-truthing has revealed that those plants are in fact, *C. rigidus.*

Regionally Significant Species

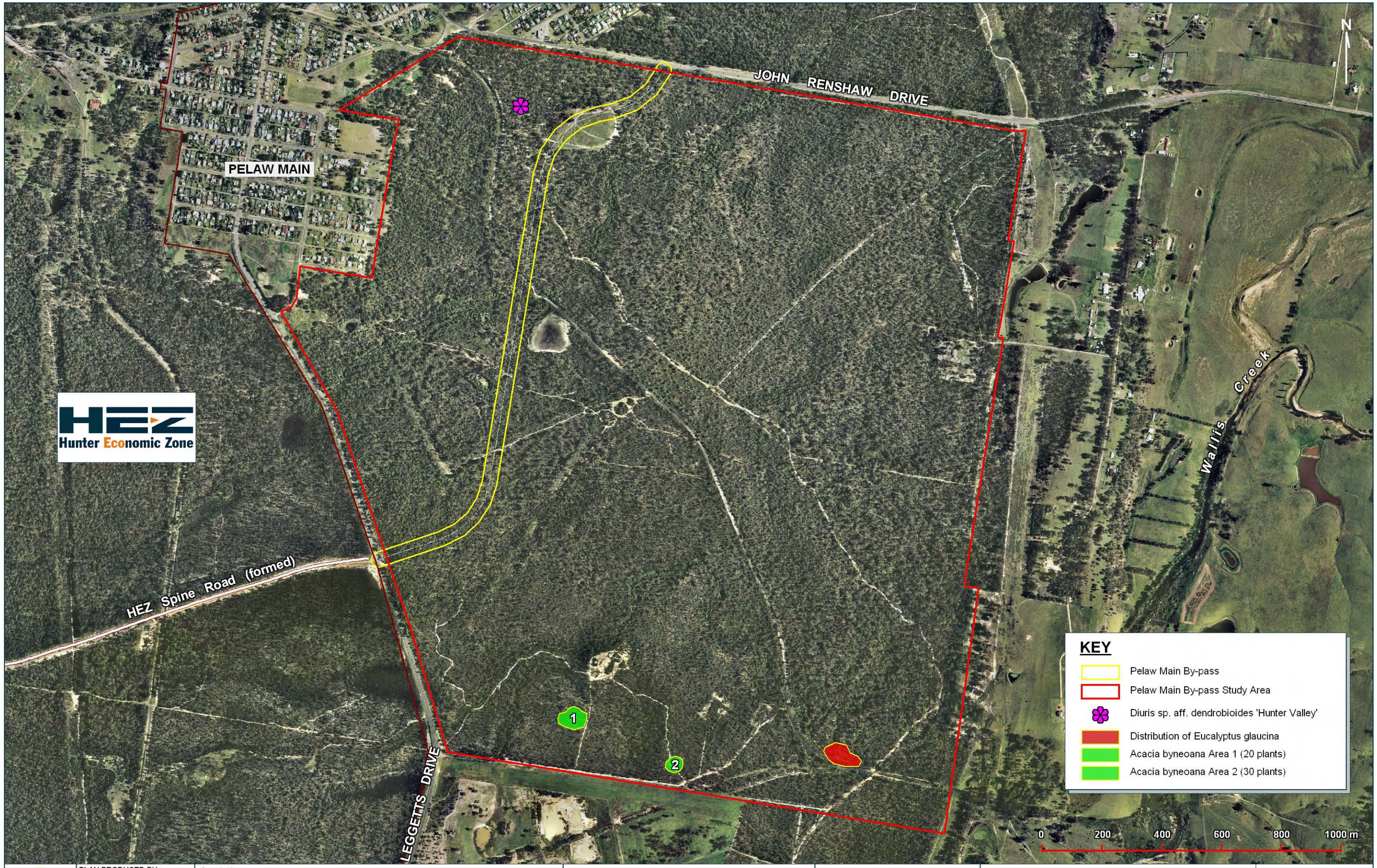
Two ROTAP species were also found to occur within the study area, namely *Macrozamia flexuosa* and *Grevillea montana*. Both *M. flexuosa* and *G. montana* were found to be scattered throughout each of the three forested vegetation communities within the study area.

The regionally significant *Diuris* sp. aff. *dendrobioides* (Hunter Valley) was also recorded growing within the LHSGIF community to the north of the proposed alignment. Bishop (2000) states that this is a rare and vulnerable species that is only known from a small area of the Hunter Valley between Lochinvar and Belford. Therefore its occurrence on the study area should be considered to be significant and potentially of high conservation value. The location of *Diuris* sp. aff. *dendrobioides* (Hunter Valley) is shown in Figure 4-5.

A recent discovery of an undescribed Stringybark has been made within the HEZ lands north of Hebburn Dam (Hill 2003). It is possible that this may be a new species of *Eucalyptus.*

Despite careful cross-checking of Stringybark species along the road alignment, no 'different' species could be noted. Fieldwork carried out within the HEZ lands have revealed that the taxonomy and status of Stringybark Eucalypts is problematic, with revision being required for such species recorded therein. Furthermore, a small stand of Stringybark trees in the east of the HEZ study area within KSSW bear strong similarities to *Eucalyptus camfieldii* (Vulnerable under the *TSC Act 1995* and *EPBC Act 1999*) (Bell 2004b). Hill (2003) considers this population to represent either a new species with affinities to, or a new subspecies of, *E. camfieldii*. Further taxonomic and distributional studies are required on this population.

Additionally, specimens of *Corymbia eximia* (Yellow Bloodwood) were observed in the north-west corner of the study area. Although not considered rare, this record may be significant due to this species reaching its northern distribution of occurrence within the locality.



HEZ Hunter Economic Zone

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NOTES:

SCALE: 1: 12000 at A3 Size
DATE: 11/11/2005
DRAWN: S. WATSON
PROJECTION: MGA Zone 56 (GDA 94)

SPECIES IMPACT STATEMENT
PELAW MAIN BY-PASS

FIGURE 4-5

LOCATION OF THREATENED PLANTS NOT AFFECTED BY THE PROPOSAL AND DIURIS SP. AFF. DENDROBIOIDES

LAYOUT REF: H:\HEZ\MAPINFO\20675 LINK - ROAD\2005 SIS NEW ALIGNMENT DOCUMENT FIGURES\20675-FIG 4-5 UNAFFECTED PLANTS-A-A3.WOR

JOB REF: 20675