Campbelltown City Council submission on the development of a NSW Koala Strategy

Recommendation 2: *That Government initiate a program to improve data on the number, location and occurrence of koalas in NSW, including trends over time, taking advantage of new sensor and communication technologies and data analytics within 12 months of receipt of this report.*

A more streamlined and consistent process for reporting and collecting koala sighting data is needed.

The current mechanism for reporting and collecting wildlife sighting data fails to capture extensive koala fatality data that is collected by a number of organisations, such as wildlife rehabilitation groups and specialist veterinary hospitals. This is due to the fact that these organisations are not subject to the same threatened species licence agreements (eg reporting to the NSW Office of Environment and Heritage (OEH) Bionet Atlas of NSW Wildlife) as government and consulting industries.

From Council's perspective, this is a particularly significant gap in data capture, given that wildlife carers and veterinary hospitals are predominately involved in responding to koala fatalities and this data is not available to land managers, such as local government for analysis; and scientists and threatened species managers for a true understanding of the threats.

Ensuring that koala sighting data is reported accurately and consistently by all relevant stakeholder groups (especially those directly dealing with fatality data), would greatly assist local government in targeting on-ground mitigation works in threat hotspots, such as areas subject to high incidents of koala road mortalities and domestic dog attacks.

Council suggests that any organisation dealing with wildlife sightings, especially threatened species such as koalas in this case, be subject to a licence agreement requiring the reporting of sightings to a common centralised online database, such as Bionet. Capturing data across these organisations is also important to inform education initiatives targeting koalas.

Following on from this, the reporting of sighting data by members of the community and persons responding to wildlife fatalities could be further streamlined through the development of a Bionet mobile application. This would enable users to log sightings of threatened species in real time, on the ground, and could potentially increase the likelihood of sightings being reported as a result of accessibility. Furthermore, this would also eliminate the time it currently takes for Council Officers to enter threatened species sightings received in various formats from the community, into the Bionet spreadsheet on their behalf; and essentially remove the associated time burden on Council resources.

In addition to the above, a complementary education program is required to facilitate a greater understanding amongst stakeholders of the value of this data.

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Recommendation 4: *That Government improve outcomes for koalas through changes to the planning system*

To achieve enhanced koala conservation outcomes, through the Local Environmental Plan (LEP) mechanism, a "Standard Instrument" model local clause (including relevant mapping) could be developed. The clause would potentially be stylized and leveraged off of current local biodiversity conservation clauses adopted by most Councils, at Part 6a and 7 of their prevailing LEP.

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Recommendation 6: *That Government investigate models for guiding and incentivising collaborative best practice for new development and ongoing land use occurring in areas of known koala populations across tenures, industries and land users.*

Council would like to see the development of state-wide best practice guidelines and/or standards for koala sensitive design requirements included in the strategy.

Koala mortality can be a direct result of human-induced threats from urbanisation and development. The main threats to koalas from urban development activities include: loss of habitat, habitat fragmentation, vehicle strike (koala injury or death), domestic dog attacks (koala injury or death), and increased prevalence of disease (increased susceptibility to disease due to stress caused by the above mentioned threats).

The development of a set of state-wide design guidelines would assist Council's in guiding development in areas of core koala habitat in a consistent manner, and ensure developers consider and incorporate koala friendly design measures into future planning and development activities. The standards should provide design guidance for use by land managers, land-use planners, infrastructure providers and development proponents to determine appropriate measures to help avoid and minimise the impact of development and land-use planning on koala populations.

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The extent of the currently approved koala population monitoring methodologies should be expanded to include more innovative, scientifically robust techniques.

To further elaborate on this recommendation, there is increasing support for the use of koala scat detection dogs, and recent off-leash dog trials were found to have a 100% detection rate of koala scat, in addition to being 19 times more efficient than the current scat survey techniques being used (Cristescu et al, 2015[1]). Council recently participated in a koala detection dog demonstration workshop conducted by OWAD Environmental in Mittagong, which showed first-hand the efficiency of the dogs at finding koala scats, when compared to the approved human survey techniques currently being used.

[1] Crisetscu RH, Foley E, Markula A, Jackson G, Jones D, Frere C (2015) Accuracy and efficiency of detection dogs: a powerful new tool for koala conservation and management. *Scientific Reports* **5**(8349)

The use of detection dogs for koala presence/absence surveys would also greatly increase time efficiency of koala surveys required by applicants in areas of core koala habitat, and greatly reduce associated survey costings.

It is recommended that the Koala Strategy support the use of koala detection dogs, and that relevant survey guidelines be updated accordingly, including State Environmental Planning Policy 44 – Koala Habitat Protection (SEPP44) (eg Circular No. B35) and the *Threatened Biodiversity Survey and Assessment Guidelines* (NSW DEC, 2004[2]).

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Council would also like to see the strategy address ways to manage existing domestic dog management in areas of core koala habitat in order to reduce the incidents of koala fatalities as a result of dog attacks on private property.

Dog attacks on koalas go largely unreported, and for this reason it is difficult to be confident in identifying threat hotspots. Analysis of historical records for the Campbeltown LGA (ELA, 2014) identified key koala/ dog conflict areas as occurring in and around the suburbs of Kentlyn and Minto Heights. However, incidental records obtained from the University of Sydney (USYD) Koala Health Hub and wildlife rescue groups, indicate that dog attacks are most frequently reported from the suburb of Wedderburn.

Council is currently in the process of developing an updated dog management flyer for the Campbelltown LGA, which will involve a community engagement campaign targeting key koala-dog conflict areas in core koala habitat. However, the effectiveness of such campaigns is largely immeasurable. The main problem faced by Council, is the inability to manage threats on private property considering the lack of jurisdiction in these areas. For example, although future development can be captured under the draft CKPoM (once adopted), it does not apply to existing development; simply meaning that the ability to manage domestic dogs on existing developments through conditions of consent (eg dog proof yard, restriction to user on title etc) is not available.

Management of domestic dogs on private properties is a highly controversial and political issue for Council, and attempts by Council to undertake community engagement activities has previously resulted in community contention. There is also reluctance by the community to report koala sightings, or dog attack incidents on their properties. Therefore, Council requires guidance and support in dealing with how to best address dog management issues to improve outcomes for the koala population. This could involve the development of best practice guidelines or Development Control Plan (DCP) provisions, written into the strategy.

For this reason, we have recently been exploring alternative opportunities that may assist us in managing the incidents of domestic dog attacks on koalas on private properties. For example, the potential to incentivise dog proof yards, the research and development of an ultrasonic acoustic koala deterrent that can be installed in the yards of landowners that have previously reported dog attacks on koalas, etc.

[2] NSW DEC (2004) *Biodiversity Survey and Assessment: Guidelines for Developments and Activities*. NSW Department of Environment and Conservation

Recommendation 7: *That Government agencies identify priority areas of land across tenures to target for koala conservation management and threat mitigation*

Fatalities caused by vehicle strikes are considered to be the second greatest threat to koalas, with disease being the primary risk, followed by dog attacks (Preece 2009[3]). However, given the lack of presence of Chlamydia in the Campbelltown Koala population (*pers comm.* David Phalen, August 2014), vehicle trauma is considered to be the highest known cause of koala mortality in the LGA. Twenty-one of the 584 people (3.6%) who responded to the Campbelltown community-based koala survey (1997) reported having seen a koala dead on a road within the area (ELA 2013[4]). In Australia, road fatalities are estimated to add an annual mortality rate of approximately 5% on top of the natural mortality rate of koalas (adapted from Dique et al 2004[5]).

Estimates of key threatening processes suggest mitigating road-kill is the most effective management solution (Roger et al 2011). In the last few years, Council has undertaken a range of traffic awareness campaigns targeting koalas in order to promote road safety in the LGA, including:

- Installation of 18 new reflective koala crossing warning signs (and upgrades to 12 old signs) in high risk areas where koala road fatalities have been recorded including predominately bushlands areas in and around Minto Heights, Ruse, Leumeah, Kentlyn, St Helens Park, Appin and Wedderburn (March, 2015) (**Attachment A**)
- Bus shelter advertising raising awareness of koalas crossing roads during the breeding season (April – May; November – December, 2016) (**Attachment B**)
- *In progress*: Purchase of a Visual Message Signboard (VMS) to be installed at strategic locations in response to community reports of koala sightings on roads.

A study by (McAlpine et al 2006[6]) found that the main cause of negative effects of landscape configuration to be a combination of increased habitat isolation and increased hostility of the matrix with high density roads.

In the Campbelltown LGA, the majority of high density roads are state roads managed by the NSW Roads and Maritime Services (RMS), and Council has limited to no ability to direct the installation of traffic calming devices. A good example to further demonstrate this predicament in relation to the koala population, is Appin Road, a major arterial road spanning approximately 10km through core koala habitat from St Helens Park in the north, through Rosemeadow and south down into Appin. The road itself predominately consists of just two lanes, and has a speed limit of 80km/hr. However, vehicles are regularly observed driving consistently above the speed limit, assumably due to the lack of police patrol and enforcement along this narrow stretch of road.

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[3] Preece, H. (2009) Localised wildlife extinctions and impacts on the regional population: Lessons from the Koala Coast. DERM

[4] ELA (2013) Draft Campbelltown Comprehensive Koala Plan of Management. Prepared for Campbelltown City Council by EcoLogical

[5] Dique, D.S., H.J. Preece, J. Thompson & D.L. de Villiers (2004). Determining the distribution and abundance of a regional koala population in south-east Queensland for conservation management. *Wildlife Research*. 31:109-117.

[6] McAlpine, C.A., J.R. Rhodes, J.G. Callaghan, M.E. Bowen, D. Lunney, D.L. Mitchell, D.V. Pullar & H.P. Possingham (2006). The importance of forest area and configuration relative to local habitat factors for conserving forest mammals: A case study of koalas in Queensland, Australia. *Biological Conservation* **132**:153-165.

At present, Council receives reports of koala fatalities on Appin Road from members of the community and wildlife carers (responding to call outs). Along with Junction Road, Ruse; Appin Road has the highest reported incidents of koala fatalities due to vehicle strike, in the LGA. The proposed Appin Road upgrade, which involves widening the road from two to four lanes in order to accommodate future housing developments in the area, would make the crossing significantly more dangerous for koalas. Without the installation of appropriate traffic calming devices and fauna crossings to facilitate koala movement (eg culvert log crossings and associated funnel fencing), these works are likely to result in an increase in koala fatalities in this area.

Therefore, Council would like to see the Koala Strategy make recommendations to ensure that appropriate threat mitigation measures are incorporated by RMS across state roads that experience high incidents of koala fatalities due to vehicle collisions. Recommendations should address both future road upgrades, and retrofitting existing roads with koala-friendly infrastructure and design measures. Providing incentives and/or funding targeting local roads, could also assist Councils in upgrading roads with traffic calming devices to reduce koala fatalities in known threat hotspots.

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Council would like to see a program focused on land acquisition and investment in key areas of koala habitat that involves purchasing lands that are not necessarily immediately bordering a National Parks estate, as proposed under the current Chief Scientist Report.

Some potential ideas might include giving consideration to targeting priority core koala habitat lands to acquire for Biobanking purposes, then using those funds to manage the site for conservation purposes in perpetuity. In taking this approach, there is also the possibility to pass the biobanked land over to local land managers, such as into Council's care and control to manage.

Other ideas to facilitate the purchase of strategic koala habitat lands might include providing land managers with incentivised investment for the acquisition of key core koala habitat areas (such as those land parcels that are to be identified through Council's and OEH's partnership strategic corridor mapping project strategic corridor mapping project funded by OEH SOS program). This could be undertaken by sharing the cost of the total purchase value of the land (eg require 50% investment by Council, and provide the other 50% through the NSW OEH SOS $10 million investment program). These sites could then be used for community engagement purposes, by incorporating passive recreation and stewardship activities into public lands. This would further ensure long term community appreciation and preservation of key koala habitat areas and corridors.

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Recommendation 10: *That Government facilitate the exchange of information among land managers, local government, the research community and broader community*

As previously described in response to Recommendation 2, Council supports the development of a Bionet mobile application. This would enable the reporting of sighting data by members of the community and persons responding to wildlife fatalities in a consistent and efficient manner.

In regards to the facilitating the exchange of information in the research community, Council would like to see the strategy explore the development of more innovative research and land use planning ideas to improve outcomes for koalas in urban areas.

In the Campbelltown LGA, koalas feed mostly on a few select species of Eucalypts endemic to the region. Planting PKFT species are generally unpopular with Council, private landowners, and local schools due to their large size as mature trees (mostly 25 – 50 metres), and greater propensity to drop branches than other species.

The idea for designing grafted koala food and habitat trees for urban koala populations has been recently developed in Queensland (Trueman et al, 2014[7]). Such a project could involve engaging a University research facility to undertake a study of graft combinations to identify a suitable graft for the LGA. The graft could be developed using a small sized Eucalypt species, such as a PKFT endemic to the Campbelltown LGA, onto a Eucalypt species that grows to a smaller height (< 4 metres).

Such a project would provide significant opportunities for local governments to take a progressive approach and contribute to creating versatile and adaptive habitat for the local koala population in an increasingly urbanised setting. In Campbelltown, this would include:

- Creating a sense of identity and facilitating environmental stewardship through the development of an iconic grafted flowering gum for Campbelltown.
- Providing a native tree species suitable for street tree plantings in urban areas: Council Reserves, local parks and under powerlines.
- Planting tree species that are palatable for the local koala population.
- Eliminating the danger of potential falling limbs.
- Enabling wildlife carers to easily access foliage, in order to harvest Eucalypt browse for injured Koalas in care; and encouraging local School's to establish arboretum's of PKFTs for the University of Sydney's Koala Health Hub.

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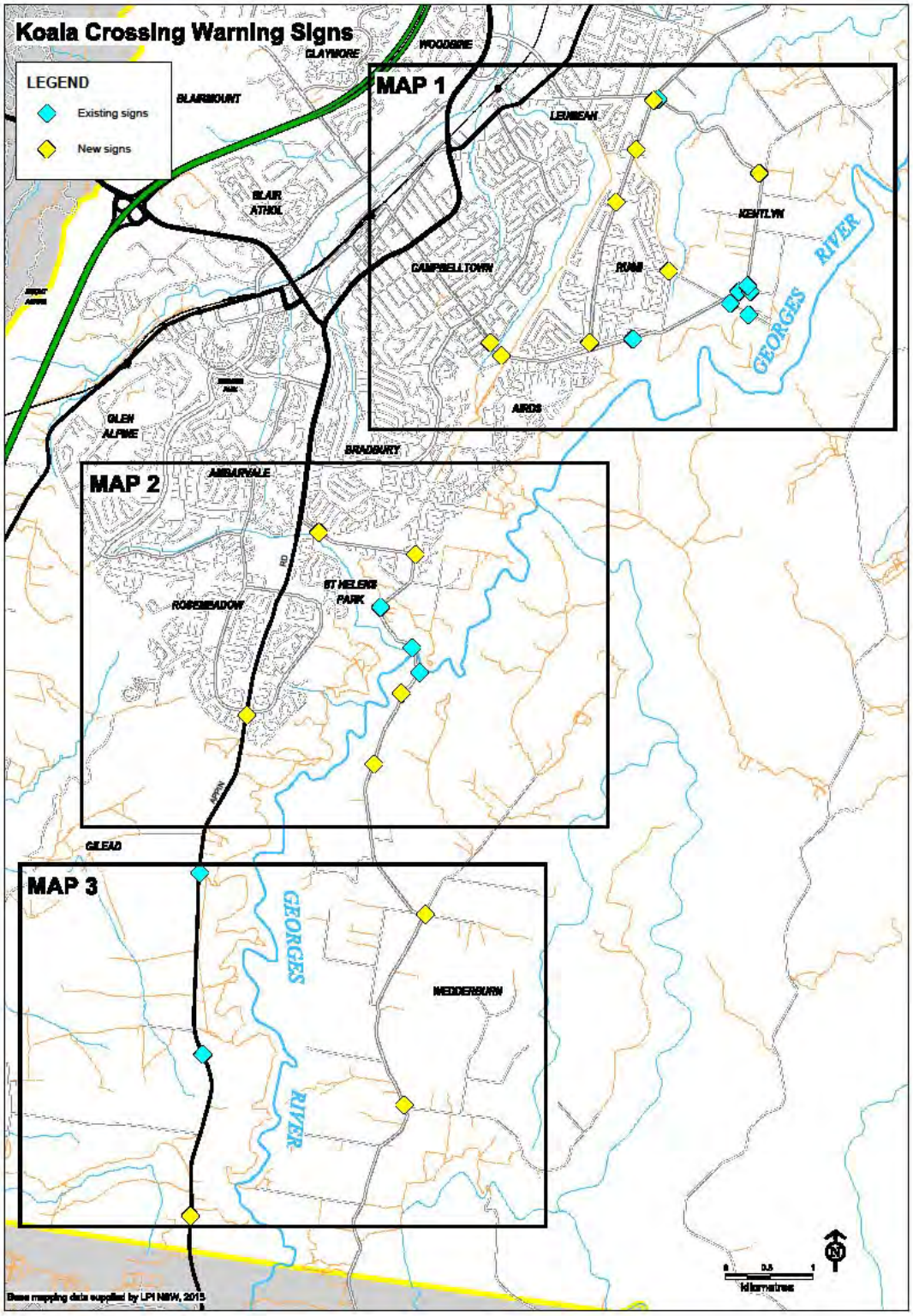
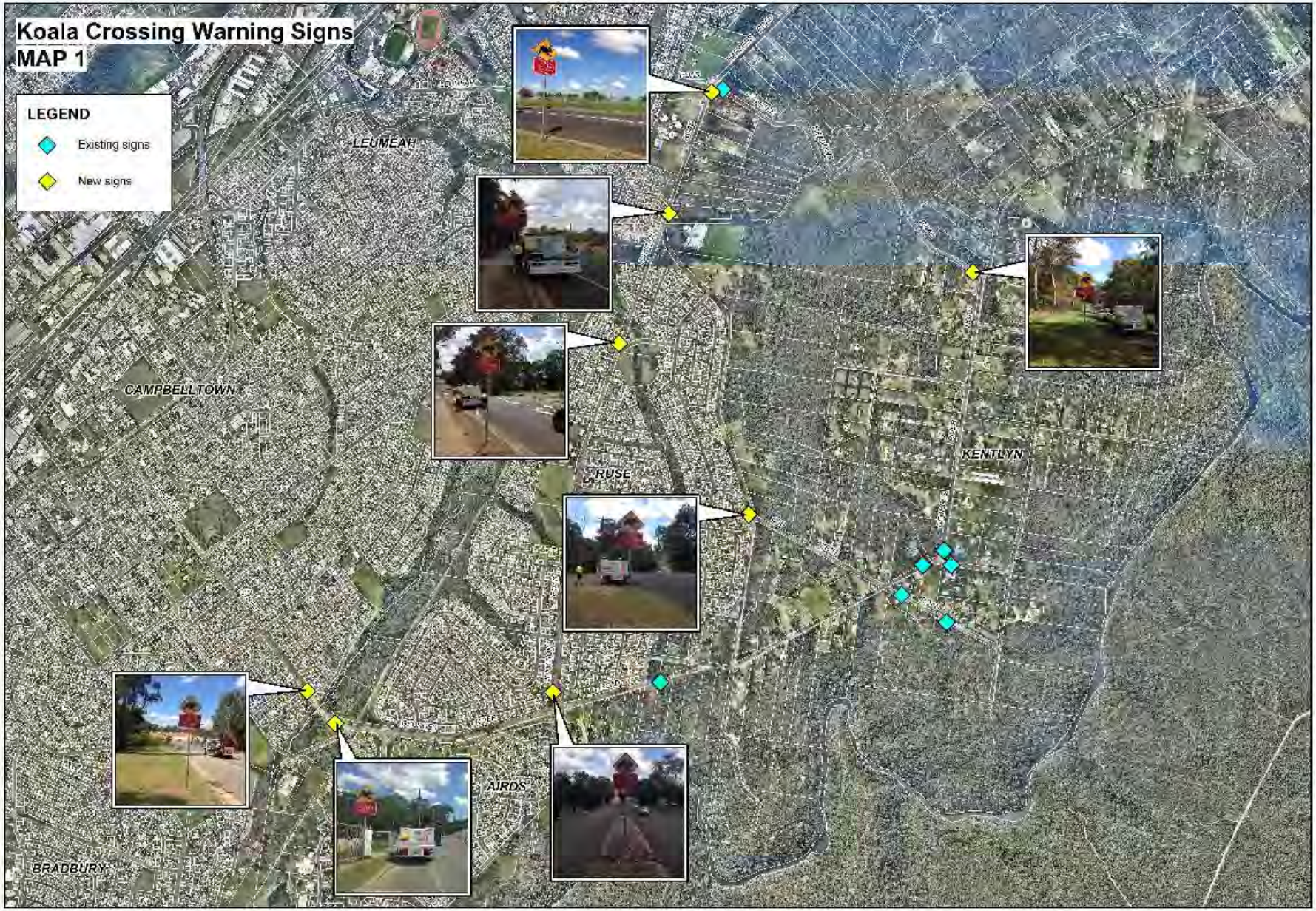
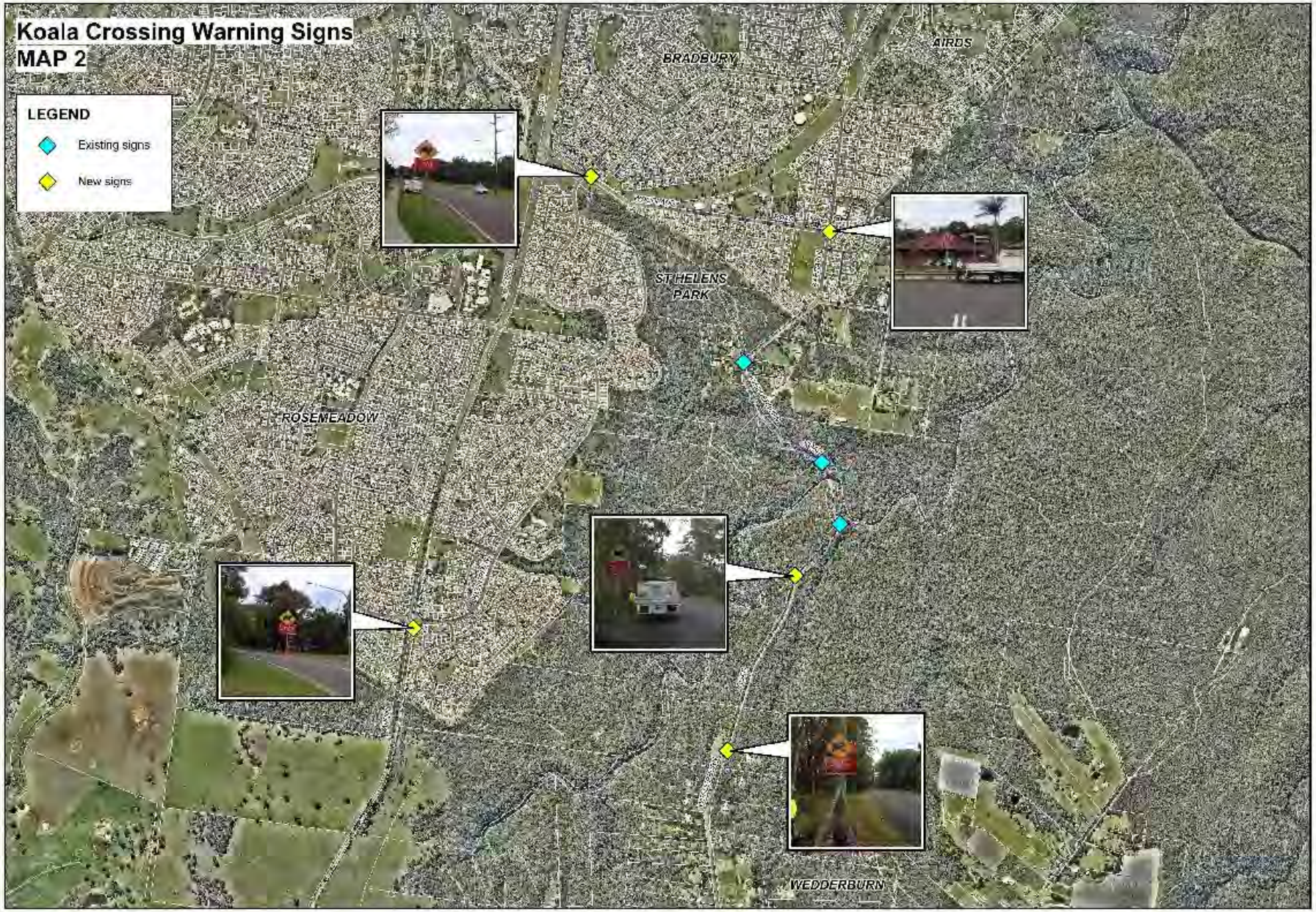
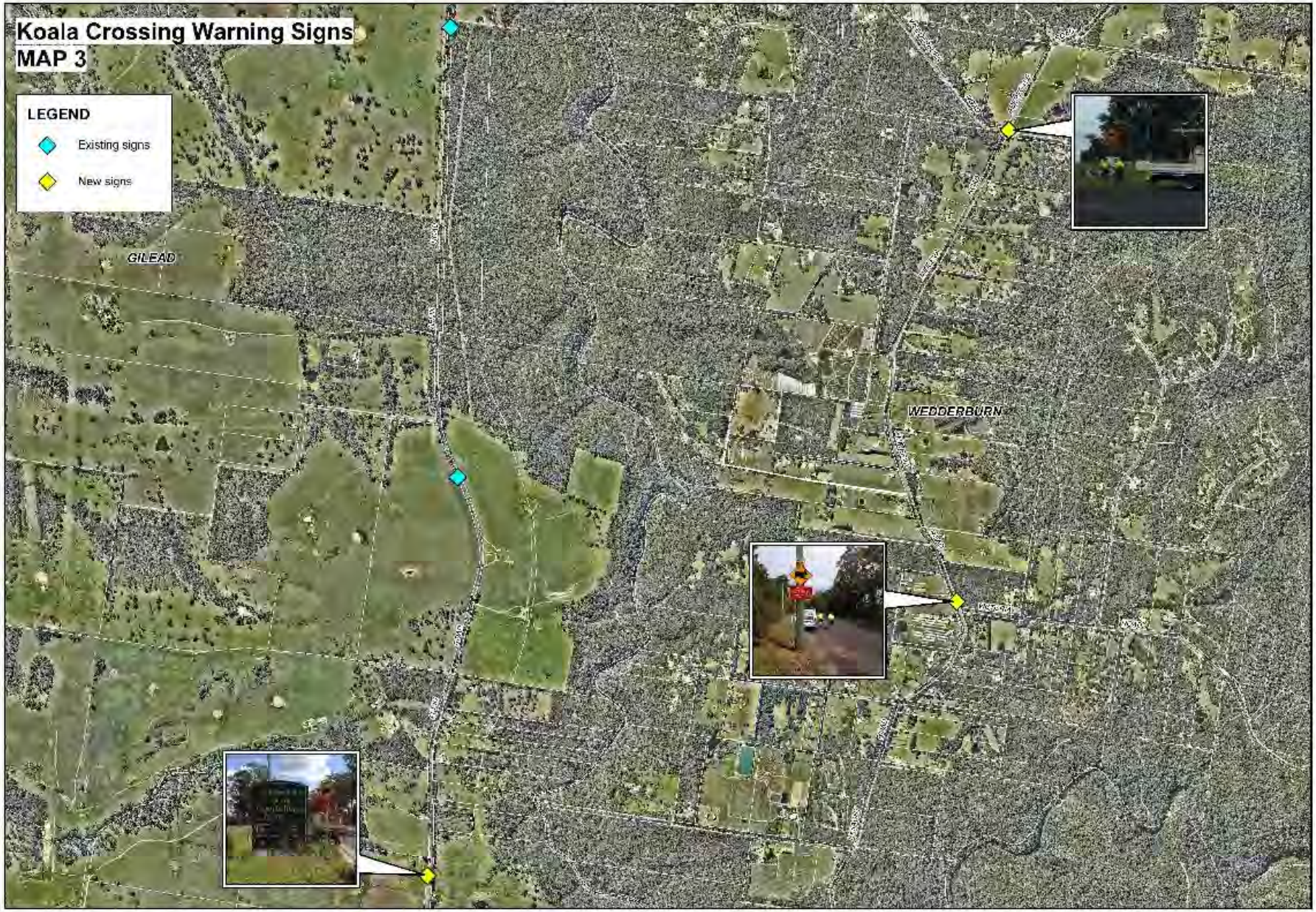
[7] Trueman SJ, McMahon TV, Grant EL, Walton DA, Wallace HM (2014) Designing food and habitat trees for urban koalas: graft compatibility, survival and height of tall eucalypt species grafted onto shorter rootstocks. *Australian Journal of Botany* **62**: 196-204

ATTACHMENT A – Installation of koala crossing warning signs




Koala Crossing Warning Signs
MAP 1
LEGEND
Existing signs
New signs
LEUMEAH
CAMPBELLTOWN
RUSE
KENTLYN
AIRDS
BRADBURY


Koala Crossing Warning Signs
MAP 2
LEGEND
Existing signs
New signs
BRADBURY
AIRDS
ST HELENS PARK
ROSEMEADOW
WEDDERBURN


Koala Crossing Warning Signs
MAP 3
LEGEND
Existing signs
New signs
GILEAD
WEDDERBURN

ATTACHMENT B – Bus shelter advertising campaign