

Title of Proposal - City Hill Section 63 Redevelopment Project**Section 1 - Summary of your proposed action**

Provide a summary of your proposed action, including any consultations undertaken.

1.1 Project Industry Type

Residential Development

1.2 Provide a detailed description of the proposed action, including all proposed activities.

The proposed action is a component of the ACT Governments Indicative Land Release Program (ILRP). The area in question (part Section 63 City) has been identified for land release. The ILRP identifies the release of 350 dwellings in 2019-20 financial year, 350 dwellings in 2020-21 financial year and 350 dwellings in 2021-22 financial year. The proposed development for this site will be mixed use development in accordance with the detailed conditions of planning, design and development set out in the City Hill Precinct Code of the National Capital Plan (NCA 2019). As well, the proposed action includes an offsite works area for road improvements to the intersection of Commonwealth Avenue/Vernon Circle.

The proposed action will occur in central Canberra. The proposed action includes unleased Territory land (part Sect 63 City), an off ramp from Commonwealth Avenue, part of the median at the northern end of Commonwealth Avenue as well as the intersection of Commonwealth Avenue/Vernon Circle.

The works footprint is approximately 2.91 ha (see Figure 1 Referral Works and Footprint in attached supporting documentation). The works footprint is bounded by City Hill to the north (section 31, Block 1), City Blocks 21, Section 63 to the north-west, Block 1 and 9, Section 7 to the south-west, and Block 9 Section 8 to the west, London Circuit to the south, and Commonwealth Avenue and City Block 1, Section 116 to the east.

1.3 What is the extent and location of your proposed action? Use the polygon tool on the map below to mark the location of your proposed action.

Area	Point	Latitude	Longitude
area is offramp from commonwealth avenue	1	-35.283045510384	149.12601422024
area is offramp from commonwealth avenue	2	-35.282618554779	149.12744383764
area is offramp from commonwealth avenue	3	-35.282964498468	149.12781398249
area is offramp from commonwealth avenue	4	-35.283008288703	149.12802319479

Area	Point	Latitude	Longitude
area is offramp from commonwealth avenue	5	-35.283111195662	149.12836383533
area is offramp from commonwealth avenue	6	-35.283146227788	149.12866960716
area is offramp from commonwealth avenue	7	-35.283141848773	149.12873129797
area is offramp from commonwealth avenue	8	-35.283124332711	149.12893782806
area is offramp from commonwealth avenue	9	-35.283323577695	149.12868838262
area is offramp from commonwealth avenue	10	-35.283575370106	149.12850867462
area is offramp from commonwealth avenue	11	-35.283855625086	149.12841747951
area is offramp from commonwealth avenue	12	-35.284122742211	149.12836115313
area is offramp from commonwealth avenue	13	-35.28439861635	149.12831019115
area is offramp from commonwealth avenue	14	-35.28436577424	149.1278166647
area is offramp from commonwealth avenue	15	-35.284343879493	149.1273419137
area is offramp from commonwealth avenue	16	-35.284254110966	149.12686984491
area is offramp from commonwealth avenue	17	-35.284140258058	149.12667940807
area is offramp from commonwealth avenue	18	-35.283047699894	149.12601690245
area is offramp from commonwealth avenue	19	-35.283049889404	149.12601690245
area is offramp from commonwealth avenue	20	-35.283043320874	149.12601690245
area is offramp from commonwealth avenue	21	-35.283043320874	149.12601958466
area is offramp from commonwealth avenue	22	-35.283041131364	149.1260329957
area is offramp from commonwealth avenue	23	-35.283034562832	149.12604908895
area is offramp from commonwealth avenue	24	-35.283041131364	149.12602226686
area is offramp from commonwealth avenue	25	-35.283049889404	149.12601958466
area is offramp from commonwealth avenue	26	-35.283036752343	149.1260329957
area is offramp from commonwealth avenue	27	-35.283045510384	149.12601422024

1.5 Provide a brief physical description of the property on which the proposed action will take place and the location of the proposed action (e.g. proximity to major towns, or for off-shore actions, shortest distance to mainland).

The site is located in central Canberra immediately south of City Hill. The works footprint comprises road surfaces, road verges, road medians, an open car park and open green space containing exotic grassland communities and scattered exotic trees.

disturbance footprint and avoidance footprint (if relevant)?

The works footprint is 2.91 ha (see attached Figure 1). The entire area will be subject to development works. The works footprint is comprised of open vacant green space (2.05 ha), a car park, road surfaces, road verges and road margin (0.86 ha). The green space and surface car parking will be developed into mixed use development in accordance with the detailed conditions of planning, design and development set out in the City Hill Precinct Code of the National Capital Plan. As well, the proposed action includes an offsite works area for road improvements to the intersection of Commonwealth Avenue/Vernon Circle. There is no avoidance area within the footprint.

The works footprint comprises Block 20, Section 63 (Urban Approved land), unused open spaces comprising TCCS Public Unleased Land, and Commonwealth Land along Commonwealth Avenue.

1.6 What is the size of the proposed action area development footprint (or work area) including disturbance footprint and avoidance footprint (if relevant)?

2.91 hectares

1.7 Is the proposed action a street address or lot?

Lot

1.7.2 Describe the lot number and title. Section 63 City, Canberra

1.8 Primary Jurisdiction.

Australian Capital Territory

1.9 Has the person proposing to take the action received any Australian Government grant funding to undertake this project?

No

1.10 Is the proposed action subject to local government planning approval?

No

1.11 Provide an estimated start and estimated end date for the proposed action.

Start date 06/2020

End date 12/2021

1.12 Provide details of the context, planning framework and State and/or Local government requirements.

The primary jurisdiction for this land is the National Capital Authority who is the planning regulator for this land. The works footprint occurs within land referred to under the National Capital Plan (NCP). Works approval from the National Capital Authority is required within this area. The Planning and Land Management Act 1988 (PLM Act) is the key legislation relevant to management of, and works approval, within Designated Land in the ACT. Under the PLM Act, the NCP is the overarching strategic plan for the ACT providing a framework for land use and development throughout the Territory. The object of the NCP is "to ensure that Canberra and the Territory are planned and developed in accordance with their national significance." The NCP includes detailed conditions for planning, design and development within these areas. The proposed works are consistent with the objectives and conditions outlined in the West Basin Precinct Code and City Hill Precinct Code.

1.13 Describe any public consultation that has been, is being or will be undertaken, including with Indigenous stakeholders.

No consultation has been undertaken with indigenous stakeholders for the proposed works. Public consultation on the City to Lake Masterplan which includes the City Hill site was undertaken by the ACT Government in 2013.

1.14 Describe any environmental impact assessments that have been or will be carried out under Commonwealth, State or Territory legislation including relevant impacts of the project.

No environmental impact assessments have been carried out at the proposed site.

1.15 Is this action part of a staged development (or a component of a larger project)?

Yes

1.15.1 Provide information about the larger action and details of any interdependency between the stages/components and the larger action.

The proposed action aligns to the ACT Government's City Plan which establishes the spatial and policy framework to manage change and development of the City centre, The proposed action is a part of the City to Lake Urban Strategy which provides a development framework for

an urban extension of the City centre towards the lake, creating a vibrant urban waterfront that will enhance the public's access to and use of Commonwealth Park, the lake and major national and regional educational and cultural institutions such as the ANU and National Museum (SMEC 2013). The proposed action aligns the City Hill Precinct Code and the National Capital Plan which permits mixed use development on the site. The site has been identified for release on the ACT Government's Indicative Land Release Program.

The proposed works is part of staged land release development that aims to provide:

A revised approach to arterial roads and through traffic

London Circuit, and its adjoining merge lanes/ramps alienate and dislocate large areas of urban land between partially realised urban precincts, preventing the safe and easy movement of pedestrians, cyclist or local traffic. Further, a number of movements on the crossing of Canberra's major arterials are becoming congested at peak periods. The re-working of arterial roads can ease these congestion points, and re-set Canberra's traffic movements to face the next 50 years (SMEC 2013).

Removal of low grade surface car parks

The use of urban capable land as surface carparking prevents uses that adequately value this land and diminishes the physical environment. Surface carparks increase urban heat island effects and greatly increase localised stormwater runoff (SMEC 2013).

Increased housing and people living within the City precinct of Canberra

Benefitting from the city centre location, there are great opportunities for new urban housing that can become the downtown neighbourhood for Canberra. A range of housing types can be accommodated, which can work hand in hand with the commercial and retail opportunities to make a diverse vibrant city centre. The new housing can benefit from the expansive lake and park front setting (SMEC 2013).

1.16 Is the proposed action related to other actions or proposals in the region?

Yes

1.16.1 Identify the nature/scope and location of the related action (Including under the relevant legislation).

The proposed action relates to the ACT Planning Strategy strategic directions (section 1, 3 and 5) in the region. The compact and efficient strategic direction section 1.1 aims to increase density in appropriate places such as town and group centres and along major transport routes. The sustainable and resilient territory strategic directions section 3.5 aims to protect diversity and enhance connectivity to improve landscape resilience in the region of the proposed action. The accessible Canberra strategic directions section 5.1 aims to enhance accessibility by better integrating transport and landuse in the region of the proposed action.

Section 2 - Matters of National Environmental Significance

Describe the affected area and the likely impacts of the proposal, emphasising the relevant matters protected by the EPBC Act. Refer to relevant maps as appropriate. The [interactive map tool](#) can help determine whether matters of national environmental significance or other matters protected by the EPBC Act are likely to occur in your area of interest. Consideration of likely impacts should include both direct and indirect impacts.

Your assessment of likely impacts should consider whether a bioregional plan is relevant to your proposal. The following resources can assist you in your assessment of likely impacts:

- [Profiles of relevant species/communities](#) (where available), that will assist in the identification of whether there is likely to be a significant impact on them if the proposal proceeds;
- [Significant Impact Guidelines 1.1 – Matters of National Environmental Significance](#);
- [Significant Impact Guideline 1.2 – Actions on, or impacting upon, Commonwealth land and Actions by Commonwealth Agencies](#).

2.1 Is the proposed action likely to have ANY direct or indirect impact on the values of any World Heritage properties?

No

2.2 Is the proposed action likely to have ANY direct or indirect impact on the values of any National Heritage places?

No

2.3 Is the proposed action likely to have ANY direct or indirect impact on the ecological character of a Ramsar wetland?

No

2.4 Is the proposed action likely to have ANY direct or indirect impact on the members of any listed species or any threatened ecological community, or their habitat?

Yes

2.4.1 Impact table

Species	Impact
Golden Sun Moth	Background The works footprint comprises sealed road surfaces, curbs, roadside verges, a median stripe, a car park, two open green

Species	Impact
	spaces east-west of Commonwealth Avenue and London circuit and open green space between the north and south bound Commonwealth Ave Road. Approximately 2.05 ha of green space occurs in the works footprint. Golden Sun Moth have been recorded in native grasslands containing wallaby grasses (<i>Rytidosperma</i> sp.), spear grasses (<i>Austrostipa bigeniculata</i>), as well as degraded grasslands dominated by the exotic Chilean needlegrass (<i>Nassella nessiana</i>). Of the green space present in the works footprint, approximately 1.49 ha is Golden Sun Moth habitat dominated by the exotic Chilean needlegrass occurs in the works footprint. Disturbance tolerant native grasses such as wallaby grasses and tall spear grass are sparsely distributed in the works footprint (SMEC 2017). The vegetation in this area has been categorised as “low quality” Golden Sun Moth habitat (SMEC 2017). Golden Sun Moth surveys were conducted in the works footprint in November/December 2015 and in greenspace south of the works footprint (Biosis 2016) and in the works footprint and surrounding roadside verges and green spaces in November/December 2016 (SMEC 2017). In December 2017, a habitat assessment and flying moth survey was conducted on City Hill and Vernon Circle road verges (i.e. between late October and early January) immediately north of the works footprint) (SMEC 2018). This survey included a section of the western green space within the works footprint (area is approximately 0.20 ha). Golden Sun Moth surveys were not recorded in this survey area and this area was categorised as “not GSM habitat” (SMEC 2018). The other half of the western section of green space has not been surveyed for golden sun moth (area is approximately 0.35 ha). However, the western section of green space consists of dense planted trees, therefore the habitat is likely to be marginal Golden Sun Moth breeding habitat. However, male Golden Sun Moth might occasionally utilise the area when searching for females. November and December is within the optimal survey timing for detecting adult flying Golden Sun Moth (i.e between late

Species	Impact
	October and early January). The surveys undertaken by Biosis (2017) and SMEC (2017 and 2018) were undertaken in accordance with the guidelines set by the Department of the Environment, Water, Heritage and the Arts 'Significant Impact Guidelines for the Critically Endangered Golden Sun Moth (Australian Government, 2009). Male and female moths and pupal cases were recorded in the open green spaces in the during November/December 2015 and 2017 (Biosis 2016, SMEC 2017). Male and female moths were also recorded Golden sun moth were recorded in the previously unsurveyed Commonwealth Avenue median bounded by Vernon Circle and London Circuit during December 2016 (SMEC 2017). These findings demonstrate that the green space within the works footprint and surround green spaces supports egg laying sites, and male and female golden sun moths at varying densities (see Figure for details on the number of golden sun moth males and females found in each survey area). The local Golden Sun Moth population around the works footprint cover an area of approximately 11.33 ha. This value was calculated as the total ha of green space where Golden Sun Moth were observed during at least once of the three surveys . Approximately 4.60 ha of the 11.33 ha area is known Golden Sun Moth Breeding habitat (i.e. contains female Golden Sun Moth or/and pupae cases). The Golden Sun Moth present in the works footprint are part of a population that is distributed on median strips, roadside verges and green space in the vicinity of the intersections of Commonwealth Avenue within London Circle, Parkes Way and Vernon Circle (Figure 2) (SMEC 2017, 2018). The reference to 'population' in this referral is in accordance with the definition provided in the EPBC Act (1999). Genetic analysis of GSM populations in the ACT has identified at least five distinct regional populations comprised of smaller, local populations within the ACT (Clarke and O'Dwyer, 1998). Genetic analysis has not been undertaken on the local population surrounding the works footprint. However, given the location

Species	Impact
	of the population it is likely to be either part of the population group 4 (Majura Range, Campbell Park and Mulanggery) or the population group 5 (Yarralumla, Woden, Naval Station, Mulligan Flat 2, York Park and Letchworth) (Clarke and O'Dwyer, 1998). Given these findings the meta-population of Golden Sun Moth is not likely to be impacted by the proposed action. Significant Impact Guidelines The proposed action has been assessed with respect to two significant impact criteria outlined in the "EPBC Act Policy Statement 3.12: Significant impact guidelines for the critically endangered golden sun moth (<i>Synemon plana</i>)" and eight significant impact criteria outlined in the "Significant Impact Guidelines 1.1 – Matters of National Environmental Importance". EPBC Act Policy Statement 3.12 Criteria An action is likely to have a significant impact if: a) a large or continuous habitat area (>10ha) is affected Response: The works footprint occurs within a large area (>10 ha) of Golden Sun Moth habitat (approximately 11.33 ha of Golden Sun Moth habitat which male Golden Sun Moth use as dispersal corridors, and a minimum of 4.60 ha of known Golden Sun Moth feeding and breeding habitat). The proposed action will result in Golden Sun Moth habitat loss (approximately 1.49 ha), and further fragmentation of Golden Sun Moth habitat. Habitat loss will include of Golden Sun Moth habitat, including known breeding and feeding habitat (see Figure 1 and 2). b) there is any habitat loss, degradation or fragmentation of a small or fragmented habitat area (<10 ha) Response: The works footprint supports a small area (<10 ha) of Golden Sun Moth habitat (approximately 1.49 ha), and habitat loss, and further fragmentation is expected to occur as a result of the proposed development. Hence, the proposed development is likely to have a significant negative impact on the Golden Sun Moth population with regard to this criterion. c) fragmentation of a population through the introduction of a barrier to dispersal occurs. Response: Golden Sun Moth males have the capacity to move between the appropriate

Species	Impact
	green space, but have limited dispersal ability (males can only fly approximately 200 m between green spaces, females only can move 1-2 m) (ACT 2009). Hence, the proposed development will likely impact connectivity and gene flow on a small scale between the occupied habitat located on City Hill, the open space east of Commonwealth Avenue and the Parkes Way median. The Golden Sun Moth population located in the vicinity of the works footprint is currently isolated from nearby populations at Campbell, Reid, Yarralumla, Ainslie and Barton, A.C.T (Mulvaney 2012). Hence, the proposed development will not impact connectivity at this regional scale. Significant Impact Guidelines 1.1 Criteria A 'population of a species' is defined under the EPBC Act as an occurrence of the species in a particular area. In relation to critically endangered, endangered or vulnerable threatened species, occurrences include but are not limited to: a) a geographically distinct regional population, or collection of local populations, or b) a population, or collection of local populations, that occurs within a particular bioregion. Hence, the golden sun moth in the works footprint are considered to belong to a distinct, isolated population. An action is likely to have a significant impact on a critically endangered or endangered species if there is a real chance or possibility that it will: a) lead to a long-term decrease in the size of a population Response: The proposed action is likely to contribute to a long-term decrease in the size of the affected local population. Golden Sun Moth breeding habitat will be lost due to the proposed action, as well as dispersal corridors for male Golden Sun Moth. Residential development will also function as a physical barrier inhibiting Golden Sun Moth dispersal. Genetic analysis of GSM populations in the ACT has identified at least five distinct regional populations comprised of smaller, local populations within the ACT (Clarke and O'Dwyer, 1998). Genetic analysis has not been undertaken on the local population surrounding the works footprint. However, given the location of the population it is likely to be either part of the Group 4 (Majura

Species	Impact
	Range, Campbell Park and Mulanggery) population or the group 5 (Yarralumla, Woden, Naval Station, Muligan Flat 2, York Park and Letchworth) population (Clarke and O'Dwyer, 1998). Given these findings the meta-population of GSM is not likely to be impacted by the proposed action. b) reduce the area of occupancy of the species Response: The proposed development will likely reduce the area of occupancy by the local population Golden Sun Moth by approximately 1.49 ha out of 11.33 ha. At a wider regional scale the area occupied by Golden Sun Moth in the whole of the ACT was calculated in 1998 as covering an area of approximately 366.7 ha (Clarke and O'Dwyer, 1998). c) fragment an existing population into two or more populations Response: The proposed development may fragment an existing population into two or more populations if a breeding population of Golden Sun Moth exists on City Hill and dispersal is reliant on the exotic grassland habitat within the works footprint d) adversely affect habitat critical to the survival of a species Response: The proposed development is likely to adversely affect 1.49 ha of habitat (i.e. exotic Chilean needlegrass, <i>Nassella nessiana</i> and sparsely distributed native grasses such as wallaby grasses and tall spear grass) critical to the survival of Golden Sun Moth at the larval stage within the works footprint. However, there is available habitat (i.e. exotic Chilean needlegrass, <i>Nassella nessiana</i>) within the surrounding area of the works footprint. Further, the vegetation in the works footprint has been categorised as "low quality" Golden Sun Moth habitat (SMEC 2017). e) disrupt the breeding cycle of a population Response: The proposed development is unlikely to disrupt the breeding cycle of a population. f) modify, destroy, remove, isolate or decrease the availability or quality of habitat to the extent that the species is likely to decline Response: The proposed development is unlikely to modify, destroy, remove, isolate or decrease the availability or quality of habitat to the extent that the species is likely to decline. g) result in invasive species that are harmful to a critically endangered or

Species	Impact
	endangered species becoming established in the endangered or critically endangered species' habitat Response: The proposed development is unlikely to result in invasive species that are harmful to Golden Sun Moth becoming established in the surrounding Golden Sun Moth habitat. h) introduce disease that may cause the species to decline, or Response: The proposed development is unlikely to introduce disease that may cause the species to decline. i) interfere with the recovery of the species. Response: The proposed development is unlikely to interfere with the recovery of the species as this particular population is not likely to be critical to the long-term recovery of Golden Sun Moth given the site's isolation, size and location in the centre of Canberra.
Natural Temperate Grassland and White Box-Yellow Box Blakely's Red Gum Grassy Woodland and Derived Native Grassland	A search of the Commonwealth Protected Matters Search Tool (PMST) indicated that the following two threatened ecological communities are present within 10 km of the proposed development: • Natural Temperate Grassland of the South Eastern Highlands • White Box-Yellow Box-Blakely's Red Gum Grassy Woodland and Derived Native Grassland The works footprint area likely supported Natural Temperate Grassland of the South Eastern Highlands prior to the establishment of central Canberra. No vegetation meeting the criteria for classification as natural temperate grassland was identified in the works footprint (EcoLogical 2014). Further, no White Box-Yellow Box-Blakely's Red Gum Grassy Woodland and Derived Native Grassland is present in the works footprint (EcoLogical 2014). The protected matters search indicated that 36 EPBC listed threatened species have been recorded, or are likely to occur within 10 km of the proposed development. The works footprint contains Golden Sun Moth (<i>Synemon plana</i>) habitat and is known to support an isolated population of this species. This species is listed as Endangered under the Environment Protection and Biodiversity Conservation Act 1999 (EPBC ACT) and under the Nature Conservation (NC) ACT. Hence, the potential impact of the

Species	Impact
	proposed development on this species is assessed in detail in this Referral. No suitable breeding or foraging habitat of the remaining 35 EPBC listed threatened species is present in the works footprint. It is unlikely the proposed action will have a significant impact on native plants due to the urban context of the surrounding landscape and small-scale of native vegetation impacted. Similarly, the proposed action is not expected to displace or substantially limit movement or dispersal of native animal populations, or substantially reduce or fragment habitat for native animal species (excluding Golden Sun Moth).

2.4.2 Do you consider this impact to be significant?

Yes

2.5 Is the proposed action likely to have ANY direct or indirect impact on the members of any listed migratory species, or their habitat?

No

2.6 Is the proposed action to be undertaken in a marine environment (outside Commonwealth marine areas)?

No

2.7 Is the proposed action to be taken on or near Commonwealth land?

Yes

2.7.1 Is the proposed action likely to have ANY direct or indirect impact on the Commonwealth land?

Yes

2.7.2 Describe the nature and extent of the likely impact on the whole of the environment.

The works footprint comprises 0.52 ha of Commonwealth Land along Commonwealth Avenue (See attached supporting documentation Figure 3).

2.7.3 Do you consider this impact to be significant?

Yes

2.8 Is the proposed action taking place in the Great Barrier Reef Marine Park?

No

2.9 Is the proposed action likely to have ANY direct or indirect impact on a water resource related to coal/gas/mining?

No

2.10 Is the proposed action a nuclear action?

No

2.11 Is the proposed action to be taken by the Commonwealth agency?

No

2.12 Is the proposed action to be undertaken in a Commonwealth Heritage Place Overseas?

No

2.13 Is the proposed action likely to have ANY direct or indirect impact on any part of the environment in the Commonwealth marine area?

No

Section 3 - Description of the project area

Provide a description of the project area and the affected area, including information about the following features (where relevant to the project area and/or affected area, and to the extent not otherwise addressed in Section 2).

3.1 Describe the flora and fauna relevant to the project area.

The site comprises road surfaces, road verges, road medians and open space containing grassland and scattered exotic trees.

An ecological assessment of the works footprint identified that the works footprint comprises exotic grassland dominated by Chilean needle grass (Ecological 2014; Biosis 2016). One patch of low diversity native vegetation is present in the northern open space (Biosis 2016). Disturbance tolerant native grasses such as wallaby grasses (*Rytidosperma* sp.) and tall spear grass (*Austrostipa bigeniculata*) are sparsely distributed in small patches in the works footprint (SMEC 2017). Scattered planted trees are located in the southern and northern open space areas including Argyle Apple (*Eucalyptus cinerea*) and ornamental plum trees. No Matters of National Environmental Significance other than Golden Sun Moth are likely to occur at the site.

Copies of flora and fauna investigations have been uploaded as evidence in Section 2.

3.2 Describe the hydrology relevant to the project area (including water flows).

The site contains no major drainage lines. Minor drainage lines flow into the Molonglo River catchment. The site currently comprises transport infrastructure, road verges, road median and open space. Current drainage comprises built infrastructure.

3.3 Describe the soil and vegetation characteristics relevant to the project area.

The works footprint is occurs within the Williamsdale soil landscape (ACT Government, 2015). The Williamsdale soil landscape is made up of highly erodible soils, localised hard-setting surfaces and dispersible subsoils (ACT Government, 2015).

The work footprint green area consists primarily of exotic grassland, scattered planted native and exotic trees. The top soil within the open green space area has been stripped and landscaped as part of previous work.

3.4 Describe any outstanding natural features and/or any other important or unique values relevant to the project area.

There are no outstanding natural features within the works footprint.

3.5 Describe the status of native vegetation relevant to the project area.

The works footprint has been subject to substantial modification since European colonisation of the area. The majority of the works footprint has become dominated in recent years by Chilean needle grass, a weed of national significance. Disturbance tolerant native grasses such as wallaby grasses and tall spear grass are sparsely distributed in the open green space within the works footprint (SMEC 2017).

3.6 Describe the gradient (or depth range if action is to be taken in a marine area) relevant to the project area.

The Project Area is relatively flat, varying between 559 and 568 metres above sea level, with a gentle slope gradient of less than 5% (ACT Government, 2015; as mapped in May 2004). The proposed action would involve realignment of the intersection at Commonwealth Avenue and Vernon Circle, removal of the off-ramp from Commonwealth Avenue and redevelopment of the site including basement carparking and internal roads for access.

3.7 Describe the current condition of the environment relevant to the project area.

The works footprint has been subject to substantial modification since European settlement of the area. The majority of the vacant green space within the works footprint has become dominated in recent years by Chilean needle grass, a weed of national significance (SMEC 2018).

3.8 Describe any Commonwealth Heritage Places or other places recognised as having heritage values relevant to the project area.

There are no Commonwealth Heritage Places or other recognised heritage value sites in the works footprint (ACT Government 2015). The closest Commonwealth heritage site is City Hill (Section 34). City Hill has historic and aesthetic significance and represents an important element of urban design and an integral component of Griffin's plan. It is a generating point for the major avenues of Civic and its plantings provide visual corridors for those avenues.

3.9 Describe any Indigenous heritage values relevant to the project area.

There are no known indigenous heritage items, or places within or adjacent to the works footprint. No culturally important landscape features exist within the works footprint (ACT 2015). No targeted indigenous heritage value surveys have been conducted in the works footprint. The works footprint and surrounding area has been subject to substantial modification and surface disturbance since central Canberra was developed in the 1920s-1930s.

3.10 Describe the tenure of the action area (e.g. freehold, leasehold) relevant to the project area.

The works footprint contains approximately 0.52 ha of unleased Commonwealth land, approximately 0.79 ha of unleased Urban Approved EPSDD land and approximately 1.6 ha of unleased TCCS Public space land (ACT Government, 2015).

3.11 Describe any existing or any proposed uses relevant to the project area.

The land consists of roads and unused open space within intersections, median strips and road verges.

Section 4 - Measures to avoid or reduce impacts

Provide a description of measures that will be implemented to avoid, reduce, manage or offset any relevant impacts of the action. Include, if appropriate, any relevant reports or technical advice relating to the feasibility and effectiveness of the proposed measures.

Examples of relevant measures to avoid or reduce impacts may include the timing of works, avoidance of important habitat, specific design measures, or adoption of specific work practices.

4.1 Describe the measures you will undertake to avoid or reduce impact from your proposed action.

We are aware that the proposed works will have a significant impact. The proponent will compensate for loss the removal of 1.49 ha of Golden Sun Moth habitat in a manner consistent with the EPBC Environmental Offsets Policy.

4.2 For matters protected by the EPBC Act that may be affected by the proposed action, describe the proposed environmental outcomes to be achieved.

Approximately 1.49 ha of low quality golden sun moth habitat dominated by Chilean needle grass is likely to be removed as a result of the proposed action. The proposed action is likely to have a significant adverse impact on a population of the critically endangered Golden Sun Moth. The impact threshold outlined in the 'EPBC Act policy statement 3.12: Significant impact guidelines for the critically endangered Golden Sun Moth (*Synemon plana*)' which specifies that 'any habitat loss, degradation or fragmentation' of a small, fragmented habitat area (<10 ha) is considered to be a significant impact, is expected to be breached as a result of the proposed development in the works footprint. The proponent will compensate for loss the removal of 1.49 ha of Golden Sun Moth habitat in a manner consistent with the EPBC Environmental Offsets Policy.

Refer to the supporting documentation uploaded in Section 2.

Section 5 – Conclusion on the likelihood of significant impacts

A checkbox tick identifies each of the matters of National Environmental Significance you identified in section 2 of this application as likely to be a significant impact.

Review the matters you have identified below. If a matter ticked below has been incorrectly identified you will need to return to Section 2 to edit.

5.1.1 World Heritage Properties

No

5.1.2 National Heritage Places

No

5.1.3 Wetlands of International Importance (declared Ramsar Wetlands)

No

5.1.4 Listed threatened species or any threatened ecological community

Listed threatened species and communities - Yes

5.1.5 Listed migratory species

No

5.1.6 Commonwealth marine environment

No

5.1.7 Protection of the environment from actions involving Commonwealth land

Protection of the environment from actions involving Commonwealth land - Yes

5.1.8 Great Barrier Reef Marine Park

No

5.1.9 A water resource, in relation to coal/gas/mining

No

5.1.10 Protection of the environment from nuclear actions

No

5.1.11 Protection of the environment from Commonwealth actions

No

5.1.12 Commonwealth Heritage places overseas

No

5.2 If no significant matters are identified, provide the key reasons why you think the proposed action is not likely to have a significant impact on a matter protected under the EPBC Act and therefore not a controlled action.

N/A

Section 6 – Environmental record of the person proposing to take the action

Provide details of any proceedings under Commonwealth, State or Territory law against the person proposing to take the action that pertain to the protection of the environment or the conservation and sustainable use of natural resources.

6.1 Does the person taking the action have a satisfactory record of responsible environmental management? Please explain in further detail.

N/A

6.2 Provide details of any past or present proceedings under a Commonwealth, State or Territory law for the protection of the environment or the conservation and sustainable use of natural resources against either (a) the person proposing to take the action or, (b) if a permit has been applied for in relation to the action – the person making the application.

N/A

6.3 If it is a corporation undertaking the action will the action be taken in accordance with the corporation's environmental policy and framework?

Yes

6.3.1 If the person taking the action is a corporation, please provide details of the corporation's environmental policy and planning framework.

The proponent, City Renewal Authority (CRA), is not a corporation. The City Renewal Authority is a Territory Government Statutory Authority and is leading the transformation of the City Renewal Precinct. As part of CRA's approach we have developed a sustainability strategy that includes principals such as climate-wise design, social and economic vibrancy, sustainable use of resources and active travel. As part of the land development program, the Authority is encouraging diverse thriving neighbourhoods that have the critical mass for social and economic sustainability that value high quality public spaces. Sustainability is encouraged via a range of land release levers such as conditions in deeds and contracts. For capital works delivered by the Authority, sustainability measures are incorporated as part of our works program across the entire precinct (eg urban trees, stormwater water run off designed to flow to tree gardens, permeable paving around tree pits, etc)

6.4 Has the person taking the action previously referred an action under the EPBC Act, or been responsible for undertaking an action referred under the EPBC Act?

No

Section 7 – Information sources

You are required to provide the references used in preparing the referral including the reliability of the source.

7.1 List references used in preparing the referral (please provide the reference source reliability and any uncertainties of source).

Reference Source	Reliability	Uncertainties
ACT Government (2013) The city plan and city to the lake: Consultancy Summary. ISBN 978 1 921117 12 1	Highly Reliable	The data that is used was derived from survey responses using quantitative and qualitative methods. The quantitative data supports the qualitative data.
ACT Government (2015) ACTmapi, accessed online (March, 2019): http://www.actmapi.act.gov.au/home.html	Moderately Reliable	The data that is used for ACTmapi is collected from numerous sources and is accurate to varying degrees. Where possible, the datasource was identified and assessed on an case by case basis.
CRA 2018. Sustainability Strategy: City Renewal Authority. ACT Government.	Highly Reliable	Not a binding document. Sets the guidelines for current developments undertaken by the City Renewal Authority.
Biosis 2016. Golden Sun Moth Report, Commonwealth Avenue, ACT. Prepared for Land Development Agency. ACT Government January 2016.	High reliability. This report is recent, and specific to the Project Area. Surveys were completed according to appropriate guidelines.	This report only covers some of the project area and does not reference the entire works footprint.
Commonwealth of Australia. 2009. EPBC Act Policy Statement 3.12 - Significant Impact Guidelines for the Critically Endangered Golden Sun Moth (<i>Synemon plana</i>) 2009. Department of the Environment, Water, Heritage and the Arts. Available from: http://www.environment.gov.au/cgi-bin/sprat/public/publicspecies.pl?taxon_id=25234	High reliability. These guidelines are the current standard for assessing impacts to golden sun moth under the EPBC Act.	No uncertainties
Commonwealth of Australia.	High reliability. These	Information to be compared to

Reference Source	Reliability	Uncertainties
2016. Natural Temperate Grassland of the South Eastern Highlands: a nationally protected ecological community, Commonwealth of Australia 2016'	guidelines are the current standard for detecting sun moth under the EPBC Act.	the SPRAT website. Information could be out of date.
EcoLogical 2014. City to the Lake, Stage 2 Ecological Assessment. Prepared for Land Development Agency. ACT Government. August 2014.'	Moderate reliability. This report is specific to the Project Area and surrounds. Surveys were completed according to appropriate guidelines. The areas of Golden sun Moth occurrence has now been extended since this report.	Surveys occurred over a limited time during a period of time that is not ideal for comprehensive survey. Habitat is referred to as managed exotic grassland (Ecological 2014)
Environmental and Sustainable Directorate. 2014. The City Plan. Available at https://www.cityplan.act.gov.au/	High reliability. These guidelines are the current city plan for Canberra.	No uncertainties
NCA (National Capital Authority) 2019. The Consolidated National Capital Plan – Precinct Codes accessed online (March, 2019): https://www.nca.gov.au/consolidated-national-capital-plan/precinct-codes-0#city-hill	Moderate reliability. The document is specific to the Project Area and surrounds. Strategy and blueprint giving effect to the Commonwealth's interests and intentions for planning, designing and developing Canberra and the Territory.	Not a binding document. Has the potential to change significantly through the developmental process.
SMEC 2013. Urban Strategy: Linking City Centre to the Lake. Economic Development Directorate (EDD)	Moderate reliability. The document is specific to the Project Area and surrounds.	Not a binding document. Has the potential to change significantly through the developmental process.
SMEC 2017. Commonwealth Avenue Golden Sun Moth Survey. Prepared for Land Development Agency. ACT Government. March 2017.	High reliability. This report is recent, and specific to the Project Area. Surveys were completed according to appropriate guidelines.	This report only covers some of the project area and does not reference the entire works footprint.
SMEC 2018. City Hill Golden Sun Moth Survey and Habitat Assessment. Prepared for City Renewal Authority. March 2018.	High reliability. This report is recent, specific to the Project Area and completed based on site scale inspection. Surveys were completed according to appropriate guidelines.	This report only covers some of the project area and does not reference the entire works footprint.

Section 8 – Proposed alternatives

You are required to complete this section if you have any feasible alternatives to taking the proposed action (including not taking the action) that were considered but not proposed.

8.0 Provide a description of the feasible alternative?

No feasible alternatives to taking the proposed action have been identified in the City Plan (Environmental and Sustainable Development Directorate 2014).

No feasible alternatives have been identified. The site has been identified for release on the ACT Government's Indicative Land Release Program and the proposed action is required to meet the ACT Governments priority for land release.

8.1 Select the relevant alternatives related to your proposed action.

8.27 Do you have another alternative?

No

Section 9 – Contacts, signatures and declarations

Where applicable, you must provide the contact details of each of the following entities: Person Proposing the Action; Proposed Designated Proponent and; Person Preparing the Referral. You will also be required to provide signed declarations from each of the identified entities.

9.0 Is the person proposing to take the action an Organisation or an Individual?

Organisation

9.2 Organisation

9.2.1 Job Title

Project Director

9.2.2 First Name

Cindy

9.2.3 Last Name

Cantamessa

9.2.4 E-mail

cindy.cantamessa@act.gov.au

9.2.5 Postal Address

1 Constitution Avenue

GPO Box 158
Canberra City ACT 2601
Australia

9.2.6 ABN/ACN

ABN

40746096162 - City Renewal Authority

9.2.7 Organisation Telephone

(02) 62058339

9.2.8 Organisation E-mail

cityrenewal@act.gov.au

9.2.9 I qualify for exemption from fees under section 520(4C)(e)(v) of the EPBC Act because I am:

Not applicable

Small Business Declaration

I have read the Department of the Environment and Energy's guidance in the online form concerning the definition of a small a business entity and confirm that I qualify for a small business exemption.

Signature:..... Date:

9.2.9.2 I would like to apply for a waiver of full or partial fees under Schedule 1, 5.21A of the EPBC Regulations

No

9.2.9.3 Under sub regulation 5.21A(5), you must include information about the applicant (if not you) the grounds on which the waiver is sought and the reasons why it should be made

Person proposing the action - Declaration

I, Cindy Cantamessa, declare that to the best of my knowledge the information I have given on, or attached to the EPBC Act Referral is complete, current and correct. I understand that giving false or misleading information is a serious offence. I declare that I am not taking the action on behalf of or for the benefit of any other person or entity.

Signature: C.C.A. Date: 17 May 2019

I, Cindy Cantamessa, the person proposing the action, consent to the designation of City Renewal Authority as the proponent of the purposes of the action describe in this EPBC Act Referral.

Signature: C.C.A. Date: 17 May 2019

9.3 Is the Proposed Designated Proponent an Organisation or Individual?

Organisation

9.5 Organisation

9.5.1 Job Title

Project Director

9.5.2 First Name

Cindy

9.5.3 Last Name

Cantamessa

9.5.4 E-mail

cindy.cantamessa@act.gov.au

9.5.5 Postal Address

1 Constitution Avenue

GPO Box 158
Canberra City ACT 2601
Australia

9.5.6 ABN/ACN

ABN

40746096162 - City Renewal Authority

9.5.7 Organisation Telephone

(02) 6205 8339

9.5.8 Organisation E-mail

cityrenewal@act.gov.au

Proposed designated proponent - Declaration

I, Cindy Cantamessa, the proposed designated proponent, consent to the designation of myself as the proponent for the purposes of the action described in this EPBC Act Referral.

Signature: C.C. = Date: 17 May 2019

9.6 Is the Referring Party an Organisation or Individual?

Organisation

9.8 Organisation

9.8.1 Job Title

Project Director

9.8.2 First Name

Cindy

9.8.3 Last Name

Cantamessa

9.8.4 E-mail

cindy.cantamessa@act.gov.au

9.8.5 Postal Address

1 Constitution Avenue

GPO Box 158
Canberra City ACT 2601
Australia

9.8.6 ABN/ACN

ABN

40746096162 - City Renewal Authority

9.8.7 Organisation Telephone

(02) 6205 8339

9.8.8 Organisation E-mail

cityrenewal@act.gov.au

Referring Party - Declaration

I, Cindy Cantamessa, I declare that to the best of my knowledge the information I have given on, or attached to this EPBC Act Referral is complete, current and

correct. I understand that giving false or misleading information is a serious offence.

Signature: C. Gt Date: 17 May 2019

Appendix A - Attachments

The following attachments have been supplied with this EPBC Act Referral:

1. Biosis 2016.pdf
2. Figure 1 Referral Works Footprint and GSM Numbers 2015-2018.pdf
3. Figure 2 GSM Numbers 2015-2018 in Vicinity of Works Footprint.pdf
4. Figure 3 Referral Works Footprint and Cadastral Layer.pdf
5. Part 1 - SMEC 2018.pdf
6. Part 2 - SMEC 2018.pdf
7. SMEC 2017.pdf
8. The City Plan and City to the Lake consultation summary - 2013.pdf

21 January 2016

Jane Overton
Infrastructure Officer
Land Development Agency
Chief Minister, Treasury and Economic Development Directorate
Level 7 TransACT House
470 Northbourne Avenue
Dickson ACT 2602
jane.overton@act.gov.au

Golden Sun Moth Survey Report, Commonwealth Avenue, ACT

Project no. 21125

Dear Ms Overton,

Biosis Pty Ltd (Biosis) was commissioned by the ACT Land Development Agency to undertake a targeted survey for the Golden Sun Moth (*Synemon plana*) within two of the 'clover leaf' sections of grassland at the intersection of Commonwealth Avenue and London Circuit, Canberra, ACT (Figure 1). The investigation area is based on previous study findings 'City to the Lake, State 2 Ecological Assessment' (EcoLogical, August 2014). The study area, which is under the jurisdiction of the National Capital Authority (NCA), consists of two circular patches of grassland: a 'north patch' of approximately 1.2 ha and 'south patch' of approximately 1.1 ha.

This survey was required to inform the Land Development Agency (LDA) regarding the significant ecological values of the study area to inform potential impacts of proposed development of the land (i.e. the 'City to the Lake' project').

Golden Sun Moth is listed as critically endangered under the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) and endangered under the ACT *Nature Conservation Act 2014* (NC Act). Habitat for the species was identified within the study area in the *City to the Lake Stage 2 Ecological Assessment* (Eco Logical Australia, August 2014).

This letter presents the methodology and results of a targeted survey for the species, based upon the following:

- A total of 10 hours on site in November and December 2015 to survey for the Golden Sun Moth and to map the habitat within the study area.
- The experience of the author with regards to the habitat requirements of Golden Sun Moth and the habitat requirements of the species.

Methodology

A desktop review was undertaken to locate any past records of the species at the study area. This included correspondence with Dr Michael Mulvaney (Conservation Planning and Research, Environment and Planning Directorate, ACT Government) and a review of relevant databases.

Targeted surveys for the Golden Sun Moth were undertaken in accordance with the survey guidelines provided in the Background Paper to EPBC Act Policy Statement 3.12 - *Significant Impact Guidelines for the Critically Endangered Golden Sun Moth (Synemon plana)* (DEWHA 2009).

As detailed in DEWHA (2009), surveys for Golden Sun Moth should involve fixed point counts or transects, as most suitable to the size and topography of the potential habitat. A combination of methods should be used if considered likely to increase the chances of detecting the species. Transects were selected as the primary survey method for the study area.

In accordance with the guidelines, four surveys were undertaken within the study area to best identify the habitat on site. For each survey, the ecologist (Samantha Vertucci, Consultant Ecologist) undertook the following:

- 'Meandering transects' 20 - 30 m apart were walked to observe and record flying males. A GPS waypoint was taken for each Golden Sun Moth flight observed. While every effort is made to avoid counting moths more than once, some double-counting occasionally occurs. Whilst observing and recording flying males was the primary focus of the survey, the ecologist also recorded any females and suspected pupal cases of the species. The patch surveyed first was alternated each survey.
- One 100 m 'monitoring transect' was surveyed within each patch for moths and vegetation characteristics. This provided data which can be easily compared, both between surveys and against data collected at other sites in the ACT region. Moths observed along the transect were noted however were not marked with the GPS. Each monitoring transect was also characterised using the step point transect methodology, whereby the groundcover component at each foot-fall along the transect is recorded into categories (dictated by Rowell and Evans 2014).

As per the guidelines, surveys were undertaken during the hottest period of the day, on days when moths were known to be flying at other locations in the ACT. This was determined through survey of a nearby reference site or through communication with other ecologists surveying for the species in the ACT region.

Dates and details of the surveys completed are provided in the results section below. The locations of the survey transects (meandering transects and monitoring transects) walked during each survey are shown on Figure 2.

Results

The presence of Golden Sun Moth was confirmed within the study area, with a total of 40 Golden Sun Moth flights (males) recorded in the meandering transects, 17 recorded in the north patch and 23 in the south patch. Survey conditions and numbers of moths recorded are shown in Table 1. Most of the moths were recorded on the final survey on 10 December.

The locations of records from the meandering transects are shown on Figure 3. Figure 3 also shows the locations of the three females and two pupal cases recorded. Photographs taken from within the study area are shown in Appendix A. Additional moths were observed before and after commencing the surveys however were not recorded, as recording moths outside of the survey or when stationary would skew the distribution results, making the identification of any moth hotspots difficult.

Windy and cool conditions during the survey season necessitated some survey on sub-optimal survey days. One survey on 30 November, a time which is usually peak season for recording the species, was abandoned due to lack of flying moths at the study area, and has not been included in the results.

Table 1 Golden Sun Moth survey conditions and results*

Survey parameters	Survey 1	Survey 2	Survey 3	Survey 4
Date	20/11/2015	24/11/2015	04/12/2015	10/12/2015
Time	11:15	11:45	12:50	11:05
Golden Sun Moth Flights	- North patch: 3 - South patch : 0	- North patch: 4 - South patch : 1	- North patch: 0 - South patch : 3	- North patch: 10 - South patch : 19 males, 1 female, 1 pupal case
Golden Sun Moth Flights in 100m transect	- North patch: 3 - South patch : 0	- North patch: 1 male, 2 females, 1 pupal case - South patch : 0	- North patch: 0 - South patch : 0	- North patch: 6 - South patch : 2
Temperature on site (Max temp. for day)	30-34 °C (36.1 °C)	22-23 °C (27.4 °C)	26 °C (29.8 °C)	27 °C (31.6 °C)
Cloud cover	Clear –sunny	Clear –sunny	Clear – hot and sunny	Clear – hot and sunny
Wind Speed (9 am – 3 pm)	Light-moderate gusts (9-37 km/h)	Light-moderate. Gusts up to 17km/h during survey (9-22 km/h)	Light (6-13 km/h)	Mostly still, occasional gusts, picking up at the end of the survey (6-30 km/h)
Ground conditions	Dry	Dry	Dry	Dry
Notes	Windy however moths flying between gusts. Flying elsewhere in ACT. All moths recorded on western side of northern patch.	Few active flights however two females recorded – displaying behaviour observed.	Good numbers at the start of the survey. Fewer flights by the end, including over the road.	High numbers of moths.

*Temperature and wind speed data obtained from Bureau of Meteorology (BOM) website for the Canberra Airport station.

The habitat for Golden Sun Moth within the study area is predominantly comprised of the highly invasive Chilean Needle Grass (*Nassella trichotoma*), on which the larvae are known to feed. The step point transects indicate a Chilean Needle Grass composition approximately 40% and 20% for the north and south patches, respectively (Table 2). Other exotic pasture grasses and weeds are also present in high density. One patch of low diversity native vegetation was recorded in the north of the study area. Several Golden Sun Moth were recorded from this location, including two females. These females may have been spotted due to the lower biomass and greater inter-tussock spaces of the native vegetation compared to the Chilean Needle Grass-dominated areas, making them easier to see against the soil.

Table 2 Step-point transect results

Groundcover	North patch	South patch
Cryptograms	0	0
Bare Earth	2	0
Rocks	0	0
Litter/Dead Vegetation	8	4
Perennial Native Grass	6	2
Other Native	0	0
Chilean Needle Grass	41	18
Perennial Exotic Grass	44	41
Annual Exotic Grass	1	0
Exotic Forb	12	33
Total	114	98

Discussion

Windy and cool conditions during the survey season made selection of survey days difficult, necessitating some survey on sub-optimal survey days. Despite this, moths were actively flying (i.e. not just being flushed by the ecologist) on the selected survey days, and the data is sufficient to provide evidence of a population of the species at the study area. The assessment also provides an indication of the distribution of the species across the northern and southern patches.

Most of the moths were recorded on the final survey on 10 December, which is usually late in the Golden Sun Moth survey season for the ACT. Climatic conditions appear to have led to poor emergence and/or flying of the species at the study area this season. Low numbers, also reported by other consultants in the ACT, may also be due to suboptimal conditions two years ago, leading to poor egg-laying and/or larval development.

Conditions may also vary between sites. For example, a site such as the study area, which, due to occurring adjacent to a busy road, is regularly and frequently mowed and does not collect much rainfall, is likely to be hotter and dryer in summer than a site which is not. For this reason, it is not possible to categorise the population as being high, medium or low density. There has been anecdotal evidence of the presence of Golden Sun Moth in this location in previous years so it appears the population within the study area may be stable. It is also possible that the population size fluctuates from season to season.

Some hotspots of moth activity were detected in the study area and have been identified in Figure 3. Of particular note is the area in the north-western part of the north patch and the north-eastern edge of the south patch.

Areas unlikely to constitute habitat for Golden Sun Moth were determined through examination of groundcover composition and the presence of trees, as well as examination of Golden Sun Moth record results. The mapped Golden Sun Moth habitat is shown as Figure 4.

Recommendations

Any loss, disturbance or fragmentation of a small or fragmented habitat area (<10 ha) is considered to be a significant impact upon the Golden Sun Moth according to the Commonwealth guidelines (DEWHA 2009). The habitat within the study area totals approximately 2.1 ha and given the distance between them (>35 m of roads) it is unlikely that high gene flow occurs between the habitat patches, or between the study area and other areas of habitat along Commonwealth Avenue, should they occur. Even if sufficiently regular gene flow does occur, the total extent of habitat is likely to be considerably less than 10 ha.

The habitat is therefore considered small and fragmented for the purposes of undertaking impact assessment. As such, Referral to Australian Government Minister for the Environment is recommended for any proposed development which may impact the mapped Golden Sun Moth habitat (Figure 4). Potential impacts to the Golden Sun Moth from development include both direct impacts (clearing of habitat for construction, landscaping etc.) as well as indirect impacts (shading from buildings, change in management regime etc.).

For any works within the study area, avoidance, minimisation and mitigation measures should first be examined, in that order. If impacts cannot be avoided or substantially minimised/mitigated, an EPBC referral will be required. Based on the Commonwealth's decision, offsetting may be required in accordance with the EPBC Act.

Based on observations made on site during the Golden Sun Moth survey and habitat assessment, it is also likely that potential habitat for Golden Sun Moth occurs elsewhere in the Commonwealth Ave road reserve system in the vicinity of the study area. This includes the other 'clover leaf' patch to the east of Commonwealth Avenue, as well as Block 1 of Section 34. Survey of these areas should be undertaken before any impacts occur.

I trust that this assessment and advice is of assistance. Should you wish to discuss any of the matters addressed herein, please do not hesitate to contact me.

Yours sincerely,

A handwritten signature in black ink, appearing to read 'S. Vertucci'.

Samantha Vertucci
Consultant Ecologist

References

Department of Environment, Water, Heritage and the Arts / DEWHA (2009). *Significant Impact Guidelines for the Critically Endangered Golden Sun Moth (Synemon plana)* (and Background Paper). Commonwealth Department of Environment, Water, Heritage and the Arts.

Department of Sustainability, Environment, Water, Population and Communities / DSEWPoC (2012) *EPBC Act Environmental Offsets Policy*. Australian Government

Attachments

Figure 1: Location of the study area

Figure 2: Golden Sun Moth survey effort

Figure 3: Golden Sun Moth survey results

Figure 4: Golden Sun Moth habitat mapping

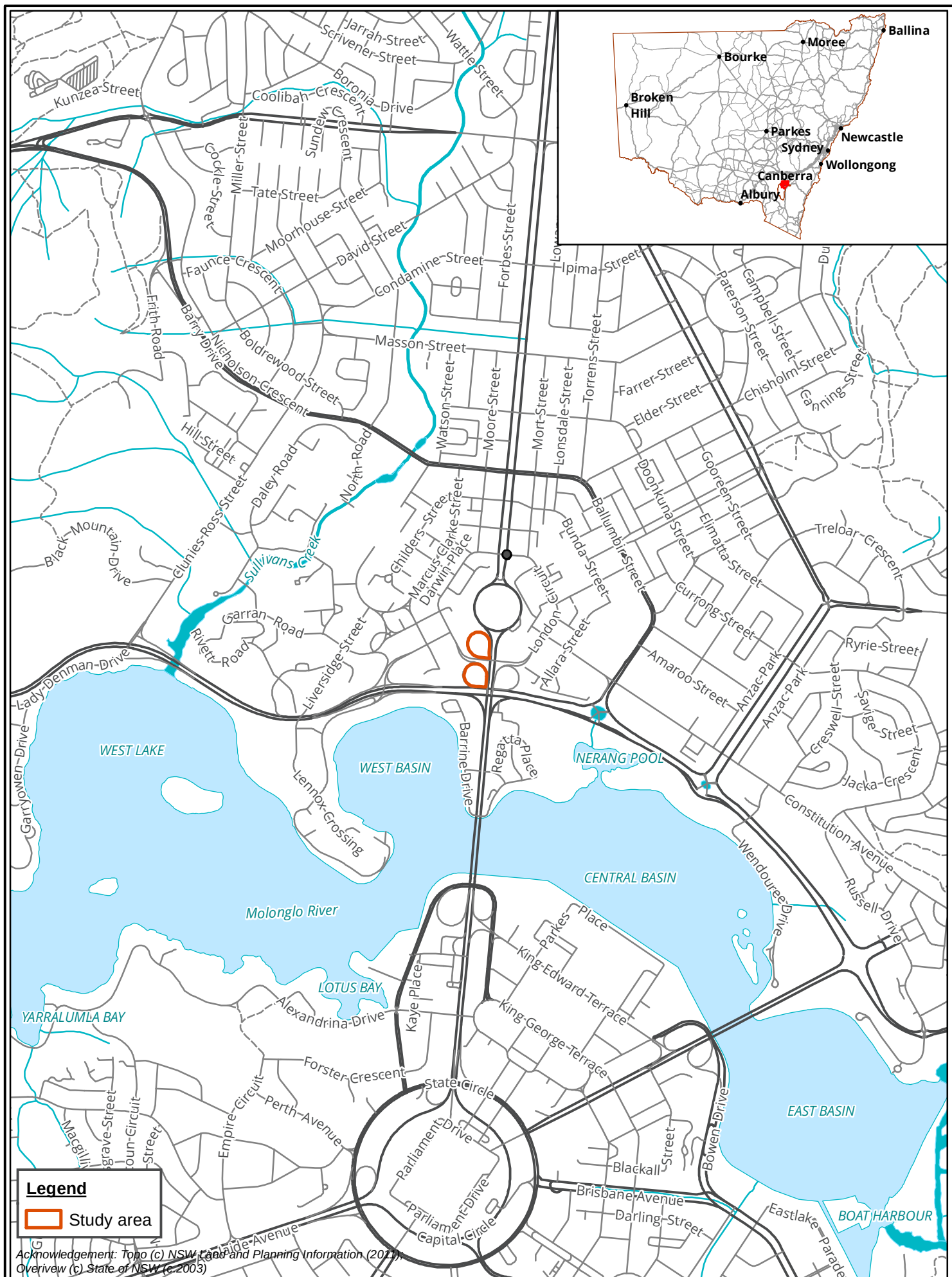
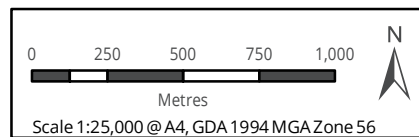


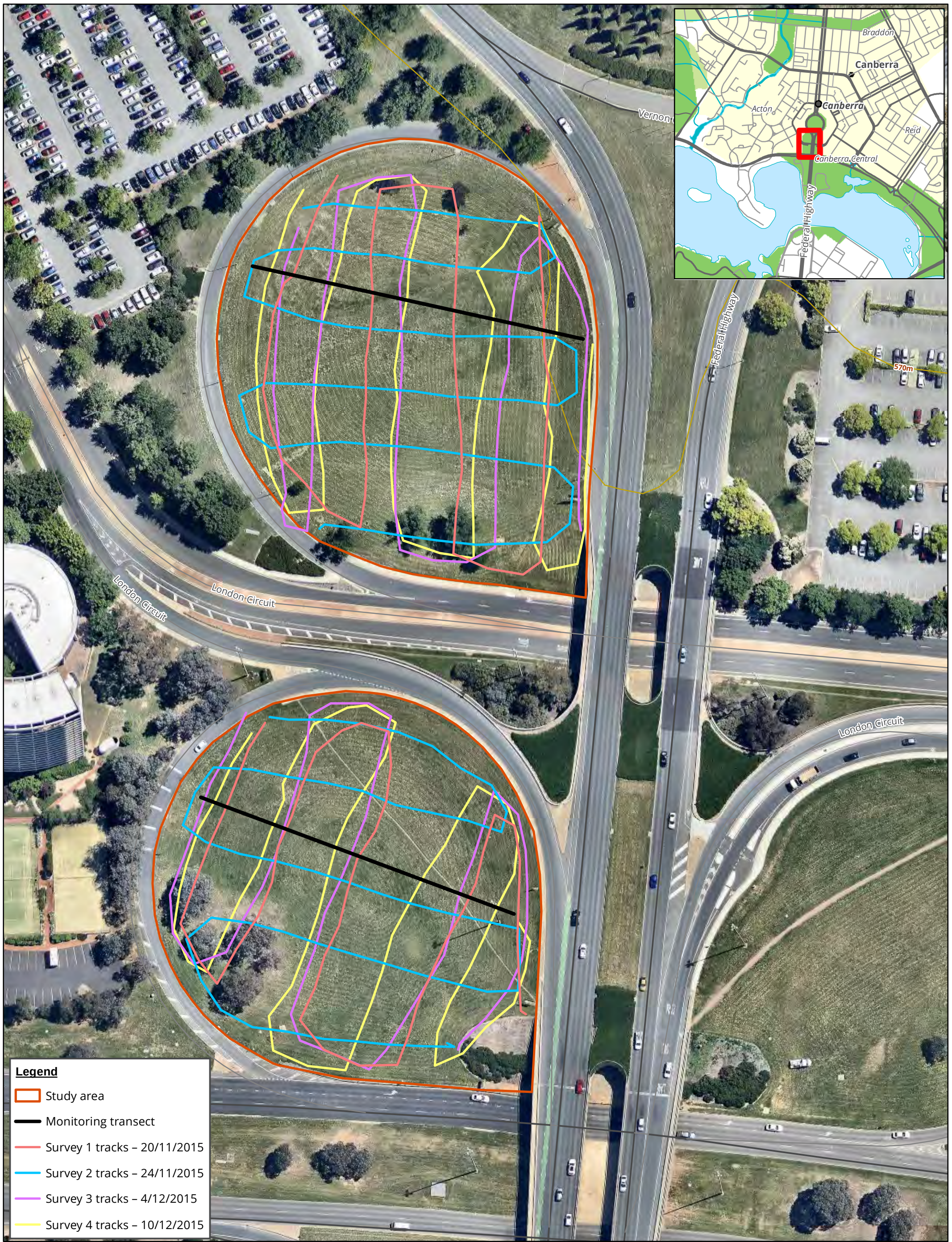
Figure 1: Location of the study area



Biosisis Pty Ltd
 Ballarat, Brisbane, Canberra, Melbourne,
 Newcastle, Sydney, Wangaratta & Wollongong

Matter: 21125
 Date: 17 December 2015,
 Checked by: SMV, Drawn by: JMS, Last edited by: Iharley
 Location: P:\21100s\21125\Mapping\





Legend

- Study area
- Monitoring transect
- Survey 1 tracks - 20/11/2015
- Survey 2 tracks - 24/11/2015
- Survey 3 tracks - 4/12/2015
- Survey 4 tracks - 10/12/2015

Figure 2: Golden Sun Moth survey effort



Biosis Pty Ltd
Ballarat, Brisbane, Canberra, Melbourne,
Newcastle, Sydney, Wangaratta & Wollongong

Acknowledgements: Imagery (c) Nearmap 2015
Topo (c) NSW Land and Planning Information (2015)

Matter: 21125
Date: 17 December 2015,
Checked by: SMV, Drawn by: LH, Last edited by: Iharley
Location: P:\21100s\21125\Mapping\
21125_F2_GSM_SurveyEffort

0 10 20 30 40 50
Metres

Scale 1:1,000 @ A3

Coordinate System: GDA 1994 MGA Zone 56





Figure 3: Golden Sun Moth survey results



Figure 4: Golden Sun Moth habitat mapping

Appendix A. Photographs



Female Golden Sun Moth recorded in the north patch on 24 November 2015



North patch 100 m transect from eastern end (24 November 2015)



North patch 100 m transect from western end (24 November 2015)



South Patch 100 m transect from western end 24 November 2015



South patch 100 m transect from eastern end (24 November 2015)



Chilean Needle Grass within the north patch (24 November 2015)

LEGEND

- Works Footprint
- 2016 Females Observed
- 2016 GSM Counts
- 2017 GSM Counts
- 2017 Females Observed
- 2018 GSM Counts

Maximum Number of Golden Sun Moth Count Over Three Years

- Not Surveyed
- 0
- 1-10
- 11-20



FIG NO. 1	FIGURE TITLE Works Footprint and GSM Records	DATE 08/03/2019	0 5 10 20 30 1:1,250 Meters	PAGE SIZE A4	COORDINATE SYSTEM GDA 1994 MGA Zone 55	© SMEC Australia Pty Ltd 2019. All Rights Reserved. Disclaimer: While all reasonable care has been taken to ensure the information contained on this map is up to date and accurate, this map contains data from a number of sources - no warranty is given that the information contained on this map is free from error or omission. Any reliance placed on such information shall be at the sole risk of the user. This map is not a design document.
PROJECT NO. 3002639	PROJECT TITLE Commonwealth Avenue Referral	SOURCES World Imagery: Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community	CREATED BY J. Ward-Jones			

LEGEND

- Works Footprint
- 2016 Male GSM Counts
- 2016 Female GSM Observed
- 2017 Male GSM Counts
- 2017 Female GSM Observed
- 2018 Male GSM Counts

Maximum Number of Golden Sun Moth Count Over Three Years

- Not Surveyed
- 0
- 1-10
- 11-20
- 21-50
- 51-160



FIG NO. 2 FIGURE TITLE GSM Records 2016-2018 in the Vicinity of Works Footprint	DATE 08/03/2019 0 35 70 140 1:5,000 Meters	COORDINATE SYSTEM GDA 1994 MGA Zone 55	© SMEC Australia Pty Ltd 2019. All Rights Reserved Disclaimer: While all reasonable care has been taken to ensure the information contained on this map is up to date and accurate, this map contains data from a number of sources - no warranty is given that the information contained on this map is free from error or omission. Any reliance placed on such information shall be at the sole risk of the user. Please verify the accuracy of all information prior to using it. This map is not a design document.  Member of the Stantec Group
PROJECT NO.3002639 PROJECT TITLE Commonwealth Avenue Referral	CREATED BY J. Ward-Jones	PAGE SIZE A4	

LEGEND

Works Footprint

Unleased TCCS Public space

Commonwealth land

Unleased Urban Approved EPSDD land



FIG NO. 3	FIGURE TITLE Works Footprint and Land Zoning	DATE 07/03/2019 05102030 1:1,240 Meters	PAGE SIZE A4 COORDINATE SYSTEM GDA 1994 MGA Zone 55	© SMEC Australia Pty Ltd 2019. All Rights Reserved Disclaimer: While all reasonable care has been taken to ensure the information contained on this map is up to date and accurate, this map contains data from a number of sources - no warranty is given that the information contained on this map is free from error or omission. Any reliance placed on such information shall be at the sole risk to using it. This map is not a design document. Member of the Surbana Jurong Group
PROJECT NO. 3002639	PROJECT TITLE Commonwealth Avenue Referral	SOURCES	CREATED BY J. Ward-Jones	

15 March 2018

Nic Plunkett-Cole
Sustainability Manager
City Renewal Authority, ACT Government
Canberra Nata Centre
1 Constitution Avenue
Canberra City, ACT 2601

Dear Nic Plunkett-Cole,

RE: Vegetation, Habitat Assessment and Golden Sun Moth survey at City Hill

1 Introduction

Overview

City Renewal Authority (ACT Government) requested SMEC Australia Pty Ltd (SMEC) to undertake a golden sun moth (*Synemon plana*, GSM) survey of City Hill and adjacent road verges to the north and west to investigate the extent of the local GSM population for the City Renewal project. GSM are listed as critically endangered under the Commonwealth *Environmental Protection Biodiversity and Conservation Act 1999* (EPBC Act). These surveys follow on from surveys confirming GSM presence in the three Commonwealth Avenue clover-leaves, and verges immediately south of City Hill, conducted in 2016 (SMEC 2017). The following assessments were undertaken:

- Vegetation mapping
- GSM habitat mapping
- GSM flying moth survey.

The purpose of this report is to provide information which would increase the understanding of the local GSM population for the City Renewal project referral under the Commonwealth EPBC Act.

Location

The survey area is located on City Hill, Canberra City, ACT (Figure 1). The grassy road verges occur along Vernon Circle and the southern end of Northbourne Avenue. The total survey area is 6.12 ha.

2 Method

The survey area was divided into six sections (Figure 1), identified as A, B, C, K, L and M. Section labelling is consistent with previous assessment of verges (SMEC 2017) at Commonwealth Ave.

Vegetation assessment

Vegetation condition was assessed across the site by meandering traverse. Dominant grass species were recorded. Areas were assessed to determine whether any sites were dominated by perennial native groundcover.

Any vegetation dominated by native vegetation was reviewed against criteria for the EPBC Act listed critically endangered Natural Temperate Grassland of the Southern Highlands ecological communities (Australian Government 2016). Threshold values for determining the classification of natural temperate grassland were determined from Australian Government (2016). To meet criteria for classification of natural temperate grassland, the patch must be over 0.1 ha (e.g. 20 m x 50 m), within the defined region and altitude, and apparently naturally treeless or sparsely treed, and it must meet criterion A or B:

- Criterion A: contains a foliage cover of more than 50% *Themeda triandra* (Kangaroo Grass) or *Poa labillardierei* (River Tussock) – or *Carex bichenoviana* (Plains Sedge) if the patch is an ephemeral wetland
- Criterion B: contains a greater percentage cover of native plants (including annual and perennial species but not cryptogams) than of perennial exotic species (including weeds), AND in favourable sampling times (generally spring and early summer, and in non-drought affected seasons) it has:
 - at least 8 non-grass native species, or
 - at least 2 indicator species, or
 - a floristic value score of at least 5OR at other sampling times it has:
 - at least 4 non-grass native species, or
 - at least 1 indicator species, or
 - a floristic value score of at least 3.

Thresholds for favourable sampling times were applied.

GSM Habitat Assessment

Potential GSM habitat was mapped following a qualitative assessment. A qualitative assessment of the areas that are likely to be shaded for extended periods causing these areas to be unsuitable for GSM was completed and the areas mapped.

Vegetation in unshaded areas was assessed against criteria for four condition classes of GSM habitat, i.e. high, medium, low and Chilean needle grass (*Nassella neesiana*), based on relatively stable habitat features such as density of larval food plants, weed cover and physical characteristics such as soil type, slope and aspect. Condition classes are defined as follows:

- HIGH quality GSM habitat
 - Primary NTG or native pasture dominated by native larval food plants (i.e. *Rytidosperma* sp. and/or *Austrostipa* sp.), with low weed cover and some bare ground.
- MEDIUM quality GSM habitat
 - Primary or secondary grassland, with a moderate component of *Rytidosperma* sp. and/or *Austrostipa* sp., and/or moderate weed cover.
or
 - Native-dominated grassland with a high component of *Rytidosperma* sp. and/or *Austrostipa* sp., but less than High quality habitat because of one or more of the following conditions:
 - On a steep slope or hill top
 - On a south or east-facing slope
 - Soil very shallow and/or stony, rock outcrops present
 - Secondary grassland or contains scattered trees.

- LOW quality GSM habitat
 - Larval food plants (*Rytidosperma* sp., *Austrostipa* sp. and/or CNG) are a minor component of the ground layer, growing sparsely or in patches among unsuitable vegetation such as:
 - Exotic species (excluding CNG)
 - Native C4 grasses (such as *Themeda* sp.)
 - Other unsuitable native ground cover (e.g. *Poa labillardieri*, rushes/sedges)
 - Trees, shrubs, regeneration, plantings.
- CNG dominated GSM habitat
 - Grassland dominated by CNG.

Information from previous reports (Ecological 2014; Biosis 2016; SMEC 2017) was reviewed to identify the extent and nature of GSM habitat within the Commonwealth Avenue verges and clover leaf intersection, and habitat in these areas was mapped to ensure consistent habitat mapping in this area. The habitat in these areas was reviewed against the criteria above by site inspection.

GSM Flying Moth Surveys

Survey methods were in accordance with the guidelines set by the Department of Environment, Water, Heritage and the Arts 'Significant Impact Guidelines for the Critically Endangered Golden Sun Moth (*Synemon plana*)' (Australian Government 2010), Conservation Planning and Research 'Survey Guidelines for Golden Sun Moth' (Australian Government 2014a) and the draft ACT 'Golden Sun Moth Monitoring Plan' (ACT Government 2014b).

Four 'meandering surveys', at least one week apart, were undertaken in each grassy area during the GSM emergence period ('flying season') during November to December. Surveys were conducted under these conditions:

- On a warm to hot day (i.e. above 20°C by 10 am)
- During the warmest part of the day (i.e. 10 am – 2 pm)
- When there is a clear or mostly cloudless sky
- In still or nearly still wind conditions
- When there has been at least two days since rain.

GSM numbers and locations, incidental observations of female moths and pupa cases were recorded.

3 Results

Vegetation Assessment

The vegetation assessment was undertaken on 11 October 2017 in spring conditions favourable for the detection of native grasses and forbs.

A complete list of flora observed at the site is presented in Appendix A. All areas have been disturbed by past landscaping and are regularly maintained by mowing. No native grasses were observed and only one disturbance tolerant native forb was observed across all the sections.

All parts of the site were dominated by exotic perennial grasses with planted exotic trees and shrubs (Figure 2). Dominant grasses at the site were goose-grass (*Eleusine tristachya*), Chilean needlegrass (CNG, *Nassella neesiana*), cocksfoot (*Dactylis glomerata*) and bulbous meadow-grass (*Poa bulbosa*). A range of exotic weeds were also present (Appendix A). The vegetation at the site was categorised into the following five categories:

- Exotic shrubs, CNG absent
- Exotic understorey with dense planted trees, CNG present

- Exotic understorey with dense planted trees, CNG absent
- Exotic grassland with no trees or scattered planted trees, CNG present
- Exotic grassland with no trees or scattered planted trees, CNG absent

Part of Section B became a construction site after the assessment was completed.

GSM Habitat Assessment

Mapping of GSM habitat is shown in Figure 3. Shaded areas within the site are unsuitable habitat for GSM. Approximately 2.2 ha (i.e. 35%) would be shaded for extended periods of time and are hence unsuitable habitat for GSM. This includes extensive areas surrounding the exotic tree plantings in Section L and all of Section K. Habitat assessment was conducted within the study site on 10 November 2017 and habitat mapping along Commonwealth Avenue and Parkes Way was reviewed during a site inspection on 21 February 2018.

Within unshaded areas, no native feed species for GSM were recorded during the survey. Consequently, no potential GSM habitat meeting criteria for High, Medium or Low quality was present within the site.

One feed species, exotic CNG, was recorded at four of the six site sections (i.e. Sections A, C, K, L). Much of this area was shaded, including all of Section K and extensive areas within Section L and consequently does not comprise GSM habitat. Approximately 3.6 ha of unshaded or only partly shaded CNG dominated grassland, which is potential GSM habitat, is present within Sections C and L (Figure 3). Potential GSM habitat is extensively distributed in Section L, with the exception of a segment in the north-eastern corner, and is otherwise restricted to a small patch in the north-western part of Section C. Within Section A, CNG was very sparse and scattered (i.e. <5% CNG cover), and is unlikely to support GSM populations.

Review and field checking of previous habitat assessments indicated that all three components of the clover-leaf intersection support predominantly CNG dominated habitat for GSM, along with the median at the northern end of Commonwealth Avenue (Figure 5). The median along Parkes Way supports scattered patches of CNG dominated habitat (Figure 5) with occasional isolated patches of sparse native grasses typical of low quality GSM habitat which were too small to warrant mapping as separate habitat zones.

GSM Survey Results

Surveys were undertaken in suitable conditions on four occasions during the GSM flying season (Table 1). GSM were confirmed flying at other Canberra reference sites on all survey occasions. No female GSM or pupa cases were observed during the surveys.

Table 1. Weather conditions during GSM surveys at City Hill.

Survey	Date	Survey Time	Temperature (°C)	Wind (km/h)	Weather
1	10 Nov 2017	1340-1410	24	0-5	Sunny, no wind, <10% cloud cover
2	21 Nov 2017	1255-1320	19-23	10-15	Sunny, light breeze, 20% cloud cover
3	1 Dec 2017	1125-1150	26	5-15	High cloud cover (i.e. 80%). Storm clouds building to 30%
4	12 Dec 2017	1359-1440	28	0-5	Sunny, no cloud cover

GSM survey results are summarised for each section in Table 2. No GSM were recorded in Sections A, B, or K (Figure 4). Thirteen GSM were observed during the four surveys (Figure 4); twelve of these were in Section L (City Hill). No GSM were observed during the first survey. One GSM was observed in unsuitable vegetation in Section M during the second survey. Eight GSM were observed in CNG dominated GSM habitat in Sections C and L during the third survey. Four GSM were observed in CNG dominated GSM habitat in Section L during the fourth survey. The numbers of GSM recorded are consistent with 'Low' GSM numbers (i.e. 2 or less moths observed per minute), according to Hogg (2010).

Table 2. Total GSM numbers at City Hill.

Survey	Date	Duration (person minutes)	Section A	Section B	Section C	Section K	Section L	Section M	Total	Moths / Minute
1	9/11/17	50	0	0	0	0	0	0	0	0
2	21/11/17	50	0	0	0	0	0	1	1	<0.1
3	01/12/17	25	0	0	1	0	7	0	8	<0.1
4	12/12/17	39	0	0	0	0	4	0	4	<0.1
	Total		0	0	1	0	11	1	13	

4 Discussion

Results Summary

Potential GSM habitat dominated by CNG is present within Section L and a restricted area of Section C (Figure 3). Vegetation within the other parts of the site did not support suitable feed species for GSM or were heavily shaded, and consequently do not comprise GSM habitat (Figure 3).

Low levels of GSM activity were recorded on three occasions on City Hill (i.e. Section L), and an extensive area of unshaded exotic grassland was classified as potential CNG dominated habitat. A single GSM was recorded in Sections C and M.

Section M does not support potential habitat for GSM, as suitable native feed plants and the exotic CNG is absent. Section C supports a very small (i.e. <10 m x 20 m) patch of CNG; however, soil has been recently disturbed and has a low likelihood of supporting GSM. No GSM were observed in Section B, although a single GSM was recorded outside of potential habitat in section B in the 2016 survey (SMEC 2016). As for Section M, Section B does not support potential GSM habitat due to the absence of potential feed species.

GSM are highly unlikely to be breeding in Sections M or B, due to the absence of feed species; therefore, Section M is discounted as habitat despite this record. The single moth recorded in this area is likely to have originated from City Hill. There is potential for a small GSM population to be present within CNG dominated habitat in Section C; however, as is the case for Section M, the individual moth recorded may have accessed the area from adjacent habitat on City Hill or around Commonwealth Avenue to the south-west (Figure 5). The likelihood of GSM to be breeding on Section C is considered low due to the extensive site disturbance, but it cannot be excluded.

Implications

When interpreted with reference to the results of the GSM survey conducted by SMEC (2016) along Commonwealth Avenue and in the three Commonwealth Avenue clover-leaves (Figure 5), the GSM at City Hill should be considered as part of the local GSM population at Commonwealth Avenue. With the exception of a small patch of CNG in Section 3, suitable habitat for GSM is not present in other verges around City Hill, and consequently the low density population at City Hill can be assumed to be the northern extent of this population. The combined results support the absence of a breeding population of GSM in Sections C, B and A.

Male GSM are likely to move between City Hill and other habitat areas identified by SMEC (2016) on the Commonwealth Avenue verge and clover leaf green spaces. These areas are approximately 135 m (i.e. Section J, SMEC 2016) to 270 m (i.e. Section E, SMEC 2016) from City Hill, and separated by one to three lanes of sealed road. The remaining verges around Vernon Circle, with the exception of a small patch of CNG in Section C, do not support potential GSM habitat. Male flying moths are occasionally recorded at these verges due to the close proximity of habitat at City Hill and Commonwealth Avenue.

Works likely to disturb areas identified as GSM habitat in Figure 5 must be considered as having the potential to have significant adverse impacts on GSM, and consequently warrant referral to the

Commonwealth Minister of the Environment under the EPBC Act on this basis. Works outside areas identified as GSM habitat are not considered likely to have significant adverse impacts on GSM and do not warrant referral to the Commonwealth under the EPBC Act on the basis of potential adverse impacts to GSM.

Due to the absence of potential habitat within areas A, B, K and M, development within these areas does not warrant referral under the Commonwealth EPBC Act on the basis of potential impacts. Disturbance to areas mapped as habitat within Sections L and C would warrant referral under the Commonwealth EPBC Act, as would any disturbance to habitat areas on verges and within the cloverleaf intersection adjacent to Commonwealth Avenue immediately to the south (Figure 5; SMEC 2017; Biosis 2016).

Conclusion

Survey and Habitat Assessment Results

This survey confirms the presence of a low-density golden sun moth (GSM) population likely to be breeding within the section of City Hill on which habitat comprising of exotic Chilean needle grass (CNG) is located. The habitat extent and quality for GSM on City Hill is limited by the absence of native groundcover or exotic food plants and by extensive shading by planted exotic trees (Figure 3), such that less than half of City Hill supports vegetation which is suitable GSM habitat. Based on the habitat assessment, identified habitat within City Hill is likely to comprise northern extent of breeding GSM populations identified on verges and within the cloverleaf intersection adjacent to Commonwealth Avenue immediately to the south (Figure 3).

Individual flying male GSM were recorded on single occasions in both Sections C and M. Section C supports a small patch of CNG dominated habitat, but has been extensively disturbed. Breeding populations are unlikely to be supported in the assessed verges surrounding City Hill, including Sections C and M, due to the restricted presence of GSM feed species and absence of consistent records. Sections A, B, K and M do not support potential GSM habitat due to the absence of GSM feed species.

Approval implications

As the overall extent of GSM habitat in the survey area, and adjacent to Commonwealth Avenue and Parkes Way to the south, is <10 ha, any habitat loss or degradation is considered as a significant impact under the EPBC Act. Even though habitat present is low quality habitat (i.e. Chilean needle grass), any negative impact (i.e. clearing or modifying the habitat) on habitat would require a referral to the Commonwealth Minister for the Environment, as part of the City Renewal project.

Works likely to disturb areas identified as GSM habitat (Figure 5 – referred to as ‘CNG dominated GSM habitat’) must be considered as having the potential to have significant adverse impacts on GSM, and consequently warrant referral to the Commonwealth Minister of the Environment under the EPBC Act on this basis.

Works outside areas identified as GSM habitat (refer to Figure 5) are not considered likely to have significant adverse impacts on GSM and do not warrant referral to the Commonwealth under the EPBC Act on the basis of potential adverse impacts to GSM.

Closure

I trust this meets your requirements. If you have any queries, please do not hesitate to contact David Moore (02 6234 1947).



Yours sincerely,

David Moore

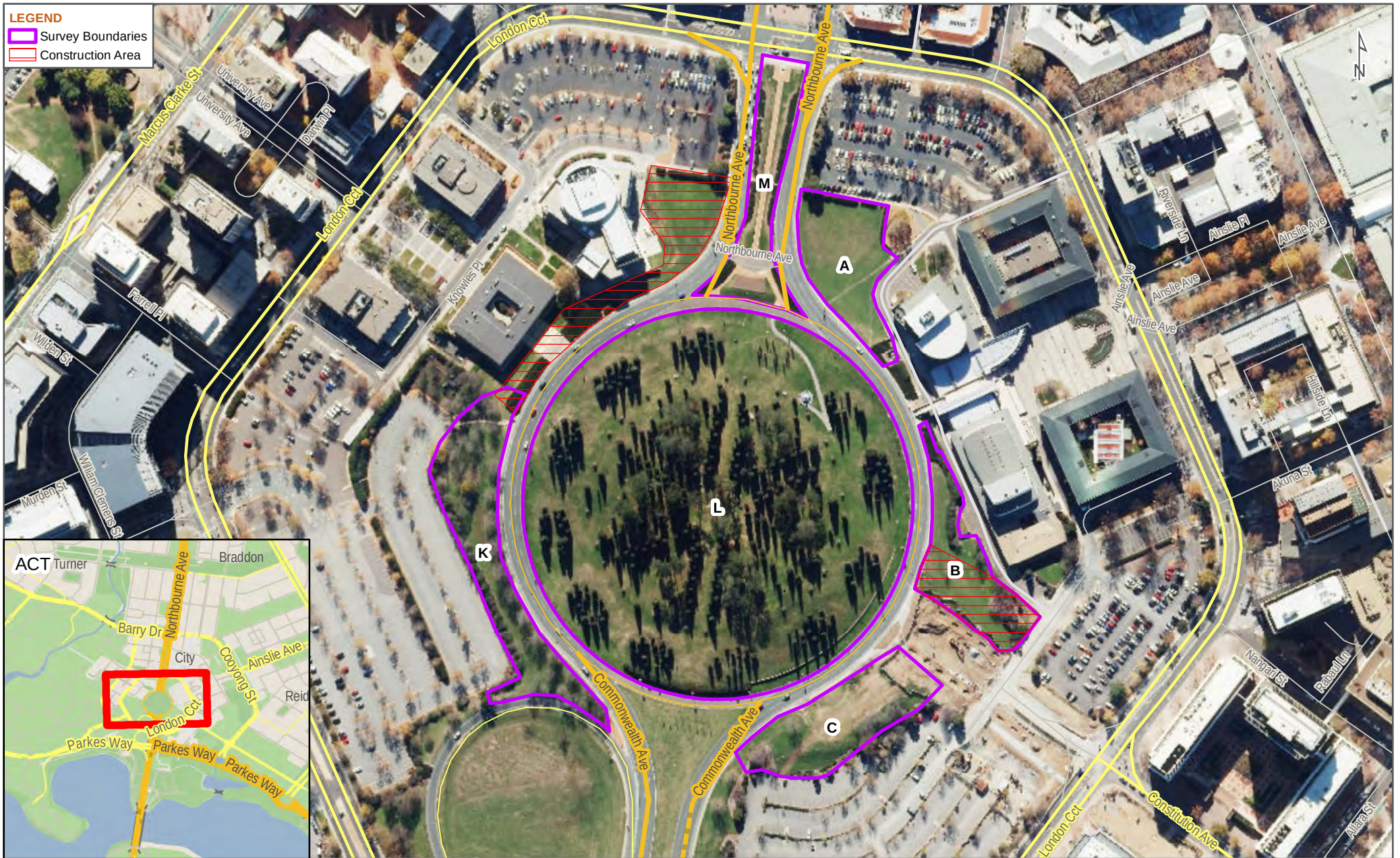
Team Lead Environment (ACT) on behalf of SMEC Australia Pty Ltd.

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APPENDIX A – Flora Species List

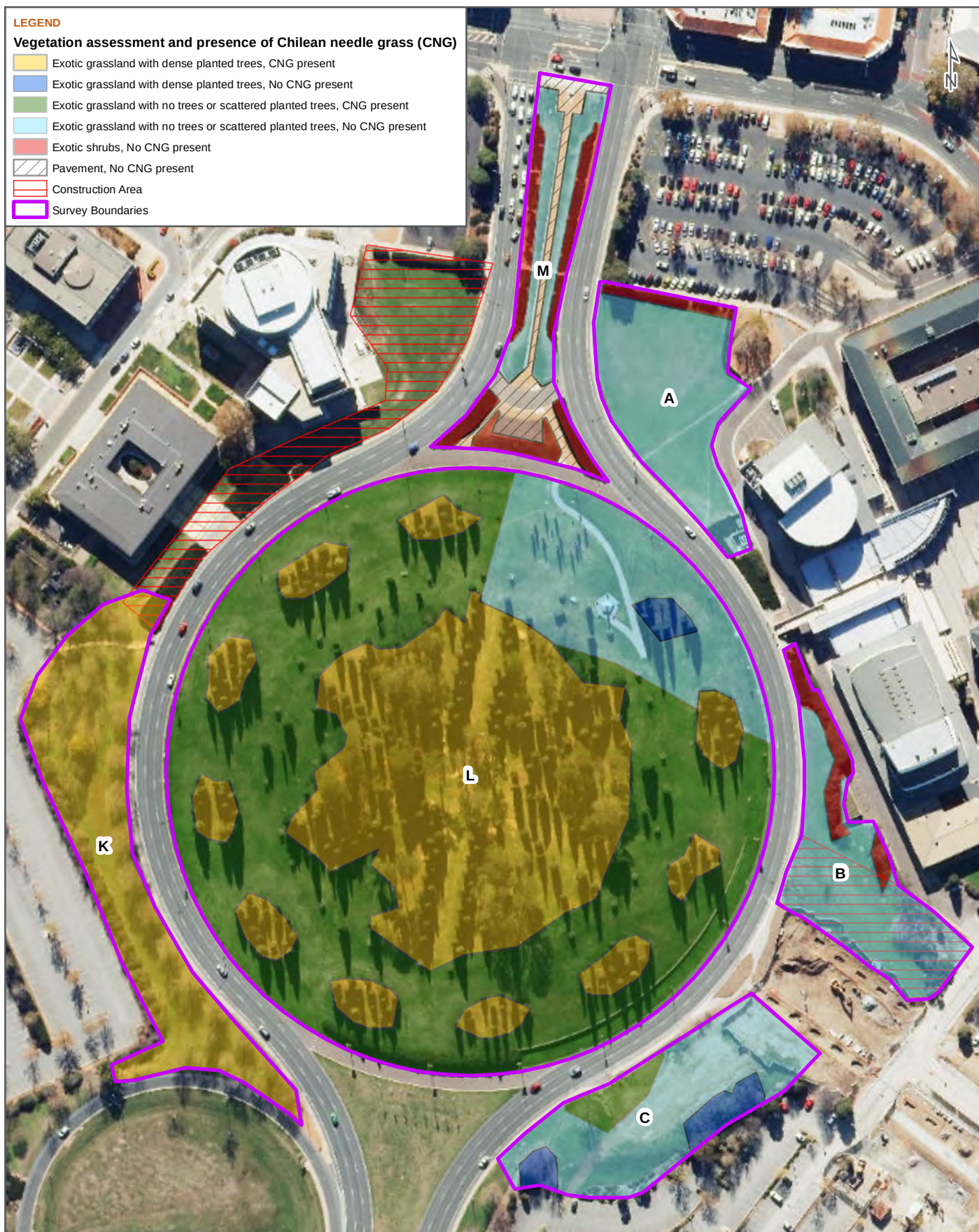
Scientific Name	Common Name	Status
Exotic Species		
<i>Anagallis arvensis</i>	Scarlet pimpernel	
<i>Arcotheca calendula</i>	Capeweed	
<i>Avena</i> sp.	Oats	
<i>Bromus catharticus</i>	Prairie grass	
<i>Cupressus semperviens</i>	Roman cypress	
<i>Dactylis glomerata</i>	Cocksfoot	
<i>Eragrostis curvula</i>	African Lovegrass	Class 2 (<i>Pest Plants and Animal Act 2005</i>)
<i>Hirschfeldia incana</i>	Buchan weed	
<i>Hordeum</i> sp.	Barley grass	
<i>Hypochaeris radicata</i>	Catsear	
<i>Lolium perenne</i>	Perennial rye-grass	
<i>Malva parviflora</i>	Small-flower mallow	
<i>Nassella neesiana</i>	Chilean needle-grass	Weed Of National Significance, Class 3 (<i>Pest Plants and Animal Act 2005</i>)
<i>Paspalum dilatatum</i>	Paspalum	
<i>Pinus radiata</i>	Radiata pine	Class 2 (<i>Pest Plants and Animal Act 2005</i>)
<i>Plantago lanceolata</i>	Ribwort	
<i>Poa bulbosa</i>	Bulbous meadow-grass	
<i>Sonchus asper</i>	Common sow-thistle	
<i>Sporobolus africanus</i>	Rat-tail grass	
<i>Taraxacum</i> sect. <i>Ruderallia</i>	Dandelion	
<i>Vulpia</i> sp.	Rat's-tail fescue	
Native Species		
<i>Oxalis perennans</i>	Grassland wood-sorrel	



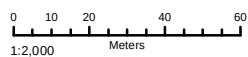
LEGEND

Vegetation assessment and presence of Chilean needle grass (CNG)

- Exotic grassland with dense planted trees, CNG present
- Exotic grassland with dense planted trees, No CNG present
- Exotic grassland with no trees or scattered planted trees, CNG present
- Exotic grassland with no trees or scattered planted trees, No CNG present
- Exotic shrubs, No CNG present
- Pavement, No CNG present
- Construction Area
- Survey Boundaries



DATE 25/01/2018



PAGE SIZE A4

COORDINATE SYSTEM
GDA 1994 MGA Zone 55

FIG NO. 2

FIGURE TITLE Vegetation Assessment

PROJECT NO. 3002561

PROJECT TITLE City Hill GSM Assessment

CREATED BY N.Crook

SOURCES
basemaps/imagery2015mga: ACTMapi ©Australian Capital Territory



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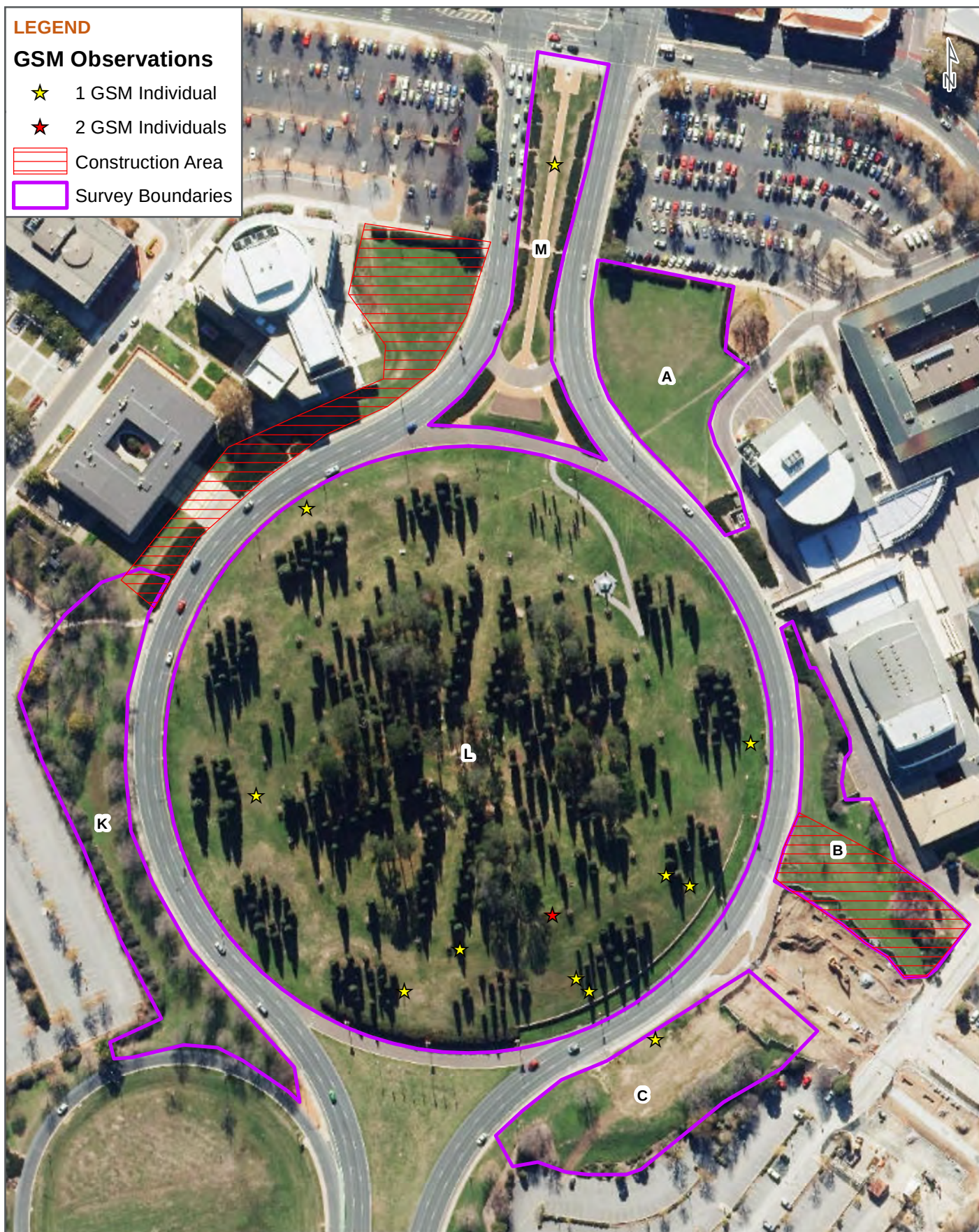
Disclaimer: While all reasonable care has been taken to ensure the information contained on this map is up to date and accurate, this map contains data from a number of sources - no warranty is given that the information contained on this map is free from error or omission. Any reliance placed on such information shall be at the sole risk of the user. Please verify the accuracy of all information prior to using it. This map is not a design document.



LEGEND

GSM Observations

- ★ 1 GSM Individual
- ★ 2 GSM Individuals
-  Construction Area
-  Survey Boundaries



DATE 25/01/2018

0 10 20 40 60
1:2,000 Meters

PAGE SIZE A4

COORDINATE SYSTEM
GDA 1994 MGA Zone 55

FIG NO. 4

FIGURE TITLE GSM Observations

PROJECT NO. 3002561

PROJECT TITLE City Hill GSM Assessment

CREATED BY N.Crook

SOURCES
basemaps/imagery2015mga: ACTMapi ©Australian Capital Territory



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LEGEND

- GSM observed by SMEC 2017
- Female GSM observed by SMEC 2016
- CNG dominated GSM habitat, Biosis 2016
- CNG dominated GSM habitat, SMEC 2017-2018
- Not GSM habitat, Biosis 2016
- Not GSM habitat, SMEC 2017-2018
- Survey boundary
- Construction area



FIG NO. 5	FIGURE TITLE Habitat assessment and GSM observations across Commonwealth Avenue	DATE 05/03/2018	0 40 80 160 1:6,000 Meters	PAGE SIZE A4	COORDINATE SYSTEM GDA 1994 MGA Zone 55	© SMEC Australia Pty Ltd 2018. All Rights Reserved. Disclaimer: While all reasonable care has been taken to ensure the information contained on this map is up to date and accurate, this map contains data from a number of sources - no warranty is given that the information contained on this map is free from error or omission. Any reliance placed on such information shall be at the sole risk of the user. Please verify the accuracy of all information prior to using it. This map is not a design document.
PROJECT NO. 3002561	PROJECT TITLE Vegetation, Habitat Assessment and Golden Sun Moth survey at City Hill	SOURCES basemaps/imagery2015mga: ACTMapi ©Australian Capital Territory		CREATED BY N.Crook		 Member of the Surbana Jurong Group

Commonwealth Avenue

Golden Sun Moth Survey

Prepared for: Land Development Agency

Reference No: 3002561.501

2/03/2017



Document/Report Control Form

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Table of Contents

Executive Summary	i
1. Introduction	1
1.1. Background	1
1.2. Golden Sun Moth	1
1.2.1. Description	1
1.2.2. Life History and Breeding	1
1.2.3. Habitat	2
1.2.4. Distribution	2
1.2.5. Conservation Status and Threats	2
1.3. Study Area	2
2. Methods	4
2.1. Golden Sun Moth Monitoring	4
2.1.1. Field Surveys	4
2.1.2. Meandering Survey	4
2.2. Vegetation	4
3. Results	5
3.1. GSM Survey Results	5
3.2. Vegetation	7
4. Discussion	9
4.1. Golden Sun Moth Presence	9
4.2. Implications	9
5. References	10

Table of Figures

Figure 1. Project locality and survey areas	3
Figure 2. GSM observed at Commonwealth Avenue	8

List of Tables

Table 1. Weather Conditions during GSM surveys at Commonwealth Avenue.	5
Table 2 Total GSM Numbers at Commonwealth Avenue	6

Executive Summary

The Land Development Agency (LDA) commissioned SMEC Australia Pty Ltd (SMEC) to undertake a Golden Sun Moth (GSM) survey of roadside verges and green spaces along Commonwealth Avenue and Parkes Way in the vicinity of Vernon Circle (Figure 1). These roadside verges and green spaces comprise part of the proposed 'City to Lake' project and potentially would be redeveloped as the project progresses.

GSM surveys were undertaken following the guidelines set by the Department of the Environment, Water, Heritage and the Arts 'Significant Impact Guidelines for the Critically Endangered Golden Sun Moth (*Synemon plana*)' (Australian Government, 2009), *Conservation Planning and Research Survey Guidelines for Golden Sun Moth* (ACT Government, 2010) and the *Draft ACT Golden Sun Moth Monitoring Plan* (ACT Government, 2014).

GSM were found in eight out of the ten sections surveyed. Numbers varied from low to high with the highest numbers found in the southern sections. Female GSM were recorded in three of the sections. The vegetation within these areas is dominated by exotic grasses. Chilean needlegrass is the dominant food species for GSM across the site. No areas of natural habitat for GSM, i.e. natural temperate grassland, were identified during the survey.

Depending on the potential disturbance to these areas anticipated under the City to Lake project, an EPBC referral may be warranted, as adverse impacts on GSM would occur as a result of development of these areas.

SMEC recommends that larvae translocation may be an appropriate impact mitigation strategy at this site, given the reliance of this population on the exotic weed species Chilean needlegrass. Approval from the Commonwealth and ACT Government would be required to undertake larvae translocation.

1. Introduction

1.1. Background

The Land Development Agency (LDA) commissioned SMEC Australia Pty Ltd (SMEC) to undertake a Golden Sun Moth (GSM) survey of roadside verges and green spaces along Commonwealth Avenue and Parkes Way in the vicinity of Vernon Circle (Figure 1).

The roadside verges and green spaces comprise part of the proposed 'City to Lake' project and potentially would be redeveloped as the project progresses.

Biosis (2016) surveyed the two western 'clover leaf' greenspaces bounded by the Commonwealth Avenue exit ramps (i.e. areas I and J, Figure 1) in 2015 and identified GSM populations in both areas.

The aim of this GSM survey was to determine the presence of GSM on the eastern clover leaf and additional grassy verges along Commonwealth Avenue and Parkes Way (Figure 1). The supplementary information would increase the understanding of GSM populations in the areas and inform a referral under the Commonwealth *Environmental Protection Biodiversity and Conservation Act 1999* (EPBC Act), if required.

1.2. Golden Sun Moth

1.2.1. Description

GSM (*Synemon plana*) is a medium sized, diurnal moth. The upper-side of the female's forewing is dark grey with paler grey patterning, while the hindwing is bright orange with black spots along the edges (refer front cover). The under-side of both wings is white with small black spots along the margins. Adult males have a wingspan of 34 mm and have dark brown upper forewings with patterns of pale grey scales. Male hindwings are bronze or brown with dark brown blotches and the underside is pale grey with dark brown spots (Australian Government, 2009).

1.2.2. Life History and Breeding

GSM have two distinct life stages. Larvae spend two to three years underground consuming the roots of summer growing C3 grasses, including native Wallaby grass (*Rytidoperma* spp.), speargrasses (*Austrostipa* spp.) and exotic Chilean Needle Grass (*Nassella neesiana*) (Ritcher *et al.*, 2013). Age cohorts are distinguished by size. Small larvae (6 – 13 mm long) are from eggs 12 months earlier, medium size (>13-20 mm long) are from the second year and large larvae (>20 mm long) are approaching pupation (Ritcher *et al.*, 2013). Pupation occurs in spring and adults emerge from October to January to live for 1- 4 days (Ritcher *et al.*, 2013).

Adult moths do not have functional mouthparts and therefore are unable to feed, spending much of their time searching for mates and breeding. During the GSM flight season, adult moths emerge continuously in cohorts and males are seen actively flying low (e.g. to approximately 1 m above the ground) and fast, usually in a zig-zag pattern over the grassland in search of females (Australian Government, 2009). The females, which only fly irregularly, position themselves on the ground in a conspicuous location (i.e. usually in inter-tussock spaces), flashing their brightly coloured hind wings to attract males. Females walk between tussocks and lay 100-150 eggs between grass tillers or between tillers and the soil (Australian Government, 2009).

Adults are most active during the hottest part of the day (i.e. between 10am and 2pm) on warm to hot, windless and cloudless days (Ritcher *et al.*, 2009); however, previous surveys (e.g. Biosis Research, 2011) recorded active male moths in more variable weather conditions. Such conditions include: cooler days (i.e. less than 20°C), days with partial or full cloud cover, on days within 24 hours after rainfall, during periods of moderate to strong wind conditions and also at times earlier and later

in the day than previously expected. Activity during these conditions typically involved smaller moth numbers than those observed during 'optimal' conditions.

Male GSM cannot travel more than 100 m away from suitable habitat patches and therefore populations separated by distances greater than 200 m can be considered effectively isolated. Sites from which the species has gone extinct are unlikely to be naturally recolonised (Australian Government, 2009).

1.2.3. Habitat

GSM occurs in Natural Temperate Grasslands and open grassy woodlands. Previous GSM habitat definitions that required the area to be 40% *Rytidosperma* cover (O'Dwyer and Attiwell, 1999) are no longer considered accurate. GSM have been identified to reside in degraded grasslands dominated by exotic Chilean needle grass (*Nassella neesiana*), a noxious Weed of National Significance (Brady and Dunford, 2006). Tall, dense grasslands are unsuitable for moth activity as it can inhibit flying male moths from detecting female moths.

GSM occur in two threatened ecological communities listed under the Commonwealth EPBC Act; the Natural Temperate Grassland of the Victorian Volcanic Plain (Australian Government, 1999) and the Natural Temperate Grassland of the Southern Tablelands of New South Wales (NSW) and the Australian Capital Territory (ACT) (Australian Government, 2009). In the ACT, GSM have also been detected in secondary grassland, predominantly those derived from Yellow Box – Blakely's Red Gum Grassy Woodland.

1.2.4. Distribution

Historically, GSM were distributed in native grasslands and open grassy woodlands across NSW, the ACT, Victoria and South Australia (TSSC, 2013). Based on the information provided in the Commonwealth Department of Environment (DoE) threatened species profiles (SPRAT; Australian Government, 2017) GSM are now only known in 125 sites across its range (TSSC, 2013); 48 sites occur in NSW, 46 in Victoria and 32 in the ACT. The species is now extinct in South Australia (TSSC, 2013). Surveys since 2008 have identified more than double the number of sites in the ACT, with GSM known to occur at low densities across relatively extensive areas of native grassland and pasture, and to occur in disturbed areas dominated by exotic Chilean needlegrass.

1.2.5. Conservation Status and Threats

GSM are listed as Endangered under the ACT *Nature Conservation Act 2014* (NC Act), endangered under the NSW *Threatened Species Conservation Act 1995* (TSC Act) and threatened under the Victorian *Flora and Fauna Guarantee Act 1988* (FFG Act). The species is listed as Critically Endangered under the EPBC Act.

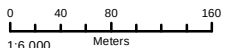
The main threat to GSM is the loss of Natural Temperate Grasslands, which have been cleared for urban and agriculture development (Australian Government, 2009). In addition, habitat degradation through overgrazing, which changes the soil structure, reduces native grass species and promotes weed invasion, has further threatened GSM (Australian Government, 2009). GSM populations have become highly fragmented and isolated.

1.3. Study Area

The study area is located within and adjacent to the intersection of Commonwealth Avenue and Parkes Way, Canberra City, ACT (Figure 1). The three clover leaf green spaces are adjacent to Vernon Circle and Commonwealth Avenue. Grassy road verges occur along Parkes Way and London Circuit. The LDA has identified these areas as potentially being redeveloped to accommodate the City to Lake project and are likely to be adversely affected during the construction phase.

LEGEND
Survey boundary



FIG NO. 1	FIGURE TITLE Site Locality	DATE 17/01/2017 	PAGE SIZE A4 COORDINATE SYSTEM GDA 1994 MGA Zone 55	© SMEC Australia Pty Ltd 2017. All Rights Reserved Disclaimer: While all reasonable care has been taken to ensure the information contained on this map is up to date and accurate, this map contains data from a number of sources - no warranty is given that the information contained on this map is free from error or omission. Any reliance placed on such information shall be at the sole risk of the user. Please verify the accuracy of all information prior to using it. This map is not a design document. 
PROJECT NO. 3002561.501	PROJECT TITLE Commonwealth Avenue Golden Sun Moth Survey	SOURCES Roadnet© basemaps/imagery2015mga: ACTMapi ©Australian Capital Territory	CREATED BY N.Crook	

2. Methods

2.1. Golden Sun Moth Monitoring

2.1.1. Field Surveys

Survey methods were in accordance with the guidelines set by the Department of the Environment, Water, Heritage and the Arts 'Significant Impact Guidelines for the Critically Endangered Golden Sun Moth (*Synemon plana*)' (Australian Government, 2009), *Conservation Planning and Research Survey Guidelines for Golden Sun Moth* (ACT Government, 2010) and the *Draft ACT Golden Sun Moth Monitoring Plan* (ACT Government, 2014).

Surveys must be undertaken during the GSM emergence period or 'flying season', which is usually from October to December in the ACT.

The guidelines also require GSM surveys to be conducted during certain preferred conditions, specifically:

- On a warm to hot day (i.e. above 20°C by 10am)
- During the warmest part of the day (i.e. 10am – 2pm)
- When there is a clear or mostly cloudless sky
- In still or nearly still wind conditions
- When there has been at least two days since rain.

Four surveys were undertaken in each grassy area at least one week apart.

Incidental observations of female moths and pupae cases were also recorded during the survey.

2.1.2. Meandering Survey

The 'meandering survey' method was used to determine GSM presence. Each grassy area was walked and the total number of GSM recorded. The survey were repeated on four suitable flying days during the season.

2.2. Vegetation

Baseline vegetation was recorded for the grassy areas. Dominant grass species were recorded.

3. Results

3.1. GSM Survey Results

Weather conditions during the surveys are presented in Table 1.

Table 1. Weather Conditions during GSM surveys at Commonwealth Avenue.

Survey	Date	Survey Time	Temperature (°C)	Wind (km/h)	Weather
1	21 Nov 2016	1100-1220	30	2-30	Sunny with light winds
2	28 Nov 2016	1040-1150	25-28	0-10	Sunny, no cloud cover
3	12 Dec 2016	1155-1300	31	9-17	Sunny, still (light) breeze, <5% cloud cover
4	20 Dec 2016	1210-1330	28-30	22-31	Sunny, slight to moderate wind, cloud cover and winds increased halfway through survey.

For assessment purposes, the survey area was divided into ten sections (Figure 1). Total GSM numbers are summarised for each section in Table 2. Two-hundred and seventy-six GSM were observed during the four surveys. One moth was observed (i.e. in Section E) during the first survey. Ninety-eight GSM were observed during the second survey in sections E-G and I-J. Seventy-seven GSM were observed during the third survey in section D-J. One hundred GSM were observed on the fourth survey in sections B, D-G and I-J.

Table 2 Total GSM Numbers at Commonwealth Avenue

Survey	Date	Duration (person minutes)	Section A	Section B	Section C	Section D	Section E	Section F	Section G	Section H	Section I	Section J	Total	Moths/ Minute
1	21 Nov 2016	160	0	0	0	0	1	0	0	0	0	0	1	<0.1
2	28 Nov 2016	140	0	0	0	0	24	37	19	0	8	10	98	0.7
3	12 Dec 2016	130	0	0	0	3	46	10	7	1	6	4	77	0.6
4	20 Dec 2016	160	0	1	0	1	82	13	1	0	1	1	100	0.6
	Overall Total		0	1	0	4	153	60	27	1	15	15	276	

Sections A and C did not record any GSM (Figure 2). Low GSM numbers (i.e. 1-4 individuals) were observed in sections B, D and H. The highest GSM numbers were recorded in section E (Figure 2). GSM were observed in section F in patches more commonly on the eastern side of Commonwealth Ave along to the pedestrian bridge and then less commonly so from there to Correnderk Pond. Patches of GSM were observed in section G west from Commonwealth Ave to the pedestrian bridge but then were generally absent. A locally-common patch of GSM was observed in the south western section adjacent to a small patch of trees in section I and were more commonly observed in the north western part of section J.

Female GSM were recorded in sections E (7), F (1) and I (1) (Figure 2).

3.2. Vegetation

All sections were open areas dominated by exotic grasses such as Chilean needle grass (*Nassella neesina*) with scattered trees. These areas are regularly disturbed (i.e. from mowing). Disturbance tolerant native grasses, i.e. wallaby grasses (*Rytidosperma* sp.) and tall spear grass (*Austrostipa bigeniculata*) are sparse and generally only present in small patches, commonly under trees. Disturbance tolerant native forbs such as yellow buttons (*Chrysocephalum apiculatum*) and cudweeds (*Euchiton* sp.) occur in restricted locations. No vegetation potentially meeting criteria for classification as natural temperate grassland was observed within the study area.

Chilean needle grass is a Weed of National Significance.

LEGEND

Female GSM Counts

- ★ 1 individual
- ★ 7 individuals

GSM Records

- 0 individual
- 1 individual
- 4 individuals
- 15 individuals
- 27 individuals
- 60 individuals
- 153 individuals

Survey boundary



FIG NO. 2 FIGURE TITLE GSM observed at Commonwealth Avenue

DATE
31/01/2017

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PROJECT NO. 3002561.501 PROJECT TITLE Commonwealth Avenue
Golden Sun Moth Survey

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4. Discussion

4.1. Golden Sun Moth Presence

GSM were present in most green spaces adjacent to Commonwealth Avenue, except for sections A and C. GSM, including females, were abundant in the clover leaf to the east of Commonwealth Avenue (i.e. section E).

GSM were confirmed to still be present in the two clover leaf areas (i.e. sections I and J) west of Commonwealth Avenue, as previously observed by Biosis (2016) in the previous season. The abundance was an order of magnitude lower than the numbers observed in the clover leaf to the east of Commonwealth Avenue (i.e. section E).

GSM numbers varied. Based on a semi-quantitative method of assessing the activity level of GSM based on the number of moths observed per minute (Hogg, 2010), low GSM numbers were observed in sections B, D and H, low-moderate numbers in sections G, I and J and moderate - high numbers were observed in sections E and F. Female GSM were recorded in three sections (i.e. sections E, F and I) indicating that populations are breeding and are perhaps sustainable.

Native vegetation, and particularly native grass food sources for GSM, are sparse; therefore, it is likely that GSM are primarily feeding on Chilean needle grass. Various studies show GSM have a broader tolerance for other grass species as food, including degraded grasslands dominated by exotic Chilean needle grass (refer Australian Government 2016 and references cited).

4.2. Implications

Any works that are undertaken within sections B, D, E, F, G, H, I and J have the potential to have an adverse impact on GSM.

Due to the presence of moderate-high numbers of GSM, and the confirmation of breeding through the identification of female GSM, the proposed City to Lake project is likely to have an adverse impact on the species. Due to the highly disturbed nature of the site, potential adverse impacts may not be significant, particularly if appropriately avoided and mitigated.

As the city to the lake project will have a negative impact (i.e. clearing of habitat during construction for development) on the GSM population at Commonwealth Avenue, SMEC recommend that referral to the Commonwealth Minister for the Environment is warranted under the EPBC Act in order to assess the potential significance of the impacts.

Should development of the area proceed, areas of moderate to high density GSM in Sections E, F and G, may be a suitable source population for larvae translocation research being undertaken by the ACT. Suitable locations for relocating GSM would be required and the translocation would need to be undertaken prior to construction. Translocation would need to be discussed and approved by the Commonwealth and ACT Government.

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The City Plan and City to the Lake

Consultation Summary

SEPTEMBER 2013



Australian Government

**The
City Plan**

**City
to the
Lake**

Community Engagement Summary

The ACT Government is committed to making its information, services, events and venues accessible to as many people as possible. If you have difficulty reading a standard printed document and would like to receive this publication in an alternative format — such as large print or audio — please telephone 02 6207 7307.

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Contents

EXECUTIVE SUMMARY	4
INTRODUCTION	6
2.1 Background	6
2.2 Purpose	7
KEY THEMES	8
3.1 Overview	8
3.2 Canberra's History, Role of the City centre and Identity	12
3.3 Planning, Land Use and Development	12
3.4 Traffic and Car Parking	13
3.5 Public Transport and Movement	13
3.6 Community infrastructure	14
3.7 Major facilities	15
3.8 Lake front	17
3.9 Neighbouring property owners	18
3.10 Lake water quality	19
COMMUNITY ENGAGEMENT METHODS	20
FEEDBACK ANALYSIS	23
APPENDICES	25

Tania Parkes of Tania Parkes Consulting and Jane Jose, Associate, Elton Consulting were engaged by the ACT Government to provide engagement and community consultation services. This report was compiled for the ACT Government from consultation work undertaken by Tania Parkes Consulting and Elton Consulting.



1.0 Executive Summary

Approximately 15,000 Canberrans sought information online, completed surveys and participated in face-to-face community engagement activities in the City Plan and City to the Lake consultations conducted between 26 March and 21 May 2013.

There was strong community interest in the City and how its growth and change might be planned and facilitated through the City Plan and projects such as City to the Lake. The consultation outcomes indicate a desire for the City Plan to establish a spatial and policy framework to manage future change in the City. Most people welcome the bold thinking of City to the Lake and the framework of the City Plan as an appealing long-term strategic plan for the City.

While embracing the vision in the City to the Lake proposal lake users want to ensure they can continue to use walking and cycling tracks and enter the lake for water sports without impediment.

A more walkable city is a priority for everyone. The community recognises that managing the traffic to prevent the City being divided by Northbourne Avenue is important, as is safe access to City Hill, Commonwealth Park and the West Basin foreshore of Lake Burley Griffin.

The light rail is seen not only as an improvement to public transport but an innovation reflecting a more modern, sustainable city. There is strong support for the continuation of light rail beyond the proposed City station to Vernon Circle and other town centres. The need for an integrated public transport network is a key element for planning and growth.

While supporting improved public transport, Canberrans want to use their cars and have sufficient car parking until such time as public transport provides a “genuinely convenient and cost-effective alternative”.

Lake water quality is of deep concern to the Canberra community. They are keen to ensure that the City to the Lake proposal to increase residential population and overall use of West Basin does not exacerbate the current status. The proposed boardwalk water gardens, which would filter and improve Lake water quality and deepen water levels which would cool the water temperature and reduce algal blooms, are very strongly supported.

There was strong support to ensure more cultural places and attractions are accommodated to further Canberra’s role as the premier civic meeting place and economic centre in the region.

Suggestions to combine or replace the Legislative Assembly with a Town Hall, or build a new one were made. A preferred location is where the Legislative Assembly currently sits.

An expanded theatre (with larger stage) and connected cultural facilities was suggested for the City centre around City Hill.

Survey respondents gave support for an aquatic centre on the lake which could be used all year round, for example, frozen over for ice skating in winter.



A mixed survey response was given for a stadium in the City. Those who supported a new stadium expressed the opinion that the facility should be enclosed and used for more than just 'game days', such as for concerts, festivals and large events. Respondents were also concerned about traffic congestion, previous investment in the stadium in Bruce, ACT Government priorities for other infrastructure needs, and noise to local residents.

There is enthusiastic support from the ACT business and events sector, which believes that a new convention and exhibition centre will help to diversify the ACT economy. There is little community feedback about the proposed convention centre.

Most consultation comments reflect the community's pride in Canberra and optimism for a City centre offering a more urban lifestyle. Community infrastructure such as schools and childcare is an important consideration when encouraging more people to live in the City.

While supporting growth in the City most people want to improve architectural design, avoid traffic congestion, retain views and create places to enjoy the open landscape and lakeside beauty. The New Acton Precinct and Capital Tower apartment owners have specific concerns about building heights that may obscure their views and impact on property values.

There is in-principle support for the City to the Lake project from owners of neighbouring commercial properties, subject to ongoing stakeholder consultation on detailed planning and design for individual projects.

"Just get on with it" was a common sentiment, as the majority of participants supported growth and renewal for the city centre.

This report was compiled for the ACT Government from consultation work undertaken by Tania Parkes Consulting and Elton Consulting

Percentages cited in the report are derived from 334 responses to the City to the Lake survey. A copy of the survey is in section 6.0 of this report.



2.0 Introduction

2.1 Background

The City Plan establishes a spatial and policy framework to manage change and development of the City centre. It considers the City as a whole to determine a comprehensive approach for its future as an economically vibrant and attractive centre.

The City Plan links policies and projects that impact on the City and will clearly articulate and facilitate the ACT Government's intention for future development. In particular, it addresses the need for the transformation into a more connected city centre at the heart of a growing region.

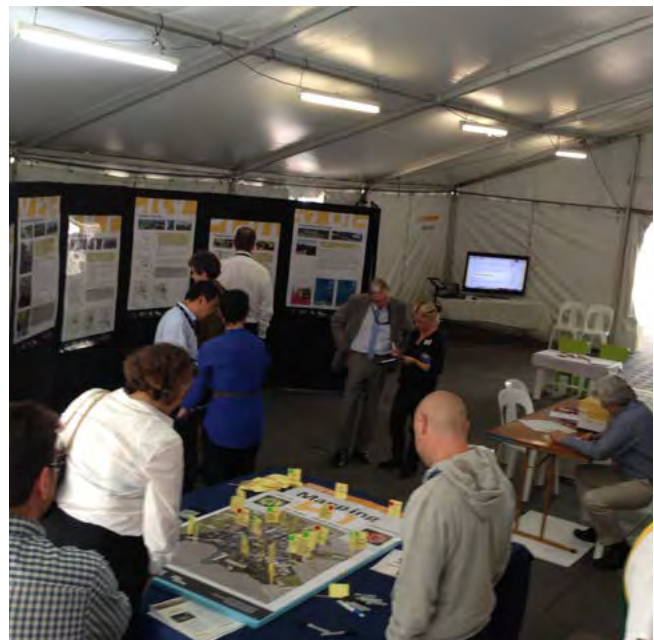
The City Plan focuses on five areas:

- **The role of the city** – key civic, cultural and administrative facilities.
- **Transport** – transport infrastructure, including how public transport will move through and within the city, parking and traffic management.
- **Growth in the city** – a sustainable and appropriate mix of uses including residential, commercial, investment and development opportunities.
- **Public realm and design** – projects and directions to improve and manage the sustainability and quality of design in the city's public spaces.
- **Implementing change** - context for projects such as City to the Lake, Capital Metro, the Constitution Avenue upgrade and the Northbourne Corridor development.

The City to the Lake project stretches from the West Basin to Anzac Parade and provides for an urban extension of the City towards the lake. It proposes a vibrant public urban waterfront, unites Commonwealth Park and City Hill as integral parts of the City with enhanced public access, and better connects the major national and regional educational and cultural institutions, such as the Australian National University and National Museum of Australia, with the everyday life of the City.

The main components of City to the Lake are:

- alteration of Parkes Way into a 'smart boulevard' that is split level, allowing free-flowing traffic at the lower level and introducing local streets at the surface
- traffic calming of Vernon Circle and London Circuit together with new streets to service the proposed West Basin residential and community areas
- integration and extension of Capital Metro to serve the entire city centre and connections to other town centres
- a new diverse City precinct at West Basin and associated cultural facilities
- identifying and reserving potential sites for a new convention centre, city stadium and aquatic facility with urban beach
- residential apartments mixed with commercial, retail and cultural facilities, providing for over 10,000 new residents
- strategically located multi-use car parks that provide for events and commuters, and
- development broadly consistent with Amendments 59, 60 and 61 of the National Capital Plan.



2.2 Purpose

The ACT Government is committed to full community consultation on the City Plan and City to the Lake project.

An integrated eight-week community consultation was undertaken between 26 March and 21 May 2013 providing a range of opportunities for participation.

Comments were invited on:

- five themed discussion papers on the role of the city, growth, transport, urban design and implementation
- concept designs for how the city could be better connected to the lake and a number of new major facilities, and
- illustrations of how future development of the West Basin lakefront could provide new recreation and residential lifestyle opportunities for the people of Canberra and visitors to the nation's capital.

In addition, specific stakeholder meetings and surveys were undertaken to gain focused feedback on the City Plan and City to the Lake project.

This report summarises the key themes expressed by the ACT community, the consultation methods and feedback analysis.

As its starting point, the consultation referenced the community values expressed during the ACT Government's 'Time to Talk 2030', and the adoption by the ACT Government of a number of strategic plans relating to the future development of Canberra.

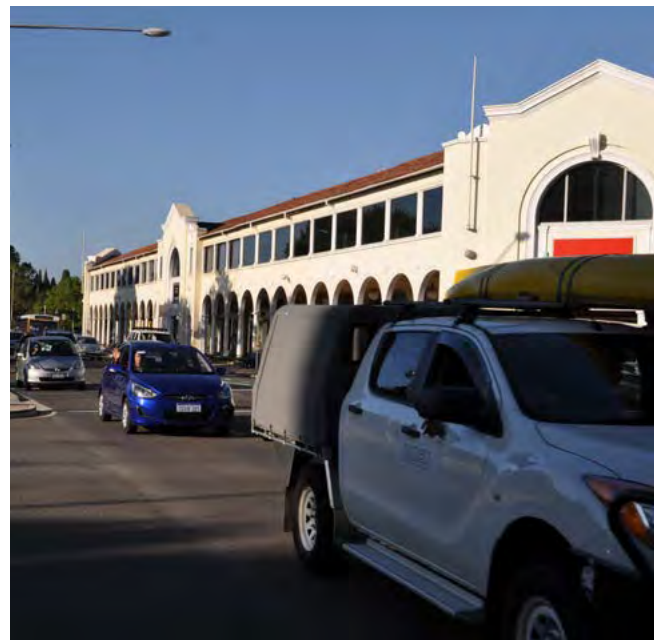
It also considered work by the ACT Government and National Capital Authority in 2007 to determine how the area between the City and the lake could be better connected and best developed.

Prior to the community consultation, a Project Reference Group (PRG) comprising 14 non-government stakeholder organisations considered site and development options for the City to the Lake project. A key outcome from the PRG was the distilling of Draft Objectives and Principles to guide the City to the Lake project. The Griffin Society was also involved in an expert design review process involving the Government Architect and other nationally recognised design professionals.

Feedback from this consultation will be used to:

- inform the preparation of the draft city plan. Further consultation will then be undertaken on the draft city plan before it is finalised later in 2013, and
- refine the draft objectives and principles for city to the lake, to guide future stages of the project's development and to shape the vision for how the west basin lakeside will link to the city.

Further stages will entail technical investigations into individual development proposals within the City to the Lake project.



3.0 Key Themes

3.1 Overview

Thousands of Canberrans sought information about the City Plan and City to the Lake project between 26 March and 21 May 2013 through 'open house' information displays, the exhibition, seminars, websites and social media, stakeholder presentations and meetings, and print and electronic media.

Approximately 7,000 people attended the 'open house' information displays held at Garema Place, Commonwealth Place and West Basin. Ninety-two (92) written submissions were received, 608 surveys completed and 800 comments collected via the web and at the 'open houses'.

The consultation program utilised applied qualitative and quantitative social research methods. The key themes that follow are derived primarily from assessment of qualitative responses provided through submissions and verbal feedback.

Surveys were undertaken to gain focused feedback on The City Plan and City to the Lake.

Percentages provided are derived from the 334 City to the Lake survey responses. The quantitative data collected through City to the Lake survey returns, although relatively little, consistently support the qualitative assessment.

Overall there is a feeling in the community that the City centre suffers by comparison with the areas of Canberra managed by the National Capital Authority and that Canberra city as a whole should display similar high standards befitting a world-class national capital.

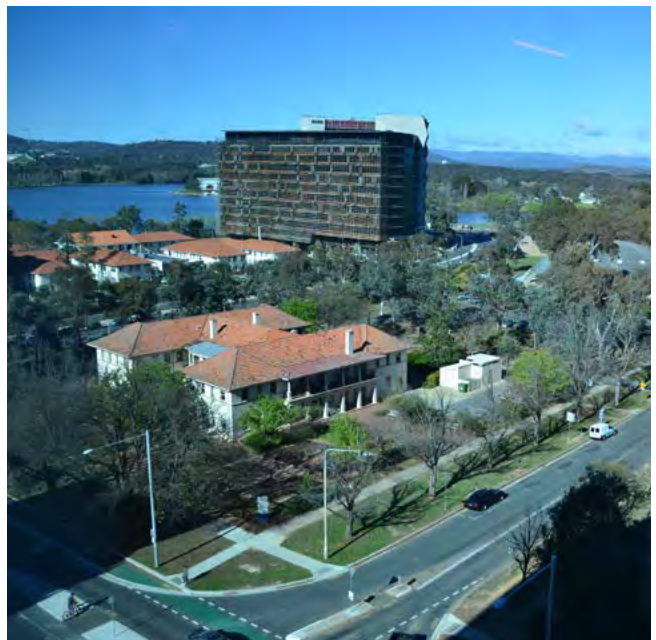
A frequent comment during the consultation was to *"Just get on with it"* suggesting a desire and willingness for change as Canberra matures into its second century.

Key messages related to the City centre and broader urban topics emerged through the City Plan consultation, while more focused messages about the proposed development and its components emerged in City to the Lake consultation.

Key messages relevant to the City centre include:

- make the city centre the predominant civic, cultural and economic focus of life in Canberra
- maintain human scale in the city centre and access to views, vistas and trees, respecting the griffin heritage
- create a walkable city as the centre of Canberra and the region
- plan and design a city centre based on principles of sustainability and healthy living with a well-linked public transport system.
- connect the city to the lake and create a lakeside leisure destination
- create lively, diverse residential neighbourhoods of mixed-use medium density buildings supported by strong public realm
- provide cultural institutions and recreational facilities to support residential and mixed-use development in the city centre and service the wider Canberra City, and
- strong support for city enhancement to give Canberra's City centre a clear identity.

The majority of Canberrans who provided comment accept and understand community benefits will come from growth and change. But they want change to happen in a context that preserves the essence of Canberra.



A more walkable city is a priority for everyone. The light rail is seen not only as an improvement to transport but an innovation that reflects a more modern, sustainable city. The community recognises that managing the traffic to prevent the City being divided by Northbourne Avenue is a priority.

There are differing opinions about building heights, city scale and heritage preservation. Many people express support for 'human scale' development, heritage conservation and preservation of views to maintain the relaxed, open character of a City in the Australian landscape.

"What is special about Civic is that, unlike Melbourne or Sydney, it is such a relatively relaxed, clean, laid back, open, environmentally friendly place where most services and amenities are readily available."

Comment, Community Member

The Griffin Society supports small-site rather than large-block development to create lively mixed-use neighbourhoods to keep the horizontal form of the Griffin design.

Others see the benefit of differentiating the repetitive horizontal lines of low-scale development with innovative architecture and design not necessarily dictated by height.

Most people are keen to be part of shaping a new identity for the centre of Canberra that reflects the unique knowledge-building and decision-making economy.

Written submissions from organisations such as the Property Council of Australia (PCA), the Griffin Society and Canberra CBD Limited call for further economic modelling before decisions are made on the development of key City sites, as well as a consultative process to name the new lively quarters proposed for the City. Identifying sites for a new assembly, a future town hall and development around City Hill are suggested as priorities.

City to the Lake identifies sites for a new convention centre, stadium and aquatic centre. Respondents to the City to the Lake survey replied that the location of these major facilities, 'Access to car parking' (78%) is the most important consideration (multiple-choice question), followed by 'Access to public transport' (62%) and 'Where there is most economic benefit to the City' (60%).

The PCA calls on the City Plan to have a statement outlining the City now and in the future, a vision of what the city will look like, full integration with existing and proposed projects, an outline of transformational projects, and a delivery framework including timeframes for priority projects, funding arrangements, governance, monitoring and review mechanisms.

On housing, the PCA sets a residential population of 20,000 within a two kilometre radius of City Hill as a realistic target for the City Plan.

The Griffin Society Australia believes the City will come to life with more residents in low-scale four- to six-storey apartments based on Griffin's Neighbourhood Plans to create lively neighbourhoods of differing character.

Among the responses to the City to the Lake survey there were high levels of support (71%) for the City to the Lake project across all demographics and from all parts of Canberra. Ninety-four per cent (94%) of survey respondents believe that the Draft Objectives and Principles for City to the Lake fit well with their idea of a liveable Canberra and the City they want for the future.

There is an understanding that priorities must be set and that funding will be a challenge for the ACT Government. Consequently there was some scepticism about whether all of the ideas considered could be realistically achieved.



‘Create more places to enjoy the spectacular landscape and the lakeside beauty.’

The City to the Lake survey result is consistent with the 27 March 2013 Canberra Times poll results (not scientific) to the question “What do you think of the ACT Government’s plans for Canberra CBD, announced yesterday?” Of the 340 poll voters, 73% support the ACT Government’s City Plan and City to the Lake ideas with 51% supporting the statement ‘Let’s get to it’ and 22% doubtful about whether it will happen.

The 15-45 and 60+ demographic are most supportive of City to the Lake, with young people and families with children saying that such projects will encourage them to stay in Canberra, parents saying it will give them more family activities, and grandparents saying that such projects will draw their grandchildren back to Canberra. The most critical views on City to the Lake are expressed by the 45-60 year-old demographic, which while generally supporting the vision is concerned about increased traffic congestion, reduced car parking and the ACT Government’s budget priorities.

Of the 29% who do not support City to the Lake or who only support aspects of the proposal, their main reason is concern about the National Capital Plan permitted height limits for mixed-use development around the West Basin lakefront and along its Commonwealth Avenue flank.

In its submission, the Walter Burley Griffin Society (Sydney) refers to the National Capital Plan amendments 59 (City Hill), 60 (Constitution Avenue) and 61 (West Basin) that allow the current height limits were approved by the Australian Government in 2007. The amendments were opposed by the

Walter Burley Griffin Society during the public consultation phase in September 2006, and again in a hearing before the Parliamentary Joint Standing Committee (JSC) on the National Capital & External Territories in February 2007. The Amendments were approved by both the House of Representatives and the Senate after the JSC public hearing.

Other reasons for not supporting City to the Lake include fear of restricted public access to the West Basin if it is privately developed, objection to change within the City, and support for a more decentralised Canberra.

There are also several submissions from residential property owners in the New Acton Precinct, Capital Tower and Forum apartments who have made significant investments in an apartment and are concerned about the possible loss of views and the impact on their amenity and property values.

“Canberra is primary and distinct. It is the National Capital. It doesn’t belong solely to the residents of the city, but to all citizens of Australia. We, the makers, of the National Capital are custodians for the physical manifestation of the culture of our nation.”

Comment, community member.



3.2 Canberra's History, Role of the City centre and Identity

Respecting the Griffin legacy is seen as a high priority while also being able to modernise the city and accommodate growth.

A range of feedback indicates agreement that the centre of Canberra should be 'first among equals' in relation to other town centres i.e. the main centre for Canberra.

An alternate view is expressed as follows:

"... the whole basis for Canberra's development since at least the late 1970s has been the Y-plan. This proposal seems to try to overturn the decentralised approach to living and working. But providing the option for people to live close to work and leisure activities in decentralised hubs is an environmentally sound approach".

There are many comments regarding the need for the centre of Canberra to have a stronger identity. Suggestions include creating a place that offers more for younger people; a place that is made livelier by infrastructure, that supports events and that has more civic and cultural facilities; and a place that is accessible to a broad population.

Many respondents are keen to differentiate the Canberra environment and lifestyle from other cities such as Melbourne and Sydney. They identify Canberra as a 'boutique city' with less traffic congestion and the ability to get anywhere in 30-40 minutes as a key reason they choose to live in the capital. These values are held across 15-60 year-old demographic groups.

There is strong support for a renewed City centre as the location for Canberra's major civic and cultural facilities. This includes an expanded / improved Legislative Assembly, Canberra Theatre complex, and consideration of a site for a future Town Hall and an expanded civic square.

The opportunity to connect the City centre to the lake with improved cross-city connections, waterfront development and major facilities such as a new aquatic centre with urban beach, city stadium, and convention and exhibition facilities is strongly supported.

3.3 Planning, Land Use and Development

Comments indicate support for long-term strategic planning and recognise the need for the City to grow and change. The City to the Lake proposal is seen as exciting and presenting Canberra City as a competitive centre on a national and international level.

A focus on improving poor-quality design of buildings and development was raised. The majority of comments related to growth calls for carefully managed change that includes high-quality architecture and urban design, and for development to provide an appropriate mix of uses in order to create lively precincts.

Ensuring that there is a mix of housing and facilities in the City, not just for the wealthy but for a range of markets and users, is considered essential.

A number of people cautioned against design that results in 'exclusivity' - developments that privatise areas and do not present a welcoming address to the street or public areas. The recent lakeside developments in Kingston were cited as examples.

Several submissions note that development close to the Lake would have to consider environmental impacts. Making improvements to the lake water quality and providing increased access to the water is strongly supported.

Potential business benefits from the City to the Lake proposal are acknowledged. Business also notes that the existing CBD should be considered in terms of retail and commercial space so as not to be adversely affected. There is suggestion that how the existing City extends toward the lake should be considered with a policy context and incentives to support urban regeneration and adaptive re-use in the future.

Provision of nodes of activity as opposed to continual ground floor level retail and commercial uses, could respond to growing neighbourhoods and distinct areas within the City centre.

The need for significant public car parking structures in strategic locations to support future demand from proposed major facilities and amenities is also identified. However, proposed public transport improvements are acknowledged as a way to reduce parking demand.

Public Areas

There was a distinct emphasis on the need to change and improve public areas to provide higher-quality, safer and more navigable public spaces.

There is strong support for human scale development, for respect and/or conservation of heritage and preservation of views to maintain the open relaxed character of the City (and the Griffin corridors). There is concern about the loss of views of the natural environment from the City centre and Commonwealth Avenue.

There were strong calls to retain the leafy, green open character of the City while improving the design and quality of buildings and creating more parks and places to enjoy the outdoors. The relationship between buildings and public areas needs high-quality resolution.

It is also recognised that more must be made of some of the City's existing assets such as Garema Place, the Melbourne and Sydney buildings, City Walk, Commonwealth Park and City Hill.

3.4 Traffic and Car Parking

While supporting improved public transport and enhanced cycle and pedestrian ways, most consultation participants want to use their cars and have access to sufficient car parking until such time as public transport provides a "genuinely convenient and cost-effective alternative".

They do not believe that public transport will be a 'genuinely convenient' option for most ACT residents,

who live in the outer suburbs and frequently travel across Canberra for work, services or recreation, until the ACT population is much larger. The ability to "get anywhere in Canberra in 40 minutes" is expressed as a key reason why they choose to live in Canberra.

Respondents to the City to the Lake survey wanted more short-term street parking and long-term structured parking.

'Access to car parking' (78%) is the most important consideration for survey respondents (multiple-choice question) in regards to the location of new facilities such as a convention centre, stadium and swimming pool, followed by 'Access to public transport' (62%).

3.5 Public Transport and Movement

People are keenly awaiting the development of a light rail network and are seeking a more walkable, pedestrian and cycle friendly City.

Northbourne Avenue is seen as dividing the east and west of the City and being unfriendly to pedestrians. It was frequently suggested that traffic should be diverted 'around / under / out of' the City centre, particularly the north-south and east-west traffic. Slowing Northbourne Avenue traffic and providing priority to pedestrians and cyclists is seen as encouraging a more liveable city.

"The fact that the city is currently divided, down the middle by the Northbourne Avenue 'freeway', into separate disparate east and west sectors should be a major concern for any future expansion of the city to the lake." Submission, Canberra resident.



There are high levels of support for continuation of light rail through Vernon Circle and beyond to the town centres. This support extends to a 'whole-of-network' approach to planning and delivery of infrastructure to result in frequent bus services connecting to light rail stations and new facilities. This access is seen as critical to encouraging families with young children and residents with mobility challenges to use public transport when visiting major facilities.

While consultation participants support improved public transport and enhanced cycle and pedestrian ways, they do not believe that public transport will be a 'genuinely convenient' option for most ACT residents until the ACT population is of sufficient size to sustain high levels of efficiency.

The taxi industry wants locations for taxi ranks to be identified early in the land development process to ensure this feature is not overlooked.

City Hill

City Hill is seen as neglected and isolated. Access to City Hill and activation of the park are important to Canberrans. There are suggestions to improve the walkability across the City to reach it, preserve the park as a 'must visit' look out for panoramic Canberra views, and enhance it as a place for people to celebrate and gather.

The City Hill 'precinct' is seen as a priority for future development, delivering a range of cultural and administrative facilities and providing an active civic core. However, it is believed that the future use of City Hill and the area within Vernon Cycle should be determined before land is sold for development.

City Hill as a transport hub and central plaza was often proposed, such as a potential site for a City station for high-speed rail.

The construction of a tunnel under the park to improve north-south through traffic and public transport through the City was also frequently suggested.

3.6 Community infrastructure

Community facilities

Canberrans are keen to ensure there are sufficient community facilities to cater for the projected increased numbers of City residents. Community infrastructure such as schools, childcare centres, health and wellbeing services, social spaces, outdoor playgrounds, and convenience retail are seen as

important considerations when encouraging more people to live in the City. Many respondents also mention the importance of 'walkability' around the City.

Inner city living

Survey respondents suggest that key considerations when encouraging more people to live in the City are sufficient sound attenuation measures, to allow residential uses to coexist with a vibrant and 24-hour active City, and housing affordability.

There is a widely held view that inner-City living, particularly in West Basin, will appeal across demographics but will be primarily in the price range for professional singles and couples, residents downsizing from the suburbs once children have left home, wealthy retirees and families with young children moving into City apartments as a first home. The community is keen to ensure a mix of housing configurations including town house styles to cater for families and affordable housing.

A submission from the Property Council of Australia (ACT) states, "The proposed plan needs to develop options for residential density and socio-economic diversity across the precinct. Current maximum yield approach may be too ambitious and not meet ACT Government targeted design quality, sustainability and affordability outcomes. Diversity of ownership, including affordable housing is critical to create a vibrant community and avoid impersonal gated city blocks".

A submission from ACT Shelter states, "ACT Shelter's comments into this consultation are intended to ensure that an outcome of the plan is that low to moderate income earners have enhanced access to affordable, safe, appropriate and adequate housing in the ACT in the defined project area and nearby surrounds".

Parkes Way

Most survey respondents (96%) consider the current configuration of Parkes Way to be a barrier to growth in the City. Participants in a stakeholder presentation to the Canberra Business Council also concur with this view.

There is widespread support for the City to the Lake proposal to alter Parkes Way into a 'smart boulevard' that is split level, allowing free-flowing traffic at the lower level and introducing local streets at the surface.

Many New Acton Precinct and Capital Tower residents can see the noise attenuation benefits of lowering the level of through traffic.

Some consultation participants would like to see larger distances of Parkes Way covered. One submission states, “I think Parkes way should be covered over a larger distance, maybe all the way from the Acton tunnels to as close as possible to Anzac parade. ... I also think Parkes Way should be totally covered to avoid the traffic noise and smells and to create the open space”.

There is also a high level of support (94%) from survey respondents for the project’s Draft Objectives and Principles that include creating the waterfront and reconstructing Parkes Way early in the project.

There is apprehension, however, at the prospect of disrupted traffic flow during the extensive road works.

A minority view from the Walter Burley Griffin Society (Sydney) states, “The so-called ‘Smart Boulevard’ solution for Parkes Way proposed in the ‘City to the Lake’ project – four lanes of motorway entrenched in a slot with side lanes at surface level – should be rejected in favour of a tree-lined boulevard at surface level with normal intersections controlled by traffic lights where the boulevard meets the grid of city streets, on the model of St Kilda Road, Melbourne or Anzac Parade, Moore Park, Sydney”.

3.7 Major facilities

Identifying land for a number of key civic and cultural facilities to service a growing Canberra and City centre has received a mixed community response, with each facility presenting its own complexity of issues and enthusiastic support.

In relation to the location of major facilities such as the convention centre, stadium and swimming pool, ‘Access to car parking’ (78%) is the most important consideration for survey respondents (multiple-choice question), followed by ‘Access to public transport’ (62%) and ‘Where there is most economic benefit to the City’ (60%).

The following remark from a Canberra resident summed up the overall community response to the major facilities: “Actually, I could live with a well-designed stadium on the site of the Civic Pool, Peter Sheargold’s Australia Forum (conference centre etc.) on the SE sector of the Hill (he wants line of sight to Parliament House), a new aquatic centre (with

cultural references to the old one) at West Basin and even a beach pool there (OK for swimming in the warmer months and pretty the rest of the year - even an outdoor skating rink), some reclamation of the Basin, and a partly buried Parkes Way.”

Town Hall

There was support for a Town Hall that would provide a communal facility for the people of Canberra and a place of celebration. Suggestions range from combining it with or having it replace the Legislative Assembly, to building a new Town Hall. A preferred location is the current Legislative Assembly site as it is seen as the heart of the City.

Theatre Expansion / Redevelopment

An expanded theatre (with larger stage) and connected cultural facilities are suggested for the area around City Hill.

Aquatic Centre with Urban Beach

There was very strong community support for the new aquatic centre with urban beach.

The majority of consultation participants strongly support replacement of the City Olympic Pool with a new ‘state-level’ facility capable of housing competition-level swimming, diving and water polo.

In response to a question about what they would most like to see in West Basin as a leisure precinct for residents and visitors, 85% of survey respondents across the 15-60+ year-old demographic and from all parts of the ACT nominated the proposed aquatic centre with urban beach.

The option to use the beach year round, for example, frozen over in winter for ice skating, was suggested by several consultation participants.

One submission put forward the idea for “...swimming baths of filtered lake water in the West Basin of Lake Burley Griffin, large enough to accommodate a 50-metre Olympic pool and flanked by an artificial beach big enough to house beach volleyball courts”.

Most survey respondents (96%) do not use the Civic swimming pool or use it and see little value in its current form or location. Those who do value the current pool identify the 10m diving board/platform (that is now closed), the location, access to public transport, the entry price and “history; memories; old days”.

The National Trust of Australia (ACT) states, “The architectural merit of this building was recognised when it won the RAIAs Sulman Award in 1955 for the most outstanding recreational building in NSW or the ACT. It deserves to be conserved for its considerable heritage significance”.

City Stadium

There is a mixed response to the proposed city stadium consistent across qualitative and quantitative feedback.

In response to a survey question about the most important issues concerning a city stadium, the 50% of survey respondents who support a city stadium nominate adequate car parking and public transport, as well as speedy access and egress to and from the stadium as issues to consider. They also support a facility that is used for more than just ‘game days’, in particular, for health and wellbeing facilities including a pool and gym. They want a city stadium that is roofed, not only for sport but also for concerts, festivals and other large events.

The 15-45 year-old demographic is particularly supportive of a city stadium and can see the benefits to all Canberrans regardless of where they live. They see the benefits to themselves and local businesses of the convenience of a central location and “making an outing of an event (dinner & drinks) before and after”.

There were submissions from local sporting groups such as the Raiders, Brumbies, Capital Football and the ACT Rugby Union Club very strongly supporting a city stadium.

The Raiders state that, “The prospect of having a 25,000-30,000 seat, all-weather stadium in Canberra will deliver significantly increased attendance to games and deliver massive economic impact to small business in the city centre as crowds make their way to and from the stadium”.

The Brumbies state, “Specifically, the prospect of a new 30,000 seat enclosed rectangular stadium, built within this precinct, is a major benefit for the region. A new enclosed stadium in the proposed location will engage local business, create a strong sense of community and atmosphere in the city, and provide a venue for fans and stadium users to a standard consistent with those in other major cities around Australia”.

Of the 50% who do not want a city stadium, the reasons given include concern about traffic congestion, the investment already made in the

Bruce stadium, ACT Government priorities for other infrastructure needs, and noise to local residents.

Typical of those opposed to a new city stadium is the following comment, “The case for a stadium in the City is dubious... It would bring noise, traffic, litter and rowdy behaviour to that area of the City”.

“We don’t want a giant stadium in the middle of our city. It’s a waste of space, we have Canberra stadium in Bruce, Manuka Oval; we don’t get the major sports here”.

Convention Centre (Australia Forum)

There is enthusiastic support for a new convention and exhibition centre from the business and events community in the ACT who believe that it will help to diversify the ACT economy beyond the public service, lead to the construction of new five-star hotels, restaurants and shops, and create other economic opportunities for the ACT.

The Australia Forum Scoping Study was commissioned by the Canberra Business Council in conjunction with the ACT Government. It has materially informed the City to the Lake proposal for a new convention centre in the south-east sector overlooking City Hill.

The Canberra Convention Bureau strongly supports a new convention centre. A submission from the Bureau states, “Canberra needs a new convention centre that meets the expectations of 21st century national and international events. It must meet the functional requirements outlined in the Australia Forum Scoping Study, which is supported by the Bureau and its Research and Learning Institutes Group (RALIG). Ideally, this new convention centre will be located on the West Basin of Lake Burley Griffin, allowing optimum capacity, enviable prestige and straightforward access to the CBD.

A submission from Cox Architects who were involved in the Canberra Business Council’s Australia Forum Scoping Study also queries the size and expansion capacity of the proposed City Hill site.

There is little community feedback about the proposed convention centre.

A submission from the Walter Burley Griffin Society states, “The Australia Forum proposal should be critically assessed with respect to the capacity of the hotel sector in Canberra; and the need for further ‘participatory democracy’ venues given existing facilities such as the Museum of Australian Democracy and technological change in the sphere of communications and networking.

If new investment is needed in Canberra's convention facilities, it should be undertaken on the site of the existing National Convention Centre as part of a comprehensive refurbishment and upgrade of the 1980s White Industries development and its interface with Glebe Park".

3.8 Lakefront

City to the Lake proposals for the West Basin foreshore public areas are strongly supported by consultation participants. However, lake users want to ensure they can continue to use walking and cycling tracks and enter the lake for water sports without impediment, as they currently do.

A submission states "The central area is extremely well used, particularly on weekends and holidays. But also there is a regular stream of walkers and cyclists along West Basin at any time of any day. It is a very pleasant area with a strong emphasis on natural features".

Seventy-two per cent (72%) of City to the Lake survey respondents do not use the West Basin of Lake Burley Griffin. The 28% who do currently use it, do so primarily to take visitors there to access the lake cruises, bike hire and pedaloes, for exercise, to play sport, for leisure such as walking and picnicking, and to enter the lake for water sports.

As reported earlier, 85% of the City to the Lake survey respondents across demographics and from all parts of the ACT nominate the proposed aquatic centre with urban beach as the preferred facility for the West Basin leisure precinct. Other nominated features are the boardwalks connecting West Basin across the water to the National Museum of Australia (82%), separated cycle and pedestrian paths wide enough for prams and wheelchairs (66%), restaurants and cafés for all budgets (53%), sport and exercise facilities (42%) and bars (30%).

Survey respondents indicate a strong preference (64%) across age groups to retain sufficient grassed areas for a sense of open space and natural landscape, picnicking and childrens' play and walking. They want soft grass landscape and not predominantly hard surfaces (e.g. bitumen, concrete, wood).

Consultation participants strongly support continuation of the existing leisure-based businesses at West Basin, and for additional leisure and recreation concessions to be considered.

In terms of priorities, there is strong support for infrastructure, such as the Parkes Way alterations, and public areas, such as the boardwalks, and the aquatic centre with urban beach, to be delivered first. Developers who participated in seminars and stakeholder presentations support this view, confirming this would increase the value of development land.

"The Property Council supports the ACT Government's approach that infrastructure for sites and services needs to be designed and delivered first to create development opportunities.

The comment "don't do another Kingston" was prevalent, referring to a sense of lake foreshore 'exclusivity' that is not welcoming to people who do not live in the area.

The Walter Burley Griffin Society "...does not support large-scale urban development on the lakefront at West Basin for the reasons stated in our 2006-2007 objections to the NCA's 'Griffin Legacy' amendments".



3.9 Neighbouring property owners

Residential

People welcome the idea of more people living in the City which would bring life to the area outside business hours.

There is strong support for the availability of affordable and sustainable housing as part of the residential offering.

The Canberra City Residents Association is generally supportive of the project with the proviso that traffic congestion, adequate car parking and residential amenities are addressed.

Consultation participants would prefer the height and density of the new residential buildings around the lakefront, near Commonwealth Avenue and within the City centre to maintain existing scale and not block views or result in a sense of enclosure.

The New Acton Precinct and Capital Tower apartment owners are concerned about building heights in relation to obscuring their views and property values. They are particularly concerned about the additional development land created by the narrowing of Parkes Way immediately south of their apartment buildings.

An apartment owner states, “A particular major concern is the proposal for a development opportunity immediately adjacent to the Acton ApARTments on the southern side – it is right in front of New Acton South - (there is a smaller but similar development site just in front of the neighbouring high-rise apartment building If this were to occur this development – even a relatively low-rise one – would destroy a great deal of the visual amenity enjoyed by residents in lower floor apartments of the ApARTments and visitors to the rooftop garden. Put simply this area (and the small area in front of Capital Towers) should not be made available for development”.

A submission from the Molonglo Group supports this view. It states, “Based on the information available, the current City to the Lake proposal envisages development, up to 25 metres in height immediately adjoining the southern boundary of NewActon. The interface between the proposed development and NewActon is generally on 15 metres, reducing to as little as 9 metres in some locations. Given the above constraints, we do not believe that the land immediately to the south of NewActon is capable of accommodating development as indicated in the City to the Lake proposals. Accordingly, it should not be identified as a possible development site”.

Forum residents are concerned about the height of the proposed city stadium in relation to their views and property values, and also of potential noise and traffic impacts.

Commercial

There was in-principle support for the City to the Lake project progressing and acknowledgement of the potential business benefits subject to ongoing stakeholder consultation on detailed planning and design for individual projects.

Commercial property owners want to ensure the existing CBD is not adversely affected and is fully incorporated in plans to extend the City centre towards the lake.

They believe it is important that the next stages of the plan include:

- The need for significant public car parking structures in strategic locations to support future demand from proposed major facilities and amenities.
- A policy framework to support urban regeneration and adaptive re-use within the existing CBD.
- Access to significantly enhanced public transport.



3.10 Lake water quality

The proposed boardwalk water gardens, which would filter and improve Lake water quality; the trenching to deepen water levels, which would cool the water temperature and reduce algal blooms; and other ESD initiatives in City to the Lake are very strongly supported.

Lake water quality is of deep concern to the Canberra community and was raised frequently by consultation participants. They are keen to ensure that proposals to increase the residential population and overall use of West Basin do not exacerbate the current status.

One submission states, “One thing I find utterly bemusing about possible future use of the Lake is the water quality. Currently there are many times when access to the Lake is prohibited because of issues with the water quality. How can it be possible to have vastly increased access to the Lake when the water quality issues are not resolved? That has to be fixed before any future development is envisaged”.

The Molonglo Catchment Group states, “...it will be critical to ensure that any infrastructure development to ‘farm stormwater and grey water’ is adequately funded or built at a scale appropriate for the requirements”.



4.0 Community Engagement Methods

On Tuesday 26 March 2013, ACT Chief Minister Katy Gallagher, MLA, Deputy Chief Minister Andrew Barr, MLA and Minister for Planning Simon Corbell, MLA launched the commencement of consultations for The City Plan and City to the Lake.

The eight-week community consultation program undertaken between 26 March and 21 May 2013 utilised applied qualitative and quantitative social research methods. The key themes are derived primarily from assessment of qualitative responses provided through submissions and verbal feedback. The results give a strong representation of the views of the target audience.

PRIMARY AUDIENCE	SECONDARY AUDIENCE
Residents of the City centre and surrounding suburbs	Wider Canberra community
Business owners and operators, property owners, employees	Occasional users of Civic Business and property owners of broader Canberra
Regular users of the City centre	Visitors to Civic
Interest groups and key stakeholders across a range of community groups	Canberra wide community councils and interest groups

The consultations were promoted through advertisements in the Canberra Times and Chronicle newspapers, in the free weekly magazines, and on radio. There was extensive electronic and print media coverage of the project during its launch week commencing on 26 March 2013 and in consequent coverage prompted by media releases and 'op ed' articles.

The consultation involved a range of activities and communication methods including a public exhibition, 'open house' information displays, public seminars, stakeholder presentations and meetings, submissions, surveys, websites, an animation or 'fly through' of the proposal on YouTube, and print and electronic media. This range of approaches assisted in communicating with a broad demographic group and resulted in responses across age groups from 15-60+.

Approximately 7,000 people attended the 'open house' information displays held at Garema Place, Commonwealth Place and West Basin. Ninety-two

(92) written submissions were received, 608 surveys completed and 800 comments collected via the web and at the 'open houses'.

Surveys were undertaken to gain focused feedback on The City Plan and City to the Lake project.

Where percentages are provided, they are obtained from the 334 City to the Lake survey responses. The quantitative data collected through City to the Lake surveys, although relatively little, consistently supports the qualitative assessment.

CONSULTATION ACTIVITY	TOTAL PEOPLE INVOLVED
'Open house' information displays (3)	7 000
Comments at exhibitions	800 approx
Surveys (2)	608
Submissions	92
Web (2 websites)	6 280
You Tube hits	2 400
Seminars	180
Stakeholder presentations meetings	440
Stakeholder groups invited	60 approx

Feedback from this consultation will be used to inform the preparation of the Draft City Plan and to refine the Draft Objectives and Principles for City to the Lake to guide future stages of the project's development.



4.1 Roving information displays

A marquee was erected in Garema Place as an exhibition space for 'open house' information displays. The exhibition material was supported by laptops for online feedback and audiovisual equipment to view a video explaining the City to the Lake development proposal.

The public was provided with various methods to submit feedback, consisting of writing a comment on a 'flag' and placing it on a wall chart plan of the City, adding comment to a 'graffiti wall', filling in a survey or speaking directly to an ACT Government representative. The marquee in Garema Place was open for five working days and one Saturday morning. This marquee arrangement was replicated on two separate Sundays at various locations on the lake foreshore in April and May 2013.

4.2 Exhibition

An exhibition was open from 3 April to 21 May 2013 at 72 Northbourne Avenue, Canberra City.

The exhibition included screens displaying the animation or 'fly through' of the City to the Lake proposal, and more than 30 large posters of a pictorial and written narrative about the project. Contents of the exhibition can be seen at www.citytolake.com.au. Hard copy surveys were available for completion. Other materials available at the exhibition included Fact Sheets, a booklet of Frequently Asked Questions, and postcards with website details, email and contact information.

The exhibition was open each day (Monday to Friday, except public holidays) and on four Saturdays. Staff were present at all sessions to answer questions and provide further information.

4.3 Seminars

Four public seminars were held in the Theatre of the Canberra Museum and Gallery, Canberra City.

Two additional seminars targeted to local residential apartment owners were held at the Kendall Lane Theatre, New Acton Precinct.

The seminars presented the animation or 'fly through' of the City to the Lake proposal, a presentation by the Project Director and a question and answer session. Materials available to take away included hard-copy surveys, Fact Sheets, FAQ booklets and postcards.

4.4 Submissions

A wide range of the Canberra community provided submissions including:

- Key stakeholders representing community groups
- Interest groups from areas such as environment, heritage, youth leadership, industry, the Griffin society and property
- Local businesses and business peak bodies from the City centre
- Community councils
- Professional groups

Ninety-two (92) submissions were received from a broad range of individuals and organisations. The submissions contained a range of views about The City Plan and City to the Lake project.

The length of submissions ranged from a few sentences to over 60 pages. They covered a wide range of issues from a general comment, to specific elements of the project, to all aspects of the proposal. The majority of individuals and organisations that made submissions were well informed having visited an information display, attended seminars or viewed the website information. Overall the submissions were well considered, thoughtful and added significant value to the consultation outcomes.

Consistent with ACT Government privacy protocols, this report identifies quotations from organisations but does not do so for quotations from individuals.

4.5 Stakeholder presentations and meetings

The City Plan and City to the Lake presentations, meetings, focus groups and reference groups involved business and industry bodies and representatives of stakeholder and community organisations. A presentation was also made to the Board of the National Capital Authority. There were also meetings with interest groups such as individual members of the Walter Burley Griffin Society, and with key stakeholders such as the current business owners and leaseholders operating in West Basin.

4.6 Survey

Specific stakeholder meetings and surveys were undertaken to gain focused feedback on The City Plan and City to the Lake project.

The City Plan survey was designed as a method to encourage comments to be framed around key questions and areas of interest and investigation by the team preparing the Draft City Plan.

The City to the Lake survey focused on the Draft Objectives and Principles for the project and on how Canberrans currently use and would like to use the City to the Lake study area.

Hard-copy surveys were available at the exhibition, 'open house' information displays and seminars. Electronic surveys could be completed on the ACT Government's Time to Talk Canberra central consultation website and could also be accessed via The City Plan and City to the Lake websites.

Of the 608 surveys, some not fully completed and many respondents wrote on the back of survey forms to expand on their answers.

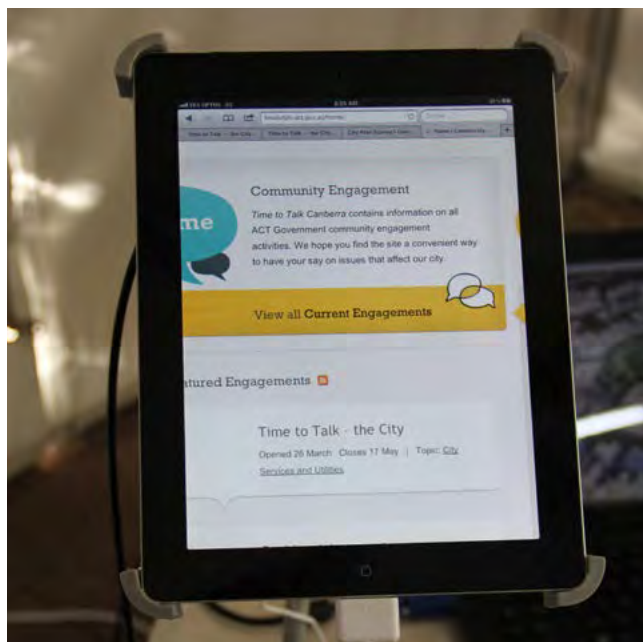
4.7 Website and Social Media

The City Plan and City to the Lake engagement used several web-based methods to reach the community.

Two dedicated websites (connected) provide background information and details of consultation events and opportunities for online feedback.

The City Plan website has details of the Liveable Cities Commonwealth Grant Program, which provides funding for the City Plan project, and previous government reports and publications regarding the study area. The City Plan website includes five papers to stimulate responses and discussion around key topics that were in part derived from previous Time to Talk feedback. The website also provides: a discussion forum or 'soap box' through the Time to Talk website; a survey for feedback and to stimulate public discourse; and a portal for the community to send emails and or formal submissions.

The City to the Lake website is designed to illustrate the transformational nature of the project and to aid with communication and community engagement. It includes the City to the Lake concept design in different downloadable and printable formats and has a direct YouTube link to an animation or 'fly through' of the City to the Lake proposal. Information and an online survey are also available on the ACT Government's consultation portal Time to Talk Canberra.



5.0 Feedback Analysis

The consultation program utilised applied qualitative and quantitative social research methods. The key themes are derived from a consultation methodology designed primarily to assess qualitative responses provided through submissions and verbal feedback.

Specific stakeholder meetings and surveys were undertaken to gain focused feedback on The City Plan and City to the Lake project:

- The City Plan survey was designed as a method to encourage comments to be framed around key questions and areas of interest and investigation by the team preparing the Draft City Plan; and
- The City to the Lake survey focused on the Draft Objectives and Principles for the project and on how Canberrans currently use and would like to use the City to the Lake study area.

Where percentages are provided, they are derived from the 334 City to the Lake survey responses. The quantitative data collected through City to the Lake survey returns, although relatively little, consistently support the qualitative assessment.

Analysis of the surveys assumes equal weighting for each question. In the absence of providing alternate weighting criteria, it is reasonable to suppose the public would assume equal weighting for each question.

The analysis examines the survey results numerically and reports how each question is answered as a percentage of the total. The percentages do not always add up to 100% as some survey questions allow for multiple answers and some survey forms are only partially completed.

The qualitative analysis examines the numeric and open commentary survey results more subjectively in that it provides context and emphasis to respondents' views. The 92 submissions from individuals and organisations provide a depth of insight into aspects of The City Plan and City to the Lake project. They add significant value to the consultation outcomes.

The overall support for City to the Lake was derived by categorising returned surveys into three areas: fully support; partial support (the comments are mixed) and do not support. Categorised in this way, 71% of survey respondents fully support the City to the Lake proposals; 12% have mixed views, only supporting some aspects of it; and 17% do not support it at all. Answers to individual questions were correlated with survey respondent profiles to provide further demographic analysis.



6.0 Appendices

6.1 City to the Lake Survey



Time to Talk Survey

City to the Lake is a transformational project being developed within The City Plan. It involves creating a framework to better use the broad southern side of Canberra City. The study area stretches from the West Basin to Anzac Parade including Canberra Olympic Pool, the existing convention centre and large surface car parks. To link and extend the City to Lake Burley Griffin, a vibrant public urban waterfront will be created as well as improved public access to Commonwealth Park and City Hill to better integrate them into the City. The project will also better connect major national and regional educational and cultural institutions – such as the Australian National University and the National Museum of Australia – with the lake and the everyday life of the City. The public waterfront and link to the City will be the centrepiece of a new mixed-use City precinct along with major new public amenities, infrastructure and cultural attractions for the Capital Region.

Main components of City to the Lake:

- Make Parkes Way into a split-level 'smart boulevard', allowing free flowing traffic at the lower level and introducing local City streets at the surface.
- Traffic calming of Vernon Circle and London Circuit together with new streets to service the proposed West Basin residential and community areas.
- A new diverse City precinct at West Basin and associated cultural facilities.
- Identifying and reserving potential sites for Australia Forum – a new convention and exhibition centre, a new city stadium, and a new regional aquatic facility and urban beach.
- Residential apartments mixed with commercial, retail and cultural facilities, delivering 15,000 to 20,000 new residents.
- Strategically located multi-use car parks that provide for events and commuter car parking.

For more information, visit www.cityplan.com.au

The following **City to the Lake** Draft Objectives and Principles have been developed to guide the project:

- Recognise unique qualities, significance and prominence of the site.
- Improve connections and public access – City to waterfront, Commonwealth Park and City Hill.
- Create public realm early – enhance waterfront experience for locals and visitors.
- Support more people living in the City.
- Ensure no detriment to the existing City.
- Ensure investment delivers broad community benefit and enhances project viability.
- Leverage natural competitive advantage of Canberra as the nation's capital.
- Assess impacts on key infrastructure.
- Encourage sustainable development, design excellence and environmental leadership.

We would like to know a bit about you to help us understand the information you provide.

- | | | |
|----------------------|--------------------------|---------------------------------|
| 1. What is your age? | 2. Where do you live? | 3. Why do you go into the City? |
| a) 10 – 15 | a) Inner North | a) work |
| b) 15 – 30 | b) Inner South | b) shopping |
| c) 30 – 45 | c) Gungahlin | c) socialising |
| d) 45 – 60 | d) Belconnen | d) entertainment |
| e) 60+ | e) Tuggeranong | e) recreation |
| | f) Other area of the ACT | f) living |
| | g) Queanbeyan | |
| | h) Interstate | |
| | i) International | |



1. How well do the Draft Objectives and Principles fit with your idea of a liveable Canberra and the City you want for the future?

2. Is there anything you feel is missing from the Draft Objectives and Principles?

3. Do you agree that Parkes Way is a barrier to growth in the City?

4. What is the most important thing to consider when deciding the locations for new facilities such as a convention centre, stadium and swimming pool?

- a) Convenience to people working and living in the City
- b) Where there is most economic benefit to the City
- c) Access to public transport
- d) Where there is room to expand
- e) Access to car parking
- f) Other

5. What are the three things you most value about the Civic swimming pool?

6. Walter Burley Griffin's original plan for Canberra included a city stadium. What are the three most important issues to consider about having a stadium in the City?

7. What stops you from using City Hill as a central city park?

8. What are the most important things to consider when encouraging more people to live in the City?

9. How do you use the West Basin of Lake Burley Griffin now?

- a) I don't use it
- b) I take visitors there – bike hire, ferry wharf, pedaloes
- c) I exercise / play sport there
- d) I use it for leisure – walking, picnicking, etc.
- e) I use it to enter the lake for water-based sport – canoeing, sailing
- f) Other

10. What are the three features you would most like to see in West Basin as a leisure precinct for all that live in or come to visit Canberra?

If there is anything else you would like to say about the City to the Lake project, please write your comments over the page.

6.2 City Plan Survey

The ACT Government is committed to consulting the community about their ideas for the future growth and development of the City centre.

This survey can be completed on line or in hard copy at consultation events. To complete online go to www.timetotalk.act.gov.au.

The City Centre is the area including City West, the City to the Lake proposal study area and the central retail/commercial area south of Cooyong St. This area used to be called Civic and is now referred to as the City Centre.

The questions below are based on the background information on the website, www.cityplan.act.gov.au, and have been grouped into key issues or themes. Please answer all or any of the questions below:

1. What is your age?

- 1. 10 - 15
- 2. 15 - 30
- 3. 30 - 45
- 4. 45 - 60
- 5. 60 plus

2. Where do you live?

- 1. inner North
- 2. inner South
- 3. Gungahlin
- 4. Belconnen
- 5. Tuggeranong

6. other area of the ACT

7. Queanbeyan

8. interstate

9. international

3. What are the main reasons you go into the City Centre? You may choose more than one.

1. work

2. shopping

3. food

4. socialising

5. entertainment

6. cultural events

7. recreation

8. living

9. social services

GROWTH IN THE CITY

4. As the City centre grows and changes, what characteristics of the City Centre would you like to see remain?

5. Can you identify the land uses or facilities you think the City Centre needs now and into the future? Please number your top three.

1. more apartments

2. major sports facilities

3. trees and parks

4. small retail shops along the streets

5. commercial offices or workplaces

6. major retail stores

7. more restaurants and cafes, particularly on the lakefront

8. cultural facilities (e.g. cinemas, theatres, galleries)

9. civic institutions (government buildings such as libraries and community centres)

10.a public transport hub

11.social facilities and services (e.g. health, youth)

12.other

TRANSPORT AND MOVEMENT

6. How do you normally travel to the City Centre?

1. walk

2. cycle

3. public transport

4. car as passenger

5. car as driver

6. other

7. Do you have comments and suggestions for the City Centre relating to:

1. walking and cycling _____

2. public transport, including light rail _____

3. parking _____

4. vehicle movements _____

8. Do you have any comments about developing light rail which connects the City to the east and south of Canberra?

PUBLIC REALM AND DESIGN

9. What is special to you about the City Centre including its public places and buildings? Please tell us about it.

10. Do you dislike anything about the City Centre? Please tell us about it.

11. Do you have any examples of other City Centres that you like – please tell us what it is about the buildings, streets and public spaces that you like there?

12. Do you have any suggestions or comments about development and growth around these major public places:

1. Garema Place _____
2. City Hill _____
3. London Circuit _____
4. Commonwealth Park _____
5. Glebe Park _____
6. the lake edge _____
7. other major public places _____

ROLE OF CITY CENTRE

15. The City centre has national, regional and local roles. How well do you think the City centre meets these roles for?

1. local residents living in and close to the City Centre _____
2. other Canberra residents _____
3. visitors to the Canberra _____

4. Do you have ideas or comments about how to make the City Centre more attractive for people to live and visit?

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