Application for a

Section 91 Licence

under the *Threatened Species Conservation Act 1995* to harm or pick a threatened species, population or ecological community* or damage habitat.

1. Applicant's Name ^: *(if additional persons require authorisation by this licence, please attach details of names and addresses)*	Belinda Pellow Staff and Contractors will also require authorisation by this licence.	
2. Australian Business Number (ABN):	85407224698	
3. Organisation name and position of applicant ^: *(if applicable)*	Australian Museum Consulting Senior Project Manager	
4. Postal address ^:	6 College Street, Sydney NSW 2010	Telephone ^: (02) 93206311
5. Location of the action *(including grid reference and local government area and delineated on a map).*	The action will occur within the Hornsby Local Government Area [redacted] The site coordinates are : [redacted] For Map refer to Appendix 1	

* A threatened species, population or ecological community means a species, population or ecological community identified in Schedule 1, 1A or Schedule 2 of the *Threatened Species Conservation Act 1995.*

^The personal details of all Section 91 licences will be displayed in the register of Section 91 licences required under Section 104 of the *Threatened Species Conservation Act 1995.* See notes.

6. Full description of the action and its purpose *(e.g. environmental assessment, development, etc.)*	As part of the consent conditions for the construction of the North West Rail Link (NWRL) cuttings/seeds were to be taken from those individuals of *Epacris purpurascens* var. *purpurascens* (listed as Vulnerable TSC 1995) with the potential to be impacted by development activities at the [redacted]. During pre-clearance surveys at the Cheltenham worksite a population of *Hibbertia* sp. Turramurra (listed as Critically Endangered TSC 1995) was located and included within the *Epacris purpurascens* var. *purpurascens* propagation plan. Figure 1 shows the location of the populations of these species within the project area. Staff from the Australian Botanic Garden, Mt Annan visited the site and under licence took cuttings in October 2013. Seeds were not harvested as plants failed to produce mature seed bearing fruit and past experience has shown a poor response from seed germination in these species. Cuttings of *Epacris purpurascens* var. *purpurascens* were taken from one individual adjacent to the disturbance footprint and a group of approximately 6 individuals adjacent to [redacted]. Cuttings of *Hibbertia* sp. Turramurra were taken from individuals that occur adjacent to the disturbance footprint. These individuals represent the entirety of known individuals in the project area (Figure 1). The action relating to this application is to plant approximately 10 of the propagated cuttings of *Epacris purpurascens* var. *purpurascens* and approximately 9 of the propagated cuttings of *Hibbertia* sp. Turramurra in an area of bushland located within the same area as the parent plants from which the cuttings were taken. Figure 1 shows the proposed planting area. This action seeks to manage the risk of local extinction through enhancing the numbers of two declared species. The addition of genetically identical propagules (cuttings) provides some level of insurance against damage to or loss off the parent plants located closer to the disturbance activities associated with the NWRL. The planting locations will be recorded with GPS and the health of the individuals will be monitored regularly over a three year period, using field assessments and photographic monitoring.
7. Details of the area to be affected by the action *(in hectares)*.	Installation of *Epacris purpurascens* var. *purpurascens* and *Hibbertia* sp. Turramurra will occur within the area designated in Figure 1. The area across which plants will be distributed is expected to cover two hectares of vegetation mapped as [redacted]
8. Duration and timing of the action *(including staging, if any).*	Installation and follow up management of *Epacris purpurascens* var. *purpurascens* and *Hibbertia* sp. Turramurra is expected to occur over a three year period, commencing in Autumn (March) of 2015 and concluding in March 2016. Plantings are planned for March/April 2015. This will include site inspections, mapping of suitable installation locations, planting of individuals and ongoing maintenance and monitoring of the installed plant health and vigour.

9. Is the action to occur on land declared as critical habitat*? *(tick appropriate box)*	☐ Yes ☒ No

10. Threatened species, populations or ecological communities to be harmed or picked.	Scientific name	Common name *(if known)*	Conservation status *(i.e. critically endangered, endangered or vulnerable)*	Details of no. of individual animals, or proportion and type of plant material
	Epacris purpurascens var. *purpurascens*		Vulnerable	Approximately 10 plants propagated from cuttings to be planted.
	Hibbertia sp. Turramurra	Julian's Hibbertia	Critically Endangered	Approximately 9 plants propagated from cuttings to be planted.

11. Species impact: *(please tick appropriate box)* a) For action proposed on land declared as critical habtat; or	an SIS is attached ☐ Yes ☐ No

* Critical habitat means habitat declared as critical habitat under Part 3 of the *Threatened Species Conservation Act 1995*.

b) For action proposed on land <u>not</u> declared as critical habitat.	Items 12 to 25 have been addressed ☒ Yes ☐ No

N.B: Provision of a species impact statement is a statutory requirement of a licence application if the action is proposed on critical habitat.
The provision of information addressing items 12 to 17 is a statutory requirement of a licence application if the action proposed is <u>not</u> on land that is critical habitat. Information addressing any of the questions below must be attached to the application.

12. Describe the type and condition of habitats in and adjacent to the land to be affected by the action.	The project area is located in a strip of remnant bushland [redacted]. The site is largely surrounded by residential development, but connects to [redacted]. The north eastern section adjacent to [redacted] Outcropping sandstone characterises much of the project area which supports a well-developed vegetation community. The canopy is dominated by mature native trees, and there is a well-developed shrub and ground layer. In general, weeds are concentrated around the perimeter of the project area. Infestations are highest along the interface of the project area in areas of disturbance such as [redacted]. A number of walking trails transect the project area and weeds are also found adjacent to these. A portion of the project area has been burnt sometime in the last 5 years.
13. Provide details of any known records of a threatened species in the same or similar known habitats in the locality *(include reference sources).*	*Hibbertia* sp. Turramurra is a newly discovered species, listed as occurring in only one other known location, the Turramurra area (Royal Botanic Gardens and Domain Trust 2015) The confirmation of this species within the project area presents a previously unknown population. No other population records exist, however potential habitat includes all clay sandstone influence in the Sydney Basin (OEH 2014) There are 67 records of *Epacris purpurascens* var. *purpurascens* occurring in the Hornsby LGA (OEH 2015), although OEH (2014) notes one threat to the species is the accuracy of identified species records.
14. Provide details of any known or potential habitat for a threatened species on the land to be affected by the	A protected matter search (DotE 2015) identified 27 threatened species records in the intended project area, including 15 fauna species. A comprehensive threatened flora species search was conducted in the project area by Australian Museum Consulting in 2013 (Australian Museum Consulting 2013). The search identified one

action *(include reference sources).*	population of *Hibbertia* sp. Turramurra. The specimens were confirmed as *Hibbertia* sp. Turramurra by the National Herbarium of New South Wales, Royal Botanic Garden. Two *Epacris purpurascens* var. *purpurascens* populations were also identified as occurring in the project area. No additional threatened flora species were located within areas of potential habitat. A pre-clearance survey undertaken in 2013 (Australian Museum Consulting 2013) positively identified 28 fauna species. This included six species of mammal and 22 species of bird. One additional bat species has also been identified as "probable" based on call analysis. Remains of what was possibly a Powerful Owl prey item were detected. The Powerful Owl is listed as 'vulnerable' under the TSC Act. One of the microbat species detected by ultrasonic call recording, the Eastern Bentwing-bat (*Miniopterus schreibersii oceanensis*), is also listed as 'vulnerable' under the TSC Act. No microbats were observed [redacted]. No habitat for Cumberland Plain Land Snails was present and none were detected. The intended activities will not impact the habitat of any recorded threatened species.
15. Provide details of the amount of such habitat to be affected by the action proposed in relation to the known distribution of the species and its habitat in the locality.	The intended activities will occur within a two hectare area (Figure 1). Impact to this habitat will be minor, limited to digging of holes required to install the propagated plants. Some minor disturbance to the bushland habitat may occur as a result of walking to and from the planting sites. Currently, the known location of parent plants immediately adjacent to the disturbance footprint is protected by a fence and locked gate.
16. Provide an assessment of the likely nature and intensity of the effect of the action on the lifecycle and habitat of the species.	The installation of propagated plants will occur in Autumn. This period corresponds with a slowing in the active growth of many native plant species, including both *Hibbertia* sp. Turramurra and *Epacris purpurascens* var. *purpurascens* flowering in Spring (OEH 2014). Plantings of these species during Autumn will reduce transplant shock and provide a period of approximately six months establishment, before summer heat stress occurs. The period also correlates with the highest rainfall (BOM 2014), which will contribute to plant establishment success. This activity is assessed to have minimal impact on the life cycle of the species. The impact to the habitat of these species and additional species in the area will also be minimal. Disturbance will be limited to digging of holes and site visitation to maintain and monitor plants.

17. Provide details of possible measures to avoid or ameliorate the effect of the action.	Individuals will be installed in similar habitat to the parent population. In order to limit damage or attrition, plants will be: • installed in areas with no weed competition; • installed in areas far removed from human traffic or at low risk of inadvertent trampling; • spread strategically throughout the proposed planting area; • maintained with supplementary water for three month post planting; and • monitored and maintained regularly over a 3 year period to limit damage and facilitate establishment.

N.B: The Director-General must determine whether the action proposed is likely to significantly affect threatened species, populations or ecological communities, or their habitats. To enable this assessment the Applicant is required to address items 18 to 24. Any additional information referred to in addressing these items must be attached to the application.

18. In the case of a threatened species, whether the action proposed is likely to have an adverse effect on the life cycle of the species such that a viable local population of the species is likely to be placed at risk of extinction.	The intended activities will not impact the existing local populations of *Hibbertia* sp. Turramurra or *Epacris purpurascens* var. *purpurascens*. As the plant material to be introduced are propagules taken as cuttings from adult plants within the project area no new genetic material will be introduced to the population as a result of this action. Therefore the life cycle of the mature specimens is not expected to be adversely affected by this action.
19. In the case of an endangered population, whether the action proposed is likely to have an adverse effect on the life cycle of the species that constitutes the endangered population such that a viable local population of the species is likely to be placed at risk of extinction.	The relevant threatened species at this location are not listed as Endangered Populations.

20. In the case of an endangered ecological community or critically endangered ecological community, whether the action proposed: (i) is likely to have an adverse effect on the extent of the ecological community such that its local occurrence is likely to be placed at risk of extinction, or (ii) is likely to substantially and adversely modify the composition of the ecological community such that its local occurrence is likely to be placed at risk of extinction.	Not applicable.
21. In relation to the habitat of a threatened species, population or ecological community: (i) the extent to which habitat is likely to be removed or modified as a result of the action proposed, and (ii) whether an area of habitat is likely to become fragmented or isolated from other areas of habitat as a result of the proposed action, and (iii) the importance of the habitat to be removed, modified, fragmented or isolated to the long-term survival of the species, population or ecological community in the locality.	The disturbance relating to planting of propagated specimens will be limited to initial site inspections, digging of holes to install plants and subsequent maintenance and monitoring. (i) The intended activities will not remove or modify the habitat of a threatened species or community. (ii) The intended activities will not fragment or isolate existing populations. (iii) No habitat will be removed, modified or isolated.
22. Whether the action	Critical habitat has not been declared for either *Hibbertia* sp.

proposed is likely to have an adverse effect on critical habitat (either directly or indirectly).	Turramurra or *Epacris purpurascens* var*. purpurascens.*
23. Whether the action proposed is consistent with the objectives or actions of a recovery plan or threat abatement plan.	No recovery plan has been developed for *Hibbertia* sp. Turramurra*.* No recovery strategies or priority actions have been developed for *Hibbertia* sp. Turramurra (OEH 2014). Activities to assist the species, as described by OEH (2014) include: • Landholder liaison. • Maintenance of the fencing which currently protects part of the population. • Habitat management: Weed control. • Monitoring • Survey and/or mapping. • Appropriate fire management. • Captive husbandry or ex-situ collection/propagation. The intended activities expand on the previously conducted propagation conducted by the Australian Botanic Garden, Mt Annan, and will include thorough mapping of new plants, landholder liaison (Hornsby Shire Council) and monitoring of outcomes. This monitoring will be developed into a case study which can inform future population expansion activities. The Environmental Impact Assessment Guidelines for *Epacris purpurascens* var. *purpurascens (2002)* suggest some populations with geographic isolation and a limited number of mature specimens, may be unviable; however, they note that these populations should be conserved to maintain genetic diversity. The intended activities will increase the viability of the population by increasing individual numbers. *Epacris purpurascens* var. *purpurascens* is a site managed species under the Saving our Species Recovery Program (OEH 2015). Although no sites have been declared within or near the project area, Recovery Strategies listed under the SOS program for other sites include management and monitoring actions to: • Minimise disturbance from recreational activities • Maintain appropriate fire regimes • Reduce weed densities • Ensure land management is sympathetic to long term requirements of the species • Track species abundance and condition over time The proposed introduction of propagules genetically identical to the parent plant will be accompanied by regular monitoring programs. This monitoring will track the species abundance and condition in

	the project area. It will also provide valuable information relating to best practice transplanting methods for this species.
24. Whether the action proposed constitutes or is part of a key threatening process or is likely to result in the operation of, or increase the impact of, a key threatening process.	Key threatening processes (TSC 1995) relevant to *Hibbertia* sp. Turramurra and *Epacris purpurascens* var. *purpurascens.* may include: • Loss and degradation of native plant and animal habitat by invasion of escaped garden plants, including aquatic plants; • Invasion of native plant communities by exotic perennial grasses; • Invasion of native plant communities by African Olive *Olea europaea* L. subsp. *Cuspidata;* • Invasion, establishment and spread of *Lantana camara;* • Invasion and establishment of exotic vines and scramblers; and • Infection of native plants by *Phytopthora cinnamomi.* Additional threats to the known population of *Hibbertia* sp. Turramurra at Turramurra (OEH 2014) that may also be relevant to this population and the intended activities include: • Highly restricted geographical distribution, occurring at only one location; • Trampling of plants may occur and compaction of the soil may affect drainage; • Competition and changes to soil and microclimate with weed invasion; and • Possible susceptibility to Phytopthora Root Rot disease (*Phytopthora cinnamomi*). Additional threats to *Epacris purpurascens* var. *purpurascens* (OEH 2014) that may also be relevant to this population and the intended activities include: • Urban run-off leading to flooding, erosion, nitrification of soil substrate, altered pH, weed invasion, and introduction of plant pathogens; and • Altered fire regimes, uncontrolled vehicular access, soil compaction, slashing, fill and rubbish dumping, and trampling through inappropriate pedestrian access. The populations of to *Hibbertia* sp. Turramurra and *Epacris purpurascens* var. *purpurascens* will not be directly impacted by the intended activities, however the threats described above will be considered when undertaking the planting activities. Off track access to the planting sites will be kept to a minimum, the number of individuals accessing the planting areas will be kept to a minimum, plants will be marked before revisiting the site to avoid inadvertent trampling, the area will be maintained to manage weeds post

	planting and all shoes, tools and equipment will be disinfected to reduce the threat of Phytopthora introduction. Routine monitoring for Phytopthora is already part of the Construction Flora and Fauna Management Plan that covers the [redacted]. During maintenance activities particular attention will be paid to removing exotic vines and scramblers, perennial grasses, *Lantana camara* and *Olea europaea* L. subsp. *cuspidata.*

Important information for the applicant

Processing times and fees

The *Threatened Species Conservation Act 1995* provides that the Director-General must make a decision on the licence application within 120 days where a species impact statement (SIS) has been received. No timeframes have been set for those applications which do not require a SIS. The Director-General will assess your application as soon as possible. You can assist this process by providing clear and concise information in your application.

Applicants may be charged a processing fee. The Director-General is required to advise prospective applicants of the maximum fee payable before the licence application is lodged. Therefore, prospective applicants should contact the Office of Environment and Heritage (OEH) prior to submitting a licence application.

A $30 licence application fee must accompany a licence application.

Protected fauna and protected native plants*

Licensing provisions for protected fauna and protected native plants are contained within the *National Parks and Wildlife Act 1974.* However, a Section 91 Licence may be extended to include protected fauna and protected native plants when these will be affected by the action.

If you are applying for a licence to cover both threatened and protected species please provide the information requested in Item 10 *as well as* a list of protected species and details of the number of individuals animals or proportion and type of plant material which are likely to be harmed or picked.

Request for additional information

The Director-General may, after receiving the application, request additional information necessary for the determination of the licence application.

Species impact statement

Where the application is not accompanied by a SIS, the Director-General may decide, following an initial assessment of your application, that the action proposed is likely to have a significant effect on threatened species, populations or ecological communities, or their habitats. In such cases, the *Threatened Species Conservation Act 1995* requires that the applicant submit a SIS. Following initial review of the application, the Director-General will advise the applicant of the need to prepare a SIS.

* Protected fauna means fauna of a species not named in Schedule 11 of the *National Parks and Wildlife Act 1974.*
Protected native plant means a native plant of a species named in Schedule 13 of the *National Parks and Wildlife Service 1974.*

Director-General's requirements for a SIS

Prior to the preparation of a SIS, a request for Director-General's requirements must be forwarded to the relevant OEH Office. The SIS must be prepared in accordance with section 109 and 110 of the TSC Act and must comply with any requirements notified by the Director-General of OEH.

Disclosure of Personal Information in the Public Register of s91 Licences

The Public Register provides a list of licence applications and licences granted. A person about whom personal information is contained in a public register may request that the information is removed or not placed on the register as publicly available.

Copies of all applications and licences issued under section 91 and certificates issued under section 95 of the Act are available on the OEH website at www.environment.nsw.gov.au/threatenedspecies/S91TscaRegisterByDate.htm or in hardcopy form from The Librarian, OEH, 59 Goulburn St, Sydney.

Certificates

If the Director-General decides, following an assessment of your application, that the proposed action is not likely to significantly affect threatened species, populations or ecological communities, or their habitats, a Section 91 Licence is not required and the Director-General must, as soon as practicable after making the determination, issue the applicant with a certificate to that effect.

N.B: An action that is not required to be licensed under the Threatened Species Conservation Act 1995, may require licensing under the National Parks and Wildlife Act 1974, if it is likely to affect protected fauna or protected native plants.

I confirm that the information contained in this application is correct. I hereby apply for a licence under the provisions of Section 91 of the *Threatened Species Conservation Act 1995.*

Applicant's name *(Please print)*	*Belinda Pellow*
Applicant's Position & Organisation *(if relevant)* *(Please print)*	*Project Manager* *Australian Museum Consulting*
Applicant's signature	
Date	15/01/2015

For more information or to lodge this form, contact the nearest branch of OEH's Conservation and Regulation Division:

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References

Australian Museum Consulting 2013, *North West Rail Link TSC Works Pre-clearance Survey Cheltenham Worksite*. Consultancy report to Thiess John Holland Dragados.

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Website http://www.environment.gov.au/webgis-framework/apps/pmst/pmst.jsf. Accessed January 2015

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OEH (2014). Threatened Species Profile.
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