

Elizabeth Drive – East Upgrade

Non-Aboriginal Heritage Impact Assessment

08-Sep-2023
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Client: Transport for NSW

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Glossary and abbreviations

Term	Description
Construction ancillary facilities	Dedicated areas of land required for construction amenities, parking, materials/equipment storage, mobile asphalt batch plants and stockpiling
Construction footprint	The area needed to construct the proposal, including for example construction ancillary facilities, access roads, haulage and water quality basins
Operational footprint	The area needed for the operation of the proposal
Transport for NSW	Transport for New South Wales, also referred to as Transport
Proposal	The Elizabeth Drive East Upgrade – the upgrade of about 7.8 kilometres of Elizabeth Drive between Badgerys Creek Road near the future M12 Motorway and about 600 metres east of Duff Road at Cecil Hills
Study area	The study area includes: The construction footprint and a 200-metre assessment buffer around the construction footprint; and the full extent of adjoining properties where they extend outside the 200-metre buffer

Acronyms

Acronym	Definition
CCTV	Closed-Circuit Television
CHL	Commonwealth Heritage List
EIS	Environmental Impact Statement
EP&A Act	<i>Environmental Planning and Assessment Act 1979 (NSW)</i>
EP&A Regulation	Environmental Planning and Assessment Regulation 2021 (NSW)
EPBC Act	<i>Environment Protection and Biodiversity Act 1999 (Commonwealth)</i>
Heritage Act	<i>Heritage Act 1977 (NSW)</i>
HIA	Heritage Impact Assessment
IHO	Interim Heritage Order
ITS	Intelligent Transport System
km	kilometres
LEP	Local Environmental Plan
LGA	Local Government Area
m	metres
NHL	National Heritage List
REF	Review of environmental factors
RNE	Register of the National Estate
Roads and Maritime	NSW Roads and Maritime Services, now known as Transport for NSW
SEPP	State Environmental Planning Policy
SHR	State Heritage Register

Acronym	Definition
SOHI	Statement of Heritage Impact
TAHE	Transport Asset Holding Entity
VMS	Variable Message Signs
WPCSEPP	State Environmental Planning Policy (Precincts-Western Parkland City) 2021
WSA	Western Sydney Airport

Executive summary

Transport for NSW (Transport) proposes to upgrade about 7.8 kilometres of Elizabeth Drive between Badgerys Creek Road near the future M12 Motorway and about 600 metres east of Duff Road at Cecil Hills (the proposal).

This Non-Aboriginal Heritage Impact Assessment (HIA) has been prepared as part of the Review of Environmental Factors (REF) for the proposal. This report assesses the heritage values attached to the construction footprint and the impact of the proposal on those heritage values. For the purposes of this assessment the construction footprint is the construction footprint, and the study area includes a 200-metre buffer around the construction footprint, while also including those adjoining properties that extend outside the 200-metre buffer.

One item listed on the *Fairfield Local Environmental Plan 2013* (Fairfield LEP 2013), the Inter-war Spanish Mission House, was identified at the outer limit of the study area, about 190 metres north of the construction footprint. Given the distance from the construction footprint, no impact to this item anticipated.

There are three unlisted heritage items that are located within 200 metres of the construction footprint:

- The site of the former Spotted Dog Inn, which has been assessed as having local heritage significance (Extent Heritage Pty Ltd, 2020: 635). It is assessed that intact archaeological remains of the Spotted Dog Inn are unlikely to remain extant in this area and therefore no impact is anticipated for this site. However, the procedure from the *EMF-HE-PR-076 Unexpected Heritage Items Procedure 2022* (Transport for NSW, 2022) would be implemented for the proposal and followed if archaeological deposits or remains are encountered in the vicinity of this site
- The remains of the former South Creek bridge are located within the construction footprint and have been assessed as having local heritage significance (Extent Heritage Pty Ltd, 2020a). While the proposal would include the construction of a new twin bridge over South Creek (including an eastern abutment), the proposed structures would not directly encroach on the remains as they would be located about 15 metres away (subject to detailed design). Detailed design is to avoid direct encroachment and impact to the remains of the former South Creek bridge; however, if direct impacts are anticipated, a detailed archaeological recording would be required
- As per the Noise and Vibration Assessment Report (refer to Appendix E of the REF), the remains of the former South Creek bridge are located within minimum working distances for cosmetic damage and would be at risk of damage from construction work. However, damage to heritage and other structures is unlikely to occur when management measures have been implemented appropriately. This includes taking attended vibration measurements to determine site specific safe working distances.
- McGarvie Smith Farm is partially located within the construction footprint and has been found to have local heritage significance (Heritage NSW, 2008). However, the construction footprint would be about 500 metres to the south-east of buildings of heritage significance associated with this heritage item and, therefore, no impacts to this item's heritage significance are expected.

It is also noted that although unlikely, the wider area has a long non-Aboriginal settlement history and, as a consequence, archaeological deposits are possible within the construction footprint. The following recommendations have been made to avoid or protect heritage values and to minimise or mitigate heritage impacts:

- If any archaeological deposits are uncovered during construction, they would be managed through the Transport for NSW *EMF-HE-PR-076 Unexpected Heritage Items Procedure 2022* (Transport for NSW, 2022), in accordance with the environmental safeguards identified in Section 10.0
- All contractors would be advised by way of induction and toolbox talks of the presence of nearby heritage, the potential for archaeological deposits to be present and the provisions and responsibilities required in the Transport's *EMF-HE-PR-0076 Unexpected Heritage Items Procedure 2022* (Transport for NSW, 2022), in accordance with environmental safeguard GEN4 in Section 7.2 of the REF.

1.0 Introduction

Elizabeth Drive is the main east-west corridor between Liverpool and surrounding suburbs. Between Badgerys Creek Road, Badgerys Creek, to the east of Duff Road, Cecil Hills, Elizabeth Drive is predominantly a two lane undivided road, with no footpath and no median.

Future projected and planned growth in this region of Western Sydney is expected with the planned development of the Western Sydney Airport (WSA). It is projected that an expansion of industrial and commercial precincts would be prompted in response to the development of the WSA precinct, known as the Western Sydney Aerotropolis, as well as related planned land releases for residential precincts and employment zones in the area.

This projected growth would require the upgrade of Elizabeth Drive to provide increased capacity between the existing and planned road corridors in the surrounding area, and to support the projected and planned development of the Western Sydney Aerotropolis.

1.1 Proposal overview

Transport for NSW (Transport) proposes to upgrade about 7.8 kilometres of Elizabeth Drive between Badgerys Creek Road near the future M12 Motorway and about 600 metres east of Duff Road at Cecil Hills. The construction footprint, which comprises both the construction and operational footprint for the proposal, spans three Local Government Areas (LGAs) – Penrith City Council to the north and west, Liverpool City Council to the south and Fairfield City Council to the north-east.

The location and extent of the proposal is shown on Figure 1-1.

**FIGURE 1-1:
LOCATION OF THE PROPOSAL**



- Legend**
- Construction footprint
 - Operational footprint
 - LGA boundary
 - Road design
 - Primary road
 - Local road

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1.2 Purpose of this technical report

This report provides an assessment of the potential non-Aboriginal heritage impacts associated with the proposal and has been prepared to inform the review of environmental factors (REF). It contributes to fulfilling the requirements of Section 5.5 of the *Environmental Planning and Assessment Act 1979* (EP&A Act) which requires that Transport examines and takes into account to the fullest extent possible, all matters affecting or likely to affect the environment by reason of the activity.

2.0 Proposal description

Key features of the proposal (subject to detailed design) include:

- Upgrade of Elizabeth Drive from a two-lane rural road, to a four-lane road (two lanes in each direction) with provision of a central median to allow for future upgrade to six lanes
- Signalisation of intersections along Elizabeth Drive: Luddenham Road, Martin Road, Western Road, Devonshire Road, Salisbury Ave, Mamre Road, Range Road and Duff Road
- Replacement of three twin bridges along Elizabeth Drive over Badgerys Creek, South Creek and Kemps Creek
- Active transport provision along the full corridor with the inclusion of shared paths along both sides of the Elizabeth Drive corridor
- Inclusion of public transport infrastructure with bus priority at intersection and bus stops facilities
- New stormwater drainage infrastructure
- Property acquisitions and adjustments on both sides of Elizabeth Drive and some side roads.
- Relocation/adjustment of existing utilities.

The following four temporary construction ancillary facilities would be established to support construction of the proposal:

- Western Road (construction ancillary facility 1) – located about 200 metres south of the Elizabeth Drive and Western Road intersection on the western side
- Bill Anderson Reserve (construction ancillary facility 2) – located on the southern side of the Elizabeth Drive within Bill Anderson Reserve
- Salisbury Avenue (construction ancillary facility 3) – located about 100 metres north of the Elizabeth Drive and Salisbury Avenue intersection on the eastern side
- Mamre Road (construction ancillary facility 4) – Located 500 about metres north of the Elizabeth Drive and Mamre Road intersection on the eastern side.

Each construction ancillary facility may include the following:

- Establishment of site office/s, amenities, and temporary infrastructure, such as fencing and car parking areas
- Laydown and storage areas, and delivery of plant, equipment and materials
- Secure and bunded storage areas for re-fuelling and chemical storage
- Concrete batching plant
- Material crushing
- Stockpiling areas and spoil management (topsoil, excavated natural material, contaminated material). Stockpile locations would be determined during subsequent design stages using the criteria set out in the Stockpile Site Management Guideline (RMS, 2015).

Construction of the proposal would involve the following general activities:

- Site establishment including set up of construction ancillary facilities and installation of environmental protection controls, including around creek areas
- Utility adjustments, relocations and replacements, where required
- Demolition of existing buildings/structures
- Property adjustments (eg adjustments to fencing, property accesses)
- Vegetation removal
- Earthworks and drainage work

- Adjustments to existing farm dams within the construction footprint, including dewatering and re-shaping where required
- Bridge work over Badgerys Creek, South Creek and Kemps Creek, including installation of temporary diversion (if required) and temporary creek crossing, construction of new twin bridge structures and demolition/removal of the existing bridges
- Elizabeth Drive upgrade roadwork, including intersections with local roads and walking and cycling infrastructure
- Landscaping and finishing work.

Subject to detailed design and construction planning, construction of the proposal is anticipated to take about 48 months to complete.

3.0 Methodology

This section describes the method of assessment used in this technical assessment report, and also outlines the legislation, guidelines and policy that are relevant to the assessment.

3.1 Method of assessment

This non-Aboriginal Heritage Impact Assessment (HIA) has been carried out in accordance with *Assessing Heritage Significance* (NSW Heritage Office, 2001) and *Statements of Heritage Impact* (NSW Heritage Office & Department of Urban Affairs & Planning, 2002). The assessment methodology has included:

- Review of proposal general arrangement drawings and design reports
- Review of the following key documents:
 - Heritage register listings
 - Historic plans
 - Previous reports and other relevant documentation
- Background research into the historical development of the construction footprint and surrounding areas using the historic plans, historical photographs, newspapers and other primary and secondary historical sources as relevant and referenced in Section 5.3
- Site inspection on 17 June 2022 by AECOM staff assessing the existing road and adjoining properties along with the existing character of the construction footprint and surrounding land uses. Note: all photographs within this report were taken during the site inspection unless otherwise stated
- Significance assessment of heritage items in accordance with *Assessing Heritage Significance*
- Impact assessment of any direct or indirect construction and/or operational impacts to identified heritage significance
- Review of relevant projects in the area and their impact on heritage to determine conclusions regarding cumulative impacts on non-Aboriginal heritage
- Summary of Statement of heritage impact, as assessed against the criteria outlined in the NSW Heritage Division guidelines
- Recommendation of safeguards and management measures to safeguard non-Aboriginal heritage from potential impacts of the proposal.

3.2 Study area

To capture the relevant non-Aboriginal heritage values and themes of potential impact by the proposal, the study area includes:

- The construction footprint (refer Figure 1-1)
- A 200-metre assessment buffer around the construction footprint
- Adjoining properties (including full extent of property where it extends outside the 200-metre buffer).

The study area is shown in Figure 3-1.

3.3 Report limitations

The purpose of this report is to identify and assess historic heritage and archaeological potential that might be impacted by the proposal. Predictions have been made within this report about the probability of subsurface archaeological materials occurring within the site, based on surface indications and environmental contexts. However, it is possible that materials may occur in areas without surface

indications and in any environmental context. Should subsurface archaeological materials be uncovered during construction, these would be addressed in accordance with the *EMF-HE-PR-076 Unexpected Heritage Items Procedure 2022* (Transport for NSW, 2022).

This report is based on the concept design and is subject to detailed design. It is noted that during detailed design, details of the proposal may change or be refined. Further heritage assessment may be required to assess the potential additional impacts to heritage during detailed design as outlined in Section 10.0.

A summary of the statutory requirements regarding historical heritage is provided in Section 4.0. The summary is provided based on the experience of the authors with the heritage system in Australia and does not purport to be legal advice. It should be noted that legislation, regulations and guidelines change over time and users of the report should satisfy themselves that the statutory requirements have not changed since the report was written.



Figure 3-1 Study Area

4.0 Statutory context

A number of planning and legislative documents govern how heritage is managed in NSW and Australia. The following section provides an overview of the requirements under each as they apply to the proposal.

4.1 Commonwealth legislation

4.1.1 Environment Protection and Biodiversity Conservation Act 1999

The Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) defines 'environment' as both natural and cultural environments and therefore includes Aboriginal and non-Aboriginal historic cultural heritage items. Under the EPBC Act, protected heritage items are listed on the National Heritage List (NHL) (items of significance to the nation) or the Commonwealth Heritage List (CHL) (items belonging to the Commonwealth or its agencies). These two lists replaced the Register of the National Estate (RNE). The RNE has been suspended and is no longer a statutory list; however, it remains as an archive.

Under Part 9 of the EPBC Act, any action that is likely to have a significant impact on a matter of National Environmental Significance (known as a controlled action under the EPBC Act), may only progress with approval of the Commonwealth Minister for the Environment. An action is defined as a project, development, undertaking, activity (or series of activities), or alteration. An action would also require approval if:

- It is undertaken on Commonwealth land and would have or is likely to have a significant impact on the environment on Commonwealth land
- It is undertaken by the Commonwealth and would have or is likely to have a significant impact.

4.2 State legislation

4.2.1 Environmental Planning and Assessment Act 1979

The *Environmental Planning and Assessment Act 1979* (EP&A Act) allows for the preparation of planning instruments to direct development within NSW. This includes Local Environmental Plans (LEP), which are administered by local government and contain provisions to guide land use and the process for development applications. LEPs usually include clauses requiring that heritage be considered during development applications and a schedule of identified heritage items be provided. The EP&A Act also allows for the gazettal of State Environmental Planning Policies (SEPP).

4.2.2 State Environmental Planning Policy (Transport and Infrastructure) 2021 (Transport and Infrastructure SEPP)

State Environmental Planning Policy (Transport and Infrastructure) 2021 (Transport and Infrastructure SEPP) aims to facilitate the effective delivery of infrastructure across the State.

Clause 2.108 of the Transport and Infrastructure SEPP permits development on any land for the purpose of a road or road infrastructure facilities to be carried out by or on behalf of a public authority without consent. As the proposal is for road and road infrastructure facilities and is to be carried out by Transport as a public authority, it is permissible without development consent and can be assessed under Division 5.1 of the EP&A Act.

Clause 2.11 of the Transport and Infrastructure SEPP applies to infrastructure developments carried out by, or on behalf of, a public authority, if the development is likely to impact a local heritage item or heritage conservation area (other than a heritage item that is also a State heritage item). A public authority, or person/s acting on behalf of a public authority, must not carry out a development to which clause 2.11 applies, unless an assessment of the proposed impact has been prepared and forwarded to the local government of the area for comment. Comments received within 21 days must be taken into consideration. Consultation has been carried out with Fairfield City Council, Penrith City Council and Liverpool City Council in accordance with the Transport and Infrastructure SEPP and is documented in Chapter 5 (Consultation) of the REF.

4.2.3 State Environmental Planning Policy (Precincts – Western Parkland City) 2021

The proposal is entirely situated within land subject to the State Environmental Planning Policy (Precincts-Western Parkland City) 2021 (WPCSEPP). The WPCSEPP includes planning controls that would enable the land within the Western Sydney Aerotropolis to be developed for aviation services, and aims to facilitate development in the Western Sydney Aerotropolis in accordance with the Western Sydney Aerotropolis Plan. The WPCSEPP requires each precinct of the Western Sydney Airport (WSA) to have a precinct plan that sets out the strategic vision for, the proposed land uses in, and the performance criteria for development in the precinct.

Clause 4.26 of the WPCSEPP requires consent for any development with the potential to impact heritage items and/or archaeological sites. However, while roads are permissible with development consent in all zones, the Transport and Infrastructure SEPP operates to remove these consent requirements.

4.2.4 Heritage Act 1977

The NSW *Heritage Act 1977* (as amended) was enacted to conserve the environmental heritage of NSW. Under Section 32, places, buildings, works, relics, movable objects or precincts of heritage significance are protected by means of either Interim Heritage Orders (IHO) or by listing on the NSW State Heritage Register (SHR). Items that are assessed as having State heritage significance can be listed on the SHR by the Minister on the recommendation of the NSW Heritage Council.

Under Section 170 of the *Heritage Act 1977*, NSW Government agencies are required to maintain a register of heritage assets. The register places obligations on the agencies, but not on non-government proponents, beyond their responsibility to assess the impact on surrounding heritage items.

Archaeological features and deposits are afforded statutory protection by the 'relics provision'. Section 4(1) of the *Heritage Act 1977* (as amended 2009) defines 'relic' as follows:

any deposit, artefact, object or material evidence that:

- (a) relates to the settlement of the area that comprises New South Wales, not being Aboriginal settlement, and*
- (b) is of State or local heritage significance.*

The 'relics provision' requires that no archaeological relics be disturbed or destroyed without prior consent from the Heritage Council of NSW. Therefore, no ground disturbance works may proceed in areas identified as having archaeological potential without first obtaining an Excavation Permit pursuant to Section 140 of the *Heritage Act 1977*, or an Archaeological Exception under Section 139 of the *Heritage Act 1977*.

The Heritage Council must be notified of the discovery of a relic under Section 146 of the *Heritage Act 1977*.

4.3 Local environmental plans

The proposal forms the northern boundary of the Liverpool local government area (LGA). To the north of the proposal as far east as Mamre Road is the Penrith LGA, and to the east of Mamre Road, north of the proposal is the Fairfield LGA. The relevant LEPs are discussed below.

4.3.1 Fairfield Local Environmental Plan 2013

Part 5, Section 5.10 of the *Fairfield Local Environmental Plan 2013* (Fairfield LEP 2013) deals with heritage conservation within the area covered by this LEP. All heritage items listed in the LEP are included in Schedule 5. Section 5.10 of Fairfield LEP 2013 states:

(1) The objectives of this clause are as follows:

- a. to conserve the environmental heritage of Fairfield*
- b. to conserve the heritage significance of heritage items and heritage conservation areas, including associated fabric, settings and views,*
- c. to conserve archaeological sites,*

- d. *to conserve Aboriginal objects and Aboriginal places of heritage significance.*
- (2) *Development consent is required for any of the following:*
- a. *demolishing or moving any of the following or altering the exterior of any of the following (including, in the case of a building, making changes to its detail, fabric, finish or appearance):*
- i. *a heritage item,*
 - ii. *an Aboriginal object,*
 - iii. *a building, work, relic or tree within a heritage conservation area,*
- b. *altering a heritage item that is a building by making structural changes to its interior or by making changes to anything inside the item that is specified in Schedule 5 in relation to the item,*
- c. *disturbing or excavating an archaeological site while knowing, or having reasonable cause to suspect, that the disturbance or excavation will or is likely to result in a relic being discovered, exposed, moved, damaged or destroyed,*
- d. *disturbing or excavating an Aboriginal place of heritage significance,*
- e. *erecting a building on land:*
- i. *on which a heritage item is located or that is within a heritage conservation area, or*
 - ii. *on which an Aboriginal object is located or that is within an Aboriginal place of heritage significance,*
- f. *subdividing land:*
- i. *on which a heritage item is located or that is within a heritage conservation area, or*
 - ii. *on which an Aboriginal object is located or that is within an Aboriginal place of heritage significance.*

4.3.2 Penrith Local Environmental Plan 2010

Part 5, Section 5.10 of the *Penrith Local Environmental Plan 2010* (Penrith LEP 2010) deals with heritage conservation within the area covered by this LEP. All heritage items listed in the LEP are included in Schedule 5. The clauses listed under Part 5, Section 5.10 of the Penrith LEP 2010 are identical to the clauses specified in Part 5, Section 5.10 of the Fairfield LEP 2013 (described in Section 4.3.1).

Under clause 4.4 (2) of the WPCSEPP, LEP provisions do not apply to the land subject to the WPCSEPP. However, the heritage conservation provisions of the LEPs and their corresponding schedules have been examined in this assessment for completeness.

4.3.3 Liverpool Local Environmental Plan 2008

Part 5, Section 5.10 of the *Liverpool Local Environmental Plan 2008* (Liverpool LEP 2008) deals with heritage conservation within the area covered by this LEP. All heritage items listed in the LEP are included in Schedule 5. The clauses listed under Part 5, Section 5.10 of the Liverpool LEP 2008 are identical to the clauses specified in Part 5, Section 5.10 of the Fairfield LEP (described in Section 4.3.1).

5.0 Existing environment

5.1 Elizabeth Drive description

Within the construction footprint, Elizabeth Drive is a dual-lane carriageway linking the M7 Motorway (to the east) and Badgerys Creek (to the west). It is bound to its north largely by semi-rural properties and to its south by the WSA (under construction). The road is a major arterial route linking major roads and motorways. Movement of large plant related to the construction of the WSA has led to temporary traffic control measures, which in turn has led to intermittent high traffic volume.

5.2 Heritage database searches

A search of heritage databases was carried out for the study area on 7 July 2022, as outlined below and summarised in Table 5-1:

- World Heritage List
- National Heritage List
- Commonwealth Heritage List
- Register of the National Estate (non-statutory)
- State Heritage Register
- Transport Asset Holding Entity (TAHE) Section 170 Heritage and Conservation Register
- Liverpool LEP 2008 – Schedule 5
- Penrith LEP 2010 – Schedule 5
- Fairfield LEP 2013 – Schedule 5
- State Environmental Planning Policy (Precincts-Western Parkland City) 2021 (WPCSEPP), Schedule 2.

While Elizabeth Drive is not listed as a heritage item on any heritage database, the Inter-war Spanish Mission House, within the study area is listed as a local item in Schedule 5 of Fairfield LEP 2013.

No heritage conservation areas were identified within the study area.

Table 5-1 Results of heritage database searches

Heritage list	Listed items within the study area	
	Item	Level of significance
World Heritage List	Nil	N/A
National Heritage List	Nil	N/A
Commonwealth Heritage List	Nil	N/A
Register of the National Estate (non-statutory)	Nil	N/A
State Heritage Register	Nil	N/A
TAHE Section 170 Heritage and Conservation Register	Nil	N/A
Liverpool LEP 2008	Nil	N/A
Penrith LEP 2010 Schedule 5	Nil	N/A
Fairfield LEP 2013	Inter-war Spanish mission house	Local
WPCSEPP Schedule 2	McGarvie Smith Farm (Significant buildings located within the curtilage of the item are located at some distance (about 500 m) outside the construction footprint and separated by an access track)	Local

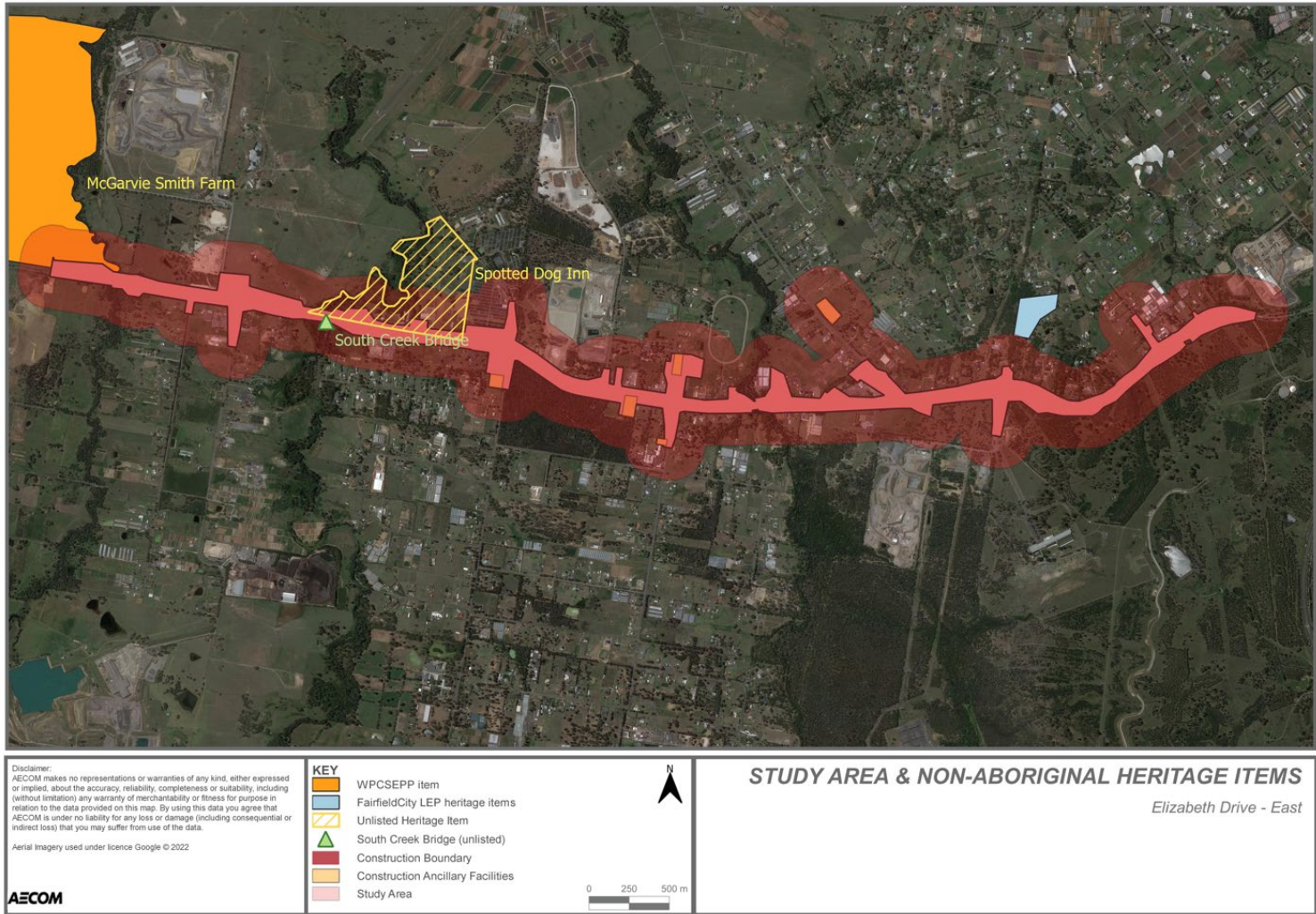


Figure 5-1 Study area and non-Aboriginal heritage items

5.3 Literature review

5.3.1 Historical context

The following sections outline the development of Elizabeth Drive and the adjoining areas (study area). This information has been used to understand the historical context in which it developed and the subsequent factors that have influenced its development.

Early European Settlement

Large land grants began to be made in the study area from the earliest years of the Colony. In the first decade of 19th century, the study area, known as Bringelly, was mostly unsettled. However, a number of floods along the Hawkesbury-Nepean in 1809 destroyed grain crops prompting Governor Macquarie to grant large tracts of land to free settlers or military officers in the Bringelly area (Morris & Britton, 2000:13).

Initial grantees included James Badgery (804 acres in 1809 at South Creek), Robert Low (1,000 acres in 1812 at Bringelly) and John Blaxland (6,710 acres of land in 1813 which he named Luddenham Estate' – about 180 metres west of the study area. Smaller grants were made to Sarah Howe (1.8 kilometres south), Edward Powell (immediately to the south of the study area), Ellis Bent, D'Arcy Wentworth and Thomas Laycock (all located south-west of the proposal). The area struggled in the mid-nineteenth century from a lack of workers and drought from 1838-1840 and then economic depression in 1841. Between 1859-1864 many of the larger estates were subdivided into smaller farming allotments (such as the Luddenham Estate) and many of the road alignments existing today were created (Department of Infrastructure and Regional Development, 2016: 434).

The proposal is within or adjacent to three of those land grants made by Governor Macquarie

- James Badgery's Exeter Farm
- Antony Kemp – Mount Vernon
- Thomas & John Wylde – Cecil Park.

Land grants

James Badgery – "Exeter Farm"

As previously mentioned, James Badgery held one of the first land grants within the area and became a prominent member of the community with his name eventually being adopted for the suburb of Badgerys Creek. Badgery was an established pastoralist and miller with a good education who came to the colony in 1799 and was employed by William Paterson. The land at Bringelly was not his first farming venture in the colony. He first leased 11 acres on the Hawkesbury and used proceeds from this to build a mill on the land. By 1801 he had built up the land to have a bakery, mill-house, dwelling and pigsty. Due to his newfound wealth, he was granted 100 acres at Agnes Banks near Yarramundi Lagoon in 1803 (RPS Manidis Roberts Pty Ltd, 2016: 21).

In 1808 Badgery with other Hawksbury farmers supported the removal of Governor Bligh and in 1809 he was granted a 840 acre plot at South Creek (Donald, 1996:3). He named the land granted to him north of Elizabeth Drive (formerly Orphan School Road) Exeter Farm. The creek running through the farm was later named Badgerys Creek.

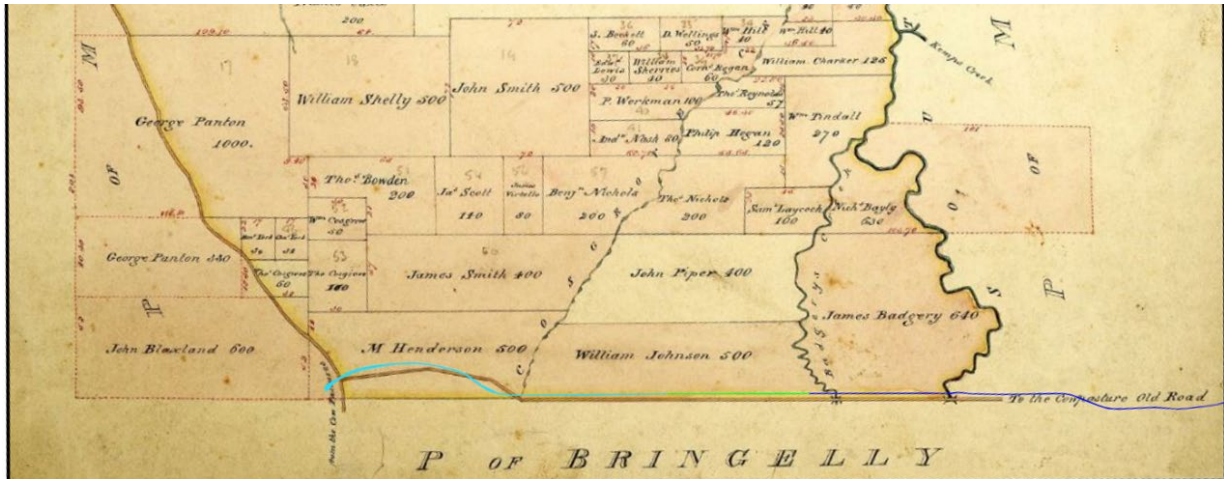


Figure 5-2 Portion of the parish of Claremont – study area in the south indicated in dark blue. James Badgery’s land grant visible in the north (Source: Parish map of Claremont, Historic Land Records Viewer)

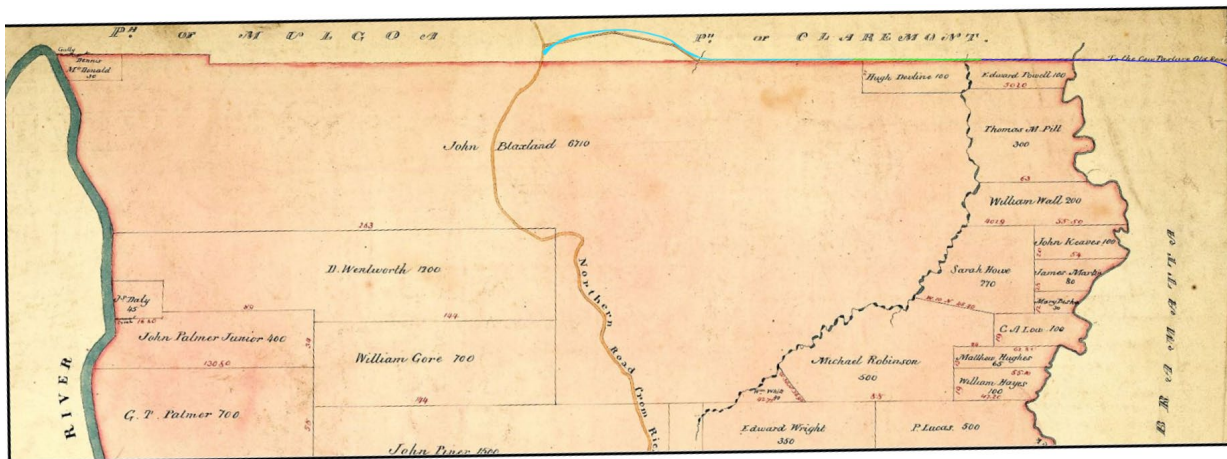


Figure 5-3 Parish of Bringelly – study area in the north indicated in dark blue. smaller land grants include Hugh Devline, Edward Powell, Thomas M. Pitt with John Blaxland holding the majority of land south of the construction footprint. (Source: Parish map of Bringelly, Historic Land Records Viewer)

In 1810 Badgery’s grant was reduced to 640 acres (as shown on Figure 5-2) after he was forced to reapply for it under the new Governor, Lachlan Macquarie. Badgery slowly increased this by purchasing plots to the south to culminate in a 1,300 acre holding spanning north and south of Elizabeth Drive (Donald, 1996:9) on land shown in Figure 5-2. Badgery initially built a wattle-and-daub structure on his land but quickly replaced it with a brick farmhouse (Figure 5-4). Badgery’s farm was soon very successful, breeding cattle, racehorses and workhorses as well as producing grain. In 1815 he constructed Badgerys Creek Road from Exeter Farm to the Nepean. James Badgery died a successful farmer in 1827 at Exeter Farm leaving a vast estate of 1,900 acres to his family (RPS Manidis Roberts Pty Ltd, 2016: 23).



Figure 5-4 Exeter Farm brick house constructed by James Badgery, 1776 (Source: Liverpool City Library, Heritage Library Collection, 1995:-12)

Remains of the former South Creek bridge

Remains of the former South Creek bridge, located at the southern extent of James Badgery's Exeter Farm, is within the construction footprint and about 15 metres from the proposal design (subject to detailed design) (see Figure 5-5). The date for construction of the bridge is not known. While it appears on plans for the area the date for these maps is also unknown (see Figure 5-2). However, in plans identifying James Badgery's estate as consisting of 640 acres, we can assume it was after 1810 when Badgery's holdings were reduced from 840 acres by Lachlan Macquarie to 640 acres (Donald, 1996:9). Therefore, it is assumed the bridge was constructed in the late eighteenth/early nineteenth century.

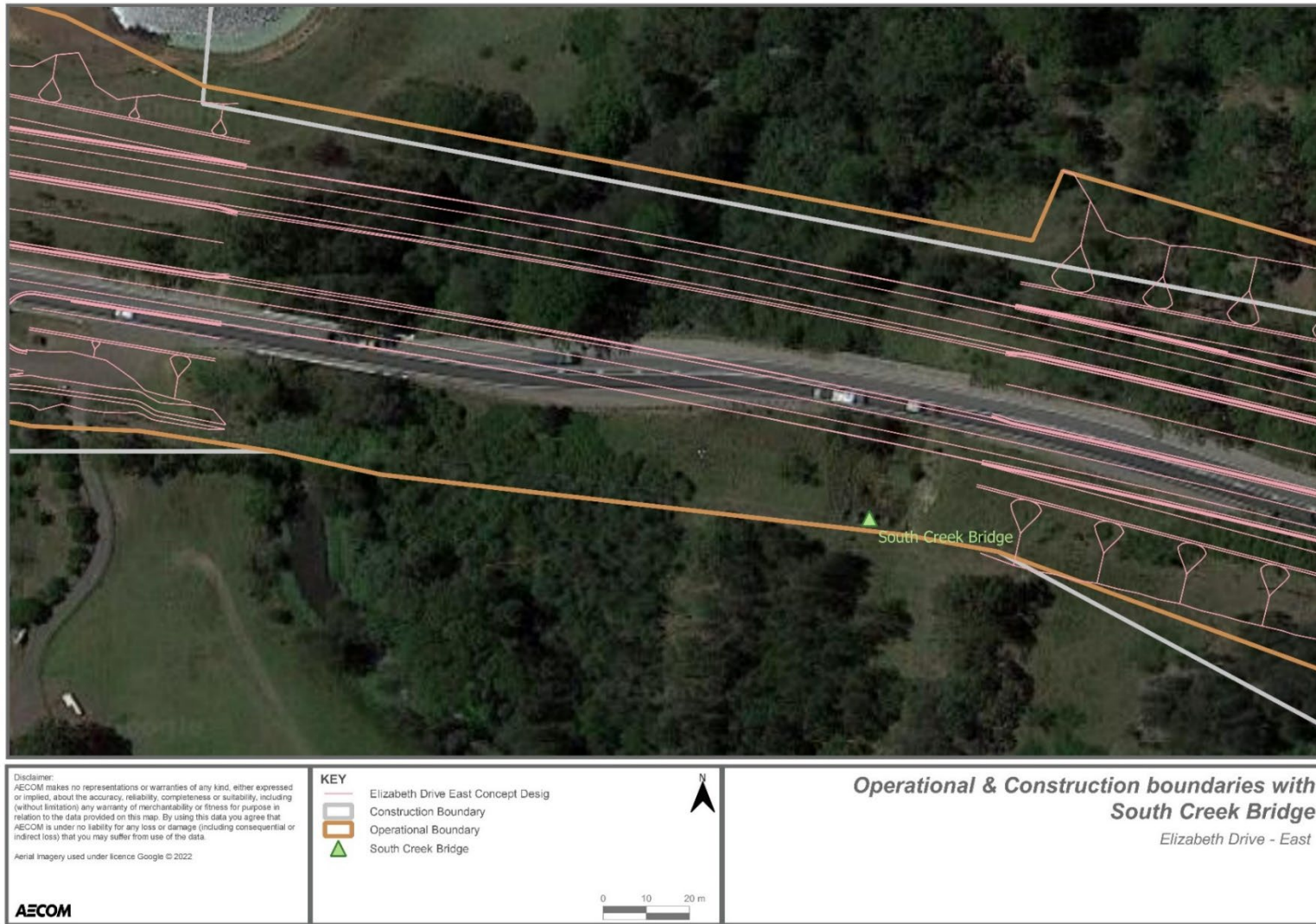


Figure 5-5 Remains of the former South Creek bridge with operational and construction boundaries

James Badgery (Jnr) – “The Spotted Dog”

Three years after his father’s death, James Badgery Jnr was still living at Exeter Farm. In the years 1839 and 1840, he was the licensee of the “Spotted Dog Inn”, at South Creek, near Penrith.

Located five miles (about eight kilometres) from Liverpool on what would become known as Orphan School Road (Elizabeth Drive) and to the east of South Creek, little is known of the type of structure the inn comprised. Badgery took over the licence from Alfred Martin and held it until 1841 (St Marys & District Historical Society Inc, 2013).

The Spotted Dog was a well-known local landmark for many years after an article in 1882 noted that the local member had been successful in securing a sum of money from the Government for “...a bridge at “The Spotted Dog” and Orphan School Road” (Nepean Times, 1882:4). In 1894, the “Spotted Dog” was one of the five mail collection points serving the mail route between Badgerys Creek and St Marys (the other four being the homesteads known as Erskine Park, Fleurs, Littleham and Mount Vernon) (Nepean Times, 1894:3). The Spotted Dog was also used for community purposes in the late 19th and early 20th centuries. For example, the school children of Kemps Creek held numerous celebrations there, including one in December 1902:

The Annual Concert by the pupils of the Kemp’s Creek Public School will be held at Oak Farm, Old Orphan School-Road (generally known as “the Spotted Dog”) on Tuesday evening...

(Nepean Times, 1902:4)

In 1907, it was reported:

Oak Farm – formerly better known as the Spotted Dog – has been purchased, and the owner proposes going in for sheep.

(Nepean Times, 1907:3)

A Cultural Heritage Assessment (Extent Heritage,2020) found the site of the Spotted Dog Inn could be located somewhere within 1569-1587, 1589 and 1605-1667 Elizabeth Drive, Badgerys Creek (Lots 1 and 3 DP255566 and Lot 21 DP601022) (refer Figure 5-6). The southern 280 metres of the site is within the study area and construction boundary for the proposal. However, as the road alignment for Elizabeth Drive (Orphan School Road) predates the Spotted Dog Inn, archaeological material associated with the inn is unlikely to be within the road corridor. Given the agricultural and commercial development in the area, surviving archaeological deposits are unlikely.

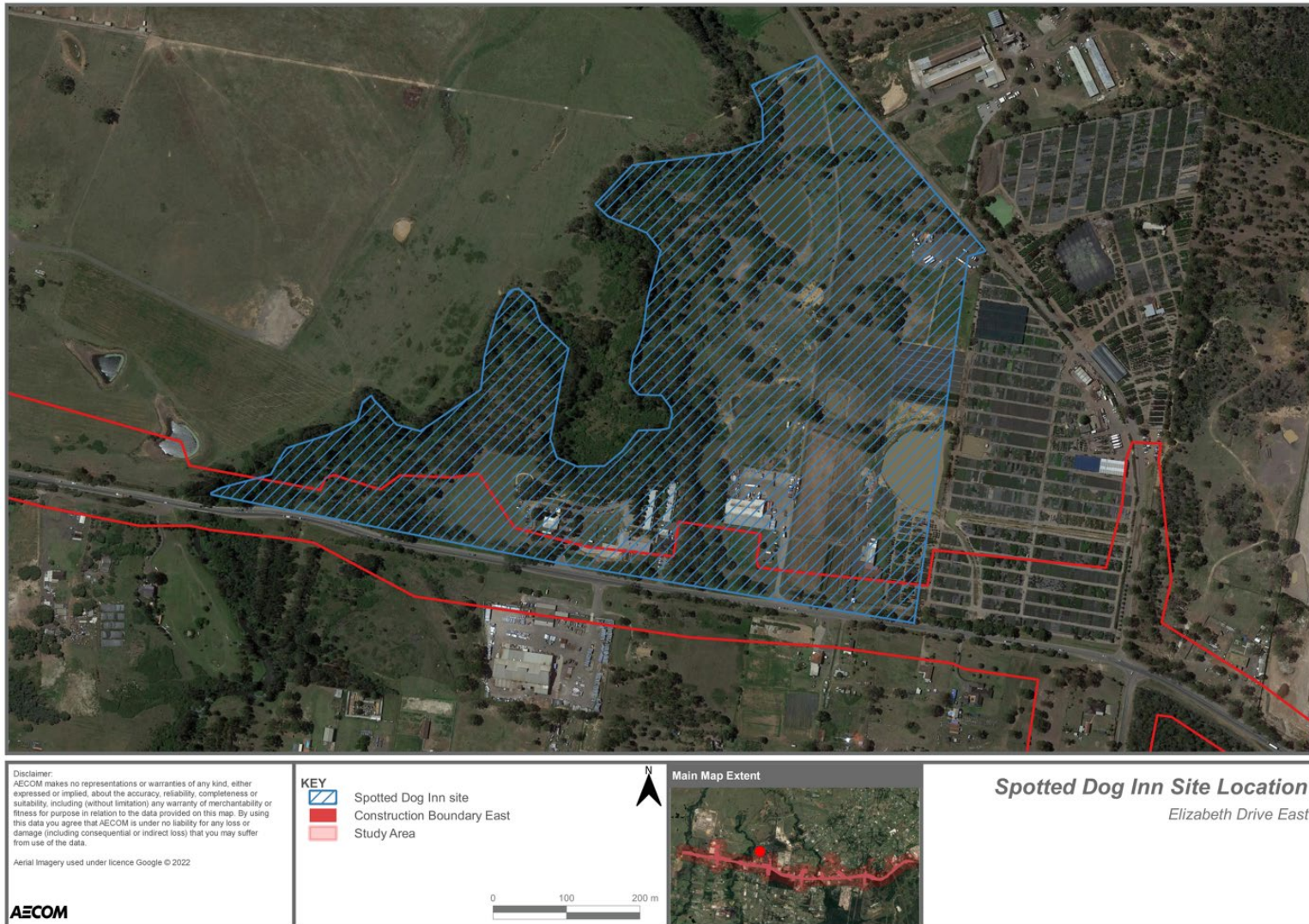


Figure 5-6 Spotted Dog Inn site location

Antony Kemp – Mount Vernon

In 1809 Anthony Kemp was given an initial grant of 500 acres in the Parish of Cabramatta (Figure 5-7) and another of 300 acres in 1820 which he named Mount Vernon after George Washington’s home, a person he admired greatly. Like James Badgery, Kemp received his grant after supporting the deposition of Governor William Bligh commonly known as the “Rum Rebellion”. The land produced wheat, timber and fruit. However larger grants such as Mount Vernon were subdivided in the late 19th century. Anthony Kemp eventually moved to Tasmania where he died in 1868 (Roads and Maritime Services, 2019: 17).

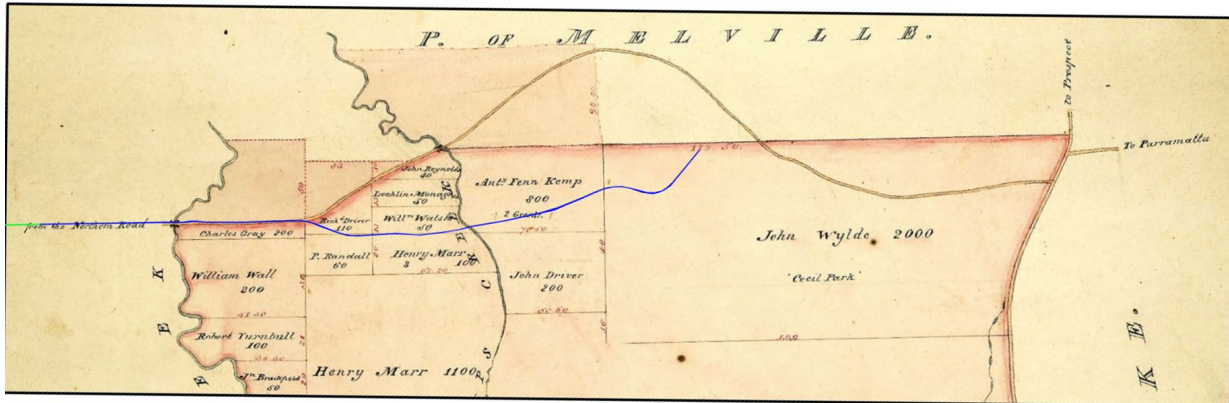


Figure 5-7 Portion of Cabramatta parish map – the study area is indicated in dark blue with Anthony Kemp’s grant just north of Elizabeth Drive (Source: Parish map of Cabramatta, Historic Land Records Viewer)

Kemp’s name was eventually adopted for the area in a similar manner to Badgery’s. Kems Creek developed around the creek on Mount Vernon with a school being built in 1885. In 1908, St Andrews Church (now demolished) was constructed and a post office opened in 1927 (NSW Roads and Maritime Services, 2019: 18).

Thomas & John Wyld – Cecil Park

Thomas Wyld was granted 1,000 acres of land in 1817 by Governor Macquarie to the north of the study area. Wyld named his land, Macquarie Park (Figure 5-8). Two thousand acres were also granted to Thomas Wyld’s son, John, who called his land Cecil Hills (see Figure 5-7 & Figure 5-8). These grants were located opposite each other on either side of Elizabeth Drive (NSW Roads and Maritime Services, 2019).



Figure 5-8 Portion of Melville parish map showing Thomas Wyld’s grant north of the study area in dark blue (source: Parish map of Melville, Historic Land Records Viewer)

When Thomas Wyldie died in 1821 his grant was passed to his son and the family held the land until the late 1800s when it was subdivided into large lots in 1886 and then smaller lots in 1906. Population growth as a result of land subdivision resulted in the need for social infrastructure in the area. To this end a school was built near the corner of Elizabeth Drive and Wallgrove Road by 1898 as well as a post office in 1897 and a church in 1903 (NSW Roads and Maritime Services, 2019).

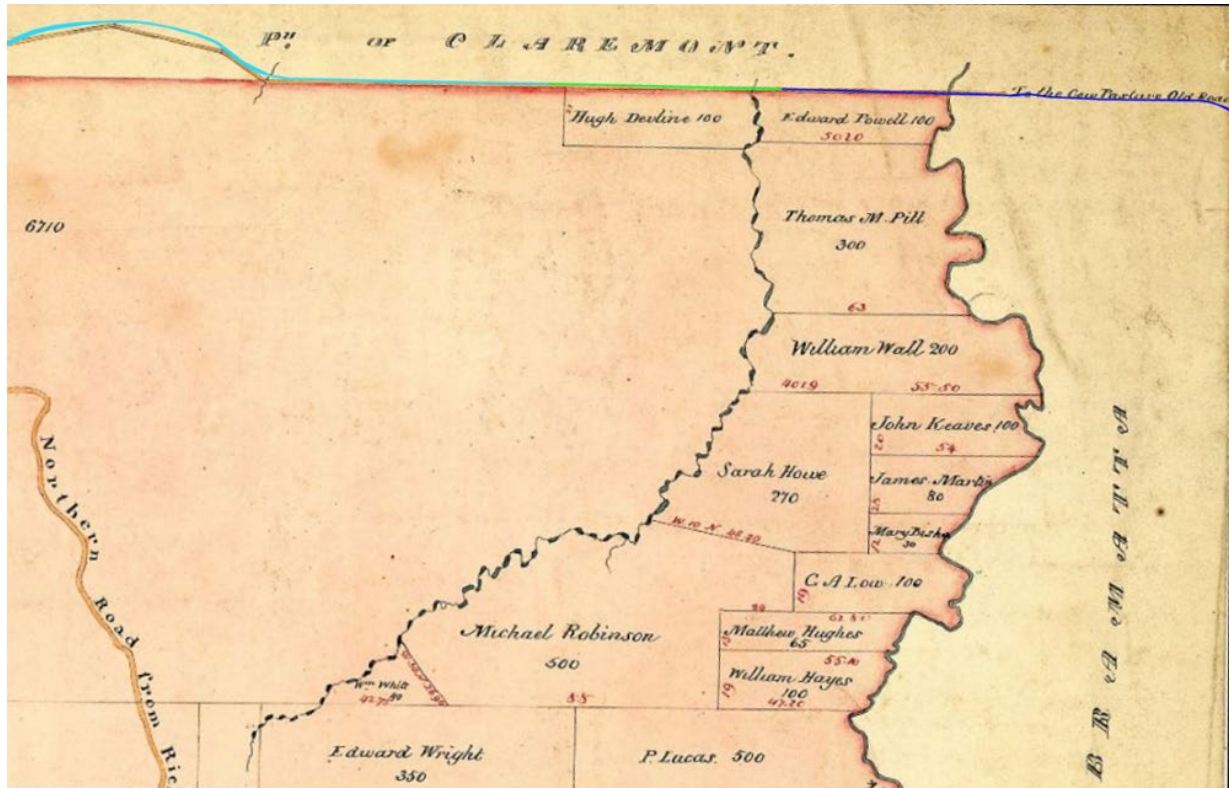


Figure 5-9 Portion of Bringelly parish map displaying smaller land holders south of the study area (source: Parish map of Bringelly, Historic Land Records Viewer)

Inter-war Spanish Mission House

The Inter-war Spanish Mission House (the house) is a rare example of the Spanish Mission architectural style which was prevalent in the Inter-War period (Ltd, 1993: 16). The prominent octagonal tower is an example of this (Heritage NSW, 2009). Historic aerials from the region show that this house was constructed between 1930 and 1955 (Figure 5-10). The form of the house remained fairly consistent until the 1980s and 1990s. Between 1986 and 1998 the house was extended with a northern wing added (see Figure 5-11 and Figure 5-12). The original central portion of the house and octagonal tower remained, as well as the structure which had been present immediately to the south. However, the western end of the house was extended and new roofing was installed. Between 2005 and 2022 the southern building was also extended. The house is located within the study area, about 190 metres to the north of the construction footprint (refer Figure 5-1).



Figure 5-10 1955 aerial of the Inter-war Spanish Mission House. Study Area is shown in red (NSW Historical Imagery viewer)



Figure 5-11 1986 aerial of the Inter-war Spanish Mission House. Study Area is shown in red (NSW Historical Imagery viewer)



Figure 5-12 1998 aerial of the Inter-war Spanish Mission House. Study Area is shown in red (NSW Historical Imagery viewer)

McGarvie Smith Farm

The McGarvie Smith Farm in the western extent of the study area was established in 1936 as a collaboration between the McGarvie Institute and the University of Sydney to teach students veterinary science and animal husbandry (RPS Manidis Roberts Pty Ltd, 2016:32). Land for the McGarvie Smith Farm was purchased by the University in 1936 with funds from the McGarvie Institute and opened in 1938 (refer to Figure 5-13).

Described in 1995 as “The Badgerys Creek Centre”, it comprised the McGarvie Smith Farm and Fleurs, an adjacent 153 hectares purchased by the University in 1977. Fleurs was once the home of Nicholas Bayly and is the site of both the Fleurs Aerodrome and Fleurs Radio Telescope heritage features (refer to the Elizabeth Drive East Heritage Impact Assessment) (University of Sydney, 1995:5).



Figure 5-13 Opening of McGarvie Smith Farm in 1938 (Courtesy: University of Sydney Archives, ID G3_224_0935)

In the 1940s and 1950s, the focus of activities on the farm expanded to include the application of science to farm management. Owing to unpredictable rainfall in the Badgerys Creek area, the work of H J Geddes also became a focus:

Under Geddes a system of containing water on the farm for use during dry periods was developed. This became the basis for a system that had international application and is still in use. The facility also tested P A Yeoman's keyline design that sought to optimise irregular rainfall through gradual release into the soil by landscape design. The favourable results of the testing encouraged the wider use of the system to the extent that it became a key concept in Permaculture (Extent Heritage, 2020:95).

Other activities included experiments with fodder crops as well as the testing and refinement of irrigation equipment (Extent Heritage, 2020:95).

The McGarvie Smith Farm is located within the construction footprint, however, the significant buildings associated with the McGarvie Smith Farm are located outside the construction footprint at a distance of about 500 metres.

Development of Orphan School Road

Forming the boundary running east-west between local government areas and parishes, Elizabeth Drive has been a road since at least the 1820s. In 1826, John Blaxland placed an advertisement in the Sydney Gazette warning that although the Government had constructed two roads through his Luddenham Estate for the benefit of the public, anyone found trespassing on any other part of the Estate would be prosecuted (Blaxland, 1826:1). In 1827, a Grand Jury sitting at Liverpool heard the urgent need for the construction of bridges over a number of waterways:

"...across the new line of road leading through the populous Districts of Cabramatta and Bringelly (past Mr Badgery's), till its junction with the great North Road, on Mr Blaxland's estate, as at present on the least fall of rain the residents on that part of the South Creek have no means of getting to either Church or market" (The Australian, 1827).

A bridge gang was despatched later that month to complete "Badgerys Road through the Orphan School to Bringelly" (The Australian, 1827).

By 1835, the road still had not been named, referred to in the description of the Hundred of Bringelly as “the bridge over Kemps Creek on the road from the Cowpasture old road to the northern road” (NSW Government, 1835:347).

By the 1850s, the road had acquired the name “Orphan School Road” and ran from the Old Cowpastures Road to the Bringelly Road. For around a century, the road was a corduroy road (timber logs laid across the road corridor) and later a gravel road. Bridges were low-lying timber structures with corduroy approaches and were subject to flooding (Adams, 1960:11).

In the 1950s, sealing of the road was in progress, with construction of Warragamba Dam an important driver, as it was the quickest route from the east. However, before this could be completed, bridge crossings needed to be raised. By 1960, the road was wholly bitumen-surfaced (Adams, 1960). By this time, the road was known variously as ‘Orphan School Road’, ‘Mulgoa Road’ and ‘Cabramatta-Mulgoa Road’. Liverpool City Council announced on 11 December 1964 that by resolution of council dated 18 June 1963, that Orphan School Road/Mulgoa Road/Cabramatta-Mulgoa Road, being Main Road No. 535, was to be renamed ‘Elizabeth Drive’ (Liverpool City Council, 1964:4158).

In 1996, an Environmental Impact Statement (EIS) was prepared for the upgrade of Elizabeth Drive between Mamre Road in the east and Luddenham Road in the west. The upgrade was designed to complement the proposed Western Sydney Airport at Badgerys Creek, and included:

- Replacement of the existing two-lane road with a four-lane divided carriageway
- Excavating a cutting of up to about seven metres depth through Kemps Creek village
- Provision of service roads at Kemps Creek village and east of Mamre Road
- Provision of new bridges over Kemps, South and Badgerys Creek
- Drainage, bicycle lanes and landscaping.

Of the above works, only the bridge works over South and Badgerys Creek have been constructed to date. However, as with the most of Elizabeth Drive, these bridges are still two lanes only.

Modern Development

The Western Sydney Airport Environmental Impact Statement (2016) effectively summarises modern development within the area, as outlined below:

From the 1920s, further settlement occurred in Badgerys Creek when portions of James Badger’s early grant were subdivided under the provisions of the Soldier Settlement Act 1919. Exeter House was at that time in the ownership of the Stevens family, who later sold a portion of the Exeter estate to Ern Kent. In the 1930s, Kent sold his property to Peter Nobbs, who moved into the homestead with his family to pursue dairying. In 1936, a large area with frontage to South Creek was acquired by the Commonwealth of Australia for a CSIRO animal health research station, known as McMaster’s Field Station, which was also used for a short time as a field station for research into radio astronomy. The site was sold by CSIRO in 1996. Also in 1936, the Veterinary Department of the University of Sydney – in association with the McGarvie Smith Institute – purchased and developed a 160 hectare property at Badgerys Creek for the training of veterinary students in animal husbandry.

A number of research facilities were established at Badgerys Creek and its surrounds in the 1950s, including the Overseas Telecommunication Commission’s Bringelly Radio Receiving Station Complex and the Australian Air Force Radio Receiving Station in 1952-55. Rural land use intensified in the 1960s with the establishment of dairy and poultry farming, beekeeping, timber and market gardening operations, and horse and dog training, but the district saw little development thereafter.

The districts of Badgerys Creek, Luddenham and Bringelly retain a great deal of their former rural character. Though subdivision and development of large estates has occurred, early slab cottages, substantial homesteads, cisterns, sheds, vineyards and small rural allotments remain. Market gardens, working farms, vineyards and close-knit village communities reflect the district’s rural development.

(Department of Infrastructure and Regional Development, 2016: 436-7)

5.3.2 Review of previous assessments

Since the announcement of the WSA in 2014, multiple non-Aboriginal heritage assessments have been carried out in and around the construction footprint. These studies have primarily related to the WSA footprint and access roads in the vicinity; however, assessment of the land comprising the construction footprint has been included in most of these studies. Where relevant to the literature review of this HIA, these have been reviewed and outlined below.

M12 Non-Aboriginal Heritage Assessment Report, Jacobs Group (Australia) Pty Ltd, 2019

The M12 Non-Aboriginal Heritage Assessment Report (the assessment) was carried out by Jacobs as part of the EIS for the proposed M12 Motorway, linking the M7 Motorway with the Northern Road, with access to the WSA. The assessment covered the entirety of the M12 Motorway footprint, assessing listed and potential non-Aboriginal heritage items that may be impacted by the proposed M12 Motorway.

The assessment identified the following listed or potential items of heritage significance within the footprint of the proposed M12 road corridor:

- McGarvie Smith Farm, local heritage item listed on the WPCSEPP Schedule 2 (within construction footprint)
- Luddenham Road Alignment, local heritage item listed on the Penrith LEP 2010 Schedule 5 (outside the study area)
- McMaster Field Station, not listed, however item of potential heritage significance as identified in previous assessments (outside the study area)
- Fleurs Radio Telescope site, local heritage item on the WPCSEPP Schedule 2 (outside of study area)
- Fleurs Aerodrome, unlisted item of local heritage significance (outside of study area)
- James Badgery's Exeter Farm site, unlisted item of local heritage significance (outside of study area)
- South, Kemps and Badgerys Creek Confluence Weirs Scenic Landscape, unlisted item of local heritage significance (outside of study area).

Of these, it was concluded that construction of the proposed M12 Motorway would have a major adverse impact on the heritage value of McGarvie Smith Farm.

Of the items within or adjacent to the construction footprint, it was concluded that construction of the proposed M12 Motorway would have a major adverse impact on the heritage value of McGarvie Smith Farm and McMaster Field Station. In relation to the McGarvie Smith Farm, several buildings (6, 7 and 8; silo) will be demolished as well as an irreversible impact to the existing landscape. In relation to McMaster Field Station, several dams, modified landscape elements and trees will be demolished. In addition, it was assessed that as the proposed M12 bisects the McMaster Field Station, its entire landscape context would be destroyed.

It should be noted that both the project footprints of the M12 Motorway and this proposal footprint have the curtilage of McGarvie Smith Farm within their boundaries.

In part, it was recommended that collaboration take place between the WSA and Sydney Metro Western Sydney Airport projects, and Transport in relation to design elements and themes to develop an integrative design approach (NSW Roads and Maritime Services, 2019).

M12 Motorway – Non-Aboriginal Photographic Archival Recording Report, Artefact Heritage, 2022

The M12 Motorway – Non-Aboriginal Photographic Archival Recording Report (the report) was prepared on behalf of Transport ahead of the construction of the M12 Motorway. It comprises a photographic record of the non-Aboriginal heritage items that may be impacted by the construction of

the M12 Motorway and includes the McGarvie Smith Farm. Each site recording includes a historical background review, significance assessment, a physical description, mapping and photographs.

The archival recording of McGarvie Smith Farm indicates 13 buildings and other structural elements that are of local heritage significance. Some of these buildings are within the M12 Motorway footprint (Sheds 1 and 2, concrete silo and McGarvie Smith Farm buildings 6, 7 and 8). Three others are located outside and to the west of the M12 Motorway footprint (McGarvie Smith Farm Buildings 1, 2 and 3). McGarvie Smith Farm Buildings 10, 11 and 12 are outside and to the east of the M12 Motorway footprint and adjacent to the construction footprint.

The McGarvie Smith Farm boundary overlaps with the study area and construction boundary; however, the heritage structures recorded as part of the M12 Motorway study are about 500 metres north-west of the study area, 700 metres north-west of the construction boundary (see Figure 5-4).

Sydney Metro – Western Sydney Airport: Non-Aboriginal Heritage, Artefact Heritage, 2020

Sydney Metro – Western Sydney Airport: Non-Aboriginal Heritage assessment (the assessment) was prepared by Artefact on behalf of the Sydney Metro Authority ahead of the proposed construction of a rail link between St Marys and the WSA. The assessment covered non-Aboriginal heritage outside and within the WSA, including land comprising the construction footprint (referred to as “Off-airport construction corridor” in Artefact, 2020).

The assessment identified McGarvie Smith Farm as a listed item of heritage significance. It did not identify any additional items of potential heritage significance in the vicinity of the construction footprint. The assessment found the construction of the rail link would cause a major impact to the McGarvie Smith Farm. The assessment found that the proposed rail link passed through McGarvie Smith Farm and would cause an overall major impact through demolition of sheds and buildings 10 and 11, and an irreversible visual impact to the rural farming landscape.

It was recommended that movable heritage items be identified and assessed, and a significant fabric salvage schedule prepared by a qualified and experienced heritage specialist for McGarvie Smith Farm. This is in contradiction of the Extent and Jacobs reports (see below) that recommended (respectively) conservation and adaptive reuse within a planned landscape and collaborative planning (Artefact, 2020).

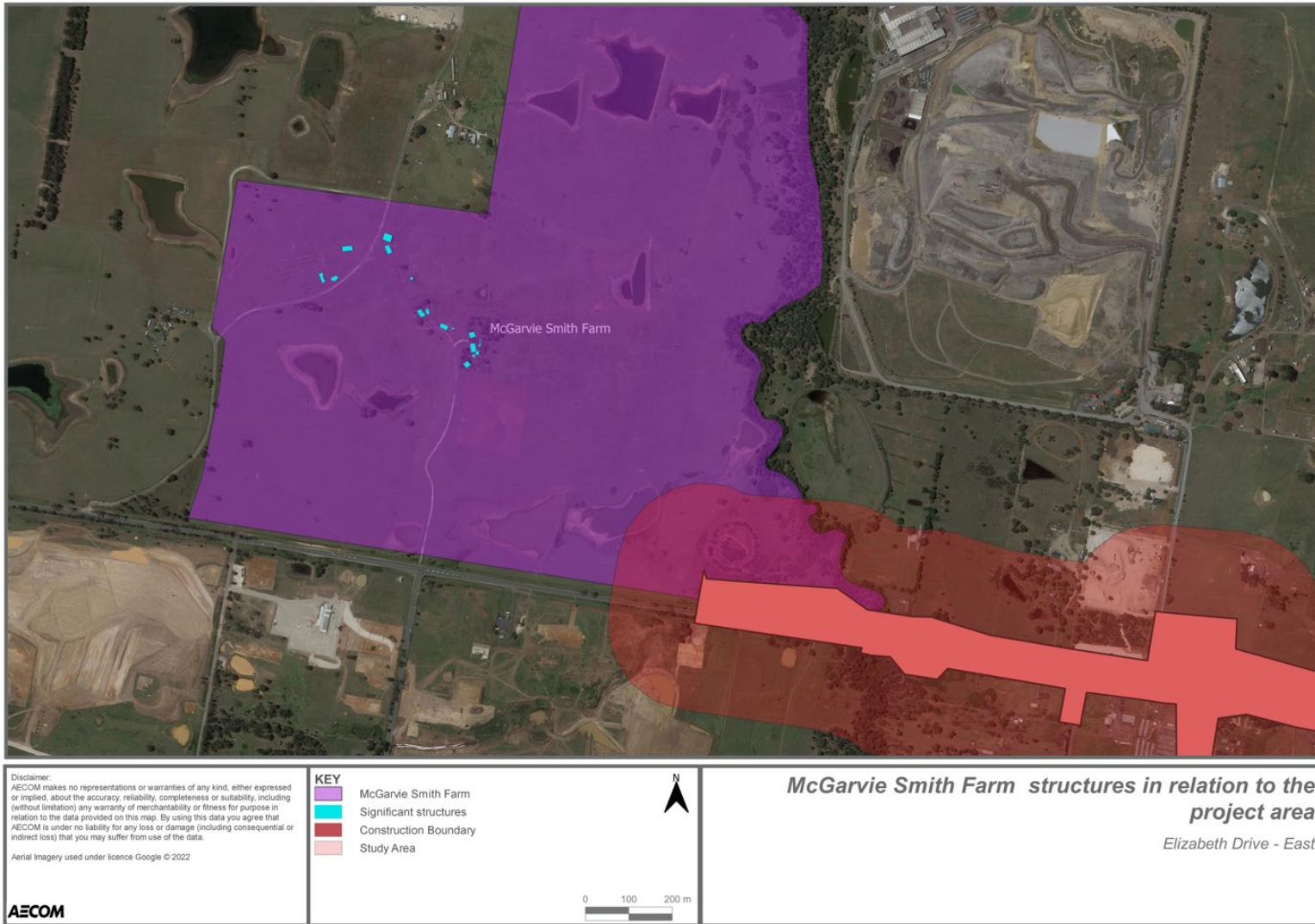


Figure 5-14 McGarvie Smith Farm buildings in relation to the construction footprint

Western Sydney Aerotropolis Initial Precincts: Draft Aboriginal and non-Aboriginal Cultural Heritage Assessment, Extent, 2020

The Western Sydney Aerotropolis Initial Precincts assessment (the assessment) was prepared to provide a strategic overview of built, Aboriginal and non-Aboriginal heritage values associated with the WSA. It comprises a high-level analysis of key heritage issues.

The following properties were identified as potentially containing State significant archaeological deposits:

- McGarvie Smith Farm – local heritage item listed on the WPCSEPP Schedule 2 (within construction footprint).
- James Badgery's Exeter Farm site – unlisted potential archaeological site of local heritage significance.

The remains of the former South Creek bridge (an unlisted heritage item) were also identified as having local heritage significance.

The assessment by Extent recommended that development in and around heritage items should accommodate retention and adaptive reuse of historic features. It recommended further that the significant elements of larger sites, such as the McGarvie Smith Farm be conserved and used within a new planned landscape.

European and Other Heritage Technical Report, RPS Australia East Pty Ltd, 2016

The European and Other Heritage Technical Report (the assessment) was prepared to support the EIS for the WSA. The assessment covered the entire WSA footprint, assessing listed and potential non-Aboriginal heritage items. The assessment identified one heritage item in the construction footprint, being the McGarvie Smith Farm. However, as this item was outside of the airport precinct, limited assessment was made.

5.3.3 Archaeological potential

The land either side of the existing Elizabeth Drive alignment is part of an historic rural landscape, with large parcels either side of the road once owned by well-known colonial figures since the early 19th century. However, land use since that time has mostly been agricultural, resulting in a low potential for significant archaeological deposits to remain within the study area.

In addition, Elizabeth Drive has been graded and widened numerous times since the early 19th century, which is likely to have removed any archaeological deposits along the roadside. It is still possible that the remains of unrecorded structures along the Elizabeth Drive East alignment may occur; however, that potential is assessed as low. Other potential archaeological remains include former roadside dwellings and/or shops; the significance of any such remains is therefore likewise predicted to be low.

The potential for any further free-floating remains such as structural elements or timbers (in addition to those identified in the visual inspection, discussed in Section 5.4) to be uncovered as part of the remains of the former South Creek bridge would also be low. This is due to the setting of the creek and tidal nature of the area in which periodic flooding has occurred, which has likely washed further potential remains away. Should any such remains be identified, these are expected to be of low to moderate local significance.

While the potential for archaeological remains would be low, any unexpected significant archaeological deposits that are identified within the construction footprint during construction would be managed as per Transport's *EMF-HE-PR-0076 Unexpected Heritage Items Procedure 2022* (Transport for NSW, 2022).

Non-significant archaeological deposits, such as former road surfaces on Elizabeth Drive may also be uncovered during construction. These former bitumen road surfaces are not considered to be significant archaeological deposits and would not require works to stop as per the Transport's *EMF-HE-PR-0076 Unexpected Heritage Items Procedure 2022* (Transport for NSW, 2022). However, any original non-bitumen road surfaces, such as stones etc, may be of local heritage significance and the *EMF-HE-PR-0076 Unexpected Heritage Items Procedure 2022* (Transport for NSW, 2022) would be followed.

5.4 Visual inspection

A visual inspection of properties within the study area where property access could be obtained was carried out by AECOM Senior Heritage Consultant, Deborah Farina and AECOM heritage consultant and Tilly Stevens, on 17 June 2022. The site visit included a general vehicular survey and a targeted pedestrian survey of the following heritage sites:

- Spotted Dog Inn site (inspected from the road due to limited access)
- Remains of the former South Creek bridge
- McGarvie Smith Farm.

It is noted that the Inter-War Spanish Mission House is a listed heritage item included within the study area; however, it is in private ownership and access could not be arranged. Given that it is located about 190 metres to the north of the construction footprint, no impacts to this item are anticipated.

5.4.1 Spotted Dog Inn Site

Photographs of the Spotted Dog Inn site were not able to be taken owing to property access limitations, heavy traffic conditions and safety issues, such as the absence of safe parking and pedestrian thoroughfares along Elizabeth Drive. However, a visual inspection from the road identified that the area is predominantly used for commercial purposes with an agricultural field and animal rescue centre currently occupying the site.

5.4.2 Remains of the former South Creek bridge

The remains of this bridge are located about 20 metres south of the existing Elizabeth Drive bridge over South Creek and currently fall within the construction footprint. The remains consist of a raised bank to the east and west of the bridge pier supports with a timber truss connecting them (refer Figure 5-15). Due to site conditions, an up-close inspection was not possible and so the fabric of the pier supports was not determined. However, it appears the remains are possibly of sandstone or aged concrete material.



Figure 5-15 Remains of the former South Creek bridge (AECOM, 2022)

5.4.3 McGarvie Smith Farm

A visual inspection of the McGarvie Smith Farm was carried out from within the property.

The construction footprint encroaches into part of the McGarvie Smith Farm property; however, the significant buildings are located about 500 metres north-west from the construction footprint (refer Section 5.3.1). It is considered that these buildings are unlikely to be impacted by the proposal.

It is noted that all buildings have recently been archivally recorded as part of the M12 Motorway project.

The McGarvie Smith Farm buildings outside the construction footprint were identified as being in a dilapidated condition. The buildings 500 metres north-west of the construction boundary (corresponding to McGarvie Smith 10, McGarvie Smith 11 and McGarvie Smith 12) appear to be former dwellings in poor condition surrounded by overgrown vegetation. See Figure 5-16, Figure 5-17 and Figure 5-18.



Figure 5-16 McGarvie Smith 10 (AECOM, 2022)



Figure 5-17 McGarvie Smith 11 (AECOM, 2022)



Figure 5-18 McGarvie Smith Farm 12 (AECOM, 2022)

The McGarvie Smith Farm buildings (McGarvie Smith 6, McGarvie Smith 7 and McGarvie Smith 8) were in a similar condition (see Figure 5-19). McGarvie Smith 6 and 7 both appear to be residential buildings in poor condition, while McGarvie Smith 8 is a former dairy shed (Artefact Heritage Pty Ltd, 2022:22).



Figure 5-19 McGarvie Smith Farm (L-R) 6, 7 and 8 (AECOM, 2022)

Buildings further to the north (Sheds 1 and 2 and a concrete silo) were located at a greater distance from the construction footprint and were not visited. Buildings to the north-west of the construction footprint (McGarvie Smith 1-3 – see Figure 5-20) are located on the western side of an access track from Elizabeth Drive to the McMaster Field Station Buildings. Although part of that access track is within the curtilage of the McGarvie Smith Farm, the gate to that access track is locked at its Elizabeth Drive entrance and permission from the owners of the McMaster Field Station (BHL) was required. Owing to the uncertainty of access to McGarvie Smith Farm 1-3 (outside the construction footprint – see 1 and 2

in Figure 5-20, number 3 was not photographed), these buildings were not visited. Since the buildings are separated from the construction footprint by a private access track, it is considered that these buildings are unlikely to be impacted by the proposal.



Figure 5-20 (L-R) McGarvie Smith Farm 1 and 2 (AECOM, 2022)

6.0 Significance assessment

6.1 Introduction

To understand how a development would impact on a heritage item, it is essential to understand why an item is significant. An assessment of significance is carried out to explain why a particular item is important and to enable the appropriate site management and curtilage to be determined. Cultural significance is defined in *The Australia ICOMOS Charter for Places of Cultural Significance 2013* (ICOMOS (Australia), 2013) as meaning “aesthetic, historic, scientific, social or spiritual value for past, present or future generations” (Article 1.2). Cultural significance may be derived from a place’s fabric, association with a person or event, or for its research potential. The significance of a place is not fixed for all time, and what is of significance to us now may change as similar items are located, more historical research is carried out, and community tastes change.

The process of linking this assessment with an item’s historical context has been developed through the NSW Heritage Management System and is outlined in the guideline *Assessing Heritage Significance* (NSW Heritage Office, 2001), part of the NSW Heritage Manual (Heritage Branch, Department of Planning). The *Assessing Heritage Significance* guidelines establish seven evaluation criteria (which reflect four categories of significance and whether a place is rare or representative) under which a place can be evaluated in the context of State or local historical themes. Similarly, a heritage item can be significant at a local level (ie to the people living in the vicinity of the site), at a State level (ie to all people living within NSW) or be significant to the country as a whole and be of National or Commonwealth significance.

In accordance with the guideline *Assessing Heritage Significance*, an item would be considered to be of State significance if it meets two or more criteria at a State level, or of local heritage significance if it meets one or more of the criteria outlined in Table 6-1. The Heritage Council requires the summation of the significance assessment into a succinct paragraph, known as a Statement of Significance. The Statement of Significance is the foundation for future management and impact assessment.

Table 6-1 Significance assessment criteria

Criterion	Inclusions/Exclusions
Criterion (a) – an item is important in the course, or pattern, of NSW’s cultural or natural history (or the cultural or natural history of the local area).	The site must show evidence of significant human activity or maintains or shows the continuity of historical process or activity. An item is excluded if it has been so altered that it can no longer provide evidence of association.
Criterion (b) – an item has strong or special association with the life or works of a person, or group of persons, of importance in NSW’s cultural or natural history (or the cultural or natural history of the local to area).	The site must show evidence of significant human occupation. An item is excluded if it has been so altered that it can no longer provide evidence of association.
Criterion (c) – an item is important in demonstrating aesthetic characteristics and/or a high degree of creative or technical achievement in NSW (or the local area).	An item can be excluded on the grounds that it has lost its design or technical integrity or its landmark qualities have been more than temporarily degraded.
Criterion (d) – an item has strong or special association with a particular community or cultural group in NSW (or the local area) for social, cultural or spiritual reasons.	This criterion does not cover importance for reasons of amenity or retention in preference to proposed alternative.
Criterion (e) – an item has potential to yield information that will contribute to an understanding of NSW’s cultural or natural history (or the cultural or natural history of the local area). Significance under this criterion must have the potential to yield new or further substantial information.	Under the guideline, an item can be excluded if the information would be irrelevant or only contains information available in other sources.

Criterion	Inclusions/Exclusions
Criterion (f) – an item possesses uncommon, rare or endangered aspects of NSW's cultural or natural history (or the cultural or natural history of the local area).	An item is excluded if it is not rare or if it is numerous, but under threat. The item must demonstrate a process, custom or other human activity that is in danger of being lost, is the only example of its type or demonstrates designs or techniques of interest.
Criterion (g) – an item is important in demonstrating the principal characteristics of a class of NSW's (or local area's): <ul style="list-style-type: none"> cultural or natural places cultural or natural environments. 	An item is excluded under this criterion if it is a poor example or has lost the range of characteristics of a type.

6.2 Significance assessment of the Spotted Dog Inn

The significance assessment of the Spotted Dog prepared as part of the *Western Sydney Aerotropolis Initial Precinct Aboriginal and Non-Aboriginal Cultural Heritage Assessment* (Extent Heritage Pty Ltd, 2020: 635) is presented in Table 6-2.

Table 6-2 Significance criteria (Extent Heritage Pty Ltd, 2020a)

Significance Criteria	Application of Criteria (existing assessment)
Historical significance SHR criteria (a)	The item may meet this criterion
Historical association significance SHR criteria (b)	The item may meet this criterion
Aesthetic/technical significance SHR criteria (c)	The item does not meet this criterion
Social significance SHR criteria (d)	The item does not meet this criterion
Research significance SHR criteria (e)	The item does not meet this criterion
Rarity SHR criteria (f)	The item may meet this criterion
Representativeness SHR criteria (g)	The item may meet this criterion

Historical notes:

- The 'Spotted Dog' Inn, which later changed its name to the 'Woodbine Cottage'. It was constructed prior to 1839 and occupied by the Badgery and Roberts families.
- James Badgery acquired the site for his son Andrew

Physical Description:

Site has been subject to intensive agricultural activity – archaeological remains are possibly compromised.

(Extent Heritage Pty Ltd, 2020: 636-7)

Extent Heritage determined this structure to be of local heritage significance and after a review of the site and literature, AECOM concurs with this assessment.

6.3 Significance assessment for remains of the former South Creek bridge

The assessment of significance for remains of the former South Creek bridge is presented in Table 6-3.

Table 6-3 Significance criteria (Extent Heritage Pty Ltd, 2020a)

Significance Criteria	Application of Criteria (Existing Assessment)
Historical significance SHR criteria (a)	The item may meet this criterion
Historical association significance SHR criteria (b)	The item may meet this criterion
Aesthetic/technical significance SHR criteria (c)	The item does not meet this criterion
Social significance SHR criteria (d)	The item does not meet this criterion
Research significance SHR criteria (e)	The item does not meet this criterion
Rarity SHR criteria (f)	The item does not meet this criterion
Representativeness SHR criteria (g)	The item may meet this criterion

Historical Notes:

A bridge of an unknown date. It is possibly associated with the operation of the Fleurs Estate (Extent Heritage Pty Ltd, 2020a).

Extent Heritage determined this structure to be of local heritage significance and after a review of the site and literature AECOM concurs with this assessment.

6.4 Significance assessment for Interwar Spanish Mission House

The significance assessment for the Inter-War Spanish Mission House (which is listed on the Fairfield Local Environmental Plan 2013 and located about 190 metres north of the construction footprint) is presented in Table 6-4.

Table 6-4 Significance Assessment – Inter-War Spanish Mission House (Heritage NSW, 2009)

Significance Criteria	Application of Criteria (Existing Assessment)
Historical significance SHR criteria (a)	<i>This item may meet this criterion</i>
Historical association significance SHR criteria (b)	The item does not meet this criterion
Aesthetic /technical significance SHR criteria (c)	The item does not meet this criterion
Social significance SHR criteria (d)	The item does not meet this criterion
Research significance SHR criteria (e)	The item does not meet this criterion

Significance Criteria	Application of Criteria (Existing Assessment)
Rarity SHR criteria (f)	<i>This item may meet this criterion</i>
Representativeness SHR criteria (g)	<i>This item may meet this criterion</i>

Statement of Significance:

Large, well designed example of an Inter-War Mediterranean/Spanish Mission style building, rare in the City area. Distinguished by consistent and prominent octagonal tower. Few modifications. Local significance. (Heritage NSW, 2009)

6.1 Significance assessment of McGarvie Smith Farm

The assessment of significance for McGarvie Smith Farm is presented in Table 6-5. This assessment has been taken from the State Heritage Inventory (Heritage NSW, 2008).

Table 6-5 Significance criteria (Extent Heritage Pty Ltd, 2020a)

Significance Criteria	Application of Criteria (Existing Assessment)
Historical significance SHR criteria (a)	The McGarvie Smith farm has interest as a veterinary research centre for Sydney University since 1936.
Historical association significance SHR criteria (b)	There is no associative value attached to this item.
Aesthetic/technical significance SHR criteria (c)	The c.1936 buildings are representative examples of Inter-War design applied to rural research buildings. The office building uses good proportions in a symmetrical design composed of primary and secondary roof forms and regular door and window openings. The scale, proportions and regular pattern of openings is continued in the less formal student accommodation building.
Social significance SHR criteria (d)	There is no social significance attached to this item.
Research significance SHR criteria (e)	There is no research value attached to this item.
Rarity SHR criteria (f)	These buildings are the only known example of rural research buildings in the Penrith City Area.
Representativeness SHR criteria (g)	These buildings are not representative.
Integrity/Intactness	Apart from damage due to neglect, the 1936 buildings on this farm appear to have been little altered since they were constructed.

Statement of Significance:

The McGarvie Smith Farm has interest as a veterinary research centre for Sydney University since 1936. These buildings are the only known example of rural research institution buildings in the Penrith City Council area.

The c.1936 buildings are representative examples of Inter-War design applied to rural research buildings. The office building uses good proportions in a symmetrical design composed of primary and secondary roof forms and regular door and window openings. The scale, proportions and regular pattern of openings is continued in the less formal student accommodation building (Heritage NSW, 2008).

7.0 Impact assessment

The following section provides a description of the proposal and is followed by a detailed assessment of the potential impacts to identified heritage significance.

7.1 Construction impact assessment

7.1.1 Direct impacts

Direct impacts are those that cause a direct adverse impact to a heritage item, such as that caused by machinery or vehicles that damage the fabric of a heritage item or one of its features, elements or setting. These types of impacts affect all types of heritage, including built, landscape and archaeological items. In relation to this project, this type of impact may occur during general construction of the road upgrade or as part of the early works, such as during establishment of construction compounds or other such ancillary works necessary for construction.

7.1.2 Indirect impacts

Indirect impacts are those that cause an indirect adverse impact to a heritage item, such as vibration, settlement, visual impact or a change of use, association or access to a heritage item during construction. These types of impacts generally affect built and landscape heritage items.

7.1.3 Assessment of construction impacts

There are no listed items within the construction footprint. The Inter-war Spanish Mission House is located within the study area, 190 metres north from the construction footprint and due to this distance no indirect or direct impacts are expected. The property is also not visible from the construction footprint, and as such no visual impacts are anticipated.

There are three unlisted heritage items within the construction footprint:

- The site of the former Spotted Dog Inn
- Historical bridges/crossings of South Creek
- McGarvie Smith Farm.

The exact location of the former "Spotted Dog" Inn is unknown. The overall area of the site was identified by Extent in 2020 (Extent Heritage Pty Ltd, 2020: 635), and the southern 280 metre portion of the site is located within the construction footprint (refer Figure 5-1). However, this area has been extensively developed for agricultural and commercial uses for decades. Therefore, the likelihood of intact archaeological deposits surviving is low. Construction activities would have little or no impact on this site. Notwithstanding, any unexpected archaeological finds would be managed in accordance with the *EMF-HE-PR-0076 Unexpected Heritage Items Procedure* (Transport for NSW, 2022).

The remains of the former South Creek bridge are located within the construction footprint (refer to Figure 5-5). While the proposal would include the construction of a new twin bridge over South Creek (including an eastern abutment), the proposed structures would not directly encroach on the remains as they would be located about 15 metres away (subject to detailed design). Detailed design is to avoid direct encroachment and impact to the remains of the former South Creek bridge; however, if direct impacts are unable to be avoided, a detailed archaeological recording would be required (refer further to Section 10.0).

As per the Noise and Vibration Assessment Report for the proposal (refer to Appendix E of the REF), the remains of the former South Creek bridge are located within minimum working distances for cosmetic damage and are at risk of damage. However, damage to heritage and other structures is unlikely to occur once the proposed management measures have been implemented appropriately (refer to Section 10.0).

There is therefore a potential negative direct impact if the remains of the former South Creek Bridge cannot be avoided and require demolition to facilitate the proposal.

The south-eastern portion of McGarvie Smith Farm is located within the construction footprint, however the heritage significant buildings within the curtilage of the item are located outside of the construction footprint (about 500 metres north-west).

Although work would take place within the heritage curtilage of the item, there would be no direct impacts to the heritage values of the McGarvie Smith Farm. The principal heritage values attached to this item relate to its historic use as a veterinary research facility and the historical and aesthetic significance of the 1936 buildings. The proposal would not impact the significant buildings located within the curtilage of the item which are located outside the construction footprint, including those buildings which relate to its historic use as a veterinary research facility, and this item is therefore unlikely to be directly impacted by the proposal.

There may be some temporary, indirect visual impacts on the landscape character of the McGarvie Smith Farm due to the presence of construction work (such as road widening activities) within a portion of the McGarvie Smith Farm, along its boundary. There would be no direct impacts to the landscape character or setting of the farm and visual impacts would be temporary and limited to the construction phase.

7.1.4 Operational impacts

Operational impacts are generally indirect in nature and relate to the ongoing use of the road. Given the type and proximity of non-Aboriginal heritage items in the vicinity of the proposal, there are no operational impacts expected.

A small portion of the widened road corridor would be located within the heritage curtilage of the McGarvie Smith Farm. This would be located along the boundary of the curtilage at a distance of about 500 metres from heritage significant buildings on the site. As such the proposal is not anticipated to have an impact on the significance of McGarvie Smith Farm.

8.0 Cumulative impacts

A cumulative impact assessment has been carried out for both construction and operation, to assess the potential cumulative impacts of the proposal with other projects in the area. This was carried out based on a screening of other nearby projects to determine those that have the potential to cause cumulative impacts. The screening took into account projects that have been approved but where construction has not commenced, projects that have commenced construction, and projects that have recently been completed. The screening process is described further in Section 6.16 of the REF.

The cumulative impact assessment was based on the residual impacts of the proposal (ie those that are expected to exist after application of management and mitigation measures).

In addition to the impacts caused by this proposal, cumulative impacts must be considered with other projects having been, or to be, carried out in the area. The following sources were searched to identify relevant projects:

- Department of Planning and Environment's major projects portal
- Transport website
- Infrastructure NSW website
- Liverpool City Council website
- Penrith City Council website
- Fairfield City Council website.

As noted in Section 7.1.4, the proposal would not result in any operational impacts to non-Aboriginal heritage. This extends to the cumulative impact of the proposal. All impacts to non-Aboriginal heritage in combination with other relevant projects in the area are confined to direct and indirect impacts during construction.

8.1 Relevant projects

The construction of the WSA at Badgerys Creek has served as a catalyst for major associated infrastructure works. Related projects are the M12 Motorway, which would provide a road link between the M7 and the Northern Road, and a connection to the WSA. The Sydney Metro – Western Sydney Airport would provide a rail link between St Marys railway station on the western rail line and the WSA.

Elizabeth Drive West Upgrade

The Elizabeth Drive West Upgrade would include the upgrade of about 3.6 kilometres of Elizabeth Drive between The Northern Road at Luddenham to near Badgerys Creek Road at Badgerys Creek where it would connect with the future M12 Motorway. The Elizabeth Drive West Upgrade is subject to determination of a separate REF by Transport.

A non-Aboriginal heritage assessment was prepared for the Elizabeth Drive West Upgrade proposal (Elizabeth Drive West Upgrade HIA) (AECOM, 2023) located between The Northern Road at Luddenham and Badgerys Creek Road at Badgerys Creek. The Elizabeth Drive West Upgrade HIA identified two items of non-Aboriginal heritage within the construction footprint, being Luddenham Road Alignment and McGarvie Smith Farm. The assessment concluded that the Elizabeth Drive West Upgrade proposal is unlikely to cause any harm to the heritage values for either of these items.

Western Sydney Airport

The WSA has been approved under the EPBC Act and is currently under construction to the south-west of the construction footprint. The European and Other Heritage Technical Report (RPS Australia East Pty Ltd, 2016) prepared to support the Environmental Impact Statement for the WSA, identified 20 items of non-Aboriginal heritage within its footprint, and a further 22 items of non-Aboriginal heritage within its immediate environs (RPS Manidis Roberts Pty Ltd, 2016a). Of the items of non-Aboriginal heritage within the WSA footprint, 18 were assessed as having Commonwealth heritage significance at a local level. All of these items have been destroyed as part of the construction of the WSA.

Sydney Metro – Western Sydney Airport

Sydney Metro – Western Sydney Airport is an approved State Significant Infrastructure project (SSI-10051) which comprises the construction and operation of a new metro railway around 23 kilometres in length, between the existing Sydney Trains suburban rail network at St Marys in the north and the Western Sydney Aerotropolis Core precinct in the south, via WSA. The project is currently under construction.

Sydney Metro – Western Sydney Airport: Non-Aboriginal Heritage assessment (Artefact Heritage, 2020) was prepared on behalf of the Sydney Metro Authority ahead of the proposed construction of a rail link between St Marys and the WSA. The assessment covered non-Aboriginal heritage outside and within the WSA, including land comprising the construction footprint (referred to as “Off-airport construction corridor” in Artefact, 2020).

The 2020 Western Sydney Aerotropolis Aboriginal and Non-Aboriginal Cultural Heritage Assessment carried out by Extent Heritage (Extent Heritage Pty Ltd, 2020b) identified eight off-airport items that would potentially be impacted by the project. It was recommended that movable heritage items be identified and assessed, and a significant fabric salvage schedule prepared by a qualified and experienced heritage specialist for some heritage items.

M12 Motorway

The M12 Motorway is an approved State Significant Infrastructure project (SSI-9364) which is currently under construction, and will include comprise a new dual-carriageway motorway to connect the M7 Motorway with the WSA and The Northern Road.

The M12 Non-Aboriginal Heritage Assessment Report (Jacobs, 2019) was carried out as part of the EIS for the proposed M12 Motorway. The assessment found construction of the proposed M12 Motorway would have a major adverse impact on the heritage value of McGarvie Smith Farm.

8.2 Cumulative impact assessment

There are four items of non-Aboriginal heritage still surviving within the construction footprint, and one listed heritage item within the study area:

- The site of the former Spotted Dog Inn
- Historical bridges/crossings of South Creek
- McGarvie Smith Farm
- Inter-war Spanish Mission House.

Collectively, the construction associated with the WSA, Sydney Metro Western Sydney Airport and M12 Motorway projects would have major impacts on the McGarvie Smith Farm. The proposal would make a negligible contribution to this cumulative impact, as direct impacts are not anticipated. The Elizabeth Drive West Upgrade proposal construction footprint would also encroach into part of the heritage curtilage of the McGarvie Smith Farm, however there would be no direct impacts to the heritage values of this item.

There may be some temporary, indirect visual impacts on the landscape character of the McGarvie Smith Farm. This would be due to the presence of construction work (such as road widening work) within a portion of the McGarvie Smith Farm, along its boundary, which would contribute to the existing visual impacts from construction of the WSA. However, these visual impacts would be temporary for the duration of construction.

Overall, the contribution to cumulative impact on non-Aboriginal heritage of this proposal is considered negligible

9.0 Statement of heritage impact

9.1 Introduction

The objective of a Statement of Heritage Impact (SoHI) is to evaluate and explain how the proposed development, rehabilitation or land use change would affect the heritage value of the site and/or place. A SoHI should also address how the heritage value of the site/place can be conserved or maintained, or preferably enhanced by the proposal.

This report has been prepared in accordance with the NSW Heritage Office & Department of Urban Affairs and Planning *NSW Heritage Manual* (1996) and NSW Heritage Office *Statements of Heritage Impact* (NSW Heritage Office & Department of Urban Affairs & Planning, 2002). The guidelines pose a series of questions as prompts to aid in the consideration of impacts based on the type of proposal.

Impact Type	Impact
<i>How is the impact of the addition on the heritage significance to be minimised?</i>	There are no construction or operation impacts identified to non-Aboriginal heritage.
<i>Can the additional area be located within an existing structure? If not, why not?</i>	The existing road corridor is insufficient to contain the widening of Elizabeth Drive.
<i>Will the additions tend to visually dominate the heritage item?</i>	The widened Elizabeth Drive is not expected to cause an adverse visual impact to any known item of non-Aboriginal heritage.
<i>Are the additions sited on any known, or potentially significant archaeological deposits? If so, have alternative positions for the additions been considered?</i>	No. However, given that the area has a long non-Aboriginal settlement history, archaeological deposits are possible. These would be governed by Transport's <i>EMF-HE-PR-076 Unexpected Heritage Items Procedure 2022</i> (Transport for NSW, 2022) during construction.

9.2 Summary of Statement of heritage impact

Although three identified heritage items are unlisted on government registers, their significance has been assessed as having heritage value by previous studies (Extent Heritage Pty Ltd, 2020a) and this HIA concurs with that assessment. As these sites are unlisted, they do not require legislative compliance. In accordance with best heritage practice as outlined by The Burra Charter: the Australia ICOMOS Charter for Places of Cultural Significance (*Australia ICOMOS Incorporate*, 2013), these items should be identified, assessed, mitigated for and, if unavoidable, recorded prior to any potential irreversible negative impacts.

The potential impacts to non-Aboriginal heritage have been assessed against the criteria outlined in the NSW Heritage Division guidelines (NSW Heritage Office & Department of Urban Affairs & Planning, 2002). The impacts of the proposal have been graded against the significance of the site as outlined in Table 9-1.

Table 9-1 Summary of the nature of the direct and indirect impacts

Impact Type	Impact
Major negative impacts (substantially affects fabric or values of state significance)	Nil
Moderate negative impacts (irreversible loss of fabric or values of local significance; minor impacts on State significance)	<p>The remains of the former South Creek bridge are located within the construction footprint and have been assessed as having local heritage significance (Extent Heritage Pty Ltd, 2020a). While the proposal would include the construction of a new twin bridge over South Creek (including an eastern abutment), the proposed structures would not directly encroach on the remains as they would be located about 15 m away (subject to detailed design). Detailed design is to avoid direct encroachment and impact to the remains of the former South Creek bridge, however if direct impacts are anticipated, a detailed archaeological recording would be required.</p> <p>As per the Noise and Vibration Assessment Report (refer to Appendix E of the REF), the remains of the former South Creek bridge are located within minimum working distances for cosmetic damage and are at risk of damage. However, damage to heritage and other structures is unlikely to occur when management measures have been implemented appropriately. This includes taking attended vibration measurements to determine site specific safe working distances.</p>
Minor negative impacts (reversible loss of local significance fabric or where mitigation retrieves some value of significance; loss of fabric not of significance but which supports or buffers local significance values)	Nil
Negligible or no impacts (does not affect heritage values either negatively or positively)	<p>The proposal would have neither a positive nor negative impact on the heritage significance of the non-Aboriginal heritage values of the site of the Spotted Dog Inn.</p> <p>The proposal would not cause impact to the significant buildings located within the curtilage of the McGarvie Smith Farm.</p>
Minor positive impacts (enhances access to, understanding or conservation of fabric or values of local significance)	Nil
Major positive impacts (enhances access to, understanding or conservation of fabric or values of state significance)	Nil

10.0 Safeguards and management measures

This section describes management measures to safeguard non-Aboriginal heritage from potential impacts of the proposal. The recommended management measures are described in Table 10-1

Table 10-1 Safeguards and management measures

Impact	Environmental safeguard	Responsibility	Timing
Non-Aboriginal heritage – Non-Aboriginal Heritage Management Plan	A Non-Aboriginal Heritage Management Plan will be prepared and implemented as part of the CEMP. It will provide specific guidance on measures and controls to be implemented to avoid and mitigate impacts to McGarvie Smith Farm and the remains of the former South Creek bridge	Contractor	Detailed design / pre-construction
Non-Aboriginal heritage – Avoidance of remains of former South Creek bridge during detailed design	Detailed design will avoid direct encroachment and impact to the remains of the former South Creek bridge. If impacts to these remains cannot be avoided, further assessment and approvals will be obtained	Transport	Detailed design
Non-Aboriginal heritage – Detailed recording prior to demolition of remains of former South Creek bridge (if required)	If detailed design results in direct impact and encroachment to the remains of the former South Creek bridge, recording of the bridge remains will be conducted by heritage specialists prior to removal. Extensive photographic recording will be included with photos lodged with the local council library	Heritage specialist / contractor	Pre-construction
Non-Aboriginal heritage – Indirect vibration impacts to remains of the former South Creek bridge	Attended vibration measurements will be carried out at the work site where plant machinery operations occur within minimum working distances (as per Appendix D of the REF) and have the potential to result in cosmetic damage to the remains of the former South Creek bridge. These vibration measurements will be taken progressively outside the minimum working distances to monitor and ensure no structure damage occurs to the remains. This will provide information regarding the transmission of vibration to allow site specific safe working distances to be determined	Contractor	Construction
Non-Aboriginal heritage – Unexpected finds	Any unexpected heritage finds identified during construction will be governed by Transport's <i>EMF-HE-PR-076 Unexpected Heritage Items Procedure 2022</i> NSW, 2022). Work will only resume once the requirements of the procedure have been satisfied	Contractor	Construction

11.0 Conclusions and recommendations

This assessment has reviewed the non-Aboriginal heritage values of the study area and the impacts resulting from the proposal.

One locally listed item, the Inter-war Spanish Mission House is located within the study area; however, would not be impacted by either construction or operation of the proposal.

Three unlisted items of non-Aboriginal heritage are located within the construction footprint:

- Spotted Dog Inn site
- Remains of the former South Creek bridge
- McGarvie Smith Farm.

While the south-eastern portion of McGarvie Smith Farm is located within the construction footprint, the proposal would not impact the significant buildings located within the curtilage of the item which are located outside the construction footprint (about 500 metres north-west). This item is therefore unlikely to be impacted by the proposal.

The exact location of the former "Spotted Dog" Inn is unknown. However, the site of the Spotted Dog Inn is located within the construction footprint on land which has been extensively developed for agricultural and commercial uses for decades. Therefore, the likelihood of intact archaeological deposits surviving is low. Construction activities would have little or no impact on this site.

The remains of the former South Creek bridge is located within the construction footprint and has been assessed as having local heritage significance (Extent Heritage Pty Ltd, 2020a). While the proposal would include the construction of a new twin bridge over South Creek (including an eastern abutment), the proposed structures would not directly encroach on the remains as they would be located about 15 metres away (subject to detailed design). Detailed design is to avoid direct encroachment and impact to the remains of the former South Creek bridge; however, if direct impacts are anticipated, a detailed archaeological recording would be required.

As discussed in the Noise and Vibration Assessment Report (refer Appendix E of the REF), the remains of the former South Creek bridge are located within minimum working distances for cosmetic damage and are at risk of damage. However, damage to heritage and other structures is unlikely to occur when management measures have been implemented appropriately. This includes taking attended vibration measurements to determine site specific safe working distances.

Although unlikely, given that the area has a long non-Aboriginal settlement history, extant archaeological deposits are possible. It is therefore recommended that:

1. If any archaeological deposits are uncovered during construction they would be managed through the NSW *EMF-HE-PR-076 Unexpected Heritage Items Procedure 2022* (Transport for NSW, 2022), in accordance with the environmental safeguards identified in Section 10.0
2. All contractors would be advised by way of induction and toolbox talks of the presence of nearby heritage, the potential for archaeological deposits to be present and the provisions and responsibilities required in the NSW *EMF-HE-PR-076 Unexpected Heritage Items Procedure 2022* (Transport for NSW, 2022), in accordance with environmental safeguard GEN4 in Section 7.2 of the REF.

12.0 References

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