

## 6.4 Non-Aboriginal heritage

The potential impacts on non-Aboriginal heritage during construction and operation of the proposal have been assessed as part of the *Statement of Heritage Impact – Great Western Highway East* (Niche Environment and Heritage, 2022), provided in Appendix F.

### 6.4.1 Methodology

The methodology for the Statement of Heritage Impact (SOHI) included:

- a review of literature and databases, including:
  - Heritage NSW Inventory (World Heritage Register List, State Heritage Register, State Heritage Inventory (SHI), Transport – Roads S170 Register)
  - City of Blue Mountains Heritage Review 2016
  - City of Blue Mountains Local Environmental Plan 2015
  - City of Blue Mountains Development Control Plan 2015
  - Commonwealth heritage registers (Australian Heritage Database, Commonwealth Heritage List, and former Register of the National Estate)
  - previous historical heritage studies and reports within or near the proposal area
- a site inspection in June 2021, which:
  - confirmed places already identified from previous studies or re-evaluated those lists
  - identified physical evidence that could indicate archaeological evidence, structures or other work that may not have been identified in other sources within or near the proposal area
- assessment of the potential non-Aboriginal heritage impacts during construction and operation of the proposal
- the provision of mitigation measures to manage the potential impacts on non-Aboriginal heritage identified.

The SOHI adopted the approach and terminology outlined in the Charter for Places of Cultural Significance (Australia ICOMOS, 2013) (*the Burra Charter*). In addition, this report has been prepared in accordance with the following heritage guidelines and policy documents:

- Cultural Heritage Guidelines (Transport, 2015a)
- Statements of Heritage Impact (Heritage Council of NSW, 2002)
- NSW Heritage Manual (NSW Heritage Office and Department of Urban Affairs and Planning, 1996)
- Assessing Heritage Significance (Heritage Office, 2001)
- Assessing Significance for Historical Archaeological Sites and 'Relics' (Heritage Council of NSW, 2009).

### 6.4.2 Existing environment

#### *Historical context*

The regional historical context of the Blue Mountains has been shaped by both the Gundungurra and Dharug Aboriginal people and European exploration west of the Great Dividing Range. Non-Aboriginal heritage across the Blue Mountains has been predominantly about crossing the mountains. Progressively developed transport connections across the Blue Mountains enabled the growth of key settlements in the region.

The local historical themes of *Early Exploration*, *The Western Road*, *The Railway*, *Recreation*, *Health and Tourism* and *Industry* have influenced the local historical context of the proposal area. This historical context is summarised in Table 6-18.

Table 6-18: Historic context of the proposal

Year	Event
<b>1813</b>	Gregory Blaxland, William Charles Wentworth and William Lawson, assisted by an Aboriginal guide and three convicts were the first Europeans to successfully cross the Blue Mountains. It is believed that Explorers Tree was engraved on this expedition. Explorers Tree was located within the Katoomba to Medlow Bath section and the stump remained in place until February 2021, when it was removed due to safety concerns.
<b>1814 – 1815</b>	Cox’s Road (the foundation for what eventually became the Great Western Highway) was constructed over a period of about six months by convict labour. Pulpit Hill, within the Katoomba to Medlow Bath section, was identified as a key point on Cox’s Road. Later, Pulpit Hill was also identified as a rest area for drovers, stock and travellers following the construction of the road west, making it another tourist drawcard from the late 19 <sup>th</sup> century until the 21 <sup>st</sup> century.
<b>1831</b>	The area of Blackheath was initially referred to as a 41 Mile Tree. The first building in the area was ‘The Scotch Thistle Inn’, built in 1831 by Andrew Gardener.
<b>1832 – 1835</b>	In 1832, Andrew Murray applied for the purchase of land near Pulpit Hill to construct an inn. The inn was licensed in 1833 as the ‘Poor Man’s Inn’, with licensee Michael Leeson. From 1835 it was licenced as the ‘Shepherd and His Flock Inn’ by Andrew Murray.
<b>1844</b>	A large convict stockade was built in Blackheath to house convicts engaged in road construction.
<b>1862</b>	On the orders of the Colonial Architect, a lock-up was built near Pulpit Hill in 1862 to hold chained gangs on the march between Bathurst and Sydney (SHI #1170813).
<b>1867</b>	The Gatekeeper’s Cottage in Medlow Bath was built by Larkin and Wakeford (SHI # 1170283) and was known as Cottage No. 11.
<b>1868</b>	The Main Western Railway was completed to Mount Victoria, providing a railway connection between Sydney and the proposal area. Following the opening of the railway, townships began to develop around the constructed rail stations, which were located near the early inns, country estates and available water supply. Halt stops were established at Blackheath and Medlow Bath in 1868. The Blackheath halt stop was upgraded to a platform in 1869.
<b>1860s and 1870s</b>	The area of Katoomba was originally known as the ‘Crushers’, named after a train stop near ballast stone associated with a quarry operation that operated from the 1860s. Katoomba remained a primarily industrial area into the late 1870s, when the Katoomba Coal Mine and coal and shale mining in the nearby Megalong Valley was established.
<b>1880s</b>	The township of Medlow Bath remained small and focused around the sawmill industry until 1902, when Mark Foy took over the Belgravia Hotel and later opened the Hydro Majestic Hotel on the site.
<b>1885</b>	While the first building was built in 1831, the township of Blackheath was declared in 1885.
<b>1888</b>	The lot on which The Pines is located was granted to D. Miller in 1888. Miller, worked at a local sawmill and built himself a house on the lot (SHI # 1170289), making The Pines one of the few 19 <sup>th</sup> century houses in Medlow Bath.
<b>1890s</b>	By the 1890s, Katoomba had seen a shift from a mining town, into a popular tourist centre. This led to subdivision of land and sale into residential lots, with cottages built on much of the land by the turn of the 20 <sup>th</sup> century.
<b>1891</b>	Bonnie Doon Reserve was opened in 1891 and formed the second largest privately constructed track network in the Upper Blue Mountains, after Medlow Bath.
<b>1902</b>	Following duplication in 1898, the railway was extended to Katoomba in 1902.
<b>1900s onwards</b>	In the early 20 <sup>th</sup> century, Blackheath became one of the principal tourist destinations in the mountains. In the interwar period, Blackheath saw a commercial boom with many of the main commercial buildings constructed during this time.
<b>1918</b>	Industrial development within the greater Blue Mountains was limited and largely associated with mining. A quarry was opened by the then Blue Mountains Shire Council at Medlow Bath with the purpose of sourcing sandstone and conglomerate gravel. This later became the Mountain Gravel Co.

Year	Event
	Quarry in 1920. The quarry was closed in 1969 and resumed as part of the Water NSW Special Catchment Area in 1992.
<b>1940s onwards</b>	The popularity of the mountains as a tourist retreat waned in the years after World War II and many of the guesthouses fell into significant disrepair and neglect. In the later decades of the 20 <sup>th</sup> century, the region once again gained popularity and has since maintained a tourist focus.
<b>1951</b>	The rail network was electrified through the proposal area.
<b>1980s</b>	Many of the Bonnie Doon tracks fell into disrepair through most of the 20 <sup>th</sup> century and remained largely neglected for the latter half of the 20th century, with the lookouts restored in the late 1980s.

### ***Heritage items***

Heritage items within and adjacent to the proposal are identified in Table 6-19. State and local heritage items within Medlow Bath have not been assessed in this REF as they are not located in direct proximity to the proposal area and have been assessed in the SOHI prepared for the Medlow Bath Upgrade (RPS, 2021). Section 6.11.4 assesses cumulative impacts of the proposal and includes further assessment of the cumulative impacts of the proposal and the Medlow Bath Upgrade.

The potential heritage items within and near the proposal area identified in the historical assessment, previous assessments and the site inspection are listed in Table 6-20. These are not listed heritage items but could have heritage significance.

These items are mapped in Figure 6-4a-h.

Table 6-19: Heritage listings within and near the proposal area

Item	Listing Number	Level of Significance	Description	Location
<b>Greater Blue Mountains Area – Additional Values (Nominated)</b>	105696	National – Nominated	<p>The Greater Blue Mountains Area is a sandstone tableland that encompasses 1.03 million hectares of eucalypt-dominated landscape inland from Sydney. It is one of the largest and most intact tracts of protected bushland in Australia. Its exceptional biodiversity values are complemented by numerous others, including indigenous and post-European-settlement cultural values, geodiversity, water production, wilderness, recreation and natural beauty.</p> <p>The item Greater Blue Mountains Heritage Area – Additional Values is a nominated heritage item only, and not officially listed on the National Heritage List, however, it has been assessed for impacts due to the proposal to follow best practice.</p>	<p>Adjacent to Katoomba to Medlow Bath section</p> <p>Within Medlow Bath to Blackheath section</p>
<b>Bonnie Doon Reserve</b>	K079	Local	<p>Bonnie Doon Reserve has high aesthetic quality as a spectacular scenic backdrop for walkers on the Six Foot Track and Grand Cliff Top Walk, with much of its early track work intact. It was a major private effort to develop and maintain walking tracks for community appreciation of the natural landscape. The area has direct association with John Britty North, considered a founding father of Katoomba and the creator of the Bonnie Doon Reserve.</p>	<p>Within and adjacent to Katoomba to Medlow Bath section</p>
<b>Pulpit Hill and Environs including: Lock-up Stockyard Elements of Cox’s Road</b>	K166	Local (Recommended for State listing)	<p>Pulpit Hill is a predominately natural bushland setting, comprising locally important areas of <i>Eucalyptus Oreades</i> open forest, an important ecological community. In the early 19<sup>th</sup> century, Pulpit Hill was an important rest area and a key part of the history and evolution of transport routes across the Blue Mountains</p> <p>The Pulpit Hill environs include sites of heritage significance, including potential historical archaeology associated with the early Cox’s Road and early convict graves which have high social value. It is a place where the local community feels a tangible attachment to the early history of the Blue Mountains.</p>	<p>Within Katoomba to Medlow Bath section</p>
<b>Stone Arrangements (within Pulpit Hill curtilage)</b>	K039	Local (Recommended for State listing)	<p>The Stone Arrangements item falls within the larger Pulpit Hill curtilage and contains 22 possible stone arrangements. The possible graves/stone arrangements are located in a small clearing north of the former location of the Explorers Tree and Nellies Glen Road.</p>	<p>Within Katoomba to Medlow Bath section</p>
<b>Shepherd and His Flock Inn site</b>	K082	Local	<p>The Shepherd and Flock Inn served travellers along the Great Western Road in the 1830s. Inns are a significant class of item with historic and social significance as they were a characteristic feature of the Colonial period which exemplify the pattern of land settlement, transport and travel.</p>	<p>Adjacent to Katoomba to Medlow Bath section</p>
<b>Explorer’s Tree and Environs</b>	K031	Local	<p>The Explorer’s Tree was reputed to have been marked by the explorers Blaxland, Lawson and Wentworth during the First Crossing of the Blue Mountains in 1813. Although the historical authenticity of the tree is uncertain, since at least the 1870s the tree has been</p>	<p>Within Katoomba to Medlow Bath section</p>

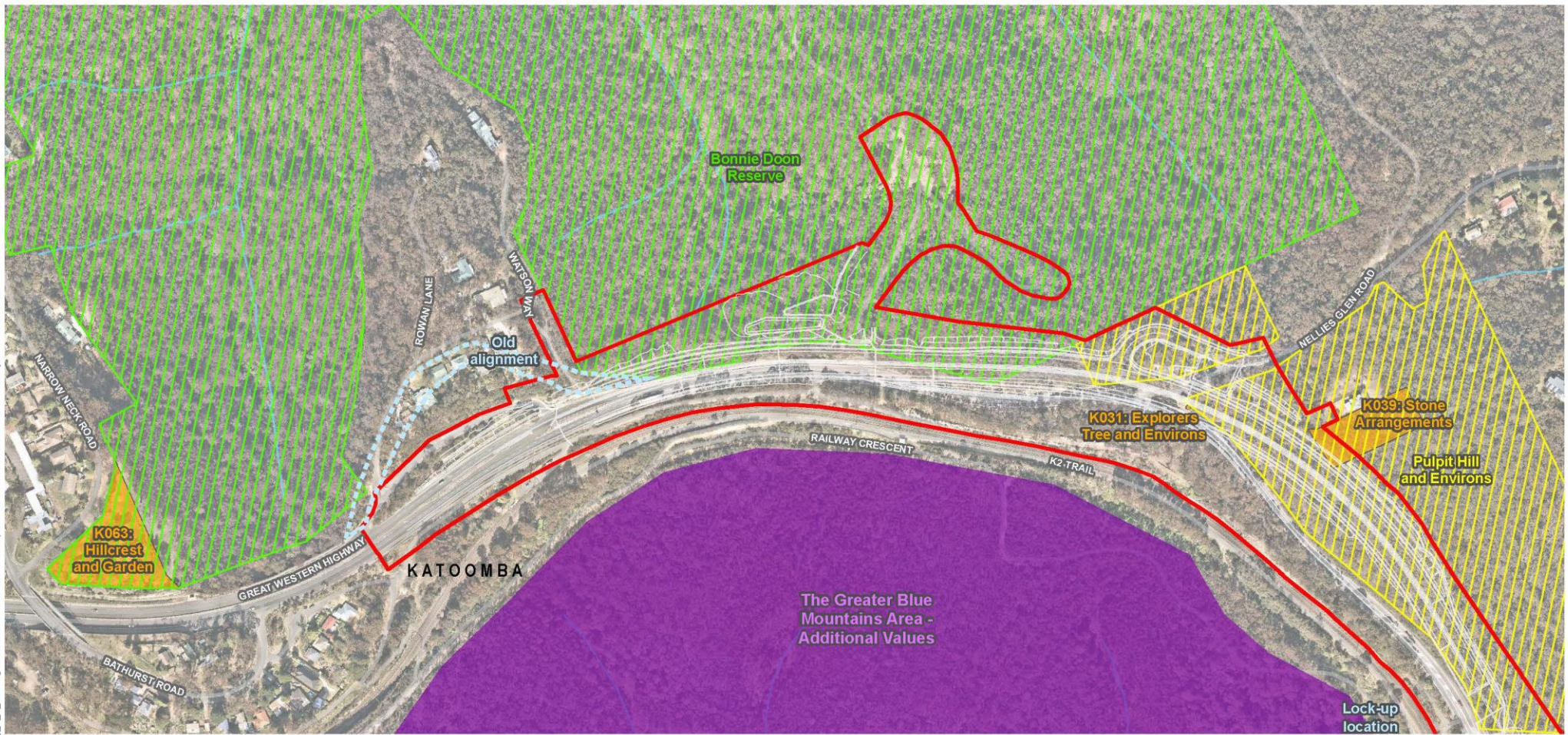
Item	Listing Number	Level of Significance	Description	Location
			viewed by visitors to the mountains since as a surviving relic from the 1813 expedition and as a memorial to the early explorers. While the Explorer's Tree was removed in February 2021 due to safety concerns, the environs retain heritage significance through the symbolic representation of the place and as part of the larger Blue Mountains cultural landscape.	
<b>The Pines</b>	MB016	Local	The Pines, 16 Great Western Highway, Medlow Bath is one of the earliest houses in Medlow Bath. It is a good intact example of a verandaed Victorian carpenter vernacular cottage typical of the early houses in the Blue Mountains.	Adjacent to Medlow Bath to Blackheath section
<b>Gatekeeper's Cottage</b>	MB006	Local	The Medlow Bath Gatekeeper's Cottage is one of only five level crossing keepers' cottages which are still habitable on their original site and one of only two which have preserved the original stone privy in the garden. The cottages were important in the interchange of rail and road between 1867 and 1902.	Adjacent to Medlow Bath to Blackheath section

Table 6-20: Non-listed heritage items within and near the proposal area

Item	Level of Significance	Description	Location
<b>Great Western Highway</b>	N/A	The Great Western Highway is the primary historical route west from Sydney, following the earliest European lines of exploration and migration over the Blue Mountains. The associated elements such as culverts, retaining, road cuttings and kerbing contribute to the significance of the road.	Within Katoomba to Medlow Bath and Medlow Bath to Blackheath sections
<b>Alignment change</b>	N/A	The alignment change of the Great Western Highway is about 350 metres north of Pulpit Hill and is currently in use as part of the Great Blue Mountains Trail. The trail is largely gravel and rock, with a grassed verge.	Within and adjacent to Katoomba to Medlow Bath section
<b>Old alignment</b>	N/A	The section of old alignment of the Great Western Highway is situated west of Katoomba, along the current Bathurst Road alignment and verge. The location consists of landscaped grass within the verge and several obtrusive service lines, with overgrown vegetation and grass in the area between the highway and Bathurst Road.	Within and adjacent to Katoomba to Medlow Bath section
<b>Culvert XA6</b>	Local (recommended)	Culvert XA6 is a sandstone culvert located on the eastern side of the highway between the road and the railway line and passes underneath the railway line.	Within Katoomba to Medlow Bath section
<b>Culvert XA7</b>	Local (recommended)	Culvert XA7 is a sandstone culvert located on the eastern side of the highway between the road and the railway line and passes underneath the railway line.	Within Katoomba to Medlow Bath section
<b>Culvert XA7a</b>	Local (recommended)	Culvert XA7a is a sandstone culvert located on the eastern side of the highway between the road and the railway line and passes underneath the railway line.	Within Katoomba to Medlow Bath section

Item	Level of Significance	Description	Location
<b>House and Orchards (former Glenara Cottage)</b>	N/A	The House and Orchards was likely used in the first decades of the establishment of the Medlow settlement.	Within Great Western Highway, Medlow Bath ancillary facility
<b>Quarry</b>	N/A	The Quarry is an important item for recognising the resources extracted in the 20 <sup>th</sup> century and local industry in the Blue Mountains.	Within and adjacent to Medlow Bath to Blackheath section
<b>Convergence of tracks</b>	N/A	The large-scale clearing and the series of tracks near the Convergence of tracks is indicative of industrial activities in the area. However, this item was found to have no historic value and so has not been assessed further for this proposal.	Within Medlow Bath to Blackheath section

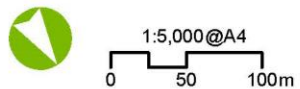
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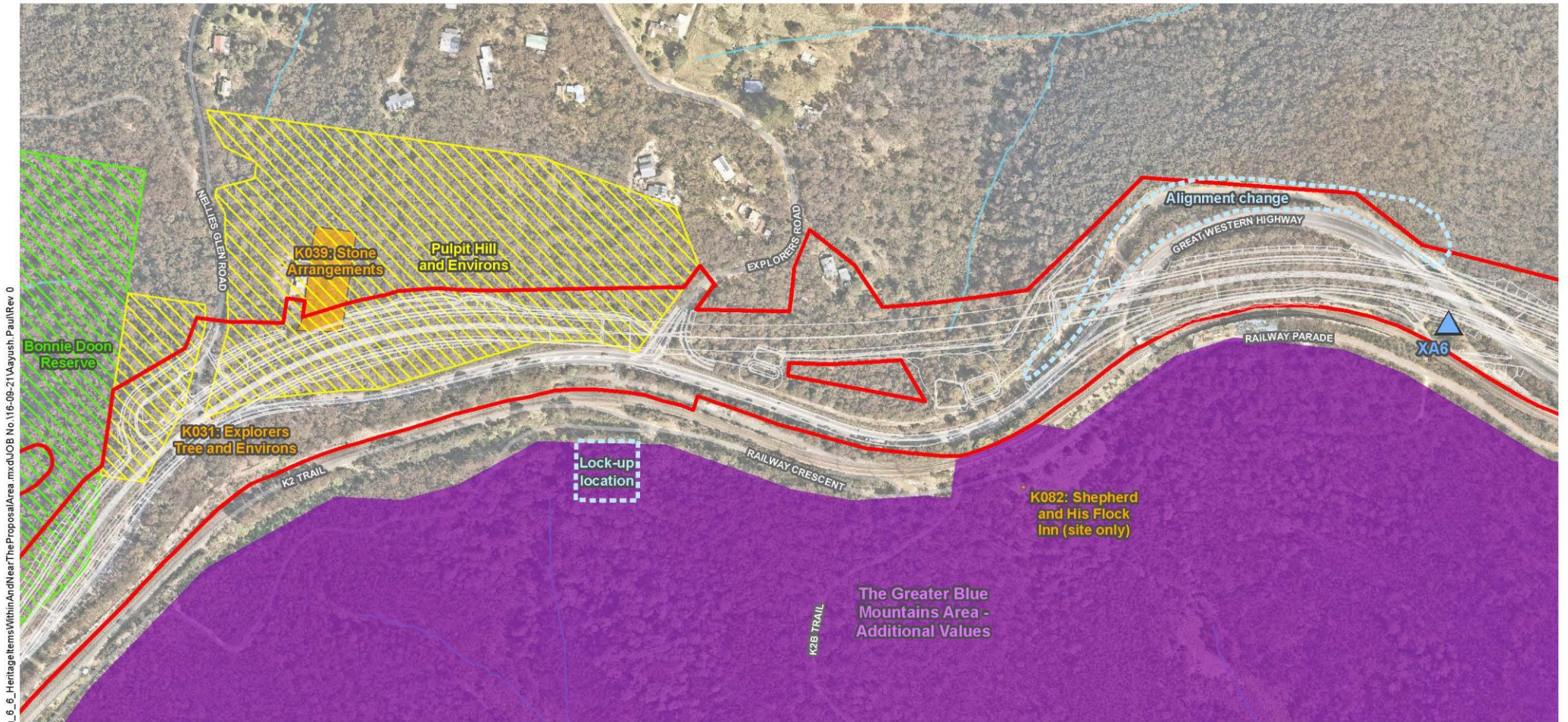
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|--|--|--|--------------------------|
|  | The design                             |  | <b>Heritage items</b>    |
|  | Proposal area                          |  | Bonnie Doon Reserve      |
|  | Potential heritage sites               |  | Pulpit Hill and Environs |
|  | Blue Mountains LEP 2015                |  |                          |
|  | National heritage register (nominated) |  |                          |











Source: Aurecon, Mott MacDonald, LPI, Nearmap, Niche

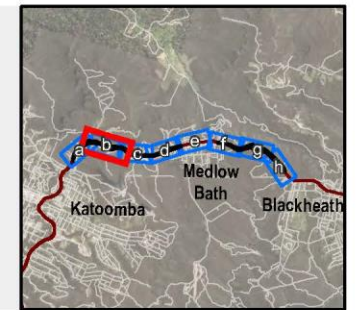


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|--|--|
|  Culverts                               | <b>Heritage items</b>  |
|  The design                             |  Bonnie Doon Reserve      |
|  Proposal area                          |  Pulpit Hill and Environs |
|  Potential heritage sites               |  |
|  Blue Mountains LEP 2015                |  |
|  National heritage register (nominated) |  |



Source: Aurecon, Mott MacDonald, LPI, Nearmap, Niche

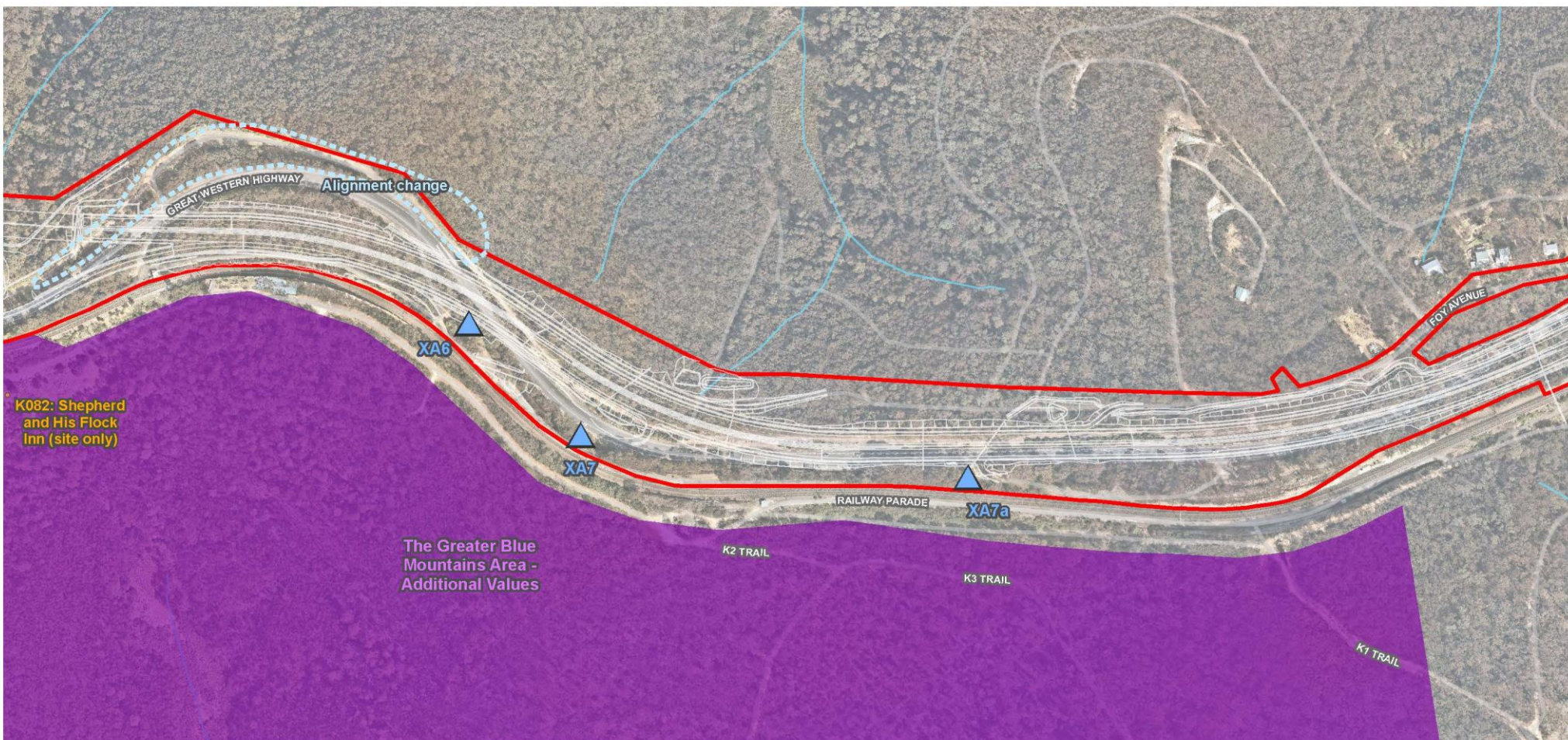








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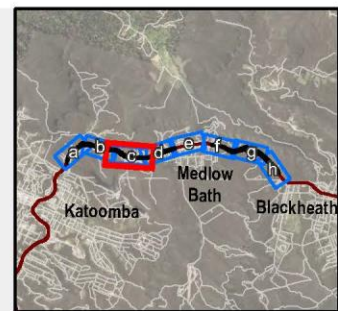
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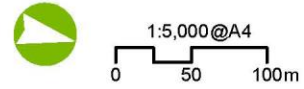
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-  Culverts
-  The design
-  Proposal area
-  Potential heritage sites
-  Blue Mountains LEP 2015
-  National heritage register (nominated)

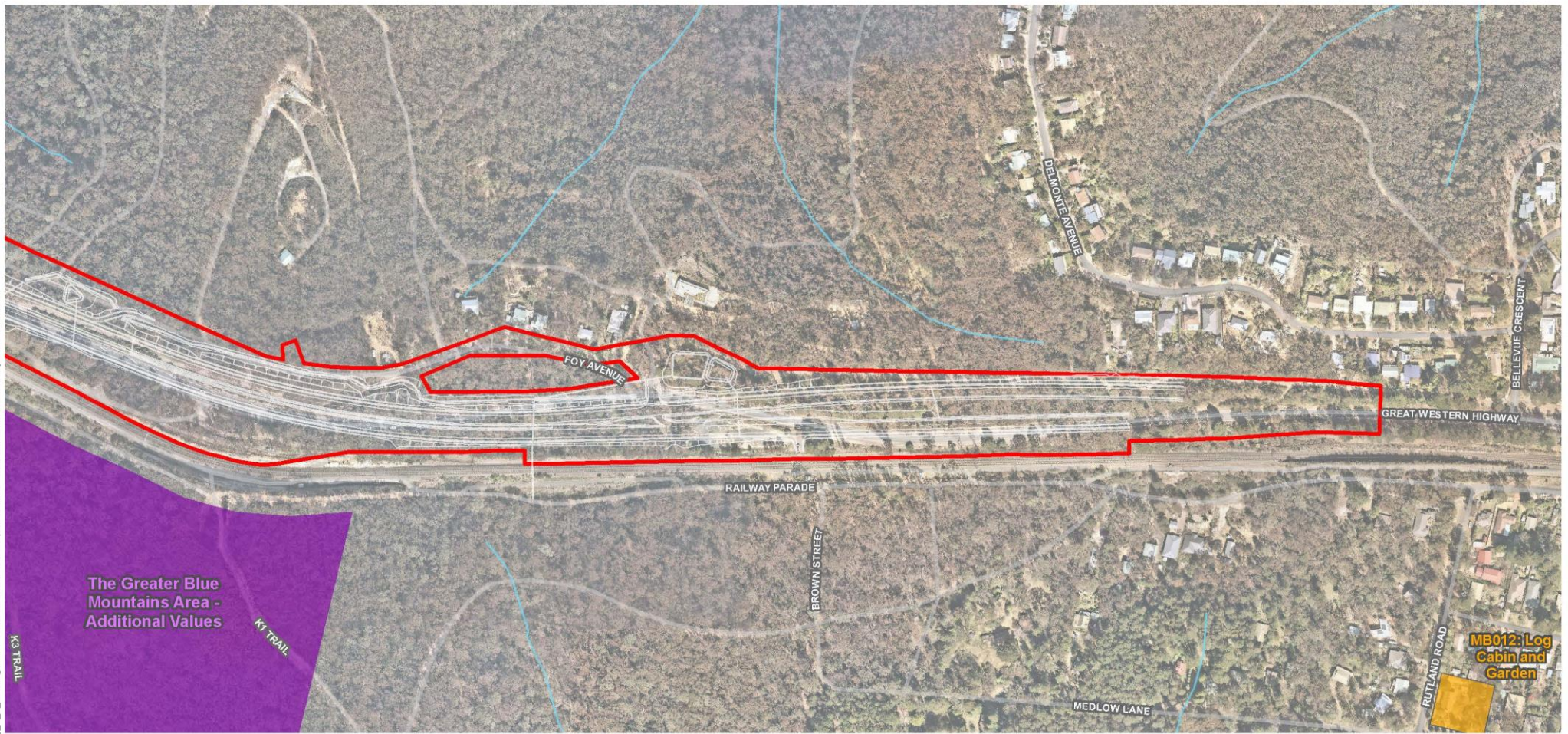


Source: Aurecon, Mott MacDonald, LPI, Nearmap, Niche

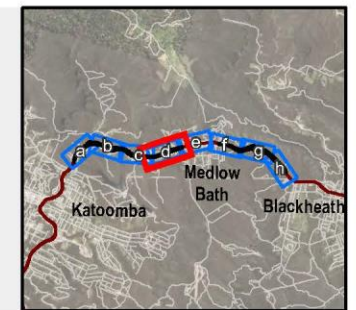


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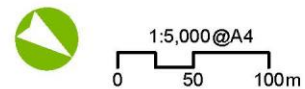
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-  The design
-  Proposal area
-  Blue Mountains LEP 2015
-  National heritage register (nominated)



Source: Aurecon, Mott MacDonald, LPI, Nearmap, Niche

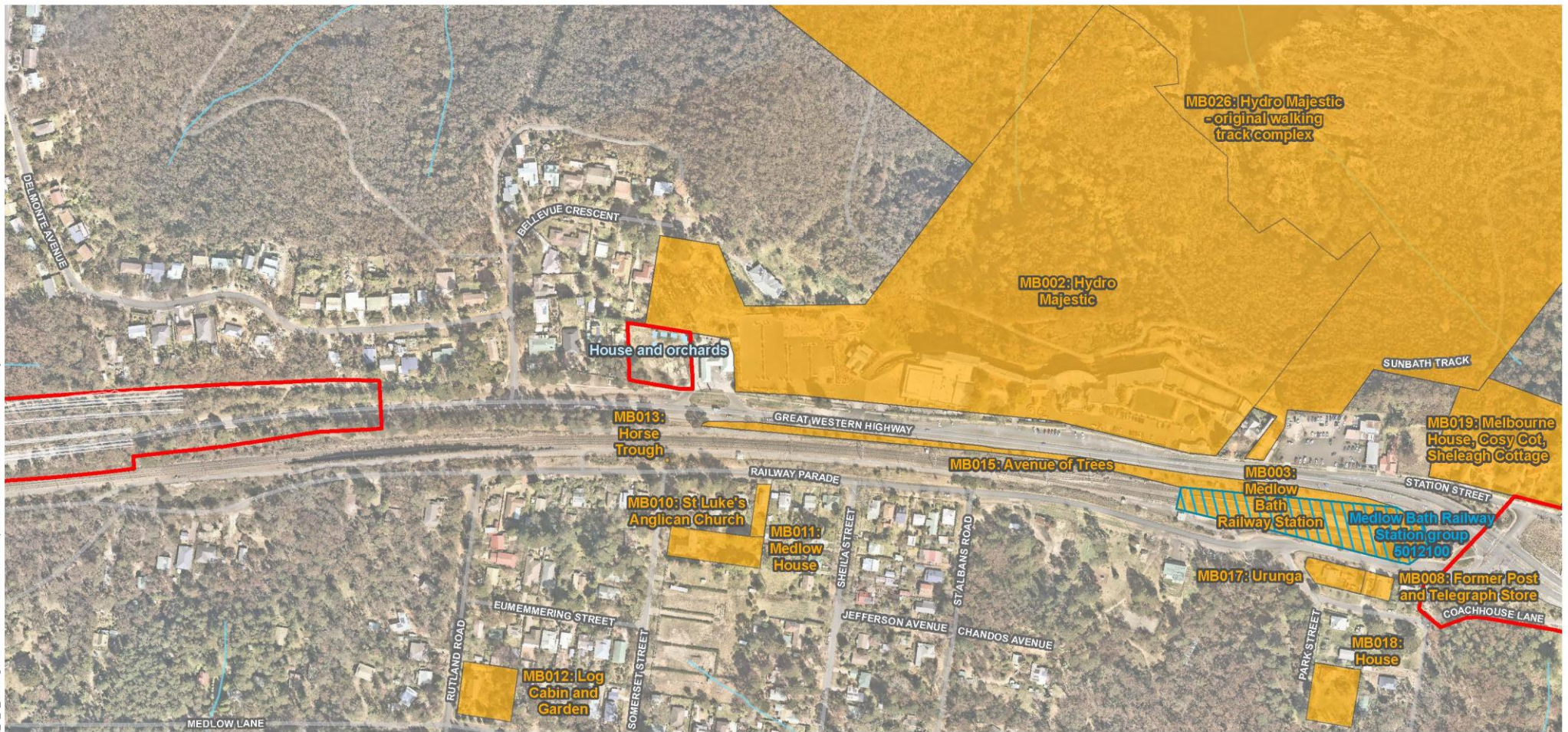


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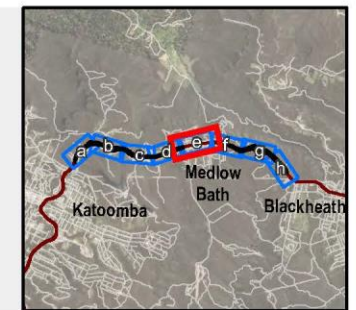
Great Western Highway East **Review of Environmental Factors**

FIGURE 6-4d: Heritage items within and near the proposal area

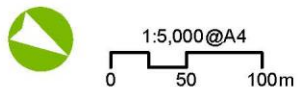
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-  The design
-  Proposal area
-  Potential heritage sites
-  State heritage register
-  Blue Mountains LEP 2015



Source: Aurecon, Mott MacDonald, LPI, Nearmap, Niche

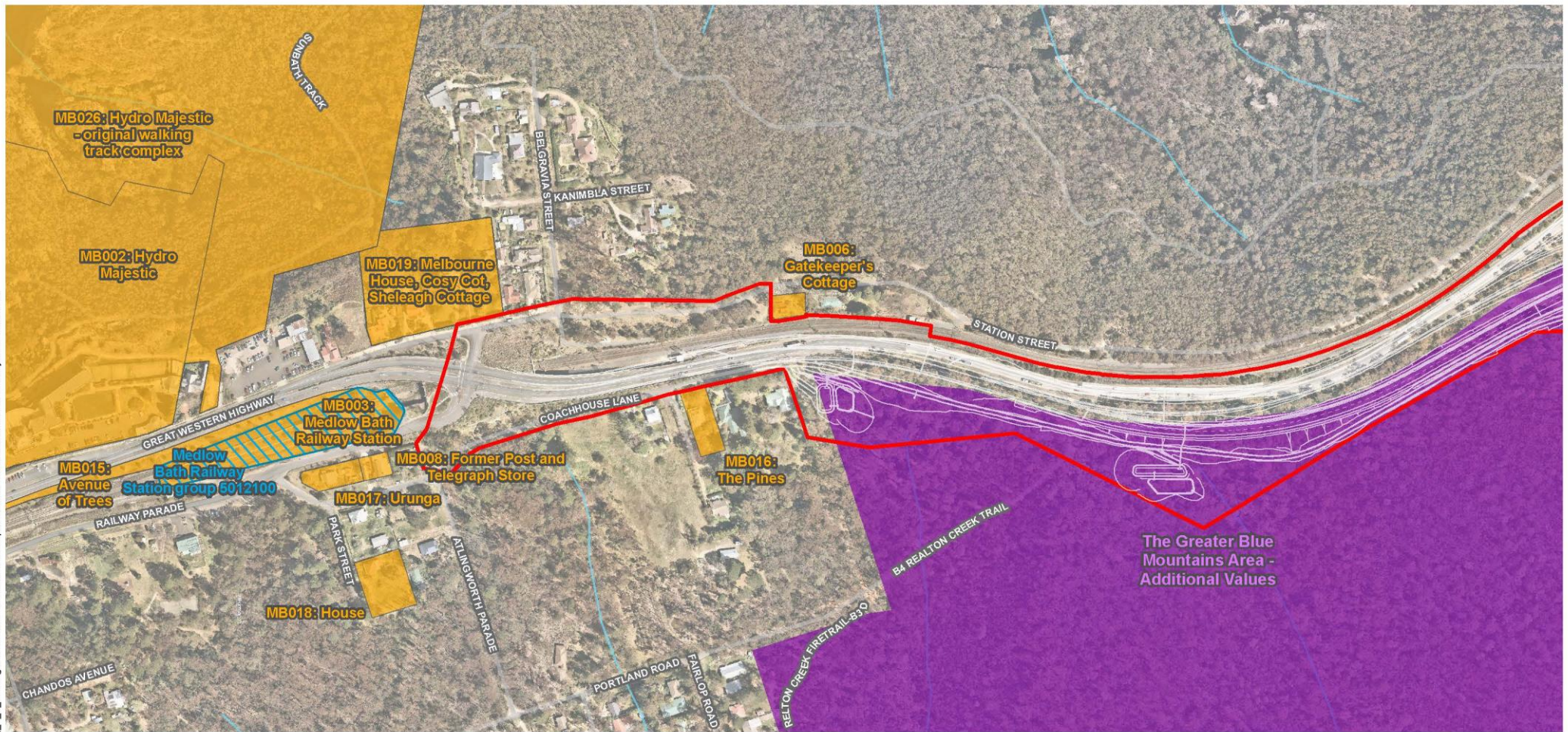


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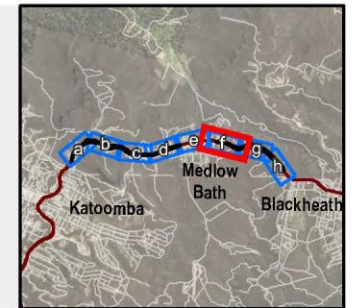
Great Western Highway East **Review of Environmental Factors**

FIGURE 6-4e: Heritage items within and near the proposal area

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-  The design
-  Proposal area
-  State heritage register
-  Blue Mountains LEP 2015
-  National heritage register (nominated)



Source: Aurecon, Mott MacDonald, LPI, Nearmap, Niche



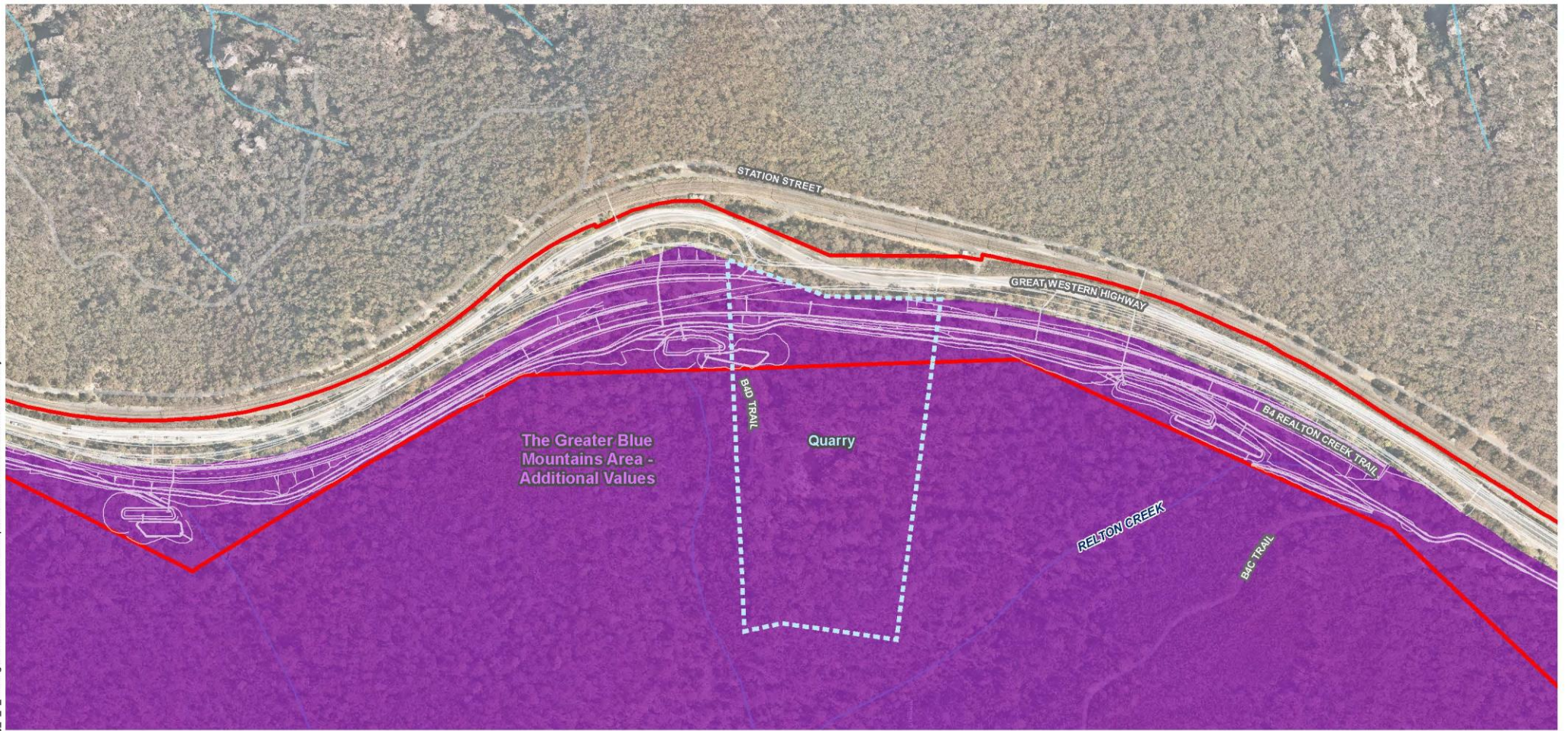
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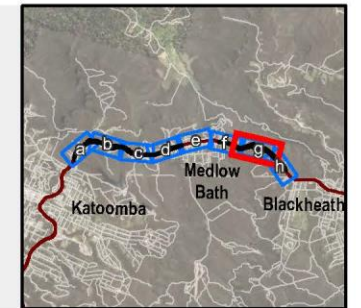
Great Western Highway East **Review of Environmental Factors**

FIGURE 6-4f: Heritage items within and near the proposal area

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-  The design
-  Proposal area
-  Potential heritage sites
-  National heritage register (nominated)



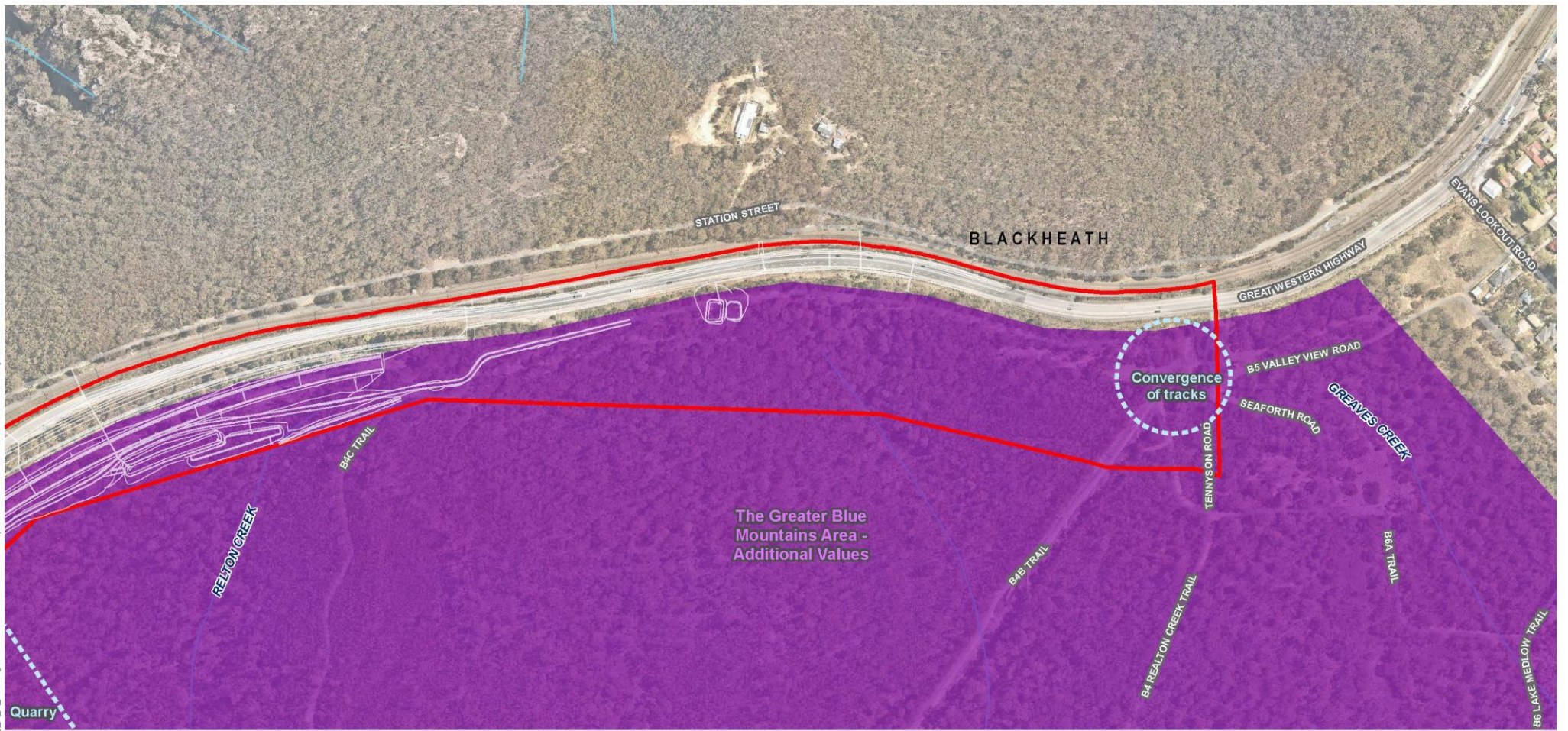
Source: Aurecon, Mott MacDonald, LPI, Nearmap, Niche



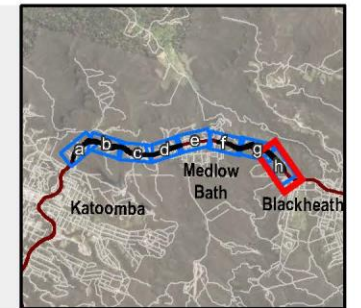
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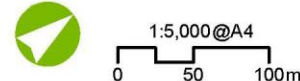
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-  The design
-  Proposal area
-  Potential heritage sites
-  National heritage register (nominated)



Source: Aurecon, Mott MacDonald, LPI, Nearmap, Niche



Projection: GDA2020 MGA Zone 56

Great Western Highway East **Review of Environmental Factors**

FIGURE 6-4h: Heritage items within and near the proposal area

### ***Archaeological potential of the proposal area***

The historical archaeological assessment found largely low potential for subsurface historical archaeological deposits across most of the proposal area. There were some areas with moderate to high levels of potential identified throughout the proposal area. Within or near the Katoomba to Medlow Bath proposal area, there is:

- moderate-high potential evidence of graves on Pulpit Hill
- moderate potential evidence of previous road alignments of the Great Western Highway
- moderate potential evidence of the construction and ongoing use of the railway, including culverts, embankments and workers camps
- moderate-high potential evidence of the Shepherd and His Flock Inn site and Lock-up site
- low-moderate potential evidence of tracks and occupation at Bonnie Doon Reserve
- low potential evidence of the stockyard as a stopping site along previous road alignments
- high potential evidence of settlements at the House at Pulpit Hill.

Within or near the Medlow Bath to Blackheath proposal area, there is high potential evidence of the cottage at the former quarry site.

There is also moderate potential evidence of settlement at the House and Orchards (former Glenara Cottage) site within the Great Western Highway, Medlow Bath ancillary facility.

### **6.4.3 Potential impacts**

#### ***Construction***

Construction of the proposal would directly and indirectly impact the identified heritage items near the proposed work. Table 6-21 outlines the predicted impacts of the construction of the proposal on these items.

During construction, there would be visual changes that may impact the setting of and views to heritage items, especially within the Katoomba to Medlow Bath section. These visual impacts would mainly be caused by the movement and operation of various machinery and light and heavy vehicles surrounding heritage items, affecting overall amenity and setting. Visual impacts of the proposal are discussed further in Section 6.5.3.

Construction work could also impact on the archaeological potential identified near Pulpit Hill. This would impact the Pulpit Hill and Environs heritage item however would not impact the potential grave sites within the Stone Arrangements curtilage. The proposed design would be further refined during detailed design to minimise heritage impacts on this item. However, it is noted that as part of the Katoomba to Medlow Bath section, the existing heritage interpretation area would be consolidated and improved to better integrate the heritage significance of the Pulpit Hill area and provide better accessibility to visitors.

Table 6-21: Potential impacts on the identified heritage items during construction of the proposal

Item	Listing number	Listing	Predicted impacts
<b>Great Western Highway</b>	N/A	N/A	<p><b>Minor partial physical impacts – Katoomba to Medlow Bath and Medlow Bath to Blackheath sections</b></p> <p>There would be direct impacts to the Great Western Highway due to the proposed road duplication and ancillary work impacting the existing road corridor. The existing Great Western Highway road alignment holds heritage significance as the crossing of the Blue Mountains and so, in areas that are no longer used, would affect the significance of those areas. Changing the alignment would result in minor impacts to the overall significance of the item.</p>
<b>Greater Blue Mountains Area – Additional Values (Nominated)</b>	105696	National	<p><b>No direct or indirect impacts – Katoomba to Medlow Bath section</b></p> <p><b>Minor partial physical impacts – Medlow Bath to Blackheath section</b></p> <p>There would be direct impacts due to vegetation clearance, road widening and construction of associated drainage basins along the western periphery of the Greater Blue Mountains Area - Additional Values area. It would involve the removal of established native trees that contribute to the overall significance of the heritage item however the loss of these elements would not reduce the overall significance of the item.</p>
<b>Bonnie Doon Reserve</b>	K079	Local	<p><b>Minor partial physical impacts – Katoomba to Medlow Bath section</b></p> <p>There would be direct impact to the northern section of the Bonnie Doon curtilage, along the existing road shoulder. Construction work would involve vegetation clearance, road widening, cut and fills and the construction of a drainage basin in this area. While established native trees that contribute to the overall significance of the heritage item would be removed, their removal would not reduce the overall significance of the item.</p>
<b>Pulpit Hill and Environs including: Lock-up Stockyard Elements of Cox’s Road</b>	K166	Local (Recommended for State listing)	<p><b>High partial physical impacts – Katoomba to Medlow Bath section</b></p> <p>There would be direct physical impacts to the eastern curtilage of this item. This would occur through road widening, earthworks, bridge construction, intersection upgrade and carpark construction. While the heritage interpretation of Pulpit Hill would be partially removed, the existing Blue Mountains City Council heritage interpretation area would be retained. An expanded and cohesive heritage interpretation area would be developed to reinterpret and display the Aboriginal and non-Aboriginal heritage of the area (refer to Section 3.2.3).</p> <p>Whilst there would be no potential heritage impacts to some components of Pulpit Hill and Environs, the cumulative impacts to the greater Pulpit Hill environs would impact the significance of these elements.</p>
<b>Stone Arrangements (within Pulpit Hill curtilage)</b>	K039	Local (Recommended for State listing)	<p><b>High partial physical impacts – Katoomba to Medlow Bath section</b></p> <p>There would be high direct impacts to this site due to major earthworks and road widening along the eastern curtilage of the Stone Arrangements site, directly adjacent to the recorded locations of stone arrangements. However, there would not be impacts to the potential grave sites within the Stone Arrangements curtilage</p>
<b>Shepherd and His Flock Inn site</b>	K082	Local	<p><b>No direct or indirect impacts – Katoomba to Medlow Bath section</b></p> <p>While there would be no impacts to this item, due to its location within Pulpit Hill and Environs, there would be high cumulative impacts on the significance of the entire curtilage.</p>



Item	Listing number	Listing	Predicted impacts
<b>Explorer's Tree and Environs</b>	K031	Local	<b>Minor-moderate partial physical impacts – Katoomba to Medlow Bath section</b> There would be direct impacts due to earthworks and the construction of the upgraded heritage interpretation area and carpark in the former location of the Explorer's Tree. While the Explorer's Tree has been previously removed, the site is still a heritage listed site and the proposal would have a partial impact on the site. The upgrade of the heritage interpretation area would help to enhance the location in the landscape.
<b>Alignment change</b>	N/A	N/A	<b>Minor partial physical impacts – Katoomba to Medlow Bath section</b> There would be direct impacts due to earthworks and road widening at the northern and southern sections of the alignment change. These locations are likely to be heavily disturbed through the previous construction of the Great Western Highway and is unlikely to retain in situ remains in the location of the proposed design.
<b>Old alignment</b>	N/A	N/A	<b>Minor partial physical impacts – Katoomba to Medlow Bath section</b> There would be direct impacts due to earthworks and road widening at the western sections of the old alignment. These locations are likely to be heavily disturbed through the previous construction of the Great Western Highway and is unlikely to retain in situ remains in the location of the proposed design.
<b>Culvert XA6</b>	N/A	Local (recommended)	<b>Minor indirect (vibration) impacts – Katoomba to Medlow Bath section</b> This culvert would be located directly adjacent to proposed work, but not directly affected. The potential vibration impacts on this item are assessed in Section 6.6.4.
<b>Culvert XA7</b>	N/A	Local (recommended)	<b>Minor indirect (vibration) impacts – Katoomba to Medlow Bath section</b> This culvert would be located directly adjacent to proposed work, but not directly affected. The potential vibration impacts on this item are assessed in Section 6.6.4.
<b>Culvert XA7a</b>	N/A	Local (recommended)	<b>Minor indirect (vibration) impacts – Katoomba to Medlow Bath section</b> This culvert would be located directly adjacent to proposed work, but not directly affected. The potential vibration impacts on this item are assessed in Section 6.6.4.
<b>The Pines</b>	MB016	Local	<b>Minor indirect (vibration) impacts – Katoomba to Medlow Bath section</b> The widened existing road corridor in front of the item would have no direct impact on the item's significance. The potential vibration impacts on this item are assessed in Section 6.6.4.
<b>Gatekeeper's Cottage</b>	MB006	Local	<b>Minor indirect (vibration) impacts – Katoomba to Medlow Bath section</b> The Katoomba to Medlow Bath section would widen the existing road in front of the item and would have no direct impact on the item's significance. The potential vibration impacts on this item are assessed in Section 6.6.4.
<b>House and Orchards (former Glenara Cottage)</b>	N/A	N/A	<b>Moderate temporary partial physical impacts – Medlow Bath ancillary facility</b> There would be direct impacts to this item during its use as an ancillary facility during construction, including as a temporary site laydown area. An Historic (non-Aboriginal) Archaeological Assessment would be carried out to identify the extent of archaeological resources prior to construction work occurring.

Item	Listing number	Listing	Predicted impacts
Quarry	N/A	N/A	<p><b>Minor partial physical impacts – Medlow Bath to Blackheath section</b></p> <p>There would be direct impacts to this site due to road widening and earthworks within the western half of this identified area. It may impact the area of an early 20<sup>th</sup> century cottage associated with the quarry use, however, this cottage does not meet the threshold for local heritage significance.</p>

## **Operation**

Generally, the proposal would be contained within the existing corridor and so would not visually dominate any heritage items more than the current alignment. The proposal would have a low visual impact on the context and views of The Pines and the Gatekeeper's Cottage heritage items. The character of the area around these items would remain similar as the Medlow Bath to Blackheath section would tie into the existing highway at this location. Visual impacts of the proposal are discussed further in Section 6.5.3.

The proposal has been designed to complement the heritage significance of the proposal area by following the original alignment and creating spaces for interpretation and community access. These design features include the consolidation and improvement of the heritage interpretation area near Nellies Glen Road and the provision of improved active transport trails. Further details are available in Section 3.2.3

Transport is currently engaging with specialist heritage consultants GML Heritage and Balarinji Indigenous Design and Strategy to engage stakeholders in developing a cultural interpretation strategy across the Great Western Highway Upgrade Program – Katoomba to Lithgow. This cultural interpretation strategy would look to interpret both Aboriginal and non-Aboriginal heritage along the highway alignment. The Pulpit Hill heritage interpretation area would be further developed as part of the Great Western Highway Upgrade Program cultural interpretation strategy, in consultation with the Blue Mountains City Council, Heritage NSW, Aboriginal knowledge holders and the local community.

As such, the operation of the proposal is not expected to result in any other direct or indirect impacts on the identified heritage items.

#### 6.4.4 Safeguards and management measures

Safeguards and management measures for non-Aboriginal heritage are outlined in Table 6-22.

Table 6-22: Safeguards and management measures – non-Aboriginal heritage

Impact	Environmental safeguards	Responsibility	Timing	Reference
Non-Aboriginal heritage	A Non-Aboriginal Heritage Management Plan (NAHMP) 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 Non-Aboriginal heritage.	Transport / Contractor	Detailed design / pre-construction	Section 4.10 of QA G36 <i>Environment Protection</i>
Non-Aboriginal heritage	The <i>Standard Management Procedure - Unexpected Heritage Items</i> (Transport, 2015d) will be followed in the event that any unexpected heritage items, archaeological remains or potential relics of Non-Aboriginal origin are encountered. Work will only re-commence once the requirements of that Procedure have been satisfied.	Transport / Contractor	Detailed design / pre-construction	Section 4.10 of QA G36 <i>Environment Protection</i>
Non-Aboriginal heritage	The proposed design will be further refined during detailed design to avoid and/or minimise non-Aboriginal heritage impact. Should detailed design result in changes to non-Aboriginal heritage impacts, this will be re-evaluated at that stage.	Transport	Detailed design	Additional safeguard
Non-Aboriginal heritage	A Photographic Archival Record of the current state of the Great Western Highway will be prepared prior to the commencement of construction. The archival recording will be submitted to Transport, local historical societies and Blue Mountains City Council.	Contractor	Pre-construction	Additional safeguard
Greater Blue Mountains Area – Additional Values	Removal of vegetation within the Greater Blue Mountains Area – Additional Values areas will be minimised as much as possible.	Transport	Detailed design	Additional safeguard
Pulpit Hill and Environs	<ul style="list-style-type: none"> <li>A Conservation Management Plan (CMP) will be prepared for Pulpit Hill and Environs to manage the heritage significance of the site and provide for ongoing management.</li> <li>The proposed concept design will be further refined during detailed design to minimise adverse heritage impact on the Pulpit Hill and Environs curtilage (including Stone Arrangements site) and interpret the heritage significance of this site, including the role the Explorers Tree played as a waypoint.</li> <li>If it is not possible to completely avoid the Stone Arrangements, then further information will be required to better understand the constraints and significance of the heritage site. This further study will include: <ul style="list-style-type: none"> <li>An Historical Archaeology Assessment including a Historical Research Study</li> </ul> </li> </ul>	Transport / Contractor	Detailed design / pre-construction / Construction	Additional safeguard

Impact	Environmental safeguards	Responsibility	Timing	Reference
	<ul style="list-style-type: none"> <li>- An Archaeological Research Design (ARD) for archaeological work</li> <li>- An archaeological test excavation targeting a portion of the Stone Arrangements and a soil analysis of excavated soil to confirm the presence of graves</li> <li>- Further remote sensing studies to verify previous study results.</li> <li>• The archaeological test excavation will be carried out to confirm whether a permit under Section 140 of the <i>Heritage Act 1977</i> will be required for the proposal.</li> <li>• A heritage interpretation strategy for the Pulpit Hill area will be developed to reinterpret the existing heritage interpretation area and communicate the heritage significance of the Pulpit Hill area. This will be integrated with the cultural interpretation strategy for the Great Western Highway Upgrade Program. The existing interpretation area will be retained as much as possible.</li> </ul>			
Bonnie Doon Reserve	Vegetation removal within the Bonnie Doon Reserve curtilage will be limited to as little as needed and unobtrusive as possible.	Transport	Detailed design	Additional safeguard
Culvert XA6, XA7 and XA7a	A further vibration assessment will be prepared to assess the indirect impacts of the proposal near Culvert XA6, XA7 and XA7a.	Transport	Detailed design	Additional safeguard
House and Orchards (former Glenara Cottage)	An Historic (non-Aboriginal) Archaeological Assessment (HAA) will be carried out to the determine the nature, extent and significance of any archaeological resources associated with the House and Orchards (former Glenara Cottage) in this area and identify appropriate management measures.	Contractor	Pre-construction	Additional safeguard
The Pines and The Gatekeeper's Cottage	<ul style="list-style-type: none"> <li>• A further vibration assessment will be prepared to assess the indirect impacts of the proposal near The Pines and The Gatekeeper's Cottage.</li> <li>• Should detailed design result in changes to the proposal near The Pines and The Gatekeeper's Cottage, visual impacts will be revaluated upon completion of detailed design.</li> </ul>	Transport	Detailed design	Additional safeguard

Other safeguards and management measures that would address non-Aboriginal heritage impacts are identified in Section 6.6.4.