6.9 Landscape character and visual impacts

Potential impacts of the proposal on landscape character and visual amenity have been assessed in the *Great Western Highway Upgrade Medlow Bath – Urban Design, Landscape Character and Visual Impact Assessment* prepared by Spackman Mossop Michaels (2021) which is provided in Appendix K. A summary of the assessment is presented in this section, together with safeguards and management measures to mitigate any negative impacts.

6.9.1 Methodology

The assessment was prepared in accordance with the Roads and Maritime *Environmental Impact Assessment Practice Note: Guideline for Landscape Character and Visual Impact Assessment (EIA-N04)* (Roads and Maritime Services, 2018b). The sensitivity and magnitude of the landscape and visual impact was assessed to produce a combined impact rating of negligible, low, moderate and high (refer to Figure 6-21).

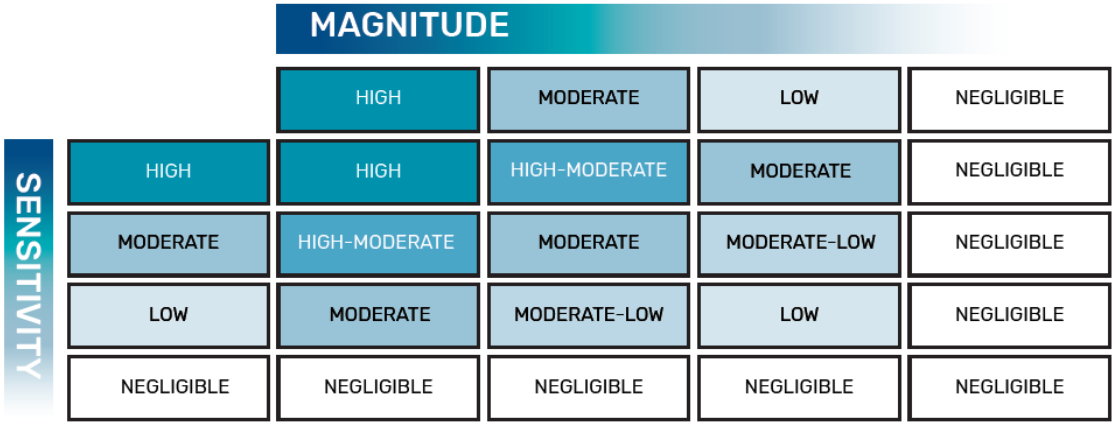

Figure 6-21: Landscape character and visual impact rating matrix (NSW Roads and Maritime, 2018)

Below is a summary of the key activities undertaken for the landscape character and visual impact assessment.

- Undertaking an initial site visit and field investigation, reviewing relevant literature, analysing aerial photographs and topographic maps to understand the study area.
- Reviewing the preferred engineering concept design on a regular basis, and other supporting material to gain an appreciation of the project.
- Developing an Urban Design Strategy comprising objectives and principles to guide the development of the concept design.
- Defining landscape character through a study area analysis, including a detailed site investigation.
- Identifying and describing landscape character zones and evaluating the proposal's impact on them.
- Evaluating the impact of the project on these landscape character zones by combining the sensitivity of the zone and the magnitude of the works to provide an overall impact rating as indicated by the Impact Assessment Grading Matrix.
- Identifying the visual catchment of the proposed works for the visual impact assessment.
- Selecting viewpoints within the visual catchment representing a range of different land uses.

- Evaluating the visual impact of the project by comparing the sensitivity of viewpoints and the magnitude of the impact of the project upon them to provide an overall impact rating as indicated by the Impact Assessment Grading Matrix.
- Developing the Urban and Landscape Concept Design, described in plans, sections/ elevations, precedent photographs and other drawings as appropriate.
- Identifying urban design and landscape opportunities and methods of mitigating adverse visual impacts, both within and outside of the project scope to assist the ongoing development of the concept design and for consideration in the detail design phase of the proposal.

6.9.2 Existing environment

The proposal area is surrounded by land zoned for residential, recreational and conservation purposes.

The Great Western Highway along with the Main West Line, forms the primary transport corridors through the Blue Mountains, connecting Penrith to Lithgow. The villages along the Great Western Highway have vast and undisturbed views over the Greater Blue Mountains World Heritage Area.

The journey along the Great Western Highway through the Blue Mountains, crosses landscapes that have rich natural, cultural, scenic and historical values that enhance its attractive and picturesque setting. Generally, urban developments along the highway are located along the ridgeline above and are discrete in nature and separated by natural bushland creating a repeating sequence of urban areas and natural bushland, sometimes referred to as a “string of pearls”.

The village of Medlow Bath is located between Blackheath, to the north, and Katoomba, to the south and mostly consists of single story dwellings, guest-houses and retreats. The western edge of the Great Western Highway is physically and visually dominated by the Hydro Majestic Hotel, which is positioned atop the Megalong Valley escarpment. The escarpment is locally protected due to its high scenic values. To the east of the Great Western Highway, vegetation creates a buffer between Medlow Bath residential tree-lined streets and the existing highway and rail corridor. Further east, low density housing backs onto the national park.

Within the Medlow Bath village and to the east of the railway line, there is one public open space facility at Medlow Bath Park, adjacent to the Rural Fire Brigade station which provides public amenity in the form of a playground, picnic tables and landscaped gardens. Surrounding the village, there are several popular bushwalking tracks that provide recreational facilities for locals and tourists, as well as regional and local cycle routes that link to the Blue Mountains Trail and Mountain Bike Trails to Point Pilcher.

Landscape character

The proposal area comprises three distinct landscape character zones (LCZ). A LCZ is defined as the collective qualities including the built form, natural elements, and the cultural and social facets that combine to provide a locale with a unique sense of place. Each LCZ reflects broadly homogenous visual characteristics particularly in terms of vegetation, land use and landform.

Table 6-38 provides a summary description and attributes associated with each LCZ and Figure 6-22 provides the approximate extent of these landscape zones.

Table 6-38: Landscape Character Zones Categories (Spackman Mossop Michaels, 2021)

LCZ	Description
LCZ 1 – Enclosed Bushland	High quality plant communities, heavily vegetated enclosed bushland with prominent rock cuttings, edged by roadside vegetation.
LCZ 2 – Medlow Bath Western Plateau	Plateau adjacent to the Megalong Valley escarpment, Rich in high visual and scenic qualities.
LCZ 3 – Medlow Bath East Village	Flat to gently undulating topography, predominantly low-density housing surrounded by remnant stands of woodland vegetation and mature planted exotics.

Visual receivers/viewpoints

The extent from which the proposal would be visible from adjoining areas varies along the length of Medlow Bath. It is influenced by topography, vegetation, and associated buildings. Detailed field and desktop assessments were undertaken in conjunction with a viewshed analysis on the site digital elevation model to determine the area from where the proposal would be visible, defined as the Visual Envelope Map as illustrated in Figure 6-23.

The visual receivers of the proposal include residents, tourists, recreational and park users, pedestrians, cyclists and motorists; with views of proposal elements generally constrained by existing rail corridor infrastructure. Elements including the proposed pedestrian bridge and associated works are more likely to be seen from a greater distance given the approximate height of nine metres. The seven viewpoints selected for the visual impact assessment are identified in Figure 6-23, and photomontages to show the existing view and potential future view with the proposal are illustrated in Figure 6-24 to Figure 6-35.

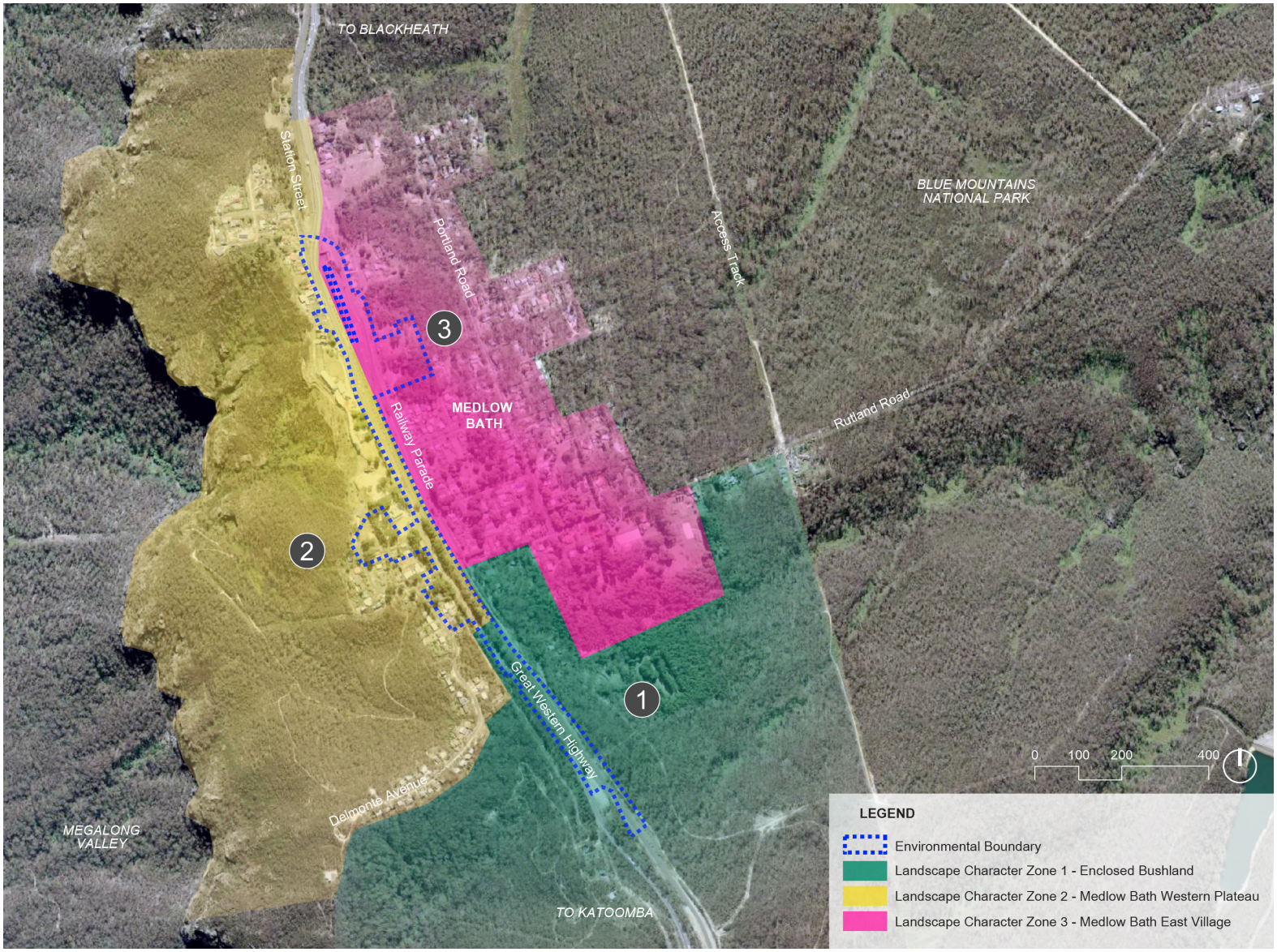

Figure 6-22: Map of identified Landscape Character Zones (SMM, 2021)

Figure 6-23: Visual impact assessment viewpoint locations (SMM, 2021)

6.9.3 Potential impacts

Construction

Construction of the proposal would result in a combination of temporary and permanent impacts to the existing landscape. Temporary visual impacts would be from construction work and materials, including:

- ancillary facilities such as site compounds
- traffic control vehicles and personnel
- construction vehicles
- various machinery and equipment
- construction fencing
- signage material
- stockpiling
- storage areas
- night-work lighting
- vegetation removal.

The ancillary facilities described in Section 3.3, would require the storage of construction materials, a site office, construction vehicles, plant and stockpiled materials. These impacts would occur throughout construction, but construction staging would result in the impact not being spread across the entire proposal area at the one time.

Operation

The *Urban Design, Landscape Character and Visual Impact Assessment* (Spackman Mossop and Michaels, 2021) outlines how key design initiatives have sought to minimise visual impacts.

- Develop an integrated design that fits with the existing visual qualities, ecology and character of Medlow Bath and the Blue Mountains setting through:
    - integrating the road into existing vegetation communities to maintain a sense of place
    - minimising the removal of vegetation to maximise opportunities to mitigate visual impacts through the refinement of retaining walls and assessment of new landscape treatment opportunities at cuttings and embankments
    - consolidating the road and rail corridor as much as possible in areas where there are limited landscape buffer zones along critical verges, such as the Hydro Majestic Hotel
    - maximising the area for verges to allow for a buffer between the shared path and highway and where space permits, the incorporation of street trees and endemic shrub planting to strengthen village character and user amenity.
- Minimise impacts to the integrity of heritage sites, significant trees and cultural values of the community within the proposal through:
    - enhancing heritage identity by using suitable materials within the landscape that enhance the character of Medlow Bath and the Blue Mountains. For example, the pedestrian bridge materials would be selected for their robustness and durability, considering tendencies to develop a patina (ie the green film formed over copper/bronze structures) as they age. The natural colours and materials of weathered steel is proposed for the pedestrian bridge, which is considered visually lightweight. Further the glass lifts proposed to be installed on the pedestrian bridge would help to reduce bulky forms given the pedestrian bridge is the most dominant feature of the proposal
    - maintaining views to heritage and cultural elements where possible to enhance Medlow Bath's cultural identity.

    - ensuring materials used in public gathering spaces are complementary to Medlow Bath conditions and character, are robust and easily maintained and deter graffiti or at least allow for easy graffiti removal.
- Contribute to the functionality of public spaces and enhance local and regional connectivity through:
    - maintaining appropriate safety criteria and sightlines to strengthen village character and protecting users of the proposed shared path along the Great Western Highway
    - providing safe, direct and obvious connections between the pedestrian bridge and existing/proposed pedestrian and cycling circulation and access networks within Medlow Bath and its surrounds.

Artist's impressions have been prepared for Viewpoints 1-7, to provide an illustration of how the proposal may appear during operation and are included in the following figures.

Figure 6-24: Viewpoint 1 (existing): looking north from the western side of the highway at Bellevue Crescent

Figure 6-25: Viewpoint 1 (visualisation of proposal): looking north from the western side of the highway at Bellevue Crescent

Figure 6-26: Viewpoint 2 (existing): looking north along the existing highway shared user path towards the pedestrian bridge

Figure 6-27: Viewpoint 2 (visualisation of proposal): looking north along the existing highway shared user path towards the pedestrian bridge

Figure 6-28: Viewpoint 3 (existing): looking south along the existing shared user path toward the proposed pedestrian bridge from adjacent to the Blue Mountains Mazda

Figure 6-29: Viewpoint 3 (visualisation of proposal): looking south along the existing shared user path toward the proposed pedestrian bridge from adjacent to the Blue Mountains Mazda

Figure 6-30: Viewpoint 4 (existing) looking north toward the pedestrian bridge and Railway Parade

Figure 6-31: Viewpoint 4 (visualisation of proposal) looking north toward the pedestrian bridge and Railway Parade

Figure 6-32: Viewpoint 5 (existing) looking north from the Medlow Bath Station platform toward the pedestrian bridge and Railway Parade

Figure 6-33: Viewpoint 5 (visualisation of proposal) looking north from the Medlow Bath Station platform toward the pedestrian bridge and Railway Parade

Figure 6-34: Viewpoint 6 (existing) from Railway Parade looking south toward the proposal

Figure 6-35: Viewpoint 6 (visualisation of proposal) from Railway Parade looking south toward the proposal

Table 6-39 provides a summary of the visual impact assessment undertaken for seven viewpoints located across the LCZs (refer to Figure 6-22 for viewpoint locations). In summary the proposal would result in Moderate-Low to High impacts for several viewpoints. One viewpoint (Viewpoint 7) would have a High visual impact, three viewpoints would have a High-Moderate visual impact (Viewpoint 1, 4, and 6), two viewpoints would have a Moderate visual impact (Viewpoint 2 and Viewpoint 5), and one viewpoint would have a Moderate to Low visual impact (Viewpoint 3).

Table 6-39: Visual impact assessment for key viewpoints

Viewpoint	Location	LCZ	Sensitivity	Magnitude	Overall impact
1	Northern corner of Bellevue Crescent and the Great Western Highway, looking north towards the proposal. The viewpoint is representative of a number of views from residencies along this portion of the Great Western Highway.	1	The existing road infrastructure consists of a large portion of the existing view composition, especially from the motorists' perspective when travelling along the road. However, although the sensitivity of the existing road corridor to change would be low, the removal of existing vegetation along the fringes of the corridor which screens the existing highway from residencies along the Great Western Highway and Bellevue Crescent would be sensitive to change.	The proposal would introduce the widening of hardstand resulting in clearing between the existing road and rail corridors. Although there would be vegetation within private property would contribute to a green backdrop, the new bridge structure, widening of the roadway and subsequent shared property access, traffic signals and turning area would result in visual changes. Landscape works would reduce the visual effect over time, introducing formalised streetscape plantings and a succinct village character.	Sensitivity: High Magnitude: Moderate Impact: **High-Moderate**
2	Along the existing shared user path, adjacent to the Great Western Highway and Hydro Majestic Hotel, looking north towards the new pedestrian bridge.	2 and 3	The existing road infrastructure and associated perpendicular parking makes up a predominant proportion of the existing view. In particular, pedestrian views which are screened by existing vegetation and buildings to the west. Due to the combination of existing infrastructure and the transient nature of pedestrians, the sensitivity is considered to be low.	The clearing of trees and the proposed widening of the road corridor to the east of this viewpoint would partially remove vegetative screening of the rail corridor. Additionally, within the mid-ground, the new pedestrian bridge would provide a dominant visual feature. The proposal design and landscaping would contribute to a better visual outcome however the pedestrian bridge would contribute to the overall magnitude of change. Tree and shrub plantings along the median would introduce a succinct village character.	Sensitivity: Moderate Magnitude: Moderate Impact: **Moderate**
3	Along the existing shared user path, adjacent to Blue Mountains Mazda dealership, looking south toward sthe new pedestrian bridge.	2 and 3	Although the existing view is dominated road corridor and existing shared user path, it is exposed and does not offer much opportunity for the view to absorb changes.	The scale and material of the proposed pedestrian bridge result in a significant change to the existing view. The existing vegetation which frames the view and partially screens the rail corridor would be only partially reinstated. Soft	Sensitivity: Low Magnitude: Moderate Impact: **Moderate-Low**

				edges in the form of planted verges will only provide minimal reduction in impact.	
4	Station Street looking south toward the proposal. The viewpoint is representative of a number of views from residencies along this portion of the Great Western Highway/Station Street.	2 and 3	The view is comprised of built elements associated with the road infrastructure including an existing retaining wall, light posts, hardstand and gravel trail, with grasses and small trees providing a buffer between the highway and Station Street. The view would have a moderate sensitivity given the existing conditions and composition of the view.	The combination of hardstand widening, the proposed shared path and pedestrian bridge would result in the magnitude being assessed as moderate. Over time, the Proposal landscape design would contribute to a reduction in magnitude.	Sensitivity: High Magnitude: Moderate Impact: **High-Moderate**
5	Medlow Bath Station platform looking north toward the pedestrian bridge and Railway Parade.	2 and 3	Existing rail and road infrastructure comprise a large portion of the existing view composition, especially from patrons of the rail station. Although the scale of the new pedestrian bridge would impact this view, given the existing infrastructure, the sensitivity of the viewpoint to change would be moderate.	The view would be characterised by the pedestrian bridge, background landscape and rail corridor. Proposal landscape design would contribute to a reduction in magnitude of the scale and materiality of the bridge, adding to the improvement of character.	Sensitivity: Moderate Magnitude: Moderate Impact: **Moderate**
6	Railway Parade looking south toward the proposal. The viewpoint is representative of a number of views from businesses and residencies along Railway Parade.	2 and 3	The view is predominantly made up of road and rail infrastructure with fringe tree and larger shrub plantings along the fence-line. The sensitivity of this view to change is moderate given the existing infrastructure and character within this viewpoint would remain largely unchanged with the exception of localised vegetation clearing and formalisation of the roadway.	The bridge provides a dominant built element, given its scale and materiality when compared to surrounding elements. Changes to lighting, around the proposed forecourt, will also contribute to increased magnitude of change at night. Landscaped vegetation would reduce the visual effect of change over time.	Sensitivity: Moderate Magnitude: High Impact: **High-Moderate**
7	Bellevue Crescent, looking east toward the optional road realignment of Bellevue Crescent. The viewpoint is representative of a number of views from residences along Bellevue Crescent.	1 and 2	The view is predominantly made up a vegetated landform with a strong presence of larger tree plantings. The sensitivity of this view to change is high given the majority of the existing view is made up of vegetation with only a small portion of built form resulting in a significant change to the character and land use of this view for residents along Bellevue Crescent.	The proposed realignment of Bellevue Crescent sits in the foreground of this viewpoint and provides a dominant built element in place of significant existing vegetation which acts as a buffer between the Great Western Highway and residents. The removal of trees in this location Would be significant and given the increase of hardstand and significant increase in traffic in this location the overall magnitude of change in this location would be high.	Sensitivity: High Magnitude: High Impact: **High**

The proposal includes an alternate option for Bellevue Crescent with a new road through vacant lots to connect to the existing Bellevue Crescent and approximately 25 metres south of the United Petrol Station.

As a result, the proposed turning circle located at 106 Great Western Highway, Medlow Bath would not be required, ultimately reducing the impact on residents, as well as reducing the removal of existing mature trees within this location. The proposed option would also provide a stronger entry gateway into Medlow Bath, through the use of mature trees planted at the entry to the previous entrance into Bellevue Crescent.

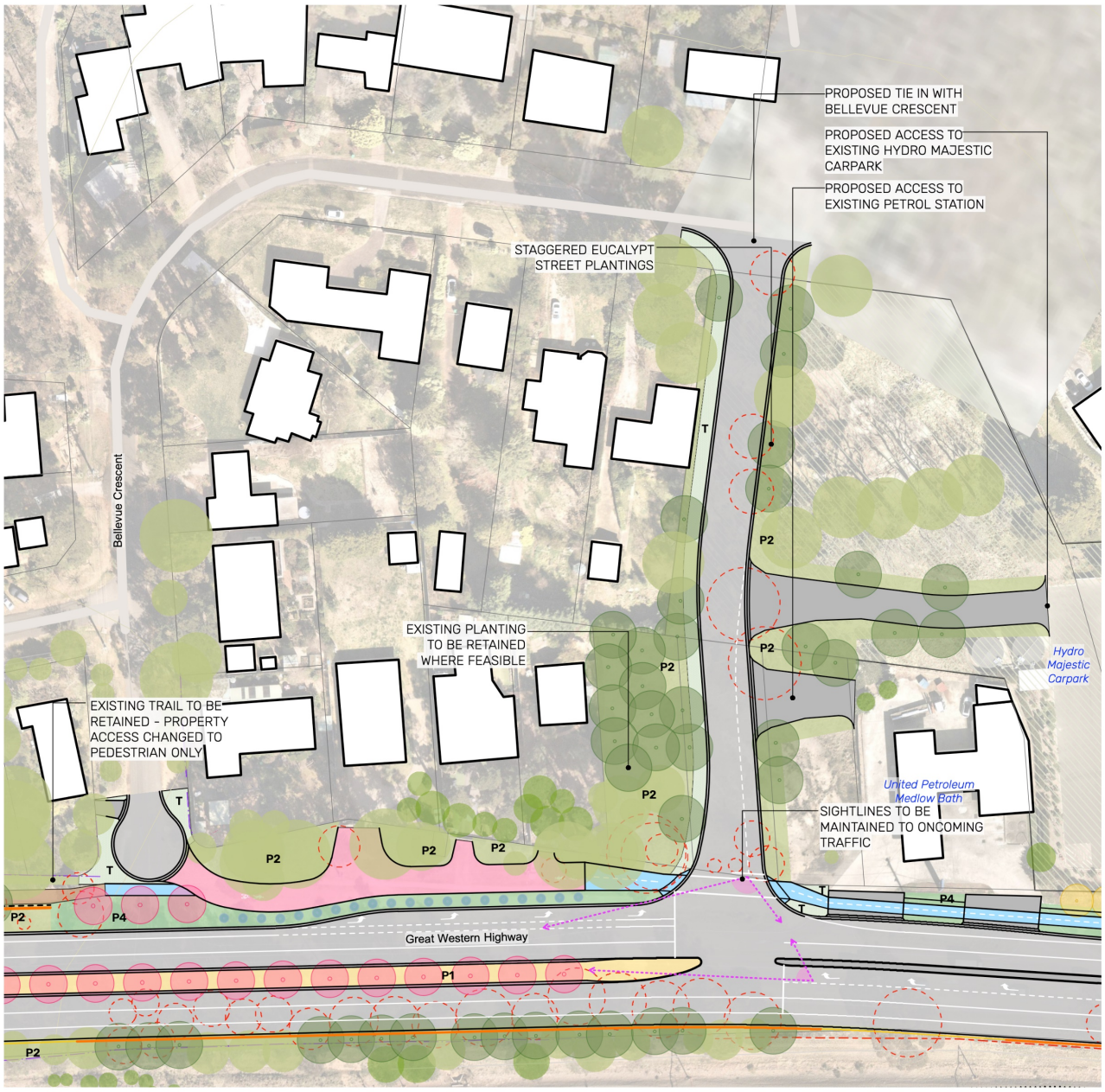

Figure 6-36: Proposed alternative option for Bellevue Crescent (including landscape treatments) (SMM, 2021)

The existing views of the location of the alternative Bellevue Crescent is as per Figure 6-37. As can be seen in Figure 6-36, there would be additional tree plantings in this area.

Figure 6-37: Viewpoint 7 (existing) from Bellevue Crescent looking east toward the option road realignment of Bellevue Crescent

6.9.4 Safeguards and management measures

Table 6-40: Safeguards and management measures – Visual and urban design

Impact	Environmental safeguards	Responsibility	Timing	Reference
Proposal Design	The following principles are to continue to be incorporated into the overall design of the proposal: • the motorists experience and attract people to town centre through the feature planting characteristic of the Blue Mountains area • screening of rail infrastructure where possible, using shrubs and trees, both native and exotic depending on the location • rounding of cut and fill batters to help integrate into the existing landform and create a more naturalised appearance • exploration of opportunities to reduce the Proposal footprint and need for temporary and ancillary sites to reduce impacts on surrounding landscape areas • Consolidating barriers and fences to increase visual access and pedestrian permeability in civic spaces • selection of lighting, signage and bus stops to compliment the Great Western Highway character • retention of views to existing non-aboriginal heritage items identified in the contextual analysis	TfNSW	Detailed design	Appendix K, UD, LC and VIA mitigation measures (Chapter 12)
Bridge Design	The following principles are to continue to be incorporated into the design of the bridge: • The simplification of the bridge forecourts to enhance sightlines and access and enable equitable access for all users, • The refinement of the pedestrian bridge design to reduce its visual impact, by increasing the visual permeability, the positioning of the bridge to reduce the required height and the visual elongation of the bridge through the design of the bridge truss bays that extend beyond the lift structures, • Maximising of opportunities to increase public amenity within the bridge forecourt and between proposed bus shelter/bus stops to enhance the public domain.	TfNSW	Detailed design	Appendix K, UD, LC and VIA mitigation measures (Chapter 12)
Accessibility	The design is to continue to provide improvements to cyclist and pedestrian access through new and upgraded, footpaths and shared paths to create a complete network around Medlow Bath	TfNSW	Detailed design	Appendix K, UD, LC and VIA mitigation measures (Chapter 12)

Impact	Environmental safeguards	Responsibility	Timing	Reference
	Station, connecting into the existing network along the Great Western Highway between Katoomba and Leura.			
Finishes of Structures	The design of new retaining walls to have finishes of a high standard and quality, that is in keeping with the Great Western Highway character	TfNSW	Detailed design	Appendix K, UD, LC and VIA mitigation measures (Chapter 12)
Landscaping	The following principles are to continue to be incorporated into the design of landscaping: • Planting strategies that respond to the existing historical and local context of Medlow Bath, • The planting of feature trees at the entry into Medlow Bath village, and to highlight access into Medlow Bath Station and proposed bus shelters, • The introduction of buffer planting in front of the retaining wall at the southern entry into Medlow Bath to minimise visual impacts, • Maximising of new tree planting where possible; within medians turning facilities, and verges to reduce the scale of the proposal over time as the tree plantings mature. Consideration has been given to sight lines for motorists when identifying possible locations, • Utilisation of native and endemic plantings along the highway outside of the village to consider pedestrians and cyclists using the existing trails as links to regional routes, • Maximisation of revegetation with appropriate species along the highway to reduce perceived corridor width.	TfNSW	Detailed design	Appendix K, UD, LC and VIA mitigation measures (Chapter 12)
Design Integration	The following measures are to be adopted during the Detailed Design stage: • All reasonable measures taken to minimise the loss of existing vegetation along the proposal corridor. Those measures will include minimise clearing of trees for construction access, rationalisation of maintenance access, • Investigate the borrowed landscape and opportunities for additional tree plantings along the proposal corridor, • Investigate opportunities to incorporate heritage qualities within the bridge design, • Further opportunities investigated to increase landscape zones within the road corridor,	TfNSW / Contractor	Detailed design / Construction	Appendix K, UD, LC and VIA mitigation measures (Chapter 12)

Impact	Environmental safeguards	Responsibility	Timing	Reference
	• Lighting and signage to be well-considered in its placement and should not detrimentally add to the visual impact, • At locations where greater visual impacts have been identified, the specification and planting of more mature sized shrubs and trees would be adopted to help reduce the visual impact upon opening of the road since the proposed planting would take a number of years (approximately between 3 to 10 years) to establish at adequate height, • Where site compounds are needed rehabilitate to previous state.			