Visual and Landscape Assessment for the Proposed Upgrade of the New England Highway: Hampton to Geham

Prepared for: Director General of the Department of Transport and Main Roads

Date: March 2010
Job Reference: PR101991

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Quality Assurance Statement				
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EXECUTIVE SUMMARY

1.1 INTRODUCTION

Due to the inadequate review of landscape and visual impacts in the original Review of Environmental Factors undertaken in 2006, this new visual and landscape assessment was commissioned by the Queensland Department of Transport and Main Roads (DTMR). This report addresses the visual and landscape impacts of the proposed upgrade of the 9.7km section of the New England Highway between Hampton and Geham. This section of road is part of the 'High Country Drive' tourist route.

In 2009 Conics prepared a Scenic Amenity Study for the Toowoomba Region and the findings of this report indicated that this section of the New England Highway is high in visibility and high in scenic amenity value.

1.2 METHODOLOGY

This report has followed the DTMR 'Road Landscape Manual' methodology. It describes the visual setting of the highway and defines landscape and visual character units of the area based upon both natural and cultural aspects of the landscape. The visual catchment of the road corridor has been determined and the visual sensitivity of the character units defined has been identified. The change to the visual character of the route following implementation of the upgrade and the affect this will have on the visual amenity of the route has been determined. A description of the visual experience for users has been described.

A series of viewing locations were chosen and photographs taken in both the northbound and southbound directions to illustrate the landscape and visual significance of this road corridor.

The landscape along this section of the New England Highway is rated as high in scenic amenity. The SEQ Scenic Amenity Guideline requires that this landscape should be recognised as locally significant and that the scenic amenity should be maintained at their existing levels.

1.3 SUMMARY OF RECOMMENDATIONS

This report recommends the following:

- A full arboricultural report and a full survey of tree size, species and locations prior to finalising a revised upgrade design.
- Prepare a full landscape integration strategy.
- Cooperate with local tourist authorities in promoting this route as a "Country Drive" landscape.
- Consider promoting the use of the term 'Cathedral Drive' to describe this section of the New England Highway.
- Instigate a programme of regular maintenance to reduce the incidence of branch drop onto the road surface.
- Revise the road upgrade detailed design in light of the findings of the independent review, this landscape and visual assessment, the arboricultural report and tree location survey.
- Features to be included in the revised detailed design:

- Retain mature trees that create the joining canopy within those sections of the route defined as having high visual significance.
- Include the southbound passing lane and the Queensland Transport inspection bays only if they can be included without impacting on the visual amenity of the route.
- Use wire rope barriers wherever possible, instead of rigid or semi-rigid barriers.
- Include revegetation areas within the revised design scheme.

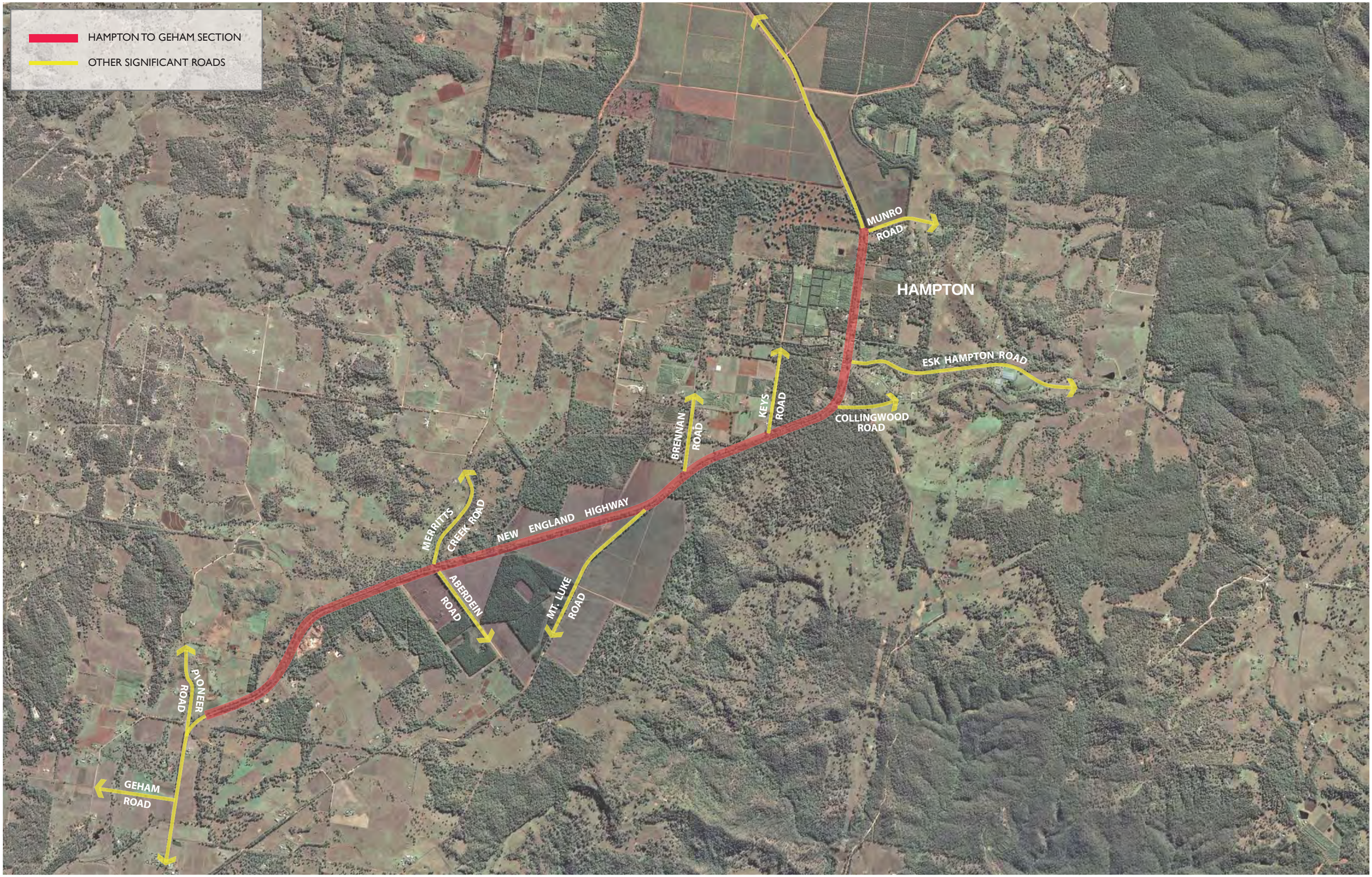

FIGURE 1

New England Highway Upgrade - Hampton to Geham

Site Location Plan

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1.0 BACKGROUND

On the 18th of September 2009 the Honourable Craig Wallace MP, Minister for Main Roads, announced an independent review of the proposed upgrade of the New England Highway (Yarraman – Toowoomba) between chainages 84.3km and 93.987km (Hampton – Geham).

During the independent review process, conducted by Conics, it was evident that the original Review of Environmental Factors (REF) carried out on behalf of the Department of Transport and Main Roads in 2006 had not adequately assessed the landscape and visual amenity aspects of the project. In order to determine the appropriateness of the ultimate upgrade proposals, this Visual and Landscape Assessment was commissioned by the Director General of the DTMR.

1.1 LOCATION OF THE PROJECT

The project site is a 9.7km section of the New England Highway between Hampton and Geham within the Toowoomba Region. (See figure 1). The proposed upgrade works are generally within the highway corridor with junction improvements extending into the local road network and adjacent properties such as the Geham Refuse Tip.

The project site is part of the "High Country Drive" indicated on the '*Toowoomba and Surrounds, Great Country Drives*' map published by the Toowoomba Visitor Information Centre. (See Figure 2). This section of the New England Highway adjoins the "Lake Tour Tourist Drive" between Hampton and Crows Nest indicated on the '*The High Country'* map published by the Hampton Visitor Information Centre. (See figure 3).

The further significance of this section of road is indicated by the fact that both the Toowoomba Regional Council 'Corporate Plan 2009-2014' and the Crows Nest Shire tourist brochure include images of this route to promote the region.

1.2 DESCRIPTION OF THE PROPOSED HIGHWAY UPGRADE PROJECT

The New England Highway forms part of the north - south intra-state route linking northern New South Wales to the Darling Downs and South Burnett and is classified as a State Strategic Road (Main Roads 2004). The Department of Transport and Main Roads (DTMR) received funding under the Regionally Significant Roadworks Project (RSRP) in 2006 for the Yarraman to Toowoomba upgrade. Project objectives as stated in the Main Roads document '*New England Highway Project. Crows Nest – Geham Section. Type 2 Road Infrastructure Projects. Short Form Business Case (R1004)*' is "To provide an improved road network which will provide safer travel for road users and maintain the attractiveness of this route for road access to tourist destinations." Main Roads Business Case was based on a Network Need showing that the existing traffic lane width is too narrow for the volume and mix of vehicles using it (Main Roads 2004).

The Yarraman to Toowoomba project was broken into 3 sections, being:

- Crows Nest to Pechey;
- Pechey Forest; and
- Hampton to Geham.

The upgrade works for Crows Nest to Pechey and Pechey to Hampton sections have already been delivered.

The currently proposed upgrade of the Hampton to Geham section includes:

- An increase in the lane widths to 3.5m;
- The addition of paved shoulders to each side of the highway;
- Improved drainage swales to each side of the highway;
- Provision of wire rope safety barriers where appropriate;
- Junction improvements to intersections with local roads;
- The addition of a southbound overtaking lane;
- Modifications of the horizontal alignment;
- The addition of a Queensland Transport Interception Site;
- The addition of pull off bays; and
- The removal of approximately 1400 existing trees.

1.3 LEVEL OF LANDSCAPE ASSESSMENT UNDERTAKEN

An assessment of the impact on the landscape and visual amenity of the site was included in the '*New England Highway Project. Review of Environmental Factors – Concept*' prepared by Connell Wagner in 2006. One of the key findings of the review of the proposed highway upgrade proposals by Conics was that the level of landscape and visual assessment undertaken during the original design process was insufficient for the visual significance of this site and this new Visual and Landscape Assessment was commissioned.

1.4 OTHER RELEVANT STUDIES

In 2009 Toowoomba Regional Council commissioned a series of studies to inform the new Toowoomba Region Planning Strategy. One of these studies, prepared by Conics, assessed the Scenic Amenity of the entire Toowoomba Region. The methodology followed is defined in the South East Queensland Regional Plan 2005-2026 Implementation Guideline No.8 'Identifying and Protecting Scenic Amenity Values'.

In brief, the methodology measures the public preference for a variety of types of landscape (scenic preference) and compares this with the visibility of the specific landscapes within the Toowoomba region (visual exposure). This data is combined to produce a map indicating the public appreciation of the visible landscape quality (scenic amenity) on a scale of 1 to 10, with 1 being the lowest rating and 10 being the highest. (See figure 4)

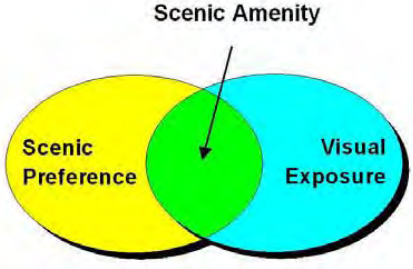

Figure 4 *Components of scenic amenity*

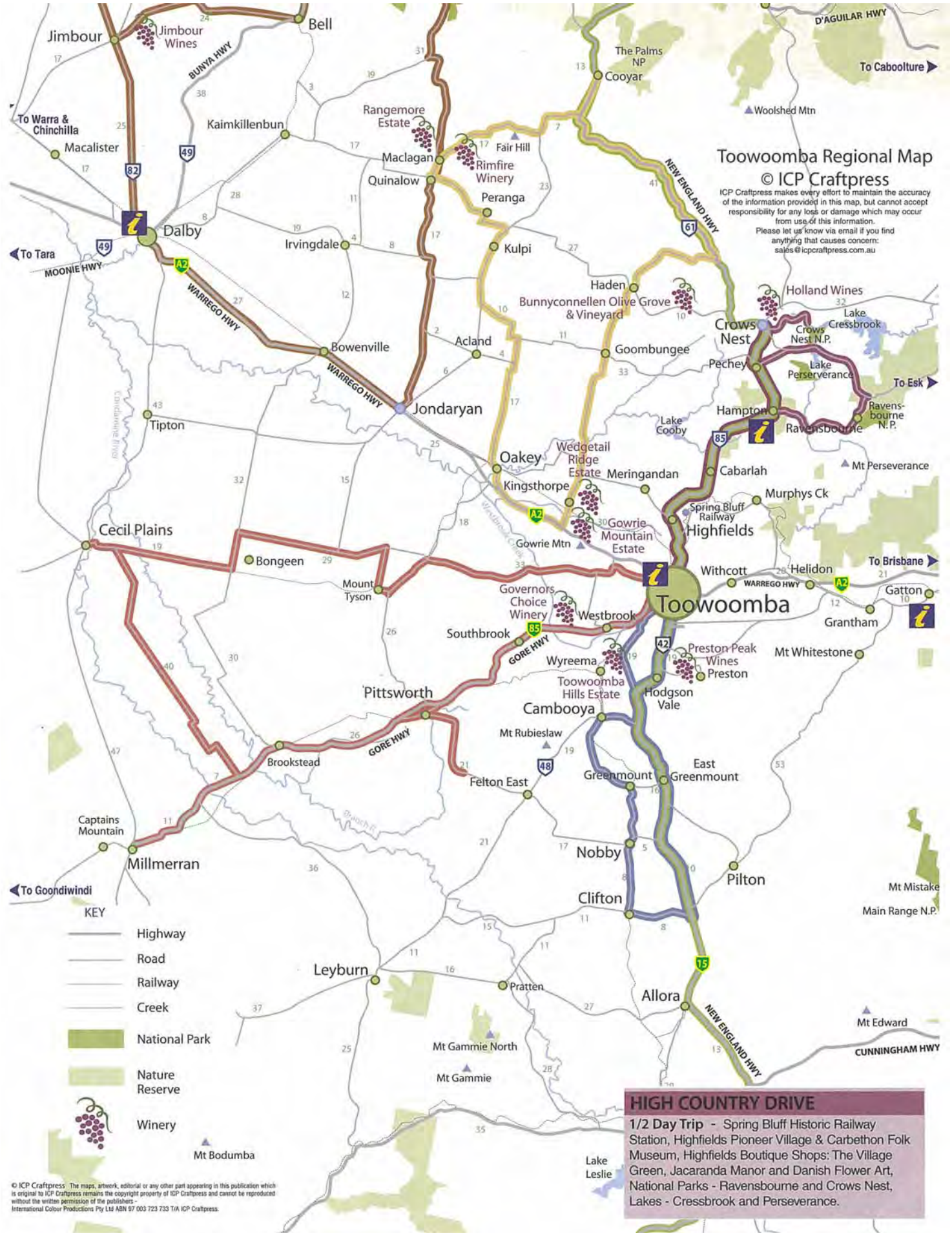

FIGURE 2

New England Highway Upgrade - Hampton to Geham
Toowoomba and Surrounds - Great Country Drives

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FIGURE 3

New England Highway Upgrade - Hampton to Geham
The High Country - High Fields to Crows Nest and surrounds

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See figures 5 through 7 for extracts of the maps from the Toowoomba Region scenic amenity study.

The results of the Toowoomba Region scenic amenity study indicate the following ratings for the Hampton to Geham section of the New England Highway:

- Scenic preference – rated as 5 to 6 (moderate preference)
- Visual exposure – rated as 9 to 10 (high visibility)
- Scenic amenity – rated as 6 to 8 (high scenic amenity)

The scenic preference ratings were based on surveys undertaken in Toowoomba City, Pittsworth and Oakey where volunteers from the local population rated their preference for different views within the Toowoomba region and South East Queensland. Generally, views with water, steeply sloping land and/or mature trees rate highly. One of the photographs included in the public preference survey for this study was of the view along the New England Highway northbound, just north of Merretts Creek Road, this photo was the third favourite photo of the Toowoomba region included in the study. (See photo 1)

Photo 1 *New England Highway northbound view, just north of Merretts Creek Road.*

The visual exposure ratings are based on visitor numbers and areas of the landscape that can be seen from highly visited areas. Due to the number of vehicles using the New England Highway, the roadside landscapes are rated as high in visual exposure.

This 9.7km section of the New England Highway traverses a landscape rated as high in scenic amenity, the Scenic Amenity Guideline No. 8 notes that areas with a scenic amenity rating of 6 to 8 are categorised as locally important. The guidelines require that the scenic amenity rating of a locally important landscape should be recognised as locally significant and that the scenic amenity rating should be maintained. In addition, the guidelines require that the visual exposure and scenic preference ratings of areas of bush, crops and pasture with moderate to high visual exposure be maintained at their existing levels.

1.5 METHODOLOGY

The DTMR Road Landscape Manual states that "The function of visual analysis is to minimise the impact and optimise the visual 'fit' of the road into its broad regional context and local landscape setting". The manual outlines the following series of tasks:

- Describe visual setting and identify character units
- Identify visual sensitivity and visual catchment
- Determine change to visual character
- Determine affect on visual amenity for the local community and visitors
- Assess visual experience for users

An initial desk study was undertaken to identify all possible public viewing points from which the site may be visible. The desktop study also included a review of the existing reports and project documentation. A series of site visits were conducted over several different days during February and March 2010.

Due to the weight of traffic on the New England Highway and the lack of public viewing locations in the area, this study assesses the visual impact of the site and the upgrade proposals as viewed from the highway.

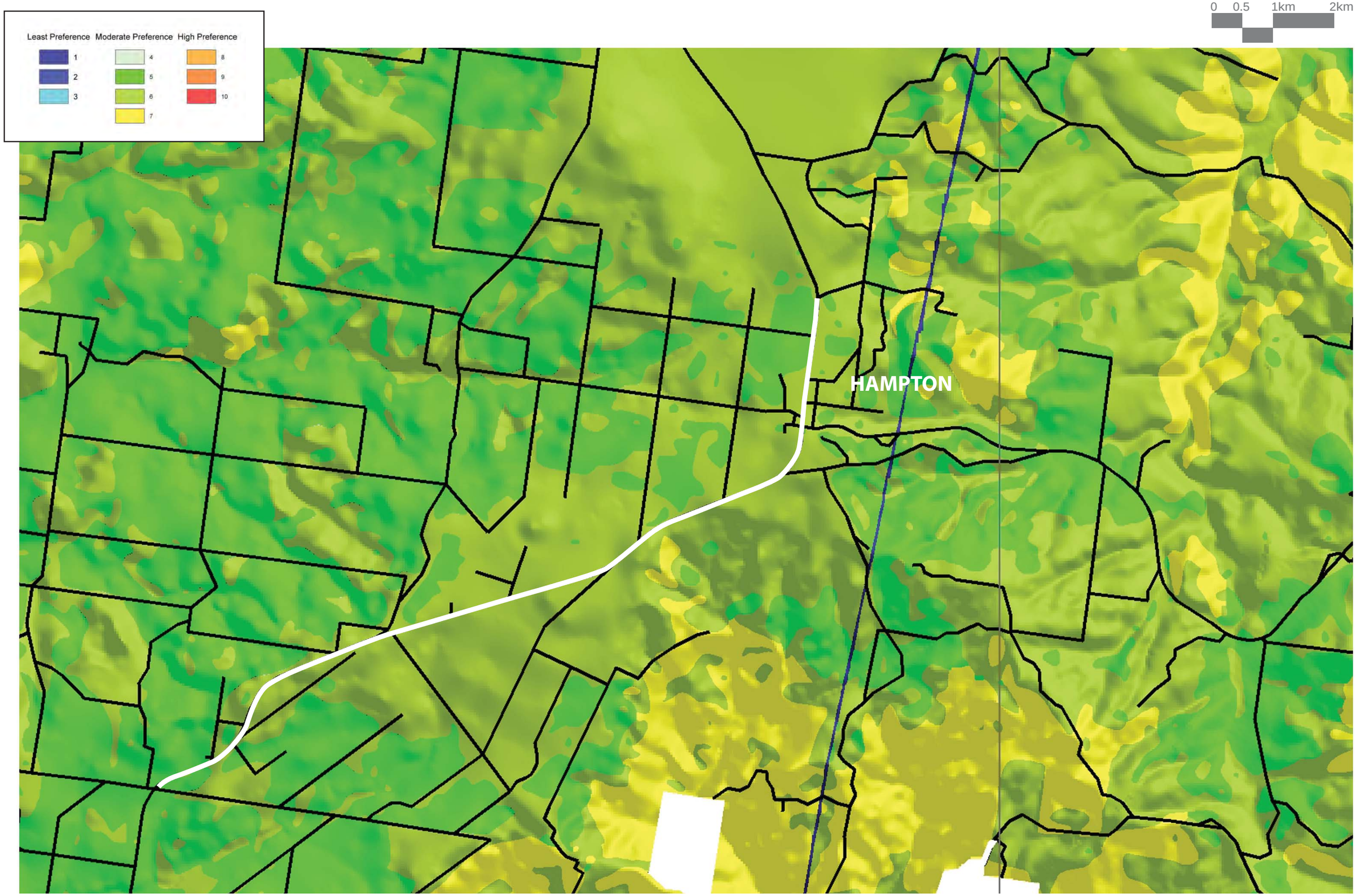

FIGURE 5

New England Highway Upgrade - Hampton to Geham
Scenic Preference

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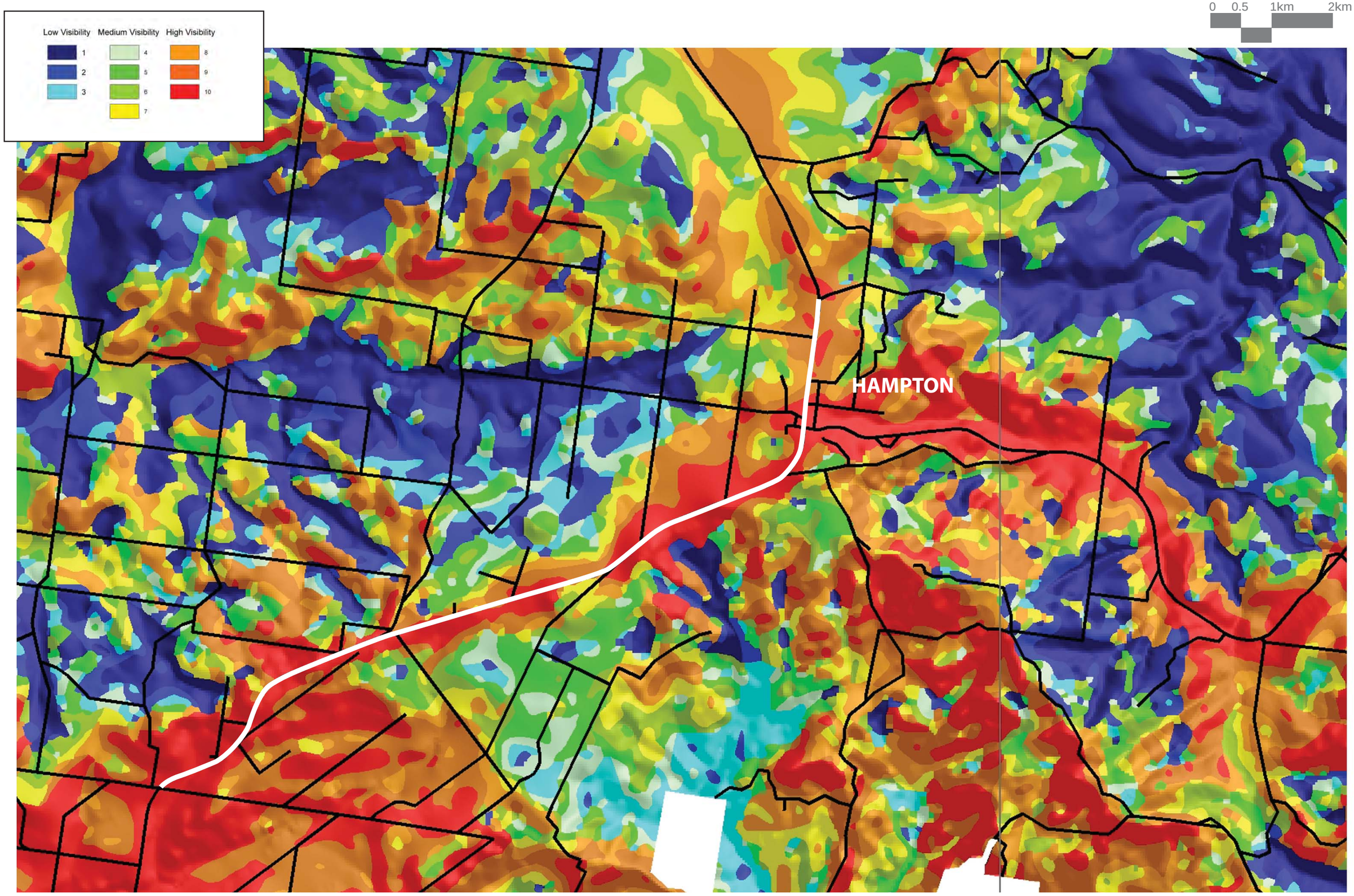

FIGURE 6

New England Highway Upgrade - Hampton to Geham

Visual Exposure

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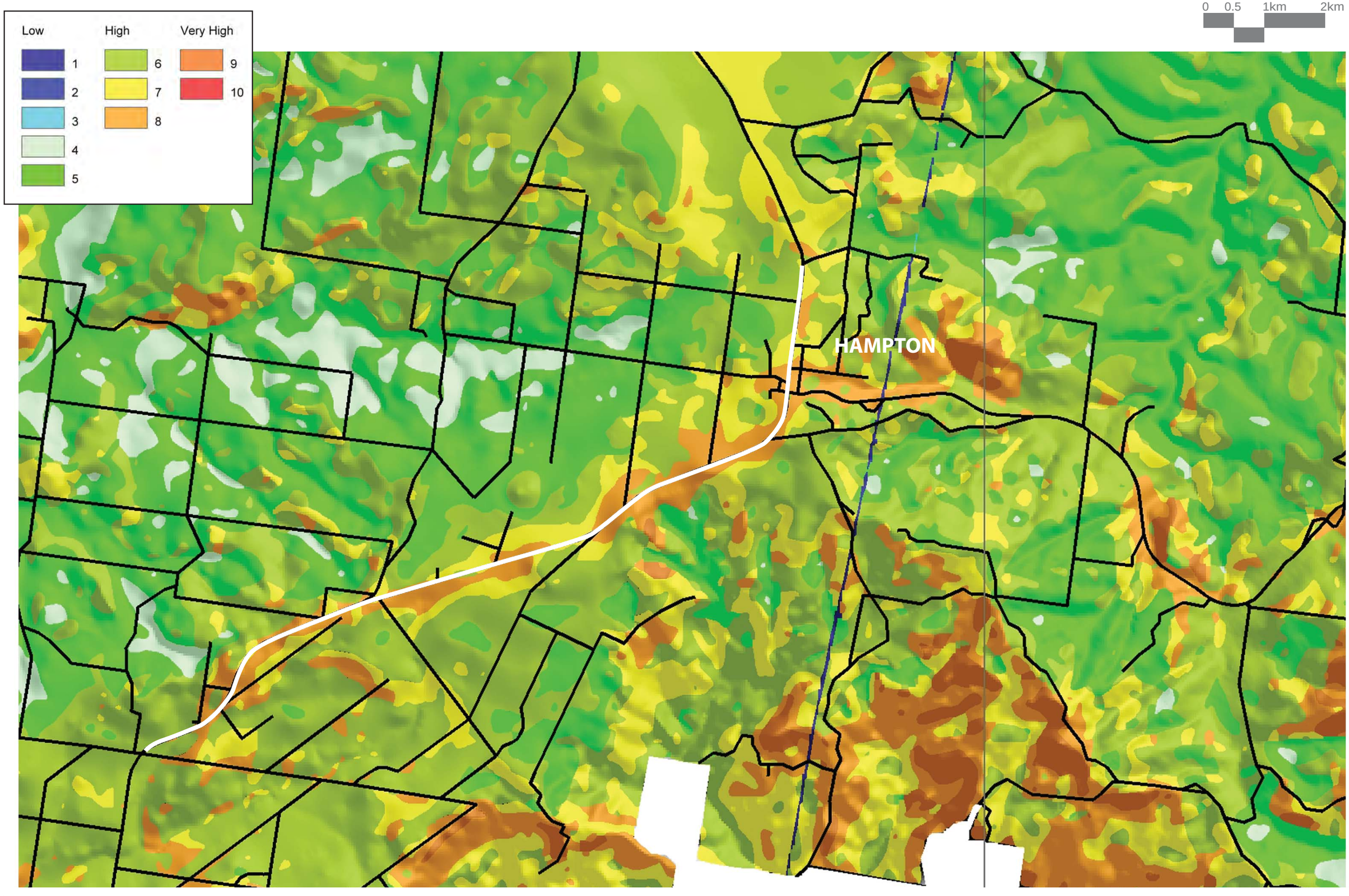

FIGURE 7

New England Highway Upgrade - Hampton to Geham
Scenic Amenity

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2.0 EXISTING LANDSCAPE CONDITIONS

2.1 LANDSCAPE CONTEXT

In October 2009 the Toowoomba Regional Council Scenic Amenity Study identified a series of 26 distinct landscape character areas within the Toowoomba region. The section of New England Highway between Hampton and Geham falls entirely into the 'Peachey-Ravensbourne Uplands' character area. This landscape is characterised by laterite and basalt geology, with main land uses of forestry plantations, pasture and orchards in a predominantly rural environment.

A more detailed landscape character assessment includes consideration of landscape elements and how they combine to influence the character of the area. In order to assess the overall landscape context, both the natural (flora, fauna, soils, geology) and the cultural (land use, settlement and other human effects) aspects of the landscape must combine to create a distinct sense of place. Four distinct visual and landscape character units have been identified along this section of the New England Highway (See Figure 8):

Geham Pasturelands – A rolling opened landscape of pastures and occasional mature native and non-native trees.
Woodland Highway Corridor – A tightly confined corridor of primarily mature re-growth native vegetation with only occasional views to the wider landscape beyond.
Hampton – A modified landscape characterised by maintained lawns, single storey residential and rural buildings interspersed with mature native and introduced trees.
Pechey Forestry Plantations – A double avenue of non-native pine trees to the east with wide views of young pine plantations to both sides.

2.2 LAND USE AND SETTLEMENT

Aside from several privately owned residential and rural properties within Hampton, the majority of the lands adjoining this section of highway are privately owned native forest and pasturelands or state owned forestry plantations primarily growing non-native commercial pine trees. Large areas of the pine plantation trees adjacent to the highway have been harvested during 2009. (See Figure 9)

2.3 GEOLOGY AND SOILS

The area is based on a laterite and basalt geology with loose, unconsolidated alluvial soil which is freely draining. The assessment of soils included in the original REF by Connell Wagner concluded that the majority of the soils in the project area are red Ferrosol soils, predominantly acidic and with a high infiltration capacity.

2.4 CLIMATE

The Toowoomba region has experienced drought conditions for several years. The area around this section of the New England Highway experiences relatively high levels of rainfall in the summer months. Regular episodes

of fog are known to cause reduced visibility on this section of the highway, this has been reported as a contributing factor in some of the reported traffic incidents.

2.5 FLORA AND FAUNA

A flora and fauna assessment was conducted by Biodiversity Assessment and Management Pty Ltd (BAAM) in February 2006. An arboricultural study conducted on a small selection of trees along this section of highway was undertaken by DTMR in order to determine the age range of the existing trees that would be removed by the current road upgrade proposals, the results of this survey found the ages of trees ranged from 19 to 384 years old. A full arboricultural survey of the tress has not been undertaken.

2.5.1 Flora

The findings of the flora assessment completed by BAAM for the project study area are summarised as follows:

- Ten vegetation communities were identified as occurring within the study area and are described as:
  - Very tall/tall open forest (mixed eucalypt species);
  - Tall open shrubland (Acacia Species);
  - Very tall/tall open forest (Mixed Eucalypt Species);
  - Tall open forest/woodland (E. tereticornis);
  - Medium closed grassland/Forbland with isolated trees;
  - Tall open forest (Angophora, Acacia and Eucalypt species);
  - Tall open forest (Angophora leiocarpa, Acacia leiocalyx, Corymbia intermedia);
  - Tall open woodland (E. tereticornis, A. leiocarpa, Grevillea robusta);
  - Tall open forest (Angophora and Eucalypt species); and
  - Tall open forest/woodland (Mixed Eucalypt species);
- Vegetation within each of the 10 identified communities was generally consistent with RE 12.5.6, which is listed as Endangered tall open forest on remnant Tertiary surfaces, is found on deep red soils and contains:
  - Eucalyptus siderophloia;
  - E. propinqua;
  - E. microcorys; and/or
  - E. pilularis.
- No flora species of significance were observed during the field investigations;
- Forty (40) exotic species (35.09% of total flora diversity) were observed during field inspections; and
- Five species identified are declared under the provisions of the Land Protection (Pest and Stock Route Management) Act 2002. These species were:
  - Asparagus aficanus (Asparagus Fern), common within study area;
  - Opuntia tomentosa (Velvet Tree Pear), uncommon within study area;
  - Lantana camara (Lantana), very common within study area;
  - Lantana montevidensis (Creeping Lantana), common within study area; and
  - Ligustrum lucidum (Large-leaved Privet), common within a small section of the study area.

(Source: BAAM February 2006).

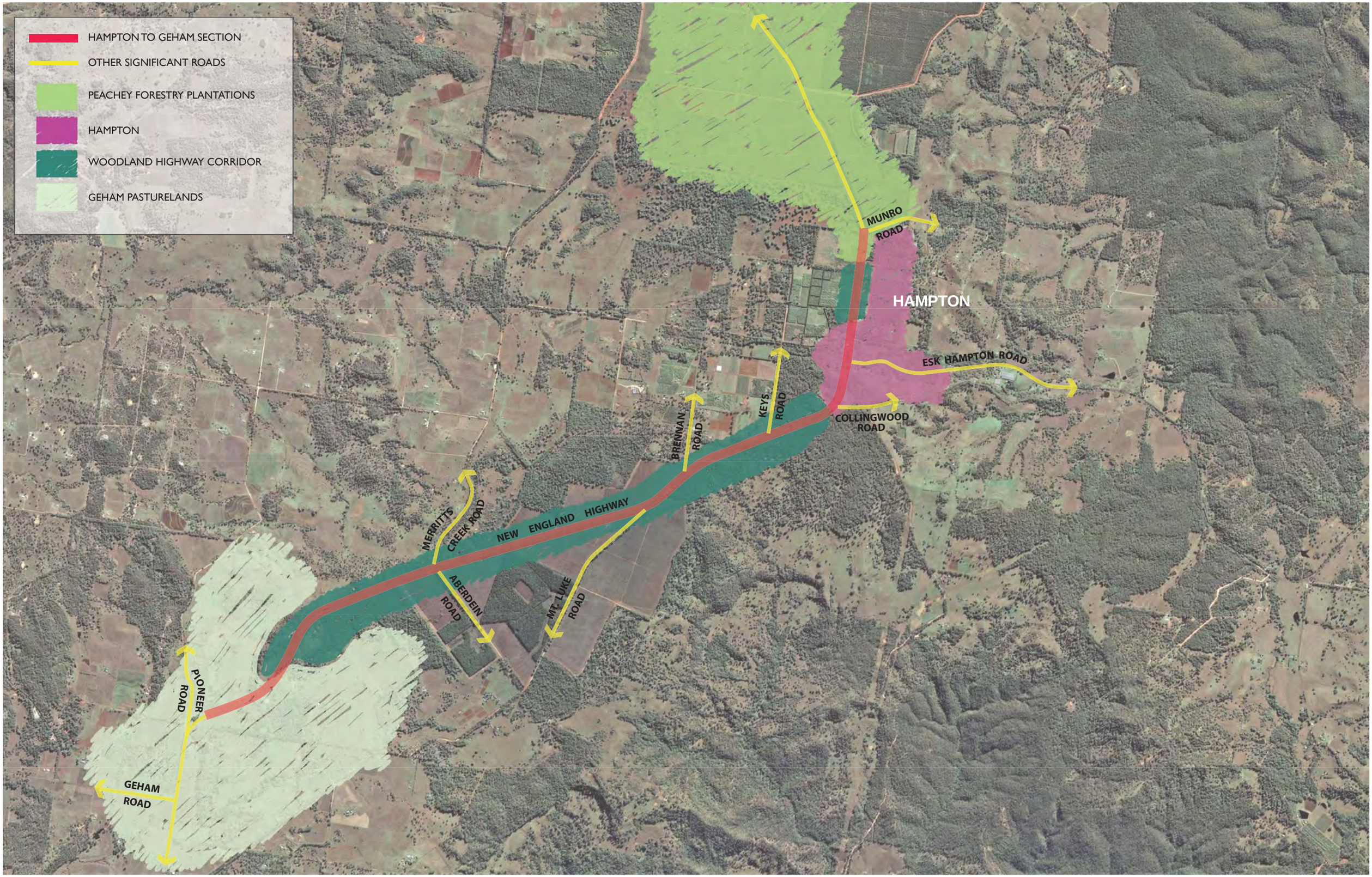

FIGURE 8

New England Highway Upgrade - Hampton to Geham

Visual and Landscape Character Units

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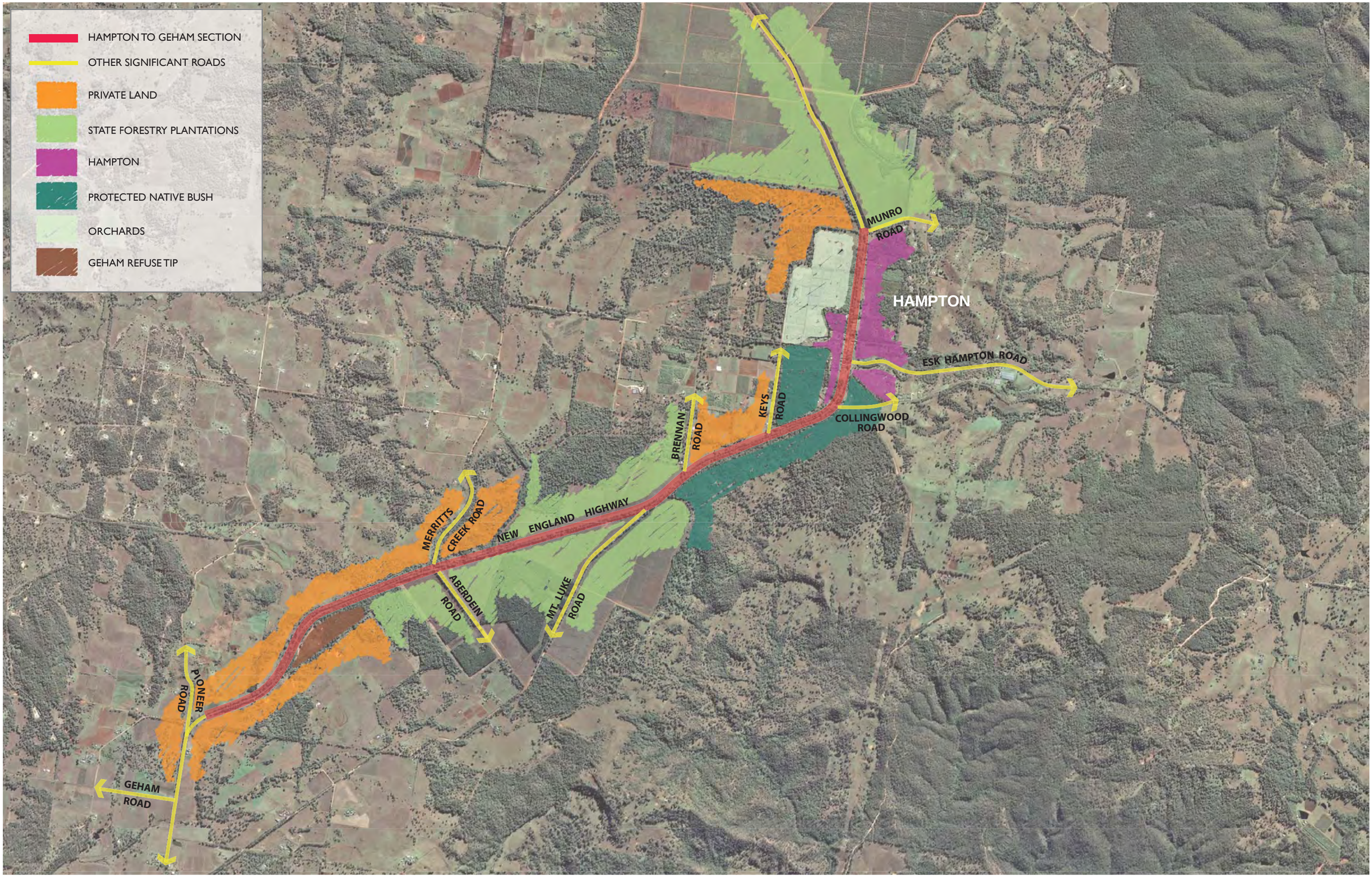

FIGURE 9

New England Highway Upgrade - Hampton to Geham
Adjacent Land Uses

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2.5.2 Fauna

The findings of the fauna assessment completed by BAAM for the project study area are summarised as follows:

- Fifty (50) vertebrate fauna species were detected during the survey, which included:
  - Three (3) amphibian species;
  - Forty-three (43) bird species; and
  - Four (4) mammal species.

- All observed species are considered to be common within the region except for Phascolarctos cinereus (Koala). Koalas were observed in the southern portion of the highway project area near the rubbish tip. The area of habitat most suitable for this species occurs between the Rubbish Tip and the town of Hampton due to feed trees being common and the provision of a link between larger areas of habitat to the north (south of Hampton) and south (around the tip). Suitable habitat also occurs in the very north of the project area, just south of Crows Nest, however there are no surrounding areas of larger habitat;
- Other species of conservation significance identified as occurring or likely to occur within the project area included:
  - Accipter novaehollandiae (Grey Goshawk) is denoted as Rare under the Nature Conservation Act 1992 (NC Act) and is a listed Migratory species under the EPBC Act. The species was not observed during the site visit however the existing habitat is consistent with that of the species. The area of highest value for this species is vegetation between the Rubbish Tip and Hampton;
  - Calyptorhynchus lathamii (Glossy Black Cockatoo) is denoted as Vulnerable under the NC Act. The species was not observed along the highway project area however, sightings have been recorded at the northern end of Highfields; and
  - Ninox strenua (Powerful Owl) is denoted as Vulnerable under the NC Act. The species were not observed however the species is known to occur within the local region. Areas in the south around the Rubbish Tip, Geham State Forest, to the east of the pine plantations and in the north around Hampton contain areas of remnant vegetation which are preferred by the species.

(Source: BAAM February 2006).

3.0 VISUAL ANALYSIS

The Queensland Government Main Roads publication '*Guidelines for Assessment of Road Impacts of Development*' is intended to provide guidance on the impact of new developments on the road network rather than the impacts of new road works. However, it provides a valuable insight as it notes that local communities are now demanding that State Controlled Roads (SCRs) should be aesthetically pleasing wherever possible and that many SCRs are considered to be 'scenic drives' or 'entrance statements' to a local area.

3.1 EXISTING VISUAL SETTING AND CHARACTER UNITS

The road setting generally follows the top of the range dividing the Brisbane River catchment to the east from the Murray Darling Basin catchment to the west. Visual and landscape character units are defined in section 2.1 of this report. Below is a description of the visual character of the site illustrated by a series of photos. For viewpoint locations see figure 10.

3.1.1 Viewpoint location 1

At this location the ground is rising from the pasturelands around Geham and the junction with Pioneer Road. The vegetation to the north west of the road corridor limits views into the pasturelands on this side of the road but to the south east there are wide views of the opened rolling landscape pasturelands with scattered native trees. This view is rated as having moderate visual significance.

Photo 2 *Northbound view, just north of Pioneer Road.*

3.1.2 Viewpoint location 2

Northbound - Mature trees enclose both sides of the highway at this point but still allow glimpsing views to the rolling pastureland rising away to both sides of the highway. The tree canopies do not touch in this section of the road but the woodland corridor effect is created by the strong lines of mature trees. This view is rated as having moderately high visual significance.

Photo 3 *Northbound view, at the start of the northbound passing lane*

Southbound - Mature trees enclose both sides of the highway at this point, views to the rolling pastureland to both sides open up as the highway drops down to Geham. The tree canopies no longer touch in this section of the road. This view is rated as having moderately high visual significance.

Photo 4 *Southbound view, at the end of the northbound passing lane*

3.1.3 Viewpoint location 3

Northbound - Mature trees create visual enclosure on both sides of the highway. At this point the hill crests and turns to the right limiting visibility of vehicles entering and exiting the tip site. The tree canopies do not touch in this section but the woodland corridor effect continues due to the strong lines of mature trees. The flora and fauna found in this area make this the most ecologically sensitive within the site. This view is rated as having moderately high visual significance.

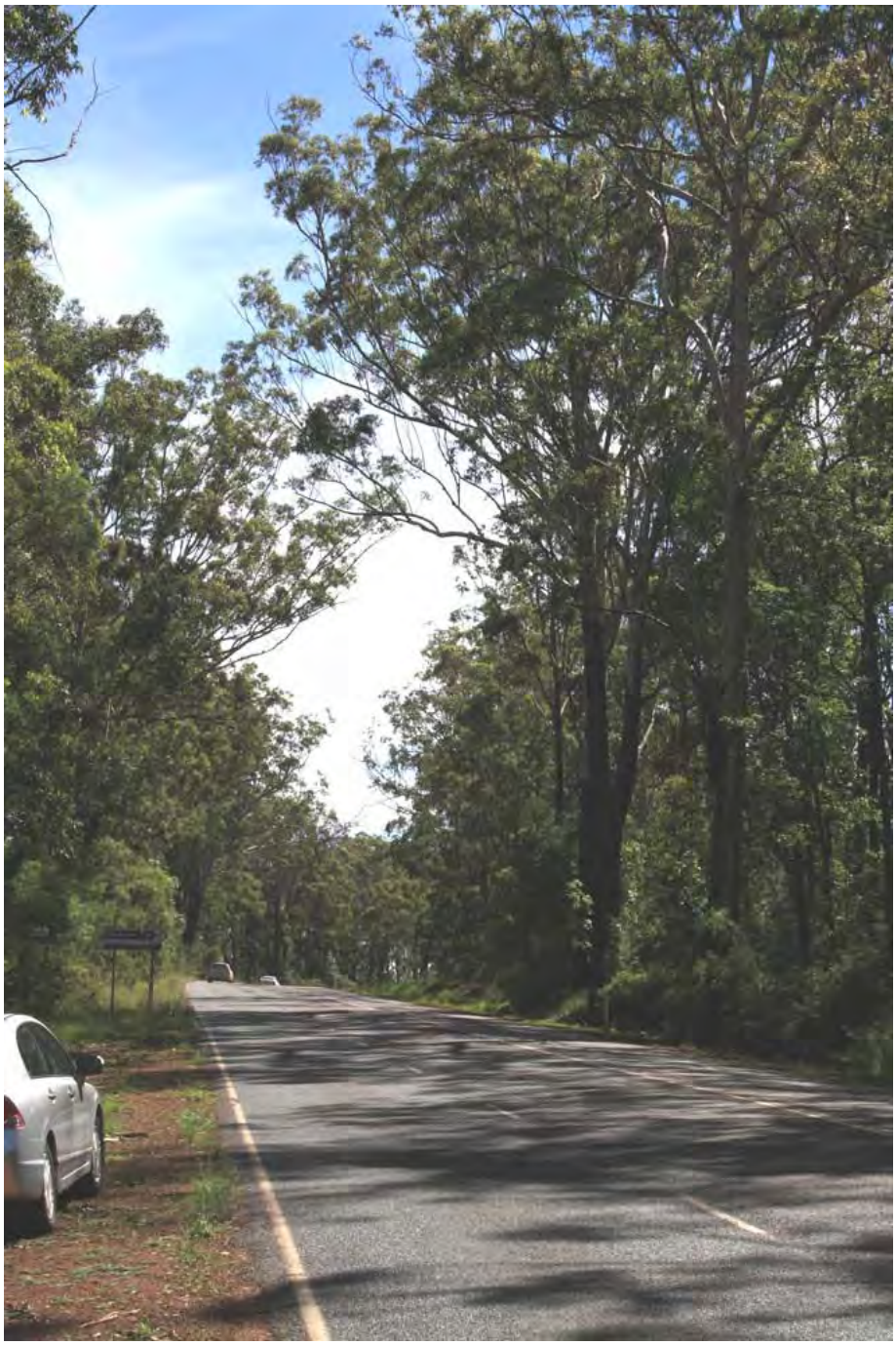

Photo 5 *Northbound view, south of the Geham Refuse tip entrance*

Southbound - Mature trees frame distant views to the south west as the road drops down to the Geham Pasturelands. The woodland corridor effect is diminishing due to the opening canopy. This view is rated as having moderately high visual significance.

Photo 6 *Southbound view, south of the Geham Refuse tip entrance*

3.1.4 Viewpoint location 4

Northbound - Mature trees almost create a joined canopy at this point where the carriageway width narrows to 2 lanes. The density of the vegetation on adjacent land to either side of the road contributes to the visual character of this section of highway. This view is rated as having moderately high visual significance.

Photo 7 *Northbound view, where the passing lane ends*

3.1.5 Viewpoint location 5

Northbound – This is the southernmost point where the tree canopies converge. Recently cleared forestry plantations allow intermittent views to the east. From this point north, land to both sides is generally lower than the road level. Further north, mature vegetation along Mount Luke Road is visible as you approach the junction. This view is rated as having high visual significance.

Photo 8 *Northbound view, north of Merritts Creek Road*

3.1.6 Viewpoint location 6

Northbound – Canopies of mature trees do not join between Mount Luke Road and Brennan Road. The spacing between trees on either side of the carriageway is wider through this section. Native vegetation on adjacent land contributes depth to the appearance of the verge planting on the south east side. This view is rated as having moderately high visual significance.

Photo 9 *Northbound view, north of Mount Luke Road approaching Brennan Road*

3.1.7 Viewpoint location 7

Northbound – Canopies of mature trees only occasionally join between Brennan Road and Keys Road. The density of the vegetation on adjacent land contributes to the visual character of this section of highway. The spacing between trees on either side of the carriageway is wider through this section. This view is rated as having moderately high visual significance.

Photo 10 *Northbound view, between Brennan and Keys Roads*

Southbound – The mature tree canopies only occasionally join between Keys Road and Brennan Road. The woodland corridor effect is diminished due to the open canopy but the density of the vegetation on adjacent land contributes to the visual character of this section of highway. This view is rated as having moderately high visual significance.

Photo 11 *Southbound view, between Brennan and Keys Roads*

3.1.8 Viewpoint location 8

Northbound – Canopies of mature trees join again north of Keys Road. The density of the vegetation on adjacent land contributes to the visual character of this section of highway. The spacing between trees on either side of the carriageway is closer through this section. This view is rated as having high visual significance.

Photo 12 *Northbound view, at Keys Road*

Southbound – The mature tree canopy opens at the junction with Keys Road. This view is rated as having moderately high visual significance.

Photo 13 *Southbound view, at the junction with Keys Road*

3.1.9 Viewpoint location 9

Northbound – At Collingwood Road the canopy opens as you enter Hampton. This view is rated as having moderately high visual significance.

Photo 14 *Northbound view, approaching Hampton at Collingwood Road*

Southbound – The mature tree canopy converges for the first time as you leave Hampton. This view is rated as having high visual significance.

Photo 15 *Southbound view, leaving Hampton*

3.1.10 Viewpoint location 10

Northbound – At Collingwood Road the canopy opens as you enter Hampton. This view is rated as having moderately high visual significance.

Photo 16 *Northbound view, entering Hampton*

3.1.11 Viewpoint location 11

Northbound – The tree canopy comes close to joining for a short section (approximately 700m) north of Mogg Road as you leave Hampton. This view is rated as having high visual significance.

Photo 17 *Northbound view, leaving Hampton*

Southbound – The tree canopy opens at Mogg Road as you enter Hampton. Although the mature trees lining this section of road do not have joining canopies, they do create an entrance feature to Hampton which differentiates this area from the character of the highway further north. Due to the entrance "gateway" effect created by the avenue of trees, this view is rated as having high visual significance.

Photo 18 *Southbound view, entering Hampton*

3.1.12 Viewpoint location 12

Northbound – Open views to the west across empty forestry plantations with occasional mature native trees within the road corridor. To the east a double avenue of non-native pine trees lines the edge of the forestry plantation lands approximately 25m back from the edge of the highway for approximately 4.5km, all the way to Pechey. Very young pine plantations can be seen through the roadside screen. This view is rated as having moderate visual significance.

Photo 17 *Northbound view, panoramic views of the forestry plantations*

Southbound – The mature tree canopy converges for the first time as you enter Hampton. This view is rated as having moderate visual significance.

Photo 18 *Southbound view, approaching Hampton*

3.2 VISUAL CATCHMENT

The visual catchment of a site generally includes locations within a distance of 6km, from which the site can be seen. Beyond the 6km distance the influence of a particular location normally recedes in comparison to closer landscape features and influences.

Along this section of the New England Highway, the existing roadside vegetation is considered to be part of the site and therefore does not factor in limiting the visual catchment. However, where existing vegetation is immediately adjacent to the road corridor, this will define the edge of the visual catchment.

The visual catchment of this site is tightly confined by both the topography and existing mature vegetation to all sides. Those areas within the visual catchment, i.e. those with a view of the New England Highway corridor, are generally limited to the pastureland and forestry plantation land adjacent to the road and a few residences, generally in Hampton. From most locations within the visual catchment the highway itself, and vehicles using the highway, are not visible due to the screening effect of the existing mature vegetation within the road corridor. (See Figure 11).

3.3 VISUAL SENSITIVITY

The visual sensitivity of a site is determined by how critically a development will be received by the local community and in this instance, users of the highway. This sensitivity is dependent on the subjective perception of local residents and users of the corridor in combination with the visual character of the site and the visual catchment area. Although the visual catchment of the site is very limited, due to the significance of the landscape and visual character of the site, and the number of visitors viewing the site as they travel through the area on the highway, the overall visual sensitivity of this site is rated as high.

The DTMR Road Landscape Manual provides a visual sensitivity matrix to determine the appropriate sensitivity of a site based on the landscape character unit and the visual setting. Table A3-3 of the manual notes a series of different sensitivities based on typical character types, three of which are applicable to the Hampton to Geham section of the New England Highway. (See Table 1)

TYPICAL LANDSCAPE CHARACTER UNIT	VISUAL SETTING		
	Local 0-1km	**Sub-regional 1-5km**	**Regional > 5km**
Rural Residential	High	High - Moderate	Low
Tourist Road	High	Low	Low
Major Road	High	Low	Low

Table 1 *Visual sensitivity matrix (extract from DTMR Road Landscape Manual Table A3-3)*

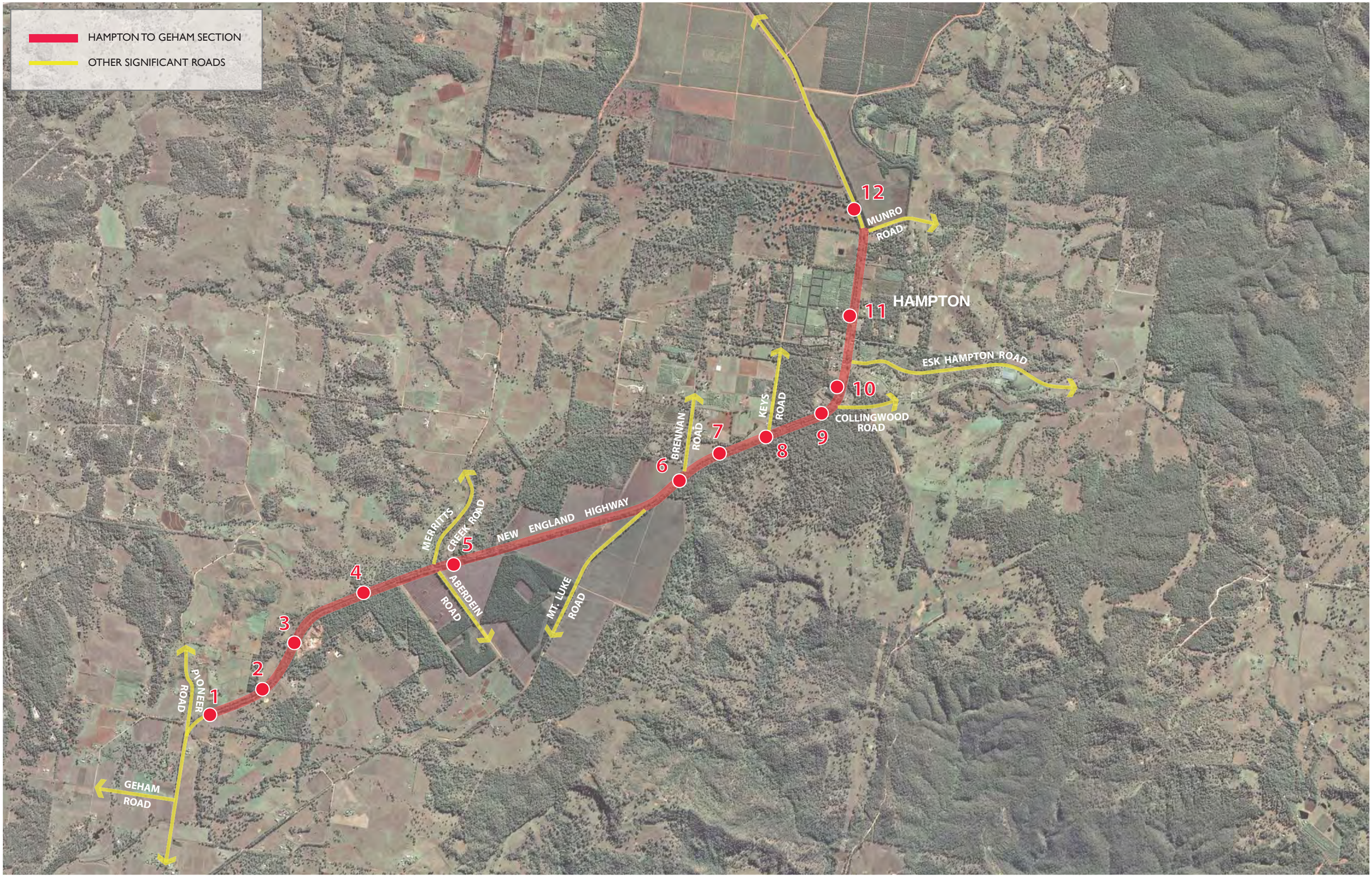

FIGURE 10

New England Highway Upgrade - Hampton to Geham

Photo Viewpoint Locations

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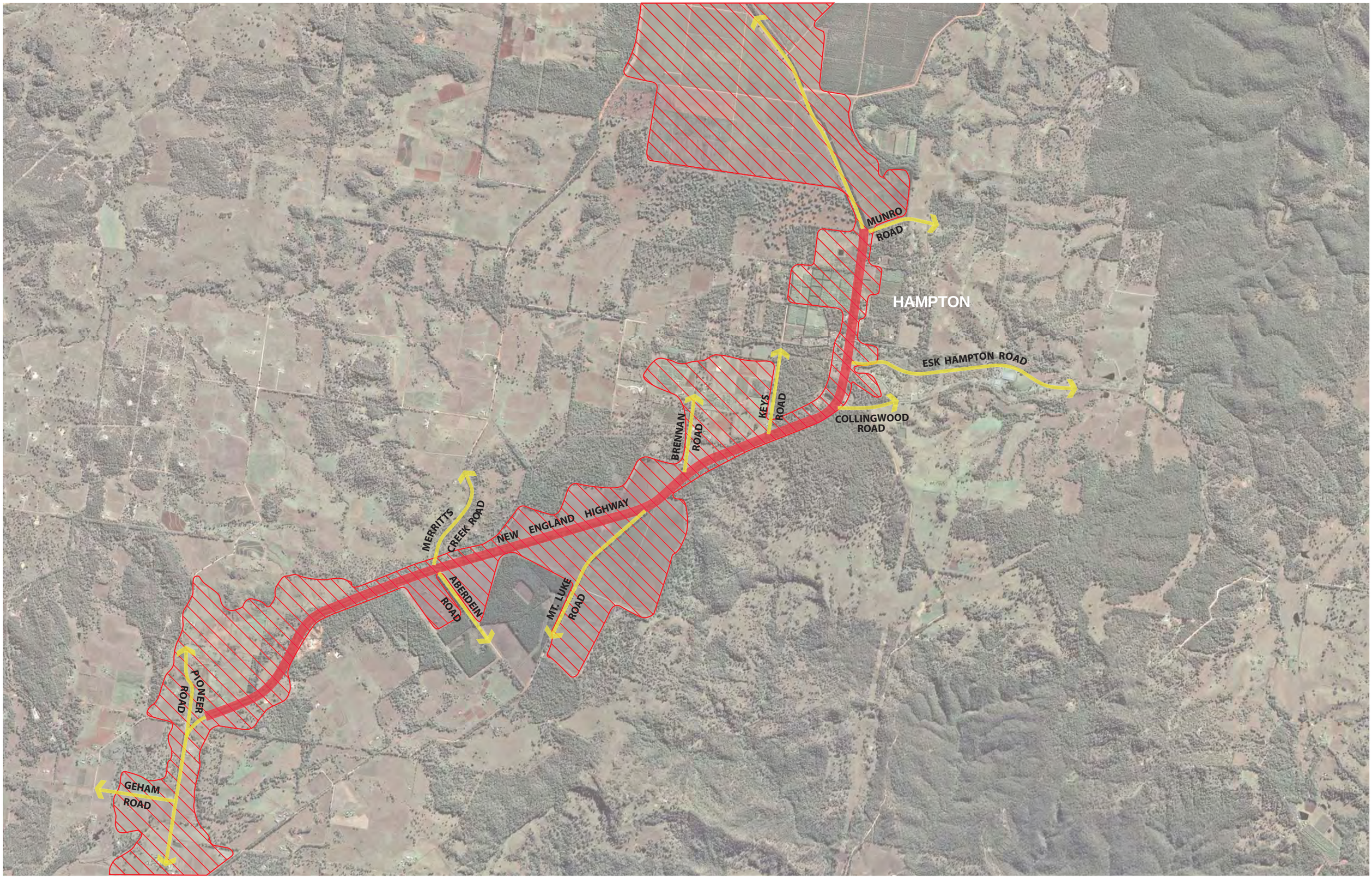

FIGURE 11

New England Highway Upgrade - Hampton to Geham
Visual Catchment

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Our estimation of the visual sensitivity of the landscape and visual character units defined in this report are:

Geham Pasturelands – Moderate sensitivity.
Woodland Highway Corridor – High sensitivity.
Hampton – Moderate sensitivity.
Pechey Forestry Plantations – Moderate sensitivity.

There are two key characteristics that make the woodland highway corridor high in sensitivity. These are the enclosing avenue created by the trunks of the mature trees and the shelter effect created by the connection of the canopies over the carriageway surface. Where each of these features is absent, for example around the junction with Keys Road, the visual sensitivity diminishes. (See Figure 12).

3.4 CHANGE TO VISUAL CHARACTER

The current road upgrade proposals will increase the width of the paved road corridor, road shoulder and the associated drainage works, this will have moderate impact on the Geham Pasturelands and the Hampton section. However, this widening will require the removal of approximately 1400 trees within the Woodland Highway Corridor which will create a substantial change to the visual character of the this character unit.

As can be seen throughout section 3.1 above, the locations where the existing road surface is wider than the standard 2 lanes, i.e. where there is a passing lane and where local roads join the highway, the mature vegetation is spaced more widely apart and the joining canopy effect, a key contributing characteristic of the woodland highway corridor, does not occur. The trees to be removed as part of the proposed upgrade will be those closest to the existing carriageway surface. These are the same trees that create the joining canopies, therefore there is a significant risk that the joining canopy effect will be eliminated if the existing upgrade proposals are implemented.

As trees grow in a natural environment, the crown will develop where there is space and light available to allow growth. In a woodland situation many trees will have the main portion of their crown at the top of the tree. Trees growing at the edge of a woodland area, where light and space are available will grow branches and foliage along the exposed side of the tree. In the woodland highway corridor, the trees closest to the existing road carriageway have more side branches and foliage than those within the woodland corridor avenue. Should these trees close to the carriageway be removed, the form of the avenue canopy will be significantly altered. (See Figure 13).

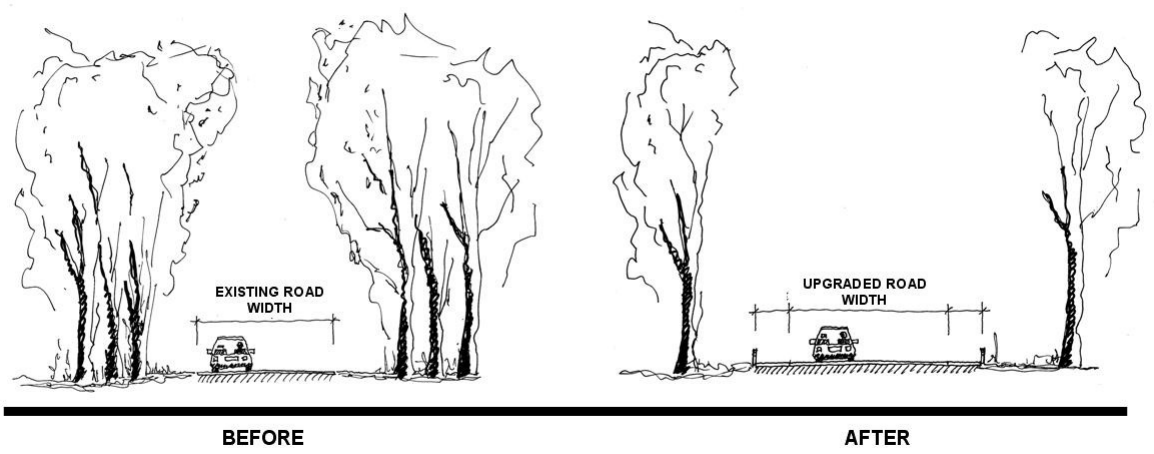

Figure 13 *Sketch indicating anticipated change in tree canopy shape following mature tree removal*

Although some effort has been made in the design process to limit the number of mature trees to be removed as part of the current upgrade proposals, the significant number of trees to be removed (approximately 1400) will open the canopy over the carriageway and thin the enclosing effect of the tree trunks. The result of this will be to reduce the visual and landscape character of the corridor and reduce the scenic amenity rating of the area.

3.5 VISUAL EXPERIENCE FOR ROAD USERS

As part of the design and public consultation process undertaken by DTMR, a detailed virtual 3D model of 4, 100m sections of the road proposal was commissioned. The purpose of creating this model was to produce a series of accurate before and after images from the 3D data in order to indicate the impact that the tree removals would have on the visual impact of the Woodland highway character. The scheme that this model was created to represent was an early version that resulted in the removal of approximately 900 trees.

This method of representing the road users experience of the upgraded road is complex and relies on the accurate representation of each tree and accurate positioning of these trees within the landscape. Due to the survey method used, the tree positions are only approximate and the tree removals indicated in the model show only 65% of the tree removals estimated in the current road proposal.

Below is a brief description of the changes expected if the currently proposed upgrade design is implemented:

Geham Pasturelands – The rolling opened landscape of pastures and occasional mature native and non-native trees will remain, the carriageway will be wider but will not be wide enough to require the removal of the existing roadside trees which are outside of the road corridor. New signing and wire rope barriers will intrude on the visual setting but will not significantly detract from the overall visual effect of the wider landscape.

Woodland Highway Corridor (south of Hampton) – A significant number of mature trees will be removed to accommodate the increased road width and additional drainage features. The removal of trees will open views through the tree trunks to views of the wider landscape, diminishing the enclosing effect of the tree trunks. The

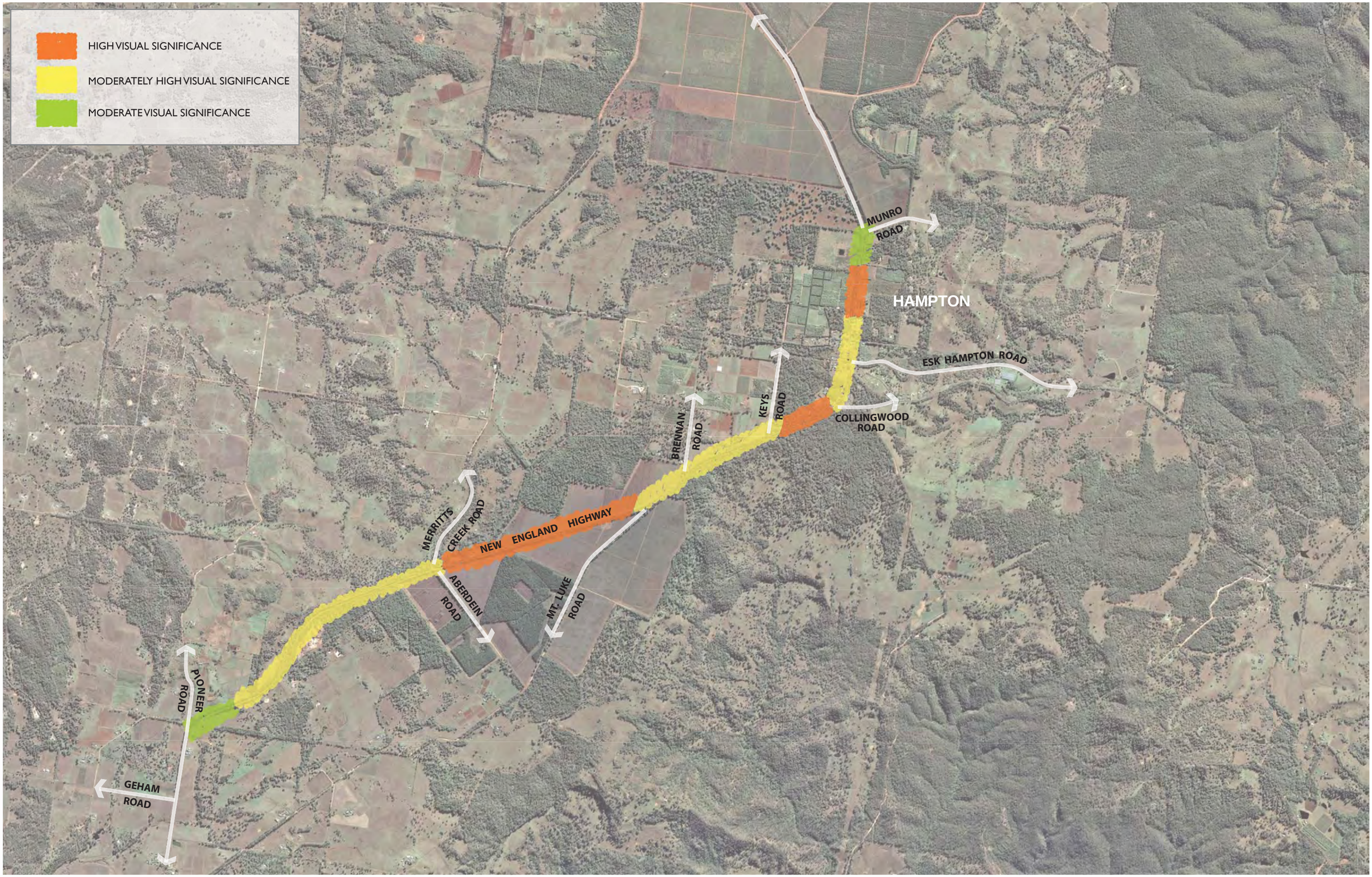

FIGURE 12

New England Highway Upgrade - Hampton to Geham
Visual Significance

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removal of the trees will open the joined canopy through most of the length of the character area, allowing more light onto the road surface and increasing the visibility of the sky. However, as this is the most highly sensitive visual and landscape character area, these changes will have a significant detrimental impact on the character of the road experience for drivers and the scenic amenity rating of the local landscape will be reduced. The addition of new road signs and barriers will intrude on the visual setting and will detract from the overall visual effect of the woodland corridor.

Hampton – Existing buildings and trees are generally set back from the road surface so widening of the carriageway surface and junction improvements as proposed may only require the removal of a few trees. The general landscape and visual character of Hampton will not change significantly, but the additional signage and roadside barriers will have a moderately detrimental effect on the visual setting and character of the area.

Woodland Highway Corridor (north of Hampton) – A significant number of mature trees will be removed to accommodate the increased road width and additional drainage features. Although the existing tree canopies in this location do not join, the removal of mature trees to allow the road widening will open the canopy more than at present and thin the avenue effect of the tree trunks to both sides of the highway.

Pechey Forestry Plantations – The current upgrade proposals do not extend far into this landscape and visual character zone and will have no direct detrimental effect.

4.0 MITIGATION MEASURES

4.1 MEASURES TO MITIGATE LANDSCAPE AND VISUAL EFFECTS

- Commission a full arboricultural report to recommend trees to be retained. If any existing trees are recognised as dangerous, these should be removed.
- Commission a full detailed survey of the accurate location, species and size of all trees indicated on the arboricultural report as to be retained.
- Prepare a detailed landscape integration strategy based on the points outlined in section 5 of this report.
- Reconsider the detailed design of the road upgrade in light of the independent review, this report, the arboricultural recommendations and the detailed survey. Existing trees within the visually significant sections of the Woodland Highway Corridor noted as to be retained by the arboricultural report should be treated as constraints on the available design width that must be accommodated in the revised detailed highway design.
- The joining canopy requires retention of existing mature trees on both sides of the highway. Repositioning of the designed centre line of the highway in order to preserve existing vegetation on one side will only be effective in locations where there is no existing joining canopy effect.
- Remove the southbound passing lane and the Queensland Transport inspection site to a different section of the highway in order to avoid the need for vegetation clearing to accommodate these features.
- Use wire rope barriers wherever possible instead of clearing of trees or the use of rigid barriers that will have a greater visual impact.
- Include the planting of revegetation areas within the road corridor with native tree species to allow for future regeneration of the tree canopy effect where it is diminished.
- Cooperate with the local tourist authorities to implement a campaign to encourage the use of this section of the highway as a tourist attractor to the region and develop a “Country Drive” landscape.
- Consider promoting the use of the term ‘Cathedral Drive’ to describe this section of the New England Highway.
- Instigate a programme of regular maintenance to remove dead and dying branches to reduce the risk of branch drop onto the highway.

5.0 LANDSCAPE INTEGRATION STRATEGY

5.1 OVERALL VISION

The vision for this section of highway is to improve the safety of the route while maintaining the highway as a scenic route and environmental corridor which provides a distinctive appearance and acts as a gateway to Hampton and the scenic 'High Country' drives in the area.

5.2 OBJECTIVES

Protect the existing scenic amenity values of the road corridor while implementing a maintenance programme that will enhance the visual and ecological qualities of the route and provide a pleasant and safe driving experience.

6.0 REFERENCES

Queensland Government, Department of Main Roads. (2004), '*New England Highway Project Crows Nest – Geham Section. Road Infrastructure Project Proposal (R1001)'.*

Queensland Government, Department of Main Roads. (2006), '*New England Highway Project.. Crows Nest – Geham Section. Type 2 Road Infrastructure Projects. Short Form Business Case (R1004)'.*

Queensland Government, Department of Main Roads. (Version 1, September 1997), '*Road Landscape Manual – Assessment and Planning*'.

Queensland Government, Department of Main Roads. (Second edition, May 2004), '*Road Project Environmental Processes Manual*'.

Queensland Government, Department of Main Roads. (2006), '*Guidelines for Assessment of Road Impacts of Development*'.

Queensland Government, Department of Main Roads. (October 2006), *'New England Highway Project, Crows Nest to Geham, Community Engagement Report*'.

Conics. (March 2010), *'Report of the Independent Review of the Proposed Upgrade of the New England Highway: Hampton to Geham'*.

Queensland Government, Office of Urban Management, Department of Infrastructure. (September 2007), 'South East Queensland Regional Plan 2005-2026 '*Implementation Guideline No. 8 Identifying and Protecting Scenic Amenity Values'*

Conics. (October 2009), *'Toowoomba Regional Planning Study, Scenic Amenity Study Final Report*'

Toowoomba Visitor Information Centre (7th edition, republished December 2008), '*Toowoomba and Surrounds, Great Country Drives*'.

Toowoomba Regional Council. (June 2009), '*Corporate Plan 2009-2014'*

Connell Wagner. (27 September 2006), '*Review of Environmental Factors – Concept. New England Highway Project. Department of Main Roads Job No. 40/22A/45*'

Hampton Visitor Information Centre '*The High Country*'.