

1 Introduction

1.1 Background

AGL Upstream Infrastructure Investments Pty Limited (AGL) has Commonwealth and State government approval to construct and operate the Gloucester Gas Project (GGP) in the Hunter region of NSW. The State government approval is under Part 3A of the NSW *Environmental Planning and Assessment Act 1979* (EP&A Act) and comprises Project approval (PA 08_015) and a broader Concept Plan approval (CA 08_0154). The Concept Plan approval covers the same aspects as the Project approval though also includes staged well field development within a broader 'Concept Area' (Figure 1.1).

The GGP includes extraction and processing of natural gas from coal seams, and transport and delivery of the natural gas to the existing supply network which services NSW markets. This includes an approximately 95 to 100 kilometre (km) long underground high pressure gas transmission pipeline from the proposed central processing facility at Stratford, to a gas delivery station at Hexham.

Stage 1 of the GGP comprises the pre-construction, construction, commissioning, operation, decommissioning and rehabilitation of the Stage 1 Gas Field Development Area, central processing facility, gas transmission pipeline, Hexham Delivery Station (HDS) and associated ancillary infrastructure. Stage 1 of the GGP is currently in its front-end engineering design (FEED) phase and construction has not yet started. The environmental assessment (EA) of the GGP prepared by AECOM (2009a) includes a detailed description of the project, its potential environmental and socio-economic impacts, and AGL's environmental management, mitigation and monitoring commitments to address potential impacts. This modification application relates only to the gas transmission pipeline and gas delivery station components of the GGP.

AGL has identified improvements to the pipeline alignment to further minimise its environmental impacts, avoid recently-constructed utilities, achieve economic and efficiency benefits, and to connect directly with AGL's approved Newcastle Gas Storage Facility (NGSF) at Tomago, rather than the HDS. Minor realignments are proposed to four sections of the pipeline corridor and end of pipeline facilities are proposed within a compound at the NGSF connection point, referred to as the Tomago Receiving Station (TRS). The proposed TRS facilities are similar to those previously assessed and approved for the HDS. Figures 1.1 to 1.6 show the approved and proposed modified pipeline corridor alignments. The four realigned sections are referred to as the Seaham, Brandy Hill, Millers Forest and Tomago sections as follows:

- Seaham section (Figure 1.3) – an approximately 0.65 km long section of pipeline corridor at East Seaham, proposed to be straightened and realigned up to 100 metres (m) north, to be mostly within a cleared area within and adjacent to the TransGrid electricity transmission line easement. This reduces the amount of vegetation clearing from that currently approved.
- Brandy Hill section (Figure 1.4) – an approximately 5 km long section of pipeline corridor near Brandy Hill, proposed to be straightened and realigned generally up to 335 m west.
- Millers Forest section (Figure 1.5) – an approximately 2.5 km long section of pipeline corridor at Millers Forest, proposed to be realigned around 50 m east, to avoid the recently-constructed TransGrid electricity transmission line.

- Tomago section (Figure 1.6) – an approximately 6.5 km long section of the pipeline corridor’s southern end, proposed to be realigned to connect with the NGSF at Tomago via the TRS (rather than the HDS). The proposed realignment avoids a wetland area designated under State Environmental Planning Policy No. 14 – Coastal Wetlands (SEPP 14), reduces disturbance to acid sulfate soils (ASS) and only involves one crossing of the Hunter River (rather than two). As in the AECOM (2009a) EA and currently approved, the river crossing is proposed to be by horizontal directional drilling (HDD), though further upstream of the Hunter Wetlands National Park and Hunter Estuary Wetlands Ramsar site than currently approved.

AGL is seeking approval to modify its Project and Concept Plan approvals (PA 08_0154 and CA 08_0154) under Section 75W of the EP&A Act, to allow for the four minor pipeline realignments and connection to the NGSF via the TRS. Construction and operation of the realigned sections of pipeline and TRS will be as described in the AECOM (2009a) EA for the original pipeline route and HDS, respectively.

AGL has engaged EMGA Mitchell McLennan Pty Limited (EMM) to prepare this EA of the proposed modification. EMM has further engaged the services of external specialists to assist with the hazard and risk and ecological assessments.

To allow flexibility in final siting and design of the pipeline, and consistent with the approach in the AECOM (2009a) EA for the approved project, this EA has generally assessed a 100 m wide pipeline corridor. However, the disturbance footprint for pipeline construction will be restricted to a right of way (ROW) which is up to around 30 m wide. As identified in the 2009 EA, temporary laydown areas will be required at the HDD sites near the end of the pipeline. These will extend outside of the 100 m wide corridor, within the area shown on Figure 1.6. This was also assessed as part of this EA. Positioning of the ROW within the pipeline corridor will be confirmed during its detailed design, taking into account constraints such as any environmental sensitivities identified in this EA.

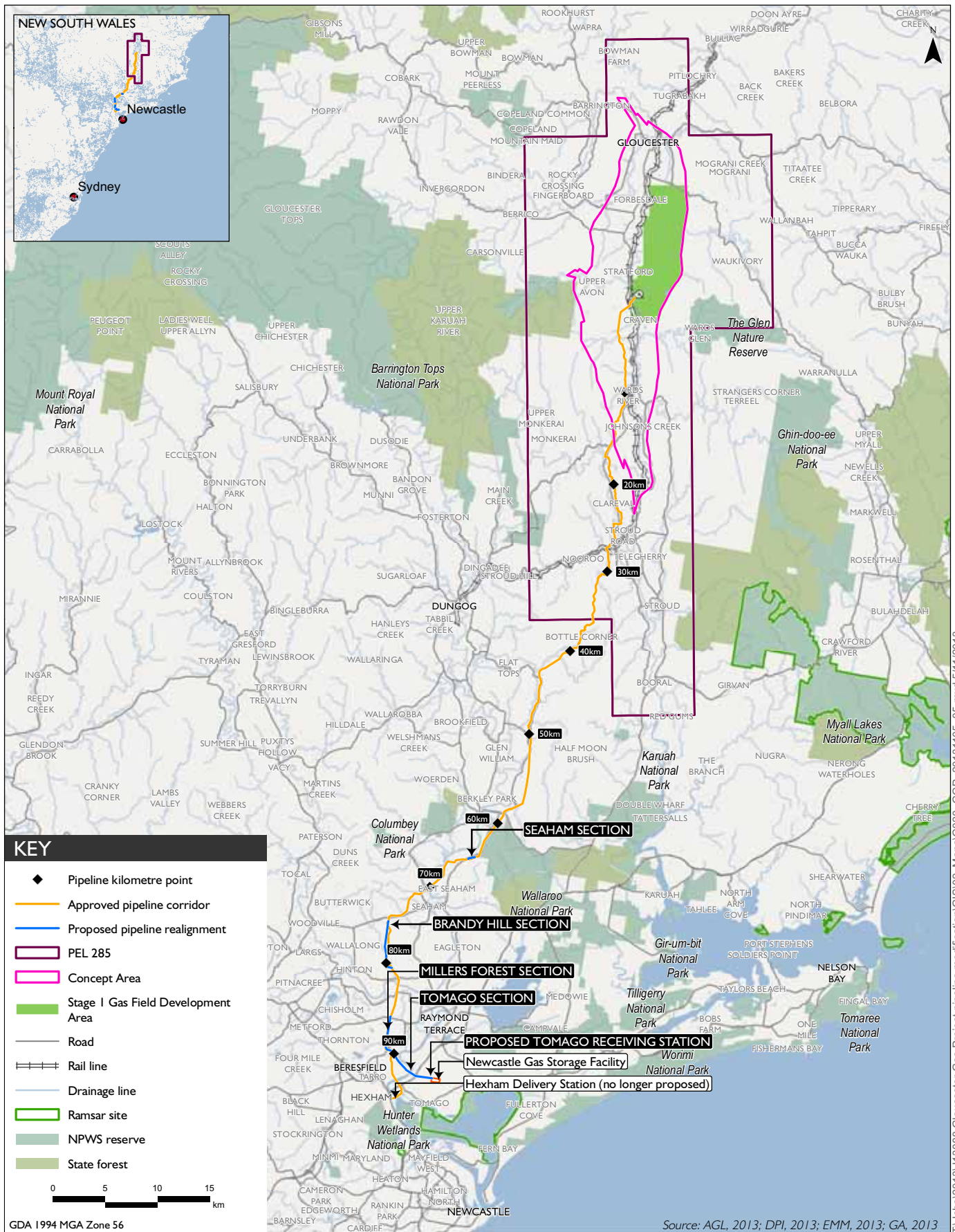
1.2 Approval process

In 2008 the GGP was declared a controlled action under the EPBC Act and a major project under the EP&A Act, requiring assessment and approval under both these acts. The assessment and approval pathway was Part 3A of the EP&A Act. The Commonwealth also accredited the EP&A Act Part 3A process as the appropriate pathway for its assessment purposes. On 22 February 2011, Project approval (PA 08_0154) and Concept Plan approval (CA 08_0154) for the GGP were granted under the EP&A Act by the NSW Planning Assessment Commission (PAC). On 11 February 2013, the GGP was also approved under the EPBC Act (EPBC 2008/4432).

Approval for the proposed modification is being sought under Section 75W of the EP&A Act, by way of a modification to the existing Project and Concept Plan approvals (PA 08_0154 and CA 08_0154). The NSW Government repealed Part 3A of the EP&A Act on 1 October 2011 but the GGP is subject to transitional arrangements outlined in Schedule 6A of the EP&A Act making it a ‘transitional Part 3A project’. Accordingly, Part 3A continues to apply to the GGP. The approval authority is the NSW Minister for Planning and Infrastructure, although the responsibility to approve the modification application may be delegated to the PAC.

This EA has been prepared as part of the approval process under Section 75W of the EP&A Act. It has been prepared with consideration to the relevant Director General’s requirements (DGRs) previously issued for the GGP.

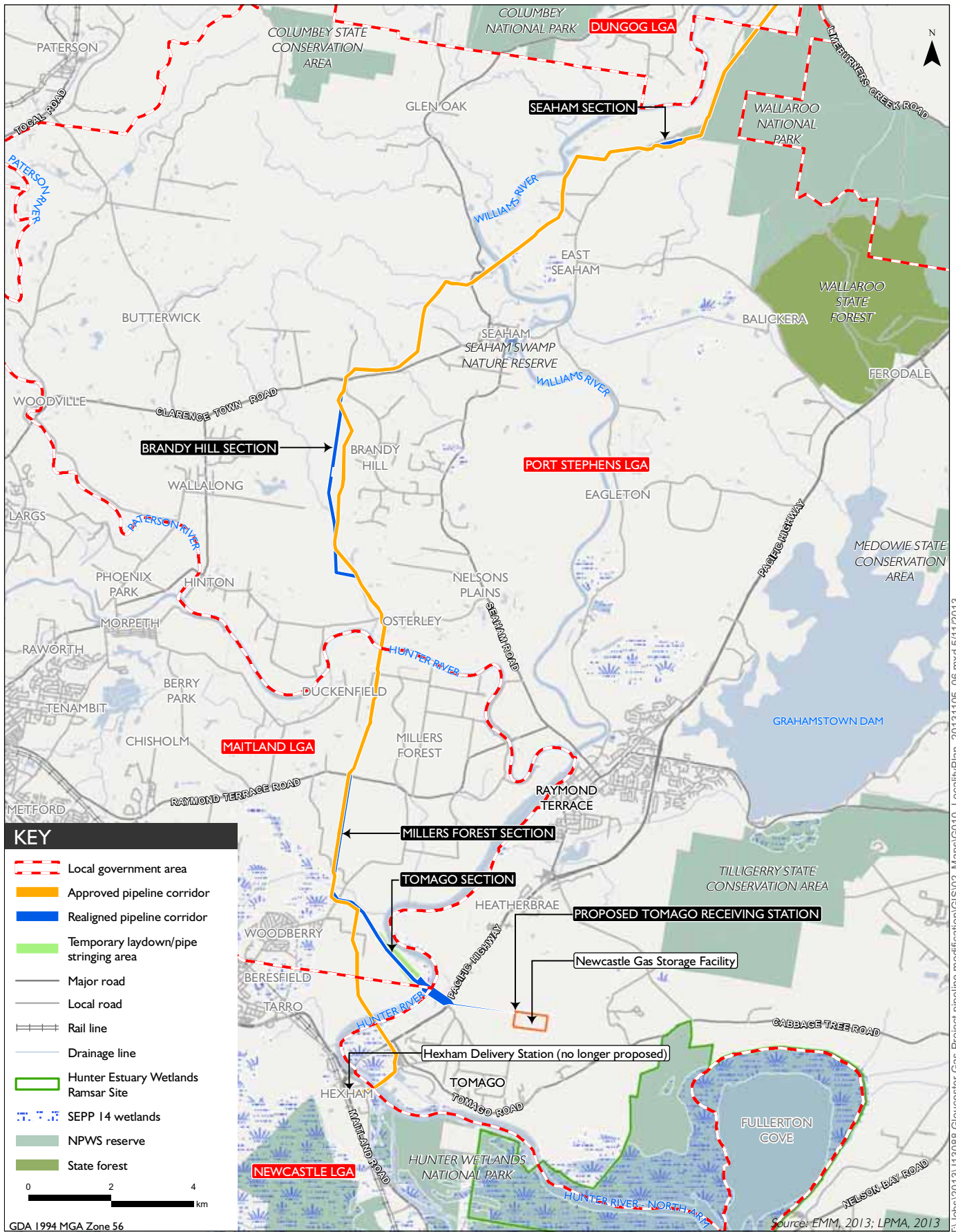
The proposed minor pipeline realignments and TRS are not likely to result in any significant impacts to matters of national environmental significance (MNES) and so a referral under the EPBC Act is not required (refer to Chapter 6).



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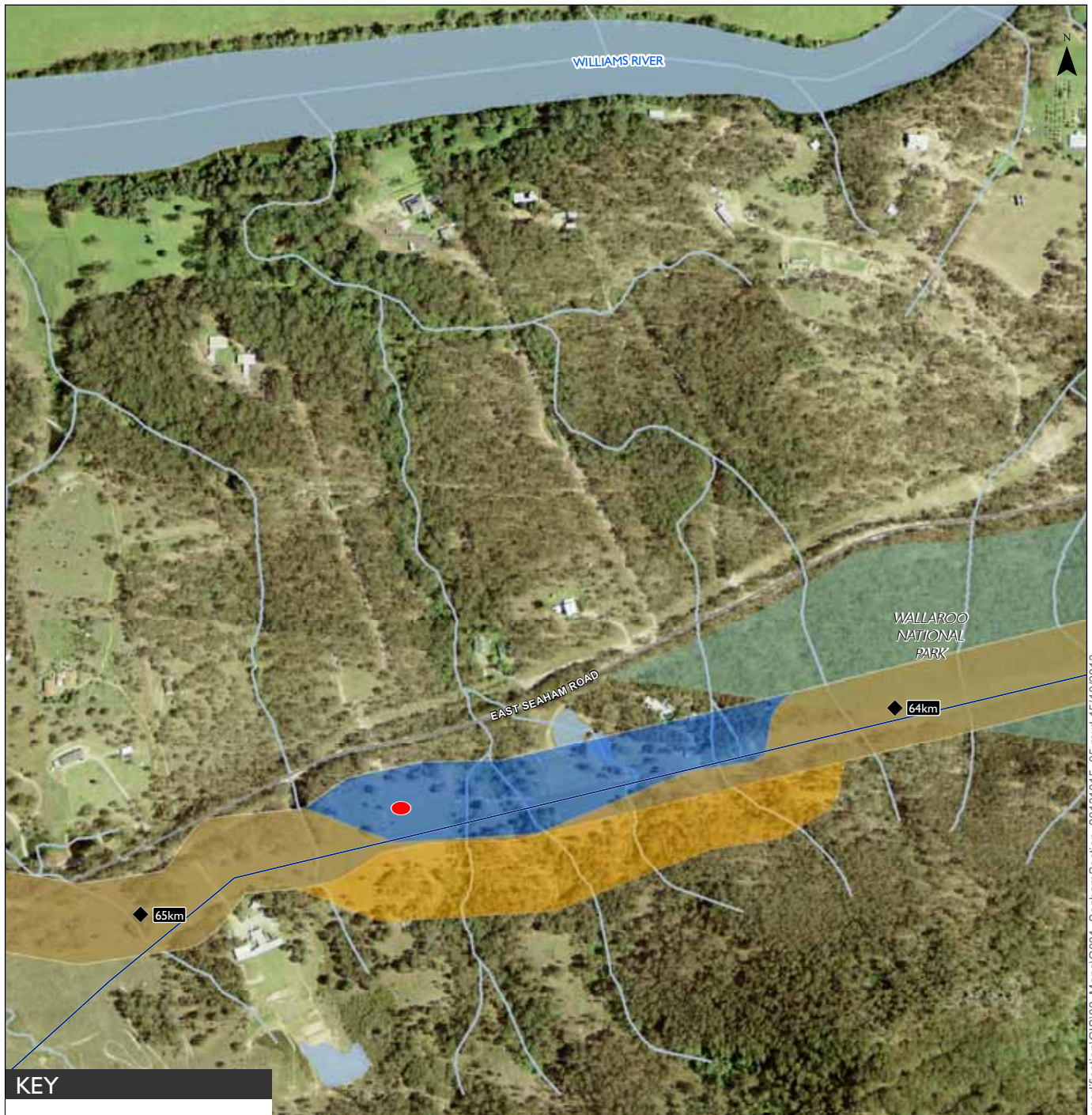
Gloucester Gas Project and the proposed modification
 Minor pipeline corridor realignments EA
 Figure I.1



Locality plan showing the proposed modification

Minor pipeline corridor realignments EA

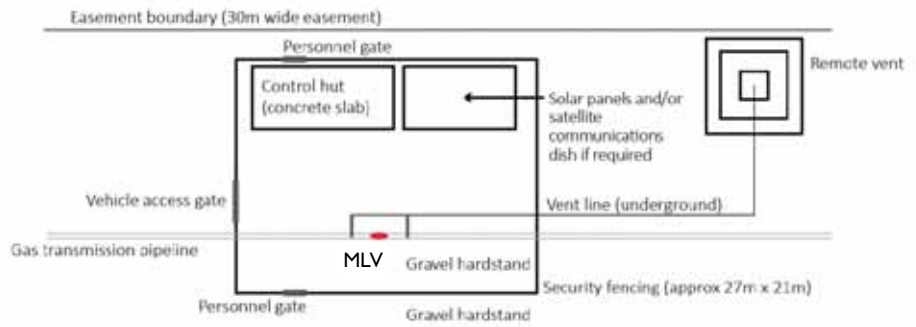
Figure I.2



KEY

- MLV facility (indicative location, subject to detailed design)
 - ◆ Pipeline kilometre point
 - Approved pipeline corridor
 - Realigned pipeline corridor
 - Electricity transmission line
 - Local road
 - Drainage line
 - NPWS reserve
- 0 0.1 0.2 0.3 km
- GDA 1994 MGA Zone 56

MLV Facility - Schematic Diagram (indicative, subject to detailed design)



Source: AGL, 2013; EMM, 2013; LPMA, 2013

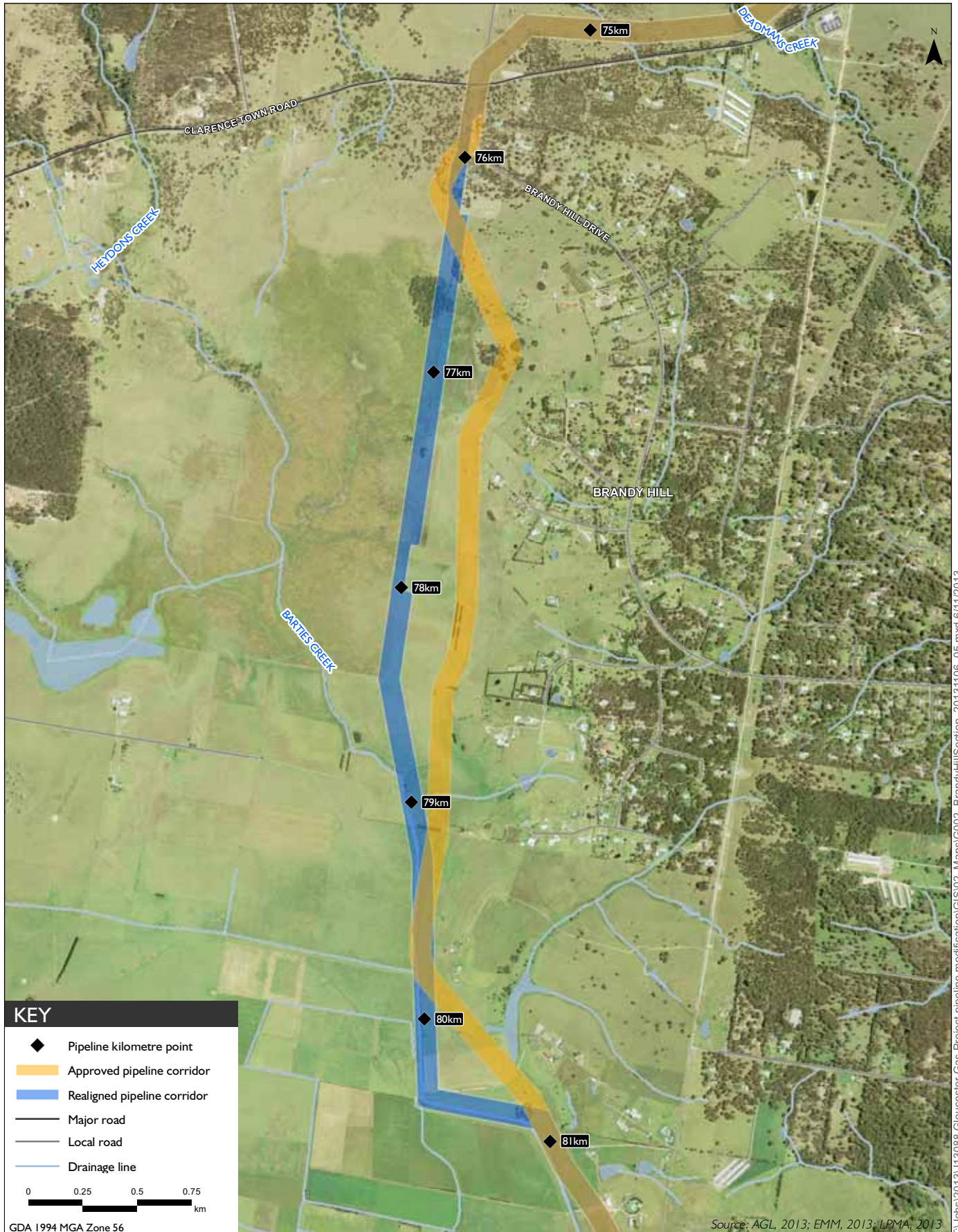
Seaham section

Minor pipeline corridor realignments EA

Figure I.3



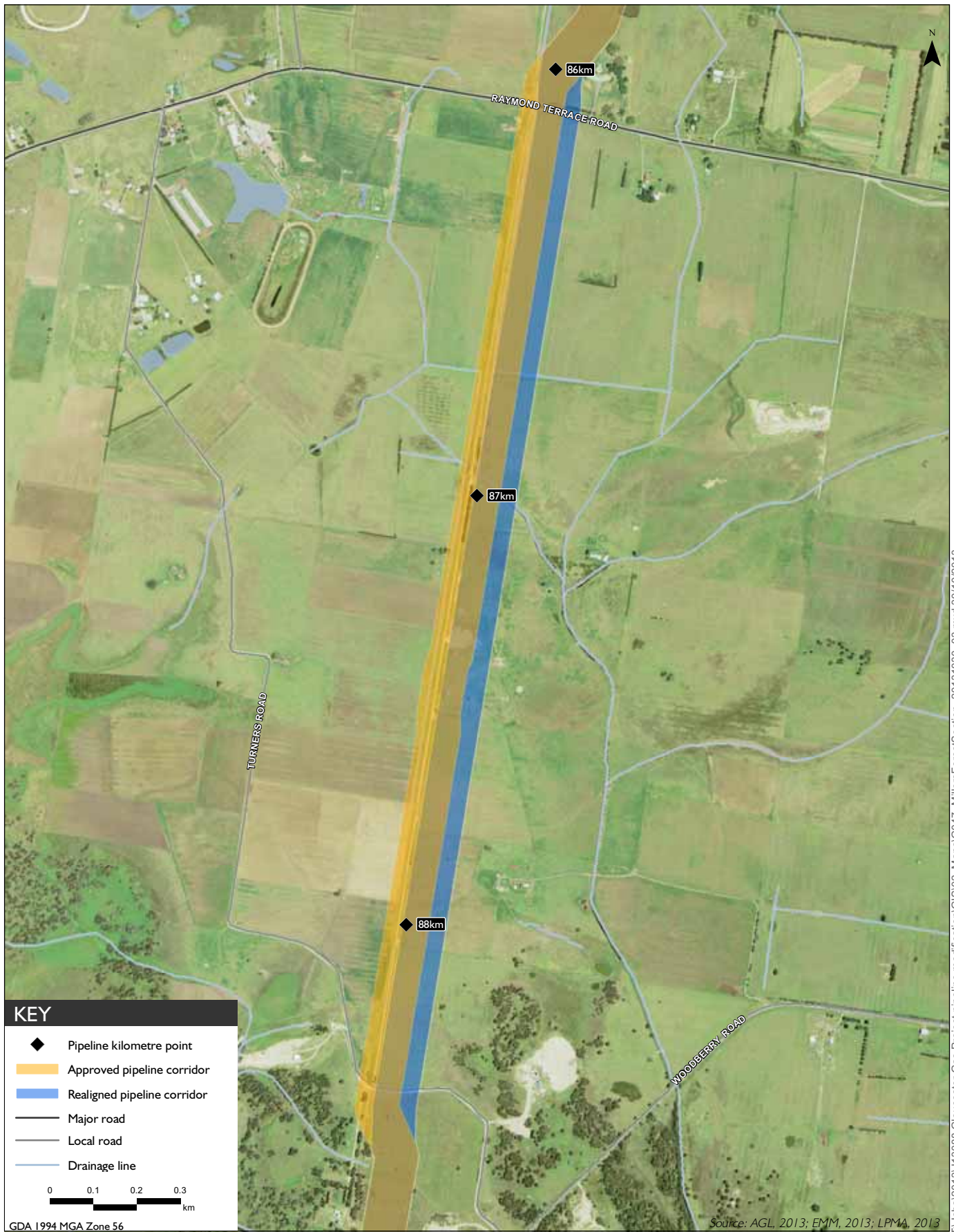
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Brandy Hill section
 Minor pipeline corridor realignments EA
 Figure I.4



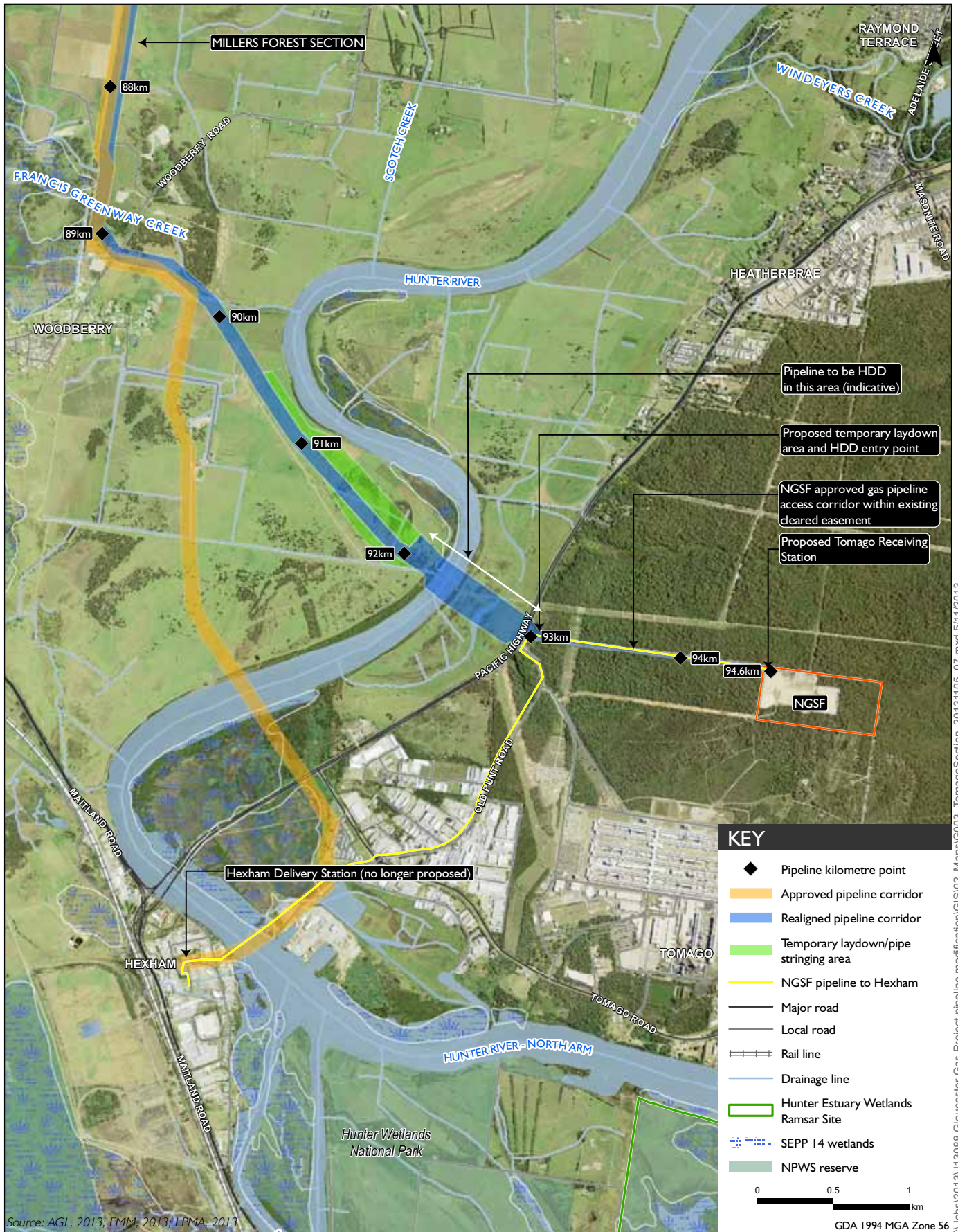
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Millers Forest section

Minor pipeline corridor realignments EA

Figure I.5





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Tomago section
 Minor pipeline corridor realignments EA
 Figure I.6

AGL applied for a pipeline licence under the NSW *Pipelines Act 1967* (Pipelines Act) in December 2012. The pipeline licence application included both the approved and proposed realigned pipeline corridors. A pipeline licence has not yet been granted, and cannot be granted until the Project approval has been modified.

Further detail on the proposed modification's statutory framework and approval process is provided in Chapter 4.

1.3 Overview of the approved project

AGL has Commonwealth and State government approvals to construct and operate the GGP.

The approved GGP, including proposed construction and operating activities, is described and assessed in detail in the AECOM (2009a) EA, and is shown in Figure 1.1. In summary it includes:

- staged construction and operation of up to 110 natural gas extraction wells and associated infrastructure in the Gloucester Basin, in the Gloucester and Great Lakes local government areas (LGAs), within an area covered by petroleum exploration licence (PEL) 285 and referred to as the Stage 1 Gas Field Development Area (Figure 1.1);
- construction and operation of a central processing facility and associated infrastructure at one of two potential sites at Stratford in the Gloucester LGA, to compress and process the natural gas ready for transport;
- construction and operation of an approximately 95 to 100 km long underground high pressure gas transmission pipeline to transport the compressed natural gas from the central processing facility to the HDS. The approved pipeline route traverses the Gloucester, Great Lakes, Dungog, Port Stephens, Maitland and Newcastle LGAs. It will be constructed within an approximately 30 m wide ROW situated within the 100 m wide corridor assessed; and
- construction and operation of a new gas delivery station at Hexham in the Newcastle LGA (the HDS), to deliver the natural gas to the existing reticulated supply network which service NSW markets.

The Concept Plan approval also includes staged well field development within a broader 'Concept Area' (Figure 1.1), including wells, gas and water gathering lines, and associated infrastructure. Activities covered by the Concept Plan approval only require Project approval before they can start.

The modification application, subject of this EA, relates only to the gas transmission pipeline component of the GGP, and the addition of the TRS in place of the HDS. Details of the pipeline's construction and operation from the original AECOM (2009a) EA are reproduced in the project description in Chapter 2 of this report. Details of the HDS construction and operation from the AECOM (2009a) EA are also in Chapter 2, as they apply to the TRS, which will be similar to the previously proposed HDS.

1.4 Need for the modification

The modification is needed to enable improvements to the pipeline alignment to further minimise its environmental impacts, avoid recently-constructed utilities, achieve economic and efficiency benefits, and allow the gas transmission pipeline to connect into AGL's approved NGSF, at Tomago, via the TRS rather than the HDS. The realigned sections utilise existing cleared areas where practical, including utility easements, and are mostly further from sensitive receptors than currently approved.

At the time the original EA was prepared (2009), the NGSF was not approved. The NGSF is a critical infrastructure project (as declared by the Minister for Planning under Section 75C of the EP&A Act) required to meet peak gas market requirements over winter and provide additional security of gas supply. NSW does not have any similar gas storage capacity. The NGSF was approved by the Commonwealth and NSW governments in 2012. Construction has commenced and it is expected to be operational from 2015. This facility will include a pipeline to Hexham, from where it will link into the NSW gas network.

Connecting the GGP to the NGSF via the TRS (rather than the previously proposed HDS) will allow natural gas from the GGP to be supplied directly to NSW markets and also to be stored at the NGSF for later use. This will assist AGL in meeting variability in gas demand, including peak demands for the Sydney-Newcastle market. Provision for storage of this natural gas will also allow AGL to produce gas from the GGP at a more consistent rate.

The proposed realignment in the Tomago section would also result in environmental benefits as it will avoid SEPP 14 wetlands assumed to be impacted in the AECOM (2009a) EA, reduce ASS disturbance, and only involves one crossing of the Hunter River (rather than two), at a location further upstream of the Ramsar site and national park than currently approved. It also reduces the number of road and infrastructure crossings required.

The proposed realignments at Seaham and Brandy Hill are to straighten up and shorten these sections of pipeline and to reduce vegetation clearing and other environmental impacts. These proposed alignments are preferred when considering constructability, reduced cost and environmental impacts, and schedule advantages. They were not previously achievable due to landholder access matters, which have now been resolved. The proposed realignment at Millers Forest is needed to avoid an electricity transmission line which was recently constructed within AGL's approved pipeline corridor.

1.5 The proponent

AGL is one of Australia's largest integrated energy companies, with a focus on power generation, gas production and energy retailing. AGL has been operating in Australia for over 175 years and has a diverse portfolio of energy generation infrastructure utilising both traditional and renewable energy sources. AGL retails natural gas, electricity, and energy-related products and services to approximately 3.2 million customer accounts across NSW, Victoria, South Australia and Queensland.

AGL has developed into Australia's leading renewable energy company and is the largest owner, operator and developer of renewable energy generation assets. It has major investments in hydro and wind power generation, as well as ongoing developments in key renewable energy areas including solar, geothermal, biomass, bagasse and landfill gas.

AGL is an experienced operator of coal seam gas and petroleum production facilities and high pressure gas transmission pipelines. In addition to the GGP, AGL's experience and expertise in designing, constructing, commissioning and operating these facilities and pipelines in Australia includes the:

- Camden Gas Project, which has been owned and operated by AGL since 2009 and is NSW's largest coal seam gas production facility. It includes 144 wells for extraction of natural gas from coal seams within petroleum production licences (PPLs) 1, 2, 4, 5 and 6, as well as over 100 km of gas gathering lines and associated infrastructure, and the Rosalind Park Gas Plant for gas treatment and supply;
- Berwyndale to Wallumbilla high pressure natural gas transmission pipeline which AGL designed, constructed, commissioned and operated between 2007 and 2010, until its sale to APA in March 2010. It is an approximately 112 km long DN 400 pipeline;

- NGSF, currently under construction at Tomago; and
- Hunter Gas Project within PELs 4 and 267 in the Hunter Valley, which is in its exploration stage.

1.6 Purpose of this report

This EA has been prepared in accordance with the EP&A Act and NSW *Environmental Planning and Assessment Regulation 2000* (EP&A Regulation) to support AGL's modification application. It addresses requirements of the relevant government policies and matters raised by stakeholders during project-specific consultation and notification.

