Sydney WATER

Environmental Assessment Addendum

Replacement Flows Project - River-flat Eucalypt Forest near the M7

February 2009

Executive Summary

An Environmental Assessment (EA) for the Replacement Flows Project was completed in November 2006. The EA showed that the pipeline alignment between the M7 and Bells Creek would be trenched in a cleared area adjacent to River-flat Eucalypt Forest. No direct impacts on River-flat Eucalypt Forest were identified in the Environmental Assessment.

The Minister for Planning approved the project in June 2007, with a specific Condition of Approval (CoA 2.11) requiring that the Project does not *directly impact* threatened species and endangered ecological communities, such as the River-Flat Eucalypt Forest.

Sydney Water consulted with the NSW Roads and Traffic Authority (RTA) as part of detailed design. During this consultation the RTA requested that the pipeline be moved approximately 20 metres south west to avoid land required for the proposed Castlereagh Freeway.

The revised alignment would require the removal of 4 trees belonging to the Endangered Ecological Community (EEC), River-flat Eucalypt Forest on Coastal Floodplains.

A flora and fauna assessment of the revised alignment was undertaken in January 2009. The assessment concluded that the direct and indirect impacts of the revised alignment would not result in a significant impact on the extent and condition of River-Flat Eucalypt Forest in the locality.

This Environmental Assessment Addendum has been prepared to assess the potential environmental impacts associated with the revised alignment which impacts on River-flat Eucalypt Forest. This Addendum forms the basis for a request for a modification of the Minister's Approval under Section 75W of the *Environmental Planning and Assessment Act 1979* for Condition of Approval 2.11.

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1 Introduction

1.1 Background

The Replacement Flows Project (RFP) is a key part of the Western Sydney Recycled Water Initiative, which is one of the measures proposed by the NSW Government to secure Sydney's water needs by increasing the use of recycled water for residential, irrigation and environmental purposes. This strategy is further outlined in the 2006 Metropolitan Water Plan (NSW Government, 2006).

The project will see the Penrith, St Marys and Quakers Hill sewage treatment plants (STPs) connected by pipes to allow treated wastewater from the three plants to be further treated at a new Advanced Water Treatment Plant (AWTP) at St Marys. The highly treated recycled water will be released into the Hawkesbury-Nepean River below Penrith Weir for the purpose of substituting for up to 18 billion litres of drinking water currently being released each year from Warragamba Dam for environmental flows.

An Environmental Assessment (EA) for the RFP was placed on public exhibition from November to December 2006. A Preferred Project Report (PPR) was submitted to the Department of Planning in February 2007 and the Minister for Planning approved the Project on 20 June 2007, subject to Conditions of Approval (CoA).

On 17 August 2007 Sydney Water awarded the delivery and operation contract for the RFP to Deerubbin Water Futures (DWF) Consortium consisting of United Group Infrastructure (UGI), McConnell Dowell (McD) Constructors (Aust) and General Electric Betz who will work with Sydney Water to deliver and operate this significant water recycling project. It is anticipated that highly treated recycled water from the St Marys AWTP will flow into the Hawkesbury-Nepean River from early 2010. The Project is currently in the detailed design and construction phase. Pipeline construction commenced in mid September 2008.

1.2 Requirement for this Addendum

An Environmental Assessment (EA) for the Replacement Flows Project was completed in November 2006. The EA showed that the pipeline alignment between the M7 motorway and Bells Creek would be trenched in a cleared area adjacent to River-flat Eucalypt Forest. No direct impacts on River-flat Eucalypt Forest were identified in the Environmental Assessment.

The Minister for Planning approved the project in June 2007, with a Condition of Approval (CoA 2.11) requiring that the Project does not *directly impact* threatened species and endangered ecological communities, such as the River-Flat Eucalypt Forest.

Sydney Water consulted with the NSW Roads and Traffic Authority (RTA) as part of detailed design. During this consultation the RTA requested that the pipeline be moved approximately 20 metres south west to avoid land required for the proposed Castlereagh Freeway.

The revised alignment would require the removal of 4 trees belonging to the Endangered Ecological Community (EEC), River-flat Eucalypt Forest on Coastal Floodplains. A flora and fauna report was prepared by SKM (February 2009) for the revised alignment and is included in Appendix A.

1.3 Purpose of this Addendum

This Environmental Assessment Addendum has been prepared by Sydney Water to assess the potential environmental impacts associated with the revised alignment which impacts on River-flat Eucalypt Forest near the M7.

It provides:

- a justification for the revised alignment
- details of the construction methods that would be undertaken
- a comparative assessment of impacts associated with the revised and approved alignment
- an outline of the mitigation measures that would be implemented to minimise adverse impacts on the endangered community, River-flat Eucalypt Forest.

This Addendum forms the basis for a request for a modification of the Minister's Approval under Section 75W of the *Environmental Planning and Assessment Act 1979.*

2 Description of the Modification

2.1 Description of the original alignment

An Environmental Assessment (EA) for the Replacement Flows Project was completed in November 2006. The EA showed that the section of pipeline between the M7 motorway and Bells Creek would be in a cleared area between patches of River-flat Eucalypt Forest and Cumberland Plain Woodland.

The original pipeline alignment joins a bore under an area of Cumberland Plain Woodland to the east and another bore under Bells Creek and associated River-flat Eucalypt Forest (See Figure 1) to the west. No direct impacts on River-flat Eucalypt Forest or Cumberland Plain Woodland were identified in the Environmental Assessment.

2.2 Justification for project change

During detailed design and site investigations Sydney Water consulted with the NSW Roads and Traffic Authority (RTA). During this consultation the RTA advised by letter (Appendix B) that the proposed pipeline alignment conflicts with the proposed ramp from the M7 to the proposed Castlereagh Freeway. RTA requested that the pipeline be moved approximately 20 metres south west to avoid this conflict.

Further investigation identified an alternative alignment which was considered satisfactory by the RTA. This alignment is described in more detail in Section 2.3.

2.3 Description of revised design

The revised alignment is approximately 20 metres south west from the original alignment. The pipelines pass through mostly cleared areas between a patch of River-flat Eucalypt Forest and a patch of Cumberland Plain Woodland. The pipeline is closer to the River-flat Eucalypt Forest. The pipelines will join up to a bore site located in a cleared area on the eastern edge of Bells Creek.

The pipeline in this section consists of two separate pipes side by side. One pipeline will be for the transfer of effluent from Quakers Hill STP to St Marys STP for treatment at the Advanced Water Treatment Plant (AWTP). The other pipeline will be for the transfer of concentrate from the AWTP at the St Marys STP to the Quakers Hill STP. The pipelines will be open trenched.

This revised alignment will require the removal of 4 trees belonging to the Endangered Ecological Community (EEC), River-flat Eucalypt Forest on Coastal Floodplains.

Figure 1 – Pipeline alignment figure from EA

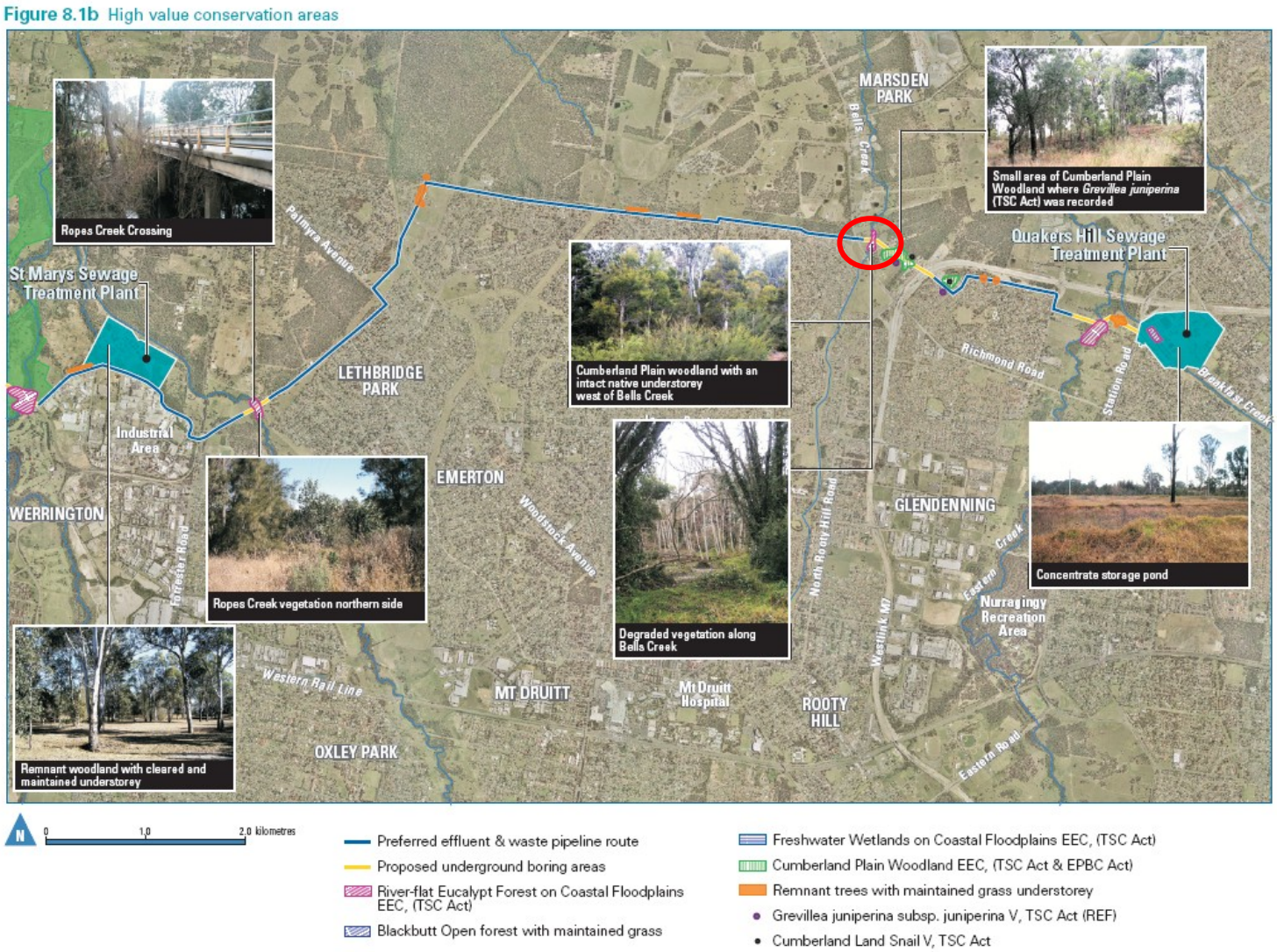

Figure 2 – Revised alignment

2.4 Construction methods

The proposed pipeline construction in this area would involve excavation and backfilling a trench for a distance of approximately 400 metres through mostly cleared areas. The trench required to install the two pipes in this area would be approximately 2.5 metres wide by 2 metres deep. However, a 6 metre wide corridor is required to allow access for plant and equipment during trench excavation.

Excavation of the trench would be undertaken by excavator. All soil material from the trench would be either loaded into trucks and transported away from the construction corridor to stockpile/ laydown areas (proposed to be located in cleared land outside the vegetated areas) or stockpiled adjacent to the trench for later backfill.

The trench and pipe installation will be staged such that the trench does not remain open overnight or would be fenced off at the end of the day to prevent access. Sediment and erosion control fencing will be used on sloping areas to minimise indirect impacts to the adjacent areas of River-flat Eucalypt Forest and the aquatic ecological communities within Bells Creek.

Construction in this area would involve:

- Survey alignment and install polyweb fencing to delineate worksite corridor (6m width) through the patches of vegetation.
- Pre-clearance surveys would be conducted for Cumberland Land Snail and any individuals present would be relocated to adjacent areas of habitat outside the works corridor. Birds nests or other fauna habitat of significance should also be identified in these pre-clearance surveys.
- Identify critical root zones (CRZs) of adjacent trees which fall within the worksite corridor (CRZ is defined as 5 x the trunk diameter measured at 1.4m above the ground) to ensure the trench excavation is outside these CRZs as much as possible.
- Any trees overhanging or adjacent to the worksite corridor would be protected/ wrapped in geotextile fabric to prevent accidental damage by an excavator where appropriate.
- Vegetation clearing within the worksite corridor, with stockpiling of topsoil for later reuse.
- Trench excavation by one excavator and loading/ laying pipes by another excavator (note any excavation in the CRZ of adjacent trees would be supervised by a qualified arborist).
- Backfilling of trench and reinstatement/ stabilisation of disturbed areas.
- Rehabilitation of worksite corridor (once pipeline has been hydrostatically tested).

2.5 Worksite rehabilitation

The worksite would be rehabilitated with locally native grasses and shrubs representative of the River-Flat Eucalypt Forest community. To minimise the impacts of the proposed tree removal, rehabilitation activities would replace the removed trees. Rehabilitation works would be maintained for a period of at least six months as per Condition of Approval 2.15. This maintenance program would include weeding and plant replacement as necessary to ensure the establishment of native vegetation. Tube stock would be sourced from locally collected seed where possible.

2.6 Benefits of the revised alignment

The revised alignment would remove the conflict with the RTA's proposed Castlereagh Freeway. The revised alignment has been chosen to minimise the impact on vegetation adjacent to the pipeline as much as possible.

3 Regulatory requirements

3.1 Statutory context

The Replacement Flows Project was assessed under Part 3A of the *Environmental Planning and Assessment Act 1979* (EP&A Act) and approved by the Minister for Planning on 20 June 2007 subject to Conditions of Approval (CoA).

Sydney Water has identified that the proposed pipeline re-alignment would involve some minor impacts to four (4) trees and some understorey (predominantly exotic grasses) within the River-flat Eucalypt Forest area. This means that the proposal is inconsistent with CoA 2.11 and a modification to the Minister's Approval is required.

Section 75W of the EP&A Act allows a proponent to request the Minister for Planning to modify the Minister's approval for a Part 3A project.

4 Environmental assessment

The key environmental impact associated with the revised alignment is the potential impact on the River-Flat Eucalypt Forest. Flora and fauna impacts for the River-Flat Eucalypt Forest are considered in Section 6.1 below, while all other environmental issues associated with the revised alignment are briefly considered in Section 4.2 below.

4.1 Flora and fauna

A flora and fauna study was undertaken for the revised alignment to provide an assessment of the potential ecological impacts on the River-flat Eucalypt Forest and their significance under Part 3 of the NSW *Threatened Species Conservation Act 1995* (TSC Act) (refer to Appendix A). The following section provides a summary of this assessment.

4.1.1 Impact assessment

The revised alignment traverses predominately cleared grassland areas along the edge of a patch of River-flat Eucalypt Forest. The patch of vegetation is remnant, although highly modified from its original condition, and consists of a mixed age canopy dominated by Cabbage Gum (*Eucalyptus amplifolia*) and Swamp Oak (*Casuarina glauca*). In addition Grey Box (*Eucalyptus moluccana*) are dispersed throughout the vegetation patch in low abundance. The understorey is dominated by exotic herb and grass species. Disturbance tolerant native species are also scattered throughout the area, with shrubs largely absent.

There will be some direct and indirect impacts to River-flat Eucalypt Forest as a result of the proposed works. Four trees, three Cabbage Gums and one Grey Box, will need to be removed to accommodate the revised pipeline (**Table 1**). In addition the root systems of a number of mature trees in close proximity to the route may potentially be impacted by the excavation activities. These impacts can, however, be minimised in accordance with advice from an arborist on maximising long-term tree stability and health. The proposed removal of this vegetation would not significantly isolate areas of habitat or threatened species.

Table 1 Trees proposed for removal

Species	Height	Number
Cabbage Gum (*Eucalyptus amplifolia*)	10 m	2
Cabbage Gum (*Eucalyptus amplifolia*)	12 m	1
Grey Box (*Eucalyptus molucanna*)	6 m	1

There is potential for Cumberland Land Snails (*Meridolum corneovirens*) to be present beneath areas of thicker leaf litter particularly around the bases of some trees, and in loose soil around the base of grass clumps. However no evidence of the Cumberland Land Snail was recorded in the vicinity of the revised alignment. An inspection of the entire revised alignment did not identify any significant natural or artificial cover for snails. This is likely to be a result of past land management practices such as firewood collection.

The study states that the proposed works area does not contain any significant or critical habitat for other threatened or significant fauna species and provided suitable construction mitigation measures are implemented, the proposal is unlikely to impact on native fauna species and habitat in the locality.

The study concludes that the direct and indirect impacts of the proposal would not result in a significant impact on the extent and condition of River-Flat Eucalypt Forest in the locality. Furthermore the proposal would not involve significant impacts to individual threatened flora and fauna species or critical habitats as listed in the TSC Act.

4.1.2 Mitigation measures

Pre Construction

- Pre-clearance surveys would be conducted for Cumberland Land Snail and any individuals present would be relocated to adjacent areas of habitat outside the works corridor. Birds nests or other fauna habitat of significance should also be identified in these pre-clearance surveys.
- Critical root zones (CRZs) of adjacent trees would be identified (CRZ is defined as 5 x the trunk diameter measured at 1.4m above the ground) to ensure the trench excavation is outside these CRZs as much as possible.
- All mature trees adjacent to the works corridor would be protected and retained in their present condition, with impacts limited to the four trees identified in this assessment. The trees would be fenced off and where overhanging the site would be protected through the use of a spotter or wrapped with geoetextile fabric.
- To avoid impacts on native vegetation, plant and equipment required for the excavation works would be restricted to the designated works corridor (6 m wide) and stockpile sites clearly identified outside the River-flat Eucalypt Forest area.

Construction

- There would be no stockpiling of excavated soil or construction plant outside of the designated works corridor or the identified stockpile sites where impacts to native trees could occur.
- Appropriate sediment and soil erosion quality controls would be implemented, particularly in regard to potential run-off in the event of heavy rain during excavation.
- Avoid vehicle entry into adjacent woodland areas or edge areas where weed seed could be transported and deposited by vehicles used in the construction.
- Removed trees would be placed on the ground within the adjacent area of River-flat Eucalypt Forest to provide potential habitat for Cumberland Land Snail and other fauna species.
- Where the trenching is within the Critical Root Zone (CRZ) of mature trees an arborist would be required on site to provide advice to the construction team and to monitor the condition of the retained trees.

Site rehabilitation

- The worksite corridor would be rehabilitated and planted with native grasses and advanced tube stock of local shrubs and trees representative of the River-flat

Eucalypt Forest. To minimise the impacts of the proposed tree removal, rehabilitation activities would aim to replace the removed trees at a rate of 2:1.

- Tube stock would be sourced from locally collected seed where possible.
- Maintenance of the rehabilitated area, including a weeding program, would occur for a period of at least six (6) months in accordance with Condition of Approval 2.15.

4.2 Other environmental issues

An assessment of other environmental issues is outlined in **Table 2** below.

Table 2 Other environmental issues

Aspect	Potential Additional Impacts to EA	Additional Mitigation Measures
Waste management	Impacts would not substantially change compared to original EA alignment.	None required
Noise and vibration	Impacts would not change compared to original EA alignment.	None required
Geology, soils and water	Impacts would not change compared to original EA alignment.	None required
Heritage	Impacts would not change compared to original EA alignment.	None required
Landuse and tenure	The revised alignment reduces the impact that the original alignment would have had on the RTA's proposed Castlereagh Freeway.	None required
Visual	Impacts would not change compared to original EA alignment.	None required
Air quality	Impacts would not change compared to original EA alignment.	None required
Traffic	Impacts would not change compared to original EA alignment.	None required

5 Conclusion and proposed modification

This EA Addendum has been prepared to assess the potential environmental impacts associated with a proposed revision to the pipeline alignment between the M7 and Bells Creek. The revised alignment would be located within a mostly cleared and modified area and along the edge of a remnant patch of River-flat Eucalypt Forest. The revised alignment would impact on four trees that form part of the River-flat Eucalypt Forest.

A flora and fauna assessment was undertaken and it concludes that the direct and indirect impacts of the proposal would not result in a significant impact on the extent and condition of River-Flat Eucalypt Forest in the locality. Furthermore the proposal does not involve significant impacts to individual threatened flora and fauna species or critical habitats as listed in the TSC Act.

The construction corridor would be rehabilitated following pipeline installation with native grasses and shrub species representative of the River-flat Eucalypt Forest. Maintenance of the rehabilitated area, including a weeding program, would occur for a period of at least six (6) months to ensure successful establishment.

Sydney Water suggests the following modification to CoA 2.11:

The Proponent shall ensure that the project avoid the direct impact to Grevillea juniperina subsp juniperina individuals, the habitat of Meridolum corneovirens, Litoria aurea and Miniopterus schreibersii, or the following Endangered Ecological Communities:

a) Cumberland Plain Woodland (with the exception of the minor impacts described in the document referred to under condition 1.1(d) and 1.1(h);

b) River-flat Eucalypt Forest on Coastal Floodplains (with the exception of the impacts described in the documents referred to under condition 1.1(g) ***and the minor impacts described in Environmental Assessment Addendum Replacement Flows Project - River-flat Eucalypt Forest near the M7 – February 2009****).*
The proponent is required to prepare a Vegetation Offset Strategy, in consultation with the Department of Environment and Climate Change, that establishes, conserves and maintains at least 1.2 hectares of the endangered ecological community River-flat Eucalypt Forest in an area that creates or enhances connections between existing remnants either within the site or in close proximity (such as along Breakfast Creek). The Vegetation Offset Strategy shall be submitted to, and approved by the Director-General prior to construction works commencing on the concentrate storage pond within the Quakers Hill STP site. The Vegetation Offset Strategy is required to be implemented within 12 months of the commencement of construction of the concentrate storage pond; and

c) Freshwater Wetlands on Coastal Floodplains.

Appendix A – Flora and Fauna Addendum, SKM, January 2009

Western Sydney Recycled Water Initiative – Replacement Flows Project

ADDENDUM: FLORA AND FAUNA ASSESSMENT FOR PROPOSED MODIFICATION TO PIPELINE ROUTE – BELLS CREEK

- Final
- 3 February 2009

Western Sydney Recycled Water Initiative – Replacement Flows Project

ADDENDUM: FLORA AND FAUNA ASSESSMENT FOR PROPOSED MODIFICATION TO PIPELINE ROUTE – BELLS CREEK

- Final
- 3 February 2009

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1. Introduction

1.1 Background

The Western Sydney Recycled Water Initiative (Replacement Flows Project) will connect the Penrith, St Marys and Quakers Hill sewage treatment plants (STP's) by pipes to allow treated wastewater from the three plants to be further treated at a new advanced water treatment plant (AWTP) at the St Marys STP. The highly treated recycled water will be released into the Hawkesbury-Nepean River below Penrith Weir.

An Environmental Assessment (EA) for the project was submitted to the NSW Department of Planning and approved by the Minister on the 20th June 2007, subject to Conditions of Approval (CoA). A specific CoA was issued for the Project in relation to ensuring that the Project does not directly impact on threatened species and endangered ecological communities, such as Cumberland Plain Woodland.

During detailed design investigations it was determined that the original EA alignment which involved open trenching through a generally cleared area between two areas of vegetation (**Figure 1**), will need to be moved to edge of the property boundary of land owned by the NSW Roads and Traffic Authority (RTA). The RTA has advised that the pipeline should be positioned on the property boundary to avoid constraining future development of this land to accommodate the proposed Castleraegh Motorway (M2). This alternative route will require the removal of 4 trees belonging to the Endangered Ecological Community (EEC), River-flat Eucalypt Forest on Coastal Floodplains. This EEC was identified in the vegetation mapping for the original EA.

1.2 Objectives of the Addendum

This report has been prepared as an addendum to original Replacement Flows Terrestrial Ecology Report (October 2006), which was contained in Appendix D of the EA.

A proposed alternate route option is now required in the Bells Creeks area approximately 600 m long situated to the southwest of the original route. The alternate route would involve open trenching through a predominantly cleared area between patches of remnant vegetation consisting of a works area of approximately 6 m width. The original EA alignment and the proposed alternate route are shown in **Figure 1**. The alternate route is subject to this flora and fauna impact assessment.

This addendum reports on an inspection of the proposed alternate route and provides an assessment of the potential ecological impacts and their significance on River-flat Eucalypt Forest under Part 3 of the NSW *Threatened Species Conservation Act*, 1995 (TSC Act). The information presented in the report is based on a review of available data, including the original EA and follow-up site investigations.

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- **Figure 1: Original and Alternate Pipeline Alignments**

SINCLAIR KNIGHT MERZ

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28/01/2009

AUSIMAGE

Sources:
Imagery: Ausimage 2007
Pipleine Routes: SKM 2008

2. Background Review

2.1 Project Ecology Assessment

A Flora and Fauna Assessment was undertaken as a component of the EA for the entire pipeline route (SKM 2006). Prior to the site inspection for this addendum a review of this report was undertaken to gather available information in relation to the vegetation community types and flora species previously recorded in the vicinity of the proposed alternate route.

The report provided details on the following:

- A description of the type, condition and distribution of flora and fauna species, ecological communities and habitats in the area directly and indirectly affected by the proposal;
- Identified and provided a qualitative evaluation and description of the conservation significance of species, populations and communities in the study area including identification of potential impacts from proposed construction activities;
- Assessed the significance of impacts from the proposal on species, populations and communities known or expected to occur in accordance with the TSC Act and EPBC Act; and
- Provided ameliorative and management recommendations to minimise the identified direct and indirect impacts of the proposal on flora and fauna of conservation significance, which were incorporated into the EA.

The report provided a description of the site in the vicinity of the proposed alternate route and described the vegetation as characteristic of River-flat Eucalypt Forest on Coastal Floodplains (Map Unit 11 Alluvial woodland: NPWS 2000) which is listed under the TSC Act as an EEC. The threatened species *Grevillea juniperina* was identified to east of the alternative route in the original EA, however no threatened flora or fauna species were identified in the proposal area for the alternative route. The site was considered potential habitat for the Cumberland Plain Snail, however no individuals were recorded. No other threatened flora or fauna were expected in this area (SKM 2006).

The proposed construction activities addressed in the original flora and fauna assessment for this section of the pipeline near Bells Creek were based on open trenching through a cleared area between two patches of vegetation. It was concluded that the proposal would have minimal impact on the River-flat Eucalypt Forest at this location, as areas of vegetation were avoided and directional bore drilling would be used to cross Bells Creek.

2.2 Broad-scale Vegetation Mapping

The study area has been included in the mapping for the *Native Vegetation of the Cumberland Plain, Western Sydney* (NPWS 2000). The area of vegetation within the proposal area for the alternative option has been mapped as Alluvial Woodland (Map Unit 11), which is recognised as being the EEC River-flat Eucalypt Forest on Coastal Floodplains. A patch of Alluvial Woodland approximately 12 hectares in area has been identified surrounding Bells Creek (NPWS 2000).

3. Site Assessment

3.1 Methods

An inspection of the proposed alternative route near Bells Creek on the eastern side of Richmond Road (**Figure 1**) was conducted on 17 December 2008, and focussed on the area of vegetation to be directly impacted, and a general meander was conducted surrounding this area to gain an understanding of the condition and type of vegetation present.

The inspection aimed to confirm the vegetation community types, flora and fauna species and habitat types present and assess the potential direct and indirect impacts on these from the proposed mechanical trenching and installation of the pipeline along the alternate route. The extent of tree removal required for the alternate proposal was quantified, and the condition of the vegetation was assessed. The dominant understorey and overstorey species were recorded and trees were assessed for the presence of hollows.

3.2 Results

The results of the site inspection confirmed that the proposed location of the alternate pipeline will indeed traverse a section of vegetation consistent with the listed Endangered Ecological Community River-flat Eucalypt Forest on Coastal Floodplains listed under the TSC Act.

The vegetation is remnant, although highly modified from its original condition, and consists of a mixed age canopy dominated by Cabbage Gum (*Eucalyptus amplifolia*) and Swamp Oak (*Casuarina glauca*). Several Grey Box (*Eucalyptus moluccana*) were also dispersed throughout this area in low abundance.

The understorey is dominated by exotic herb and grass species with disturbance tolerant native species also scattered throughout the area, and shrubs are largely absent. Dominant understorey species include Kikuyu (*Pennisetum clandestinum*), Paspalum (*Paspalum dilatatum*) and Plantain (*Plantago lanceolata*), with Fleabane (*Conyza* spp.), Spear Thistle (*Cirsium vulgare*), Prairie Grass (*Bromus catharticus*), Common Couch (*Cynodon dactylon*) and Fireweed (*Senecio madagascariensis*) occurring in lower abundance. Native species present in the understorey include Gotu Cola (*Centella asiatica*), *Glycine clandestina*, Spring Grass (*Eriochloa procera*) and Weeping Grass (*Microlaena stipoides*). A very sparse shrub layer is present consisting of a low diversity and abundance of exotic and native species including Falcate Wattle (*Acacia falcata*), Blackthorn (*Bursaria spinosa)* and Small-leaved Privet (*Ligustrum sinense)*. Noxious weed species were recorded in the vicinity of the proposal area comprising Small-leaved Privet and Bridal Creeper (*Asparagus asparagoides*).

Several trees will need to be removed to accommodate the proposed pipeline along the alternate route (**Table 3**). Additionally as a result of the excavation the root systems of a number of mature trees in close proximity to the route may potentially be impacted, however, these impacts can be minimised in accordance with advice from an arborist to assist in long-term tree stability and health.

Table 3: Trees proposed for removal for the alternate pipeline alignment

Species	Height	Number
Cabbage Gum *Eucalyptus amplifolia*	10 m	2
Cabbage Gum *Eucalyptus amplifolia*	12 m	1
Grey Box *Eucalyptus molucanna*	6 m	1

Habitat for threatened fauna is generally absent from the proposed works corridor, however Cumberland Land Snail (*Meridolum corneovirens*) may potentially be present in this area on the basis of suitable habitat. The preferred habitat attributes for this species are limited to areas of leaf litter around the base of some trees and possibly in loose soil around grass clumps. Potential habitat is widespread and not limited to the works corridor.

Important fauna habitat attributes such as fallen timber, hollow logs, tree hollows and rocky outcrops are absent from the works corridor. This area of vegetation has been impacted from previous agricultural activities such as grazing, wood collection, under-scrubbing, pasture improvement and clearing. Some habitat use could be expected by a small number of bird and reptile species which are common inhabitants of urban and fragmented landscapes. During the site inspection, there was no evidence of Cumberland Plain Snails within the worksite area which would be directly impacted by the proposal, and habitat attributes such as logs and other ground cover was absent, however some shelter is provided by areas of thicker leaf litter and loose soil around the base of grass clumps.

4. Impact Assessment

4.1 Potential impacts from alternate route

The proposed pipeline construction involves excavation and backfilling a trench through predominately cleared grassland areas along the edge of a patch of River-flat Eucalypt Forest. The remainder of the pipeline will traverse open or cleared disturbed land. The width of trench required to install the two (2) pipes in this area is approximately 2.5 m wide by approximately 2m deep. Excavation of the trench will be by machine and restricted to a 6 m wide disturbance corridor with all soil material to be transported away from the construction corridor to stockpile areas to be located in cleared land to the south-east of the River-flat Eucalypt Forest area (**Figure 1**). The trench and pipe installation will be staged such that the trench does not remain open overnight or would be fenced off at the end of the day to prevent access. Sediment and erosion control fencing will be used on sloping areas to minimise indirect impacts to the adjacent areas of River-flat Eucalypt Forest and the aquatic ecological communities within Bells Creek.

No hollow-bearing trees, logs, natural and artificial cover were identified in the proposed construction corridor. Thereby fauna sheltering opportunities are absent and habitat is restricted to an exotic dominated groundcover of grasses and herbs and leaf litter.

As noxious and invasive weeds are currently present at the site in high abundance there is potential to inadvertently spread weeds through machinery and vehicles entering and leaving the work site. Top soil is expected to be infested with weed seed and not suitable for regeneration purposes.

Remnant and regrowth woodland from the site and surrounding areas is consistent with the endangered ecological community (EEC) referred to as River-flat Eucalypt Forest scheduled in NSW under the *TSC Act*. As there will be some direct and potential indirect impacts to River-flat Eucalypt Forest as a result of the proposed works, an assessment of significance under Part 3A of the *EP&A Act* has been conducted in accordance with guidelines for threatened species assessment (DECC and DPI 2005).

The proposed works area does not contain any significant or critical habitat for threatened or significant fauna species and provided suitable construction mitigation measures are employed as is proposed in the recommendations of this report, the proposal is unlikely to impact on native fauna species and habitat in the locality. As a precautionary measure, the vulnerable Cumberland Plain Snail (*Meridolum corneovirens*) is considered to potentially occur in the area surrounding the site and the potential impacts of the proposal on this species have been addressed below.

The removal of vegetation along the proposed pipeline route is limited to 4 trees consisting of a 3 medium sized Cabbage Gum trees and a single Grey Box (**Table 3; Appendix 1**), along with a disturbed groundcover dominated by exotic grasses and herbs within the 6m wide construction

corridor. The proposed removal of this vegetation would not result in the significant isolation of interconnecting areas of habitat or threatened species. The degraded nature of the disturbance area indicates that it is unlikely to provide important habitat for threatened fauna species and it is considered unlikely that this proposal would reduce the long-term viability of native fauna within the local or regional area. The worksite corridor would be rehabilitated post construction with native grasses, shrubs and trees.

4.2 Environmental Planning and Assessment Act

An assessment of the impacts of the proposed alternate route on threatened species and endangered ecological communities listed under Schedules 1, 1A and 2 of the TSC Act has been undertaken. The proposal is to be assessed under Part 3A of the *EP&A Act* and consequently this impact assessment was undertaken in accordance with the Draft Guidelines for Threatened Species Assessment (DEC and DPI 2005).

4.2.1 River-flat Eucalypt Forest on Coastal Floodplains

The presence and conservation value of River-flat Eucalypt Forest near Bells Creek has been noted from the previous EA and subsequently the proposed alternate route has been placed to minimise the impact on vegetation as much as possible. Further assessment and planning conducted on site to address construction impacts include:

- Identification of appropriate locations for temporary stockpile of soil during the excavation and filling of the trench; and
- Specific techniques to minimise the impacts on the roots of mature trees located close to the construction corridor.

Assessment of Significance (Part 3A EP&A Act)

How is the proposal likely to affect the lifecycle of a threatened species and/or population?

River-flat Eucalypt Forest is not a threatened species or population.

How is the proposal likely to affect the habitat of a threatened species, population or ecological community?

This proposal will result in direct impacts to 4 trees (**Table 3**) and exotic dominated groundcover vegetation. The proposed clearing and excavation for trenching works requires a disturbance zone consisting of a 6 m wide corridor and soil removed from the trench will be stockpiled in cleared areas outside the River-flat Eucalypt Forest area (**Figure 1**). The disturbance will be temporary for excavation of the trench and backfilling once the pipes have been installed, and the disturbed area will be regenerated with native species indigenous to River-flat Eucalypt Forest of the local area.

Strict adherence to these mitigative and protective measures is essential for consistency with the conclusions of this assessment.

The protective measures put forward are designed to ensure that any impacts on River-flat Eucalypt Forest would be minimised and ensure there is no long-term reduction in the extent of this community.

Does the proposal affect any threatened species or populations that are at the limit of its known distribution?

River-flat Eucalypt Forest is not a threatened species or population.

How is the proposal likely to affect current disturbance regimes?

A number of current disturbance activities are evident in the study area which has been a result of past agricultural activities. These include a high abundance of weed species in the ground layer and absence of any significant native regeneration most likely due to pasture improvement and heavy grazing. The shrub layer is largely absent, suggesting this area may have been under-scrubbed in the past to improve grazing opportunities. The proposed excavation and disturbance of topsoil has potential to exacerbate the issue of weed invasion. Measures to ameliorate this impact during the construction are required and have been identified in this report. Adherence to these measures will provide adequate provisions to protect native flora and may improve the overall condition of the site.

How is the proposal likely to affect habitat connectivity?

The proposal will contribute to further fragmentation of vegetation, however impacts will be minor, as the works are restricted to the edge area of this vegetation patch and some canopy cover from adjacent trees outside the works area will be maintained above the works area. The proposal will result in a small amount of fragmentation, contributing to the canopy gap between this patch of River-flat Eucalypt Forest patch and areas of vegetation to the east (**Figure 1**). Rehabilitation of the site and regrowth of vegetation will ensure that there are no long-term impacts to connectivity and surface disturbances associated with the trench corridor will be concealed following the proposed construction.

How is the proposal likely to affect critical habitat?

No critical habitat has been identified for this community within the study area.

4.2.2 Cumberland Land Snail

How is the proposal likely to affect the lifecycle of a threatened species and/or population?

At present there is limited information about the biology and life history of the Cumberland Land Snail. It is hermaphroditic and eggs are laid in moist and dark areas such as under logs, fallen trees and artificial ground cover such as building refuse and car bodies (NSW Scientific Committee 1997). The species appears to persist in degraded environments provided that this critical ground cover of logs or rubbish is available (NSW Scientific Committee 1997). However nothing is currently known about rates of fecundity of the species, length of life span, dispersal patterns and over what distances individuals can move.

No evidence of the Cumberland Land Snail was recorded in the vicinity of the alternate route. An inspection of the entire trenching works site identified an absence of any significant cover for snails either natural or artificial. This is likely to be a result of past land management practices such as firewood collection. However there is potential for Cumberland Land Snails to be present beneath areas of thicker leaf litter particularly around the bases of some trees, and in loose soil around the base of grass clumps.

On the basis of records of this species which account for its distribution throughout the wider area (DECC Atlas of NSW Wildlife 2008) it is evident that there are larger expanses of Cumberland Plain Woodland that provide suitable and indeed better quality habitat than those in the works area. There are numerous records of Cumberland Land Snail surrounding the Proposal area, including within the area of Cumberland Plain Woodland to the east (DECC Atlas of NSW Wildlife 2008).

Given the presence of some areas of thicker leaf litter there is potential for Cumberland Land Snail to be present. Therefore pre-clearance surveys should be conducted in the works area to relocate any Cumberland Land Snails into adjacent areas of habitat.

How is the proposal likely to affect the habitat of a threatened species, population or ecological community?

No evidence of the Cumberland Land Snail was recorded in the vicinity of the alternate route during inspections in December 2008. An inspection of the entire trenching works site identified an absence of any significant cover for snails either natural or artificial. However there is potential for Cumberland Land Snails to utilise areas of thick leaf litter and areas of thicker groundcover in the general works area, particularly at the base of some of the trees and grass clumps.

There are opportunities to improve the habitat for Cumberland Land Snail by placing the proposed removed tree trunks and branches on the ground in adjacent areas of remnant vegetation.

Does the proposal affect any threatened species or populations that are at the limit of its known distribution?

Cumberland Land Snail occurs within the Cumberland Plain region of Western Sydney, bounded by Cattai (to the north), Picton (to the south), Prospect Reservoir (to the east) and Yarramundi (to the west) (NSW Scientific Committee 1997). Any Cumberland Land Snails within the vicinity of the proposed works area are towards the central areas of the species distribution and would not be at the limit of distribution.

How is the proposal likely to affect current disturbance regimes?

A number of current disturbance activities are evident in the study area which has been a result of past agricultural activities. These include a high abundance of weed species in the ground layer and absence of any significant native regeneration most likely to pasture improvement and heavy grazing. The shrub layer is largely absent, suggesting this area may have been under-scrubbed in the past to improve grazing opportunities. The proposed excavation and disturbance of topsoil has potential to exacerbate the issue of weed invasion. Measures to ameliorate this impact during the construction are required and have been identified in this report. Adherence to these measures will provide adequate provisions to protect native flora and may improve the overall condition of the site.

How is the proposal likely to affect habitat connectivity?

The proposal will contribute to further fragmentation of vegetation, however impacts will be minor, as the works are restricted to the edge area of this vegetation patch and some canopy cover from adjacent trees outside the works area will be maintained above the works area. The proposal will result in a small amount of fragmentation, contributing to the canopy gap between the River-flat Eucalypt Forest patch and areas of remnant vegetation to the east (**Figure 1**). Rehabilitation of the site and regrowth of vegetation will ensure that there are no long-term impacts to connectivity and surface disturbances associated with the trench corridor will be concealed following the proposed construction.

How is the proposal likely to affect critical habitat?

No evidence of the Cumberland Land Snail was recorded in the vicinity of the alternate route. An inspection of the entire trenching works site identified an absence of any significant cover for snails either natural or artificial, however there are areas of leaf litter and dense groundcover which may be utilised. On this basis the site is not considered critical for this species.

4.3 Comparative Assessment of Original and Alternate Pipeline Routes

The original route alignment avoided areas of remnant vegetation and had minor ecological impacts in this area. As a result of discussions with the RTA the original location has been identified as a potential constraint to the future development of this land. Therefore the RTA requested the proposed pipeline alignment be moved to the edge of the property boundary.

The alternate route will require the removal of 4 small to medium sized trees which are part of River-flat Eucalypt Forest with a highly disturbed understorey. However considering the proposed mitigation measures to minimise impacts and regenerate the site following the proposal, ecological impacts will be minimised, and limited to short-term impacts to native tree cover.

5. Recommendations

The following mitigation measures are recommended to protect the integrity of the River-flat Eucalypt Forest on coastal Floodplains EEC during the construction and operation of the pipeline.

5.1 Pre-construction measures

- Pre-clearance surveys should be conducted for Cumberland Land Snail and any individuals present should be relocated to adjacent areas of habitat outside the works corridor, and bird's nest or other fauna habitat of significance should also be identified in these pre-clearance surveys.
- All mature trees adjacent to the works corridor should be regarded as significant and retained in their present condition, with impacts limited to the 4 trees identified in this assessment.
- All vegetation from land surrounding and in proximity to the works corridor is classified as an endangered ecological community and is to be treated accordingly (i.e. fenced off to prevent accidental damage during construction works).
- To avoid impacts on native vegetation, plant and equipment required for the excavation works should be restricted to the designated works corridor (6 m wide) and stockpile sites clearly identified outside the River-flat Eucalypt Forest area (**Figure 1**).

5.2 Construction measures

- There should be no stockpiling of excavated soil or construction plant outside of the designated works corridor or the identified stockpile sites where impacts to native trees could occur.
- Appropriate sediment and soil erosion quality controls should be utilised, particularly in regard to potential run-off in the event of heavy rain event during excavation.
- Avoid vehicle entry into adjacent woodland areas or edge areas where weed seed could be transported and deposited by vehicles used in the construction.
- Removed trees should be placed on the ground within the adjacent area of River-flat Eucalypt Forest to provide potential habitat for Cumberland Land Snail and other fauna species.

5.3 Post-construction measures

- The worksite corridor would be rehabilitated and planted with native grasses and advanced tube stock of local shrubs and trees from the list provided in **Appendix B** or other species representative of the River-flat Eucalypt Forest. To minimise the impacts of the proposed tree removal, rehabilitation activities would aim to replace the removed trees at a rate of 2:1. Tube stock would be sourced from locally collected seed where possible.

- Maintenance of the rehabilitated area, including a weeding program, would occur for a period of at least six (6) months as per Condition of Approval 2.15.

6. Conclusions

The works to be undertaken as part of the proposed alternate pipeline route for the Western Sydney Recycled Water project have been assessed in regard to the presence of River-flat Eucalypt Forest (Endangered Ecological Community: *TSC Act*) and threatened species. The assessment concludes that:

- The proposed alternate route is located within a highly disturbed area of River-flat Eucalypt Forest supporting an understorey dominated by exotic grasses and herbs. A total of 4 trees (**Table 3**) will need to be removed to accommodate the proposed pipelines.
- The works required would not result in a significant adverse impact on the overall distribution, condition and future viability of River-flat Eucalypt Forest in western Sydney, with the proposed clearing representing less than 0.001% of the distribution on the Cumberland Plain.
- Potential ecological impacts will be minimised with the inclusion of appropriate protective measures to be implemented during the pre-construction, construction and post-construction phases of the project (Section 5).
- Furthermore, the proposal does not involve significant impacts to individual threatened flora and fauna species or critical habitats as listed in the *TSC Act* and would not significantly impact on a matter of national environmental significance as scheduled in the *EPBC Act*.

7. References

DEC and DPI (2005). Draft Guidelines for Threatened Species Assessment. Department of Environment and Conservation and Department of Primary Industries, July 2005.

DECC 2008. *Atlas of NSW Wildlife.* Report generated on 18/12/2008. Department of Environment and Climate Change. http://wildlifeatlas.nationalparks.nsw.gov.au/wildlifeatlas/watlas.jsp

NPWS 2000. *The Native Vegetation of the Cumberland plain, Western Sydney – Technical Report.* NSW National Parks and Wildlife Service, Hurstville.

NSW Scientific Committee (1997) Cumberland Plain land snail - Endangered species determination - final. DEC (NSW), Sydney

SKM (2006). Replacement Flows Project Environmental Assessment. Appendix D: Terrestrial Ecology Assessment. Sinclair Knight Merz, Sydney.

Appendix A Site Photographs

Plate 1: Photographs of Cabbage Gums (*Eucalyptus amplifolia*) proposed to be removed labelled as "1" in Figure 1.

Plate 2: Small Grey Box (*Eucalyptus molucanna*) proposed for removal, labelled as "2" in Figure 1

Plate 3: Cabbage Gum (*Eucalyptus amplifolia*) proposed to be removed labelled as "3" in Figure 1.

Plate 4: View of proposed alignment from the trail at the northern end

Plate 5: Cleared area southeast of proposal area suitable for stockpiling soil and equipment (see Figure 1).

Appendix B Plant species identified along the works corridor and immediately surrounding areas

Classification / Scientific name	Common Name	
Flowering Plants - Dicotyledons		
APIACEAE		
Centella asiatica	Swamp Pennywort	
APOCYNACEAE		
Araujia hortorum	Moth Vine	i
ASTERACEAE		
Aster subulatus	Wild Aster	i
Cirsium vulgare	Spear Thistle	i
Conyza spp.	Fleabane	i
Hypochoeris radicata	Flatweed	i
Lactuca serriola	Prickly Lettuce	i
Senecio madagascariensis	Fireweed	i
BASELLACEAE		
Anredera cordifolia	Madeira Vine	i
CASUARINACEAE		
Casuarina glauca	Swamp Oak	R
CHENOPODIACEAE		
Einadia hastata	Shrubby Berry-saltbush	
FABACEAE		
FABOIDEAE		
Glycine clandestina agg.	Twining Glycine	
MIMOSOIDEAE		
Acacia falcata	Sickle Wattle	R
Acacia parramatensis	Sydney Green Wattle	R
MALVACEAE		
Modiola caroliniana	Red-flowered Mallow	i
Sida rhombifolia	Paddys Lucerene	i
MYRTACEAE		
Eucalyptus amplifolia	Cabbage Gum	R
Eucalyptus moluccana	Grey Box	R
Melaleuca linariifolia	Snow-in-Summer	R
OLEACEAE		
Ligustrum sinense	Small-leaved Privet	i
OXALIDACEAE		
Oxalis spp.		
PITTOSPORACEAE		
Bursaria spinosa	Blackthorn	R
PLANTAGINACEAE		
Plantago lanceolata	Plantain	i
POLYGONACEAE		
Rumex crispus	Curled Dock	i
VERBENACEAE		
Verbena bonariensis	Purple Top	i

Flowering Plants - Monocotyledons		
ASPARAGACEAE		
Asparagus asparagoides	Florists Smilax	i
Asparagus officinalis	Asparagus	
COMMELINACEAE		
Commelina cyanea	Scurvy Weed	
Tradescantia albiflora	Wandering Jew	i
CYPERACEAE		
Cyperus eragrostis	Umbrella Sedge	i
POACEAE		
Avena fatua	Common Oat	i
Briza subaristata		i
Bromus catharticus	Prarie Grass	i
Cynodon dactylon	Common Couch	n
Eriochloa procera	Spring Grass	
Lachnagrostis filiformis	Blown Grass	
Lolium spp. (hybrid swarm)	Rye Grass	i
Microlaena stipoides var. *stipoides*	Weeping Grass	
Paspalum dilatatum	Paspalum	i
Pennisetum clandestinum	Kikuyu	i
Setaria gracilis	Slender Pigeon Grass	i

i = introduced species

R = species suitable for regeneration following proposal

n = Native species likely to be introduced to the area

Appendix B – RTA Letter 17 September 2008

RTA

Mr Wassim Wasseff
Project Manager
Western Sydney Recycled Water Initiative
Sydney Water Corporation
PO Box A53
SYDNEY SOUTH NSW 1232

Dear Mr Wassim

RE: Castlereagh Freeway and M7 Motorway Corridors

I refer to a meeting of officers from the Roads and Traffic Authority (RTA) and Sydney Water held on 18 August 2008.

At this meeting Sydney Water presented 80% detailed design drawings for the section between Peter Van Hasselt Park, Willmot and Symonds Road, Dean Park for discussion with RTA. This section of the Western Sydney Recycled Water Initiative Replacement Flows Project utilises the RTA's long standing Castlereagh Freeway Corridor (CFC) and the M7 Motorway corridor.

The RTA recognises Sydney Water's efforts to respond to requirements set during the environmental assessment phase of the project to the extent that is practicable. The RTA accepts that the design generally complies with the requirement to locate the pipeline within 10 metres of the southern boundary of the CFC. With regard to the RTA's suggestion to lower the pipe to 3m below surface to reduce the need for future protection of the pipe the RTA accepts that this would impact the maintenance free aspects of the design.

Accordingly, the RTA provides the following comment on the 80% design drawings to assist in progressing the detail design to minimise impacts on the RTA's responsibility for protecting the CFC and M7 Motorway corridor to ensure they are available for the planning, construction, operation and maintenance of road infrastructure.

Peter Van Hasselt Park to west of Richmond Road (Drawing No.1205 – 1308)

The RTA supports locating the pipeline in the public reserve south of the CFC from Peter Van Hasslet Park to around Emerson Street (Drawing No. 1208). East of this point the pipeline meanders in and out of the CFC (Drawing No.s 1209, 1301, 1302, 1303 and 1304). It should be noted that the pipeline does not align between sheets 1209 and 1301. East of Daniels Road the pipeline is located within the CFC to Richmond Road (Drawing No.s 1304 – 1308). The RTA has no objection, except as stated below, to the proposed alignment between Peter van Hasslet Park and Richmond Road as the pipeline, where it is within the CFC, is generally within 10 metres of the southern boundary.

The RTA supports the location of the required air valve outside of the CFC in Daniels Road and the proposed maintenance access to the air valve from Daniel Street and not the CFC

(Drawing 1304). The RTA, however, does not accept the location of the scour valve (Drawing 1307) and the air valve (Drawing 1308) west of Richmond Road that are both located within the CFC. The RTA requires that the pipeline be realigned at this location so that the scour valve and air valve are both located outside of the CFC and the RTA's Richmond Road widening reservation and into the adjacent Bells Creek reserve. The RTA is concerned that in future a possible noise wall along the CFC boundary could prevent access to the air and scour valves from the reserve if located within the CFC. RTA would not be agreeable to access for maintenance purposes to these valves from a future motorway in the CFC.

Richmond Road to M7 Crossing (including the crossing)

The RTA confirms that the proposed location of the pipeline, air valve and scour valve east of Richmond Road (Drawing No.1308) conflicts with the RTA's concept design for a westbound ramp from the M7 to a possible future motorway in the CFC. An electronic copy of the preliminary concept design (for planning purposes only) was provided to Sydney Water by email on 16/09/08. To avoid the need to relocate the pipeline and valves in the future to accommodate the possible ramp the RTA strongly suggest that it would be prudent to adjust the location of the pipeline and valves so that it is located close to the boundary of the privately owned property (Lot 2 DP 1081371) and the access point is just to the north-west of this property. Adjoining land owned by RTA (Lot 101 DP 1109052) may provide long term access from Richmond Rd.

It is noted that there appears to be a 16.311m section missing between the longitudinal sections Drawing No. 1309 and 1401, with a discrepancy in invert levels of the pipes between the two sheets. Presumably the intention is for the pipeline to step up from the deeper level (3.51m at Ch 9002.169, Sheet 1309) to the shallower level (1.16m at Ch 9018.48, Sheet 1401) once clear of the M7/Castlereagh Freeway ramp area. However, the RTA requires at this location for the pipeline to remain at the deeper level. The depth of the bore beneath the M7 north of Richmond Road should take into account the clearance to any cabling/pipes for street lighting/drainage/ITS that may run longitudinally along and below the M7 ramps.

East of M7 Crossing to Simmons Road

East of the M7 crossing the proposed alignment of the pipeline (Drawing No. 1401A and 1402A) affects an RTA residue being part of Lot 103 DP 1109052. The RTA's current understanding is that all of the property maybe subdivided and therefore requires the pipeline to be 3m deep for the full length of the property including the eastern end. It is understood that this depth would allow construction of a building over the pipeline. While a pipeline easement on the RTA's residue would have minimal restrictions, it would be a perceived blight on the title and the RTA would seek appropriate compensation.

At our recent meeting it was proposed that the M7 shared path could be used to access the pipeline in this section for maintenance of various air and scour valves (Drawing No.1403A, 1404A and 1405A). The shared path is located some distance away from the boundary and the proposed pipeline and hence vehicular access to the maintenance points is unclear. Alternative access arrangement may need to be considered from the public reserve via Anthea Place and Amanda Close. This section of the corridor should be walked with a representative of Westlink Motorway Limited to determine appropriate access for maintenance purposes.

Finally, as previously advised, in the case of the M7 crossing and use of the M7 corridor RTA requires that Westlink Motorway Limited be consulted and all their conditions met including

provision of a security bond. Similarly, with the proposed under boring of Richmond Road and the M7 RTA requires a proposed/design longitudinal section for these driven bore sections prior to accepting the final design.

Should you wish to discuss these matters please contact Ms Natalie Camilleri, Manager Network and Corridor Planning on (ph) 9218 6077.

Yours sincerely

John Brewer
General Manager, Strategic Network Planning
17/9/08

CC: Mr Grant Sutton
Construction Manager
Sydney Water Corporation