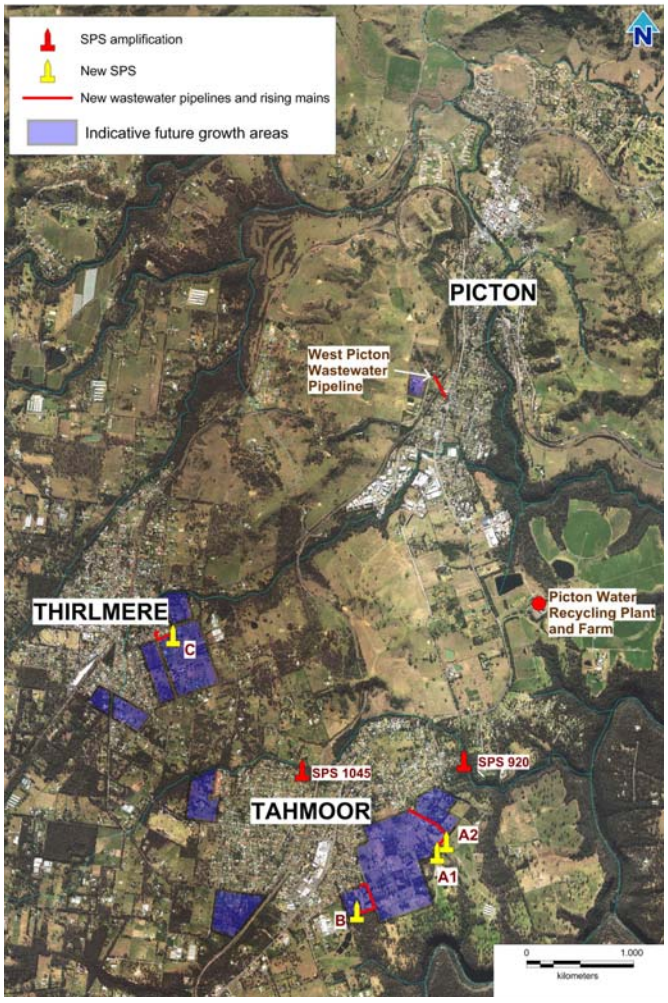
# *MODIFICATION REQUEST: Picton Regional Sewerage Scheme - Scheme Boundary Expansion Picton, Thirlmere and Tahmoor (1997-01-15 Mod3)*




Director-General's
Environmental Assessment Report
Section 75W of the
*Environmental Planning and Assessment Act 1979*
January 2013

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*NSW Government*
*Department of Planning & Infrastructure*

# TABLE OF CONTENTS

# ABBREVIATIONS

| | |
|---|---|
| ADWF | Average Dry Weather Flow |
| Council | Wollondilly Shire Council |
| EP&A Act | *Environmental Planning and Assessment Act 1979* |
| EP&A Reg | *Environmental Planning and Assessment Regulation 2000* |
| farm | Picton Re-use Farm |
| ha | Hectare |
| L/sec | Litres per second |
| LEP | Local Environmental Plan |
| LGA | Local Government Area |
| ML/day | Mega litres per day |
| mm | millimetres |
| plant | Picton Water Recycling Plant |
| Proponent | Sydney Water Corporation |
| Scheme | Picton Regional Sewerage Scheme |
| SPS | Sewage Pumping Station |
| STP | Sewage Treatment Plant |
| WRP | Water recycling plant |

# EXECUTIVE SUMMARY

Sydney Water has lodged a modification request seeking the Minister for Planning's approval to remove the Picton Sewerage Scheme boundary to allow for additional connections where the Picton Water Recycling Plant (the plant) and the Picton Re-use Farm Scheme (the farm) have spare capacity within the existing Minister's Approval; and to amplify the collection system to transfer wastewater from new connections to the plant and farm. The proposed modification is located in Picton, Tahmoor and Thirlmere within the Wollondilly Local Government Area (LGA).

The proposal includes the removal of the Picton Sewerage Scheme boundary to allow additional connections where specified criteria are met;

- amplification of two existing sewage pumping stations at Tahmoor;
- construction of three new sewage pumping stations and rising mains in Tahmoor and Thirlmere; and
- construction of a wastewater pipeline in West Picton.

Modelling by Sydney Water has shown that the plant and farm are expected to be able to accommodate wastewater flows from additional connections within existing uncommitted spare capacity at the plant and farm. The modification has a capital investment value of approximately $16.6 million and is expected to generate 50 construction jobs.

The Modification to the Picton Regional Sewerage Scheme Environmental Assessment Report was placed on public exhibition between Wednesday 18 January 2012 and Wednesday 15 February 2012. Two submissions from the general public were received. Both submissions requested connection to the scheme although they are located outside of the originally proposed expanded scheme boundary.

Nine submissions were received from public authorities. Key issues raised included:

- flexibility of approach to allow additional connections outside of the scheme boundary without further modifications and changes to planned growth areas;
- water quality impacts to waterways from the potential for additional flows to result in increased discharges to the environment; and
- noise impacts.

A Submissions Report, prepared by the Proponent, addressing the issues raised in the submissions on the modification was submitted to the Department. Further clarification of the existing capacity of the plant and farm was also prepared supplementary to the Submissions Report.

The Department has assessed the merits of the modification and considers that the modification would facilitate efficient connection and provision of wastewater services to new developments and proposed new growth areas and is therefore in the public interest. The Department also considers that all environmental issues associated with the construction and operation of the proposed modification have been appropriately addressed and can be managed to acceptable levels in accordance with the Proponent's proposed mitigation measures and/or the conditions of approval. The Department therefore, recommends that the modification, be approved, subject to the Proponent's proposed mitigation measures and the Department's recommended conditions of approval.

# 1. BACKGROUND

The Picton Regional Sewerage Scheme was approved by the then Minister for Urban Affairs and Planning on 15 January 1997 and was designed to be implemented in two stages. Stage 1 involved a collection and treatment system with the capacity to service 3,000 lots or 2.7 mega litres per day (ML/day) and included:

- a new Water Recycling Plant designed to treat an Average Dry Weather Flow (ADWF) of 2.7 ML/day;
- a sewage collection system in Picton, Tahmoor and Thirlmere;
- reuse of treated effluent at a treated effluent reuse area/farm of up to 175 hectares; and
- a precautionary discharge of excess treated effluent to Stonequarry Creek.

Stage 1 was expected to reach capacity by 2004.

Stage 2 involved amplifying the Scheme to an ultimate capacity of 4,500 lots or 4.05 ML/day in order to cope with residential and industrial development within the three towns which were expected to be developed by 2016.

The approval has been modified twice. Modification 1, approved on the 5 March 1999, approved relocation of the plant, an increase in the irrigation area and construction of an effluent main from the plant to Picton for possible re-use of fully treated effluent (note: this main was not constructed).

Modification 2, approved on the 30 March 2009, extended the approved Service Area Boundary allowing connections from outside of the Scheme as long as any additional connections did not result in the capacity of the collection system, plant and farm being exceeded.

The Scheme was commissioned in February 2000 and following the approval of Modification 2, three facilities; Macquarie Retirement Village, Tahmoor Oval and the Estonian Retirement Village were invited to connect to the Scheme. Connection to the Scheme is reliant on the owners funding the connection. These properties have not yet connected to the Scheme. Sydney Water has stated that Phase 1 of this modification would give priority to long-standing requests for connection to connect community service facilities and sports clubs. Following this, Phase 2 would offer wastewater services to the proposed urban growth areas in Picton, Thirlmere and Tahmoor.

The project location and approved layout is shown in Figure 1.

Slower than anticipated development and lower residential water use and wet weather infiltration has resulted in lower flows than originally predicted. The plant is currently operating at less than its Stage 1 capacity of 2.7 ML/day receiving an ADWF of 1.4 ML/day[1] from approximately 2,500 lots. The farm can receive up to 2.5ML/day under current operations. The farm currently irrigates 90 hectares out of the 175 hectares approved for irrigation.

Modification 3 (the current modification application) was first lodged on 21 November 2011, proposed to allow connections from the proposed future growth areas identified for Picton, Tahmoor and Thirlmere and identified in the:

- *Metropolitan Development Program – Residential Forecasts 2008/09 - 2017/18 (Department of Planning, February 2010);* and
- reflected in the Wollondilly Local Environmental Plan 2011 (LEP).

These growth forecasts have also been revised in light of submissions received and are predicted to include the development of around 2070 lots by 2036. Sydney Water anticipates that there is enough spare capacity within the Scheme to allow for additional connections up to 2018. Sydney Water is currently undertaking detailed planning in order to determine the

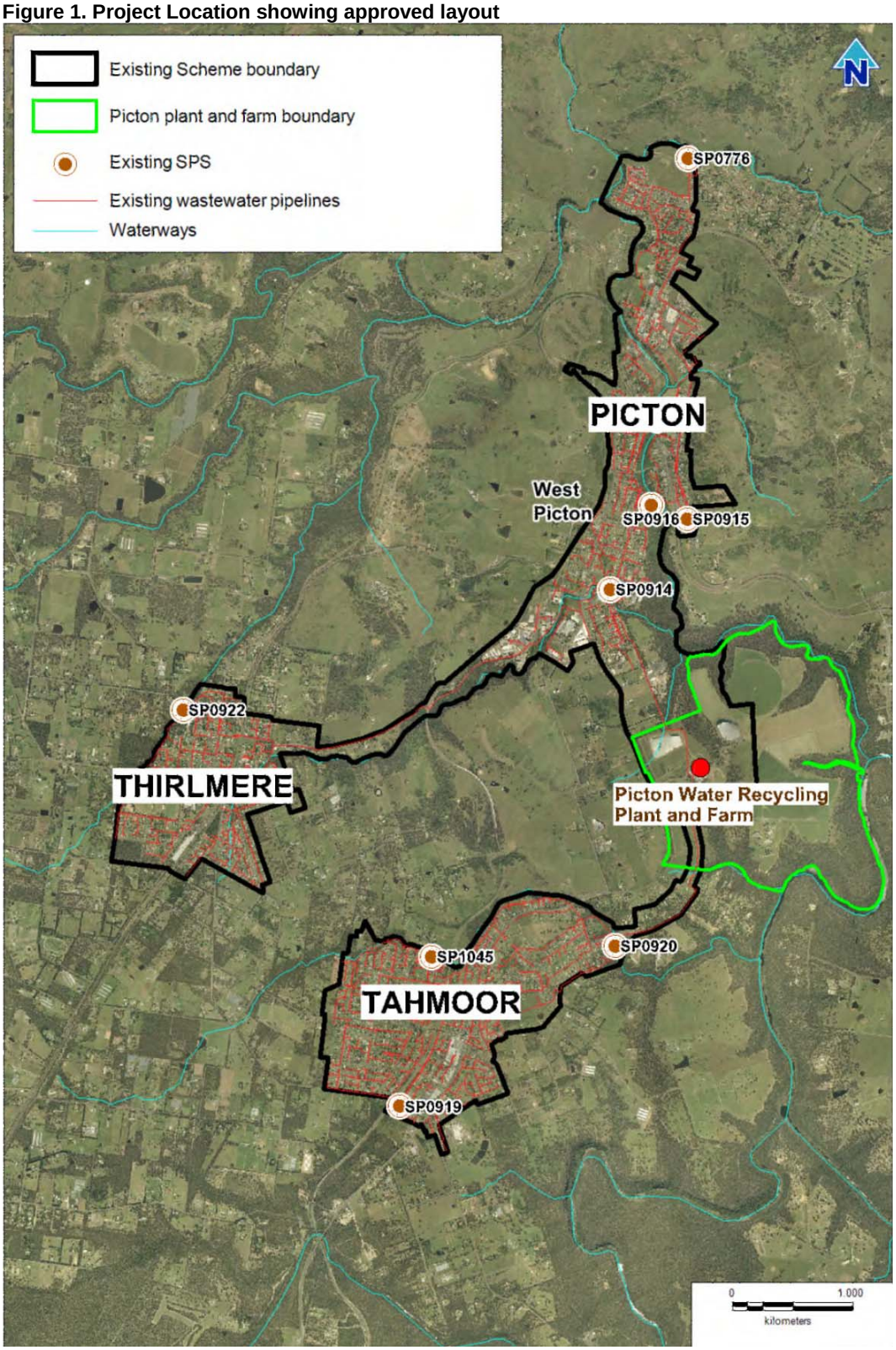
[1] The Average Dry Weather Flow presented in the Modification Assessment Report was 1.65ML/day. See Section 4.4 for further details.

likely timing of the plant upgrade and expansion of the farm in order to meet the projected inflows up until 2036.

Sydney Water has also been approached by land owners and developers to allow new connections to the Scheme from outside the growth areas and the proposed expanded Sewerage Scheme boundary.

Following submissions received Sydney Water has revised its modification in order to remove the scheme boundary to allow connections as long as the applicants meet certain criteria.

**Figure 1. Project Location showing approved layout**




*(Source: Modification to the Picton Regional Sewerage Scheme – Assessment Report, Sydney Water 10 November 2011)*

# 2. PROPOSED MODIFICATION

## 2.1. Modification Description

The modification proposes to remove the Picton Sewerage Scheme boundary to allow for additional connections where the sewerage scheme has spare capacity and to amplify the

collection system to transfer wastewater from the new connections to the plant and farm. The modification would allow additional connections where:

- property owners or developers are willing to comply with Sydney Water's connection requirements;
- property owners or developers have an existing relevant planning approval under the *Environmental Planning and Assessment Act 1979*; and
- Sydney Water has determined that total flows including additional connections would be within the approved Scheme capacity of the plant and farm and compliance with the Scheme's Environmental Protection Licence could be achieved.

Other key aspects of the proposed modification are listed in Table 1 and shown in Figure 2.

The proposed modification would also require minor changes to the water recycling plant components in order to maintain its reliability. These changes would be determined during the detailed design stage and be the subject of a consistency assessment. Amplification of the plant and farm beyond that already approved are not required as part of this modification.

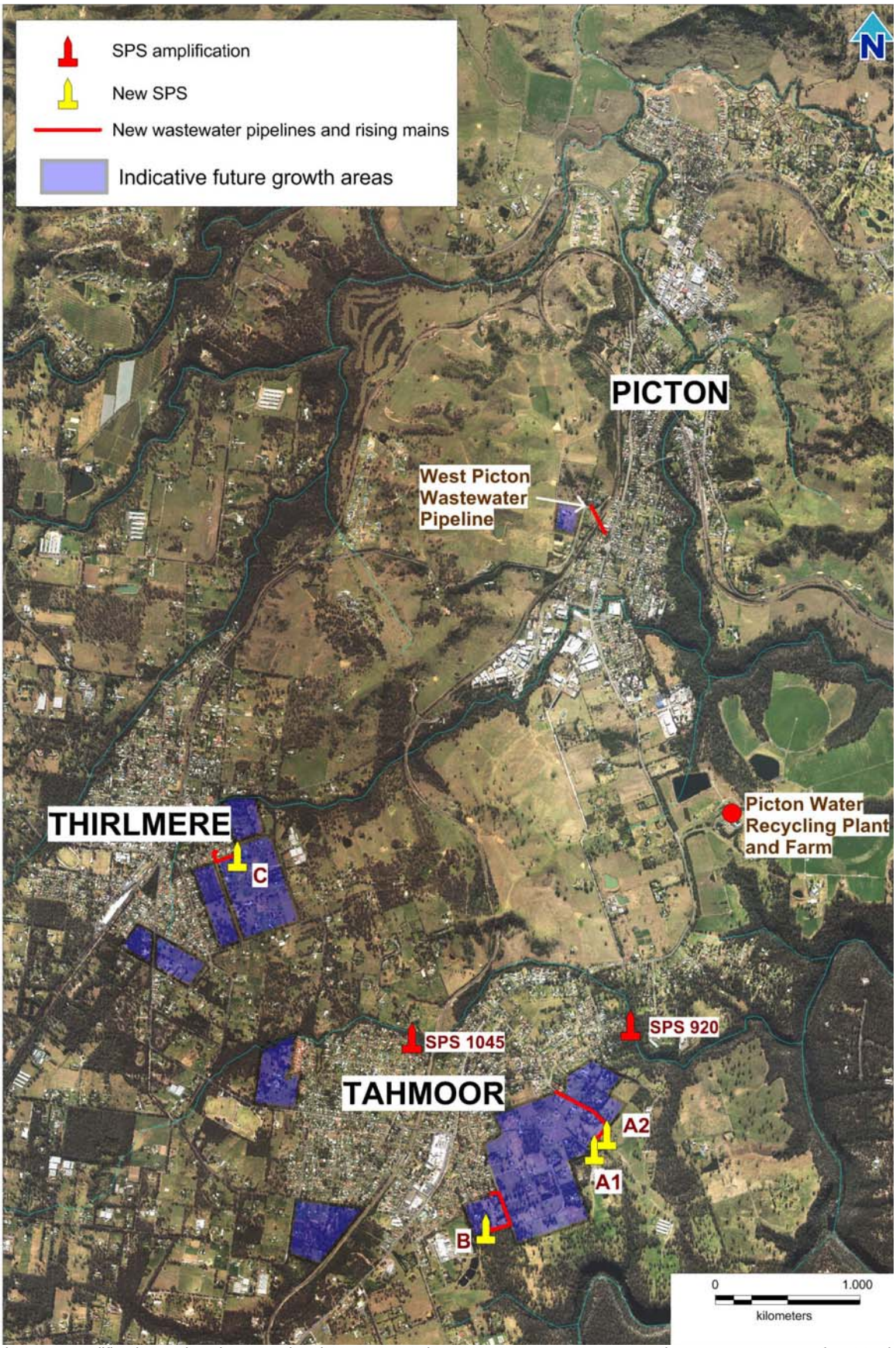
**Table 1. Description of Proposed Changes**

| Infrastructure | Description | Location |
|---|---|---|
| Amplification of SPS 920 | Increase capacity from 134L/sec to 200L/sec | River Road, Tahmoor |
| Amplification of SPS 1045 | Increase capacity from 20L/sec to 35L/sec | Hilton Park Road, Tahmoor |
| New SPS A (two alternative locations A1 and A2 are identified in Figure 2)* | 24L/sec capacity | Cross Street, Tahmoor |
| New SPS B | 60L/sec capacity | Progress Street, Tahmoor |
| New SPS C | 25L/sec capacity | Marion Street, Thirlmere |
| New Rising Main A | 590m long, 150mm diameter pipe | Cross Street & Myrtle Creek Avenue, Tahmoor |
| New Rising Main B | 440m long, 225mm diameter pipe | Progress Street, Tahmoor |
| New Rising Main C | 260m long, 150mm diameter pipe | Marion Street and Rita Street, Thirlmere |
| New West Picton Wastewater Pipeline | 210m long, 150mm diameter pipe | Between Connellan Crescent and Remembrance Driveway Picton |

* The location of SPS A at either location A1 and A2 is proposed to be determined based on the results of engineering constraints to be considered during detailed design. An environmental assessment has been undertaken for both locations.

The Proponent has stated that developers are responsible for constructing the reticulation system to service individual lots and may also construct some of the assets that are the subject of this modification.

**Figure 2. Future Growth Areas adjacent to the Scheme and Proposed modification**




*(Source: Modification to the Picton Regional Sewerage Scheme – Assessment Report, Sydney Water 10 November 2011)*

# 3. STATUTORY CONTEXT

## 3.1. Modification of the Minister's Approval

The Picton Sewerage Scheme was deemed to be an approved Part 3A project as a result of the Minister for Planning's Order of 29 July 2005. Under Schedule 6A Section 2(1)(a) of the EP&A Act, Part 3A continues to apply to approved projects.

Consideration of the modification request under section 75W of the EP&A Act is appropriate as the proposed modification is not consistent with the project approval, but is not a radical transformation of the approved project. The modification request would allow the use of currently uncommitted spare capacity of the plant and farm to service future growth areas adjacent to the Scheme.

## 3.2. Delegated Authority

On 14 September 2011, the Minister for Planning and Infrastructure delegated his powers and functions under section 75W of the EP&A Act to the Directors in the Major Projects Assessment Division where:

- the relevant council has not made an objection;
- a political disclosure statement has not been made; and
- there are less than 10 public submissions in the nature of objections.

As Wollondilly Shire Council did not object to the proposal, only two public submissions were received supporting the proposal (see section 4) and no political donations have been made, the Director, Infrastructure Projects, may determine the modification request under delegated authority.

# 4. CONSULTATION AND SUBMISSIONS

## 4.1. Exhibition

Under Section 75X(2)(f) of the EP&A Act, the Director-General is required to make the modification request publicly available. The Department:

- publicly exhibited it from Wednesday 18 January 2012 until Wednesday 15 February 2012 (29 days):
  - on the Department's website;
  - Department of Planning & Infrastructure, Information Centre, 23-33 Bridge Street, Sydney; and
  - Wollondilly Library, 42 Menangle Street, Picton.
- advertised the public exhibition in the:
  - Sydney Morning Herald on 18 January 2012;
  - The Daily Telegraph on 18 January 2012; and
  - Macarthur Chronicle on 17 January 2012.
- advised relevant State and local government authorities in writing.

The Department received nine submissions during the exhibition of the modification request – seven submissions from public authorities and two submissions from the general public.

The Sydney Catchment Authority confirmed that the project was not within the Sydney Catchment Area and that it would not be making a submission on the project.

A summary of the issues raised in submissions is provided below.

## 4.2. Public Authority Submissions

Seven submissions were received from public authorities. These are summarised below:

**Environment Protection Authority (EPA) –** requesting further information about the precautionary discharge regime in place to manage discharges to Stonequarry Creek. Further information was provided by Sydney Water and EPA now provides in principle support of the proposed modification.

**Wollondilly Shire Council (WSC) –** supports the proposed modification and suggested the use of criteria to determine eligible sites for connection rather than a mapped servicing boundary and provided comments on buffer distances, landscaping, construction management and potential impacts of a future Picton bypass road.

**Ministry of Health (MoH) –** supports the proposed modification and provided comments on the requirement for reporting dry weather overflows to the Ministry of Health, consultation with the Sydney Catchment Authority and encouraged the use of the treated effluent reuse scheme which was proposed but not constructed as part of the original proposal.

**Hawkesbury Nepean Catchment Management Authority (HNCMA) –** commented on the preferred location of proposed infrastructure and supported all recommendations of the Flora and Fauna Report.

**Trade and Investment – Agriculture, Fisheries, Forestry and Resources and Energy (T&I) –** did not object to the proposal and provided comments on possible impacts to intensive agriculture, the capacity of the existing irrigation area and risks to the scheme as it is within the Bargo, Wilton and Picton Mine Subsidence Districts.

**Department of Primary Industries – Office of Water (NOW) –** did not object to the proposal and questioned whether the assessment considered the *Water Sharing Plan for the Greater Metropolitan Region – Unregulated River Water Sources and Groundwater Sources*, the impact to groundwater levels and the need for an approval under NSW water legislation.

**Roads and Maritime Services (RMS) –** did not object to the proposal and provided comments on traffic management and requested further information should the proposal impact on MR612.

## 4.3. Public Submissions

Two submissions were received from the public. Both of the public submissions supported the proposed modification and requested to be serviced by the Picton Sewerage Scheme even though they are located outside the proposed new growth areas and revised Scheme boundary originally proposed.

The Department has considered the issues raised in submissions in its assessment of the proposed modification.

## 4.4. Proponent's Response to Submissions

Sydney Water provided a response to the issues raised in submissions (see Appendix C). The response also included a section on changes to the proposal since exhibition.

The Modification Assessment Report proposed extending the Picton Sewerage Scheme boundary, however, following the consideration of submissions the Proponent now proposes to remove the Picton Sewerage Scheme boundary and allow additional connections subject to the fulfilment of certain criteria as also suggested by WSC. Additional connections would be allowed where:

- property owners or developers are willing to comply with Sydney Water's connection requirements;
- property owners or developers have an existing relevant planning approval under the *Environmental Planning and Assessment Act 1979*; and

- Sydney Water has determined that flows from the additional connection would be less than the approved Scheme capacity of the plant and farm and compliance with the Scheme's Environmental Protection Licence could be achieved.

The spare capacity available in the sewerage scheme was revised following further and more detailed review and analysis of flow data compared with simulated flows from hydraulic wastewater models calibrated using in-system flow meters. This resulted in the current average dry weather flows being calculated as 1.4 ML/day resulting in a spare capacity of 1.1ML/day. See Table 2 for an explanation of the changes.

**Table 2. Changes to the calculated average dry weather flows**

| | Modification Assessment Report | Response to Submissions |
|---|---|---|
| Calculated current ADWF | 1.65 ML/day | 1.4 ML/day |
| Calculated spare capacity | 0.85 ML/day | 1.1 ML/day |
| Total ADWF* | 2.5 ML/day | 2.5 ML/day |

** based on current farm capacity of 2.5ML/day*

# 5. ASSESSMENT

The Proposed modification includes the removal of the Scheme boundary to allow for additional connections and the construction and operation of additional sewage collection infrastructure. The Department considers that the impacts from the proposed modification are predominantly associated with construction as it is proposed to operate the expanded Scheme within the capacity of the approved project.

The Department therefore considers the key issues associated with this modification a be water quality, biodiversity and noise. All other issues are considered to be adequately addressed by the Submissions Report, the Proponent's proposed mitigation measures or conditions of approval. The identified key issues are discussed further in the following sections.

## 5.1. Water Quality

### *Water Recycling Plant and Reuse Farm*

Additional wastewater connections to be considered under this modification would result in increased flows to the plant and farm. Sydney Water is proposing to assess requests for new connections to determine that the additional flows are able to be accommodated within the approved capacity of the plant (2.7ML/day ADWF, mega litres per day average dry weather flow) and the current farm capacity (90 hectares) of 2.5ML/day ADWF prior to accepting those connections.

The treated effluent produced by the plant is used for irrigation of the farm or discharged to Stonequarry Creek as precautionary discharges. Precautionary discharges from the Plant to Stonequarry Creek are allowed under the current approval and EPL where water quantity, quality requirements and the annual load limits for all discharge events are met.

The farm currently irrigates an area of 90 hectares, although 175 hectares is available under the approval. It is surrounded by runoff control structures and banks and is expected to be able to accommodate up to 2.5ML/day without any uncontrolled discharge to Stonequarry Creek and therefore within the capacity of the Scheme as it is currently operated.

Sydney Water has committed to expanding the irrigation area within the current approval, if required, including installing new runoff control structures and banks.

Recent increases in the number of precautionary discharges were considered by Sydney Water and EPA in response to submissions received. The recent increases were attributed to the farm continuing to be operated as if it was operating under drought conditions which favoured maximum irrigation rates over discharge to Stonequarry Creek. Drought conditions were experienced since commissioning in 2000 to 2010. The operation of the plant along with increased rainfall since 2010 resulted in the plant's wet weather storages being kept at an elevated level resulting in four unscheduled discharges. In response, Sydney Water has revised its operating protocol in order to provide for a greater ability to accommodate wet weather inflows to reduce unscheduled discharges to Stonequarry Creek.

The management of precautionary discharges were considered as part of the original approval and are controlled by the Environment Protection Licence. The Department, therefore, considers that the impacts from and management of precautionary discharges is unlikely to be affected by additional connections that are to be accommodated within the current approved capacity of the plant and farm providing the plant and farm are managed in accordance with the revised operating protocol.

The risk of impacts to groundwater from the application treated effluent was considered in the original Environmental Impact Statement. Impacts from the application of additional treated effluent are expected to be very low as the farm's ability to accommodate the irrigation flows is monitored such that only 5mm of treated effluent is applied to the soil once the soil deficit reaches 15mm. This ensures that there is a buffer so that even after heavy rain the risk of treated effluent percolating down to the water table is very low.

***Sewage Pumping Stations and Wastewater Pipelines***

The proposed pipelines would be designed to meet the performance target of no dry weather overflows and minimal inflow and infiltration during wet weather. Each SPS would be able to store peak dry weather flows for a four hour period during a power failure. The Proponent has also committed to providing additional wet weather storage, where feasible, at the new SPS locations.

Even with measures designed to minimise infiltration water quality impacts are still possible from system leaks and wet weather overflows. The waterways potentially affected by these overflows and leaks are Myrtle Creek, Bargo River, Redbank Creek and Stonequarry Creek. All of these waterways flow to the Nepean River. Impacts from wet weather overflows are however, expected to be minimal due to the temporary nature and the poor water quality of the receiving waterways during wet weather events.

Construction impacts from the amplification of SPS 920 and 1045, new SPSs and pipelines are possible due to erosion and sedimentation from construction on soils that are moderately to highly erodible especially if rehabilitation following construction is unsuccessful. Other impacts could arise from frac-outs where boring works may cause the ground to fracture with the risk that dirty water, mud and oil from the drilling works under the Main Southern Railway line could be released to land or waterways. Mitigation measures proposed to manage these impacts include the implementation of erosion and sediment controls, use of containment procedures during construction to collect drill fluids and the use of bunded areas for fuel and chemical storage.

***Consideration***

The Department considers that potential impacts during construction from erosion and sedimentation can be mitigated to satisfactory levels provided that appropriate erosion and sediment controls are implemented and maintained throughout the construction phase. The Department also considers that the conditions of approval adequately cover erosion and sediment control and revegetation of disturbed areas following construction. Further, the risk of impact from frac-out and spills can be appropriately minimised through the application of the proposed standard mitigation measures such as containment or bunded areas. The Department, therefore, considers that the impacts associated with construction of the SPSs

and wastewater pipeline can be adequately mitigated through the implementation of the Proponent's mitigation measures and the conditions of approval.

While operational impacts from wet weather overflows or leaks are possible, the Department notes that the design of the assets would minimise infiltration and wet weather overflows. The Proponent also commits to the provision of extra wet weather storage at the new SPSs, where feasible, and inclusion of measures to minimise infiltration and inflow to the system during wet weather. The Department acknowledges that the proposed modification is modelled to comply with the existing EPL target of no dry weather overflows and notes that impacts from diluted effluent being released into the environment during wet weather overflow events are still likely and a feature of all wastewater systems. The Department considers that wet weather overflows are, however, unlikely to result in a significant impact to the waterways due to the infrequent and temporary nature and the quality of water within the catchment during wet weather events.

The Department notes that Modification 3 would not result in a change to the approved capacity of the plant and farm and that impacts from its operation have, therefore, been assessed as part of the original Environmental Impact Statement. The Department therefore considers that no additional conditions are considered necessary in order to manage water quality impacts.

## 5.2. Biodiversity

A biodiversity survey was completed for the three new rising mains and SPSs (A, B and C see Figure 2) but not for the proposed wastewater pipeline at West Picton or existing SPS 920 or SPS 1045 as they occur in disturbed areas and are unlikely to require the removal of vegetation during construction.

Study areas A and B identified vegetation meeting the definition of Shale Sandstone Transition Forest, an Endangered Ecological Community (EEC) under the *Threatened Species Conservation Act 1995*. It did not meet the criteria under the *Environment Protection and Biodiversity Conservation Act 1999* due to its degraded form or modified understorey. Study area C was described as having poor conservation value as it was dominated by exotic grasses and annual weeds. Two native species; *Acacia decurrens* and two *Eucalyptus tereticornis* do occur sparsely on site, however, neither has particular conservation significance.

Impacts to vegetation are illustrated by Table 3 and described below.

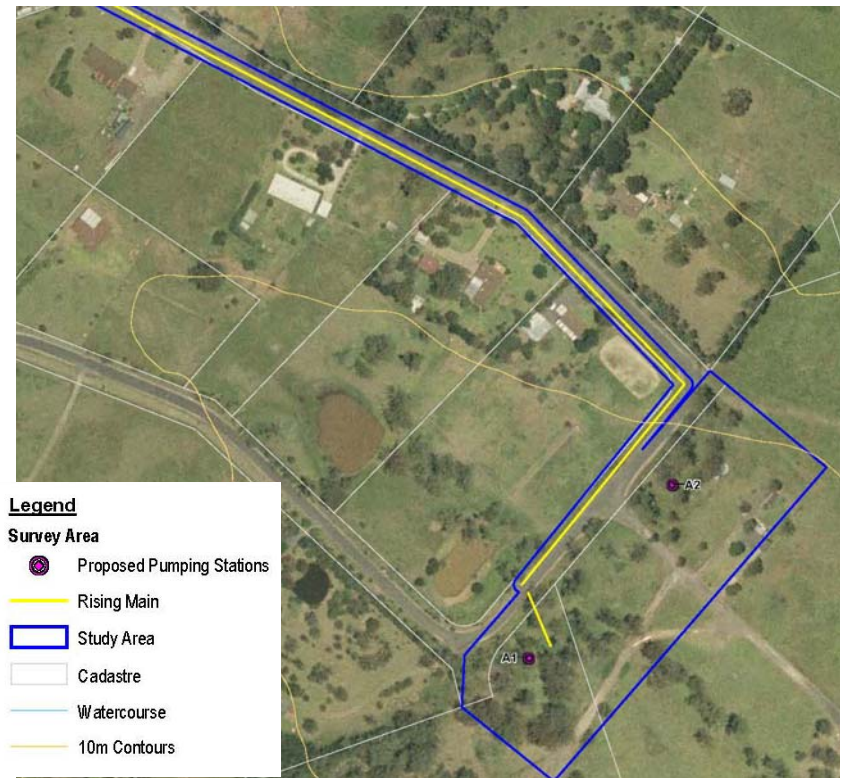
**Table 3. Impacts to Vegetation**

| Infrastructure | Impact to Vegetation |
|---|---|
| SPS location A1 | removal of up to 15 *E. tereticornis* |
| SPS location A2 | 0 trees to be removed |
| SPS B | removal of 1 mature *E. tereticornis* |
| SPS C | 0 trees to be removed |
| Rising Main A | 0 trees to be removed. Potential for indirect impacts to root area of Shale Sandstone Transition Forest |
| Rising Main B | 0 trees to be removed. Potential for indirect impacts to root area of Shale Sandstone Transition Forest to the south of the rising main. |
| Rising Main C | 0 trees to be removed. |

Two potential locations were assessed for SPS A (see Figure 3); A1 involving the removal of up to 15 *E. tereticornis* trees and A2 requiring no trees to be removed. SPS B may require the removal of one mature native tree and no trees are required to be removed for SPS C.

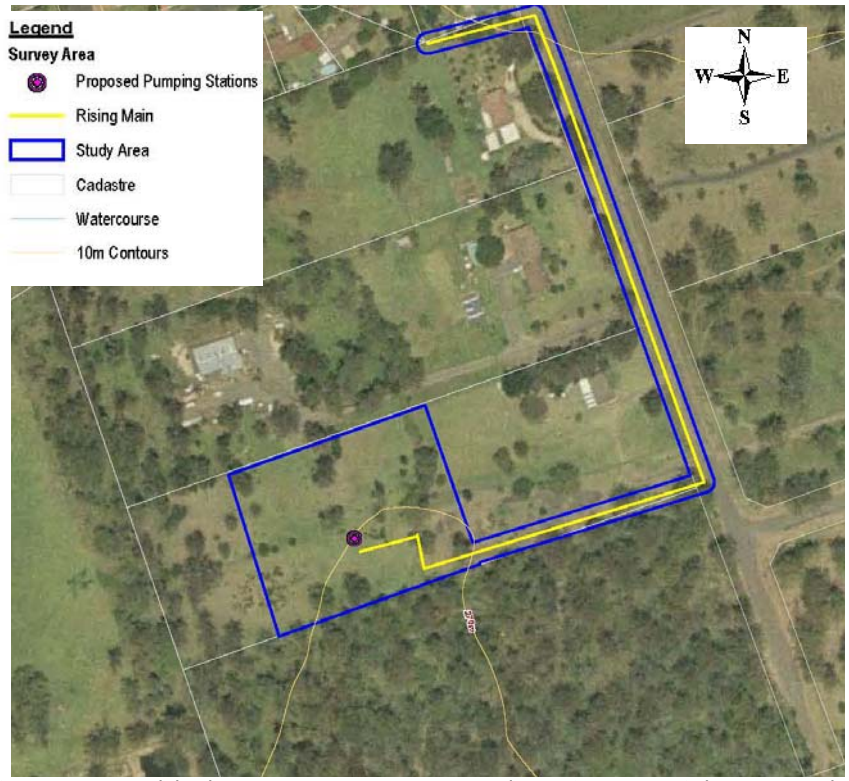
No trees would need to be removed for the rising mains, however, indirect impacts are possible for Rising Main B (see Figure 4) as open trenching could damage adjacent tree roots which could reduce the health and longevity of the trees and to a lesser extent Rising Main A (see Figure 3).

**Figure 3. SPS A1 and A2 and Rising Main A**




*Source: Terrestrial Flora & Fauna Assessment Picton Sewerage Scheme Boundary Modifications, Biosis 23 March 2011*

**Figure 4. SPS B and Rising Main B.**




*Source: Terrestrial Flora & Fauna Assessment Picton Sewerage Scheme Boundary Modifications, Biosis 23 March 2011*

Sydney Water has stated it intends to minimise tree removal by minimising trenching within tree protection zones of native trees and locating SPS A at location A2 if possible. Location A2 is dependent on the consideration of engineering constraints during detailed design which is expected to commence by 2021. The engineering constraints to be considered include geotechnical constraints such as water charged ground, the location of existing services and the ability of the catchment to drain to the SPS.

Further mitigation measures proposed include pruning tree roots encountered during trenching works, protecting trees during construction and replacing native vegetation removed or disturbed by the proposal where possible.

The biodiversity assessment concludes that the Proposal would not have a significant impact on the habitat or habitat connectivity of Shale Sandstone Transition Forest or the current disturbance regime.

***Consideration***

The Department has considered the biodiversity assessment and is satisfied that the level of assessment undertaken is sufficient for the Department to form a view of the existing biodiversity values and likely impacts of the proposal.

In assessing the acceptability of the biodiversity impacts, the Department has considered whether the Proponent has demonstrated that impacts on biodiversity have been avoided wherever possible and, where unavoidable, whether viable options exist to mitigate the impacts of the project. Area A1 potentially involving the removal of up to 15 trees resulting in habitat fragmentation, the reduction of the extent and condition of the EEC Shale Sandstone Transition Forest within the study area while Area A2 avoids the requirement to remove trees all together.

The Department notes that the level of impact to native vegetation for either of the proposed alternative locations A1 and A2 is predicted to be relatively small given the existing nature of the sites, the proposed assets and construction methodology. For this reason the Department does not propose a condition requiring offsets. While impacts to Shale Sandstone Transition Forest are unlikely to be significant, the Department considers area A2 to be preferable over area A1 as this site avoids impacts to the EEC entirely. A condition of approval has been recommended to demonstrate that all measures to avoid impact to the vegetation have been implemented, where reasonable, should Sydney Water decide to locate the SPS at location A1.

The Department is satisfied that the proposed pipeline corridors have been selected to avoid intact vegetation and that, subject to the implementation of appropriate management measures, the potential biodiversity impacts of the project would be acceptable and manageable.

The Department is supportive of mitigation measures proposed to avoid vegetated areas where possible and to minimise the impact on native vegetation where avoidance is not possible. The Department is also supportive of the commitment to replace native vegetation removed or disturbed by the proposal. Overall, the Department is satisfied that the proposal has been designed to avoid intact vegetation and that, subject to the implementation of appropriate management measures as outlined above, the potential biodiversity impacts of the project would be acceptable and manageable. No additional conditions are considered necessary.

## 5.3. Noise

A construction and operational noise assessment was completed in accordance with the *Interim Construction Noise Guidelines (DECCW 2009)* and the *NSW Industrial Noise Policy (EPA, 2000).*

The area surrounding the Proposal is predominately classified as rural suburban communities surrounded by dense bushland. The Rating Background Level (RBL) was

determined to be between 31 and 38.5 dB(A)$L_{A90}$ and considered typical of a rural residential environment.

The nearest residential noise sensitive properties are located between 10 and 400 metres away from the Proposal. The proposed future residential communities are expected to be located within 20m of the SPS sites, rising main and wastewater pipeline corridors.

***Construction Noise and Vibration***

Construction or amplification of the SPSs is expected to take between three and six months to complete with the rising mains expected to take one week and the wastewater pipeline up to four weeks to complete.

Construction would occur during standard construction hours (Monday to Friday 7am to 6pm, Saturday 8am to 1pm with no work on Sunday or public holidays) except where site-specific engineering, health, safety or operating conditions require these works to be done outside these hours. The Noise and Vibration Assessment adopts construction noise management levels of:

- 41 dB(A) $L_{Aeq, 15min}$ for construction works during standard construction hours;
- 36 dB(A) $L_{Aeq, 15min}$ for construction works out of standard construction hours during the evening;
- 35 dB(A) $L_{Aeq, 15min}$ for construction works out of standard construction hours during the night; and
- 55dB(A) $L_{Aeq, 1hr}$ for construction traffic.

Noise impacts associated with construction are expected to cause disturbance to a number of residences in the area. Under a worst case scenario noise levels could exceed noise management levels by up to 32 dB(A)$L_{Aeq,15min}$ for noisy activities such as saw cutting and rock breaking at the closest sensitive receivers. The Proponent proposes to schedule noisy activities in order to minimise impacts to sensitive receivers, use temporary noise barriers, noise reduction equipment and provide respite periods, if possible and where necessary. Noise from construction traffic is, however, predicted to comply with the adopted construction traffic noise management level.

Construction vibration levels from excavation, trenching and boring are expected to be within the adopted goal (0.2 – 0.4 $m/s^{1.75}$ VDV) for human comfort for all residences except the two residences located approximately 10 metres from the connection of the wastewater pipeline to the existing network (Rising Main C on Rita Street and Marion Street Thirlmere) where there is the potential for ground vibrations to exceed 0.4 $m/s^{1.75}$ (for example up to 0.8 $m/s^{1.75}$ for an excavator working within 10m of a residence) and may cause annoyance. Potential vibration levels are, however, predicted to be within the goals for structural integrity (5mm/s – 20mm/s) at all residences.

The Proponent commits to adopting the best management practice and best available technology economically achievable as outlined in the *Interim Construction Noise Guidelines* including the use of temporary noise barriers, if possible, at locations close to residences where construction involves major plant. The Proponent also commits to notifying residents and businesses likely to be affected by the proposed works at least two weeks prior to works commencing.

***Operational Noise***

Noise from the operation of the SPSs is expected to be between 10 and 20 dB(A)$L_{Aeq, 15min}$ and expected to be inaudible at most nearest affected receivers to each SPS. The noise level is predicted to comply at all times with the adopted criteria of:

- 35 dB(A) $L_{Aeq, 15min}$ for all residential receivers;
- 40 dB(A) $L_{Aeq, 15min}$ internal noise goal for the child care centres and churches; and
- 65 dB(A) $L_{Aeq, 15min}$ for commercial receivers (the Wollondilly Abattoir is the only commercial receiver).

Both proposed sites A1 and A2 were assessed in the Modification Assessment Report as resulting in a noise level of less than 10 dB(A)$L_{Aeq, 15min}$ at the nearest receivers which is less than the generally accepted background noise level of 30dBA for rural areas and likely to be inaudible.

***Consideration***

The Department acknowledges that noise impacts causing disturbance at nearby sensitive receivers from construction of the proposal is likely. The Department also acknowledges the Proponent's intention to implement best management practices and best available technology economically achievable as outlined in the *Interim Construction Noise Guidelines*. This includes the use of temporary noise barriers, if possible, at locations close to residences where construction involves major plant and notification of residences and businesses prior to works commencing. The Department also notes the temporary and varying nature of construction works that impacts would be greatest for those residents closest to the proposed SPSs where works could extend between three and six months in duration.

The Department notes that the *Interim Construction Noise Guidelines* promotes construction noise goals rather than criteria and that the proposed mitigation measures are appropriate for construction of this scale and duration. The Department is supportive of the Proponent's communication strategy with affected residents, particularly those at the SPS construction sites. The Department is, therefore, satisfied that construction noise is unlikely to pose an unacceptable impact with the implementation of the proposed mitigation measures and the temporary nature of construction works.

The Department also notes that noise from the operation of the proposal is predicted to be within the adopted noise criteria for all sensitive receivers and is expected to be inaudible at most locations assessed. There is the potential for noise levels from SPS C (20dB(A)$_{LAeq,15min}$) to be discernable from background at the nearest sensitive receivers.

The Department notes the operational noise impact for both locations A1 and A2 is likely to be not discernable from background noise at the nearest residential receiver. The Department does not have a preference for either location from an acoustic perspective and considers that existing conditions are appropriate to manage noise from new infrastructure.

# 6. CONCLUSION AND RECOMMENDATIONS

The Department considers that:

- the proposed removal of the Picton Sewerage Scheme boundary to allow for additional connections where the plant and farm have spare capacity; and
- the amplification of the collection system to transfer wastewater from the new connections to the plant and farm

would entail significant benefits to the Wollondilly community by avoiding the need for individual onsite sewerage systems or private schemes to manage sewage. This approach also addresses concerns raised in submissions about the flexibility of this approach to consider future applications for additional connections and would remove the need for additional modifications where applications meet the required criteria.

The currently approved project has enough spare capacity to accommodate additional flows from proposed growth areas and new developments without modification to the plant or farm.

The Department has reviewed the modification request, submissions received and the Proponent's Submissions Report. The key issues assessed are impacts resulting from the construction and operation of the proposal on water quality, biodiversity and noise amenity. The Department found that water quality impacts associated with the plant and farm could be managed consistent with the approved project. Other construction or operational water quality and noise impacts were considered manageable through the application of the proposed mitigation measures. Biodiversity impacts were considered small however the

alternative site SPS A2 is preferable over SPS site A1 as site A2 avoids clearing EEC. The Department considers that site A2 should be pursued if at all possible and has recommended a condition of approval should Sydney Water decide to pursue site A1 instead.

The Department considers the proposal has positive benefits for the community and the mitigation measures proposed by the Proponent would ensure that potential impacts are managed and minimised. Further, the conditions of approval governing impacts from the construction and operation phases are relevant to the proposed expansion and amplification of the wastewater collection system to service the proposed new growth areas. Therefore the Department recommends that the Director, Infrastructure Projects, approve the modification request under section 75W of the EP&A Act, by signing the attached Instrument of Modification (Appendix D).

Prepared by

23/1/13

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**Infrastructure Projects**

Felicity Greenway 24/1/13

**A/Director**
**Infrastructure Projects**

# APPENDIX A. MODIFICATION REQUEST

See the Department's website at
http://majorprojects.planning.nsw.gov.au/index.pl?action=view_job&job_id=5061

## APPENDIX B. SUBMISSIONS

See the Department's website at
http://majorprojects.planning.nsw.gov.au/index.pl?action=view_job&job_id=5061

# APPENDIX C. RESPONSE TO SUBMISSIONS

See the Department's website at
http://majorprojects.planning.nsw.gov.au/index.pl?action=view_job&job_id=5061

# APPENDIX D. RECOMMENDED MODIFYING INSTRUMENT