



***MODIFICATION REQUEST: Western
Sydney Recycled Water Initiative –
Replacement Flows Project Approval
– Modification 7***

(06_0190 MOD7)

***Application by Sydney Water Corporation
to modify the Project Approval to enable
the measurement of operational noise at
the most affected sensitive receiver, as
opposed to at the project boundary.***

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

April 2011

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1 INTRODUCTION

Sydney Water Corporation (the Proponent) is seeking approval to modify the Project Approval of 20 June 2007, for the construction and operation of an Advanced Water Treatment Plant (AWTP) and associated works in Western Sydney (refer to Appendix A). The project involves treatment of existing tertiary treated effluent from Quakers Hill, St Marys and Penrith sewage treatment plants at a new Advanced Water Treatment Plant to produce high quality recycled water.

Condition 2.17 of the Project Approval states that the Proponent shall design, operate and maintain the project such that there is no increase in noise levels over those currently being emitted from each of the premises (St Marys STP, Quakers Hill STP and Penrith STP). Part of condition 2.18 of the Project Approval states that for the purposes of noise specified under condition 2.17, noise from the project shall be measured at the most affected point on or within the Site (being land to which the project applies) boundary at the most sensitive receiver to determine compliance with condition 2.17.

The Proponent has previously sought the Department of Planning's (the Department) confirmation that condition 2.17 can be interpreted such that operational noise should not increase beyond current levels emitted from the three STP sites *as measured at the nearest sensitive receiver*. However, the Department formally advised the Proponent in August 2010 (refer to Appendix B) that the interpretation of condition 2.17 is that the project is to be designed, operated and maintained, such that the noise emitted from each premise is not increased over those levels emitted from each of the premises, prior to the project commencing. It is not intended to imply no increase at the most affected residence.

In response to the Department's advice, the Proponent has sought to modify conditions 2.17 and 2.18 to enable the measurement of noise levels generated by the project at the sensitive receptor locations, rather than at the project premises.

This report presents the Department's environmental assessment of the modification proposal. The Department recommends approval of the modification to the Project Approval, subject to modified conditions.

2 BACKGROUND

On 20 June 2007, the Minister for Planning granted project approval to the Proponent for the construction and operation of the Western Sydney Recycled Water Initiative – Replacement Flows Project. The project connects the Penrith, St Marys and Quakers Hill sewage treatment plants (STPs) 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 STP (refer to Figure 1). The highly treated recycled water would then be released into the Hawkesbury-Nepean River below Penrith Weir for the purpose of substituting up to 18 billion litres of drinking water currently being released each year from Warragamba Dam for the purposes of maintaining environmental flows. The project involves laying an extensive system of pipelines between the three plants.

Previous modifications to the approval include five amendments to conditions 2.11 to allow for the clearing of native vegetation as a result of realignments made to the pipelines between the three STPs, subject to vegetation offset requirements. Also, condition 2.4 has been modified to allow for the biological validation of the pilot plant in lieu of challenge testing on the AWTP.

Sydney Water Corporation has now requested that condition 2.17 and 2.18 be modified to enable the measurement of operational noise at the nearest (most affected) sensitive receiver, as opposed to measurement at the project site boundary.

The following operational project components would emit noise emissions:

- a new pump station and effluent balance tank at the Penrith STP site (located approximately 300 metres from the residential receiver);
- a new pump station at the Quakers Hills STP site (located approximately 100 metres from the nearest residential receiver);
- a balance tank, scrubbers and pump station at the AWTP, located on the St Marys STP site, which is surrounded by an Industrial Area. The AWTP is located approximately 900 metres from the nearest residential receiver.

During the preparation of the Environmental Assessment for the original application, limited attended background noise monitoring was conducted to determine the project intrusive noise criteria. For the Penrith, St Marys and Quakers Hills STP sites, the noise criteria was determined to be 35 dB(A) at Panorama Avenue, 47 dB(A) at Triggs Road and 40 dB(A) at Jasmine Street respectively. Condition 2.17 of the project approval requires that noise from each of the project premises does not exceed these respective noise levels (when measured on or within the project site boundary, refer to condition 2.18).

The Proponent owns five properties on Trigg Street (each with a house), adjacent to the St Marys STP and AWTP site. This land was zoned '5a – Special Uses' under the Penrith Local Environmental Plan 1996. However, the Department issued a Site Compatibility Certificate on 21 April 2009 (refer to Appendix C), that allows the land to be used in accordance with the '4a – General Industrial' zoning under the Penrith Local Environmental Plan 1996. The Proponent has advised that it is currently preparing a revised subdivision application for this land. The Trigg Street tenants were issued with a notice to vacate the properties on 1 July 2010. The notice requires all properties to be vacated on or before 1 October 2010. The Proponent has advised that all of these tenants have now vacated the houses. The houses will be demolished prior to the sale of the land for industrial development.

The Proponent undertook a noise survey on 31 August 2010, when the AWTP was fully operational. The lowest and highest noise levels on Trigg Street were 47 dB(A) and the 70 dB(A) respectively.

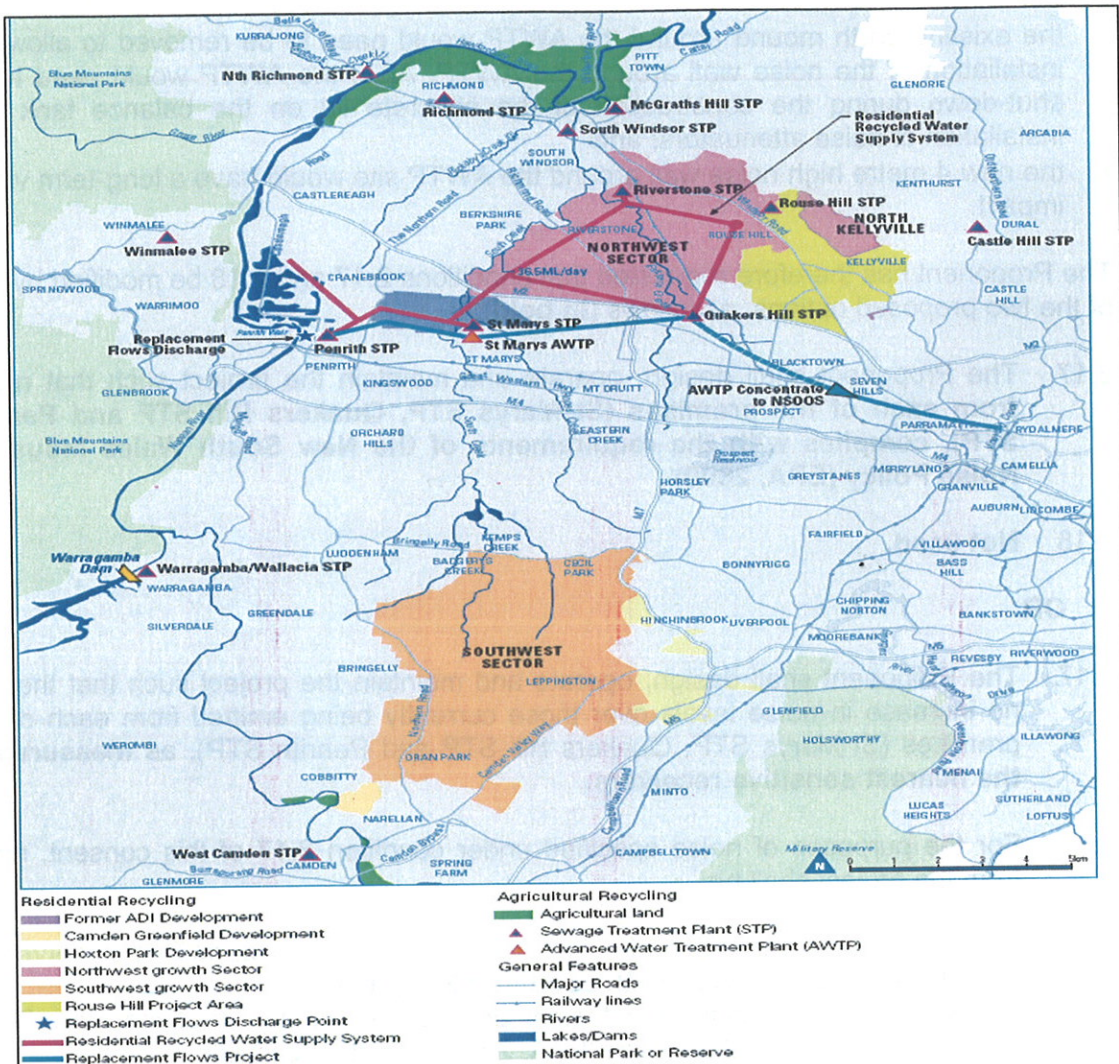


Figure1: Overview of the Western Sydney Recycled Water Initiative

Source: Figure 2-3 of Proponent's Environmental Assessment (SWC AND SKM, 2006)

3 THE MODIFICATION PROPOSAL

The Proponent proposes that condition 2.17 and 2.18 be modified, so as to clarify that noise is to be measured at the sensitive receiver locations, rather than at the boundary of the STP sites, for the purposes of ensuring compliance with the noise levels stipulated under condition 2.17. The Proponent considers it to be unreasonable to comply with these noise levels at the project boundary because firstly the landuses immediately surrounding the STP sites comprise of industrial type development (Penrith and St Marys STPs) and major connecting roads (Quakers Hill STP). Secondly, the distances between the STP sites and the most affected sensitive receivers are greater than the distances between the sites and the surrounding industrial type developments. For example, the Proponent's assessment has found that it would not be reasonable to install the mitigation measures for the AWTP site to meet the noise requirements of condition 2.17, because:

- no sensitive receivers (residents) would benefit and there would be minimal (if any) benefit to surrounding industrial receivers;
- the cost of the mitigation measures (approximately \$2.5 million) would far outweigh any benefits provided;
- noise levels associated with the AWTP (without mitigation measures) would comply with the INP criteria for the surrounding industrial receivers (an "Acceptable" level of 70dB(A));

- the existing earth mound around the AWTP would need to be removed to allow the installation of the noise wall around the AWTP. Also, the AWTP would need to be shut-down during the construction of the concrete lid on the balance tank and installation of noise attenuators; and
- the new 4 metre high noise wall around the AWTP site would have a long-term visual impact.

The Proponent has therefore requested that conditions 2.17 and 2.18 be modified by one of the two proposed options, as follows (**in bold**):

2.17 The Proponent shall design, operate and maintain the project such that **noise from each of the premises (St Marys STP, Quakers Hill STP and Penrith STP), complies with the requirements of the New South Wales Industrial Noise Policy (EPA, 2000).**

2.18 **Not used.**

OR

2.17 The Proponent shall design, operate and maintain the project such that there is no increase in noise levels over those currently being emitted from each of the premises (St Marys STP, Quakers Hill STP and Penrith STP), **as measured at the nearest sensitive receivers.**

2.18 For the purposes of noise specified under condition 2.17 of this consent, noise from the project shall be:

- a) measured at the most affected point **at the most sensitive receiver to determine compliance with condition 2.17;** and
- b) subject to the modification factors provided in Section 4 of the New South Wales Industrial Noise Policy (EPA, 2000), where applicable.

Notwithstanding, should direct measurement of noise from the project be impractical the Proponent may employ an alternative noise assessment method deemed acceptable by the DECC (refer to section 11 of the *New South Wales Industrial Noise Policy* (EPA, 2000)). Details of such an alternative noise assessment method deemed acceptable by the DECC shall be submitted to the Director-General prior to the implementation of the assessment method.

Condition 3.2 requires the Proponent to undertake, within 90 days of the commencement of operation of the AWTP (or as otherwise agreed to by the Director-General) a program to confirm the noise emissions performance of the AWTP plant. Operation commenced in August 2010 and the Proponent has requested, as part of this modification, that the Director-General extend the period in which noise monitoring is to be undertaken. This is because the subject modification would confirm the monitoring locations for the project (this being on or within the boundary of the sensitive receiver location as opposed to at the project site boundary). Once the monitoring sites are confirmed, the noise performance audit programme required under condition 3.2 can be appropriately implemented at all the monitoring sites, including at the AWTP, and these sites would be identified pursuant to condition 3.2c)).

4 STATUTORY PLANNING FRAMEWORK

On 25 January 2010, the Minister delegated his powers and functions under Section 75W of the *Environmental Planning and Assessment Act 1979* to Directors in the Major Projects Assessment Division in cases where there are less than 10 public submissions (not including submissions from public authorities) in the nature of objections in respect

of the modification request. As no public submissions were received, the Director may determine the modification request under delegated authority.

5 CONSIDERATION OF ISSUES RAISED IN SUBMISSIONS

In accordance with section 75X of the *Environmental Planning and Assessment Act 1979* and clause 8G of the *Environmental Planning and Assessment Regulation*, the modification request was made available on the Department's website. Due to the minor nature of the proposed modification, the modification request was not exhibited by any other means. No public submissions were received on the modification request. The request was referred to the Department of Environment, Climate Change and Water (DECCW). Whilst DECCW does not object to the proposed modification, it does not support the Proponent's proposed Option 1 (i.e. compliance with the NSW Industrial Noise Guideline). DECCW does however support Option 2 with minor amendments, as follows.

- 2.17 *The Proponent shall design, operate and maintain the project such that there is no increase in noise levels over those currently being emitted from each of the premises (St Marys STP, Quakers Hill STP and Penrith STP), **when assessed at the most affected sensitive receiver location.***
- 2.18 *For the purpose of assessment of noise specified under condition 2.17 of this consent, noise from the project shall be:*
- (a) measured at the most affected point **on or within the property boundary of the most affected noise-sensitive receiver** to determine compliance with condition 2.17; and*
 - (b) subject to the modification factors provided in Section 4 of the New South Wales Industrial Noise Policy (EPA, 2000), where applicable.*

DECCW was further consulted by the Department during the assessment of the modification. To ensure the operation of the project does not significantly impact upon the noise amenity of sensitive receivers, DECCW supports the inclusion of a noise limit in the amended condition 2.17. DECCW considers that a noise limit of 35 dB(A) would be appropriate to apply to all three STP sites, unless additional background noise monitoring data justifying a higher limit is provided. The 35 dB(A) noise level is a conservative limit set in the absence of adequate measured background noise data. DECCW also considers that a level of 35 dB(A) should be achievable at a fixed industrial facility (this being with fixed pumps and other components in operation) through noise treatments.

6 CONSIDERATION OF ISSUES

6.1 Potential Operational Noise Emissions and Noise Measurement

It is noted that the Director-General's Environmental Assessment Report (the Report) on the original project application did not identify noise as a key assessment issue. However, conditions 2.17 and 2.18 were recommended (and now form part of the Project Approval) to ensure that noise [and vibration] impacts are adequately mitigated to protect the surrounding community. The Report stated that the then recommended conditions relating to operational noise would ensure that there is no increase in noise levels over those currently (i.e. prior to the commencement of works associated with the project) being emitted from each of the premises (St Marys STP, Quakers Hill STP and Penrith STP). The Department notes that the Report does not identify the significance of ensuring noise levels are not exceeded at the project sites, as opposed to at the nearest (most affected) sensitive receptors.

The Department notes that the existing wording of condition 2.17 is ambiguous in terms of identifying the current noise levels emitted from each of the premises (this being prior to the commencement of the project). Furthermore, the noise goals determined by the Proponent for the project (35 dB(A) at Penrith, 47 dB(A) at St Marys and 40 dB(A) at

Quakers Hills), were derived from limited noise measurements. The Department, therefore, is not certain that these derived noise goals are appropriate and equivalent to the noise environment that existed before the commencement of the project. Also, since the approval of the original application, the closest residents to the St Marys STP site are now further away from this site (previous background monitoring was undertaken at properties on Triggs Road which is now subject to industrial development). The properties on Triggs Road are located approximately 30 metres from the St Marys STP site, whereas the closest residential receiver is now located 900 metres away from the St Marys STP site (at Forresters Road, Ropes Crossing). As such, the Department considers that the existing noise levels relevant to the sensitive receiver locations, which are to be maintained by the project, should be clarified and specified in the Project Approval.

With regards to residential receivers, the Department notes that in addition to the above, the Proponent has more recently estimated (in 2008) the background noise level at Triggs Street (6 metres from the St Marys STP site boundary) as 40 dB(A). The Proponent also predicts similar noise levels from the other two STP sites. The Department notes that given the closest residential receptor is approximately 900 metres away from the St Marys STP site, 330 metres away from the Penrith STP site and 165 metres away from the Quakers Hill STP site, the noise level at these further distances would be less than 40 dB(A).

Also, the Department notes that noise levels no greater than 40 dB(A) can be achieved at the most affected sensitive residential receivers closest to the St Marys AWTP site and the Quakers Hill STP site, without mitigation. Minor noise mitigation, such as using equipment with efficient muffler design, may be required to meet the residential noise criteria at the most affected receivers to the Penrith STP site.

The Department also agrees in principle that it is reasonable to modify condition 2.17 for the purposes of measuring noise at the sensitive receiver locations (residences), as opposed to at the project boundary. This is because the closest receptors to the Penrith and St Marys STP sites are of industrial type and traffic noise on Quakers Road and Quakers Hill Parkway are dominant noise sources surrounding residences close to the Quakers Hill STP site.

The Department notes that DECCW has recommended a noise limit of 35 dB(A) at sensitive (residential) receiver locations, unless additional noise monitoring is undertaken to justify a higher limit (refer to DECCW's proposed amendments detailed above). The Department concurs with the general recommendations made by DECCW, including the establishment of a noise limit of 35 dB(A) at sensitive (residential) receiver locations. However, the Department also considers that the wording recommended by DECCW should be further amended to provide certainty that noise levels at the sensitive receptor locations, rather than the project premises, are restricted to this noise level and that the Proponent is required to assess these levels for compliance purposes.

For the reasons stated above, the Department recommends that condition 2.17 be modified by the insertion of "noise emitted from each of the premises (St Marys STP, Quakers Hill STP and Penrith STP), does not exceed the noise limit of 35 dB(A) at sensitive receiver locations, when assessed at the most affected sensitive receiver location." The Department considers that the stipulation of the 35 dB(A) noise limit at the residential receptors is appropriate to ensure the existing noise amenity levels are not significantly impacted.

The Proponent has indicated that it would undertake further background noise monitoring to obtain additional noise data to verify the existing noise environment. This would be done by shutting down the AWTP for the period required for the monitoring. As such, the

Department recommends that the Director-General be allowed to vary the proposed noise limit of 35 dB(A) under condition 2.17, should the Proponent provide additional background noise monitoring data for the most affected sensitive receiver location (refer to the second part of new condition 2.17, Appendix D).

Similarly, the Department recommends that existing condition 2.18 a) be modified by the insertion of the following text: "...measured at the most affected point on or within the property boundary of the most affected noise-sensitive receiver to determine compliance with condition 2.17."

The Department notes that the conditional approval of the subject modification would not increase the potential noise impacts of the project. The recommended noise limit of 35 dB(A) at the receivers' boundaries that is to be applied to all three sites is based on the minimum noise level considered to be achievable. The Department further notes that noise predictions are to be verified by the Proponent, pursuant to condition 3.2 of the Minister's approval. Should any exceedances of these criteria occur, the Proponent would develop remedial measures and submit the measures and a timetable for the implementation of the measures, to the Director-General for approval, as required by condition 3.3 of the Minister's approval.

The Department is satisfied that the recommended amendments to existing conditions 2.17 and 2.18, appropriately take into account the existing noise amenity of the areas immediately surrounding the project sites.

7 OTHER ISSUES

The Department has considered the proposed amendment to the specified period in which the Proponent is required to undertake the operational noise monitoring program (condition 3.2 of the Minister's approval). The Department recommends that the Proponent be required to undertake the noise monitoring within 60 days from the date of this modified approval (as opposed to within 90 days from the commencement of operation), so as to allow noise monitoring to occur after the Department's consideration and determination of this modification request.

The Department notes that existing condition 3.2 allows discretion by the Director-General, and also considers that the required noise modelling should only occur after a determination has been made on the subject modification request. For this reason, the Department recommends existing condition 3.2 be amended to require the noise performance within 60 days of the date of this approval (refer to recommended modified condition 3.2, Appendix D).

The Department also notes that condition 3.2 d) requires the noise monitoring program to include details of any complaints and enquiries received in relation to noise generated by the operation of the AWTP and associated infrastructure within the first 90 days of operation. This 90 day period corresponds with the 90 day period within which the noise monitoring program is to be submitted to the Department. However, to ensure that the noise monitoring program includes all complaints received since the project commenced operation, the Department recommends that condition 3.2 d) be modified to replace 'within the first 90 days of operation' with 'since the commencement of operation'.

Also, due to the organisational change of the former Department of Environment and Climate Change (DECC), the Department recommends the definition of DECC be modified to state 'now incorporated within the Department of Environment, Climate Change and Water', under Schedule 2 of the Project Approval (refer to recommended modification 1, Appendix D).

8 CONCLUSION AND RECOMMENDATIONS

The Department considers that the proposed modification is reasonable to ensure operational noise is appropriately measured at the sensitive receptor location, rather than at the project premises.

The Department considers that the measurement of operational noise at the sensitive receptor location would allow the Proponent to ensure the avoidance of impacts to the existing noise amenity of the residential receivers. The Department also considers that the Proponent would meet the noise criteria for receivers located on industrial zoned land.

The Department recommends that the Director of 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
Swati Sharma
A/Senior Planner, Infrastructure Projects


Daniel Keary
Director
Infrastructure Projects

1/4/11

APPENDIX A – MODIFICATION REQUEST

See the Department's website at

http://majorprojects.planning.nsw.gov.au/index.pl?action=view_job&job_id=4322.

APPENDIX B – CORRESPONDENCE FROM THE DEPARTMENT REGARDING THE INTERPRETATION OF CONDITION 2.17



Planning

Contact: Swati Sharma
Phone: (02) 9228 6221
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Email: swati.sharma@planning.nsw.gov.au
Our ref: 9043442
Your ref:

Dr Sue Bowen – Environmental Program Manager
Sydney Water Corporation
PO Box 399
PARRAMATTA NSW 2124

Dear Dr Bowen

Western Sydney Recycled Water Initiative – Replacement Flows Project (Reference 06_0190) – Operational Noise (Conditions 2.17, 2.18, 3.2 and 3.3)

I refer to your email correspondence of 29 July 2010, which sought clarification on advice provided by the Department on 19 April 2010, regarding the interpretation of conditions 2.17, 2.18, 3.2 and 3.3 of the Minister's approval.

The Department confirms its advice of 19 April 2010, that the intent of condition 2.17 is that the project be designed, operated and maintained, such that the noise emitted from each premise is not increased over those levels emitted prior to the project commencing. This is confirmed in section 5.5 of the Director-General's environmental assessment report, which states *"During operation of the project, the recommended conditions require that the project be operated and maintained such that there is no increase in noise levels over those currently being emitted from each of the premises (St Marys STP, Quakers Hill STP and Penrith STP)." It is not, as suggested in your email and supporting report from Wilkinson Murray Pty Limited, intended to imply no increase at the most affected residence. Whilst the Department notes that Wilkinson Murray Pty Limited advised that there is "no possibility that noise levels would not be increased by the new plant", the proposed approach is not considered consistent with the Minister's approval.*

Further, it is noted that the Operation Environmental Management Plan was approved on 29 July 2010, which stated that within 90 days of the commencement of operation of the Advanced Water Treatment Plant, a program will be undertaken to confirm the noise emission performance of this Plant. It also states that management measures will be implemented where required to ensure no noise levels above those already emitted from the St Marys STP occur, as measured at the nearest sensitive receivers. This suggests that Sydney Water Corporation was aware of the implications of the condition and would implement mitigation measures to ensure compliance.

Notwithstanding the above, it is noted that conditions 3.2 and 3.3 relate only to the Advanced Water Treatment Plant (located within the St Marys STP area). These two conditions are relevant to the approved Operation Environmental Management Plan. As such, Sydney Water Corporation must satisfy itself that the proposed management measures in the Operation Environmental Management are consistent with the Minister's approval.

Any processes or methodologies that are not consistent with the Minister's approval would require a modification under section 75W of the *Environmental Planning and Assessment Act 1979*. The Department would be happy to discuss this further if required.

If you have any enquiries or require clarification, please do not hesitate to contact Swati Sharma on 9228 6221 or via email at swati.sharma@planning.nsw.gov.au.

Yours sincerely

20.8.10

Lisa Mitchell
Manager – Water
Infrastructure Projects

Bridge St Office: 23-33 Bridge St Sydney NSW 2000 GPO Box 39 Sydney NSW 2001
Telephone (02) 9228 6111 Facsimile (02) 9228 6191 Website: planning.nsw.gov.au

APPENDIX C - SITE COMPATIBILITY CERTIFICATE OF 21 APRIL 2009



NSW GOVERNMENT
Department of Planning

Office of the Director General

RECEIVED 27 APR 2009

Our ref: Y09M1156
File: S09/00389-1

Ms Naomi L'Osto Brown
WSP Fitzwiller
Level 1, 41 McLaren Street
NORTH SYDNEY NSW 2060

Dear Ms L'Osto-Brown,

Determination of application for a Site Compatibility Certificate, State Environmental Planning Policy (Infrastructure) 2007 – St Marys Sewerage Treatment Plant, Part Lot 1 DP 223888, Links Road, St Marys - I09_005

I refer to your application of 11 March 2009 for a Site Compatibility Certificate (SCC) under Clause 19(1) of State Environmental Planning Policy (Infrastructure) 2007 (the SEPP) in relation to the proposal to use the land for industrial purposes at the St Marys Sewerage Treatment Plant, Part Lot 1 DP 223888 in the Penrith City Council LGA.

I have made the determination to issue the SCC under clause 19(5) of the SEPP, refer to attached, on the basis that the site of the proposed development is compatible with surrounding land uses, having had regard to the matters in clause 19(6).

Should you have any further enquiries about this matter, I have arranged for Mark Brown to assist you. He may be contacted at the Department's Bridge Street Office on telephone number (02) 9220 6385 or via email mark.brown@planning.nsw.gov.au.

Yours sincerely

Sam Haddad
Director General
21/4/2009

Additional Uses on State Land Determination of Certificate of Site Compatibility Division 2 Part 2 of State Environmental Planning Policy (Infrastructure) 2007

I, the Director General of the Department of Planning, pursuant to Clause 19(5) of the State Environmental Planning Policy (Infrastructure) 2007, determine the application made by the WSP Fitzwiller on behalf of Sydney Water on 11 March 2009 by issuing this certificate.

For the purposes of obtaining consent to development referred in Clause 18(3), I certify that in my opinion, the development of the site described in Schedule 1 is compatible with the surrounding land uses having had regard to the matters specified in Clause 19(6) subject to the requirements prescribed in Schedule 2.

Sam Haddad
Director-General
Department of Planning

Date certificate issued: 21st April 2009

Please note: This certificate will remain current for 5 years from the date of issue.

SCHEDULE 1

Site description: Part Lot 1 DP 223888, Links Road, St Marys, Penrith City Council LGA.

Application made by: WSP Fitzwiller on behalf of Sydney Water.

Project description: Additional use for the land consistent with the adjacent land zoning to the south which is zoned "4(a) – General Industrial" under the Penrith Local Environmental Plan 1996 (Industrial Land).

SCHEDULE 2

Requirements imposed on certificate:

1. Nil.

APPENDIX D – RECOMMENDED MODIFYING INSTRUMENT