

Appendix A

Submissions





GROWTH CENTRES COMMISSION

Contact: Jonathon Carle
Phone: (02) 9860 1517
Fax: (02) 9895 7670
Email: jonathon.carle@gcc.nsw.gov.au

8 April 2008

Mr Scott Jeffries
Director, Major Infrastructure Assessments
NSW Department of Planning
GPO Box 39
Sydney NSW 2001

File: P-101-01-A2

Dear Mr Jeffries,

**RE: NORTH WEST GROWTH CENTRE WATER-RELATED SERVICES
STAGE 1 PRECINCTS (APPLICATION: 07_0125)
ENVIRONMENTAL ASSESSMENT**

Thank you for providing the Growth Centres Commission with the opportunity to provide comments on the Environmental Assessment (EA) of the above project.

Delivery of the project is critical to ensure that land is released on to the market in a sustainable way, in parallel with essential infrastructure. The Commission has reviewed the EA report and notes that the proposed works and timing generally appear to be consistent with previous advice provided by Sydney Water. On this basis, I confirm the Commission's firm support for the project.

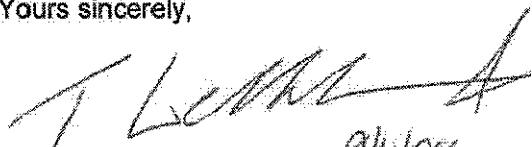
Notwithstanding this, the Commission makes the following comments:

- It is not clear from table 3.7 (pp 3.30-31) what is included in each package for the pipeline construction. This impacts on the Commission's understanding of which land will be serviced within each package. While the timing is related to the rate of development, it would be useful to include a map in the EA (or provide to the Commission) that shows which infrastructure is within each of the packages.
- There is no mention of the Alex Ave or Burdekin Road 250 mm water mains in the staging table, although these are included in the scope of works in Table 3.2 on page 3.7 of the EA and shown on Figure 3.1. Clarification of the timing of these would assist in understanding the overall servicing program.
- The Commission recently met with Sydney Water, DECC and the Department of Planning (DoP) to discuss the proposed upgrade to the Riverstone STP, which is located in the Riverstone West precinct. A number of concerns were identified with the odour modelling provided by Sydney Water. Sydney Water agreed to prepare revised odour modelling clarifying the odour contours as well as focusing on 'unusual odour events' rather than averages. Sydney Water, DoP and the Commission need to continue to work together to establish compatible, agreed land uses within STP odour buffers.

The provision of water related infrastructure is critical to the successful release of land for urban development, and the timing of consideration and approval of the EA is therefore also of great importance. Sydney Water's program is currently on the Commission's critical path for lot release and servicing, and any delays will jeopardise the timing of planned urban development in the North-West precincts.

Thank you again, and please do not hesitate to contact either myself or Jonathon Carle, Precinct Planning Officer, on (02) 9860 1500 should you require any further information or clarification.

Yours sincerely,



9/4/08

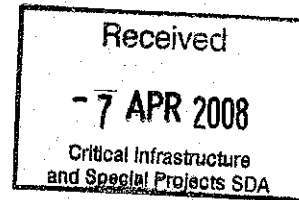
Tom Gellibrand
Deputy General Manager, Strategy



2 April 2008

Reference: 1002557

Scott Jeffries
Major Infrastructure Assessment
Department of Planning
GPO Box 39
Sydney NSW 2001



Dear Scott,

Environmental Assessment – North West Growth Centre water related services for first release precincts

I refer to the Environmental Assessment currently on exhibition regarding water related services in the North West Growth Centre, and would like to provide the following comments from Transport Infrastructure Development Corporation (TIDC).

North West Metro Line (formerly North West Rail Link)

On 18 March 2008, the NSW Government re-affirmed its commitment to build a new rail line to the North West of Sydney with the announcement of the North West Metro. The NWRL concept plan described in TIDC's preferred project report would become part of the North West Metro.

The North West Metro is a 38km rail line which will run from Rouse Hill through Norwest, Castle Hill, Epping, Top Ryde, Gladesville, Drummoyne, Rozelle and Pyrmont before reaching Wynyard, Martin Place and St James.

Proposed Sydney Water Infrastructure

Sydney Water propose to construct the following infrastructure that is within or very close to the proposed North West Metro rail corridor:

- A drinking water pipeline running northwards from the suburb of Stanhope Gardens, along Windsor Road and through the Area 20 Precinct to the Cudgegong Road Reservoir site.
- Drinking water pipeline along Rouse Road, Rouse Hill
- A drinking Water Pumping Station (WPS) to be located on Rouse Road, Rouse Hill.

Implications for Transport Infrastructure Development Corporation

Drinking water Pipeline

A stabling facility for the North West Metro is currently proposed within Area 20 of the North West Growth Centre. The rail infrastructure for the stabling facility would be located under Rouse Road, where the Sydney Water pipeline is proposed, resulting in a direct conflict between the two infrastructure projects.



The North West Metro alignment would also cross Windsor Road, creating another direct conflict with the drinking water pipeline.

The proposed location of the drinking water pipeline would have significant implications for the construction of the rail line and stabling facilities as it would be in a location that would require its removal and relocation during construction activities under Windsor Road and Rouse Road.

The proposed North West Metro would be constructed using cut and cover techniques for the crossing of Windsor Road. This would require the relocation of a number of services, including the drinking water pipeline should it be constructed in this location. Should Sydney Water determine that this location is preferred, TIDC requests ongoing consultation during detailed design of the drinking water pipeline, to determine the precise location and design of the pipeline (including providing some 'slack' to allow the pipe to be lifted).

Notwithstanding, TIDC would prefer that Sydney Water consider an alternative location for the drinking water pipeline. Option "A" outlined in Table 4.4 in the Environmental Assessment would avoid a direct conflict with the proposed rail line. Alternatively another option not considered in the Environmental Assessment is attached for consideration. (See map outlining alternative route for drinking water pipeline).

At this stage it is anticipated that the North West Metro Line will terminate at Rouse Hill. For information about any future extensions into the North West Growth areas, Sydney Water will need to consult with the Ministry of Transport.

Water Pumping Station (WPS)

The WPS will be located in close proximity to the proposed stabling facility. At this stage TIDC does not have information regarding the exact location of the WPS and requests that Sydney Water provide information when it is available.

TIDC does not anticipate significant issues regarding the location of the WPS as long as it is not in direct conflict with the operations of the stabling facility.

Other Infrastructure

TIDC notes the major pipeline to deliver wastewater to Riverstone STP would cross the Blacktown to Riverstone rail line near the Bandon Road crossing. Additionally, a pipeline transporting recycled water to the Riverstone, Riverstone West and Alex Avenue Precincts from the RWP at the Quakers Hill STP would cross the Blacktown to Riverstone rail line at Quakers Hill. The exact locations of the pipelines relative to the roads and rail line have yet been determined, and it is noted that the pipelines would be installed underneath the rail line with the use of either micro-tunnelling or horizontal directional drilling techniques. TIDC supports the use of these techniques to avoid direct impacts on the rail line and minimise disruptions to rail line operations.



Other Comments

TIDC understands that the provision of recycled water from the Rouse Hill STP has been designed to meet needs of predominantly residential users. With the completion and the operation of the stabling facility at Rouse hill, there will be an industrial demand for recycled water, particularly for washing trains. TIDC would like Sydney Water to advise in due course, if such a demand can be met to supply recycled water to the stabling facility.

Statement of commitment 25 - Ongoing consultation with the Transport Infrastructure Development Corporation (TIDC) would be undertaken regarding the construction and location of the WPS relative to the proposed stabling yards of the North West Rail Link.

TIDC requests that the Statement of Commitment 25 be amended to include the pipelines at the crossing of Windsor Rd and in Rouse Road.

TIDC would like to thank the Department of Planning for the opportunity to provide comment and if you have any enquiries or would like further information, please contact Peter Bourke, Environment and Planning Manager on 02 9422 5411.

Yours sincerely

Brendon Baker
Senior Manager Planning

cc. Raymond Ng, Bryan Jones, Belinda Scott (TIDC)
Jenny Rogers (Sydney Water, Environmental Planning and Management)
(PO Box A53 Sydney South NSW 2000)

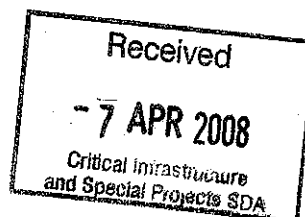


Proposed route to avoid design complexities that may arise to facilitate future water mains and rail construction.



Transport Infrastructure
Development Corporation

Mr Scott Jeffries
Director
Major Infrastructure Assessment
Department of Planning
GPO Box 39,
SYDNEY NSW 2001



Dear Mr Jeffries

I am writing regarding the Final Environmental Assessment (EA) for the North West Growth Centre Water Related Services for Stage One Precincts.

From a public health perspective the Director General's Requirements have been met. They included a detailed description of treatment technology and water quality standards to be applied as well as addressing human health impacts arising from the application of recycled water. The EA indicates that the treatment and provision of recycled water will be undertaken in accordance with the *Australian Guidelines for Water Recycling: Managing Health and Environmental Risks* (NRMCC, EPHC and AHMC, 2006). The EA addresses the treatment technologies to be used and the potential upgrades in treatment trains which may be necessary to meet the required water quality. Section 6.8 adequately addresses the human health requirements including listing the proposed uses of the recycled water, the log reduction capabilities of the proposed treatment plants and the intended development of the Recycled Water Quality Management Plans.

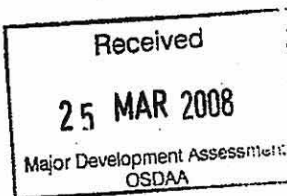
Drinking water quality is adequately addressed with reference to the *Australian Drinking Water Guidelines* (NHMRC, 2004) and the current requirements placed on Sydney Water for supply of drinking water.

Thank you for the opportunity to comment on the final Environmental Assessment. If you require further information please contact Dr Kaye Power at the NSW Health Water Unit on 9816 0541.

Yours sincerely

A handwritten signature in black ink, appearing to read "Wayne Smith".

Dr Wayne Smith
Director Environmental Health



19th March 2008

Major Developments Assessment
Department of Planning
GPO Box 39
Sydney NSW 2001

To whom it may concern,

Thankyou for the opportunity to review the preliminary environmental assessment associated with the provision of services to the North West Growth Centre. This will be a valuable project for local development and the community.

I am specifically writing in relation to the proposed route for the water related services in the North West Growth Centre. With reference to page 42 of the preliminary environmental assessment, it appears that the current proposal includes the installation of new potable and recycled water pipelines through several narrow residential streets to the north of Quakers Hill STP.

I can understand the need to minimise the length of these services, while also minimising disruption to the community. However, I do not agree with the current proposal to use Jocelyn Boulevard as a route for the recycled water pipeline. This street is commonly used by the local children. Due to the incline between Toomey Cr. and Rosegum Pl, it is also very popular with older children on bicycles. I suspect that the earth works required to install this pipe would pose a significant public hazard whilst in this area.

An alternative option may be to install the pipes up Walker Road, then onto Burdekin Road. This would avoid narrow residential roadways and would minimise disruption to traffic and the local residents.

Sincerely,

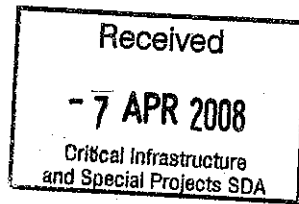
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A small, dark, rectangular redacted area, likely covering a phone number or email address.



NSW Government

DEPARTMENT OF WATER AND ENERGY



Mr Scott Jeffries
NSW Department of Planning
GPO Box 39
Sydney
NSW 2001

Contact: Janne Grose
Phone: (02)9895 7651
Fax: (02) 9895 7501
Email: Janne.Grose@dnr.nsw.gov.au

Our ref: ERM08/7749
File:
Your ref:

4 April 2008

Dear Mr Jeffries

Subject: Major Project – North West Growth Centre Water Related Services for First Release Precincts

Thank you for your letter of 21 February 2008 seeking the Department of Water and Energy's submission on the Environmental Assessment and Conditions of Approval for the above proposal.

Key issues of DWE's response are outlined in Attachment A and include:

- the protection and rehabilitation of watercourses and vegetated riparian corridors
- groundwater.

The Department's Conditions of Approval are provided in Attachment B.

The Department wants to see addressed the provision of a sustainable water supply, with minimal reliance on accessing valuable surface water and groundwater resources, for all proposed development within the Growth Centres.

I trust the attached DWE natural resource comments are of assistance to the Department of Planning.

Contact Details

Should you have any queries in respect to this matter, please contact Jeff Hunt on (02) 4904 2634 at the Newcastle office or Janne Grose on (02) 9895 7651 at the Parramatta office.

Yours sincerely

Janne Grose

Jeff Jeff Hunt
Senior Project Planner
Major Projects and Planning



ATTACHMENT A

Major Project Application – Environmental Assessment – North West Growth Centre Water Related Services for First Release Precincts

Department of Water and Energy Issues

The following comments are provided in relation to the Department of Water and Energy's natural resource issues concerning the Environmental Assessment for the proposed water related services for the first release precincts.

Protection and rehabilitation of riparian corridors

The former DIPNR has developed a stream classification system to identify minimum riparian corridor widths along watercourses. The stream classification uses three categories which reflect the environmental significance of watercourses. The minimum widths to achieve the riparian categories are as follows:

Category 1 – Environmental Corridor (Red)

- Purpose: to protect and enhance ecological connectivity between key remnant native vegetation within and between catchments.
- Minimum width : a CRZ width of **40 metres** (measured from the top of bank) along both sides of the watercourse + a **10 metre** vegetated buffer

Category 2 – Terrestrial and Aquatic Habitat (Green)

- Purpose: to provide for a viable and robust node or reach of riparian habitat (both aquatic and terrestrial)
- This habitat does not necessarily provide connectivity to other key remnant native vegetation due to constraints from existing development.
- Minimum width: a CRZ width of **20 metres** (measured from the top of bank) along both sides of the watercourse + a **10 metre** vegetated buffer.

Category 3 – Bank Stability and Water Quality (Blue)

- Category 3 recognises the critical role of riparian vegetation for stabilising the bed and banks of watercourses and filtering catchment run-off and the contribution this makes to overall catchment health and retention of land (eg protection of property and assets).
- Minimum width: a CRZ width of **10 metres** (measured from the top of bank) along both sides of the watercourse (generally no buffer is required)

Please note, the above riparian widths are minimum widths and opportunities for achieving greater corridor widths are encouraged. Additional width may be required for geomorphological and environmental considerations (eg to protect and enhance remnant native vegetation adjacent to the riparian corridor and biodiversity). The riparian corridors should be protected and/or enhanced with native riparian vegetation.

Stream Mapping in the First Release Precincts

The Department has mapped and classified the watercourses in the first release precincts and this information has been provided to the Growth Centres Commission.

Only the following uses should be permitted within the riparian corridors: environmental protection works and crossings (eg road/ pipelines). All other development associated with the proposal

should be located outside the riparian corridors including buildings, pipelines (except for creek crossings), pumping stations, temporary site compounds, detentions basins etc.

The riparian corridors in the first release precincts should be protected and rehabilitated with fully structured local native riparian vegetation (trees, shrubs and groundcover species) at a density that would occur naturally.

Drinking and recycled water pipelines:

Section 3.1 of the EA indicates that the majority of the proposed drinking and recycled water pipelines would be located in existing road verges and pathways but some of these pipelines would be located in drainage reserves (page 3.1).

Clarification is required as to whether the drinking and recycled water pipelines are proposed to be located within, or outside the mapped riparian corridors. The DWE Guidelines for Controlled Activities (February 2008): *Laying pipes and cables in watercourses* outlines that "when considering the placement of utilities in, or across watercourses the design and construction footprint, and extent of disturbances to soil and vegetation within the watercourse and riparian corridor, should be minimised".

The Department does not support the locating of pipelines within the riparian corridors (with the exception of crossings) and in accordance with the above mentioned Guideline the drinking and recycled water pipelines (with the exception of crossings) should be located beyond the riparian corridors (ie furthest from the watercourses).

Wastewater pipelines:

The EA indicates that the proposed wastewater pipelines are to generally be laid adjacent to drainage lines and that many of the affected creek corridors are heavily vegetated. Section 3.2.4 of the EA notes the wastewater carriers would follow Cattai Creek, Smalls Creek, Killarney Chain of Ponds and First Ponds Creek.

Clarification is required as to whether the wastewater carriers are proposed to be located within, or outside the mapped riparian corridors. If the pipelines are proposed to be located within the riparian corridors, alternative options for locating the pipelines outside the riparian corridors need to be identified.

The Department does not support locating the wastewater pipelines within the riparian corridors, particularly the removal of any riparian vegetation at construction and the potential impacts of sewerage overflows and leakage into the creeks from the wastewater system and the potential to disturb riparian vegetation during routine maintenance and repair to the pipelines. Access areas for the maintenance of the pipelines should be located outside of the riparian corridors.

Pipeline crossings of creeks:

The Department agrees that all pipeline crossings of creeks should either be under bored or attached to existing structures such as bridges to avoid direct impacts on the aquatic ecology. Where ever possible, the Department recommends that the underground boring commences from the outer edge of the vegetated buffer and that it is bored for the full width of the watercourses, core riparian zone and vegetated buffer.

Potential Salt Impacts on Stream Quality:

Section 11.3 and 11.6 of the Soil and Groundwater Investigations indicates that pulses of salt are likely to occur after heavy rain and that the salt load must be kept moving into and down the creek system until it discharges into marine waters, as the presence of increasing salt loads within the

catchment will result in increasing salt levels in fresh water streams ((Appendix E, Volume 3, pages 78 and 80). While the streams eventually discharge into the brackish or saline waters of the Hawkesbury River, the Department agrees that it must be established whether the freshwater creek system can accommodate the additional salt load. The potential impact on the freshwater creek system needs to be addressed.

Detention Basin along Smalls Creek:

The Flora and Fauna Assessment report refers to the proposed construction of an in line detention basin along Smalls Creek at North Kellyville for sediment interception and nutrient polishing (Appendix B, Volume 2, page 85). Table 5.2 in the EA also makes reference to 'instream stormwater basins' (Volume 1, page 5.5).

The Department of Planning has clarified to DWE that an online detention basin is no longer part of this proposal. The Department supports the withdrawal of the proposed online basin from this proposal, particularly as the EA notes that the establishment of a detention basin would require the clearing of at least 13.5 hectares of woodland and a large area of aquatic habitat and would be up to 400 m long and 50 m wide (Appendix B, Volume 2, pages 56 and page 73).

For future reference, the Department does not support the construction of online detention basins, particularly on Category 1 watercourses such as Smalls Creek, nor should any basins be located within the riparian corridors. Placing structures on-line causes detrimental impacts on the watercourse that often outweigh any potential benefits to the watercourse and associated ecosystem.

The Management for on-line structures is very problematic in both timing and funding for on-going maintenance for permanent wet structures. Off-line structures give greater management flexibility and minimize potential adverse watercourse impacts for less stringent management regimes.

When problems occur an on-line structure generally cannot be isolated from the watercourse to address the issue, and is constantly under threat of flow events that can cause the problem to move downstream. Some issues include:

- Infestation by noxious (W1) aquatic weeds, (such as *Salvinia*, Alligator Weed or Water Hyacinth) and the weed mass moving downstream causing further problems. The problem of infection by W1 weeds cannot be over emphasized. The risk is far less in off-line structures.
- As contaminants are captured and accumulate, there risk of remobilization in flow events, negating the purpose of the structure. The risk is far less in off-line structures.
- High risk in warmer weather of nutrient release and blue green algal blooms can occur. The risk is far less in off-line structures.

There is usually a "trash rack" and "forebay", for litter and coarse sediment capture, which require regular maintenance, often necessitating heavy machinery access. Such works and their associated maintenance activities are not appropriate in terms of trying to get "naturalness" back into watercourses.

On-line structures detrimentally effect the character of environmental flows and the naturalness of any watercourse.

On-line structures act as a dam or weir - it is likely that in dry times they will draw down and when a rain event occurs they will capture an excessive percentage of flow, thus impacting on down stream ecological processes.

On-line structures are likely to negatively impact on the existing riparian zone physical and ecological situation - that is, actual construction and land take of the structure will affect soils, morphology,

vegetation and habitat.

On-line structures high flow/emergency spillways generally need to be designed for 1:100 flows at considerable expense. The spillway itself is also an area of high maintenance and risk failure to the structure and a location of bed and bank instability. Offline basins do not have these issues to the same extent.

On-line structures impact on ecological connectivity – walls and embankments, maintenance areas, access tracks and paths, trash racks, etc. will sever ecological pathways. Apart from impacts on fish passage, a “natural” riparian zone will not be achieved and biodiversity protection will be further unnecessarily compromised within an urban context.

Groundwater

Section 6.2.2 of the EA refers to the pumping of groundwater encountered during construction (page 6.13). A water licence under the *Water Act 1912* may be required from the Department if the proposal requires groundwater pumping. The Department will assess the need for a water licence once more detailed project information is available. Details are required on the extent of any dewatering (such as pumping volumes, flow rates water quality etc) to enable DWE to determine if a licence under the *Water Act* is required.

The disposal of any dewatering needs to be carried out appropriately (especially if the tailwater is saline) and in accordance with relevant DECC guidelines/ licence requirements.

The Department should be consulted in relation to the proposed groundwater monitoring program as the groundwater monitoring will require a licence under the *Water Act 1912* from DWE.

**Major Project Application – Environmental Assessment – North West Growth Centre Water
Related Services for First Release Precincts**

Department of Water and Energy - Conditions of Approval

Riparian Corridors

1. Operations shall not damage or interfere in any way with:
 - Vegetation and habitat within the riparian corridors.
 - The stability of adjacent or nearby bed or banks of Waterfront Land.
 - The stability of Waterfront Land and their associated environments
 - The flow of watercourses within Waterfront Land.
 - The quality of water within Waterfront Land
 - Any pumps or structures in the vicinity (that are licensed under the Water Act 1912 or the Water Management Act 2000).
2. Riparian zones consisting of local native plant species shall be established and maintained in and adjacent to the watercourses within the First Release Precincts. The extent of the riparian zones is to be measured horizontally landward from the top of the bank of the watercourse/s, and is to be in accordance with Figure 1 for the First Release Precincts.
3. All riparian zones within the First Release Precincts **must be rehabilitated** where they are affected by, or located adjacent to, or located within 10m of, any works, for the purposes of aiming at naturalised bed and bank stabilisation and giving adequate space for the natural functioning of the watercourse.
4. A **Vegetation Management Plan (VMP)** is to be prepared for site rehabilitation - that demonstrates protection of any remnant local native riparian vegetation within the First Release Precincts and restores any riparian zones disturbed or otherwise affected by the development to a state that is reasonably representative of the natural ecotone of the protected waters system - to achieve sound naturalised watercourse and long term riparian area stabilisation and management by the enhancement/emulation of the native vegetation communities of the subject area.
5. Seed and propagule sources are to be from **local botanical provenance** (regarded as from as close as possible and from the same general habitat (same soil type, distance from watercourse, exposure etc)
6. The riparian zone (and all areas and activities described in the **VMP** must be maintained for a period of at least **five (5) years** after final planting or where other revegetation methods are used, five years after plants are at least of tubestock size and are at the densities required by these conditions and with species richness as described in the **VMP**, and **five (5) years minimum** for those areas required for access and maintenance relating to any WP.
7. The proponent must ensure that all works and activities within the First Release Precincts do not compromise the implementation of the **VMP** in any way.
8. Any property boundary fence should generally be located beyond the riparian zones and is not to be placed where the location, access and maintenance of the fence will cause bed and bank instability or have adverse impacts upon flow. There is to be no cleared

maintenance area along the fence. If an access (such as a path) is approved then the locations should be combined, if this results in a lesser disturbance footprint and greatest corridor function

9. Any **pipeline** and their associated disturbed areas are not to be located in any riparian area (except for crossings). If any pipeline is required to be located in a riparian area the watercourse and riparian area functions are not to be compromised and :
 - in these areas, pipes or cables must be "seamless", very durable and reliable.
 - not require to have access/inspection points or maintenance access tracks for maintenance or other purpose within any core riparian zone.
 - minimise disturbance within the core riparian zone and bed and bank of any watercourse.
 - not disturb existing vegetation
 - not restrict the establishment of trees in any way within a core riparian area
 - minimise disturbance of any existing local native vegetation community.
10. Any **permanent** constructed basin/wetlands/flood compensatory area and their associated disturbed areas are not to be located in any riparian area in **or on-line**
11. Any crossing structures must always be directionally drilled, or constructed within existing crossing structures, such as bridges to avoid direct impacts on the aquatic and terrestrial ecology. The underground boring should commence from the outer edge of the vegetated buffer and be bored for the full width of the watercourses, core riparian zone and vegetated buffer.

Groundwater

Should a water licence under the *Water Act 1912* be required then the following Conditions of Approval will need to be activated.

Licences under Part V of the *Water Act 1912* are required for the works for purposes of **temporary dewatering** as part of proposed construction.

1. General and Administrative Issues.

- a. Groundwater shall not be pumped or extracted for any purpose other than **temporary construction dewatering**.
- b. Tailwater shall not be allowed to discharge off-site (eg adjoining roads, stormwater system, sewerage system, etc) without the controlling authorities approval and/or owners consent.
- c. The licensee shall allow (subject to Occupational Health and Safety Provisions) the DWE or any person authorised by it, full and free access to the works (excavation or bore/borefield), either during or after construction, for the purpose of carrying out inspection or test of the works and its fittings and shall carry out any work or alterations deemed necessary by the DWE for the protection and proper maintenance of the works, or the control of the water extracted to prevent wastage and for the protection of the quality and prevention from pollution or contamination of the groundwater.
- d. If a work is abandoned at any time the licensee shall notify the DWE that the work has been abandoned and seal off the aquifer by such methods as agreed to or directed by the DWE.
- e. Suitable documents are to be supplied to the DWE of the following:

- A report of prediction of the impacts of pumping on any licensed groundwater users or groundwater dependent ecosystems in the vicinity of the site. Any adverse impacts will not be allowed and the project will need to be modified.
- A report of assessment of the potential for salt water intrusion to occur as a result of the dewatering. This report is only required for sites within 250m of any marine or estuarine foreshore area. The generation of conditions leading to salt water intrusion will not be allowed, and the proposal will need to be modified.
- Descriptions of the methods used and actual volume of groundwater to be pumped (kilolitres/megalitres) from the dewatering works, the works locations, the discharge rate (litres per second), duration of pumping (number of days/weeks), the amount of lowering of the water table and the anticipated quality of the extracted water.
- Descriptions of the actual volume of tailwater to be reinjected (kilolitres/megalitres), the reinjection locations, the disposal rate (litres per second), duration of operation (number of days/weeks) and anticipated quality of treated tailwater to be reinjected.
- Monitoring of groundwater levels (minimum of 3 weekly measurements of depth to water at a minimum of 3 locations broadly distributed across the site) beneath the proposed development site prior to construction. This requirement is only for sites where the proposed structure shall extend greater than one floor level into the existing ground level.

2. Specific Conditions.

- a. The design of the structure must preclude the need for permanent dewatering.
- b. The design of the structure that may be impacted by any watertable must require a water proof retention system (i.e. a fully tanked structure) with adequate provision for future fluctuations of watertable levels. (It is recommended that a minimum allowance for a watertable variation of at least +/-1.0 metre beyond any expected fluctuation be provided). The actual water table fluctuation and fluctuation safety margin must be determined by a suitably qualified professional.
- c. Construction methods and material used in and for construction are not to cause pollution of the groundwater.
- d. Monitoring of groundwater levels is to be continued at least weekly during the construction stage and at least weekly over a period of at least 2 months following cessation of dewatering, with all records being provided to the DWE on expiration of the licence. This requirement is only for sites where the proposed structure shall extend greater than one floor level into the existing ground level.
- e. Groundwater quality testing must be conducted (and report supplied to the DWE). Samples must be taken prior to the commencement of dewatering, (and ongoing to the satisfaction of the DWE for both extraction and reinjection activities, if required). Collection and testing and interpretation of results must be done by suitably qualified persons and NATA certified laboratory identifying the presence of any contaminants and comparison of the data against accepted water quality objectives or criteria.
- f. Discharge of any contaminated tailwater **that is not to be reinjected**, must satisfy all requirements of any controlling authority (i.e. the NSW Department of Environment and Climate Change, Council and Sydney Water). The method of disposal of excess tailwater (i.e. street drainage to the stormwater system or

discharge to sewer) and written advice from the relevant controlling authority, indicating that the proposed/actual quality of tailwater is acceptable, must be presented to the DWE and the consent authority.

- g. Discharge of any contaminated tailwater, **if reinjection is proposed**, must satisfy all requirements of the NSW Department of Environment and Climate Change and the DWE. The quality of any tailwater reinjected must be compatible with, or improve the intrinsic or ambient groundwater in the vicinity of the reinjection site. Contaminated groundwater is not to be reinjected into any aquifer. The following must be demonstrated in writing:
- The treatment to be applied to the tailwater to remove any contamination.
 - The measures to be adopted to prevent redistribution of any contaminated groundwater.
 - The means to avoid degrading impacts on the identified beneficial use of the groundwater.
 - Written advice from the NSW Department of Environment and Climate Change indicating their approval for the methodology of handling and treating the groundwater.
- h. Written advice be provided from the Certifying Authority to the DWE to certify that the following ground settlement issues have been addressed in reports submitted by the proponent:
- Assessment by a suitably qualified geotechnical professional that the proposed dewatering activity does not pose an unacceptable risk of off-site impacts such as damage to surrounding buildings or infrastructure as a result of differential sediment compaction and surface settlement during and following pumping of groundwater.
 - Settlement monitoring activities to be undertaken prior to, during and for the required period of time following the dewatering pumping to confirm the impact predictions.
 - Locations of settlement monitoring points, and schedules of measurement.

3. Formal Application Issues.

- a. An application must be completed on the prescribed form for the specific purpose of **temporary construction dewatering** and a licence obtained from the DWE prior to the installation of the groundwater extraction works. A plan drawn to scale will be required with the application clearly identifying the location of the dewatering installations.
- b. Upon receipt of an approved development application from, a fully completed licence application form and all required supporting documentation, DWE will issue a Water Licence under Part V of the *Water Act, 1912*.
- c. A licence application under Part V of the *Water Act 1912* must be accompanied by a \$151.00 fee and must specify the proposed volume of groundwater to be pumped (megalitres). The licence is also subject to administrative charges as determined from time to time by the Independent Pricing and Regulatory Tribunal (IPART).

End of Conditions

31 MAR 2008

30 March 2008

The Director
Major Infrastructure Assessments
Department of Planning
GPO Box 39
Sydney NSW 2001

Dear Director

Re: North West Growth Centre Water Related Services – Stage 1 Precincts

The Nature Conservation Council of NSW (NCC) strongly opposes the development of the North West Growth Centre's Water Related Services. The area to be developed includes a variety of threatened flora, which is very likely to be significantly disturbed, if not destroyed. The effect this is likely to have on local and regional aquatic health and the local and regional fauna species, many of which are already threatened, is likely to be catastrophic.

Flora

Development in the North West Growth Area has resulted in widespread loss of understorey plants, impacting on biodiversity¹. NCC believes that any further disturbance and clearing of vegetation in the North West growth centre is likely to lead to further fragmentation of vegetation communities. This could mean further losses to biodiversity, especially in creek line corridors. NCC is particularly concerned with the significant effect the further disturbance and degradation of Ecologically Endangered Communities (EECs) such as the Shale Sandstone Transition Forest may have at local and regional scales.

NCC understands that individual threatened plants occurring in the project area, including the Juniper-leaved Grevillea (*Grevillea juniperina* subsp. *Juniperina*) and *Epacris purpurascens* var. *purpurascens*, are planned to be fenced off and avoided during the construction of pipes in creek lines. However, we believe development will cause disturbance to these threatened plants, likely leading to further destruction of the species.

A number of flora species located in the proposed development area, although not listed as threatened, are thought to be of regional significance due to their inadequate populations in the Western Sydney area. These species include the Fringed Wattle (*Acacia fimbriata*), Red Spider Flower (*Grevillea speciosa*), and

¹ Parliament of New South Wales. 2007. Rouse Hill Development.
<http://www.anzacatt.org.au/prod/PARLMENT/hansArt.nsf/V3Key/LC19991130067>.
Accessed 27.3.08

Elkhorn (*Platyserium bifurcatum*). We are also in opposition of the development on the grounds that these regionally significant species will likely be destroyed, or at the very least, disturbed.

Recommendation – The proposed development is not approved on the grounds that significant flora species, the majority of which are already high degraded and fragmented, will very likely be further disturbed or destroyed.

Threatened fauna

NCC is particularly concerned with the significant effect that the proposed development is likely to have on threatened fauna species including the Little Bentwing Bat (*Miniopterus australis*) and the Cumberland Plain Land Snail (*Meridolum corneovirens*). The location of these and many other threatened species is at the Cudgegong Road Reservoir site which is in very close proximity (within approximately 2 kilometres) of the proposed location of drinking and recycled water pipelines. We strongly oppose the development of any water related infrastructure at this site.

Recommendation – Cudgegong Road Reservoir is not the site for the drinking and recycling water pipelines and any other water related infrastructure. We strongly suggest a buffer or no construction zone is created around the reservoir.

NCC wish to highlight probable effects of the proposed development on bird species. The greatest diversity and abundance of bird species has been found in sections of Smalls Creek, the proposed site of wastewater pipeline construction². The removal of trees, along the Smalls Creek corridor in particular, is likely to be catastrophic for birds. We understand that replanting is to occur in the area to offset the initial vegetation loss, however, previous replanting in the area has been in rows, with no attempt to re-establish the natural structure of vegetation. This situation has very likely resulted in a decline in certain species.

Recommendation – A replanting strategy is created prior to any development approval, to ensure revegetation reflects the natural structure and appearance of the vegetation, especially along creek corridors.

The lack of any apparent mitigation strategy for fauna most likely to be affected by the development (birds and threatened species) in the environmental assessment is completely unacceptable. Without a planned and detailed strategy with objectives for threatened fauna mitigation, the likely incidence of significant threatened species decline is probable. The development should not be

² Parliament of New South Wales. 2007. Rouse Hill Development.
<http://www.anzacatt.org.au/prod/PARLMENT/hansArt.nsf/V3Key/LC19991130067>.
Accessed 27.3.08

approved until a detailed strategy for the mitigation of threatened species is created.

Recommendation – The development is not considered for approval until an appropriate and comprehensive threatened species mitigation strategy is developed.

Aquatic ecology and health

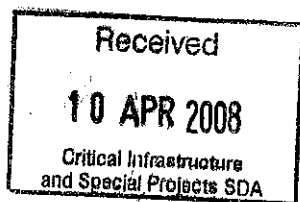
Four significant aquatic species were identified in the proposed development area, including the endangered Sydney Hawk Dragonfly (*Austrocordulia leonardi*) and the threatened Macquarie Perch (*Macquaria australasica*). Any development in the area could have a potentially devastating effect on these species and the aquatic food chain in the area, leading to a decrease in biodiversity at local and regional scales.

In addition, local and regional aquatic environments, such as Cattai Creek, Second Ponds Creek and Smalls Creek which lead into the Hawkesbury River, could increase in sediment load following the disturbance and destruction of vegetation in or close to creek lines. The flow on effects from this are potentially extremely damaging to the regional area and could include a decrease in dissolved oxygen in stream, and significant damage to aquatic fauna and flora. This situation would pose an additional stress on the biodiversity of the area and is likely to extend as far as the Hawkesbury-Nepean River.

Recommendation – The development is not approved on the grounds that, local and regional aquatic health and biodiversity is likely to be severely impacted.

Conclusion

NCC strongly opposes the approval for development of the North West Growth Centre Water Related Services. The impact of development on threatened and significant flora and fauna and biodiversity in the area are our main concerns. We contend the development would very likely be damaging or catastrophic to local and regional flora and fauna. The lack of any mitigation strategy for these species is completely unacceptable and we strongly recommend the development not be approved.



Your Ref: S07/01293, 07_0125
File No: MC-08-570

2 April 2008

Director, Major Infrastructure Assessments
Department of Planning
GPO Box 39
SYDNEY NSW 2001

Attn: Scott Jeffries

Dear Sir,

North West Growth Centre Water Related Services – Stage 1 Precincts

Thank you for providing Council with the opportunity to provide comment on the Environmental Assessment (EA) recently submitted to the Director-General by Sydney Water Corporation for the water related services in the Stage 1 Precincts of the North West Growth Centre.

The EA and supporting studies have been reviewed by relevant Departments of Council. The comments and issues arising from Council's assessment of the EA are provided in **Attachment 1** to this letter.

Council looks forward to working with the Department on any relevant Part 3A Projects to ensure that sustainable major projects are developed with proper and reasonable outcomes.

Should you require any further information regarding this matter, please contact Council's Strategic Planner, Amy Watson on 9839 6236.

Yours faithfully,

RON MOORE
GENERAL MANAGER

Per: 

Attachment 1

Blacktown City Council Submission in Response to Exhibition of the Environmental Assessment (EA) for water related services in the Stage 1 Precincts of the North West Growth Centre

General Comments

1. Blacktown City Council is supportive of the timely provision of water related services for the first release precincts within the North West Growth Centre, particularly the Riverstone Precinct which has a long history of commitment to release the land for urban development.
2. Notwithstanding this, environmental impacts need to be appropriately identified and mitigated. In this regard, Council's comments on the Environmental Assessment (EA) predominantly relate to impacts on vegetation, particularly where infrastructure is proposed along waterways, the potential impact on salinity, and the impact of the infrastructure on the ability to impose best practice Water Sensitive Urban Design (WSUD) principles in the first release precincts.
3. The appendices of the EA identify that Blacktown City Council should be consulted and involved in the decision making process regarding vegetation offsets and other matters. It is therefore recommended that the EA appropriately recognise the importance of the involvement of Blacktown City Council, and ensure appropriate communication measures are implemented with regard to environmental impacts particularly biodiversity offsets, salinity management and treatment of outlets.

Water Quality and Hydrology

4. The EA does not appear to consider potential impacts of scouring and/or erosion issues caused by the outlets. It is therefore recommended that the best practice treatment methods for the outlets be described.
5. The EA states that the new recycled water pipelines will be located predominantly within existing road verges and pathways and that the pipelines will be positioned on opposite sides of the roadways up to one and a half metres deep. The EA does not appear to consider future Water Sensitive Urban Design (WSUD) considerations. WSUD will be a hydrological and water quality treatment method for areas of new development within the North West Growth Centre. The EA should consider the potential restrictions the installation of these pipelines may have on future amenity of the area including restrictions that may be placed on the construction of WSUD features, street tree planting and other services.

Terrestrial flora and fauna

6. There appear to be inconsistencies with the values of amount of vegetation being cleared, conserved and offset throughout the report. It is also difficult to ascertain the amounts of vegetation being offset through the draft Conservation Plan and through a separate offset plan for the area of non-certified lands. Page 6.30, for example, states that the majority of the

vegetation to be impacted lies within areas identified as 'Non-Certified' lands, however other sections of the report state that the majority of the vegetation loss is identified as already offset through Biodiversity Certification which has been granted to the Growth Centres. If the majority of impacted vegetation is in 'Non-Certified' land, then the majority of impacted vegetation would in fact not be offset through Biodiversity Certification granted to the Growth Centres. It is therefore recommended that these inconsistencies be amended to provide greater clarification of the different amounts and types of vegetation being offset through the different measures. This may be presented for example using a table which summarises the total amount of vegetation to be cleared in certified and non-certified areas, the method of offset and whether or not this is covered by the draft Conservation Plan.

7. The appendices identify a number of measures for the protection of biodiversity of which only some have been incorporated or presented in recommendations in the EA. It is therefore recommended that all of the recommendations made in Section 4, Part 23 of the Flora and Fauna Assessment (pp 59 to 61) and other sections of the Flora and Fauna reports be incorporated into the EA, this should include a translocation plan for Cumberland Plain Land Snails and specific protection measures for *Grevillea juniperina*.
8. The EA does not appear to adequately consider the environmental significance of the Cudgegong Road reservoir site nor provide appropriate consideration to the discussion of ameliorative measures proposed by Eco Logical Australia Pty Ltd in the "*Species Impact Statement – Cudgegong Road Reservoir Site*" (Appendix B). It is therefore recommended that the EA further consider the environmental significance of this site and discuss in more detail the appropriateness of this site for its intended purpose and proposed offset measures to provide some certainty.

Indigenous Cultural Heritage

9. The "*Aboriginal Heritage Assessment*" prepared by ENSR (Appendix C) recommended the realignment of pipeline to avoid the A7 complex, which is seen as the most exceptional archaeological site in the area. Council strongly supports this recommendation and requests that Sydney Water investigate the viability of realigning the pipeline in this area to either 200m to the east or west of First Ponds Creek. The EA should include a detailed discussion on the A7 complex and the management measures recommended by ENSR.
10. Council encourages Sydney Water to investigate moving the level crossing carriers in the vicinity of the RV13, RV30 and A1 sites, and the First Ponds Creek carrier in the vicinity of the A4 site, as recommended by ENSR.

Soils and Groundwater

11. The soil in the first release precincts within the North West Growth Centre currently range from low to high salinity levels. Sydney Water has identified that the use of recycled water could potentially increase the salt and nutrient concentrations within soils and waterways. The management of salinity

impacts from recycled water use are complex in the Riverstone, Riverstone West, Alex Avenue and Area 20 Precincts due to the existing high soil salinity and soil characteristics which have a high potential for salinity issues to develop. In this regard, Council recommends the EA assess the appropriateness of the use of recycled water in these areas of existing high soil salinity and/or a high potential for salinity issues to develop.

12. Where the use of recycled water is implemented control measures need to be put in place to ensure that appropriate construction materials are selected for developments in this area where there is potential that the salinity of the soil will increase over time.
13. In accordance with the recommendations in the report titled "*Riverstone, Alex Avenue, Area 20 and Riverstone West Precincts, Impacts Associated with the use of Recycled Water for Garden Irrigation, Soil and Groundwater Investigations*" prepared by Agsol Pty Ltd (Appendix E) detailed electro-magnetic survey and soil/groundwater surveys should be undertaken in areas for the proposed pipelines and other infrastructure. The design of any infrastructure should take into account that salt levels could rise in the soil materials surrounding the infrastructure.
14. The recommendations within the "*Phase 1 Environmental Contamination Assessment*" prepared by GHD (Appendix F) will need to be undertaken. This will ensure that during construction of the pipeline, all potentially contaminated soil is identified and managed appropriately.

Noise

15. The noise studies prepared for the EA demonstrate that the predicted noise levels during the construction of the pipeline, during the operation of the Quakers Hill sewage treatment plant (STP) and the operation of the pumping stations are above the relevant noise criteria. The Department of Environment and Climate Change (DECC) should consider the noise impact and impose any relevant conditions of approval and ensure the enforcement of these conditions.

Air Quality (Odour)

16. The EA indicates that Sydney Water undertook odour analysis and modelling of the Quakers Hill and Riverstone sewage treatment plants (STP). However, only the Riverstone STP odour impact assessment is provided in the appendices. Sydney Water will need to provide the Quakers Hill STP odour impact assessment for review.
17. The EA states that analysis and modelling of the odour emissions from the Quakers Hill STP predicted odour levels greater than the relevant criteria at the nearest residence. The DECC should consider the odour impact and impose any relevant conditions of approval and ensure the enforcement of these conditions.



Director Major Infrastructure Assessments
NSW Department of Planning
GPO Box 39
SYDNEY NSW 2001



Your Ref: S07/01293
Our Ref: 05/400, OUT08/

Attention: Scott Jeffries

24 April 2008

Dear Mr Jeffries

**North West Growth Centre Water Related Services
Stage 1 Precincts**

Thank you for your letter of 21 February 2008 concerning the Sydney Water Environmental Assessment for water related services in the Stage 1 Precincts of the North West Growth Area, NSW Department of Primary Industries (DPI) has reviewed the EA and provides the following recycled treated water advice.

EA Volume 1

Page 1.6 Riverstone West Precinct. As noted there are extensive areas of flood-affected rural land, opportunities for recycling effluent for agriculture such as producing fodder could form part of the planned reuse options.

Page 3.42 Wastewater treatment... Riverstone STP. The proposal does not propose any wet weather storage, using treated waste water for agriculture could reduce discharges to Eastern Creek.

EA Volume 3

Page 82. Impacts on garden plants from salinity. EA notes Chloride levels of 133 mg/L may be expected and suggests that plants could cope except for the most sensitive plants. However, the Environmental Guidelines: Use of Effluent by Irrigation (p 30 DECC 2004) recommend Chloride levels be kept to 5mg/L for horticultural crops.

Page 82 also notes sodium levels of 127 mg/L, but there is no mention of the sodium adsorption ratio (SAR) number for the treated effluent. To assess whether Sodium concentrations applied may cause a problem to the soil structure assessment using the SAR may be necessary (p 28-29 DECC 2004).

Householders will need to receive educational materials about salinity and watering strategies and the need for extra care / caution when applying recycled water on salt sensitive plants in the garden.

Should you have any further queries on this matter please do not hesitate to contact Andrew Docking, Resource Management Officer, 45882128.

Thank you for providing the opportunity to comment on the Environmental Assessment.

Yours sincerely

A handwritten signature in black ink, appearing to read 'Andrew Docking', with a stylized flourish at the end.

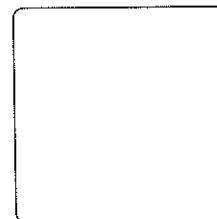
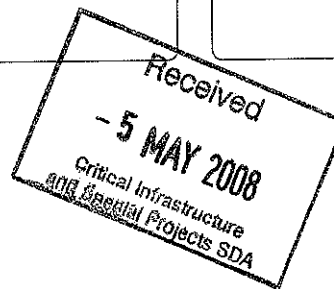
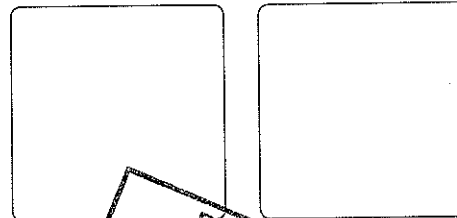
Andrew Docking
Resource Management Officer
Division of Agriculture and Fisheries

Baulkham Hills Shire Council

30 April 2008



The Director
Major Infrastructure Assessments
Department of Planning
GPO Box 39
SYDNEY NSW 2001



S07/01293,
Your Ref: 07_0125
Our Ref: FP142

Dear Sir/Madam

Submission – North West Growth Centre Water Related Services – Stage 1 Precincts

Thank you for the opportunity to comment on the North West Rail Growth Centre Water Related Services – Stage 1 Precincts.

The following comments are provided on the exhibited material:-

Wastewater

Two routes are proposed for the new wastewater pipelines in the North Kellyville precinct, one following Smalls Creek and one following Cattai Creek – the former is referred to as the North Kellyville carrier, and the latter the Cattai Creek Carrier. The carriers run in a south to north direction, and at the junction of Second Ponds Creek and Cattai Creek, the Cattai Creek carrier travels in a north to south direction along the southern side of Second Ponds Creek. It is proposed to cross each of these pipelines under Smalls Creek – at two separate locations – so that they can connect into existing wastewater pipelines and (eventually) connect to the Rouse Hill Sewerage Treatment Plant.

- The landform of the proposed alignment of the Cattai Creek Carrier consists of steep lands, with some areas of extreme slopes. Access to these areas, during both the construction and operational phases, should be taken into account during further design phases.
- Both Smalls Creek and Cattai Creek have several tributaries joining into the main creeklines. If both the North Kellyville Carrier and the Cattai Creek Carrier are to be gravity pipelines, the location and size of these tributaries should be taken into account during further design phases.



- Careful consideration is required when finalising the locations of the creek crossings under Smalls Creek for both the Cattai Creek and North Kellyville Carrier. Issue Number 3 of the Draft Statement of Commitments indicate that creek crossings will be either underbored or pipelines attached to bridges or existing structures. The maintenance requirements of these pipelines should also be considered.

Recycled Water

A report included in Appendix E of the EA referred to above is titled '*Impacts Associated with the use of recycled water for garden irrigation*'.

- As stated in Appendix E, detailed information should be available to residents on the appropriate use and application of recycled water, including its use with other gardening additives, such as fertilizer and mulch. This could be in the form of information leaflets with their water bills, or information on the internet.
- Further research could be undertaken by Sydney Water to the potential reduction of TDS and nutrients available in recycled water.

Construction Impacts

Erosion and sedimentation practices during the construction phases should be stringently followed so that the water quality, aquatic ecology and terrestrial flora and fauna of waterway corridors both within and downstream of the North Kellyville Precinct, are not compromised.

Water mains within road reserves

Proposed water mains within Council's road reserves should be installed at such alignment and levels to match with the future road cross sections and the vertical alignment of the road. It is critical that Sydney Water consult with Council during the design stages to ensure that the proposed alignment and the levels of the pipes are agreed to by Council prior to commencement of the construction. The above requirement is essential to avoid any possible need for relocating these water mains to facilitate the road works as part of development of the North Kellyville precinct in the near future.

Restoration of the open trenches within Council's road reserves should be undertaken in accordance with Council's specification for trench restorations and in accordance with the Council's process of managing the restorations of road openings.

We look forward to working with the Department, Sydney Water and other relevant stakeholders during further consultation and detailed design stages of the project.

Should you wish to discuss this submission, please contact Council's Acting Forward Planning Coordinator Ms Dana Quintal on 9843 0390.

Yours faithfully

A handwritten signature in cursive script, reading "Stewart Seale".

Stewart Seale

MANAGER - FORWARD PLANNING



The Director General of Planning
GPO Box 39
Sydney NSW 2001

Attention: Mr S Jeffries

15 April 2008

Dear Sir

Re: Major Project Assessment - Water Related Services for Stage One Precincts of the North West Growth Centre (MP 07_0125)

I refer to the recent telephone conversation between Scott Jeffries of your Department and David Birds of Landcom when Mr Jeffries confirmed that the Department is willing to consider our submission on the above proposal. I wish to confirm that Landcom supports the timely delivery of the supporting infrastructure needed to serve the North West Growth Centre to which this proposal makes a major contribution. I set out below some specific concerns that we have relating to, firstly, the servicing of the Riverstone Scheduled Lands, and secondly, the potential use of certain areas for native vegetation offsets to mitigate the effect of the proposals.

1 Riverstone Scheduled Lands

The Riverstone Scheduled Lands form approximately a third of the Riverstone precinct in the North West Growth Centre as shown on the enclosed location map. The area comprises of about 3,600 small lots in over 500 ownerships. Whilst the development of the area will make a major contribution towards new land supply is widely recognised that, due to the fragmented land ownership pattern, development is unlikely to occur in the normal manner.

As a consequence the Minister for Planning has asked Landcom to help find a way to facilitate the development of the Scheduled Lands. We have been working towards the formulation of a suitable development model with local landowners. This has lead us to create a land-trading development model that will enable owners to develop their land and in doing so have the option of paying for their share of the development costs with part of their land.

In the meantime we are working with Sydney Water to develop a delivery strategy that will enable water and sewer services to be brought into the Scheduled Lands. The current proposal only brings drinking and recycled water to the edge of the Scheduled Lands at Crown Street. Furthermore the sewer services along the nearby Killarney Chain of Ponds, is up to 500 metres in some locations from the point of discharge for the Scheduled Lands with the



Level 2, 330 Church Street
Parramatta NSW 2150
PO Box 237 Parramatta NSW 2124
DX 28446 Parramatta
ABN 79 268 260 688
Telephone 61 2 9841 9800
Facsimile 61 2 9841 6688
enquiry@landcom.nsw.gov.au



separation predominately privately owned, flood affected land that has not form part of the first stage releases. During our consideration of this issue it has become apparent that the topography of the area and the location of areas to be protected for environmental conservation and recreation increase the difficulties of bringing services into the area to serve new dwellings.

Ultimately the services that form the subject of the proposal you are now assessing will be extended further into the Scheduled Lands and may, in due course, become a proposed amendment to the proposals now under consideration.

We would therefore appreciate if, during your consideration of the current proposals, you could take into account that proposals for extensions to these services are likely to be brought forward in the near future. We would be pleased to supply you with further details as they emerge.

2 Native Vegetation Offsets

We note from the application documentation that the proposals involve the clearing of vegetation, including some Ecologically Endangered Communities, and that Sydney Water will be aiming to identify suitable areas of appropriate vegetation for conservation off-sets or for revegetation to compensate for this. The proposals do not identify any specific areas for these purposes.

Landcom and Blacktown City Council jointly own 14 hectares of land adjacent to the North West Growth Centre at the Blacktown Native Institute that could be revegetated with Cumberland Plain Woodland. This land could be made available for use as a potential offset should the need arise for Sydney Water to look outside of the Growth Centre for off-set opportunities.

We would be pleased to supply you with further details of this if it would be helpful.

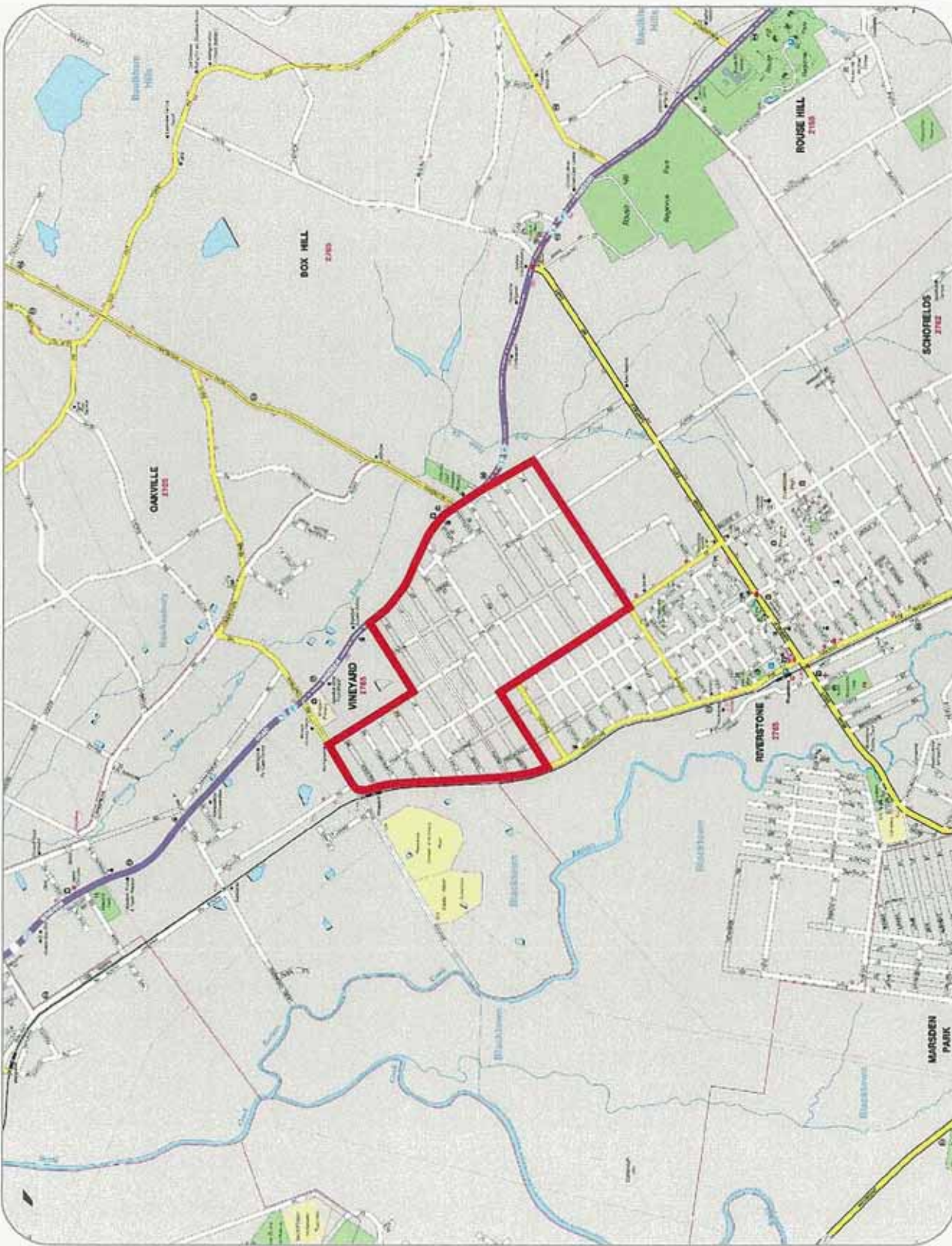
Yours faithfully

Peter Anderson
Development Director

cc Adrian Miller – Sydney Water
Jenny Rogers – Sydney Water



RIVERSTONE SCHEDULED LANDS - LOCATION MAP



Legend

 Subject Site

Item	Date	Expense Details	1410000	Q44
SCALE			1410000	Q44
COUNTIES			1410000	
COUNTY			1410000	
DATE OF PLAN			1410000	
PREPARED BY/DATE			1410000	
APPROVED BY/DATE			1410000	
JOB REF			1410000	
JOB REF			1410000	

Your reference S07/01293, 07_0125
Our reference DOC08/8182
Contact Gillian Reffell ☎ 9995 6813

Mr S Jeffries
Director
Major Infrastructure Assessments
Department of Planning
GPO Box 39
SYDNEY NSW 2001

Dear Mr Jeffries

**NORTH WEST GROWTH CENTRE WATER RELATED SERVICES: STAGE 1 PRECINCTS
APPLICATION NUMBER 07_0125**

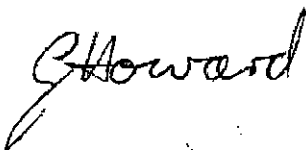
I refer to your letter of 21 February 2008 and to the Environmental Assessment entitled *North West Growth Centre water related services for first release precincts Environmental Assessment*, Volumes 1- 4 (the EA) for the above proposal.

The Department of Environment and Climate Change (DECC) has reviewed the EA and offers the comments in the attachment to this letter.

As it is anticipated that one or more Environment Protection Licences (EPLs) or EPL variation/s will be required, it is requested that the drafting of approval conditions be discussed with DECC in order to avoid duplication of consultation and reporting requirements for those matters likely to be the subject of DECC's regulatory responsibility under the EPL.

Should you have any queries regarding this matter, please contact Gillian Reffell on 9995 6813.

Yours sincerely



23 APR 2008
GISELLE HOWARD
Director Metropolitan
Environment Protection and Regulation

Encl: Implementing planning controls in the Buffer Area around Warriewood Sewage Treatment Plant

CC: SWC - Jenny Rogers
GCC - Elizabeth Kinkade

The Department of Environment and Conservation NSW is now known as
the Department of Environment and Climate Change NSW

ATTACHMENT**DEPARTMENT OF ENVIRONMENT AND CLIMATE CHANGE****NORTH WEST GROWTH CENTRE WATER RELATED SERVICES:
STAGE 1 PRECINCTS. APPLICATION NUMBER 07_0125
(April 2008)****Environment Protection Licensing**

The construction of the sewerage infrastructure for the first release precincts is a scheduled activity under the *Protection of the Environment Operations Act 1997* (POEO) and will require one or more environment protection licences (EPLs). The EPLs may be either variations of Sydney Water's existing EPLs or separate scheduled development works EPLs. Construction works on the sewerage systems must not commence until the EPLs are varied or issued.

The construction of drinking water or recycled water systems is not a scheduled activity and will not require licensing under the POEO Act. However, the proponent may wish to apply for a Water Protection Licence if it believes that there is a substantial risk of the construction or operation of the infrastructure resulting in pollution of waters.

Notwithstanding licensing requirements, the proponent and its contractors will need to comply with the provisions of the environment protection legislation, including the POEO Act, the *National Parks and Wildlife Act 1974* and the *Threatened Species Conservation Act 1995* during the construction of all proposed works.

Water Quality

DECC notes the discussion on water quality in the EA. The North West Growth Centre project will need to be undertaken in a manner that complements other water related projects in the northwest Sydney area, including the Western Sydney Recycled Water Replacement Flows Project.

The EA correctly notes that discharges from the Riverstone Sewage Treatment Plant (STP) must comply with the "bubble licence" conditions on the licences for Sydney Water's three South Creek sewage treatment systems (STS). However, DECC notes that a recent meeting between Sydney Water and DECC concluded that it is timely to review the regulatory arrangements governing nutrient discharges to the Hawkesbury Nepean River. The upcoming review will ensure that growth related wastewater management remains both operationally reasonable and feasible and environmentally sustainable. The review may have implications on future regulatory approaches for nutrient management in the river catchment, and may result in modified effluent management practices and limits to those currently required under the STS licences.

Air Quality

The potential for offensive odour from the current operation and future upgrades of the Riverstone STP requires particular attention to ensure that planning of the new station precinct does not create intractable land use conflicts.

While recognising the inherent uncertainty in assessing future odour emissions, DECC considers that the odour impact contours presented in the EA underestimate the likely odour impacts of the proposal at times of likely "worst" odour emissions from the proposal. Accordingly, subsequent to review of the EA and discussion with key stakeholder agencies,

DECC prompted the proponent to undertake additional modelling on the likely impact of odours from the augmented Riverstone STP.

DECC recommends that, prior to any project approval being granted, the proponent:

- presents revised odour impact contours that are based on modelling that has taken into account the likely "worst" odour emissions the proposal may generate;
- list all the key operational assumptions upon which the modelling has been based. For example, whether certain parts of the sewerage treatment process are assumed to be covered or whether specific management controls or pollution abatements are assumed to be in place; and
- presents odour contours for the operation both at current capacity and at full proposed capacity.

Overall, the purpose of predictive odour modelling is to indicate the potential for offensive odour impacts to occur. In conducting this modelling, the proponent should consider any additional factors needed for it to be confident that the operation of the augmented STP will not result in offensive odour beyond any revised 2 odour unit (OU) boundary.

Ensuring that no future offensive odour impact occurs in the project area relies on two key factors:

- operating within the level committed to by the proponent; and,
- making planning decisions that prevent future landuse conflict arising.

The revised modelling recommended above should provide a sound basis upon which to make good planning decisions in the project area. DECC attaches a paper, prepared in response to a request for more detailed advice on appropriate land uses in a STP buffer zone, that may be of interest to the appropriate planning authority.

DECC recommends that planning decisions for the project area be taken to ensure that:

- the most sensitive future receptors, such as dwellings, schools and hospitals not be located within the 2 OU isopleth or to the west of the rail line;
- receptors where large numbers of people work, such as commercial offices or administration centres not be located within the 2 OU isopleth;
- all other sensitive receptors are located in areas such that no future receptor is likely to experience odours that could be considered offensive.

DECC defines "sensitive receptor" in the *Approved Methods for the Modelling and Assessment of Air Pollutants in NSW* (August 2005).

In addition to the above recommendations DECC suggests that the appropriate planning authority may wish to consider the following complementary planning strategies:

- Annotating Section 149(5) certificates on the title of each property within the 70U affected area to ensure that buyers of potentially odour affected land are aware of the potential prior to purchasing in the area.
- Locating areas of park and recreational lands between the station and residential receivers to the east of the station to reduce the potential for odour impact.
- Undertaking very dense tree-hedge plantings along the western side of the rail line and around the eastern perimeter of the sewerage treatment plant to ameliorate odour impacts.

Such planting works could reduce odour impacts by forming an effective barrier to winds and air-drift, forcing dilution of odour laden air. Should this option be considered it is suggested the issue be further discussed with DECC to ensure design of the most effective barrier possible.

Fauna, Flora and Biodiversity

DECC notes the findings and conclusions in the EA on fauna, flora and biodiversity. DECC also notes that, subsequent to the preparation of the EA, further discussions were undertaken between Sydney Water, the Growth Centres Commission and DECC on the potential impacts on fauna, flora and biodiversity.

The amount of vegetation to be lost as a result of the proposal is uncertain, due to the lack of data regarding the width of clearing required for trenching along different sections of the route, the extent of drilling that will be used, the quantity and quality of rehabilitation that will be allowed and the extent of the consequent indirect impacts, including edge effects.

DECC therefore recommends that either the proponent quantifies these matters prior to any approval being granted so that the amount of offset required is known at that time, or that the conditions of approval require the proponent to assess the extent of impacts post-construction so that the required offset can be determined.

The proposed offset at the Riverstone STP site is acceptable provided that the protection applied to the site meets the definition of protection in the biodiversity certification order. DECC recommends an E2 zoning and/or a protective covenant.

It is required that the offset be finalised prior to commencement of construction.

Aboriginal Cultural Heritage

DECC notes the findings and recommendations contained in the Aboriginal Heritage Studies reports (EA Volume 2, Appendix C). In undertaking the project, the proponent should follow the recommendations of the reports, as well as the recommendations and requests noted by the representatives of the Aboriginal community during the assessment process.

Noise and Vibration

The noise impact assessment (NIA) for the North Kellyville area (the Kellyville NIA) includes an assessment of construction noise for installation of pipework, and the NIA for the Riverstone, Riverstone West, Alex Avenue and Area 20 areas (the Riverstone NIA) includes an assessment of construction noise for installation of pipework, pumping stations and reservoirs as well as construction at the two existing STPs. The assessment of construction noise in both NIAs is undertaken for the daytime period, as it is stated that there will be construction activity during the daytime only. DECC suggests that the any consent for the project include conditions that limit construction work to the periods between 7 am and 6 pm Monday to Friday, between 8 am and 1 pm Saturdays and at no time on Sundays and public holidays, unless inaudible at any residential premises, and that any works outside of these are by approval only.

There is no assessment of operational noise levels, and recommends that the proposed services be designed and built such that noise and vibration as a result of their operation do not exceed criteria derived by application of the NSW Industrial Noise Policy and the DECC publication "Assessing Vibration: a technical guideline".

The EA notes that the construction period for the project is anticipated to be up to 4 years, and that therefore the construction criteria of background + 5dB(A) applies. The criteria are

exceeded at most locations in both NIAs, and such exceedances are typical of construction activities. DECC recognises that the laying of pipework is a transient construction activity, and therefore residences should not be exposed to construction noise levels that exceed the criteria for the entire duration of the construction period. However, it is important for all feasible and reasonable mitigation measures to be applied to the construction activities to reduce construction noise levels with an aim to meeting the criteria.

The NIAs include recommended mitigation measures such as screening and silencing, as well as management measures to minimise noise levels. DECC suggests that the project consent include a requirement for the proponent to prepare and implement a construction noise management plan prior to commencement of construction activities and that the activities be conducted in accordance with the EA, including the recommended mitigation measures suggested in the NIAs. It is also suggested that the construction noise management plan includes, but is not necessarily limited to:

- identification of each work area, site compound and access route (private and public);
- identification of the specific activities that will be carried out and associated noise sources at each work area, site compound and access route;
- identification of all potentially affected sensitive receivers;
- the construction noise and vibration objectives identified in the EA for construction periods greater than 26 weeks;
- an assessment of potential noise and vibration from the proposed construction methods (including noise from construction traffic) against the objectives identified in the EA for construction periods greater than 26 weeks;
- where the objectives are predicted to be exceeded, an analysis of feasible and reasonable noise mitigation measures that can be implemented to reduce construction noise impacts;
- a description of management methods and procedures and specific noise mitigation treatments that will be implemented to control noise and vibration during construction, including the erection of temporary noise control barriers and silencing of equipment;
- procedures for notifying residents of construction activities that are likely to effect their noise and vibration amenity;
- measures to receive, record and respond to complaints;
- measures to monitor and report against noise performance.

The EA also notes that the vibration criteria for the construction activity may be exceeded where activities occur at distances closer than 8 metres, and the NIAs suggest that a vibration management plan be implemented. DECC agrees with this approach, and suggests that the construction noise management plan includes vibration from construction activity as noted above.

General Conditions

Any approval given for the Project should include conditions that address the above issues and also the following matters:

- The treatment and disposal of any spoil from the project including proposals for the management of any acid sulphate soils;
- The treatment and disposal of any contaminated ground water;
- The treatment and disposal of any contaminated surface water;
- The treatment of and disposal of drill water from the directional boring operation.

Appendix B

Director-General's Requirements



Item to be Addressed	Director General Requirement	Chapter of PPR
General Requirements	The EA should be prepared to a high technical and scientific standard and include: An executive summary. A detailed description of the project including construction methods, location and alignment of project components, operation details, including treatment technology and water quality standards to be applied, interfaces with existing sewage treatment infrastructure, energy requirements and staging. An assessment of the environmental impacts of the project, with particular focus on the key assessment requirements specified below. Justification for undertaking the project with consideration of the benefits and impacts of the proposal. Certification by the author of the EA that the information contained in the Assessment is neither false nor misleading.	Chapters 1 and 4
Strategic and Project Justification	The EA shall clearly outline the strategic context of the project, having regard to existing and future development of the North West Growth area, how it meets the aims and objectives of <i>State Environmental Planning Policy</i> (Sydney Region Growth Centres) 2006 and its relationship to the North West Structure Plan. The EA must describe the need for and objectives of the project; alternatives considered (including an assessment of the environmental costs and benefits of the project relative to alternatives) and provide justification for the preferred project taking into consideration the objectives of the <i>Environmental Planning and Assessment Act 1979</i>.	Chapter 1
Water Quality and Hydrology	The EA shall include an assessment of the water quality impacts arising from construction and operation of the project. With respect to construction, risks associated with laying pipelines, including across watercourses, erosion and sedimentation controls and management of any discharges from the project to prevent impacts to nearby watercourses should be addressed. With respect to operation, details of the quality of the recycled water should be provided particularly as it relates to salinity, and sodicity. Details on the proposed use(s) of the recycled water and how this will be managed, particularly with respect to runoff into waterways and the need for buffer zones. Details on the impacts and management of wastewater and infrastructure must be addressed, including impacts from effluent discharge from Riverstone Sewage Treatment Plant and where relevant, Rouse Hill Recycled Water Plant, identification of wet weather effluent storage requirements, location of infrastructure with riparian areas including dry and wet weather sewerage overflows. Consideration should also be given to water management plans for the area.	Section 4.2.1
Human Health	The EA should address the human health impacts arising from the application of recycled water. The assessment should be undertaken in accordance with the <i>Australian Guidelines for water Recycling: Managing Health and Environmental Risks</i> (NRMMC, EPHC & AHMC, 2006).	Section 4.2.7

Item to be Addressed	Director General Requirement	Chapter of PPR
Soils & Groundwater	The EA shall include consideration of existing soil conditions, the sustainability of long term recycled water application, including measures to avoid soil degradation and inappropriate nutrient loading. An assessment of groundwater impacts specifically the potential for accessions to groundwater of recycled water and salinity impacts. Consideration should also be given to the impact of trenching and other underground work on groundwater and subsurface flows.	Sections 4.2.1 and 4.2.6
Flora and Fauna	The EA shall include a flora and fauna impact assessment taking into consideration impacts on any threatened species, populations, ecological communities and/or critical habitat and any relevant recovery plan in accordance with DECC's <i>Guidelines for Threatened Species Assessment</i> (2005). This assessment shall justify the need for clearing any vegetation and/or habitat features and include an evaluation of potential impacts on waterways, aquatic ecosystems or riparian zones, including any instream stormwater basins, potential for weed infestation, impacts to fish passage, and the provision of any compensatory habitat/biodiversity offsets. Specific consideration should be given to the significance of the impacts of the project in the context of the North West Growth area and the consistency of the project with the objectives of broader biodiversity conservation objectives of the area (such as through any Biodiversity Certification).	Sections 4.2.2 and 4.2.3
Indigenous & Non-Indigenous Cultural Heritage	The EA shall include an assessment of indigenous and non-indigenous cultural heritage values that may be impacted by the project with details on subsurface archaeological investigations undertaken for potential archaeological deposits. Considerations should be given to the significance of the impacts of the project in the context of the North West Growth area and any mitigation measures. The assessment must address the information and consultation requirements of the draft <i>Guidelines for Aboriginal Cultural Heritage Assessment and Community Consultation</i>.	Sections 4.2.4 and 4.2.5
Traffic & Transport	The EA shall include an assessment of impacts to the local and regional road network and intersections, including direct impacts from traffic rerouting and any access restrictions to property, as well as details on the nature/mode of traffic generated from the project, transport routes and traffic volumes. Consideration should also be given to the impact of the project on any existing and proposed railway infrastructure in the area.	Section 4.2.8
Waste Generation and Management	The EA shall detail the likely waste quantities and qualities generated during the construction (including spoil generation) and operation of the project. Specific focus must be placed on potential contamination of soils, and on sludges, solids and aqueous wastes produced through the operation of the project. Details of appropriate waste management and disposal options for those materials must be provided. The assessment must take into consideration the DECC's <i>Assessment, Classification and Management of Liquid and Non-liquid Wastes</i>.	Section 4.2.9

Item to be Addressed	Director General Requirement	Chapter of PPR
Air Quality	The EA shall include an assessment of the air quality impacts associated with the project prepared in accordance with the <i>Approved Methods for the Modelling and Assessment of Air Pollutants in NSW</i> (DECC, 2005), <i>Assessment and Management of Odour from Stationary Sources in NSW</i> (DEC, 2001) and <i>Technical Notes: Draft policy: Assessment and Management of Odour from Stationary Sources in NSW</i> (Dec 2001). This assessment must consider any potential impacts on nearby sensitive receptors.	Section 4.2.10
Noise & Vibration	The EA shall include an assessment of noise and vibration impacts during construction and operation and in cumulative context with existing development. Construction traffic noise must also be addressed. The assessment must take into account the following guidelines, as relevant: <i>Environmental Noise Control Manual</i> (EPA, 1994), <i>Environmental Criteria for Road Traffic Noise</i> (EPA, 1999), <i>Industrial Noise Policy</i> (EPA, 2000) and <i>Assessing Vibration: A Technical Guideline</i> (DECC, 2006).	Section 4.2.11
Hazards & Risks	The EA shall include an assessment of the hazards and risks associated with the project including details of hazardous materials used or kept on the premises during construction and operation phases. The assessment must refer to the Department's Guideline <i>Applying SEPP 33</i> (DUAP, 1994). If relevant, a <i>Preliminary Hazard Analysis</i> in accordance with the Department's Hazardous Industry Planning Advisory Paper No. 6, <i>Guidelines for Hazard Analysis</i> must be included as part of the Environmental Assessment.	Section 4.2.12
Risk Analysis	Notwithstanding the above key assessment requirements, the EA shall include an environmental risk analysis to identify potential environmental impacts associated with the project (construction and operation), proposed mitigation measures and potentially significant residual environmental impacts after application of proposed mitigation measures. Where additional key environmental impacts are identified through this environmental risk analysis, an appropriately detailed impact assessment of this additional key environmental impact must be included in the EA.	The PPR



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