Decision Report

NWTH Upgrades (Growth) – Biosolids Processing and Construction Compound (August, 2024)

Sydney WATER

Acknowledgement of country

The proposal is the land of the Dharug people. We acknowledge these traditional custodians and their ancestors of the land and waters. Their lore, traditions and customs nurture and continue to nurture the water, creating wellbeing for all. We also pay our respect to Elders, past and present.

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1 Introduction

Sydney Water's North West Treatment Hub (NWTH) comprises the Castle Hill Water Resource Recovery Facility (WRRF), Rouse Hill WRRF and Riverstone WRRF. In 2022, Sydney Water proposed upgrades at Rouse Hill WRRF and Riverstone WRRF to cater for growth within the NWTH service area and improve treatment processes to meet future regulatory requirements. These works were assessed in the Review of Environmental Factors North West Treatment Hub Plant Upgrades and Sludge Transfer System (Growth Package), July, 2022 (REF 2022) and Decision Report North West Treatment Hub Plant Upgrades and Sludge Transfer System Growth Package, November 2022 (Decision Report 2022).

Since then, the following changes have been proposed:

- Construction of a new carbonisation facility and associated infrastructure at Riverstone WRRF.
- Construction of a new dewatering and outloading building at Rouse Hill WRRF.
- Removal of both sludge transfer systems from the scope.
- Expansion of the construction footprint at Rouse Hill WRRF to include a temporary compound site at 7 Money Close, Rouse Hill, new temporary access road into the facility, as well as a 3m wide extension to the northern WRRF boundary for permanent access.

Sydney Water placed a Review of Environmental Factors Addendum North West Treatment Hub Upgrades (Growth Package) – Biosolids Processing and Construction Compound (REFA) on public exhibition from Monday 17 June to Tuesday 9 July 2024. During public exhibition the community and stakeholders were invited to comment on the proposed changes.

Sydney Water received three submissions on the REFA. Of these, two submissions were from State agencies and one was from a community member. These are summarised below:

- community member – supports the project, specifically the carbonisation technology and avoiding building the pipeline; suggested better labelling of the community newsletter diagram
- Department of Climate Change, Energy, the Environment and Water – Biodiversity, Conservation and Science (BCS) – relating to the construction compound at Rouse Hill WRRF and methods for vegetation removal and restoration
- Environmental Protection Agency (EPA) – relating to the operational emissions modelling at Riverstone and requirement to obtain a licence variation application.

This Decision Report:

- summarises community and stakeholder consultation undertaken on the proposed change
- considers the comments raised in the submissions
- recommends that Sydney Water proceed with the proposed change.

2 Consultation

This section summarises Sydney Water's consultation with community and stakeholders.

2.1 Proposal development and REFA exhibition

Community and stakeholder engagement is a planned process of initiating and maintaining relationships with external parties who have an interest in our activities.

Stakeholders were identified during preparation of the REFA. These included State agencies, local councils, landowners and utility companies.

Consultation activities included:

- Sharing the REFA and specialist studies online during the consultation period (North West Treatment Hub | Sydney Water Talk) from Monday 17 June to Tuesday 9 July 2024.
- Delivering a community newsletter to about 13,000 properties in the NWTH catchment area between the 17 and 24 June, 2024. The newsletter included:
    - proposal overview
    - REFA and proposed change overview
    - a diagram showing the carbonisation technology
    - 'how can I have my say' information.
- Delivery of 117 personalised letters to landowners previously directly impacted by the sludge transfer system. The letter confirmed that the pipeline would no longer be constructed as part of this proposal and provided a copy of the community newsletter.
- Door knocking of 112 properties in Vineyard, surrounding the Riverstone WRRF. Calling cards were left with residents when doors were not answered.
- Providing a Sydney Water Talk webpage to the public, which was also available via a QR code provided in personalised letters and the community newsletter. The website included:
    - an overview of the project
    - a map of the proposed pipeline, including the existing pipeline
    - the project timeline
    - a newsfeed
    - the REFA and specialist studies which were available to view online and download (80 downloads of the REFA were recorded during the public display period)
    - the community newsletter which was available to view online and download

- a subscription service
- contact details
- frequently asked questions.

- Providing a project email (NorthWestTreatmentHub@sydneywater.com.au). An initial response to email enquiries was provided within 48 hours, with further information provided, as required.
- Providing a 1800 (1800 560 682) number which was monitored by a member of the community engagement team.
- Hosting a community information session at Rouse Hill Bunnings on Saturday 29th June, 9.30am to 2.30pm. The community information session included conversation with about 18 individuals. Information materials included:
  - printed copies of community newsletter and fact sheet
  - printed maps of the two WRRFs
  - QR code to the Sydney Water talk page detailed above.
- A community member meeting on 2 July 2024 (in-lieu of an online community session which only had 1 registration).
- Stakeholder correspondence sent to EPA, DCCEEW (BCS), Endeavour Energy, NSW Fire, NSW Health, TfNSW and Transgrid.
- Meeting with the following stakeholders to present information on the proposed change:
  - NSW Health on 20 May 2024
  - The Hills Shire Council on 20 June 2024
  - Hawkesbury City Council on 13 June 2024
  - EPA on 14 July 2023, 26 March 2024 and 08 August 2024 (post consultation period)
  - BCS on 19 July 2024 (post consultation period).

2.2 Submissions

Submissions received during the consultation period included:

- one email submission from a community member
- two letter submissions from State agencies – BCS and EPA.

Comments raised by the submissions are detailed in Section 3 of this report.

3 Submissions

This report responds to three submissions received. The submissions are provided in full in Appendix A and are considered below. The text from these submissions have been reproduced exactly as it was provided to Sydney Water. In accordance with the *Privacy and Personal Information Protection Act 1998*, the email addresses have been omitted.

3.1 Community member

Community member submission

My feedback on the north west treatment hub is that I support the project as it will increase efficiency of the wastewater treatment system by utilising carbonisation. This will generate a product which has additional uses in keeping with reduce, reuse, recycle. Avoiding building giant pipeline will be good as it will have a much larger impact on the community constructing a pipeline.

The other upgrades will increase wastewater treatment capacity which is very much needed in these areas of high growth and new housing targets. The upgrades will also be beneficial from an environmental standpoint by reducing noise and odour impacts.

My only slight negative is the site diagrams in the leaflet are a little confusing as the construction footprint could imply you are building on the entire thing. In addition to the 'work site' labelling I presume that is existing? Better labelling or a hybrid overlay might be better.

This submission supports the proposed change; specifically, the carbonisation technology, avoiding building the sludge pipeline, increasing wastewater capacity and reducing odour and noise impacts. It also provides feedback that the community newsletter diagram was confusing (see Figure 3-1 below). The 'proposed construction footprint' label more correctly refers to the current operational area of the WRRF and the 'work sites' label refers to where construction will take place as part of this proposal. This feedback is useful and will be considered in the development of any future newsletters.

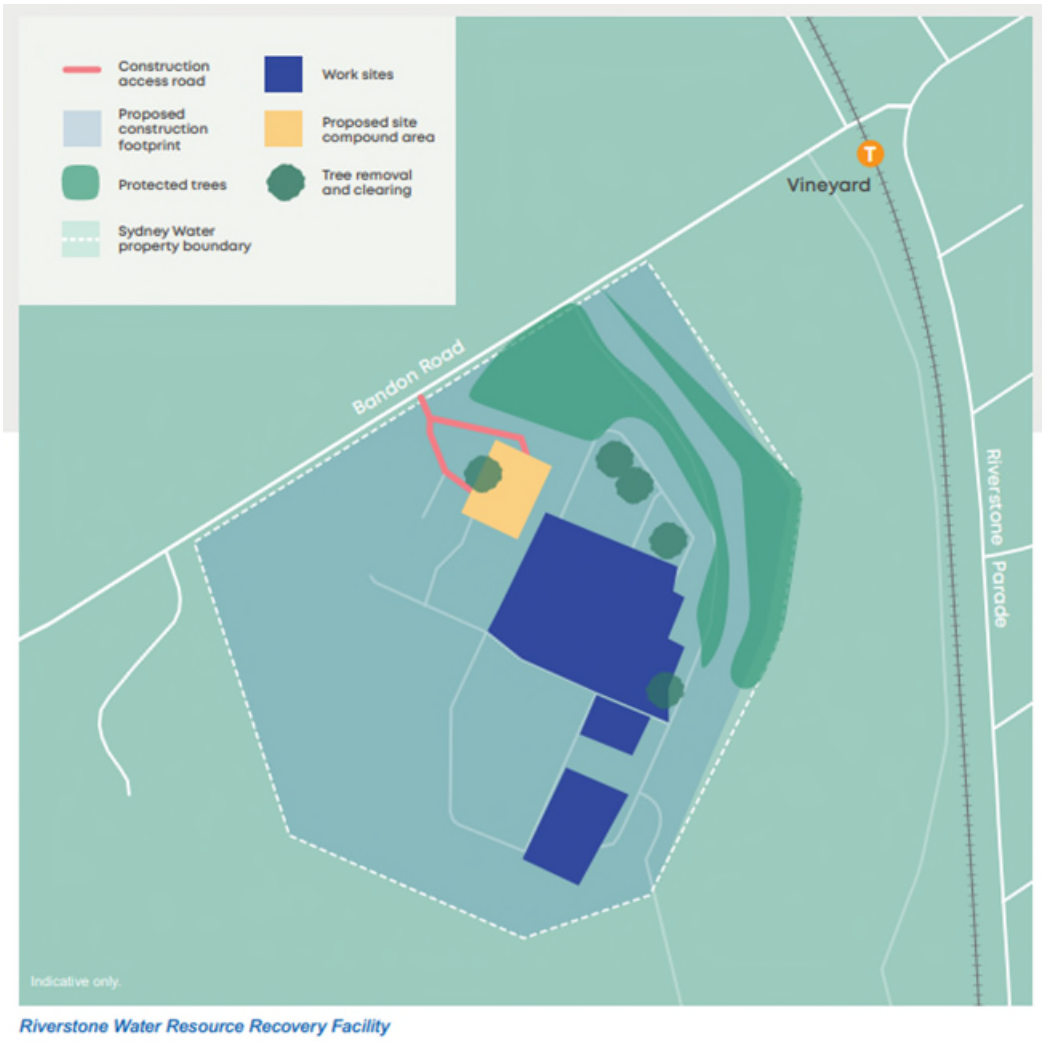

Figure 3-1 extract from NWTH community newsletter, June 2024

3.2 Department of Climate Change, Energy, the Environment and Water – Biodiversity, Conservation and Science (BCS)

As detailed above, a meeting was held in July 2024 with BCS to talk through Sydney Water responses. Table 3-1 summarises the comments raised in the submission from BCS and details how the comments have been addressed as agreed in the meeting.

Table 3-1 Comments raised in the BCS submission and how they are addressed

Element	Comments raised	Sydney Water Response
Figure requests	BCS understands that the new compound area and access road is located outside the boundary of the NWGA and it is not subject to the GC Certification and as such	For any future environmental approval figures created for this project a note will

Element	Comments raised	Sydney Water Response
	requires assessment under the BC Act and/or the EPBC Act (Flora and Fauna Assessment addendum, page 19). It would be helpful if the REFA included these details and the figures in the REFA were amended to show this. With the proposed removal of the sludge transfer mains, the REFA indicates the vegetation clearing has been reduced to 1.3ha. The inclusion of a scaled plan/aerial photograph in the REFA which overlays the location of the proposed deletion of the sludge pipeline, native vegetation now to be retained, the NWGA/area outside the NWGA, certified land and non-certified land would be useful.	be added if the figure is located inside or outside the NWGC. If requested, a figure of the vegetation removal approved from the project scope can be provided.
Seed collections of native plants to be removed	Prior to the removal of any native vegetation, seed from the native plants (trees, shrubs and groundcover species) approved for removal is collected and propagated and used in the project plantings and a safeguard is included in the REFA regarding this.	A safeguard on page 47 of the REFA states that vegetation will be offset "*in accordance with the Sydney Water Biodiversity Offset Guideline*". Sydney Water Biodiversity Offset Guide states that contractors should follow the SWEMS0025.11 Managing Native Re-vegetation for Construction Projects Guide, which includes seed collection and propagation wherever possible.
Translocation of juvenile plants	Prior to any clearing of native vegetation, juvenile native vegetation that is to be cleared is translocated and stored for reuse at appropriate locations. The translocated plants should be maintained until established (i.e., weeding and watering).	As above, SWEMS0025.11 allows for translocation of plants were possible.
Reuse of removed trees, bush rock or logs	BCS supports the proposal to retain dead tree trunks, bush rock or logs and salvaging and reusing native trees that are removed by this project including tree trunks and root balls and these are used to enhance habitat in suitable locations including retained bushland, riparian corridors such as the nearby Second Ponds Creek riparian	Sydney Water's Biodiversity Offset Guide requires consultation with external stakeholders such as council. If the project is unable to reuse all removed native trees, Sydney Water will consult with external stakeholders, such as those recommended by BCS, to determine if the removed trees can be re-used by others.

Element	Comments raised	Sydney Water Response
	corridor, and other bushland owned by Sydney Water. BCS recommends that the REFA specify that logs greater or equal to 25-30cm in diameter and 2m in length be retained or reused. Logs of 2m length are recommended as this significantly reduces costs in transporting and installing. The 25-30cm diameter of the log is important because it impacts thermal qualities and longevity of the material. If the project is unable to reuse all removed native trees, BCS recommends Sydney Water consults with local community restoration/rehabilitation groups, Landcare groups, and relevant public authorities including NSW National Parks and Wildlife Service, local councils, and Greater Sydney LLS to determine if the removed trees can be re-used by others.	SWEMS0025.11 states that were possible the contractor should stockpile larger logs/branches/hollow bearing branches for later re-use as a valuable source of habitat. Specialist input from the bush regenerator will be obtained to determine the best size and location for hollows and habitat creation.
	BCS notes the REFA includes new safeguards during construction for the offsetting of removed trees. To do so, during construction data will need to be collected on the total number of trees to be removed by the project, the tree species, and whether the trees to be removed are exotic, invasive, non-local natives or local native species. It is recommended a vegetation clearing report is prepared by a suitably qualified ecologist to capture this data. Further, BCS recommends: • the offset planting uses a diversity of local provenance native species from the relevant native vegetation community (or communities) that occurs, or once occurred at the offset location • the local native provenance tree species to be planted are advanced and established local native trees	A safeguard on page 47 of the REFA states "*monitor and record vegetation clearance and provide to Sydney Water in accordance with SWEMS0015.26.*" SWEMS0015.26 includes the requirement to record: • total number of trees or total PCT area removed • the tree species or PCT cleared • if the vegetation is exotic, invasive, non-local natives or local native species. SWEMS25.11 states planting should be sourced locally, such as from local council nurseries or bush regenerators. Specialist input from the bush regenerator will be obtained to determine which re-vegetation option is most suitable for the project. As per REFA safeguards, maintenance of any restored areas will occur for 2 years to

Element	Comments raised	Sydney Water Response
	with a minimum plant container pot size of 100 litres, or greater for local native tree species which are commercially available. Other local native tree species which are not commercially available may be sourced as juvenile sized trees or pre-grown from provenance seed • enough area/space is provided to allow the trees to grow to maturity.	ensure the areas are stabilised, native plant species establish, and weeds are managed.
Priority weeds	The REFA proposes to manage biosecurity during Construction in accordance with the *Biosecurity Act 2015* and contemporary bush regeneration practices and that during Operation maintenance will be undertaken on any restored area for 2 years to ensure weeds are managed. However, based on Section 3.5 of the REFA the construction compound at 7 Money Close will be in place for up to 5 years. BCS considers it is important that these priority weeds are removed, controlled and eradicated for the duration of operation and not limited to 2 years, and recommends that the REFA be updated to reflect this.	A safeguard on page 48 of the REFA states "*maintenance of any restored areas will occur for 2 years to ensure the areas are stabilised, native plant species establish and weeds are managed".* Priority weeds will be managed at 7 Money Close for 5 years whilst Rouse Hill is in the construction stage. Once the compound site has been decommissioned, all restored areas will then be managed for an additional 2 years as per this operation safeguard.

3.3 Environment Protection Authority (EPA)

The EPA provided an initial submission letter on 12 July 2024. Table 3-1 summarises the comments raised in the initial letter from EPA and our response.

Table 3-2 Comments raised in the EPA submission and how they are addressed

EPA comments – letter dated 12 July 2024	Sydney Water response
The REFA and AQIA document at least two possible equipment configurations and suppliers for the proposed biosolids carbonisation facility as well as referencing the biosolids processing plant configuration at the Loganholme Wastewater Treatment Plant in Queensland. It is not clear to the EPA which plant/equipment configuration is being	Sydney Water is currently in the detailed design phase of the project. [redacted] [redacted] data has been adopted in the model where directly applicable to the installation proposed.

EPA comments – letter dated 12 July 2024	Sydney Water response
considered for construction and operation at Riverstone. The AQIA has primarily utilised [redacted] as its source of information and emissions data. However, data and information are also sourced from [redacted] The HHERA assessment has addressed risks to human health and the environment (from air emissions) from the proposed facility as "assessed and modelled in the AQIA". Before the EPA can provide detailed comments on both the AQIA and the HHERA, modelling and possible impacts on human health and the environment, the EPA requires the selection of supplier to be finalised and the appropriate emissions data and emission factors be utilised in the AQIA and HHERA.	However, the modelled input values have been adjusted as required to accommodate the following aspects: • variability of feed stock characteristics • data limitations • specific operations proposed and competing objectives of compounds removal (e.g. operating at a higher temperature is required to remove some compounds, potentially compromising NOx removal) • [redacted] will install newer technology at Riverstone WRRF. This will potentially reduce concentration levels of some parameters further than predicted in the data. • ensuring compliance with POEO limits (where supplier data shows higher values) [redacted]. Sydney Water provided the EPA further air quality modelling input justification reflecting the above aspects. The EPA confirmed that the additional information provided was sufficient and are satisfied that the assessment is robust. However, further information will be required as part of the Licence Variation Application (LVA) submission to determine the licence conditions. In some cases the modelled values are considered conservative to assess the worst case scenario from an environmental impact assessment perspective. We are optimistic we can achieve better than predicted values (model inputs) in some cases but this requires actual monitoring data during process proving/ performance testing (e.g. Total Suspended Particulate (TSP) and heavy metals). If further relevant input data is obtained (from external sources) Sydney Water will re-run the model to confirm modelling results and to support the LVA.
Justification of data and emission factors to be used in the AQIA must be clearly documented, not only focusing on compliance with the Protection of the	As detailed above, Sydney Water provided the EPA further air quality modelling input justification. The

EPA comments – letter dated 12 July 2024	Sydney Water response
Environment Operations (Clean Air) Regulation 2022 for emissions such as particulates, metals and polyfluoroalkyl substances, but also on the best capabilities/performance of the plant and equipment selected.	EPA confirmed that the additional information provided was sufficient at this stage.
A licence variation for Environment Protection Licence (EPL) No. 1796 for the Riverstone WRRF will be required before the proposed carbonisation facility could operate. This is likely to include emission limits derived from the AQIA and the Regulation, air discharge points, air emissions monitoring, additional fee based scheduled activities, and requirements for the management of water, waste and noise control associated with the plant.	Noted. As detailed in Section 3.1 of the REFA, Sydney Water will request a licence variation to our existing EPL1796 at Riverstone WRRF from EPA prior to operation. We will ensure the carbonisation facility is operated to meet specified emissions standards set out in the EPL1796, as well as any air monitoring or other licence requirements. This will include air quality analysers on the equipment for continuous emissions monitoring, as well as sampling ports for the laboratory analysis of gas from vent shafts.
Regulation of Biochar – thermally processed biosolids (Refer to Appendix A for full text provided by EPA, an extract is provided below) A resource recovery order and exemption issued by the EPA will be required to enable the supply and use of biochar produced from the carbonisation facility for most if not all the potential reuse options currently being investigated by Sydney Water as outlined in Section 6.7 of the REFA. The EPA strongly encourages Sydney Water to seek a new resource recovery order and exemption for the reuse of biochar.	Noted. As detailed in Section 5.3 of the REFA, Sydney Water will continue to work with EPA to ensure the necessary Resource Recovery Order (RRO) and/ or Resource Recovery Exemption (RRE) are in place prior to any off-site reuse.
Potential transfer of contaminants (Refer to Appendix A for full text provided by EPA, an extract is provided below) The EPA is aware that technology changes to the biosolids processes at treatment plants can affect the mass transfer from the biosolids stream to the liquid effluent stream, which recently occurred at the St Marys WRRF where copper concentrations were impacted by process changes, for example. The EPA requests that as part of an updated REFA, Sydney Water assesses the potential for	Water quality impacts have been assessed in Section 6.3.1 of the approved REF. The biosolids processing change proposed in the REFA are not expected to alter the liquid effluent stream and therefore we have not completed further water quality assessment. The EPA noted this response.

EPA comments – letter dated 12 July 2024	Sydney Water response
mass transfer from the biosolids stream to the liquids stream. If a potential for mass transfer is established, the EPA requests that the REFA is further updated to quantify any potential increases and decreases in liquid stream pollutant concentrations as a result of the mass transfer, with a focus on the pollutants listed at L3.4 of EPL 1796. Where increases in liquid stream pollutant concentrations are predicted or possible, the potential environmental impact of those increases must be assessed via a Water Quality Impact Assessment as part of the REFA. This WQIA must include (but is not limited to) an assessment of whether all reasonable and practical measures are being taken to prevent, control, abate and mitigate the increased pollutant concentration(s) and any subsequent environmental impacts.	
Noise (Refer to Appendix A for full text provided by EPA, an extract is provided below) The EPA expects that Sydney Water implements all feasible and reasonable noise and vibration mitigation and management measures during construction works, to minimise noise and vibration impacts on nearby sensitive receivers. This may involve implementing additional noise mitigation measures as may be necessary throughout the life of the construction works to minimise exceedances of Noise Management Levels (NMLs) at nearby noise sensitive receivers.	As detailed in section 6.4 of the REFA, Sydney Water will implement all feasible and reasonable noise and vibration mitigation and management measures during construction. This is covered in the following safeguard from page 59 of the REFA *"reasonable and feasible noise safeguards should be implemented to mitigate noise impacts and include selection of low-noise construction equipment or quieter and less vibration emitting construction methods (e.g. rubber wheeled instead of steel tracked plant)".* As detailed in the REFA, construction will be undertaken during standard business hours with the exception of works that have obtained out of hours works permit or emergency works.

The above responses were provided to the EPA and a meeting was held on 8 August 2024. A second letter was provided from EPA on 19 August 2024 and is included in Appendix A. The EPA advised that they cannot provide a licensing framework and specific licence air discharge limits at this stage. Further information would be needed during the development the LVA.

Sydney Water acknowledges that the LVA submission is likely to require:

- a review and, if required:

- an update to the air dispersion model inputs based on final detailed design of the carbonisation plant and thermal oxidiser,
- re-running the air dispersion model and updating the AQIA and Human Health Risk Assessments accordingly.

- detailed Commissioning Plan, Air Quality Monitoring Plan and Proof of Performance Plan (including air quality testing).

The EPA confirmed that the additional information provided by Sydney Water on the carbonisation equipment and model inputs is sufficient at this stage. They are satisfied that the assessment is robust enough for the REFA.

4 Conclusion and recommendation

Sydney Water has considered and responded to the comments raised in the submissions. The proposal as described in the REFA (Section 3) has not changed since public display or as a result of the submissions. The proposed change is justified on the basis that:

- It is required to support upgrades at Rouse Hill WRRF and Riverstone WRRF to facilitate growth within the NWTH area and improve treatment processes to meet future regulatory requirements.
- The environmental impacts have been assessed and a significant impact to the environment is unlikely.
- The proposal has been assessed appropriately against the relevant legislation and an EIS is not required.
- No additional legislative requirements to consult with council or any other external stakeholders under TISEPP are required.

Potential impacts can be mitigated through implementation of the measures outlined in the Approved REF and REFA.

For the purposes of Division 5.1 of the EP&A Act, it is recommended that the proposed change proceed, as described in the REFA.

Prepared by:	Reviewed by:	Endorsed by:	Endorsed by:	Approved by:
[redacted]				
Sarah Mitchell Senior Environmental Scientist Date: 19/08/2024	Sally Spedding Environment Assessment Team Manager Date: 19/08/2024	Reza Kharaghani Senior Project Manager Date: 19/08/2024	Murray Johnson Senior Manager Environment and Heritage Services, Date: 20/08/2024	Paul Plowman Executive General Manager, Water and Environmental Services Date: 21/08/2024

Appendices

Appendix A - Submissions

-----Original Message-----
From: Tori [redacted]
Sent: Sunday, June 23, 2024 11:41 AM
To: North West Treatment Hub <NorthWestTreatmentHub@sydneywater.com.au>
Subject: [External] North West Treatment Hub

CAUTION: This email originated from outside the organisation. Do not click links or open attachments unless you recognise the sender and know the content is safe.

Hi

My feedback on the north west treatment hub is that I support the project as it will increase efficiency of the wastewater treatment system by utilising carbonisation. This will generate a product which has additional uses in keeping with reduce, reuse, recycle. Avoiding building giant pipeline will be good as it will have a much larger impact on the community constructing a pipeline.

The other upgrades will increase wastewater treatment capacity which is very much needed in these areas of high growth and new housing targets. The upgrades will also be beneficial from an environmental standpoint by reducing noise and odour impacts.

My only slight negative is the site diagrams in the leaflet are a little confusing as the construction footprint could imply you are building on the entire thing. In addition to the 'work site' labelling I presume that is existing? Better labelling or a hybrid overlay might be better.

Thanks [redacted]

Department of Climate Change, Energy, the Environment and Water

DOC24/490275

Ms Sally Spedding
Lead Environmental Scientist
Sydney Water
PARRAMATTA NSW 2150

By email: [redacted]

5 July 2024

Subject: BCS response on Sydney Water REF Addendum for North West Treatment Hub upgrades (Growth Package) Biosolids Processing and Construction Compound

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Dear Ms Spedding

Thank you for your email of 19 June 2024 requesting comments on the Sydney Water Review of Environmental Factors Addendum (REFA) for the above project.

The Biodiversity, Conservation and Science (BCS) group understands that Sydney Water proposes a number of changes to the North West Treatment Hub (NWTH) upgrade project in the REFA. BCS further understands that Sydney Water has determined that the proposed changes do not require development consent, are not classified as state significant infrastructure, and has concluded that the proposed changes are unlikely to have a significant impact on the environment.

BCS has reviewed the REFA and provides its comments and recommendations at Attachment A.

If you have any queries, please contact Dana Alderson, Senior Project Officer Planning at [redacted]

Yours sincerely

[redacted]

Susan Harrison
Senior Team Leader Planning
Greater Sydney
Regional Delivery
Biodiversity, Conservation and Science

Attachment A

BCS advice on Sydney Water REF Addendum for North West Treatment Hub upgrade (Growth Package) Biosolids Processing and Construction Compound

BCS has reviewed the following documents for the above project:

- North West Treatment Hub upgrade Review of Environmental Factors Addendum– (Growth Package) Biosolids Processing and Construction Compound – June 2024 (REFA)
- Appendix C – Flora and Fauna Assessment addendum for the North West Treatment Hub – 20 May 2024 (Flora and Fauna Assessment addendum).

Biodiversity

BCS understands that in relation to biodiversity, the project changes:

- at the Riverstone Water Resource Recovery Facility (WRRF) will not alter the scale of impacts to biodiversity at this location
- expand the construction footprint at Rouse Hill WRRF to include an additional temporary compound site at 7 Money Close, Rouse Hill and a new temporary access road which will impact 0.45 ha of vegetation including 0.11 ha of TECs listed under the NSW *Biodiversity Conservation Act 2016* (BC Act) and Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act)
- remove the sludge transfer systems from the scope of the project which will substantially reduce native vegetation removal (Table 1.1 in REFA).

Riverstone WRRF

The Riverstone WRRF is located wholly within the North West Growth Area (NWGA) and is subject to the Growth Centres Biodiversity Certification (GC Certification). Native vegetation impacts at the Riverstone WRRF remain the same as the original approved REF (Appendix A, page 97) with 0.85ha of vegetation to be removed on certified land. BCS understands that non-certified Existing Native Vegetation (ENV) will not be removed as a result of the project.

BCS advises that should during delivery of the project result in impacts to ENV, offsets will be required pursuant to the Relevant Biodiversity Measures of the GC Certification.

Rouse Hill WRRF

The REFA indicates a vacant property at 7 Money Close, Rouse Hill, adjacent to the WRRF, was selected for the construction compound due to insufficient area within the Rouse Hill WRRF operational site and that this avoids the need to clear a large area of native vegetation on Sydney Water owned land to the north of the WRRF site for a construction compound (section 2.2, page 8). BCS supports this revised approach.

BCS understands that the new compound area and access road is located outside the boundary of the NWGA and it is not subject to the GC Certification and as such requires assessment under the BC Act and/or the EPBC Act (Flora and Fauna Assessment addendum, page 19). It would be helpful if the REFA included these details and the figures in the REFA were amended to show this.

Sludge transfer

With the proposed removal of the sludge transfer mains, the REFA indicates the vegetation clearing has been reduced to 1.3ha. The inclusion of a scaled plan/aerial photograph in the REFA which overlays the location of the proposed deletion of the sludge pipeline, native vegetation now to be retained, the NWGA/area outside the NWGA, certified land and non-certified land would be useful.

<u>Mitigation measures/safeguards</u>

BCS recommend that in addition to the 'Sydney Water standard safeguards' in Table 11 of the Flora and Fauna Assessment addendum (pp. 20-22), the following be included in the finalisation of the REFA:

Element	BCS recommendation
Seed collection from native plants to be removed	Prior to the removal of any native vegetation, seed from the native plants (trees, shrubs and groundcover species) approved for removal is collected and propagated and used in the project plantings and a safeguard is included in the REFA regarding this.
Translocation of juvenile plants	Prior to any clearing of native vegetation, juvenile native vegetation that is to be cleared is translocated and stored for reuse at appropriate locations. The translocated plants should be maintained until established (i.e., weeding and watering).
Reuse of removed trees, bush rock or logs	BCS supports the proposal to retain dead tree trunks, bush rock or logs and salvaging and reusing native trees that are removed by this project including tree trunks and root balls and these are used to enhance habitat in suitable locations including retained bushland, riparian corridors such as the nearby Second Ponds Creek riparian corridor, and other bushland owned by Sydney Water. BCS recommends that the REFA specify that logs greater or equal to 25-30cm in diameter and 2m in length be retained or reused. Logs of 2m length are recommended as this significantly reduces costs in transporting and installing. The 25-30cm diameter of the log is important because it impacts thermal qualities and longevity of the material. If the project is unable to reuse all removed native trees, BCS recommends Sydney Water consults with local community restoration/rehabilitation groups, Landcare groups, and relevant public authorities including NSW National Parks and Wildlife Service, local councils, and Greater Sydney LLS to determine if the removed trees can be re-used by others.
Offsetting of removed trees	BCS notes the REFA includes new safeguards during construction for the offsetting of removed trees. To do so, during construction data will need to be collected on the total number of trees to be removed by the project, the tree species, and whether the trees to be removed are exotic, invasive, non-local natives or local native species. It is recommended a vegetation clearing report is prepared by a suitably qualified ecologist to capture this data. Further, BCS recommends: • the offset planting uses a diversity of local provenance native species from the relevant native vegetation community (or communities) that occurs, or once occurred at the offset location • the local native provenance tree species to be planted are advanced and established local native trees with a minimum plant container pot size of 100 litres, or greater for local native tree species which are commercially available. Other local native tree species which are not commercially available may be sourced as juvenile sized trees or pre-grown from provenance seed • enough area/space is provided to allow the trees to grow to maturity.
Priority weeds	The REFA proposes to manage biosecurity during Construction in accordance with the *Biosecurity Act 2015* and contemporary bush regeneration practices and that during Operation maintenance will be undertaken on any restored area for 2 years to ensure weeds are managed. However, based on Section 3.5 of the REFA the construction compound at 7 Money Close will be in place for up to 5 years. BCS considers it is important that these priority weeds are removed, controlled and eradicated for the duration of operation and not limited to 2 years, and recommends that the REFA be updated to reflect this.

Flooding

Although Appendix B to the REFA states that the proposed works are not on flood-prone land, a preliminary assessment by BCS indicates that the Riverstone WRRF is susceptible to flooding during rare events, as identified in the 2024 *Hawkesbury-Nepean River Flood Study* conducted by the NSW Reconstruction Authority, available at: Hawkesbury-Nepean River Flood Study 2024 - Flood Projects - NSW Flood Data Portal.

BCS recommend considering this information in the planning process.

END OF SUBMISSION

DOC24/528126

Ms Gill Fowler
Environment & Sustainability Manager – Major Projects
Sydney Water Corporation
2 Parramatta Square
PARRAMATTA NSW 2150

Email: [redacted]

Dear Gill,

Thank you for consulting with the NSW Environment Protection Authority (EPA) on the "Northwest Treatment Hub - Review of Environmental Factors Addendum" for a proposed biosolids processing and construction compound at Sydney Water's Riverstone Water Resource Recovery Facility (WRRF).

The EPA understands that Sydney Water is both the proponent and determining authority for this project amendment which is being assessed under Division 5.1 of the *Environmental Planning and Assessment Act 1979* (EP&A Act).

The EPA has reviewed the following reports:

1 *Review of Environmental Factors Addendum North West Treatment Hub Upgrades (Growth Package) – Biosolids Processing and Construction Compound* (Sydney Water, June 2024) (REFA)

2 *North West Treatment Hub Plant Upgrades Growth Package – Riverstone WRRF Air Quality Impact Assessment* (WSP, June 2024) (AQIA)

3 *North West Treatment Hub Plant Upgrades – Human Health and Ecological Risk Assessment* (enRiskS, 11 June 2024) (HHERA)

4 *North West Treatment Hub Noise and Vibration Assessment* (AECOM, 9 May 2024)

and has the following comments in Attachment A to this letter. The EPA would be happy to meet with Sydney Water to discuss these comments as needed.

If you have any questions about this matter, please contact me on (02) 9995 5620 or [redacted]

Yours sincerely

[redacted] 12 July 2024
MATTHEW HART
Unit Head Operations

Attachment A

Air Quality

The REFA and AQIA document at least two possible equipment configurations and suppliers for the proposed biosolids carbonisation facility as well as referencing the biosolids processing plant configuration at the Loganholme Wastewater Treatment Plant in Queensland. It is not clear to the EPA which plant/equipment configuration is being considered for construction and operation at Riverstone.

The AQIA has primarily utilised [redacted] as its source of information and emissions data. However, data and information are also sourced from [redacted] The HHERA assessment has addressed risks to human health and the environment (from air emissions) from the proposed facility as "assessed and modelled in the AQIA".

Before the EPA can provide detailed comments on both the AQIA and the HHERA, modelling and possible impacts on human health and the environment, the EPA requires the selection of supplier to be finalised and the appropriate emissions data and emission factors be utilised in the AQIA and HHERA. Justification of data and emission factors to be used in the AQIA must be clearly documented, not only focussing on compliance with the Protection of the Environment Operations (Clean Air) Regulation 2022 for emissions such as particulates, metals and polyfluoroalkyl substances, but also on the best capabilities/performance of the plant and equipment selected.

A licence variation for Environment Protection Licence (EPL) No. 1796 for the Riverstone WRRF will be required before the proposed carbonisation facility could operate. This is likely to include emission limits derived from the AQIA and the Regulation, air discharge points, air emissions monitoring, additional fee based scheduled activities, and requirements for the management of water, waste and noise control associated with the plant.

Regulation of Biochar – thermally processed biosolids

The EPA's *Environmental Guidelines: Use and Disposal of Biosolids Products* (1997) and the biosolids order and exemption permit the land application of biosolids subject to specified contaminant and stability limits. The EPA is in the process of finalising a regulatory review into the management of biosolids in NSW, with a particular focus on various emerging contaminants present in biosolids. It is expected that this review will provide further guidance into how to manage contaminants in biosolids and products derived from biosolids such as biochar.

The current Biosolids Guidelines do not consider in detail biosolids-derived products such as biochar as they were published in 1997, before such technologies existed at a commercial / technical scale. The EPA's view is that to produce biosolids-derived biochar, the biosolids must undergo an energy intensive thermal treatment process of drying and gasification which is anticipated to result in a completely different waste product to conventional biosolids, both physically, chemically and biologically. The EPA's Biosolids Guidelines do not include sufficient safeguards for the likely enrichment of key environmental contaminants associated with the biochar product, including elevated heavy metals and the properties that biochar may present to the receiving land application sites. Sydney Water is advised not to rely on the biosolids guidelines for reuse of biochar derived from biosolids.

The resource recovery framework enables the EPA to exempt the land application of waste from regulatory requirements including, but not limited to, the need to hold an environment protection licence for the activity of waste disposal (application to land) and payment of the waste levy. The resource recovery orders and exemptions set out specific requirements that all suppliers and consumers of waste must meet in order to activate the exemption from these regulatory requirements. The EPA has published approximately 40 resource recovery orders and exemptions on the EPA website for commonly recovered and reused wastes.

Where an existing order and exemption does not exist for the proposed reuse of waste, you can apply for a specific resource recovery order and exemption for your proposed reuse of waste. Further information on how to apply for a specific resource recovery order and exemption can be found on the Apply for an order and exemption website. Applicants that wish to apply for a resource recovery order and exemption for the land application of a waste must follow the Resource Recovery Guidelines (Guidelines for fill material, Guidelines for fertiliser or soil amendment) and demonstrate that the waste material (1) is fit for purpose in its proposed use (i.e. demonstration that it provides a benefit), (2) poses minimal risk of harm to the environment or human health, and (3) is not intended to be land applied as a means of disposal (i.e. a landfilling activity).

Applicants are strongly encouraged to discuss their specific reuse proposal with the EPA prior to commencing work on a resource recovery order and exemption application. Discussions with the EPA prior to submission of an application can assist via provision of informal feedback on the proposal, advice on sampling and testing requirements, and whether a trial may be necessary to generate the evidence needed to support a resource recovery order and exemption.

A resource recovery order and exemption issued by the EPA will be required to enable the supply and use of biochar produced from the carbonisation facility for most if not all the potential reuse options currently being investigated by Sydney Water as outlined in Section 6.7 of the REFA. The EPA strongly encourages Sydney Water to seek a new resource recovery order and exemption for the reuse of biochar.

Potential transfer of contaminants

The EPA is aware that technology changes to the biosolids processes at treatment plants can affect the mass transfer from the biosolids stream to the liquid effluent stream, which recently occurred at the St Marys WRRF where copper concentrations were impacted by process changes, for example.

The EPA requests that as part of an updated REFA, Sydney Water assesses the potential for mass transfer from the biosolids stream to the liquids stream. If a potential for mass transfer is established, the EPA requests that the REFA is further updated to quantify any potential increases and decreases in liquid stream pollutant concentrations as a result of the mass transfer, with a focus on the pollutants listed at L3.4 of EPL 1796.

Where increases in liquid stream pollutant concentrations are predicted or possible, the potential environmental impact of those increases must be assessed via a Water Quality Impact Assessment as part of the REFA. This WQIA must include (but is not limited to) an assessment of whether all reasonable and practical measures are being taken to prevent, control, abate and mitigate the increased pollutant concentration(s) and any subsequent environmental impacts.

The EPA considers this information is required under Sydney Water's requirement to examine and take into account to the fullest extent possible all matters affecting or likely to affect the environment (including direct, indirect and cumulative impacts) as part of the REFA, in accordance with Division 5.1, Section 5.5 of the EP&A Act. Furthermore, this information will also be required under section 45 of the *Protection of the Environment Operations Act 1997* for any amendments of concentration and/or load limits on EPL 1796 as a result of the proposal.

Should the updated REFA indicate that the proposal will significantly affect the environment, an Environmental Impact Statement (EIS) is required to be prepared. Guidance is available in the document *Guidelines for Division 5.1 assessment (Department of Planning and Environment, 2022)* in relation to the standards required for Division 5.1 assessments generally and the thresholds for an EIS in comparison to an REF. This document is available at: https://www.planning.nsw.gov.au/sites/default/files/2023-02/guidelines-for-division-51-assessments.pdf

Noise

The EPA expects that Sydney Water implements all feasible and reasonable noise and vibration mitigation and management measures during construction works, to minimise noise and vibration impacts on nearby sensitive receivers. This may involve implementing additional noise mitigation measures as may be necessary throughout the life of the construction works to minimise exceedances of Noise Management Levels (NMLs) at nearby noise sensitive receivers.

As no works are expected outside of standard hours and no out of hours noise impacts are modelled or detailed in the REFA, the EPA therefore considers noise generating construction works would be restricted to the following standard hours:

a) 7:00am and 6:00pm Monday to Friday;
b) 8:00am and 1:00pm Saturday; and
c) not to be undertaken on Sundays or Public Holidays.

With the following exception for low noise impact works:

a) Where additional environmental assessment is undertaken, including a strong justification for the works, and
    a. The works do not cause LAeq (15 minute) noise levels greater than 5dB above the day, evening and night rating background level (RBL*) as applicable;
    b. LA1 (1 minute) or LAmax noise levels greater than 15dB above the night RBL for night works;
    c. continuous or impulsive vibration values greater than those for human exposure to vibration, set out for residences in Table 2.2 in “Environmental Noise Management - Assessing Vibration: a technical guideline” (DEC, 2006); and
    d. intermittent vibration values greater than those for human exposure to vibration, set out for residences in Table 2.4 in “Environmental Noise Management - Assessing Vibration: a technical guideline” (DEC, 2006).

* RBLs as per the *North West Treatment Hub Noise and Vibration Assessment* (AECOM, 9 May 2024).

And the following exception for exceptional circumstances:

    a. emergency works are required to avoid the loss of lives or property, or to prevent material harm to the environment.

Our Ref: DOC24/672735

Gill Fowler
Environment & Sustainability Manager – Major Projects
Sydney Water Corporation
2 Parramatta Square
PARRAMATTA NSW 2150

By email: [redacted]

19 August 2024

Dear Ms Fowler,

North West Treatment Hub – Proposed biosolids carbonisation facility – Riverstone WRRF

Thank you for the continuing consultation with the EPA on the above proposal. Since the EPA's last letter on this matter dated 12 July 2024, we have received further information about the proposal from Sydney Water which addresses some of our queries outlined in that letter.

This includes:

- Email from Gill Fowler dated 12 July 2024 [redacted]
- Email from Gill Fowler dated 6 August 2024 providing a response to the EPA's queries about the proposal in our letter of 12 July 2024 including further justification of the inputs used in the initial air dispersion modelling for the Air Quality Impact Assessment.
- Meeting on 8 August 2024 between Sydney Water and the EPA to discuss details on the equipment supplier, air dispersion modelling inputs, the AQIA and future EPA licensing approaches.
- Email from Gill Fowler dated 8 August 2024 providing notes of the meeting and commitments by Sydney Water.
- Email from Gill Fowler dated 9 August 2024 providing [redacted]

As a result of this meeting and the further information on the proposal provided by Sydney Water the EPA can advise as follows:

1. It is difficult for the EPA to provide full endorsement of the carbonisation proposal, as detailed and justified emissions data has not been provided that is sufficient to allow the EPA to develop specific licence air discharge limits and monitoring. This is typically done in the Part4/SSI planning pathway, where the EPA licensing framework and conditions are set at the time of the planning approval.
2. Sydney Water has acknowledged (email from Gill Fowler 8 August 2024) that its decision to progress through planning approval without agreed EPA licence limits/monitoring conditions is at its own risk.
3. The additional information provided by Sydney Water on the carbonisation equipment and model inputs is sufficient for EPA to be satisfied that the assessment is robust enough for Sydney Water to progress independently with its Part 5 EP&A Act assessment and approval process, however further information will be required as part of any future licence

variation application from Sydney Water in order determine the specific licence conditions under which the proposal would operate. This will likely include:

- reviewing and updating the air dispersion model inputs based on final detailed design of the carbonisation plant and thermal oxidiser,
- re-running the air dispersion model and updating the AQIA and Human Health Risk Assessments accordingly,
- providing to the EPA a detailed Commissioning Plan, Air Quality Monitoring Plan and Proof of Performance Plan (including air quality testing).

If you have questions regarding the above, please contact Stuart Clark at [redacted] or on 9995 6835.

Yours sincerely

[redacted]

JULIAN THOMPSON
Manager Operations