



Decision Report

Thornleigh Inlet/Outlet Main Duplication (October, 2024)

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1 Introduction

The proposal involves duplicating a 1.4 km long DN1800 (1.8 m diameter) inlet/outlet main between WS0148 (Thornleigh Reservoir) and WP0159 (Thornleigh-Wahroonga Water Pumping Station). The proposal is within Hornsby Shire Council local government area, in the suburbs of Westleigh and Thornleigh.

The objectives of the proposal are to:

- improve water quality at Thornleigh Reservoir (primary objective)
- ensure water supply network can handle expected growth (secondary objective)
- increase system resilience by duplicating the inlet/outlet main.

Sydney Water placed the Thornleigh Inlet/Outlet Main Duplication Review of Environmental Factors (REF) on public exhibition from Tuesday 21 November 2023 to Monday 18 December 2023. Community and stakeholders were invited to comment.

This decision report (report):

- outlines our consideration of 11 submissions received during public exhibition
- identifies if proposal changes and/or new mitigation measures are needed to address the comments raised
- recommends whether Sydney Water should proceed with the proposal.

1.1 Summary of the original proposal

The key elements of the original proposal outlined in the REF are described below and shown in Figure 1-1 to Figure 1-3.

The main asset to be installed is 1.4 km DN1800 drinking water pipeline. Additionally, the scope includes connections into the existing network, and establishment and use of temporary ancillary facilities, such as compounds and access roads. Commissioning and testing of the new pipeline will also be required before it is operational.



Figure 1-1 Proposed inlet/outlet main alignment



Figure 1-2 Northern construction footprint for works around the launch shaft



Figure 1-3 Southern construction footprint for works around the retrieval shaft



2 Consultation

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

2.1 Proposal development and REF preparation

Stakeholder and community 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 REF. These included special interest groups and government agencies, such as those to be consulted in accordance with the State Environmental Planning Policy (Transport and Infrastructure) 2021 (TISEPP). Meetings have been held with stakeholders during planning and concept design. An initial meeting was held with Hornsby Shire Council on Tuesday 21 February 2023 during concept design of this proposal. Another meeting was held with council on Thursday 16 November 2023 to brief them on the REF consultation plans, including an overview of the proposal.

Engagement with community members has been ongoing since March 2023, to support site investigations during concept design.

Community consultation activities during the proposal development included:

- Sharing the REF online during the consultation period (www.sydneywatertalk.com.au/thornleighiom) from Tuesday 21 November to Monday 18 December 2023.
- Delivering a community newsletter to 1,007 properties on Tuesday 21 November 2023. The delivery included residents within 500 metres of the existing pipeline, proposed pipeline, reservoir and pumping station. The newsletter included:
 - an overview of the proposal
 - the REF process and document
 - community information details
 - how to respond to the consultation
 - details of Sydney Water's translation service.
- The project team also hand-delivered personalised letters to 49 directly impacted residents on Tuesday 21 November 2023. The letters included a map of the proposed pipeline and impacted properties, and a copy of the community newsletter.
- Calling cards were left with residents when doors were not answered on Tuesday 21 November 2023. The personalised landowner letters were posted in letterboxes alongside calling cards, which included contact details and a note to get in touch with the project team with any questions.

- Providing a [Sydney Water Talk website](#) to the public, which was also available via a QR code provided in resident letters and the community letters. The website was available from Tuesday 21 November 2023. The website included:
 - an overview of the proposal
 - a map of the proposed pipeline, including the existing pipeline
 - a timeline for the proposal
 - a newsfeed
 - the REF which was available to view online and download
 - the community newsletter which was available to view online and download
 - a subscription service
 - contact details
 - frequently asked questions.
- Providing an email (ThornleighIOM@sydneywater.com.au). An initial response to email enquiries was provided within 48 hours, with further information provided, as required.
- Providing a 1800 (1800 242 184) number, which was monitored by a member of the community engagement team.
- Hosting 2 community information sessions at 2 local community venues on 29 November and 5 December 2023, near the proposed pipeline, where members of the project team were available to answer questions.
- Preparing information display panels for the 2 community information sessions, which included:
 - an overview of the proposal
 - benefits of the proposal
 - a timeline for the proposal
 - REF overview
 - construction which included a diagram showing the construction methodology
 - how can I have my say?
- Delivering a presentation to the Sanctuary Gardens Residents Association on Monday 18 December 2023.

2.2 REF public exhibition

The REF was on public exhibition from Tuesday 21 November 2023 to Monday 18 December 2023 on the [Sydney Water Talk website](#). The website was accessed 584 times during the consultation period.



Community information sessions were held during the public exhibition period at:

- Thornleigh Squash and Fitness Club, Wednesday 29 November 2023, 4:30pm to 6:30pm.
- Normanhurst West Public School, Tuesday 5 December 2023, 5pm to 7pm.

About 30 people attended across the 2 community information sessions. Information materials included:

- Printed copies of the REF and community newsletter.
- Printed maps of the pipeline.
- Information display panels described in section 2.1 above.

During these 2 sessions, most community members were interested in seeing the location and depth of the proposed pipeline, and construction areas. Other questions and discussions included:

- impacts on individual properties during construction and operation, including noise and vibration
- environmental impacts from construction
- removal of Sydney Turpentine Ironbark Forest (STIF)
- impacts on scar trees
- avoiding vegetation at the launch shaft
- impact on eucalypt roots
- the location of the reservoir access track alongside Quarter Sessions Road
- Sydney Water's general co-ordination with Hornsby Shire Council on the Westleigh Park project – which is not linked to the proposed pipeline and will not be considered when deciding whether to proceed.

Submissions were sought until Monday 18 December 2023.

2.3 Submissions

Submissions received during the community consultation included:

- 2 calls to the community information line (of which 2 were made during the REF public exhibition period)
- 11 written submissions (by email) from 10 stakeholders (all of which were made during the REF public exhibition period).

The written submissions are provided in full in Appendix A, with responses to submissions provided in Section 3 of this report.



2.4 Future consultation

Consultation with key stakeholders will continue throughout detailed design, construction, and commissioning of the proposal. We will keep the community informed about the progress of our proposal and continue to engage with those who are directly impacted.

The team has considered all written submissions from the REF consultation and has prepared a Decision Report (this document) in response, which will be available at the [Sydney Water Talk website](#).

We will monitor the contractor's performance during proposal delivery. We will continue to inform the community and stakeholders about the proposal start date, where we will be working and when, as well as what to expect during each stage of the proposal's progress.

During construction and operation, all engagement would be performed in accordance with Sydney Water's Complaints Handling Process and Sydney Water's Stakeholder Engagement Policy.

3 Submissions

3.1 Summary of submissions

During public exhibition, 11 written submissions were received:



- 8 from individuals
- 3 from community groups – one from Sanctuary Gardens Residents Committee, 2 from Protecting Your Suburban Environment (PYSE Inc)
- None from state agencies, councils, or other organisations.

Each submission was assigned a number and is listed in Appendix A. The text from each submission has been paraphrased in Section 3.2 Consideration of submissions, below. If a submission raised several comments, only the relevant parts of the submission have been presented for each issue. In accordance with the *Privacy and Personal Information Protection Act 1998*, addresses have been omitted.

Table 3-1 summarises the comments raised in the submissions and details where the comments are addressed.

Table 3-1 Comments raised in the submissions and where they are addressed

Submission #	Comment summary	Reference where comments are addressed in this report
3, 5, 6	Proposal background and need	3.2.1
5, 9	Working hours and proposal timeframe	3.2.2
1, 2, 5, 6, 7, 8, 9, 11	Work sites, access, and vehicle movements	3.2.3
1, 2, 3, 5, 6	Legislative requirements	3.2.4
5	Water and drainage	3.2.5
1, 2, 3, 5, 6	Flora and fauna	3.2.6
4, 10	Noise and vibration	3.2.7
5	Waste and hazardous materials	3.2.8
4, 5, 6, 9	Traffic and access	3.2.9
4	Social and visual	3.2.10

Submission #	Comment summary	Reference where comments are addressed in this report
4, 5, 6	Cumulative and future trends	3.2.11
1, 2, 5, 6	Other comments	3.2.12

3.2 Consideration of submissions

This section addresses the comments raised in the submissions. The comments are categorised based on the relevant section of the REF.

Submissions are captured in blue boxes, with the response from Sydney Water underneath. If a submission raised several comments, those comments have been organised and grouped to align with the issue categories presented in the REF. Clarification notes made by Sydney Water are shown in *italics*. Proposed additional mitigation measures (also captured in Section 4 of this report) are shown in underline.

3.2.1 Proposal background and need

Submission 3, 5, 6

The duplication of the water pipe between Thornleigh Reservoir and the Water Pumping Station is a necessary upgrade.

These submissions acknowledge the proposal need. The proposal aims to support increased demand for drinking water in response to current and forecasted population growth across Greater Sydney.

3.2.2 Working hours and proposal timeframe

Submission 5

Concern regarding the timing of the proposal and that it could be done in a less invasive or impactful way.

Concern on the timing of this project, due to other projects in the area in planning or already occurring.

Request that the proposal be completed later if it does not need to be done now.

‘Quieter construction methods’ should be used where feasible.

Request that the works be scaled back to the minimum that is necessary.

Concern that the REF does not consider alternatives and is facilitating the Westleigh Park proposal.

Sydney Water needs additional infrastructure to support increased demand for drinking water. Sydney Water is performing a range of upgrades to drinking water assets within the Prospect North and Ryde Water Delivery Systems. This proposal is one of 6 servicing packages to support growth in this precinct, across North and North-West Sydney.

We are investing now to transform our water systems to ensure we can continue to provide safe, reliable and affordable services to customers as the region continues to grow. Having 2 water pipelines connecting the reservoir and pumping station, instead of one, will also improve network resilience and allow for more water to cycle between the reservoir and pumping station.



To maximise the benefits of the proposed pipeline duplication, and manage the increased drinking water requirements from the projected growth, our proposal needs to begin soon and be completed by the end of 2026.

The pipeline duplication must be installed before the Sefton Road extension can be installed. We acknowledge that there will be impacts from the work during construction, but will manage this through the mitigation measures in the REF. We have attempted to use the least invasive method available to construct the pipe, by tunnelling instead of open trenching.

Page 88 of the REF identifies “use quieter construction methods where feasible and reasonable” as part of a mitigation measure related to the selection of plant and equipment. The noise assessment is a worst-case assessment. We expect that actual noise impacts during construction would be lower than the assessed impacts.

We will work with council to minimise cumulative noise impacts should construction of the Westleigh Park project and our proposal coincide.

In relation to scaling back the work to the minimum that is necessary, our proposal scope only includes those assets necessary to deliver the benefits from the proposal. The construction footprint and impact of our proposal has been minimised during concept design and will continue to be refined during detailed design.



Our proposal does not facilitate the Sefton Road extension for council's Westleigh Park project. The Sefton Road extension scope is separate from our proposal. The driver for council's project is to develop the site for a new recreational facility, and the Sefton Road extension is a part of council's project scope. While there may be an overlap in construction footprints, it is important to note that our proposal has its own independent justification and has been assessed according to a separate approval process from the Westleigh Park project.

Submission 9

Request the exact start date of the project.

An exact start date cannot be provided at this stage, as we are still required to appoint a delivery contractor, and complete detailed design and pre-construction activities. Construction of our proposal is expected to start in late 2024. We expect construction to take about 2 years to complete, with the new pipeline in operation in 2027.

3.2.3 Work sites, access, and vehicle movements

An objection was received and concerns raised around the use of the existing internal access road to Thornleigh Reservoir, off Quarter Sessions Road. Particular concerns were around the vegetation impacts that would be required to allow heavy vehicle access. An alternative alignment suggested by some respondents was to use the proposed access track for the Westleigh Park development instead. A summary of this feedback is shared below.



Submission 1, 2, 5, 6, 7

General disagreement with the need to prune trees near the entrance to the site along Quarter Sessions Road and the internal access road within the reservoir.

Request that Sydney Water consider an alternative option to pruning, e.g. use of council's proposed access road for the Westleigh Park project.

The assessed scope in the REF involves minor trimming of some lower-hanging branches for trucks to be able to drive along Quarter Sessions Road without damaging them. The existing internal access road on Sydney Water land, near Quarter Sessions Road, will need to be widened to 6 metres and this will require some vegetation impacts.

The existing internal access road currently accommodates light vehicle movements throughout the reservoir site. The existing internal access road is already hardstand, widening is required but construction impacts from this widening are expected to be minimal.



One of the access roads proposed by council, the access road opposite Corang Road, services a Sydney Water pumping station, and we intend to use it during construction. This would reduce the need for road widening and tree trimming on the existing internal access road.

Sydney Water proposes the below approach for construction access:

- Sydney Water to use the existing internal access road for construction vehicles.
- Sydney Water to use the access road near the intersection with Corang Road for heavy vehicles, and entry to the Thornleigh Reservoir lot (Lot 100, DP 1217395) through the gate, where it doesn't clash with council's future road construction.
- Sydney Water will encourage council to exclusively use an entry and exit point on Warrigal Drive for their works.

Figure 3-1 shows these proposed access points.

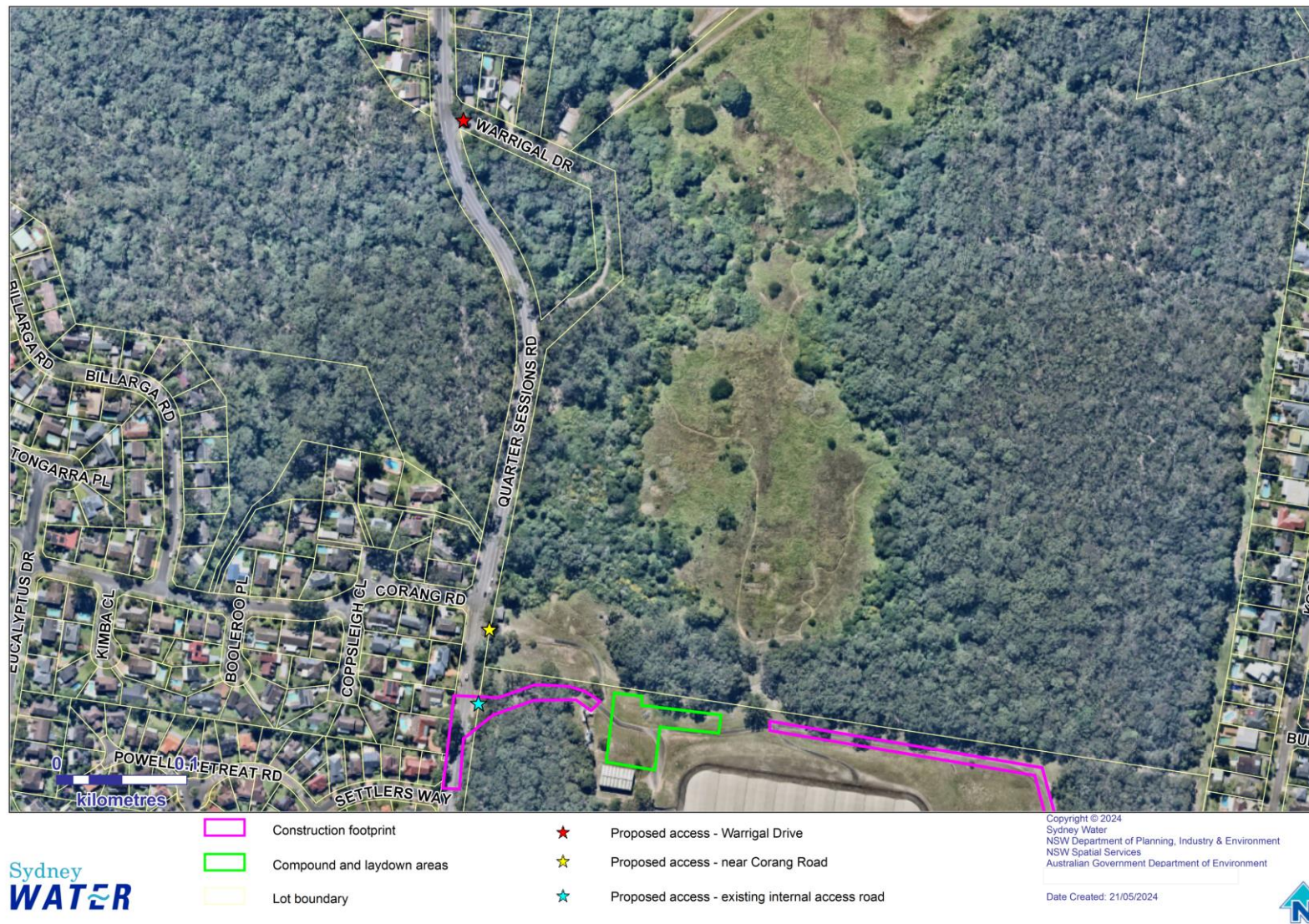


Figure 3-1 Proposed access – approximate entry points
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Submission 8

Questions about the use of the compounds and footprint of the compounds within the reservoir, including:

- scope
- if any buildings are to be constructed within the compounds
- would any chemicals be stored within the compounds
- would there be concrete installed.

Request that the northern end of the compound be further away from residents.

The green lines on the plan in Figure 1-2 of this document indicate the proposed compound and laydown areas at the reservoir. This is where there will be site offices, stockpile and materials.

Temporary demountable buildings will be installed as part of compound setup and use. No permanent buildings are proposed. Some chemicals will need to be stored on site, such as concrete curing compounds, cleaning products, adhesives, grouts, and sealants. These chemicals will be stored in securely bunded and appropriately sized containers.

It is expected that hardstand will be installed within the compound. We install hardstand to cover the grass and soil so that the risk of dust and mud travelling offsite is minimised. The preferred hardstand method for our proposal is compacted road base material, not concrete. Environmental controls such as silt fencing, or sandbags, will also be installed around the compound boundary.

We will aim to use the areas further away from residents, where we can, and minimise noisy activities close to residential properties. The mitigation measures in the REF, related to site setup and use of noise barriers, will be incorporated into the Construction Noise and Vibration Management Plan to reduce impacts to residents.

Submission 9

Questions about pipe material, the maintenance corridor, and maintenance access points.

The pipeline and all associated structures will be constructed using reinforced concrete. Valve structures will be constructed with steel.

There will be no direct access to the tunnelled pipeline as it will be inside a concrete pipe.

Outside of the tunnelled section, maintenance will be carried out via Thornleigh Reservoir (on Quarter Sessions Road) and the Thornleigh-Wahroonga Water Pumping Station (on Dale Close).



Submission 11

Question whether the pipeline will go under a particular property.

Question on the likely impacts during construction.

The approximate alignment of the pipeline is shown in Figure 1-1 of this report. To identify if a particular property is above the proposed underground pipeline, residents can contact Sydney Water through the contact details on the [Sydney Water Talk website](#).

Construction is expected to take about 2 years to complete, including work at the retrieval shaft, as well as the launch shaft and new pipeline. It will have impacts related to soil, water, biodiversity, noise, vibration, traffic, and access.

These impacts will be mitigated through measures described in the REF.

3.2.4 Legislative requirements

Objections and concerns were raised around the suitability of the legislation used in the assessment. Feedback included:



- *That the proposal has a significant impact on the environment.*
- *That an Environmental Impact Statement (EIS) is required.*
- *That a referral is required to the Commonwealth under the Environment Protection and Biodiversity Conservation Act 1999 (Commonwealth) (EPBC Act).*
- *That the proposal meets the criteria for the Matters of National Environmental Significance (MNES) and that there is a Serious and Irreversible Impact (SAIL) from the proposal.*

Within this sub-section, similar comments have been grouped together.

Submission 2, 6

Opinion that the REF does not adequately address a “significant number of issues” that must be resolved and re-exhibited prior to any formal decision on approval of this proposal.

Our assessment indicates that a significant impact to the environment is unlikely. This assessment is based on a range of specialist advice. Specialists have provided advice on flora and fauna, noise and vibration, traffic and transport, and Aboriginal and non-Aboriginal heritage impacts.



Sydney Water is a determining authority as defined by Part 5 of the *Environmental Planning and Assessment Act 1979 NSW* (EP&A Act). As a determining authority, Sydney Water must consider, to the fullest extent possible, all matters affecting or likely to affect the environment (section 5.5 of the EP&A Act). These considerations are documented in the REF, prepared in accordance with the Guidelines for Division 5.1 assessments (DPE, 2022).

All environmental issues have been assessed in the REF and all relevant approvals obtained. We have reviewed the REF in response to submissions and have concluded that no further regulator referrals or approvals are necessary. As such no further exhibition, or re-exhibition, is needed.

Submission 1

Request that an additional Environmental Impact Statement (EIS) must be prepared with all environmental impacts avoided, and the EIS completed and released to the public.

It is not possible to avoid all environmental impacts associated with our proposal. We have minimised environmental impacts during concept design, and will implement mitigation measures during construction to further minimise and/or mitigate impacts.

Sydney Water activities requiring preparation of a Review of Environmental Factors (REF) comply with requirements under Division 5.1 of the EP&A Act and the Environmental Planning and Assessment Regulation 2021 (EP&A Regulation).

An EIS needs to be prepared when it meets certain legislative triggers:

- Division 5.1 of the EP&A Act, subdivision 3, clause 5.7
- BC Act, where the significant impact is to more than biodiversity (threatened species and ecological communities, or their habitats)
- State Significant Development or State Significant Infrastructure, as required by the Environmental Planning and Assessment Amendment (Major Projects Regulation) 2021.

These triggers are not met by this proposal.

Submission 1

Request that the REF review locations of proposed roads at Westleigh Park.

Council's Westleigh Park project is a separate project and not led by Sydney Water. Sydney Water is not required to review locations of proposed roads at Westleigh Park as part of the REF or this Decision Report. The use of different construction access roads for our proposal is discussed in section 3.2.3 of this document.

Submissions 1, 3, 5 & 6

Concern that the Flora and Fauna Assessment (FFA) has incorrectly interpreted the Matters of National Environmental Significance (MNES) significant impact guidelines, and that there is a significant impact. Submissions 3 and 6 identified modify or destroy abiotic factors, reduce the extent of an ecological community, and 'edge effects' as specific concerns.

Concern that the project meets the criteria for significant impact under the Matters of National Environmental Significance (MNES).

Concern from Submission 5 that there will be a Serious and Irreversible Impact (SAIL) to this CEEC, and that any impacts upon CEEC are considered a 'controlled action' and likely to impact irreversibly on threatened species.

Request that a Federal Referral be made under the Commonwealth EPBC Act due to the impact that the current plans would have on the EPBC Act-listed CEEC Sydney Turpentine Ironbark Forest. Concern from Submission 6 that Sydney Water is not doing a Federal Referral for the proposal, when council is doing a Federal Referral for a 'virtually identical' footprint.

This proposal does not meet the significant impact criteria for Matters of National Environmental Significance (MNES). Two threatened entities listed under the EPBC Act were assessed against the MNES. One threatened ecological community (TEC) was assessed (Turpentine-Ironbark Forest of the Sydney Basin Bioregion), since it is known to occur in the proposal area and will be impacted. One threatened flora species – Bauer's Midge Orchid (*Genoplesium baueri*) – was assessed, as there is habitat for the species within our proposal footprint, and the species has a medium or higher potential to occur in our proposal footprint.

Significant Impact Criteria (SIC) assessments performed under the EPBC Act are summarised below (Table 3-2). The SIC assessments have considered all criteria outlined in the Matters of National Environmental Significance (MNES): Significant impact guidelines 1.1 (Commonwealth of Australia 2013). Full details of the SIC assessments and MNES criteria are provided in Appendix 1 of the proposal's Flora and Fauna Assessment (Appendix C of the REF). Sydney Water considers that all these criteria have been appropriately assessed. Assessments for each of these threatened entities identified a significant impact was unlikely.



Table 3-2 Summary of SIC assessment outcomes

Test/ legislation	Threatened entity	Outcome of impact assessment	Reasoning
SIC (EPBC Act)	Turpentine- Ironbark Forest of the Sydney Basin Bioregion	Unlikely to be significantly impacted	<p>The proposal is:</p> <ul style="list-style-type: none"> • Unlikely to contribute to substantial fragmentation of the community. • Unlikely to contribute to local scale reduction in the extent and functionality of the community. • Unlikely to adversely affect habitat critical to the community's survival. • Unlikely to interfere with the recovery of the ecological community.
SIC (EPBC Act)	Bauer's Midge Orchid (<i>Genoplesium baueri</i>)	Unlikely to lead to a significant impact	<p>Impacts towards potential habitat for the species are minimal and are limited to clearing to a small section of potential habitat.</p> <p>Pre-clearance surveys are recommended to be completed prior to works commencing to prevent any previously undetected individuals from being impacted.</p> <p>The proposed works will not fragment any remaining populations, interrupt with the species breeding cycle or interfere with the recovery of the species.</p> <p>Mitigation measures will be implemented to prevent the spread of invasive weeds and diseases.</p>

Council are assessing their project under Part 4 of the EP&A Act. Sydney Water is assessing our proposal under Division 5.1 of the EP&A Act. Part 4 of the EP&A Act has different triggers to Division 5.1 relating to the requirement for a BDAR and Federal Referral. It is considered unlikely that a significant impact on a MNES would result from our proposal. This means that we do not require a Federal Referral.

Our proposal and council's project have been assessed independently. Each have been subject to individual assessments of impacts on the TEC, which are more conservative than a combined assessment of potential impacts on the TEC. Our proposal's assessment indicates that a significant impact on the TEC is not likely (Appendix C of the REF). The impact on the TEC resulting from council's Westleigh Park project has been determined by a Federal Referral as not a controlled action (EPBC Act referral 2023/09746).

Assessment of serious and irreversible impacts (SAII) is only required for activities requiring assessment under the NSW Biodiversity Offset Scheme (BOS). The triggers for the NSW BOS do not apply to Sydney Water's approval pathway under Division 5.1 of the EP&A Act.



Sydney Water's proposal footprint is not similar to council's project footprint. Council have assessed subject land (Westleigh Park) and a wider development footprint (direct impact area). The land that council has assessed includes Sydney Water land (Lot 100, DP 1217395) that they consider necessary to complete their work. The construction footprint assessed for our proposed pipeline duplication is the area considered necessary to complete our work. There is minimal overlap between the 2 construction footprints. The extent of work that council propose to perform on Sydney Water land related to the Sefton Road extension is shown below (Figure 3-2).

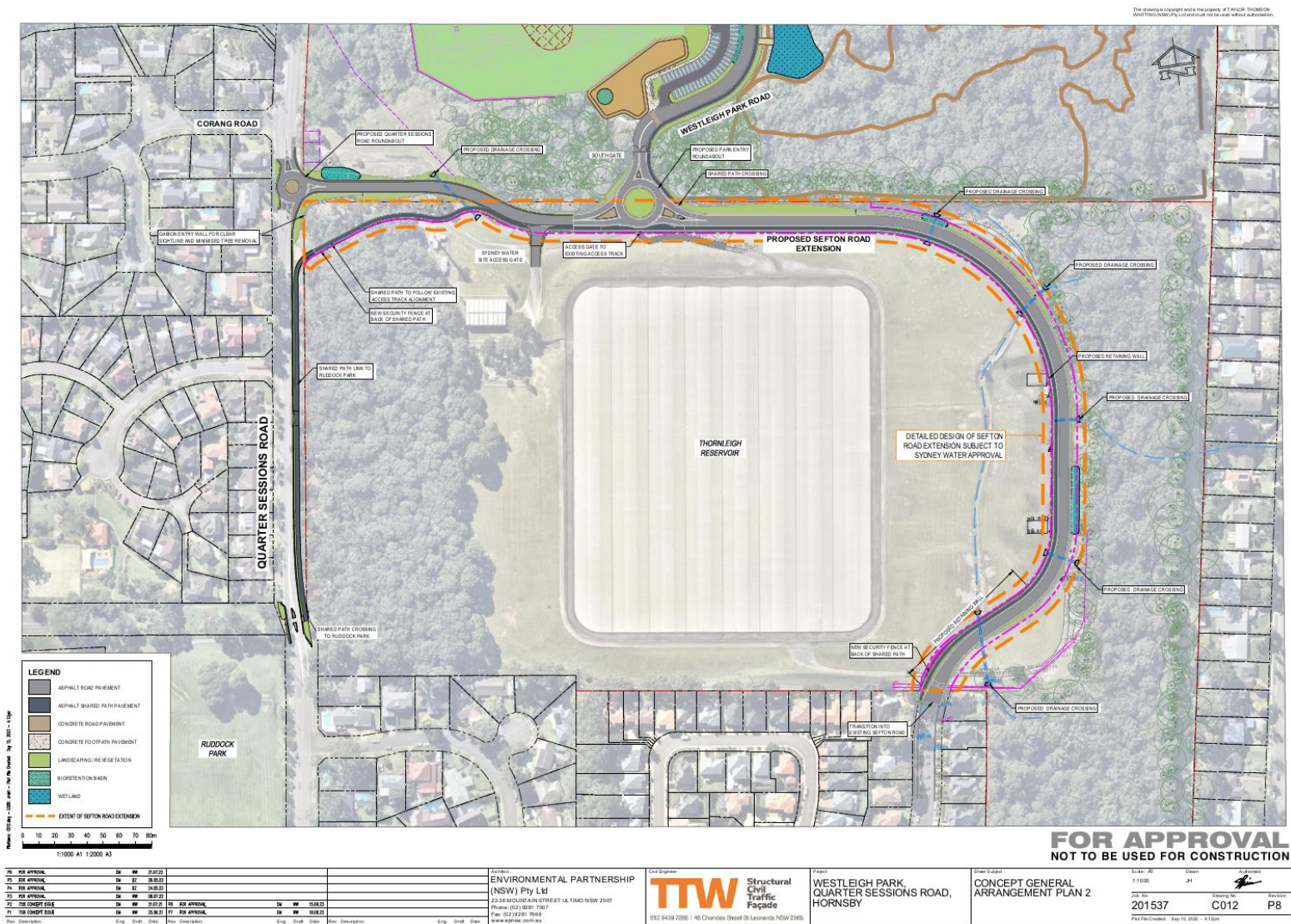


Figure 3-2 Council's project – proposed work on Sydney Water land (source: Hornsby Shire Council, 2024. Document D08735889 - DA/975/2023 - 10. Civil Engineering Drawings - Part1 - 62 Quarter Sessions Road, WESTLEIGH NSW 2120)

Submission 3

Question around why a Species Impact Statement (SIS) and/or Biodiversity Development Assessment Report (BDAR) not required when a CEEC is being impacted.

A Test of Significance (ToS) was performed by specialist ecologists, in accordance with s7.3 of the *Biodiversity Conservation Act 2016* (NSW) (BC Act), and indicates that a significant impact is not likely to result from the proposal. An SIC assessment was also performed by the same ecologists, in accordance with the Matters of National Environmental Significance: Significant impact guidelines 1.1 (Commonwealth of Australia 2013). This assessment concluded that a significant impact from the proposal is unlikely.

As the proposal is not considered likely to have a significant impact to any entity listed under the BC Act or EPBC Act, Sydney Water is not required to prepare a Species Impact Statement (SIS) or BDAR, or opt into the NSW BOS.

Submission 1, 5, 6

Disagreement that an EIA is not required.

Disagreement that the proposal is unlikely to have a significant impact.

Submission 2

Questioned why the removal of threatened species on Thornleigh Reservoir would not be a significant impact.

Submission 6

Request that the proposal be amended to avoid the significant impacts.

Our assessment indicates that a significant impact to the environment is unlikely. This assessment has been made based on advice related to flora and fauna, noise and vibration, traffic and transport, Aboriginal and non-Aboriginal heritage from multiple external specialists.

In relation to flora and fauna impacts specifically, assessments of the likelihood of significant impact were performed under both the BC Act and EPBC Act. Both assessments identified a significant impact was unlikely. Further detail on these assessments are in Appendix 1 and Appendix 2 of the proposal's Flora and Fauna Assessment (Appendix C of the REF). The SIC assessment outcomes have been summarised in Table 3-2. The ToS assessments are summarised in Table 3-3 below.



Table 3-3 Summary of ToS assessment outcomes

Test/ legislation	Threatened entity	Outcome of impact assessment	Reasoning
ToS (BC Act)	Sydney Turpentine- Ironbark Forest in the Sydney Basin Bioregion	Unlikely to be affected	<p>The proposal is limited to the clearing of a small section of a larger contiguous area of the CEEC.</p> <p>The proposal is localised, and the study area has already been exposed to a number of disturbances which are unlikely to be further exacerbated by the proposed works.</p> <p>The proposal is unlikely to significantly alter floristic or structural diversity of the CEEC within the study area, particularly given that impacts are limited to ground disturbances only.</p> <p>The localised nature of the proposal will not significantly trigger or exacerbate any key threatening processes.</p>
ToS (BC Act)	Bauer's Midge Orchid (<i>Genoplesium baueri</i>)	Not likely to significantly affect the species within the study area or wider locality	<p>The proposal is localised, and the study area has already been exposed to a number of disturbances which are unlikely to be further exacerbated by the proposed works.</p> <p>The proposal is unlikely to significantly alter the extent of a population to the point where they become locally extinct.</p> <p>Pre-clearance surveys will be completed before works start to prevent any previously undetected individuals from being impacted.</p> <p>The removal of potential habitat will not result in the isolation or fragmentation of locally occurring habitat within the study area and as such is unlikely to affect its long-term survival in the locality.</p> <p>The localised nature of the proposal will not significantly trigger or exacerbate any key threatening processes.</p>
ToS (BC Act)	Flora species: <i>Epacris purpurascens var. purpurascens</i>	Not likely to significantly affect the species within the study area or wider locality	<p>The proposal is localised, the study area has already been exposed to a number of disturbances and ample contiguous habitat will remain intact.</p> <p>The proposal is unlikely to significantly alter the extent of a population to the point where they become locally extinct.</p> <p>Pre-clearance surveys are recommended to be completed before works start to prevent any previously undetected individuals from being impacted.</p>

Test/ legislation	Threatened entity	Outcome of impact assessment	Reasoning
			<p>The removal of potential habitat will not result in the isolation or fragmentation of locally occurring habitat within the study area and as such is unlikely to affect its long-term survival in the locality.</p> <p>The localised nature of the proposal will not significantly trigger or exacerbate any key threatening processes.</p>

3.2.5 Water and drainage

Submission 5

Concern about excess stormwater runoff from the Westleigh Park project into surrounding areas, and removal of soil at Westleigh Park to be replaced with less porous materials.

Request for safety measures to be installed so excess stormwater runoff will not impact Thornleigh Reservoir.

Concern that putting a road around the reservoir will exacerbate the impacts of the water flowing in and around the reservoir site.

Request that the impacts be considered to ensure the safety of the surrounding residents.

Council have identified mitigation measures for their project to manage soil and water impacts, including the risk of increased runoff, during construction and operation. Effective implementation of these mitigation measures should ensure there is minimal impact to the reservoir site and to surrounding residents.

3.2.6 Flora and fauna

Multiple concerns were raised and suggestions provided around the assessed impacts to flora and fauna, including:

- *Alternative layouts or locations for vehicles to turn*
- *Location of the existing internal access road through the reservoir in relation to vegetation*
- *Positioning of the pipeline*
- *Impacts to threatened and non-threatened native fauna*
- *Impacts to threatened flora.*

Within this sub-section, similar comments have been grouped together.

Submission 1, 2, 5, 6

Request that alternative methodologies be considered instead of the truck turning circle to reduce that area of vegetation removal at the launch shaft.

Request that the truck turning circle could be downsized or relocated.

Suggestion that a truck turntable could reduce area and reduce vegetation impacts.

We have reviewed potential alternative locations and methodologies for trucks turning within the site, in response to the above submissions.

An alternative location for truck turning is not practical, as:

- The acoustic shed shields the TBM and associated equipment at the launch shaft. The location of the launch shaft is fixed, it needs to be in this location so that the new pipe can connect into existing assets. Therefore, the location of the acoustic shed and TBM is also fixed.
- The trucks need to be able to enter and exit the acoustic shed, to be able to deliver materials and collect waste materials.
- This limits the areas the trucks can use for movement, including turning. Any truck turning must be adjacent to the acoustic shed, to minimise the safety risk of trucks reversing within the site. Some reversing will still be required within the site, and all vehicles are required to use non-tonal beepers to dampen noise during reversing.

A turntable adjacent to the acoustic shed was considered:

- Due to the large length of pipes that are required (about 13.5 metres), the truck length will also need to be large (approx. 15-16 metres).
- As noted above, any truck turning must be performed adjacent to the acoustic shed. We are constrained by the embankment, vegetation and existing underground assets as to where a turntable could be located.
- Having enough space to install a turntable will require more trees to be cleared than the loop road around the acoustic shed and will also require excavation which would likely encroach on the reservoir embankment.

Therefore, a turntable is not considered practical at this site.

Submission 2, 5, 6

Suggestion that there is enough space between the embankment and the vegetation to widen the existing internal access road and install the pipeline without vegetation impacts, e.g. impacts to root zones.

Request that the 'bulge' to the east of the internal access road should be on the western side.

The below figure (Figure 3-3) demonstrates some of the constraints that needed to be considered when selecting a construction footprint for our proposal. These include:

- Presence of an existing internal access road, which needs to be widened to about 6 metres wide in sections to cater for heavy vehicles.
- The proximity to the reservoir embankment, where no excavation is permitted.
- The proximity to existing above- and below-ground assets, which need to have specific cover, or clearance, in between the existing asset and a new asset.
- The proximity to threatened vegetation.

This figure demonstrates that the construction footprint for our proposal is mostly in the narrow corridor between the embankment and the vegetation.



There is not a suitable option closer to the embankment (which includes the side slopes that connect the road surface to the surrounding land area). This is for several reasons, including:

- The requirement to install an acoustic shed at this location which will reduce noise from the works at the reservoir. The acoustic shed also cannot be built on the embankment.
- Ensuring that construction activities do not impact on the integrity of the dam.

Although some vegetation trimming and removal to widen the internal access road is unavoidable, we will ensure that the impacts are minimised. The delivery contractor, once appointed, will identify initiatives to further minimise the area of cleared vegetation from the area assessed in the REF. Initiatives to reduce vegetation clearing further from that assessed in the approved REF, include:

- alternative construction methodologies (e.g. compressed construction corridors)
- arborist engagement during detailed design or pre-construction to identify Tree Protection Zones and where there may be opportunity to remove and/or trim branches and/or roots instead of removing trees (particularly where open excavation is required).

The 'bulge' to the east of the access road relates to installation of a valve chamber. The valve chamber is required at this location because of the location of the existing inlet/outlet main, and the proposed location of the Sefton Road extension.



The proposed pipeline alignment was identified through an options assessment against multiple alternative options. The proposed pipeline was chosen following consideration of cost and non-cost factors including:

- hydraulic performance
- community impact
- traffic impact
- environment and heritage impacts (including vegetation impacts)
- operations and maintenance
- dam safety
- geotechnical risks
- bushfire egress impact
- constructability (e.g., overall tunnelling length, width of trenching corridor if excavating).

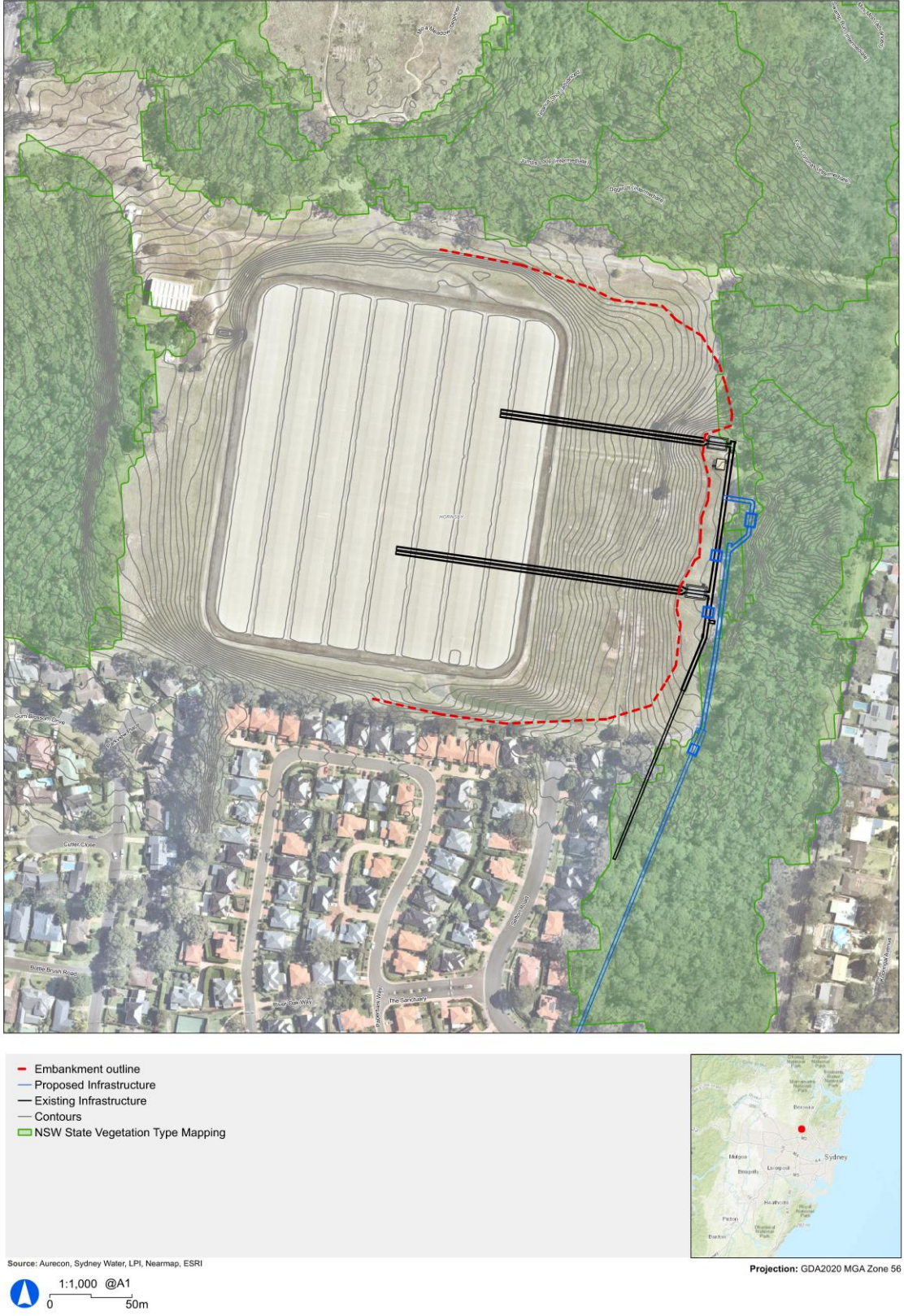


Figure 3-3 Constraints at reservoir site

Submission 1, 3

Request that strategies be considered which do not impact threatened flora and fauna and CEEC's. If not prevented at least minimised much more.

The construction footprint must remain outside of the reservoir embankment for structural integrity and stability reasons. Consequently, our construction footprint must include vegetation removal south-east of Thornleigh Reservoir. We have tried to minimise the extent of vegetation removal by making the launch shaft and surrounding storage area as small as possible, while considering turning circles of the trucks coming in and out.

Residual impacts to native vegetation and trees will be offset, including any potential impacts to threatened flora. The preliminary calculation is that there would be an offset multiplier of 2:1 applied to non-threatened vegetation and offset multiplier of 3:1 for threatened vegetation removed for this proposal. Potential offset planting locations include:

- on site: native revegetation or bushland restoration
- nearby site: native revegetation or bushland restoration
- Sydney Water offset site bushland restoration.



The contractor will ensure offset vegetation is maintained at least one year after planting is completed.

Submission 5

Request for a Fauna Management Plan including conditions related to targeted surveys, Department of Primary Industries (DPI) notification, wildlife fencing, timing of work outside of breeding season, compliance with codes of practice, and other items.

The mitigation measures in the approved REF are considered appropriate to manage the potential for fauna impact. Before construction starts, we will undertake pre-clearance surveys to identify any fauna in or near the construction footprint.

The study area for our proposal includes the construction footprint and the adjacent land likely to be directly, or indirectly, impacted by the proposal. Most threatened fauna species within 5 km of the study area use hollow-bearing trees for shelter and/or breeding. Some of these threatened fauna species include mobile or migratory species such as microbats, and birds such as the Powerful Owl (*Ninox strenua*). Hollow bearing trees are not present within our proposal footprint.



Therefore, species associated with hollow-bearing trees would not have any sheltering or breeding habitat impacted by our proposal.

Should fauna be found during work, suitably qualified ecologists or wildlife rescuers would assist with relocation.

Submission 5

Request that threatened flora species identified along the southern end of the forest, near the Thornleigh Reservoir northern boundary, be surveyed and impacts avoided.

The area north of the Thornleigh Reservoir lot (Lot 100, DP 1217395) is outside the construction footprint for our proposal. Aside from use of the existing access track, we have no intent to perform any work outside of our proposed construction footprint.

Figure 5 of the Westleigh Park BDAR (Figure 3-4 below) identifies multiple hollow bearing trees within council's project footprint. These trees are about 50-100 m north of the Thornleigh Reservoir lot boundary. We will not impact any of these hollow-bearing trees for the proposed pipeline duplication.

Figure 15 of the Westleigh Park BDAR (Figure 3-5 below) did not identify any threatened flora species within 100 m of the Thornleigh Reservoir lot boundary. We will manage potential impacts to threatened flora through the mitigation measures in the approved REF.

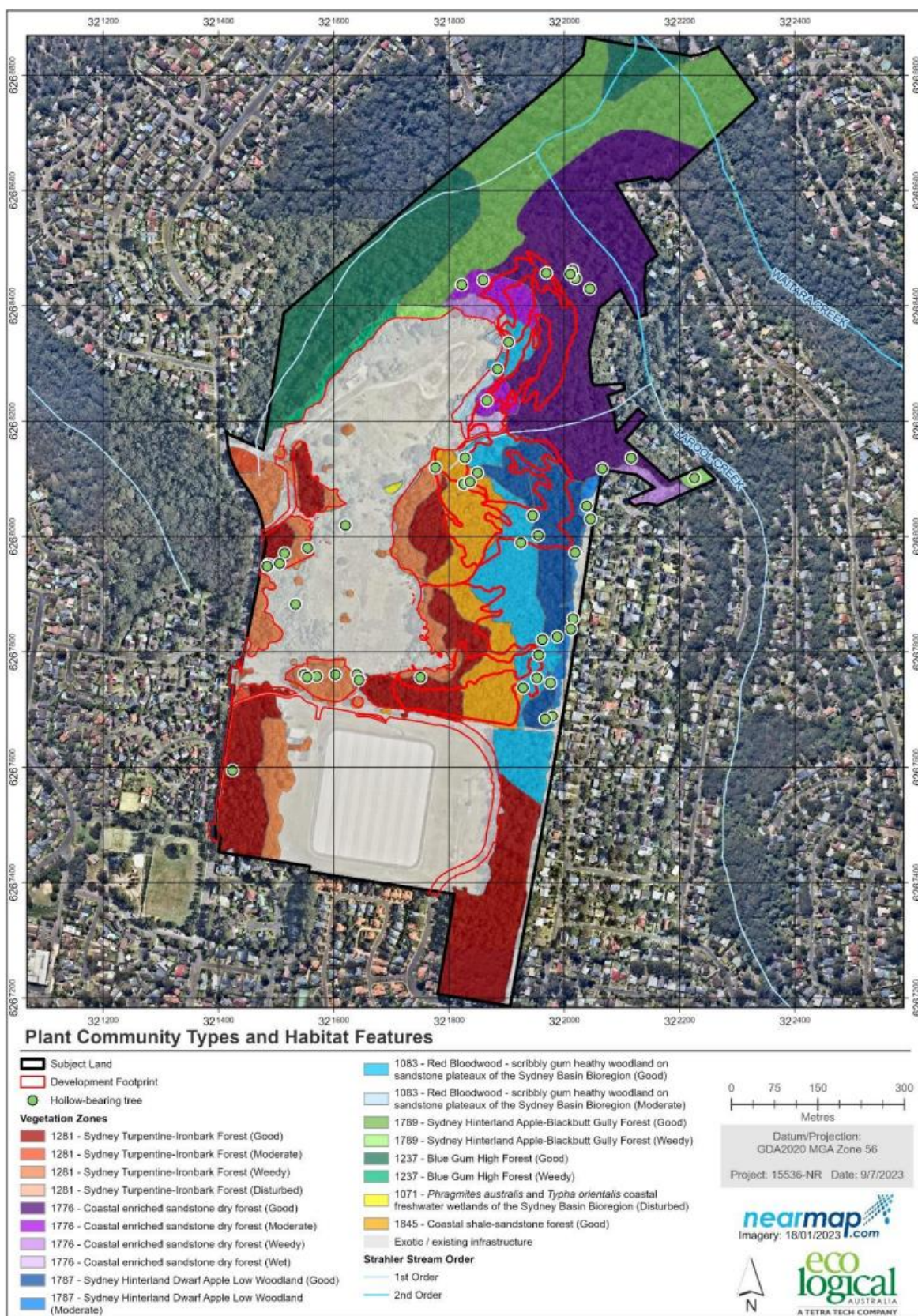


Figure 3-4 Plant community types and habitat features assessed for council's project (Eco Logical Australia, 2023)

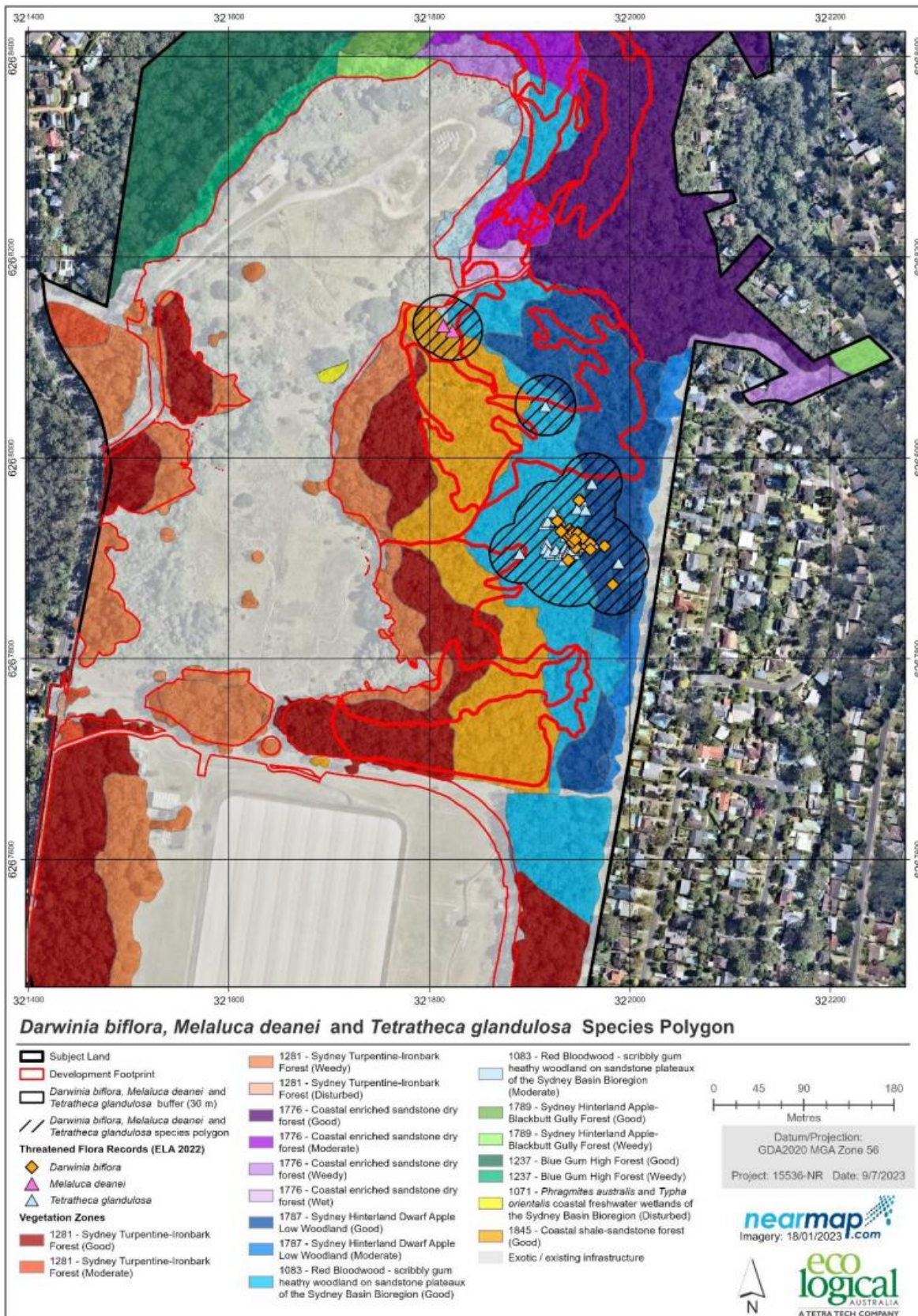


Figure 3-5 Threatened species polygons assessed for council's project (Eco Logical Australia, 2023)

Submission 5

Disagreement with the assessment on presence of fauna at the site.

Request for pre-clearance surveys to be performed by specialists at targeted times of the year.

Based on desktop assessment of previous sightings and background research, 6 flora species and 16 fauna species were identified as most likely to have habitat within our proposal footprint.

Following site survey, the likelihood of occurrence of these species was refined with regards to local distribution, habitat requirements, and presence of preferred habitat. From these assessments, a likelihood of occurrence of impact was determined for each species.

Where threatened flora species were not found within the study area, or assessed to have a low likelihood of being impacted, no further assessment was required.

Where threatened fauna species were assessed to have a low likelihood of being impacted, or preferred habitat was not found within the study area, no further assessment was required.

The outcome of these assessments was summarised in the REF. The assessments are available in Section 3.3 of our proposal's Flora and Fauna Assessment (Appendix C of the REF). The level of assessment regarding the likelihood of threatened species presence is considered appropriate.

Targeted pre-clearing surveys will be performed at a suitable time before any vegetation impacts are required. These pre-clearing surveys will consider more recent data from the Westleigh Park BDAR (such as location of hollow bearing trees and any threatened flora or fauna sightings).

3.2.7 Noise and vibration

Submission 4

Concern about the acoustic performance of the enclosure around the TBM access pit, and its ability to suppress the noise sufficiently during night-time working.

The delivery contractor will install an acoustic shed in accordance with REF requirements around the launch shaft (at the reservoir) during tunnel boring activities. At this stage, we are unable to say what the exact brand or setup would be. Once installed correctly, and in accordance with manufacturer specifications, the acoustic shed should reduce air-borne noise levels by about 20 dB(A). This would reduce noise levels to about a quarter of what they would be if the shed was not in place.

Submission 10

Request to provide details of the dilapidation process and the make good process for any damage, including responsibility for repairs.

Request to provide details of noise and vibration monitoring locations and the depth of the pipeline under the property.

Sydney Water and our delivery partners are committed to delivering this important infrastructure safely while minimising impacts on the environment and the community. We will keep the community informed throughout the proposal via:

- regular letterbox drops
- updates to our website and
- face to face meetings where required to provide updates.

The contractor will prepare a Construction Environment Management Plan (CEMP), which will outline how the proposal will be delivered safely, while minimising impacts on the community and the environment. A specific Noise and Vibration Management Plan (NVMP) will cover how noise and vibration is managed during construction. The CEMP/NVMP will outline how the tunnelling will be undertaken and monitored. This will include potential monitoring locations.

We will identify ways to minimise and monitor vibration impacts through construction, including during tunnelling. Attended vibration measurements would be required when starting vibratory activities within the minimum working distances identified in Table 6-14 of the REF. If above-ground vibration monitoring exceeds specified limits (the minimum working distance-based screening criterion of 7.5 mm/s), we will re-assess construction methodologies. No repairs are expected to be required, as no impacts to properties along the alignment are expected. However, we intend to perform dilapidation surveys pre- and post-construction for properties at risk of vibration impacts.

The proposed pipeline duplication will range in depth between about 10 and 37 metres. The location and depth of the proposed pipeline at the northern end of the alignment is shown below (Figure 3-6). In Figure 3-6, the depths range between 26.55 m and 33.99 m. Should any individual properties be interested to know the depth of the new pipeline under, or near their property, residents can contact Sydney Water through the contact details on the [Sydney Water Talk website](#).

Regular monitoring of the works is proposed to ensure outcomes are being met and that the CEMP (which includes sub-plans like the NVMP) is effective. The CEMP is a live document, and will be updated and adjusted as required to ensure that successful outcomes are achieved (e.g. through regular auditing and compliance checks).

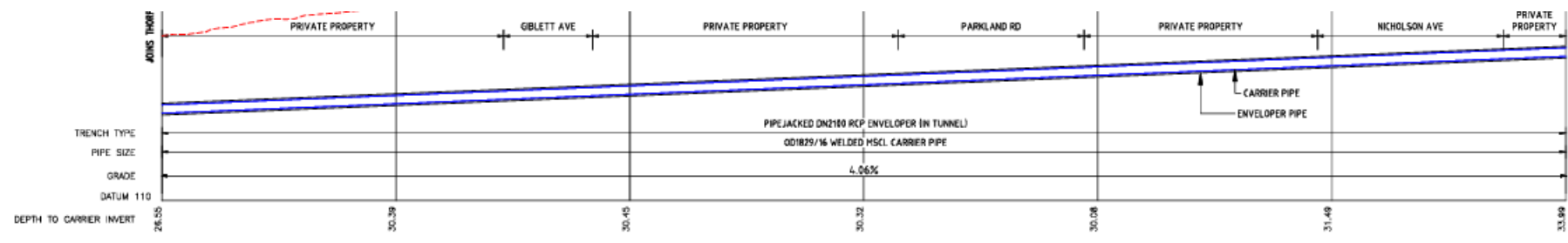
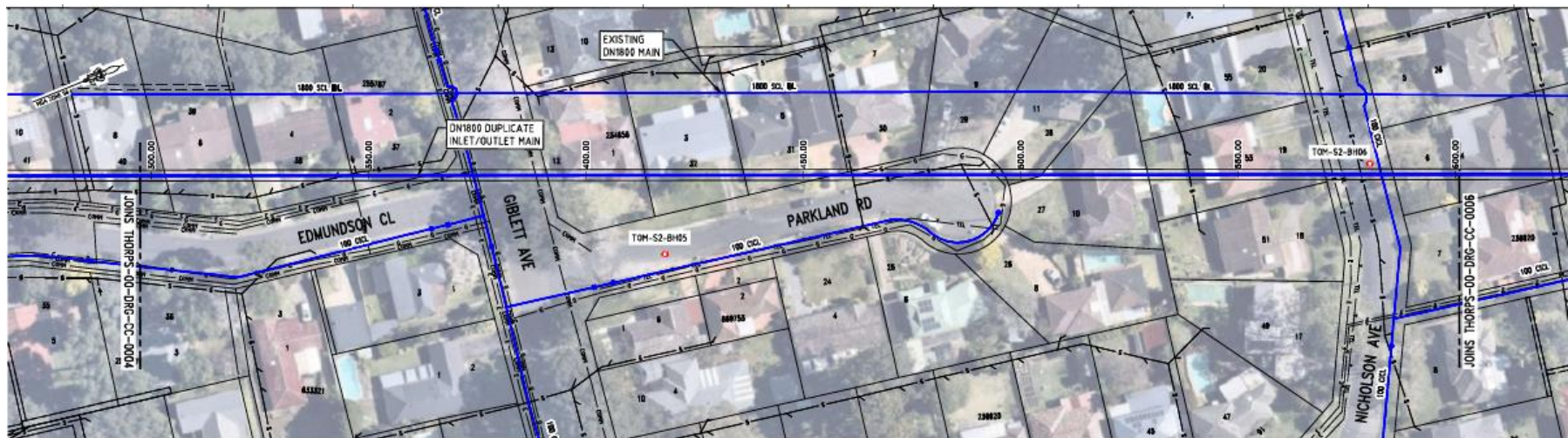


Figure 3-6 Location and depth of proposed pipeline at northern end of alignment

3.2.8 Waste and hazardous materials

Submission 5

Concern that Westleigh Park is a contaminated site and the disturbance of contaminated material may leach out and travel off-site.

Request that the significant contamination is dealt with safely, and in conjunction with, the pipeline duplication work.

We understand that contamination risks from council's Westleigh Park project would be managed in accordance with the mitigation measures in the Westleigh Park EIS.

The contamination risk within the construction footprint for the proposed pipeline duplication is considered low to moderate. Should contamination be identified during construction, the relevant mitigation measures in the REF would be implemented. These measures involve containment, notification, and specialist advice.

3.2.9 Traffic and access

Concerns around traffic and access relate to cumulative impacts on the local road network, and increased security risks.

Submission 5, 6

Concern that the new Sefton Road extension would make the reservoir more visible and increase the risk of vandalism at the site.

Request that the REF considers the safety and security aspects of the pipeline duplication project and the Westleigh Park project. Ensuring adequate security is provided to protect this the Thornleigh Reservoir site.

Request that the REF include security measures, for the protection of the reservoir.

The Sefton Road extension is not being approved by Sydney Water. The determining authority for council's Westleigh Park project, including the Sefton Road extension, is the Sydney North Planning Panel.

With reference to the Westleigh Park EIS, the Sefton Road extension is expected to provide restricted access for vehicle traffic. It is expected that most vehicles using this road would be:

- vehicles leaving Westleigh Park at specific times (e.g. peak times such as weekend sports events)



- council maintenance vehicles
- emergency services entry and exit
- secondary exit point from the suburb of Westleigh during emergency.

Users of the Sefton Road extension would experience increased visibility of the reservoir. However, this is not expected to increase the risk of vandalism or impact the safety of the reservoir.

The Westleigh Park EIS identifies risk mitigation measures associated with the Sefton Road extension. Measures captured in section 19 of the Westleigh Park EIS will also manage security risks within Westleigh Park. Sydney Water will continue to engage with council to ensure that the security of Sydney Water's assets are maintained.

The REF for our proposal considers safety and security in relation to the construction and operation of the pipeline.

Submission 5, 6

Request to assess cumulative traffic impacts from the proposal and Westleigh Park, in the REF.

Concern that the overlapping timing of the pipeline duplication and Westleigh Park development will negatively impact local amenity.

Concerns about other nearby projects in the area, which will also contribute to local traffic volumes.



Concern that all construction vehicles for the proposal will use the Duffy Avenue/Chilvers Road/The Esplanade intersection.

If construction of council's project and our proposal occur at the same time, cumulative traffic impacts will be unavoidable.

Duffy Avenue accommodates heavy vehicles, making it suitable for construction vehicles. For light vehicles, direct routes between launch and receival shafts will be prioritised to minimise travel on smaller suburban roads.

Both our proposal and council's Westleigh Park project have identified a preference to avoid construction vehicle movements during morning and afternoon peak hours, as much as possible. This will minimise the construction traffic impacts during peak hours.

The operational traffic impacts of nearby projects, such as new warehouses on Chilvers Road, could increase road traffic during construction of the proposed pipeline duplication. However, it is unknown whether this added traffic would coincide with our construction related traffic impacts. Should this warehouse construction or operation coincide with our proposal, the impacted roads would include the short distance between Pennant Hills Road and the Chilvers Road/Duffy



Road/The Esplanade intersection (about 300 metres). As most construction traffic movements for our proposal are expected to be outside of peak hours, these potential traffic impacts over this short distance are likely to be minor.

Submission 4

Question regarding whether Sydney Water would be able to ensure that vehicle movements during construction will avoid coinciding with vehicle movements from the Westleigh Park project.

If construction of the proposal and the Westleigh Park Development coincide, cumulative traffic impacts will be unavoidable. There is potential that vehicle entry and/or exit to the sites could coincide and cause queuing or delays.

Sydney Water will consult with council to determine and agree on a coordinated traffic management approach across our proposal and council's project. For example, a co-ordinated staging area for heavy vehicles to manage vehicle movements along local roads and reduce queuing.

Submission 9

Question regarding when the Edmundson Close walkway would be closed and if it would be available once pipeline duplication is complete.



Following completion of the detailed design and confirmation of the construction methodology for the proposal, the construction contractor will prepare a traffic and pedestrian management plan around work sites. This will ensure the safety of the community and our workers. This plan will provide detail on construction traffic impacts, and will consider use of this walkway.

The Edmundson Close walkway will be available and accessible to pedestrian traffic once construction is complete.

3.2.10 Social and visual

Submission 4

Concern about the analysis of lighting impacts around the TBM launch shaft and the potential for lighting to spill into surrounding bushland and adjacent residential properties.



Most of the lighting required for the TBM and acoustic shed would be located within the acoustic shed. Some lighting may be required outside of the shed (e.g., to improve visibility for truck movements), or for other night work activities (e.g., connections).

Where possible, artificial light will be directed away from sensitive receivers such as residents, fauna or roadways.

As described in the REF, temporary disturbance to wildlife from light spill during construction works are likely to be localised to within 50-100 m of the construction footprint. Noise, light, dust and vibration during the construction phase may disturb any fauna. These may include threatened microbats and other hollow-dependent species that may be inhabiting nearby hollow-bearing trees or man-made structures. However, the specialist ecology assessment identified that construction activities are not considered likely to have a significant long-term impact on wildlife that may occur within the study area or surrounding environment.

3.2.11 Cumulative and future trends

The main concerns raised in this section relate to potential cumulative impacts with the neighbouring Westleigh Park development, and queries around consultation with council.

Submission 4

Concern raised regarding the perceived lack of collaboration between Sydney Water and council, to minimise the overall environmental impacts.



We will continue to work with council throughout the detailed design and construction phases of our proposal and council's project. We have identified opportunities in this report to collaborate with council, to potentially minimise or manage potential cumulative environmental impacts of our proposal and council's project. In addition, ongoing consultation will ensure that council's Westleigh Park project does not impact the reservoir, or the integrity of our assets.

Submission 6

Concern that Sydney Water is clearing CEEC that council would otherwise be seeking permission to remove.

Concern that Sydney Water is facilitating this CEEC clearing that would assist another project.

The assessment of vegetation impacts, as described in the REF, is specific to our proposal and its requirements. Our assessment does not include, or facilitate, the removal of vegetation for any



other projects. Hornsby Shire Council requires a separate approval for any activities impacting vegetation.

Submission 5

Statement that impacts from the Sydney Water proposal can be avoided, if chosen to do so.

Concern that the Sydney Water proposal is larger than needed, due to the adjacent Westleigh Park project.

Request that Sydney Water limit their works to only the essential scope and not performing any unnecessary work.

The Westleigh Park project, managed by Hornsby Shire Council, is independent of our proposal. While the Sefton Road extension will be located on Sydney Water land (Lot 100, DP 1217395), it still forms part of the Westleigh Park development. Discussions between Sydney Water and the council regarding the Sefton Road extension have not impacted the scope and footprint of this proposal. Our proposal needs to proceed, regardless of council's Westleigh Park project.

Our proposal scope only includes the necessary assets and footprint to deliver the proposal. The construction footprints and impacts have been minimised during concept design and will continue to be refined during detailed design.

Submission 5

Concerns when combining the Sydney Water proposal with the Westleigh Park project and other industrial projects in the area. This includes concerns regarding the cumulative impacts on the CEEC, fauna species, and local amenity.

Through the development of the REF and this report, we have sought expert ecological advice to ensure that our proposal aligns with all relevant environmental regulations and standards. An ecology assessment was carried out as part of the REF, which assessed the potential impacts of the proposal on CEEC and local fauna species. The assessment concludes that the proposal is not likely to have a significant impact on the CEEC, fauna species, and local amenity.

We recognise the importance of preserving local ecology, and will implement measures, as described in the REF and this report, to minimise and/or mitigate potential environmental impacts.

We will continue to engage with council, to identify opportunities to manage and minimise potential cumulative impacts to biodiversity and local amenity. We will also engage with other relevant key stakeholders (such as utility providers) to manage impacts from our proposal.

3.2.12 Other

Responses in this section are not directly related to impacts assessed in the REF, but have been addressed to assist in providing feedback to stakeholder concerns.

Submission 2

Concern that council included the entire Sydney Water lot in its Development Application for Westleigh Park due to the proposed Sefton Road extension through Sydney Water's reservoir property boundary.

Hornsby Shire Council incorporated the entire Sydney Water lot boundary for Thornleigh Reservoir (Lot 100, DP 1217395) into the subject land assessed in their EIS. However, council's proposal will not affect the entire reservoir lot. Only specific areas of the reservoir lot, specifically those linked to the Sefton Road extension, would be impacted by council's project.

Submission 6

Concern that the REF does not address the timing of the Sydney Water pipeline duplication proposal with regard to the Westleigh Park project.

Request that the REF consider how council's timetable will impact upon the Sydney Water pipeline duplication timetable, and who will pay for construction of the road.

Construction of the Sefton Road extension would be carried out as part of council's Westleigh Park project. As such, any costs associated with the road extension would be covered by Hornsby Shire Council. Construction of the Sefton Road extension cannot start until the proposed pipeline duplication is completed.

If construction timeframes for the Westleigh Park project and this proposal overlap, Sydney Water will work with council to identify opportunities to minimise construction impacts. By coordinating efforts, such as sharing access roads, redundant or duplicated activities can be minimised, reducing overall environmental impacts.

Submission 5

Question regarding when Sydney Water began considering the pipeline duplication, in comparison to council's request for an access road [i.e. Sefton Road extension].

Concern that the public exhibition periods for the REF and [Westleigh Park DA] did not coincide. Concerns that cumulative impacts have not been raised to the Sydney North Planning Panel for the Westleigh Park project.

Our proposal forms part of a range of upgrades to drinking water assets within the Prospect North and Ryde Water Delivery Systems. The Thornleigh Inlet/Outlet Main duplication is just one of many projects associated with these Water Delivery Systems, to proceed to delivery. Our proposal needs to proceed, regardless of council's Westleigh Park project.

Timing of public exhibition of the REF was influenced by coordinating with other Sydney Water projects. Although there was no overlap with the Westleigh Park DA exhibition, Sydney Water will share matters raised during the public exhibition of the REF with council.

We understand that the Sydney North Planning Panel are responsible for assessing the Westleigh Park project. Council's [Development Application website](#) enables further matters to be raised in respect to that project.

Submission 1, 2, 5, 6

Concern that the Sefton Road extension will need a sharp right turn, requiring excavation into the reservoir wall. Specifically, excavation at the south-eastern corner, within the embankment.

Concern that the area is too narrow for the proposed road between the embankment and the Sydney Water southern boundary.

The Sefton Road extension forms part of council's Westleigh Park project and is managed by Hornsby Shire Council. It is independent of our proposal.

Sydney Water has consulted with, and will continue to consult with, Hornsby Shire Council to ensure the proposed Sefton Road extension does not impact the integrity of Sydney Water assets. If the Sefton Road extension has any potential to affect the reservoir, the council would be required to engage Sydney Water and Dam Safety NSW. Excavating or disturbing the reservoir embankment is unlikely to be permitted by these authorities.



4 Environmental impacts and mitigation measures

Following consideration of the submissions, it has been determined that no further environmental assessment is necessary, beyond what was conducted in the REF. Additional environmental impact assessment may be required if the scope of work or work methods change significantly following determination.

The key environmental impacts raised in submissions are summarised in Table 4-1, including new, or revised, mitigation measures. These measures will be implemented throughout the detailed design, pre-construction and construction phases of the proposal. All other environmental impacts and mitigation measures identified in the REF remain the same and will be incorporated into the contractor's CEMP.

Table 4-1 Updated assessment of impacts and mitigation measures

Aspect	Potential impacts	Mitigation measures
Working hours and proposal timeframe	Cumulative noise impacts with council's project	We will work with council to minimise cumulative noise impacts should construction of the Westleigh Park project and our proposal coincide.
Work sites, access, and vehicle movements	Use of 2 nearby construction access tracks for different projects	<p>Sydney Water proposes the below approach for construction access:</p> <ul style="list-style-type: none"> Sydney Water to use the existing internal access road for construction vehicles. Sydney Water to use the access road near the intersection with Corang Road for heavy vehicles, and entry to the Thornleigh Reservoir lot (Lot 100, DP 1217395) through the gate, where it doesn't clash with council's future road construction. Sydney Water will encourage council to exclusively use an entry and exit point on Warrigal Drive for their works.
Flora and fauna	Impacts to threatened flora and fauna	Targeted pre-clearing surveys will be performed at a suitable time before any vegetation impacts are required. These pre-clearing surveys will consider more recent data from the Westleigh Park BDAR (such as location of hollow bearing trees and any threatened flora or fauna sightings).
Traffic and access	Cumulative impacts	Sydney Water will consult with council to determine and agree on a coordinated traffic management approach across our proposal and council's project. For example, a co-ordinated staging area for heavy

Aspect	Potential impacts	Mitigation measures
		vehicles to manage vehicle movements along local roads and reduce queuing.
Noise and vibration	Monitoring and review of management plans	Regular monitoring of the works is proposed to ensure outcomes are being met and that the CEMP is effective. The CEMP is a live document, and will be updated and adjusted as required to ensure that successful outcomes are achieved (e.g. through regular auditing and compliance checks).

5 Proposal justification, conclusion and recommendation

Sydney Water has considered the comments raised in the submissions. The proposal is justified on the basis that:

- It is required to support increased demand for drinking water as a result of current and forecast population growth across Greater Sydney.
- 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.

Sydney Water has made additional commitments regarding management of potential cumulative impacts with the adjacent council project at Westleigh Park.

Potential impacts can be mitigated through implementation of the measures outlined in Section 4 of this document, and the REF. The proposal is not likely to significantly impact the environment.

For the purposes of Division 5.1 of the EP&A Act, it is recommended that the proposal proceed, as described in the REF and as subsequently revised in this report. It is recommended that the Thornleigh Inlet/Outlet Main Duplication proposal be implemented in accordance with the mitigation measures listed in the REF and this report.

Prepared by:	Reviewed by:	Endorsed by:	Approved by:
Grace Corrigan Environment Representative Sydney Water Date: 02/10/2024	Michael Pan Project Manager Sydney Water Date: 03/10/24	Murray Johnson Senior Manager Environment and Heritage Services Sydney Water Date: 3/10/2024	Paul Plowman Executive General Manager, Water and Environment Services Sydney Water Date: 03/10/2024



Appendices

Appendix A - List of submissions

Submission 1

To thornleighIOM@sydneywater.com.au

Objecting submission regarding Sydney Water Thornleigh Inlet/Outlet Review of Environmental factors

I object to the conclusion of the Sydney Water Review of Environmental Factors (REF) that an *"an Environmental Impact Statement (EIS) is not required"*. I also object to the conclusion that *"the proposal is unlikely to have a significant impact on the environment."*

The proposal seeks to remove 0.53 ha of critically endangered Sydney Turpentine-Ironbark Forest (STIF) and 0.55 ha of potential habitat for two threatened flora species *Epacris purpurascens* var. *purpurascens* and *Bauer's Midge Orchid Genoplesium baueri*.

There must be no critically endangered ecological communities (CEEC) removed for this project, other strategies must be considered which do not impact threatened flora and fauna and CEEC's.

It is noted that the truck turning circle proposed at the acoustic shed is the cause of removal of a large portion of the STIF. The project must consider other alternatives such as a truck turntable.

In addition to direct effects on the STIF by way of 0.53ha removal, the project will have indirect impacts on the health and biodiversity of the site through soil impacts related to ground disturbance, water impacts related to groundwater extraction, vegetation disturbance, noise and vibration impacts and degradation at the edges of the STIF through creeping in of weeds and soil degradation. The project meets the criteria for Matters of National Environmental Significance (MNES) and a Referral must therefore be made under the Commonwealth EPBC Act to the Minister for the Environment.

I also object to pruning of the Quarter sessions Rd trees. An alternative must be found to pruning of these trees.

I am concerned about the south-eastern embankment of the Reservoir. At this place Hornsby Shire Council proposes to excavate to facilitate their access road joining onto Sefton Road for the proposed Westleigh park sporting fields. Mapping of the site, viewed at a community session showed that the area is too narrow for the proposed road between the embankment and the Sydney Water southern boundary. The current review seems to support this saying that no excavation can occur on the dam or embankment to protect the structural integrity of the dam.

Therefore the Sydney Water Thornleigh Inlet/Outlet Review of Environmental factors must review locations of proposed roads at Westleigh park, and must acknowledge impacts on CEEC STIF by referral under the Commonwealth EPBC. An additional Environmental Impact Statement (EIS) must be prepared with all environmental impacts avoided. Assessment must not occur until an EIS has been completed and released to the public.

[REDACTED]

Submission 2

Dear Sir or Madam,

It is understood that this upgrade is desirable but I am concerned that it will have significant impacts on the Sydney Turpentine Ironbark Forest (STIF) environment and therefore ask that amendments be made to avoid the proposed impacts. I disagree with the assessment for the following on the following points:

- The removal of Threatened species on Thornleigh Reservoir of critically endangered 0.53 ha of STIF both high and low quality along the northern access track and also surrounding the launch site. Also 0.55 ha of potential habitat for threatened species of *Epacris purpureascens* (Vulnerable) and Bauer's Midge Orchid *Genoplesium baueri* (Endangered).
- There is more than enough distance between the foot of the reservoir embankment and the STIF to enable construction of a widened access track without removing trees or impacting upon the root zones of the trees. The 'bulge' to the east of the north south access track should be on the western side.
- The size of the acoustic shed for the launch shaft and the truck turning area are stated to have the largest footprint. This site could include a truck turntable area to reduce the area size and impact on need to reduce less number of trees.
- Significant Impact Criteria. The Flora and Fauna Assessment (FFA) has incorrectly interpreted the Matters of National Environmental Significance (MNES) significant impact guidelines. There is a real chance that the project will modify abiotic factors (water, nutrients or soil) which are necessary for an ecological communities survival. The principal of precaution must be applied here.

There will be edge effects associated with the building of the access track immediately adjacent to the STIF which includes the drying out of the edge of the Forest resulting in a reduction of native plant species and an increase in shade intolerant species, weeds and an increase in the number of the Noisy Miner and Magpie numbers which drive out the small native bird species.

The already narrow strip of STIF on the eastern boundary will be further fragmented and contribute to further degrading of the ecological community.

A Referral must be made with the Commonwealth EPBC Act.

- Since Sydney Water has had ongoing discussions with Hornsby Council with regards to their proposed construction of access to Westleigh Park through Thornleigh Reservoir from Quarter Sessions Rd entrance, there is no reason why Sydney Water should avoid use of the Hornsby Council's access Road (slightly north of Syd. Water entrance) and pursue the matter to avoid any impact on the STIF at the entrance by moving it slightly northwards. This will ensure the trees are not affected and remain healthier.

- The mapping provided at the Syd. Water community session showed that the proposed Sefton Rd extension would require a right angle bend to the right which would still require excavating into the Reservoir wall which is dangerous to its stability. It appears that Sydney Water is failing to find a better alternative for these mature trees.

I believe that Sydney Water is failing to find a reasonable alternative solution to the pruning of these trees.

- Hornsby Council has included the whole of the Sydney Water Thornleigh Reservoir site in its Development Application for the Westleigh Park development due to their desire for an access road through the site.

- I am of the opinion that the Rev. of Env. Factors does NOT address a significant number of issues that must be resolved and re-exhibited prior to any formal decision on the approval to proceed with the project.

Yours sincerely



Submission 3

Sydney Water Thornleigh Pipeline Duplication

Comments on Review of Environmental factors (REF) Report.

It is understood that a function of Sydney Water is to provide clean drinking water to the public and that the Thornleigh Pipeline Duplication has been found to be necessary to achieve this. The current planned works needed for that construction will impact on the Sydney Water land resulting in vegetation loss at both ends of the proposed new pipe.

Sydney water's land holdings surrounding the Thornleigh Reservoir at the northern end of the proposed pipeline include some high quality relatively unspoilt bushland. This has survived by thankfully not having been cleared and also by having been protected mostly from public access historically. It is a very valuable asset locally, regionally and also nationally and Sydney Water as custodians, have a duty to ensure its continued protection. It is also legally bound to do that as parts of that bush, notably Sydney Turpentine Ironbark Forest (STIF) are classified Critically Endangered Ecological Community (CEEC) under the Federal EPBC Act and also under the NSW BC Act. Similarly there are highly likely to be Threatened Plant species that are also protected under these Acts, namely *Epacris purpurascens* var. *purpurascens* (Vulnerable, BC Act) and Bauer's Midge Orchid *Genoplesium baueri* (Endangered, BC Act and EPBC Act)



STIF Forest is now so critically endangered due to its ongoing widespread clearing over the years in the Sydney Basin area which is its main habitat. Just 0.5% remains of what once existed. The STIF Forest in the vicinity of the northern pipeline entry point is 6.7 hectares in area, not an insignificant remnant. We are told in the REF Report that 0.53ha (0.15 ha of PCT1183 and 0.38 ha of PCT 1281) ie 7.9% of this CEEC on site, which is also not an insignificant percentage, is slated for removal under the current plans. Of particular concern is the loss of a big percentage of the high quality PCT 1281 (STIF) on site which from diagram map Fig.6.2 in the REF appears to be around 20% to be cleared. Also 0.55 ha of land that is potential habitat for the two threatened species is to be cleared.

The Initial Statement in the REF that:

The proposal will not be carried out in a declared area of outstanding biodiversity value and is not likely to significantly affect threatened species, populations or ecological communities, or their habitats. Therefore, a Species Impact Statement (SIS) and/or Biodiversity Development Assessment Report (BDAR) is not required. It is considered that, given the nature, scale and extent of impacts and implementation of the mitigation measures outlined in this REF, the proposal is unlikely to have a significant impact on the environment. Therefore, we do not require an Environmental Impact Statement (EIS) and the proposal may proceed.

...is very debateable. Under the current plans, a patch of a Critically Endangered Ecological Community (STIF), protected under the EPBC Act, will be cleared, so why is a Species Impact Statement (SIS) and/or Biodiversity Development Assessment Report (BDAR) not required? Similarly Sydney Water should be making a Referral to the Federal Environment Minister under the Commonwealth EPBC Act due to the impact that the current plans would have on Sydney Turpentine Ironbark Forest. This is now very rare bush and everything should be being done to conserve it. To use the argument that a lot of the work is planned to occur in lower quality STIF is not valid because it is adjacent to current high quality STIF and today's high quality STIF becomes tomorrow's lower quality STIF due to edge degradation encroachment. Chip away at the edges and eventually this bush remnant that is managing to hold together will be so small that it could degrade away altogether. Mitigation measures mentioned can be considered to be "better than nothing" but are a poor





second to doing no damage to the STIF in the first place. It is very difficult, if not impossible, to replicate what was there in good condition to start with once it has been damaged.

It is convenient for Sydney Water to brush off this area of bush to be impacted as insignificant but the bottom line is that there will be less CEEC standing at the end than there is now and there will be less threatened plants surviving if the proposal goes ahead in its current form.

Every attempt should be made to revise the plans, therefore, so that the damage to STIF and the threatened flora species is altogether prevented or at very least much more minimised.

[REDACTED]

[REDACTED]

Submission 4

Hello

Firstly I'd like to commend Sydney Water and their Community Engagement Team for their approach to engaging the community, for thorough and open communication and for convening Community Consultation sessions. The main concern arising from those sessions is the apparent absence of collaboration with Hornsby Council to minimise the environmental impacts of this project with those of Hornsby Council's Westleigh Park project with which there seems to be substantial scope for collaboration in minimising overall environmental impacts in relation to access roads in the vicinity of the Tunnel Boring Machine Access pit and associated need to encroach into existing Critically Endangered Sydney Turpentine Ironbark Forest. Other concerns include:

2. the acoustic performance of the enclosure around the TBM access pit to suppress the noise sufficiently during night time working
3. I did not pick up any analysis of lighting impacts around the TBM access pit (I would anticipate some lighting being necessary for WH&S reasons) and the potential for lighting to spill into the surrounding bushland (and hence disturb native animals) and into adjacent residential property
4. In line with the need for collaboration with Hornsby Council, will Sydney Water be able to ensure that vehicle movements during their work will avoid coinciding with vehicle movements associated with the construction of Westleigh Park, the aggregate of vehicle movements could create serious inconvenience to residents using the main access roads through the suburb.



Thornleigh Pipeline Duplication – Sydney Water Review of Environmental Factors – Dec 2023



Figure 9 Westleigh Park Locality Plan (Source: Draft Westleigh Park Master Plan Document, Hornsby Shire Council)



On consideration of the Review of Environmental Factors (REF) on public exhibition for these works at Thornleigh Reservoir, I object to a number of conclusions and assertions outlined in this document as summarized below and believe some further environmental considerations must be factored into these works being considered.

Firstly, I would be curious to know when Sydney Water started considering this upgrade to the water pipes, and whether it was only considered once Hornsby Shire Council (HSC) approached Sydney Water regarding their requirement for an access road around Thornleigh Reservoir to facilitate a regional sporting complex just north of the reservoir. It seems opportune timing that the exhibition period for Westleigh Park Sporting complex closed on 20th November and the exhibition of the documents for this project opened on 21st November. I am sure this was just a complete coincidence although it has made it impossible for residents to include comments for these works in the submissions to the Sydney North Planning Panel. This is very disappointing to the local community who have an expectation of transparency from their council and government agencies when they are making decisions that will have significant impacts upon the residents of this quiet residential area.

I believe the **cumulative effects** of both these projects on the local community, and on the threatened flora & fauna species, will be serious and have many adverse effects for Westleigh and Thornleigh residents and on the surrounding districts of Wahroonga, Pennant Hills, Normanhurst and Hornsby especially with regards to traffic and noise disruption.

Summary of concerns:-

1. Works could be scaled back to lessen the impact on CEEC
2. Impacts on STIF require Federal Referral
3. Impacts on threatened flora & fauna
4. Risks to critical infrastructure

- 
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5. Significant Traffic Impacts
 6. Thornleigh reservoir structural integrity risks
 7. Avoidable impacts at Quarter Sessions Road
 8. Fauna Management Plan
 9. Contamination risks
 10. Stormwater risks

1. **Works must be scaled back to lessen the impact on CEEC**

It is likely that the duplication of the water pipe between Thornleigh Reservoir and the Water Pumping Station is a necessary upgrade. However, I believe these works may be more extensive than what would be required if there was not also a corresponding Development Application that has just been submitted by HSC for a road access to facilitate their sporting complex. There have been arguments that this sporting complex is over-sized for this location and will have serious and detrimental environmental and amenity impacts on the surrounding residents.

Sydney Water must limit their pipeline works to only those that are essential for an upgrade to the pipeline and must not be carrying out any works that would not otherwise be necessary.

The REF report has summarized that *'the proposal is unlikely to have a significant impact on the environment'* and that an Environmental Impact Statement (EIS) is not required for these water works. I strongly disagree with this conclusion because in correspondence with Sydney Water, I have been advised that 0.53 ha of Sydney Turpentine-Ironbark Forest (STIF) will be removed on this site. STIF is a 'critically endangered ecological community' which only grows in the Sydney Bioregion and large healthy remnants are now very rare. Every remnant is significant for the protection of this species.

There is the potential for this removal of STIF to have a Serious and Irreversible Impact on this CEEC and the utmost consideration must be given to avoiding impacts completely PRIOR to any works occurring. This species is listed as 'critically endangered' under the Commonwealth EPBC Act. There is no next rating other than 'extinct'. This ecological community is restricted geographically to a single bioregion in NSW.

The 'Test of Significance for STIF' as detailed in the REF by Biosis it makes the statement that *'the vegetation to be impacted does not comprise any ecological components critical to the survival of the CEEC in the locality as most of the area to be cleared is in degraded condition and subject to edge effects'*. It argues that because *'adjacent areas of the community within the broader area will remain intact'* and *'a portion of the section being removed is already subject to edge effects resulting from previous clearing'* the area being *'directly and indirectly impacted by the proposal is **not considered important to the long-term survival** of the community'*.

However, this goes against the recommendations by the Department of Climate Change, Energy, the Environment and Water (DCCEEW) which states the following: -

The three key generic management steps recommended in the guidelines for Cumberland Plain communities are:

- retain all existing native vegetation where possible
- protect any retained vegetation from further degradation (including fencing remnants and linking remnants through targeted revegetation)
- actively manage all retained and protected vegetation remnants (including weed suppression, control of feral animals, encouraging regeneration of native plants).

The DCCEEW stresses the importance of protecting the remaining small remnants – no matter the condition – as they have conservation values as biodiversity reservoirs and faunal corridors and recommends that efforts are made to link corridors and enhance them through natural regeneration and supplementary plantings.

It was also noted by Benson (1992) that buffer zones should be identified and managed to ensure better quality vegetation is retained.

<http://www.environment.gov.au/cgi-bin/sprat/public/publicshowcommunity.pl?id=38>

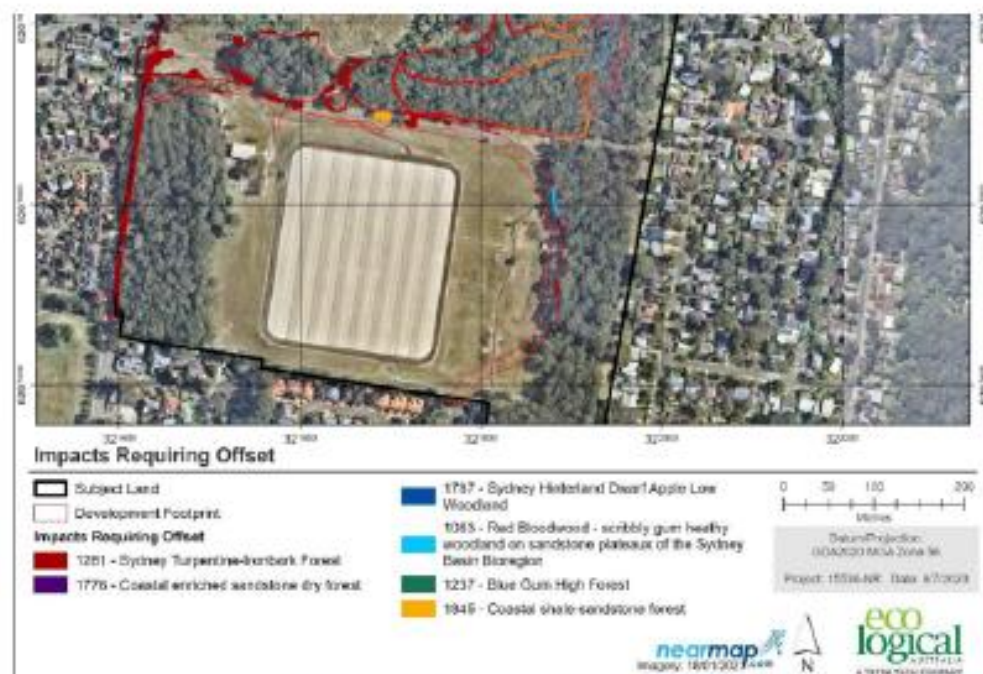
I believe the positioning of this pipeline, within the root zones of the STIF *can be avoided*. There is sufficient room between the embankment of the reservoir and the STIF for these pipeline works to occur with little or no impact on this CEEC.

2. Impacts on STIF require Federal Referral

In the Biodiversity Development Assessment Report (BDAR) for Westleigh Park (DA/975/2023), Hornsby Council has stated that their will need to be a Federal Referral for the impacts on the STIF that their sports complex will have. Sydney Turpentine-Ironbark Forest is 'critically endangered' under Commonwealth legislation EPBC Act.

Sydney Water has outlined how this pipeline duplication will remove 0.53ha of STIF and that offsets *will be undertaken* for these impacts.

Sydney Water has an *almost identical* 'development footprint' outlined in this REF to what is outlined for the Westleigh Park DA – in fact, SW is proposing further impacts on STIF due to the additional area for the trucks to turn around.



Westleigh Park BDAR, Figure 19 – Impacts requiring offset

STIF is not just the trees – it is the entire ecosystem that is interconnected. The soil structure, the understory, the tree canopy and the unique species that it supports, both flora and fauna, are what makes this an ‘ecological community’ and this REF outlines significant detrimental impacts on this ecologically rare site. The vegetation at Westleigh and particularly on this site footprint was described in the ‘Natural Areas Assessment Report 2020’ compiled by EcoLogical for HSC which stated that the STIF was in particularly good condition due to how undisturbed it was from being part of a fenced off site closed to the community.

The advice on the NSW government website regarding the STIF is that “*in view of the small size of existing remnants, the threat of further clearing and other known threats, the Scientific Committee is of the opinion that Sydney Turpentine-ironbark Forest in the Sydney Basin Bioregion is likely to become extinct in nature unless the circumstances and factors threatening its survival or evolutionary development cease to operate.*” Hence its listing as Critically Endangered under the EPBC Act 1999.

The significance of every remnant tree is noted as they may have “particular ecological and genetic significance and be important sources of propagation material for use in rehabilitation projects.”

<https://www.environment.nsw.gov.au/topics/animals-and-plants/threatened-species/nsw-threatened-species-scientific-committee/determinations/final-determinations/1996-1999/sydney-turpentine-ironbark-forest-endangered-ecological-community-listing>

The works described in this REF include ‘ground disturbance, groundwater extraction, impacts on waterways, vegetation disturbance, noise and vibration disturbances’. Combined with the impacts from the Westleigh Park development which include, ‘**114 1-tonne rock loads brought into the site, 63 by helicopter plus 31 loads of imported soil**’ and ‘**machinery movements and downdraft from the helicopter**’ could cause issues with contaminants if not ‘**well considered in advance**’ (MTB report by DirtArt, pg 127) there are serious concerns about the cumulative impacts of both developments on this CEEC and on the local amenity. Westleigh/Thornleigh residents have at least a decade of significant construction works to look forward to.....and considering this neighbourhood just has one road in and out, that is highly concerning.

The NSW Dept. of Planning & Environment goes on to state that, ‘*an ecological community can be at risk of extinction. This can occur because of a significant reduction in its distribution across regions or a decline in ecological function.*’ **This decline can occur if there is, “disruption of ecological processes, invasion by exotic species, or habitat degradation or fragmentation”.**

<https://www.environment.nsw.gov.au/topics/animals-and-plants/threatened-species/about-threatened-species/threatened-ecological-communities>

NSW Scientific Committee, Final Determination 2008 states, ‘it is estimated that only 0.5% of the original area of STIF exists in the form of a number of remnants’.

There must be a Federal Referral undertaken for the impacts on ‘Critically Endangered Ecological Community’ for these works. Any impacts upon CEEC are considered a ‘controlled action’ and likely to impact irreversibly on Threatened species.

3. Threatened Flora and Fauna Species impacted

There are a number of threatened flora species identified along the southern end of the forest near the Thornleigh Reservoir northern boundary. Further surveys must be conducted to identify the species and impacts must be AVOIDED at all costs before any consideration can be given to Mitigate or Minimise impacts under the Biodiversity Offsets scheme.

Threatened Flora species likely impacted: -

Bauer's Midge Orchid (*Genoplesium baueri*)
Epacris purpurascens
Darwinia biflora
Tetratheca glandulosa

Threatened Fauna species likely impacted: -

Koala
Powerful Owl
Barking Owl
Gang-gang Cockatoo
Glossy Black Cockatoo
Grey-headed Flying Fox
Little Lorikeet
White-throated Needletail
Eastern False Pipistrelle
Eastern Coastal Free-tailed Bat
Little Bent-winged Bat
Large Bent-winged Bat
Yellow-bellied Sheath-tail Bat
Greater Broad-nosed Bat
Eastern Pygmy possum
Red-crowned toadlet
Dural Land Snail

Matters of National Environmental Significance (MNES) guidelines require a determination that there will be a '*reduction in the extent of an ecological community*' that indicates there will be a MNES impact occurring.

Therefore the 'Precautionary Principle' must be applied to any proposal for these works and impacts AVOIDED. This forest will have to endure the impacts from these construction works for the pipeline and then have continued exposure to the damaging activity of cars from the proposed access road that this pipeline project is facilitating. The effects will be serious and harmful for the soil quality, soil erosion, moisture content, transmission of harmful bacteria and pathogens and other 'edge effect' impacts which will be long-lasting and enduring upon this CEEC.

Several threatened fauna species inhabit and forage in this forest and the surrounding area, including Powerful Owls and Glossy Black Cockatoos. Hornsby council reports identified over 50 bird species and there is likelihood for other threatened native species to occur, such as the Eastern Pygmy Possum and various species of microbats. No studies of invertebrates have been done as far as we know, so we do not have a full and comprehensive understanding of just what protected native wildlife would be impacted.

The REF states that 'koala feed trees such as Blackbutt Eucalyptus pilularis are present within the study area and koala records are located within 1.4 kms of the site footprint.

This project is having a significant impact on threatened species and therefore meets the criteria for Matters of National Environmental Significance. A Federal Referral must be lodged according to the environmental legislation the EPBC Act which protects threatened flora & fauna.

The cumulative effects of the proposed Pipeline Duplication together with the Westleigh Park DA and other industrial projects ongoing in this area will have serious impacts on the fauna species that currently inhabit this site. It has been left cordoned off for years and the remnant forest has healthy plants and trees and supports a high volume of wildlife.

It is NOT appropriate to just state in the REF that the presence of these threatened species is 'not likely to be high' and that 'an assessment of impact is not required' or that 'impacts are considered to be minor' – all comments noted in the Biosis report. Pre-clearance surveys MUST be carried out by species experts at appropriate times of the year, and day or night, in order to assess the presence of any of these species which have all been documented in recent times in areas close to this site. The vegetation here is contiguous and wildlife moves around.

4. Risks to Critical Infrastructure from the proposed access road

The site at Westleigh Park has been fenced off for many years in order to secure the Thornleigh Reservoir. Yet still local mountain bikers have accessed the site and been riding through the area which was once owned by Sydney Water but has now been sold to HSC and being proposed as a sporting precinct.

The damage done to the STIF by these bike riders is significant and threatens the ecological integrity of this 'Critically Endangered Ecological Community'. This access has always been unauthorized and considered as trespassing.

The access road proposed by HSC as part of their DA for Westleigh Park is going to further open up the Thornleigh Reservoir to out-of-town mountain bikers and sport participants from all over Sydney. Hornsby council has specifically mentioned in their reports that they want to make this sports precinct one that **"will attract visitors from across the Sydney area"**. This is a REGIONAL SPORTING PRECINCT not just a local facility. There is the likelihood of formal sporting events to be held here across numerous sports and weekend traffic volume will be extremely high. There have also been many accounts of mountain bikers riding this area at night despite requests from council to stop this activity. The mountain bikers do not listen and show little regard for rules.

Until now the reservoir has been well concealed, and the activities of the trespassers has happened mostly to the north of the reservoir. Opening up this area with a through road access is putting this critical infrastructure at increased risk of vandalism and the impacts of young adults looking to cause mischief.

The security must be comprehensive and this REF must consider the utmost safety and security of the reservoir by ensuring adequate security is provided to protect this site. The local residents must be given assurances that this critical infrastructure is going to be well protected and that anyone considering tampering with the reservoir will be stopped.

The security of the reservoir must be a priority once it is opened up to huge traffic impacts.

5. Traffic Impacts will be significant

The traffic reports for the Westleigh Park DA show that there will be significant increases to the level of traffic and congestion is expected on many of the local roads in and out of Westleigh residential area. One area mentioned that is of particular concern is the area around Duffy Avenue and Chilvers

Road intersection which is already currently operating at capacity on weekdays during the peak periods.

The cumulative effects of the Sydney Water pipeline construction traffic and the construction traffic from the Sports Precinct for Stage 1a is going to cause traffic chaos and huge disruption to the local residents and that of surrounding suburbs with the compounding impacts.

The REF (Construction memo, pg. 5 of 13) details that the *“peak vehicle movements will likely be during delivery of material or spoil placement/removal”* and that an estimated **“900 truck movements would be required over a year period to dispose of/place the spoil produced by the TBM and other construction activities at the reservoir site”**. **The construction period is expected to take approximately 2 years and construction will be occurring 24/7 (pg. 6 of 13).**

The MTB report by DirtArt for Westleigh Park DA states that there will be **“114 1-tonne rock loads brought into the site, 63 by helicopter plus 31 loads of imported soil.”** There will be heavy machinery working on the site simultaneously to Sydney Water working on this pipeline and for a period of 2 years, there will be severe traffic congestion caused by the construction vehicles for both projects.

Section 3.4, Thornleigh Inlet/Outlet REF – TTIA states that there are ‘several infrastructure schemes...planned or ongoing in the study area’. These additional projects in the Westleigh district will also add to the cumulative impacts for the local community. Altogether, the impacts of all of this simultaneous construction work on the local road network will be highly disruptive. The local roads are residential roads with homes directly alongside them.

The cumulative impacts on traffic congestion must be analysed. The access to the pipeline site and to the Westleigh Park site together will practically halt access in and out of the area for the local community and this REF must factor in these impacts thoroughly. Timing of the pipeline in conjunction with the significant works for Stage 1a of DA/975/2023 is not conducive to the local amenity and is unfair to the Westleigh/Thornleigh residents.



6. Thornleigh Reservoir Structural Integrity at risk

The south-eastern corner of the Thornleigh Reservoir site is going to be significantly impacted by the Pipeline duplication works and then by the Access Road that is being facilitated by Sydney Water for Hornsby council. Yet, during analysis of the reports for the Westleigh Park DA and during council meetings it has been stressed to the local community that there is insufficient width here to adequately accommodate and compliant through road. Excavating into the dam embankment would be highly risky and the integrity of the reservoir itself could be impacted. The REF documentation stresses that there must be NO EXCAVATION of the dam or embankment in order to safeguard the structural integrity and stability of the dam and prevent

7. Avoidable Impacts at Quarter Sessions Road entrance

The NSW Biodiversity Conservation Act (BC Act) makes provision through the Biodiversity Offsets Scheme (BOS) that impacts on threatened species must first be ‘avoided’ **BEFORE** consideration should then be given to ‘minimising’ and ‘mitigating’ impacts which are deemed **‘unavoidable’**.

The entrance point along Quarter Sessions Road currently proposes to remove or prune Sydney Turpentine-Ironbark Forest **‘Critically Endangered Ecological Community’** when it would be possible to locate the road further north and avoid these impacts almost entirely. Damage *limitation* is not sufficient and works that can be avoided should be. The purpose of the BC Act should be to sustain, or



enhance, important biodiversity and ecosystems and this starts with Avoiding impact to threatened species.

The heavy construction vehicles will impact upon the soil around the roots of the trees and upon the canopy branches and will have serious impacts upon the native wildlife that inhabit this forest. The entrance to the site must be situated as far from the STIF and mature trees as possible. Mature trees provide habitat and foraging for native and threatened species which new planting cannot.

When such an easy resolution is available, Sydney Water must avail itself of this simple option and locate the entrance to the site in the geographical location that AVOIDS detrimental impacts upon the STIF at Thornleigh reservoir.

Sydney Water and Hornsby Shire Council must liaise on the most appropriate entrance to the site to ensure the harm to the STIF is Avoided in the first instance, *before* consideration is then given to minimizing any damage to this Critically Endangered Ecological Community.

The cumulative impacts upon the STIF across both projects will be subject to a Federal Referral since these impacts WILL have a Serious and Irreversible Impact (SAIL) upon this threatened ecological community.

8. Requirement for Fauna Management Plan

A Fauna Management Plan (FMP) is the last line of defence for native and threatened wildlife species being impacted through our planning processes.

An FMP would ensure people handling wildlife are appropriately trained and licensed to do so and that wildlife rescuers and veterinarians are employed to deal with any rescues and injuries to wildlife that occur on the site. Targeted surveys must take place prior to each stage of works and each area of the site being impacted. Department of Primary Industries (DPI) must be informed of any works taking place under the consultant ecologist's research licence 40 days PRIOR to works commencing to ensure Animal Ethics approval granted for all impacts on native wildlife.

The FMP must include provisions such as the use of wildlife-friendly fencing, timing of works so clearing of vegetation or significant fauna habitat is not undertaken during breeding seasons. There must be protocols detailed for capture, containment and release of wildlife on this site to ensure animal welfare is considered for *any and all* wildlife encountered during construction.

Any FMP must comply with the 'NSW Codes of Practice for Injured, Sick and Orphaned Protected Fauna' – as all native wildlife in NSW is protected by law.

Westleigh Park and the adjoining lands are home to Powerful Owls, endangered microbats, GHFF, Glossy Black cockatoos, numerous bird species, macropods, mammals, reptiles including the Red-crowned Toadlet. Measures must be outlined and approved by DPI and documented in the FMP for all species and include pre-clearance surveys by species experts.

A condition of consent must be applied to ensure a 100m buffer is left around any roosting or nesting site for Powerful Owls known to forage and roost in the forests at Westleigh.

The FMP must detail strict protocols and reporting standards for these works. Reports of any injured or killed native wildlife should be notified to DPI Animal Ethics division within 24 hours which is a requirement under an Animal Ethics licence in NSW.

A Fauna Management Plan must be a Condition of Consent for works taking place for this Pipeline duplication. The site contains 'critically endangered ecological community' and pre-clearance surveys must be carried out for the Threatened and native species known to inhabit this area. An FMP would ensure animal welfare considerations are factored into the works processes being employed.

9. Serious Contamination levels at Westleigh Park site

The REF for these works opening statement mentions how this project is about – 'water – clean, life sustaining water'. Westleigh Park has undergone extensive testing for the high contamination levels on the site.

In the Remediation Action Plan (RAP) for the Westleigh Park DA, Arcadis have documented elevated nitrate, ammonia and a number of heavy metals which registered above the ANZECC trigger values including Copper, Nickel, Zinc and Lead. All groundwater was found to be acidic with all pH readings below 5.

Bore hole samples were high in nitrate values and showed elevated ammonia levels in 3 samples. Elevated copper concentrations were found in all wells with one sample as high as 5mg/L and others at 0.1 and 0.5mg/L more than 100 times the trigger level.

Page 10 of the report states, *"infiltration of stormwater into soils where it is either infiltrating directly into fill material or where it can flow through fill material downstream of the infiltration trench is NOT recommended. This would likely **accelerate the leaching of pollutants from the fill into the downstream receiving waters.**"*

The mitigation measures being proposed include water harvesting and the creation of 'wetlands' on the site. This report goes on to state that, 'there are currently NO LEGISLATIVE REQUIREMENTS for specific water quality targets for stormwater harvesting and reuse schemes'.

Page 41 states that, *"**the only sewer on site is the sports field itself**"* and that, *"If treated stormwater is to be reused for synthetic field cooling, consideration should be given to chlorination of the water as **there is an increased risk associated with treated stormwater coming into contact with players with open cuts or wounds which provides a pathway for pathogens of infection for users of the field.**"*

Pg. VIII states the following: -

- Concentrations of **lead exceeded the adopted human health criteria at one location**. Concentrations of **nickel, zinc and copper in fill material exceeded the adopted ecological criteria at several locations** around the site.
- Due to the identification of leachable PAHs and lead, and the former landfill areas located in the north western and south western portions of the developable site, there is **the potential of migration of contaminants from the site**.

Just last month (November 2023) advice was given to HSC that following correspondence with NSW Environment Protection Agency (EPA) and given the volume of soil disturbance that is planned, there will be an Environment Protection License required for the contaminated soil treatment at Westleigh Park. This license needs to be obtained prior to DA approval and prior to ANY works commencing on this site.

This is a highly contaminated site and it is concerning that contamination works outlined by council are currently NOT comprehensive and considered best practice. Works are being staged which will

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leave disturbed contaminated soil exposed until the next stage of works can take place, which is also dependent upon funding. This is not ideal for the local community or the surrounding district with a potential for disturbed contamination to leech into the surrounding environment. Everything must be done to ensure the significant contamination is dealt with safely and *in conjunction with* these Pipeline Duplication works being proposed under this REF.



Figure 2 Extent of historical contamination areas 2014

10. Stormwater Changes from Westleigh Park DA

The Biodiversity Development Assessment Report (BDAR) for Westleigh Park DA, Section 2.4 Topography details that the site, *"lies at approximately 140m AHD on an approximately north-trending ridgeline. Land slopes away from the centre of the site to the East and West, while the northern areas slope to the northwest, north and northeast towards gullies."*

The proposed repurposing of this site to a sports precinct is going to remove a substantial area of natural turf and plants which absorb water on this plateau and replace it with synthetic surfaces, footpaths, cement carparks and concrete buildings. Due to the change in impermeable area the flows in the catchment will change substantially post-development. Westleigh Park is set upon a ridgeline and the stormwater impacts will be significant. **The estimated flow prior to development is 5 days per annum and this will rise to 98 days post-development (see table below, pg 24).**

Even with mitigation measures that are proposed, the post-development stormflow days have still increased from 5 days to 33 days.

Plans to mitigate these impacts will in themselves create impacts on the surrounding lands with Option 4 suggesting to 'manufacture wetlands' to absorb some of the excess water. There will be ongoing and increasing risks of excess stormwater running off this plateau into surrounding areas which must be considered BEFORE these Pipeline Duplication works and outlined. There must be

safety measures put in place to ensure the excess stormwater runoff will not impact upon the Thornleigh Reservoir.

With the impacts of climate change an acknowledged threat to biodiversity and human habitation and with increasing rainfall and flooding becoming more widespread, the proposal to remove significant soil at Westleigh Park and replace it with surfaces substantially less porous may have serious impacts upon the Thornleigh Reservoir. Putting a road around this critical infrastructure once this pipeline duplication works are completed will exacerbate the impacts of the water flowing in and around the reservoir site. These impacts must be properly considered prior to works commencing at either location to ensure the safety of the surrounding residents that are literally right next to this site.

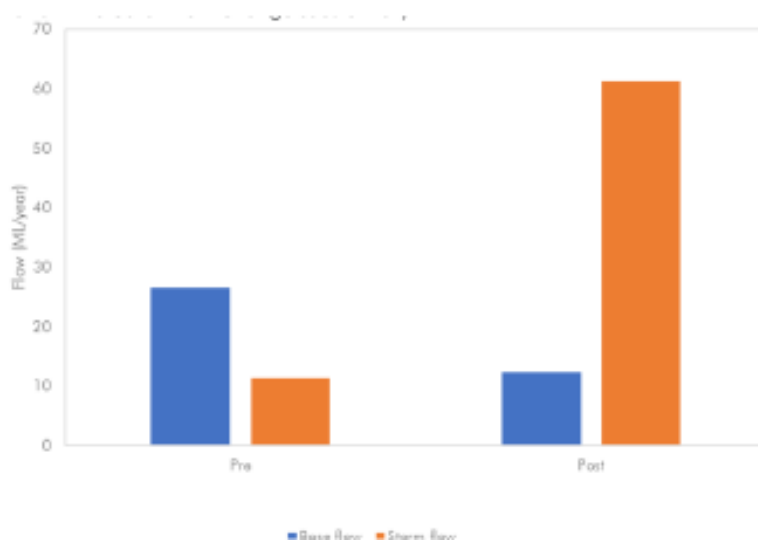


Figure 16 Pre-development and post-development base and storm flow estimates from MUSIC modelling

Conclusion

The REF states that, 'given the potential for (noise) exceedances at night and the duration of works' it is already recognised how highly disruptive this project will be for local residents in this residential area. Combined with the significant DA seeking approval for Westleigh Park and other construction projects occurring in the Westleigh/Thornleigh area at this time, I do not consider the timing of these works appropriate. If the upgrade of this pipeline does not need to happen now, I believe it should be accommodated at a later date.

It is also going to impact upon 'Critically Endangered Ecological Community' and is removing 0.53 ha of STIF and impacting on threatened and native flora and fauna. The works can AVOID many of the impacts if they chose to and I believe these works are far more extensive than what is necessary because Sydney Water has been 'in discussion with' Hornsby Shire Council about the road access they need in order to be able to proceed with their DA/975/2023 for a Regional Sports Precinct to the north of the Thornleigh Reservoir site. Without this access road, the sports precinct proposal is untenable and cannot be approved.

Yet it is a valid concern of the local community that this road is going to put the security and structural integrity of the Thornleigh reservoir at risk.

Any failure of the embankment for this reservoir would result in catastrophic outcomes for local residents which could pose significant risk to human life.

It seems to me this project could be done at a better time for the community and with a less invasive or impactful approach taken. The width of the turning circle for trucks could be down-sized or accommodated elsewhere in order to preserve the sensitive environment that has been described as having 'almost pristine' examples of rare vegetation communities because this area has been fenced off for many years by Sydney Water – to safeguard this important site. Now Sydney Water and Hornsby Council will be opening up this area to the general public and the use will be high volume.

The REF, pg. 38 states that 'quieter construction methods' should be used where feasible. This could be best done by timing these works at a later date and scaling them back to the minimum that is necessary. I do not believe this REF currently considers possible alternatives and I believe it is facilitating the Westleigh Park DA requirement for a road with complete disregard for local amenity and environmental protection legislation.

There are more reports and information that must be provided before these works can be considered. Environmental and amenity impacts will be significant.

Best regards.

Attached Map - Concept Masterplan for Westleigh Park



Sydney Water - Thornleigh Inlet / Outlet Main Duplication – Review of Environmental Factors



It is accepted that duplication of the main pipe between Thornleigh Reservoir and the Thornleigh-Wahroonga Water Pumping Station is desirable. However the upgrade as proposed is likely to have a significant impact on the environment and should therefore be amended to avoid the impacts.

Temporary environmental impacts during construction have been identified by Sydney Water which include:

- soil impacts related to ground disturbance
- water impacts related to groundwater extraction and works above/near waterways
- biodiversity impacts from vegetation disturbance
- noise and vibration impacts from plant, equipment, and vehicles
- traffic and access changes

The Sydney Water Review of Environmental Factors (REF) assessment concluded that *"the proposal is unlikely to have a significant impact on the environment"* and therefore *"an Environmental Impact Statement (EIS) is not required"*. We disagree with this assessment for the following reasons.

1. Removal of Threatened Species on Thornleigh Reservoir site

0.53 ha of critically endangered Sydney Turpentine-ironbark Forest (STIF) would be removed as a result of removing threatened native vegetation being;

0.15 ha of PCT 1183 (moderate and high quality) at the northern construction footprint, along the widened access track, and

0.38 ha of PCT 1281 (low, moderate, and high quality) at the northern construction footprint, along the widened access track and surrounding the launch shaft

Plus 0.55 ha of potential habitat for the following two threatened flora species;

Epacris purpurascens var. *purpurascens* (Vulnerable, BC Act).

Bauer's Midge Orchid *Genoplesium baueri* (Endangered, BC Act and EPBC Act).

There is sufficient distance between the foot of the reservoir embankment and the Sydney Turpentine-Ironbark Forest trees to enable the construction of a widened access track without removing trees or impacting upon the root zones of the trees. It can be seen from the pink outline of the impact area in the diagram above that there is more than enough distance between the embankment and the trees, otherwise the launch shaft shed could not extend as far west towards the embankment as is proposed. Similarly the 'bulge' to the east of the north/south access track should be on the western side of the road.

This would reduce the impact on the STIF as well as on the potential habitat for the two threatened flora species.

2. Size of the acoustic shed for the launch shaft

The acoustic shed encompasses the launch shaft on the Thornleigh Reservoir site and is considered by Sydney Water to be the largest footprint that is likely to be needed by the site contractors. However this impact area also includes sufficient space to include a truck turning area to enable trucks to enter and exit in a forward direction. It is that turning area which requires the greatest amount of Sydney Turpentine-Ironbark Forest (STIF) removal on the site.

As discussed at the community information session on 29 November 2023, a truck turntable could instead be installed which would reduce the impact area considerably and negate the need for most of the removal of STIF south of the launch pit. Compared to the overall cost of this development the cost of installation of a truck turntable would be minimal and it would significantly reduce the environmental impacts of the proposal. **An alternative design for the infrastructure and acoustic shed which would avoid impacts on the STIF has not been adequately considered.**

3. Significant Impact Criteria

The Flora and Fauna Assessment (FFA) has incorrectly interpreted the *Matters of National Environmental Significance (MNES) Significant Impact Guidelines*. The FFA states that "the proposed impacts of the project will not result in a substantial reduction to the extent of the Turpentine-Ironbark Forest". However the MNES Guidelines do not require there to be a "substantial" reduction to the extent of the Forest, rather that a project will simply "reduce the extent of an ecological community" for an action to be considered as having "a significant impact on a critically endangered ecological community".

In addition there is a real chance or possibility, as described in the FAA that the project will "modify abiotic (non-living) factors (such as water, nutrients, or soil)" which are necessary for an ecological community's survival, "including reduction of groundwater levels, and alteration of surface water drainage patterns". In accordance with the Guidelines, these actions are therefore also likely to have a significant impact. The precautionary principle must be applied.

Furthermore, by building the access road/track immediately adjacent to the Sydney Turpentine-Ironbark Forest (STIF), the project will increase the 'edge effects' upon the STIF. These edge effects include the drying out of the edge of the Forest, reduction in plant species with an increase in shade-intolerant species, increase in weed species and an increase in native miner and magpie numbers at the expense of other smaller native bird species.

This will cause a substantial change in the species composition of the STIF ecological community and cause a substantial reduction in its quality and integrity. Additionally, because the strip of STIF along the eastern boundary of the Reservoir site is already narrow, any increase in edge effects will increase fragmentation of the ecological community.

By these definitions, the project meets the significant impact criteria for *Matters of National Environmental Significance (MNES)* and a Referral must therefore be made under the Commonwealth EPBC Act.

4. Pruning trees at Quarter Sessions Road entry

A question was asked at the community information session as to whether the entry from Quarter Sessions Road could be moved further north to prevent having to prune the Sydney Turpentine-Ironbark Forest trees. A written response was provided that stated in part -

"we do not propose to impact on land outside of the reservoir, where possible. The existing access gate and track will accommodate the large construction plant movements. There will be minimum impacts from the work associated with this access track".

Given that Sydney Water is involved in ongoing discussions with Hornsby Shire Council with regard to Council constructing an access road for Westleigh Park through the Thornleigh Reservoir land, which will use the Quarter Sessions Rd entrance, Sydney Water could and should consider avoiding any impact on the Sydney Turpentine-Ironbark Forest trees at the entrance by moving the entrance slightly northwards onto Council land. The mature trees will be much better balanced and therefore healthier if large limbs are not removed from one side, risking weak epicormic growth.

After all, if part of Council's access road will be on Sydney Water land, there is no reason that an entrance way for Sydney Water cannot be on Council land. Indeed Council intends to use its entrance adjacent to the Sydney Water site and then divert the access road into the Reservoir site.

We believe that Sydney Water is failing to find a reasonable alternative to pruning the Quarter Sessions Rd trees.

5. REF has not considered the existing levels of impact from other sources

The REF has not considered the existing levels of impact from other sources, being the development of the adjacent Westleigh Park regional sporting complex and the consequent cumulative impacts. The *Matters of National Environmental Significance (MNES) Significant Impact Guidelines* states that it is important to consider the "existing levels of impact from other sources".

Sydney Water is acutely aware that Hornsby Shire Council is intending to develop a regional sporting complex adjacent to the Thornleigh Reservoir as there has been considerable correspondence between the two parties with regard to Council obtaining an access road for the sporting complex through the Sydney Water site. Sydney Water is also aware of the proposed impacts on the STIF within Westleigh Park, which currently forms a contiguous corridor of STIF, because local community groups have repeatedly raised issues about the Westleigh Park proposal with Sydney Water management.

Hornsby Council has included the whole of the Sydney Water Thornleigh Reservoir site in its Development Application (DA) for the Westleigh Park development due to their desire for an access road through the site. **Not coincidentally, the access road that Council wants follows virtually exactly the same route as the Sydney Water access track for its pipeline duplication** (Council BDAR map below).



Council acknowledges in its Biodiversity Development Assessment Report (BDAR) for their DA that **the impact on the Sydney Turpentine-Ironbark Forest within Westleigh Park and Thornleigh Reservoir site requires a Referral to the Federal Environment Minister under the Commonwealth Environment Protection and Biodiversity Conservation (EPBC) Act.**

We therefore consider it to be unacceptable that Sydney Water is declining to make a Referral to the Federal Minister regarding the pipeline duplication project, when Sydney Water's footprint is virtually identical to Hornsby Shire Council's proposed footprint on the Reservoir land, plus a significant amount more for the truck turnaround area.

Furthermore, it is not acceptable for Sydney Water to clear Sydney Turpentine-Ironbark Forest that Hornsby Shire Council would otherwise be seeking permission to clear for their regional sporting complex project. Sydney Water should not be seen to be facilitating destruction of critically endangered forest that would assist another project.

6. REF does not consider timing or costing of adjacent development

The REF does not address the timing of the Sydney Water pipeline duplication project with regards to Hornsby Shire Council's regional sporting complex project. Council intends, should it receive approval from Sydney Water to use the Thornleigh Reservoir site for its regional sporting complex access road, to construct the access road as part of Stage 1 of Council's development.

The REF must therefore take into consideration how Council's timetable will impact upon the Sydney Water pipeline duplication timetable and who will pay for construction of the road.

7. REF has not adequately considered Thornleigh Reservoir safety and security

As discussed at the Sydney Water community information session, there have been numerous issues with people cutting fences to get into the Westleigh Park site from Koorinal Ave, Thornleigh, through the old Sydney Water access. Considerable damage has also been done to the Sydney Turpentine-Ironbark Forest by unauthorised mountain bike access. An attendee at the Sydney Water community information session even mentioned that his friend's son had broken into the Thornleigh Reservoir and swam in the Reservoir itself.

By opening up an access road that is highly visible and accessible to teenagers and thrill seekers out to prove themselves, Sydney Water puts the critical infrastructure of Thornleigh Reservoir at an increased risk. Simple chain link fencing will not deter thrill seekers nor will security that is not onsite 24/7. This will be further exacerbated if or when Sydney Water approves an access road for Council.

The REF must consider the safety and security aspects of its pipeline duplication project and the adjacent Hornsby Council project. The REF must be able to assure the general public that Sydney Water will have adequate security measures in place for the protection of the Reservoir critical infrastructure, the community and for any thrill seekers that break in.

8. REF has not adequately considered traffic impacts including cumulative impacts

The REF includes a Traffic and Transport Impact Assessment which states in section 3.4.4 that Hornsby Council's Traffic Study concluded that *"The intersection of Duffy Avenue / Chilvers Road / The Esplanade currently operates near capacity on weekdays during the PM peak period"*, and that was 4 years ago. Yet it is proposed that all of the pipeline construction traffic utilize this intersection. The REF has not even considered the additional current projects that will further burden this intersection, being the distribution centre on Chilvers Rd for which their traffic report shows there will be 410 additional vehicle movements per day, including 111 truck movements which will all have to use this intersection. Plus the industrial warehouse being built in Sefton Rd near the corner of Chilvers Rd for which most truck movements will again use the same intersection.

The REF must provide cumulative impact studies, not simply Reservoir traffic in isolation.

9. REF has not adequately considered traffic impacts on Reservoir infrastructure

The REF has not considered the impacts on the pipeline duplication and associated infrastructure of a catastrophic failure of the Reservoir embankment. Previous Sydney Water documentation obtained under the *Government Information (Public Access) Act* stated that a south-eastern embankment failure would have a catastrophic impact on property and life. **That corner of the embankment is where Hornsby Shire Council proposes to excavate to facilitate their access road joining onto Sefton Road.**

Mapping provided at the community information session showed that there is insufficient width for any road, even of the width of Sefton Road without footpaths, between the embankment and the Sydney Water southern boundary. Skirting the embankment would also require a 90 degree bend into Sefton Road, if it could fit, which a road doesn't.

Page 50 of the REF states **"At the Thornleigh Reservoir site, NO EXCAVATION can occur on the dam OR EMBANKMENT, to protect the STRUCTURAL INTEGRITY and stability of the dam and PREVENT DAM FAILURE"** (capitals inserted).

Dam failure would not only have a catastrophic impact on property and life, it would have a catastrophic impact on both the pipelines, which are closer to the surface within the Reservoir site.

CONCLUSION

We are of the opinion that the Review of Environmental Factors does not adequately address a significant number of issues that must be resolved and re-exhibited prior to any formal decision on approval of this project.

Submission 7

Sydney Water - Thornleigh Inlet / Outlet Main Duplication – Review of Environmental Factors - Additional submission

Further to our recent submission on the above project, we wish to provide the additional information below.

In addition to our previous Point 4, reiterated below, we are providing an additional map from Hornsby Shire Council's September 2023 General Meeting.

4. Pruning trees at Quarter Sessions Road entry

A question was asked at the community information session as to whether the entry from Quarter Sessions Road could be moved further north to prevent having to prune the Sydney Turpentine-Ironbark Forest trees. A written response was provided that stated in part -

"we do not propose to impact on land outside of the reservoir, where possible. The existing access gate and track will accommodate the large construction plant movements. There will be minimum impacts from the work associated with this access track".

Given that Sydney Water is involved in ongoing discussions with Hornsby Shire Council with regard to Council constructing an access road for Westleigh Park through the Thornleigh Reservoir land, which will use the Quarter Sessions Rd entrance, Sydney Water could and should consider avoiding any impact on the Sydney Turpentine-Ironbark Forest trees at the entrance by moving the entrance slightly northwards onto Council land. The mature trees will be much better balanced and therefore healthier if large limbs are not removed from one side, risking weak epicormic growth.

After all, if part of Council's access road will be on Sydney Water land, there is no reason that an entrance way for Sydney Water cannot be on Council land. Indeed Council intends to use its entrance adjacent to the Sydney Water site and then divert the access road into the Reservoir site.

We believe that Sydney Water is failing to find a reasonable alternative to pruning the Quarter Sessions Rd trees.

4(b). It can be seen from the additional map on the next page, that Hornsby Shire Council intends to build a construction access road from Quarter Sessions Rd, immediately adjacent to the access road that Sydney Water intends to construct. Council intends to use that access road on their land, which is in the cleared area immediately north of the Thornleigh Reservoir site, at the beginning of 2025 to June 2026 (see excerpt from same Council meeting documents below). It is therefore wholly reasonable for Sydney Water to use that entrance instead of lopping the trees of the Sydney Turpentine-Ironbark Forest which lines the side of the Sydney Water entrance.

Timeframes planned for staged construction are as detailed in the table below:

Stage 1a – 18 months	Jan 2025 to Jun 2026	opening Jun 2026
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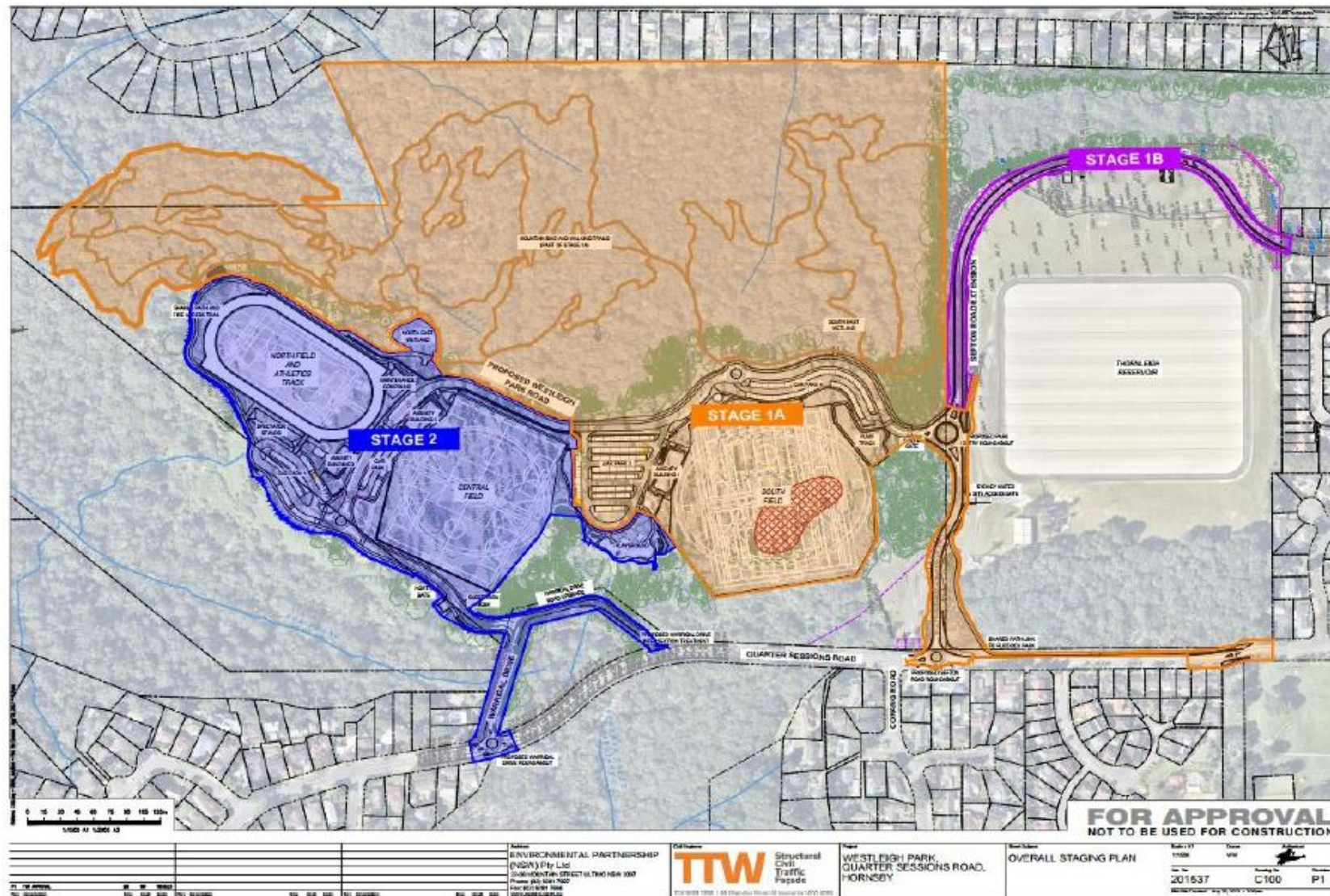
General Meeting 13 September 2023

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We believe that Sydney Water is failing to use this reasonable alternative to pruning the Quarter Sessions Rd entrance trees.



- 2 -



Hornsby Shire Council

Attachment to Report No. IM623 Page

Submission 8

Dear Sydney Water

I am writing in regards to the construction of the compound required for the Thornleigh Pipeline Duplication. [REDACTED]

[REDACTED] Please could you address my following questions and concerns:

1. What activity will be taking place at the southern end of the compound, as the scope appears quite wide? Does this involve constructing buildings to house equipment and chemicals? What type of chemicals will be stored? Will this whole area be concreted? I am concerned about the impact of excessive noise and increased activity in an area which is generally very quiet.

2. Do you have detailed information as to how close [REDACTED] the compound will come? [REDACTED]

3. Is there an intention to utilise the northern end of the compound as priority in order to minimise impact to residents?

Thank you in advance for addressing these questions.

Kind regards

[REDACTED]





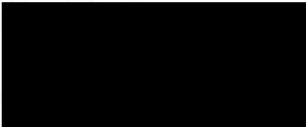
Submission 9

Dear Sir/Madam

I wish to know:

- the exact Starting date of project.
- What will the pipe itself be made of?
- What is the maintenance corridor for this pipeline?
- will there be access points for maintenance and if so, where will these be?
- what is the time period during the project that the lower end Edmundson Close walkway shortcut to Thornleigh Railway Station be inaccessible?
- When work is complete, will the walkway shortcut to Thornleigh Station still be available and easily accessible?

Thank you





Submission 10

Hi [REDACTED]

Thank you and the gentlemen for their time tonight to present to the Residents and Committee members.

Outstanding questions for the Sydney Water project area:

- Please provide details of the degradation process, the report and how any damage to residents or community association property is made good through this process.
- Please clearly state who is responsible for making good any damage from the tunnelling process. (i.e. Sydney Water or Contractor)
- Please provide details of the how and where the sound and vibration monitoring will be located on the Community Association during the tunnelling below the estate.
- Please provide a copy of the map illustrating the tunnel location under the estate and the depth of the tunnel (i.e. Top of Tunnel to Duffy Rd.)

Thank you once again for your assistance in arranging this presentation tonight.

Regards
[REDACTED]



Submission 11

Hello

I have just received the flyer regarding the pipeline duplication project at Thornleigh.

The pipeline will run down my street, [REDACTED] however it has been completely left off the map that shows the approximate location of the pipeline. I have gone to the website listed to find more details however it cannot be found. It was supposed to be available today. Do you know when this will be available?

We live [REDACTED] so are keen to find out the likely impact for the two years the project is forecast to take and whether the duplicate pipeline runs under our property.

Thank you

[REDACTED]



References

Commonwealth of Australia 2013. *Matters of National Environmental Significance: Significant impact guidelines 1.1. Environment Protection and Biodiversity Conservation Act 1999.*

Eco Logical Australia, 2023. *Westleigh Park - Biodiversity Development Assessment Report.* Prepared for SJB Planning (NSW) Pty Ltd, September 2023.

SJB Planning, 2023. *Environmental Impact Statement for Designated Development, Westleigh Park, Quarter Sessions Road, Westleigh.* Prepared for Hornsby Shire Council, September 2023.

State of New South Wales through Department of Planning and Environment, 2022. *Guidelines for Division 5.1 assessments,* June, 2022.

Glossary

Term	Meaning
Ancillary facilities	Infrastructure that supports the operation of treatment plants and pipelines
Ecosystem	A community of organisms and their physical environment interacting together
Environmental planning instruments	Collective name for Local Environmental Plans (LEPs), State Environmental Planning Policies (SEPPs) and Regional Environmental Plans (REPs) under the <i>Environmental Planning and Assessment Act 1979</i> (NSW)
Fauna	Animals
Flora	Plants
Groundwater	Water that accumulates underground within cracks or pores in rocks. This water forms groundwater resources, which eventually flow into rivers, lakes or the ocean
Habitat	The natural resource, physical and biotic factors that are present in an area that support the survival of plants and animals
Impact area/ construction footprint	The area that will be impacted by the proposal
Light spill	When light falls outside the object or area to be illuminated
Runoff	Flow of water on ground surfaces due to rainfall
Stormwater	Rainwater that runs off hard surfaces like roofs and roads and is carried away by stormwater drains flowing into local waterways
Tunnelling	A method of building a pipeline by drilling an underground bore in which the pipe is installed. It is a method of construction that reduces environmental and community impacts

Abbreviations

Abbreviation	Definition
BAM	Biodiversity Assessment Method
BC Act	<i>Biodiversity Conservation Act 2016 (NSW)</i>
BDAR	Biodiversity Development Assessment Report
BOS	Biodiversity Offset Scheme
CEEC	Critically Endangered Ecological Community
CEMP	Construction Environmental Management Plan
DA	Development Application
DPE	Department of Planning and Environment
DPI	Department of Primary Industries
EEC	Endangered Ecological Community
EIA	Environmental Impact Assessment
EIS	Environmental Impact Statement
EP&A Act	<i>Environmental Planning and Assessment Act 1979 (NSW)</i>
EP&A Regulation	Environmental Planning and Assessment Regulation 2000 (NSW)
EPBC Act	<i>Environment Protection and Biodiversity Conservation Act 1999 (Commonwealth)</i>
HSC	Hornsby Shire Council
MNES	Matters of National Environmental Significance
REF	Review of Environmental Factors
SEPP	State Environment Planning Policy
SIC	Significant Impact Criteria
SIS	Species Impact Statement
SSD	State Significant Development
SSI	State Significant Infrastructure
STIF	Sydney Turpentine Ironbark Forest
TBM	Tunnel boring machine
TEC	Threatened ecological communities
TISEPP	State Environment Planning Policy (Transport and Infrastructure) 2021
TMP	Traffic Management Plan
ToS	Test/s of Significance

