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Our ref: 754-NTLEN329399-L03 Rev 1

Transport for New South Wales
Level 37, 680 George Street
Sydney NSW
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Attention: Pat Patel

Glendale Concept DA - Council RFI Letter, Contamination, Mine Subsidence and Geotechnical Responses

1. INTRODUCTION

Tetra Tech Coffey Pty Ltd. (Tetra Tech) has prepared technical reports to inform contamination, mine subsidence and geotechnical aspects in support of a Concept Development Application (DA) and first stage of development relating to 65 Glendale Drive, Glendale NSW 2285. The subject site is legally described as Lot 1 in DP 1286424 and has a total site area of 35.85 hectares (the Site). The Site (shown in **Figure 1** below) is owned by the Transport Asset Holding Entity (TAHE). The Site is largely vacant, except for a small portion of land to the south, which is being used by Sydney Trains for project operations and will be retained for this purpose. The Site is currently zoned as a combination of E2 commercial centre, MU1 mixed use, C2 environmental conservation as described in Lake Macquarie Local Environment Plan (LEP) 2014 on Land Zoning Map - Sheet LZN_008C.

Figure 1: Proposed Lot Layout

1.1 PROPOSED CONCEPT DESIGN

Specifically, the combined application comprises the following elements:

- A Concept DA under s4.22 of the EP&A Act with proposed arrangement comprising:
  - internal vehicular and active transport network;
  - connections and alterations to the adjacent street network;
  - civil and stormwater arrangement;
  - bulk earthworks arrangement;
  - landscaped and public open space areas;
  - bush fire management arrangement;
  - ecological management arrangement;
  - heritage management arrangement;
  - future development parcels; and
  - land use and development envelope associated with each parcel.
- A first stage of development, which includes subdivision comprising two phases:
  - Phase 1: Three (3) lots (north and south of Glendale Drive) – Subdivision Certificate only; and
  - Phase 2: Subdivision of Lot 3 created at Phase One into seven (7) lots, including one (1) lot for proposed road reserve. Works to facilitate the second subdivision phase, including (but not limited to):
    - bulk earthworks;
    - civil (stormwater and road) infrastructure; and
    - servicing infrastructure.

The Concept DA proposes the following uses for each lot:

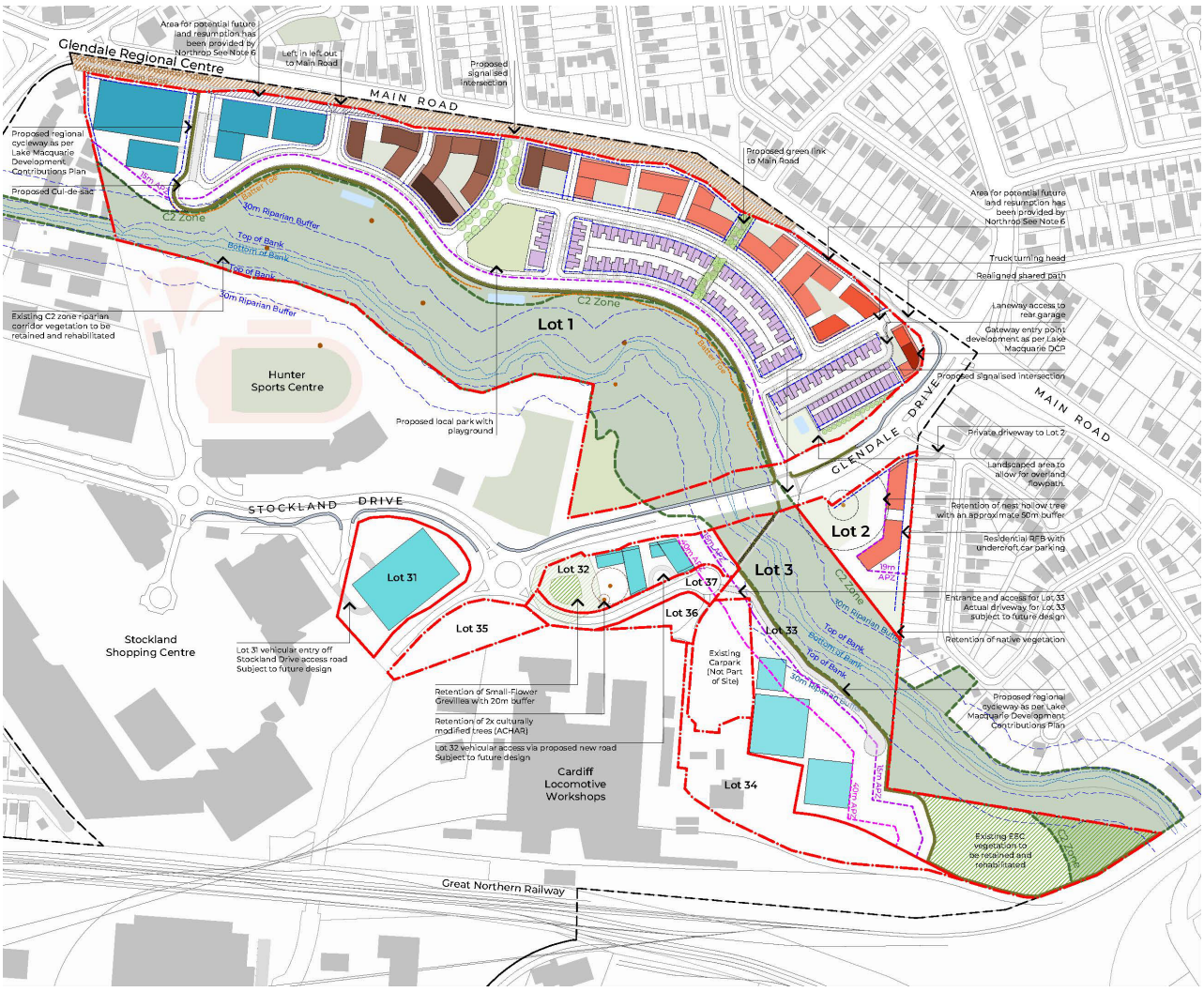
- Lot 1 (north of Glendale Drive)
  - development parcels comprising:
    - mixed use buildings;
    - residential flat buildings;
    - multi dwelling housing;
    - commercial premises; and
  - public open space.
- Lot 2 (north of Winding Creek and east of Glendale Drive)
  - a development parcel comprising residential flat buildings.
- Lot 3 (south of Glendale Drive)
  - subdivision at Phase 2 into seven lots comprising:
    - three lots with a permissible use (Lot 31, Lot 32 and Lot 33);
    - three lots to be retained by TAHE for existing transport operational purposes (Lot 34, Lot 35 and Lot 36); and
    - one lot for dedication as road reserve (Lot 37)

For the first stage of development, Phase 1 proposes to separate the existing Lot 1 DP1286424 into three lots (Lots 1, 2 and 3 which has two parts) as shown on Figure 1. This would facilitate the future development and activation of the Site in line with a Concept DA and associated proposed land uses as discussed in the Introduction (Section 1).

The proposed Lot 1 and Lots 2 and 3 areas are already functionally separated by Glendale Drive and Stockland Drive and the proposal is to create three separate titles defining the Northern Lot 1 and the Southern Lots 2 and 3 into separate developable areas within the Site.

The subdivision will create essentially two functional areas of development. The first, to the north, will be extensively a mixed-use area with mostly residential development across the current northern bushland with retention of a riparian corridor. The second area to the south, will be primarily focused on commercial developments within Lot 3 (intended to be subdivided) with the smaller area of Lot 2 proposed for residential use. The Glendale Envelope Plan (GEP) showing the proposed developed form is shown in Figure 2.

Figure 2: Glendale Envelope Plan



Following TAHEs submission of the Concept DA (DA/598/2024) for the Concept Development and First Stage of Development – Subdivision to the Lake Macquarie City Council (Council), responses and requests for information (RFI) were provided for discussion and closeout with the various technical advisers for the Project.

Items were identified within the RFI related to contamination, mine subsidence and geotechnical factors advised by Tetra Tech. Tetra Tech is pleased to provide responses to the RFI items within this response letter.

1.2 RELEVANT TETRA TECH REPORTS AND SUBMITTED REVISIONS

Tetra Tech has completed and provided the following reports and revisions to inform the submission of the Concept DA. These include:

- *Glendale Concept Development Application and First Stage of Development - Statement of Nil Requirement for Contamination Assessments for Subdivision Application, Tetra Tech Coffey, dated 14 February 2024* (Reference: 754-NTLEN329399-L02)
- *Glendale Concept Development Application and First Stage of Development, Remediation Strategy Report - 65 Glendale Drive, Glendale, Tetra Tech Coffey, dated 14 February 2024* (Reference: 754-NTLEN329399-R01)
- *Concept Development Application and First Stage of Development, Detailed Site Investigation (Phase 2, Lot 3 Subdivision), dated 14 February 2024* (Reference: 754-NTLEN329399-R04)
- *Concept Development Application and First Stage of Development, Remediation Action Plan – Phase 2, Lot 3 Subdivision, dated 14 February 2024* (Reference: 754-NTLEN329399-R05)
- *Concept Development Application and First Stage Development 65 Glendale Road, Glendale, Mine Subsidence Assessment Report, dated 20 February 2024* (Reference: 754-NTLGE320046-AC.Rev 3
- *Glendale Concept Application and First Stage of Development, Geotechnical Report, dated 20 February 2024* (Reference: 754-NTLGE320046-AD Version 3).

2. TETRA TECH RESPONSES TO RFI

The RFI items specific to the Tetra Tech advice disciplines and the relevant are included in Table 2-1.

Table 2-1: Tetra Tech RFI Responses

RFI Item Reference	Planning Panel Clarification	Tetra Tech Response
Panel Comments	The Panel questioned the overall approach to the site with the four storey height limits proposed and whether there could be opportunities for further variety in heights across the site (mid-range) and that this could offer possible solutions to biodiversity and social housing. The applicant noted that mine subsidence is dictating the practical limit for 4 storeys to avoid a requirement for grouting to create adequate foundations.	Yes, this was the initial advice from Tetra Tech however after working through the desktop study and feedback from Subsidence Advisory (SA) NSW due to the size of the developments they will be all B3[1] so no change in class. Structurally, for construction costs versus floor space, there is little difference in designing for subsidence for 4 storeys and 8 storeys, given the rock is at a depth of 6m. Detailing of the developments may also improve the flexibility by having a soft floor for the first level i.e. mostly carparking and large commercial with limited hard walls (i.e. avoid lots of glass or tiled kitchens or bathrooms on the lowest floor).
Activation of Main Road Frontage	Presentation of commercial frontages to Main Road is supported however lot 103 appears to interrupt this. To ensure the commercial presence is enforced the use of 103 as residential is to be reconsidered. In addition, the interface of residential development to Main Road is to be considered with intention of retaining mature vegetation to this frontage. There may be scope to increase height of development around the commercial precinct to ensure yields are maintained.	Due to the current size and building costs, the developments will all fit within the B3 category. As such there is unlikely to be an issue for buildings up to 8 storeys. Above 8 storeys there is likely to be an increase in the cost per m^2 of floor space due to increased lateral loads.
Biodiversity	The following information is required in order to appropriately assess impacts to flora and fauna values: • Redesign of proposed Lot 32 shall be considered to avoid further removal of	With respect to the development of Lot 32, both contamination and geotechnical constraints were identified that would require addressing during the design phase. As identified in the respective geotechnical and contamination reports, these include: • Subsurface conditions are generally anticipated to comprise up to 1.0m of fill overlying clayey residual material. Weathered rock typically expected at depths of

[1] Subsidence Advisory NSW Classification of Building Type for Merit Based Assessment

RFI Item Reference	Planning Panel Clarification	Tetra Tech Response
	native vegetation. The lot contains vegetation mapped as EEC and is susceptible to water logging and semi-permanent water standing which may not be suitable for development. Consideration should be given avoid the development of proposed Lot 32 entirely. • The Powerful Owl nest/roost tree requires a buffer of 100m (nest) or 50m (roost) as per the Large Forest Owl Planning and Management Guidelines (LMCC 2014). While it is understood that a 100m buffer might not be achievable, the development should be adjusted to significantly increase the buffer possibly to 50m.	around 1.5 – 2.0m. Depth to rock / depth of soils may rapidly vary in the north-eastern portion of the lot (possibly in proposed riparian corridor / close proximity to Winding Creek – additional investigation is required to understand this change). • Presence of former sludge pond in proposed Lot 32. Sediments within sludge pond are expected to be saturated and loose or soft. Settlement / consolidation, earthworks and foundation issues would likely arise where construction occurs over the sludge pond (assuming sludge pond sediments are left in place and / or capped). Handling of the sludge pond sediments will require consideration of contamination issues. Foundations likely to require engineered solution with footings uniformly founded in natural soils below all fill / disturbed ground. • Required management or remediation of contaminated sludge will be confined mainly to the Western portion of Lot 32 and is not proposed to incorporate areas related to the EEC. Surface water flows are not proposed to be modified as part of required remedial works/development given the sludge pond is located downgradient from the EEC.
Contamination	The detail of the Remediation Action Plan (RAP) Phase 2, Lot 3 Subdivision, define the material from Lot 31 will be moved to Lot 33 for fill does this require an NSW Environment Protection Authority Environmental Licence. Please confirm if the requirement for Environmental Protection Licence is required to implement the RAP.	The EPL is a requirement under clause 48 of the POEO Act to allow a scheduled activity to operate on a premises. The proposed remediation works meet the definition of treatment of contaminated soil (non-thermal) as listed for Activity 15 in Schedule 1 of the POEO Act which states: *"(1) This clause applies to contaminated soil treatment, meaning the on site or off site treatment of contaminated soil (including, in either case, incineration or storage of contaminated soil but excluding excavation for treatment at another site).* *(2) The activity to which this clause applies is declared to be a scheduled activity if -* *(a) in any case, it has the capacity to treat more than 1,000 cubic metres per year of contaminated soil received from off site, or* *(b) where it treats contaminated soil originating exclusively on site, it has a capacity –* *i. to incinerate more than 1,000 cubic metres per year of contaminated soil, or* *ii. to treat (otherwise than by incineration) and store more than 30,000 cubic metres of contaminated soil, or* *iii. to disturb more than an aggregate area of 3 hectares of contaminated soil."*

RFI Item Reference	Planning Panel Clarification	Tetra Tech Response
		Regarding the process of applying for and the EPA approving the EPL, the Development Approval will need to include the EPL as a condition. The EPA will consider issue of the EPL only when EPA is certain that Council has included the requirement for an EPL as part of the planning approval for the development of the site.
Subsidence Advisory	Subsidence Advisory has conducted a review of the Tetra Tech Coffey Report 'Concept Development Application and First Stage Development 65 Glendale Road', Glendale' Ref: 754-TLGE320046-AC. Rev3, dated 20 February 2024. An amended report for the application is requested which provides consideration of: • Table 4 (summary of uncertainty factors) states a weighting of 2 for the Geotechnical Environment (R1). Under our subdivision and merit assessment policies this weighting value should be 3. • The report advises the subsidence mechanism is residual subsidence over extracted mini walls. For this mechanism of subsidence, application of our design requirements in our policies should be as per pillar factors of safety not being met.	All matters raised by SA have been included in the Revision 4 of the mine subsidence report (Ref: 754-NTLGE320046-AC. Rev 4, dated 25 June 2024). This document was an update that was completed following the provision of inputs from SA post DA submission.

For and on behalf of Tetra Tech Coffey.

Paul Wright
Site Assessment and Remediation Team Leader (Newcastle)

cc

Attachment

Please note: This report must be read in the context of the attached limitations.

APPENDIX A: LIMITATIONS

IMPORTANT INFORMATION ABOUT YOUR TETRA TECH COFFEY ENVIRONMENTAL REPORT

Introduction

This report has been prepared by Tetra Tech Coffey for you, as Tetra Tech Coffey's client, in accordance with our agreed purpose, scope, schedule and budget.

The report has been prepared using accepted procedures and practices of the consulting profession at the time it was prepared, and the opinions, recommendations and conclusions set out in the report are made in accordance with generally accepted principles and practices of that profession.

The report is based on information gained from environmental conditions (including assessment of some or all of soil, groundwater, vapour and surface water) and supplemented by reported data of the local area and professional experience. Assessment has been scoped with consideration to industry standards, regulations, guidelines and your specific requirements, including budget and timing. The characterisation of site conditions is an interpretation of information collected during assessment, in accordance with industry practice.

This interpretation is not a complete description of all material on or in the vicinity of the site, due to the inherent variation in spatial and temporal patterns of contaminant presence and impact in the natural environment. Tetra Tech Coffey may have also relied on data and other information provided by you and other qualified individuals in preparing this report. Tetra Tech Coffey has not verified the accuracy or completeness of such data or information except as otherwise stated in the report. For these reasons the report must be regarded as interpretative, in accordance with industry standards and practice, rather than being a definitive record.

Your report has been written for a specific purpose

Your report has been developed for a specific purpose as agreed by us and applies only to the site or area investigated. Unless otherwise stated in the report, this report cannot be applied to an adjacent site or area, nor can it be used when the nature of the specific purpose changes from that which we agreed.

For each purpose, a tailored approach to the assessment of potential soil and groundwater contamination is required. In most cases, a key objective is to identify, and if possible quantify, risks that both recognised and potential contamination pose in the context of the agreed purpose. Such risks may be financial (for example, clean up costs or constraints on site use) and/or physical (for example, potential health risks to users of the site or the general public).

Limitations of the Report

The work was conducted, and the report has been prepared, in response to an agreed purpose and scope, within time and budgetary constraints, and in reliance on certain data and information made available to Tetra Tech Coffey.

The analyses, evaluations, opinions and conclusions presented in this report are based on that purpose and scope, requirements, data or information, and they could change if such requirements or data are inaccurate or incomplete.

This report is valid as of the date of preparation. The condition of the site (including subsurface conditions) and extent or nature of contamination or other environmental hazards can change over time, as a result of either natural processes or human influence. Tetra Tech Coffey should be kept appraised of any such events and should be consulted for further investigations if any changes are noted, particularly during construction activities where excavations often reveal subsurface conditions.

In addition, advancements in professional practice regarding contaminated land and changes in applicable statues and/or guidelines may affect the validity of this report. Consequently, the currency of conclusions and recommendations in this report should be verified if you propose to use this report more than 6 months after its date of issue.

The report does not include the evaluation or assessment of potential geotechnical engineering constraints of the site.

Interpretation of factual data

Environmental site assessments identify actual conditions only at those points where samples are taken and on the date collected. Data derived from indirect field measurements, and sometimes other reports on the site, are interpreted by geologists, engineers or scientists to provide an opinion about overall site conditions, their likely impact with respect to the report purpose and recommended actions.

Variations in soil and groundwater conditions may occur between test or sample locations and actual conditions may differ from those inferred to exist. No environmental assessment program, no matter how comprehensive, can reveal all subsurface details and anomalies. Similarly, no professional, no matter how well qualified, can reveal what is hidden by earth, rock or changed through time.

The actual interface between different materials may be far more gradual or abrupt than assumed based on the facts obtained. Nothing can be done to change the actual site conditions which exist, but steps can be taken to reduce the impact of unexpected conditions.

For this reason, parties involved with land acquisition, management and/or redevelopment should retain the services of a suitably qualified and experienced environmental consultant through the development and use of the site to identify variances, conduct additional tests if required, and recommend solutions to unexpected conditions or other unrecognised features encountered on site. Tetra Tech Coffey would be pleased to assist with any investigation or advice in such circumstances.

Recommendations in this report

This report assumes, in accordance with industry practice, that the site conditions recognised through discrete sampling are representative of actual conditions throughout the investigation area. Recommendations are based on the resulting interpretation.

Should further data be obtained that differs from the data on which the report recommendations are based (such as through excavation or other additional assessment), then the recommendations would need to be reviewed and may need to be revised.

Report for benefit of client

Unless otherwise agreed between us, the report has been prepared for your benefit and no other party. Other parties should not rely upon the report or the accuracy or completeness of any recommendation and should make their own enquiries and obtain independent advice in relation to such matters.

Tetra Tech Coffey assumes no responsibility and will not be liable to any other person or organisation for, or in relation to, any matter dealt with or conclusions expressed in the report, or for any loss or damage suffered by any other person or organisation arising from matters dealt with or conclusions expressed in the report.

To avoid misuse of the information presented in your report, we recommend that Tetra Tech Coffey be consulted before the report is provided to another party who may not be familiar with the background and the purpose of the report. In particular, an environmental disclosure report for a property vendor may not be suitable for satisfying the needs of that property's purchaser. This report should not be applied for any purpose other than that stated in the report.

Interpretation by other professionals

Costly problems can occur when other professionals develop their plans based on misinterpretations of a report. To help avoid misinterpretations, a suitably qualified and experienced environmental consultant should be retained to explain the implications of the report to other professionals referring to the report and then review plans and specifications produced to see how other professionals have incorporated the report findings.

Given Tetra Tech Coffey prepared the report and has familiarity with the site, Tetra Tech Coffey is well placed to provide such assistance. If another party is engaged to interpret the recommendations of the report, there is a risk that the contents of the report may be misinterpreted and Tetra Tech Coffey disowns any responsibility for such misinterpretation.

Data should not be separated from the report

The report as a whole presents the findings of the site assessment and the report should not be copied in part or altered in any way. Logs, figures, laboratory data, drawings, etc. are customarily included in our reports and are developed by scientists or engineers based on their interpretation of field logs, field testing and laboratory evaluation of samples. This information should not under any circumstances be redrawn for inclusion in other documents or separated from the report in any way.

This report should be reproduced in full. No responsibility is accepted for use of any part of this report in any other context or for any other purpose or by third parties.

Responsibility

Environmental reporting relies on interpretation of factual information using professional judgement and opinion and has a level of uncertainty attached to it, which is much less exact than other design disciplines. This has often resulted in claims being lodged against consultants, which are unfounded. As noted earlier, the recommendations and findings set out in this report should only be regarded as interpretive and should not be taken as accurate and complete information about all environmental media at all depths and locations across the site.