FORMER LILYDALE QUARRY PLANNING SCHEME AMENDMENT

Geotechnical Overview

Prepared for
HBI LILYDALE PTY LTD
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URBIS

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INTRODUCTION

At 163 hectares, the former Lilydale Quarry (**the land**) is located to the south of Lilydale, in the Shire of Yarra Ranges (see Figure 1). The southern portion of the land, known as Stage 1, underwent a separate planning approval process for which approval has been issued to facilitate development. The balance of the land (Stage 2 – 143.8 hectares of land) is the subject of a proposed Planning Scheme Amendment (PSA).

The land was purchased from the previous quarry operator (Sibelco) in mid-2017 by HBI Lilydale Pty Ltd, a Joint Venture between Intrapac Property, Brencorp Properties, and Bayport. The Joint Venture is hereby referred to as the **Proponent**.

In line with State and local strategic planning policy, it is proposed to amend the Yarra Ranges Planning Scheme to facilitate significant urban renewal of the Stage 2 land. In the coming decades, the combined Stage 1 and 2 land will be home to approximately 8,000 residents in 3,200 homes, community facilities, open space, and a local town centre. This thriving and sustainable neighbourhood will be imbued with walkability and transit-oriented development principles, supported by the delivery of a potential future train station.

The Proponent and its consultant team have undertaken extensive consultation with Yarra Ranges Shire Council (Council) and the Victorian Planning Authority (VPA) to develop a cohesive and robust strategy to manage geotechnical matters relating to the ultimate development of the land. Representatives of the Department of Jobs, Precincts and Regions – Earth Resources Regulation (ERR) have also been consulted on the broader proposal in the context of the current Work Authority (WA199), issued under the *Mineral Resources (Sustainable Development) Act 1990*.

Workshops and meetings have been undertaken since the establishment of the joint venture, with a concentrated effort undertaken between October 2018 and February 2020. This work has resulted in the production of a suite of geotechnical documents, of which this document is included.

PURPOSE

This document has been drafted in support of the PSA for the Stage 2 land. The Geotechnical Overview addresses the following:

- The proposed process to fill the existing quarry pit.
- The planning controls and approval gateways proposed to minimise risk to Council and the community.
- The proposed agreement to be struck by the Proponent and Council to manage community risk.
- The alternate planning position to be employed in the unlikely scenario that the fill does not perform to the desired level.

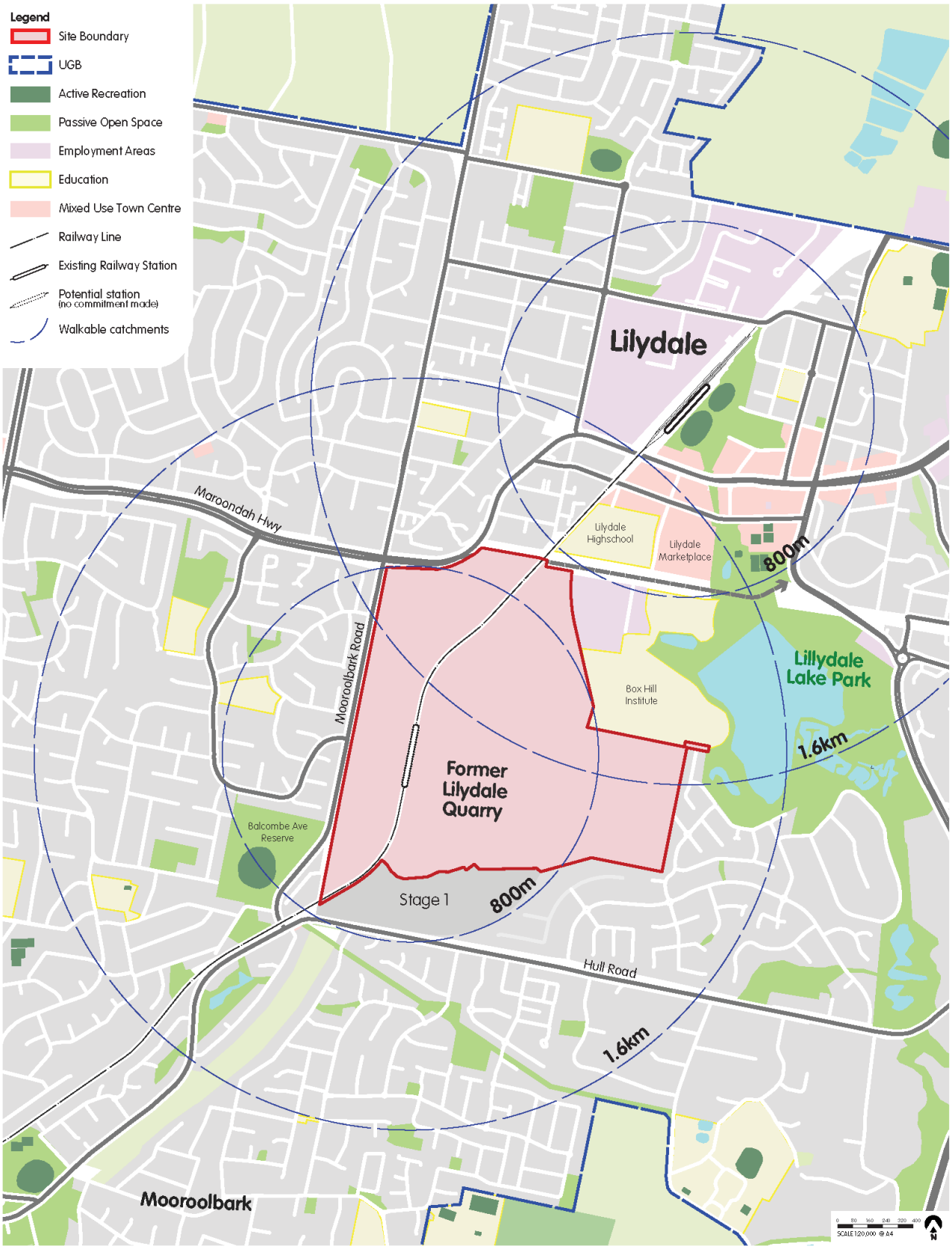

Figure 1: Site location plan

1. BACKGROUND

1.1. SITE HISTORY & CONDITIONS

The land previously incorporated a limestone quarry and lime production facility that operated since the late-19th Century until its closure and sale in recent years.

The eastern portion of the land consists of the quarry pit, processing plant and amenities, product and overburden stockpiles and buffer zone. A redeveloped heritage oval and facilities are located in the northern portion of the land. The western portion of the land originally formed a buffer area to the west of the quarry. It is bounded by Mooroolbark Road to the west and a railway reserve to the east. An easement for the potential future 'Lilydale Bypass' exists along the northern boundary, with another strip of land along the western boundary proposed to be reserved for the potential future 'Healesville Arterial'. The Lilydale Railway line separates the Eastern Land and quarry pit from the Western Land.

A variety of investigations have been undertaken to determine the condition of the land and a summary can be found within the *Geotechnical Framework*, prepared by Tonkin+Taylor (T+T). The document summarises the following investigations:

- Geotechnical (e.g. nature of fill material, land stability, rock stability, assessment of haul roads).
- Environmental (including assessment of site history, inspection of onsite infrastructure/land use, and sampling (soil and groundwater) with laboratory analysis). The assessment of, and proposed management processes for, potential site contamination has been subject to thorough consideration throughout the project. See Section 2.4 for further detail.
- Hydrological (e.g. groundwater modelling in relation to pit filling processes).

The existing condition of the land presently limits connectivity within the region, particularly reducing access from residential areas in the west to Lillydale Lake. Without wholesale redevelopment of the land, it will remain as a hole in the urban fabric of Lilydale, restricting access and presenting ongoing maintenance and surveillance concerns for the landowner and surrounding residents.

1.2. GOVERNANCE ARRANGEMENTS

1.2.1. Current Planning Scheme control

The Responsible Authority for land use and development on the site is the Yarra Ranges Shire Council. The land is currently encompassed within two planning zones:

- The Stage 1 land is zoned General Residential Zone 1, with a planning permit granted by Council for the development of approximately 196 lots.
- The Stage 2 land is controlled by a Special Use Zone (Schedule 1), which relates to land associated with Earth and Energy Resources Industry. This zoning is incompatible with the long-term redevelopment vision for the land and accordingly an amendment to the Yarra Ranges Planning Scheme is sought by the Proponent (see Section 1.3).

1.2.2. Work Authority

Works within the quarry are operating under Work Authority 199, which is administered by ERR. A variation to WA199 was approved by ERR in September 2020, which altered the Work Authority boundary and allows filling of the quarry pit up to RL100 metres (the prior approval allowed filling up to RL40 metres). See the 'Mining Licenses Near Me' search tool on Earth Resources for the revised Work Authority boundary.

It has been contemplated by all parties that WA199 will be extinguished upon reaching RL100 metres, with filling works thereafter to be carried out under a Council works planning permit (consistent with typical bulk earthwork planning permit approvals).

1.3. PLANNING SCHEME AMENDMENT

The Proponent has developed a PSA to facilitate the urban renewal and development of the site over the coming decades. It is considered that the circumstances and complexities inherent in the development of the former quarry, coupled with its status as a state significant urban renewal site, warrant the application of a bespoke planning control framework.

The proposed planning control framework – which has been the subject of discussions with Council and the VPA over the past three years – is predicated on a Comprehensive Development Zone (CDZ) and associated Schedule, and three new overlay provisions that will apply to parts of the site (Heritage Overlay (HO), Environmental Audit Overlay (EAO), and Public Acquisition Overlay (PAO)).

Through the CDZ Schedule, a Comprehensive Development Plan (CDP) will be prepared and enshrined in the Planning Scheme at the time of rezoning, which will provide a cohesive vision for the entire site, a high level urban framework, key infrastructure commitments, and clear objectives and requirements for future development.

The Schedule to the CDZ is based on a logical gateway approval process, which requires further detailed planning to be undertaken prior to the issue of a permit for development. The drafting of the planning control enables the geotechnical requirements that are critically important to the development of the filled land to be clearly articulated in the zone schedule, as part of the application requirements for subdivision and buildings and works. This is further detailed in Section 3.2.

This planning framework avoids the potential for piecemeal planning outcomes and meets Council's stated expectations for a clear and binding plan for the entire site to be locked in at the rezoning stage. Most importantly, the approach enables the development of future plans to adapt and respond to evolving needs and expectations of future communities and for development to achieve best practice outcomes that are relevant at the point of development, as opposed to a point in time when the land is rezoned.

It provides a single zone for the entire site, and incorporates all critical development requirements into a single schedule.

2. PROPOSITION

2.1. DEVELOPMENT PROPOSED

The vision for the former Lilydale Quarry is to deliver a major new urban renewal precinct that prioritises liveability and sustainability. Planned as a true 20-minute neighbourhood, the development of the land will provide housing diversity, recreation opportunities, services and transport modes that support the future community, and integrate with surrounding neighbourhoods. Designed to achieve high levels of walkability, the development will promote social interaction and encourage healthy, active lifestyles.

The land will be home to approximately 8,000 residents and 3,200 dwellings, with supporting community facilities, generous open space, and a local town centre. This thriving and sustainable neighbourhood will be imbued with walkability and transit-oriented development principles

The scale of the land provides an opportunity to create a variety of urban neighbourhoods of diverse character, density and uses to cater for the needs and preferences of different groups. The design of precincts will respond to the particular environmental and cultural values of the land, ensuring that each precinct is authentic and sensitively responds to the site's history.

2.1.1. Precincts

The Stage 2 land has been divided into four precincts, to assist in guiding the future preparation of Precinct Plans: Precinct 1 – Western Neighbourhood, Precinct 2 – Heritage Village, Precinct 3 – Eastern Neighbourhood, and Precinct 4 – Urban Core. Figure 2 illustrates the precinct boundaries.

Precinct 1: Western Neighbourhood

The Western Neighbourhood will predominately feature a mix of traditional (detached, small lot and/or dual occupancy) and medium density (terrace/town house and/or low to mid-rise apartment) housing, which responds to the sloping topography of the land. The northern edge of the precinct will also allow for a commercial mixed-use development that responds to the Maroondah Highway frontage, providing an appropriate landmark for this gateway to Lilydale.

Precinct 2: Heritage Village

The development of the Heritage Village precinct will see the retention and adaptation of significant built heritage elements within the former limestone processing area and farm area for community, commercial, tourism and retail uses. The precinct will be a focus for mixed use activity, which will integrate the site's significant heritage assets with residential uses and open spaces. District-scale sport and recreation facilities will also be provided in the precinct's north. This focal point for the region will be delivered to support future and surrounding residents and complement nearby community facilities (e.g. Lilydale High School, Box Hill Institute).

Precinct 3: Eastern Neighbourhood

The Eastern Neighbourhood will be a model walkable urban neighbourhood with a mix of traditional (detached, small lot and/or dual occupancy) and medium density (terrace/town house and/or low to mid-rise apartment) housing, focused around a defining central park and transecting avenue streets. New development will be integrated with surrounding, established residential areas and the Box Hill Institute land via new pedestrian and cycling links.

Precinct 4: Urban Core

The location for a vibrant higher density transit-oriented development focused around a potential future train station and urban plaza. Mixed use development will be delivered as a priority within the walkable catchment of the station. Community facilities and open space will be delivered in the north of the precinct. While Precinct 4 is predominately located within the extent of the existing quarry pit, the north-eastern area of the precinct is not on filled land. This land will be used as an alternate location for community facilities in the unlikely event that the proposed extent of development cannot be undertaken on the filled land (see Section 2.5 for further detail).

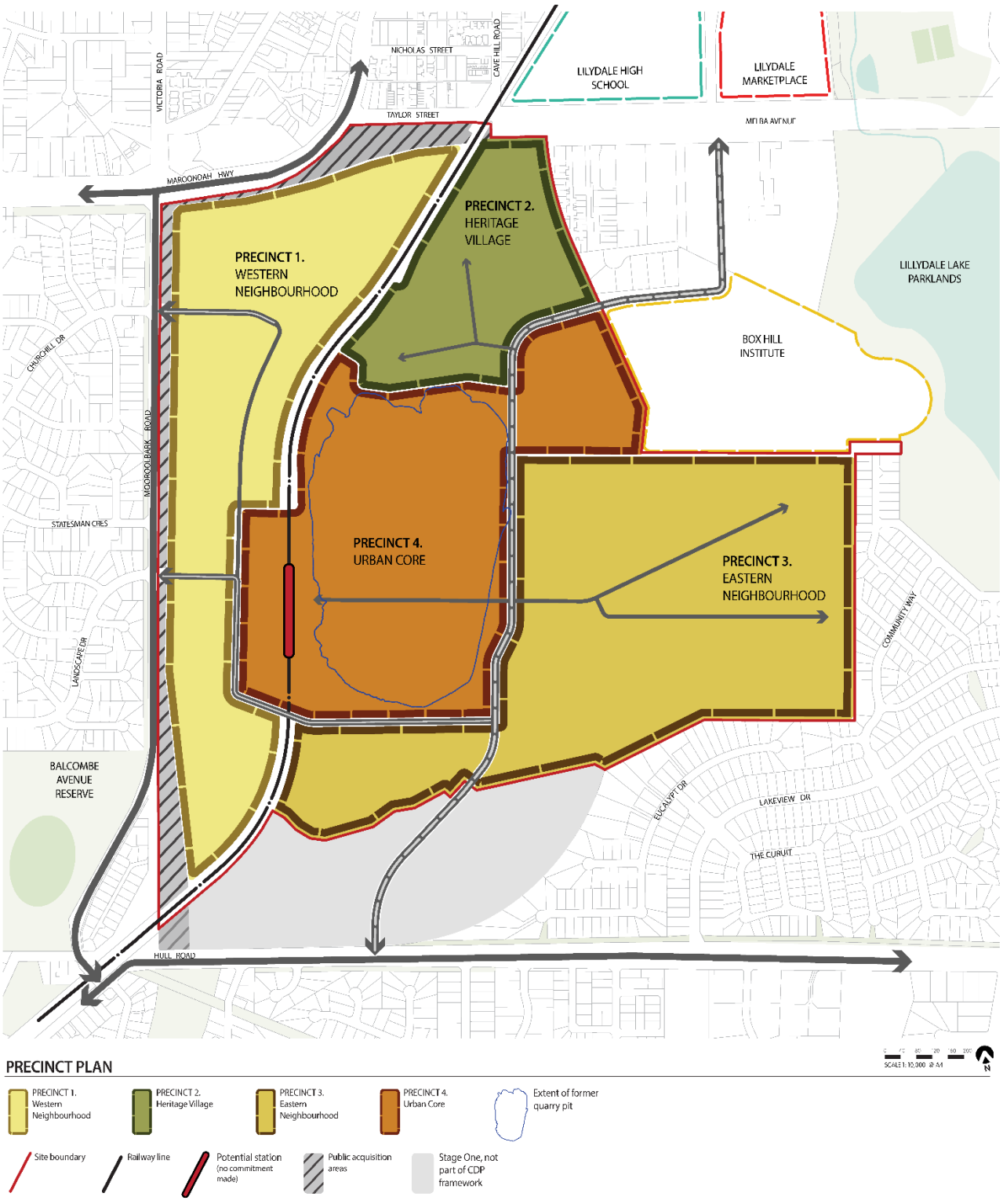

Figure 2: Lilydale Quarry Precinct Plan

2.2. SUMMARY OF GEOTECHNICAL WORKS

It is proposed to undertake the geotechnical works across the land in stages. The existing context for each work area and a description of the geotechnical works is summarised below (refer again to Figure 2):

- Stage 1 is approximately 19 hectares, formed on natural ground at the southern end of the site, between Hull Road and the southern edge of the quarry. It abuts existing residential land to the east and the Lilydale commuter railway line to the west. This area has been rezoned for residential purposes and will be developed into residential lots, which will involve some cutting and filling consistent with normal residential development.
- Precinct 1 is approximately 44 hectares, formed on natural ground east of Mooroolbark Road and west of the railway line. This area was previously used for agricultural grazing purposes. The mixed use, low and medium density residential development subdivision proposed will involve cutting and filling consistent with normal residential development.
- Precinct 2 is approximately 22 hectares and comprises the area north of the quarry and east of the railway line, including the previous lime production and storage facilities, plus offices. This area comprises most of site's heritage assets, including the lime production plant and farming buildings. Major earthworks will be required within this precinct (e.g. levelling of land for playing fields), but will be somewhat constrained by heritage asset levels.
- Precinct 3 is approximately 53 hectares and is located east of the quarry pit out to the eastern project boundary, abutting existing residential development and the Box Hill Institute land. This area has been previously used to stockpile overburden material removed progressively from the quarry during its operations (i.e. quarried product that was not turned into limestone product). This overburden has been placed over many years in terraces up to 40 metres deep. The overburden material will be progressively removed from this area and placed into the quarry pit as engineered fill, allowing the underlying natural ground to be exposed. Once the overburden is removed, this area will be developed predominantly as traditional and medium density housing.
- Precinct 4 incorporates the former quarry pit, which covers an area of approximately 25 hectares at the proposed finished surface level and surrounds. This is the area associated with the most complex geotechnical works. Precinct 4 also includes a small area west of the train line (associated with the proposed location for a potential future train station) and an area to the east, which is not on filled land.
  - The quarry extracted limestone for 137 years and excavated to a depth of approximately 120 metres below the surrounding ground level and about 80 metres below the water table, which has been lowered as the quarry progressed.
  - The quarry pit will be filled as part of the redevelopment of the land. The central portion of the pit area is proposed as a neighbourhood centre, consisting of dwellings (e.g. potentially 4-8 storey apartment buildings and medium density townhouses), commercial office space, and retail facilities. A potential future train station is proposed at the western edge of the quarry pit. The northern part of the quarry is planned as public open space (Escarpment Park), which will eventually be handed over to Council.
  - The fill material to be used in backfilling comprises natural material that was removed from the original landform and stockpiled to the east of the quarry pit. The material comprises a mix of sandstone, quartzite, and Devonian volcanic material including material from boulder size to clay. All the material to be used for filling is located on site, avoiding external impacts associated with importing fill to the site.
  - The quarry walls have been benched, but contain various conditions that require treatment (e.g. vegetation, old landslide debris, uncontrolled fill, caves and other cavities, loose rocks and potentially unstable rock formations). These issues will be treated as work progresses.
  - The backfilling work is being conducted with the intention to develop the final land surface for a range of uses, comprising buildings, roads and sports fields. Importantly, the end use and how it is implemented will be determined by the performance of the fill material. This will be established once the filling is completed and monitoring of settlement can be assessed to determine the suitability of the land for development (see Section 2.3 for further detail on this assessment process). Settlement monitoring will be undertaken from instruments within the fill and at the finished surface. Groundwater will also be monitored within the fill and in bores placed outside the quarry.

2.3. FILLING METHODOLOGY

The proposed method for filling the quarry pit is detailed within the Geotechnical Framework prepared by T+T. The following pages provide a summary of the proposed approach.

2.3.1. Proposed final landform

The landform for the filled quarry surface has been designed to allow surface drainage to travel generally from south to north, and west to east. The planned finished surface level at the southern end of the quarry pit is approximately RL140 metres at the rim of the quarry pit. The land then slopes down towards the north at approximately 3% grade, so that the northern edge of the quarry pit is approximately RL 120 metres. The final design levels will be determined based on the total volume of suitable fill on the site.

The final planned landform leads to the existing quarry batters being retained at the northern faces of the quarry. This design mirrors conditions of the heritage permit issued by Heritage Victoria, which requires a portion of the existing escarpment to be retained to preserve the heritage value of the place. The earthworks design will leave no escarpment at the quarry edge along the east and south – it is proposed that the existing natural ground and the filled quarry area will blend together imperceptibly.

The project does not require the importation of fill material from external sources, avoiding external impacts from the filling exercise on the existing community (e.g. significant external truck movements).

2.3.2. Filling process

The backfilling plan for the quarry pit includes placing fill up to approximately 120 metres deep from the original quarry base. The exact settlement profile cannot be predicted with confidence at this time due to the uncertainty about the compressibility of the fill. It is proposed to use an observational approach to the settlement of the filling and to modify the placement methods if needed as the work progresses. There is a high degree of confidence that the filled quarry area will be suitable for a level of development at some point.

First stage: quarry pit preparation

The first stage of quarry development involves filling to satisfy ERR concerns about over-excavation of batters and pit instability caused by the previous quarry operator.

In addition to placing fill into the quarry pit, the first stage includes:

- Significant preparatory works to remove uncontrolled filling in the quarry floor and old haul road
- Upgrading and building new haul roads
- Placing a drainage blanket over the entire floor of the quarry to direct groundwater to the new sump riser built at the northern end
- Sealing potential caves in the lower walls of the quarry and stabilising rock slopes
- The first level of settlement monitoring equipment and piezometer installations.

Fill for the first stage is sourced from the southern and eastern stockpiles (Stage 1 and Precinct 3 land).

Second stage: filling to between RL100 and RL120/130 metres

The second stage of filling will be much simpler with material being removed from the eastern stockpile and progressively raising the level of fill in the quarry pit. Material may also be sourced from the land to the west of the railway line (Precinct 1). This work will fill the quarry to approximately RL 120 metres, utilising fill that is taken from the stockpiles outside the buffer setback distance from residential areas (as required by the authorities).

Final stage: completion of quarry pit filling

The final stage of filling work will require access to material in the eastern stockpile within proximity to existing residential properties (which is a condition of the planning permit for the Stage 1 land). As this requirement exists only because of the ERR Work Authority in place, it is proposed that responsibility for completion of the quarry filing is transferred to Council for this last stage of work. The removal of material within the setback distance will be undertaken in compliance with normal governance requirements required

for subdivision construction adjacent to existing residential development. Included in this stage will be the lowering of natural ground levels at the quarry title boundary to match the designed final landform.

Since the volume of material available and needed cannot be predicted with precision at this time, there is flexibility to adjust the final landform to match the available material without importing or exporting additional material, to continue mitigating against any offsite impacts.

2.3.3. Engineering filling specification

The relevant Australian Standard for Earthworks for Residential Development is AS3798. However, this specification was not intended to deal with circumstances where filling up to a depth of 120 metres is required.

In response, following detailed investigations and discussions between the Proponent and Council, a project specific specification has been developed. The specification was developed and reviewed by the Proponent and Council's expert engineering consultants, T+T and Golder Associates. The primary objective of this specification is to achieve safe and economical backfilling of the quarry pit to a standard that will allow development at some time in the future. Filling is planned to take about five years and during this time settlement monitoring will be undertaken to assist in estimating the extent and timing of future settlement.

The filling specification, detailed in Section 6 of the Geotechnical Framework, is summarised below:

- The material for the engineered fill will be sourced from overburden stockpiles and excess cut material on site. Any observed contaminated material, topsoil or organic material will be precluded from the engineered filling.
- A minimum average dry density ratio of 101% Standard for a day's placement has been adopted, with no test result below 98% Standard. This exceeds the requirements of AS3798 (the Australian Standard for Earthworks for Residential Development), which requires a dry density ratio of 95% Standard for residential development.
- A maximum particle size of 300 mm has been adopted and the moisture content has been maintained at that measured from the stockpiles.
- At the end of each day's work a flat drum roller is used to seal off the fill material to limit water ingress in the event of rainfall.
- All earthworks are being conducted under Level 1 supervision, with a geotechnical expert observing the operation and undertaking all testing from a NATA registered laboratory established on site. An engineer from T+T attends site several times each week to track progress and deal with any issues arising from the work. The same engineer also reports on the filling work undertaken.

Despite the high-density compaction ratio specified, it is accepted that some settlement will occur and that monitoring of settlement after completion is the only way that confidence in future settlement predictions can be established.

The Proponent accepts that it may take a period of time after filling is completed before the settlement performance criteria are met and the land is deemed suitable for development. There is also a very small risk that development may never be possible on the filled area if the settlement performance fails to meet the agreed criteria.

2.4. MANAGEMENT OF POTENTIALLY CONTAMINATED LAND

Due to the former use of much of the land as a limestone quarry and processing facility, there remains a possibility that portions of the land may have potential for contamination. The Proponent, Council, VPA and EPA Victoria have engaged throughout the PSA process to determine the appropriate response to addressing potentially contaminated land.

For the purposes of an environmental assessment, the land has been separated into two portions. The Western Land (land to the west of the Melbourne-Lilydale Railway Line) and the Eastern Land (to the east of the rail line). This is illustrated in Figure 3.

Figure 3: An EAO is proposed to be applied to the Stage 2 land to the east of the railway line

Based on its former use for agricultural and grazing purposes and the results of various environmental assessments, it is considered that the Western Land has low potential for contamination. As such, an Environmental Audit is not required, and no Planning Scheme triggers are proposed to be applied.

Due to the uncertainty relating to the management of past quarrying activities and the potential for contamination, an Environmental Audit is required to be undertaken for all of the Eastern Land with an Environmental Audit Overlay to be applied to the affected land as part of the proposed PSA. The Proponent has recently engaged Peraco Pty Ltd as Environmental Auditor for the site (defined as 4 Melba Avenue, Lilydale).

An account of the land's potential for contamination and the adopted approach to manage this risk is provided in Section 3.2 of the Geotechnical Framework (see also Appendix H of the Geotechnical Framework).

2.5. ALTERNATE PROPOSITION

As noted in Section 2.3.3, there is small risk that some development of the filled area may not be possible if the land does not achieve the agreed settlement performance criteria. While this risk is deemed to be extremely low, the Proponent has prepared an alternate development proposition as a contingency.

The alternative development proposition is predicated on the use and development of the filled land for open space purposes only. This alternative proposition would only be enacted where the settlement performance of the filled land is unable to be demonstrated to achieve the agreed criteria. In that circumstance, an amendment to the Yarra Ranges Planning Scheme would be necessary (i.e. CDZ Schedule and CDP changes), in order to:

- Modify the land use/development controls for Precinct 4.
- Relocate the proposed community and retail facilities to an area of unfilled land in the north-east corner of Precinct 4.
- Modify the open space network to respond to the alternate development pattern and concentration of population.
- Reduce the dwelling yield and revise the provision of community infrastructure and open space based on the lower population yield.

The preparation of the CDP and the design of the site's precincts makes provision for this alternative development proposition by preserving an area of unfilled land in the north-east of Precinct 4 as an alternative location for the proposed community/retail facilities (including the Proposed Government Specialist School) if the quarry pit cannot be developed. This land is outside of the fill area. While the land is not as well located in regards to the potential future train station, it is still in proximity to the proposed retail and open space amenity offered by the Heritage Village Precinct (Precinct 2) and its position adjacent to the North-South Connector will ensure that future land uses are well connected with the Lilydale Town Centre to the north. See Figure 4 for further detail.

It should be noted that the significant decrease in dwellings on the site (resulting from the reduced development capacity of the pit area) will lead to a necessary reassessment, and likely reduction, of the developer infrastructure contributions (including community facilities) required to service the future population.

In relation to open space and recreation assets, land will not be transferred to Council if it does not meet the agreed performance standards. These standards will be subject to a formal agreement between the Proponent and Council (detailed further in Section 4).

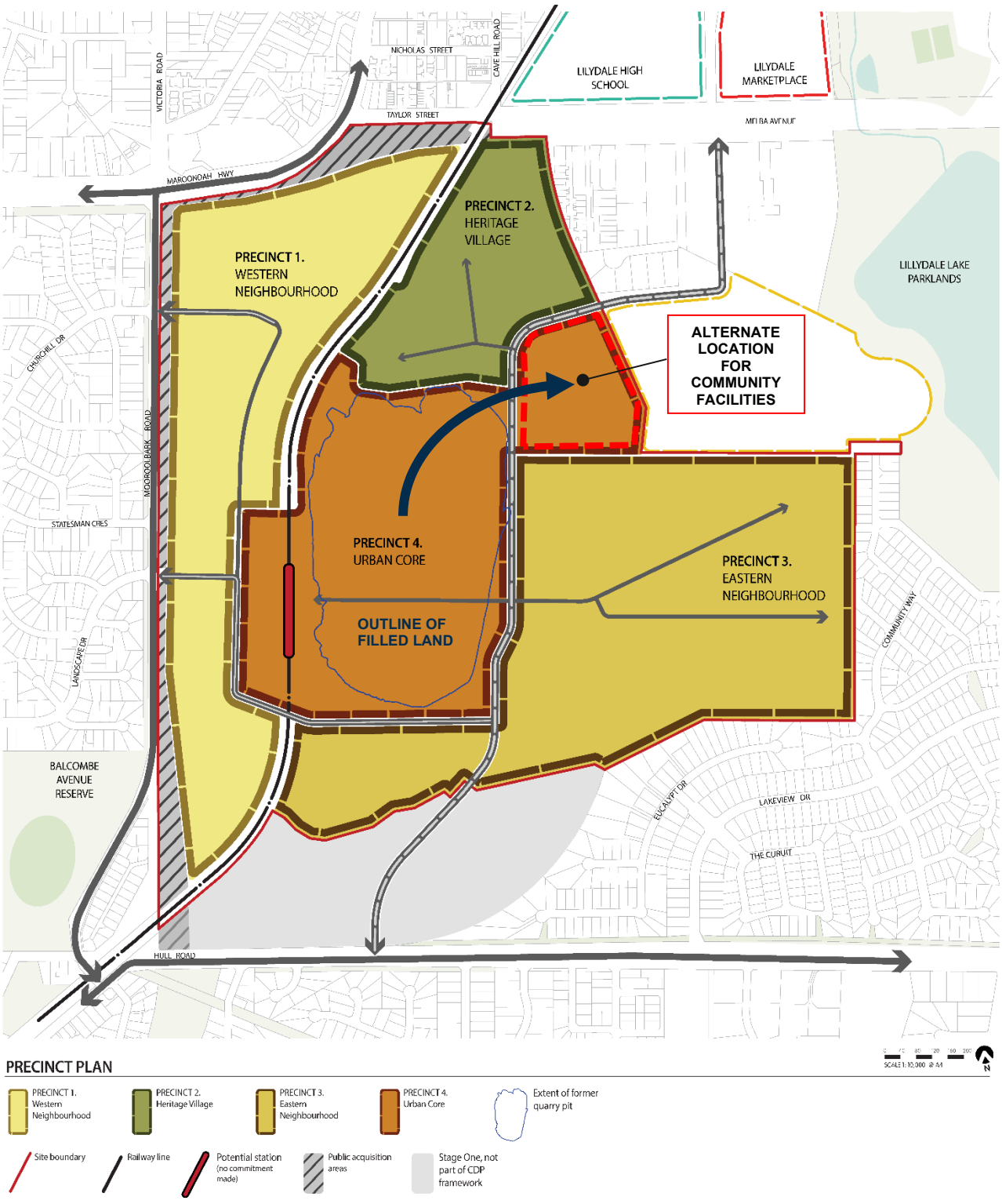

Figure 4: Proposed alternate location for community facilities in Urban Core (Precinct 4)

3. PLANNING CONTROL & APPROVAL PROCESS

3.1. PROPOSED PLANNING CONTROL

In a complex geotechnical and regulatory environment, it is important to note that introducing the proposed primary planning control (a CDZ with Schedule) will only establish the land's future suitability for urban development. The approval of the PSA will not provide an as-of-right approval for development of the land. The proposed planning control instead stipulates a logical gateway approval process that requires further detailed planning be undertaken prior to the issue of any permit.

The **CDZ Schedule** has been specifically drafted to articulate the geotechnical requirements that are critically important to the development of the quarry pit area filled land.

As part of the CDZ Schedule, unless otherwise agreed to by the responsible authority a permit must not be granted to subdivide or develop land in Precinct 4 until the owner of the land enters into an agreement under section 173 of the *Planning and Environment Act 1987* regarding the performance of filled land in Precinct 4 and its development. The agreement must address:

- Monitoring and reporting obligations
- Performance specifications to be achieved for land to be transferred to Council for public open space and infrastructure
- Indemnification of Council in relation to claims by third parties relating to negligence or non-compliance with the requirements of the agreement by the proponent.

The CDZ Schedule also stipulates that:

> *Unless otherwise agreed to by the responsible authority, a permit must not be granted to subdivide land within Precinct 4 until a geotechnical statement prepared by a suitably qualified geotechnical engineer has been prepared to the satisfaction of the responsible authority*
>
> *The statement must confirm that the geotechnical condition of the filled area will support the type and scale of development proposed within the CDP for Precinct 4.*
>
> *The statement must be accompanied by a peer review and supporting report from a suitably qualified and independent geotechnical engineer.*

The above clause is also replicated for building and works permits.

As a further requirement for building and works permit applications, applicants proposing buildings and works on filled land within Precinct 4 must provide 'a statement from a suitably qualified geotechnical engineer that confirms the land is suitable for the proposed development'.

The inclusion of these clauses in the CDZ Schedule effectively ties planning approvals to a legally binding agreement to undertake the level of geotechnical work deemed necessary by Council, and also ensures Council is provided with expert opinion regarding the geotechnical suitability of proposed development.

As part of the proposed precinct layout, an area of unencumbered land is located in the north east of Precinct 4. In the highly unlikely event that the quarry pit area is ultimately unable to meet the geotechnical standards required for urban development, this unencumbered land will be reserved for the retail and community facilities proposed for the quarry pit area.

3.2. SUMMARY OF APPROVAL GATEWAYS

Development of the quarry site will be subject to a variety of approvals under multiple Acts. Figure 5 provides a summary of the statutory approvals that are required as part of the planning and development process.

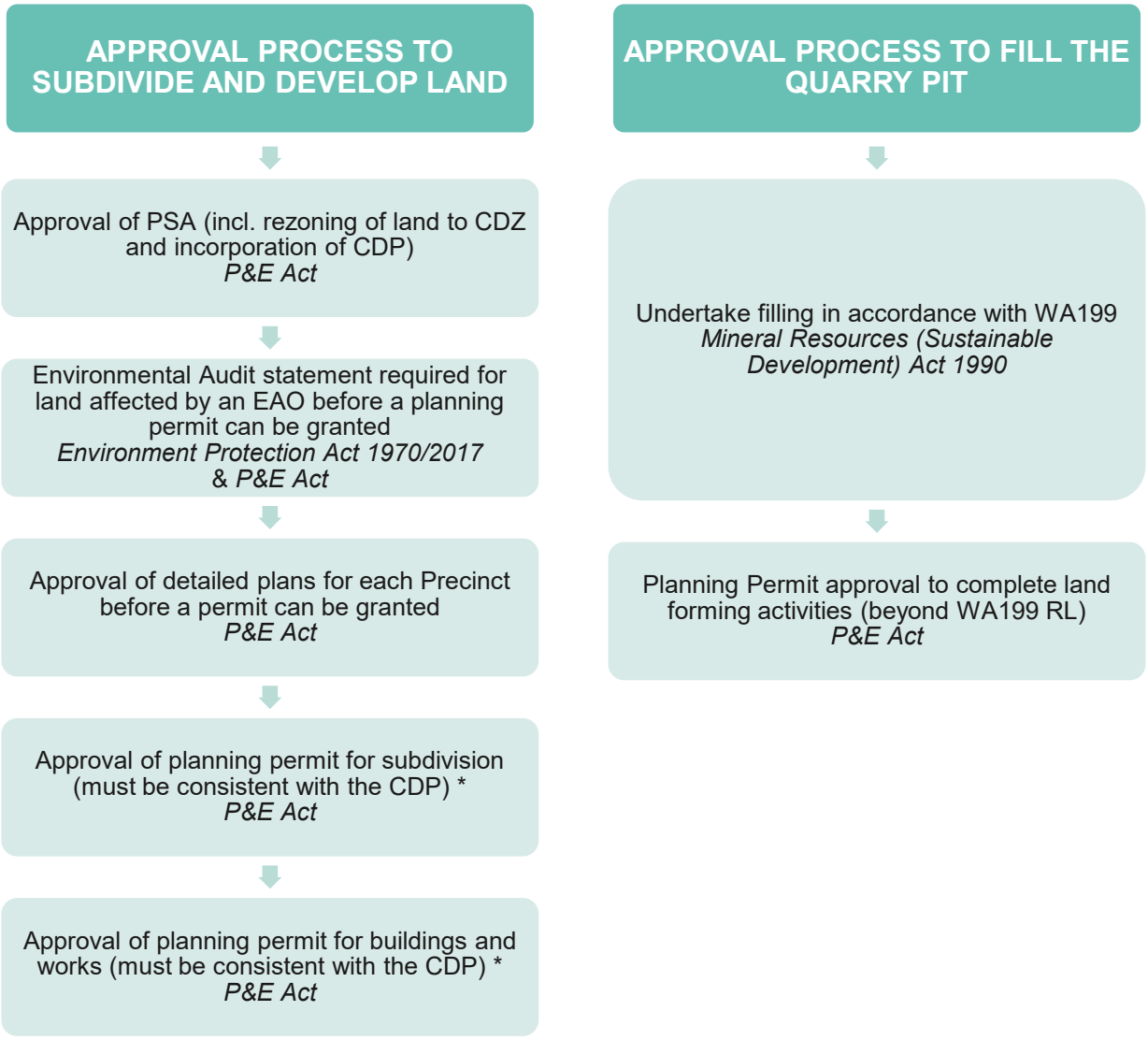

Figure 5: Statutory approvals required to fill the quarry pit and undertake development

** Note: these approval steps may be combined.*

While there are numerous statutory approvals required, they can be broadly understood through the lens of a gateway process. This is outlined in the following sections and the diagram in Appendix A.

3.2.1. Gateway 1

Planning phase: Planning Scheme Amendment (rezoning to CDZ and incorporation of CDP) is assessed and adopted by Council, then approved by Minister for Planning

Geotechnical matters to be addressed before Gateway 1 is passed:

- The Geotechnical Framework document suite (including this document) is submitted to the Planning Authority to aid in its assessment of the proposed PSA. These documents address the site context and conditions, filling approach, contamination management, site monitoring and the proposed legal framework.
- A Section 173 Agreement is executed between the Proponent and Council, addressing:
  - The Geotechnical Framework and the regulation of the filling of the quarry pit
  - Agreed Performance Specifications for land to be used and developed for open space and infrastructure

  - Indemnification of Council relating to negligence or non-compliance with the requirements of the Agreement by the Proponent.
  - Contingencies in the event that the Fill Works will not allow the achievement of the proposed development outcomes.
- An Environmental Audit Overlay (EAO) will be applied to the Eastern Land to ensure that potential contamination is managed prior to development.
- An Environmental Audit of the quarry pit area is initiated.

3.2.2. Gateway 2

Planning phase: Preparation and approval of detailed plans for each precinct as a requirement before a permit can be granted (other than Precinct 4, which pertains to quarry pit area)

Ongoing geotechnical matters during this planning phase:

- Filling of quarry pit in accordance with WA199 – ongoing monitoring of settlement in line with Section 173 Agreement and instrumentation/ settlement monitoring plan. All work performed under Level 1 Supervision as per AS3798.
- A permit for subdivision or buildings and works that pertains to land to the east of the Lilydale-Melbourne Railway Line (Precinct 2 or Precinct 3) should not be approved by Council until the following requirement has been satisfied (as applicable):
  - Where the *Environment Protection Act 1970* applies:
    - A certificate of environmental audit is issued for the affected land in accordance with Part IXD of the *Environment Protection Act 1970*; or
    - An environmental auditor appointed under the *Environment Protection Act 1970* makes a statement in accordance with Part IXD of that Act that the environmental conditions of the affected land are suitable for sensitive uses.
  - Where an Environmental Audit is required after the repeal of the *Environment Protection Act 1970*, this shall be carried out in accordance with the relevant provisions of the *Environment Protection Act 2017*.
- No further geotechnical approvals are required for precincts outside the Precinct 4 former quarry pit area for this Gateway, noting that overburden fill will be removed to natural ground level as a Work Authority earthworks exercise.

3.2.3. Gateway 3

Planning phase: N/A

Ongoing geotechnical matters during this planning phase:

- Completion of quarry pit filling
- Ongoing settlement monitoring and reporting post fill completion, in accordance with the Section 173 Agreement and monitoring plan.

3.2.4. Gateway 4

Planning phase: Approval of detailed plans relating to Precinct 4 by Council

Geotechnical matters to be addressed before gateway is passed:

- Before a permit for subdivision or buildings and works can be granted in Precinct 4:
  - A statement from a suitably qualified geotechnical engineer evidencing compliance with the specification detailed in the Geotechnical Framework is to be submitted to Council, accompanied by a supporting report from a similarly qualified and independent geotechnical engineer; and
  - Where the *Environment Protection Act 1970* applies:

- A certificate of environmental audit is issued for the affected land in accordance with Part IXD of the *Environment Protection Act 1970*; or
- An environmental auditor appointed under the *Environment Protection Act 1970* makes a statement in accordance with Part IXD of that Act that the environmental conditions of the affected land are suitable for sensitive uses.

– Where an Environmental Audit is required after the repeal of the *Environment Protection Act 1970*, this shall be carried out in accordance with the relevant provisions of the *Environment Protection Act 2017*.

- Open space and in-ground infrastructure may be constructed and handed over to Council once the CDZ Schedule requirement is met and once Section 173 Agreement requirements have been satisfied.

3.2.5. Gateway 5

Planning phase: Planning Permit applications for subdivision and buildings and works within Precinct 4

Geotechnical matters to be addressed before gateway is passed:

- Before a planning permit for buildings and works can be granted in Precinct 4, this application is to be accompanied by a geotechnical engineering statement that confirms the performance reported at Gateway 4 is continuing (or improved) and specifying the ground classification as Type P or better.
- Structures are to be designed to engineering principles in accordance with AS2870, or other applicable standards.
- A process of dual certification is required for the footing/foundation design of all proposed buildings and works within Precinct 4, to be obtained by the Proponent.

3.2.6. Gateway 6

Planning/building phase: Construction of buildings in Precinct 4

Geotechnical matters to be addressed before gateway is passed:

- Building and engineering approvals to be secured prior to construction (as per standard building permit process).
- Works are to be carried out in accordance with a Construction Management Plan, approved by Council.
- Building and engineering certification will be required prior to occupancy (as per standard building permit process).

4. RISK MITIGATION

The Proponent recognises that the planning process must seek to manage any risk to the Council or community arising from the geotechnical and filling processes to be carried out on the site. Accordingly, an agreement made under section 173 of the P&E Act is proposed to be entered into between Council and the Proponent to formalise the requirements and obligations of the Geotechnical Framework and deal with contingencies. The agreement will be entered into in order to:

(a) Facilitate the Development in a manner that regulates the filling of the Quarry Area

(b) Make provision for the Proponent to progress the Amendment to facilitate the Development

(c) Recognise the Geotechnical Framework to direct the filling of the Quarry Area

(d) Document processes designed to assess the outcomes of the Fill Works in considering the development of areas for Open Space and Road Reserve on filled land within the Quarry Area

(e) Facilitate initial dual regulatory roles in respect to the Fill Works, initially with ERR and Council, then a transition to Council alone

(f) Establish processes to deal with contingencies

(g) Facilitate and regulate the use and development of the Land

(h) Achieve and advance the objectives of planning in Victoria or the objectives of the Scheme.

The executed Section 173 Agreement will be placed on public exhibition with the PSA to provide context and comfort for the community.

The agreement will provide a comprehensive risk mitigation approach, which affords protection to Council and the community through all phases of the geotechnical works.

Key requirements and covenants of the agreement that will be binding on the Proponent include:

- Works to be carried out under Level 1 Supervision, and under the overall direction of an Approved Engineer
- Requirement for regular progress reporting to be provided to Council every 3 months during the filling works
- Requirement for monitoring to be undertaken during the conduct of the works and then for a period of time until the open space and roads are transferred to Council
- Requirement for Environmental Management Plan to address and mitigate amenity impacts
- Indemnification of Council relating to negligence or non-compliance with the requirements of the agreement by the Proponent
- Requirement to achieve agreed settlement criteria for all open space and roads proposed to be transferred to Council.

It is noted that in the event that the PSA does not proceed, the Lilydale Quarry final condition will revert to that which was approved by ERR under WA199.

5. GEOTECHNICAL DOCUMENT SUITE

A suite of documents relating to geotechnical matters has been prepared to support the Former Lilydale Quarry PSA. These documents are detailed in Figure 6 below.

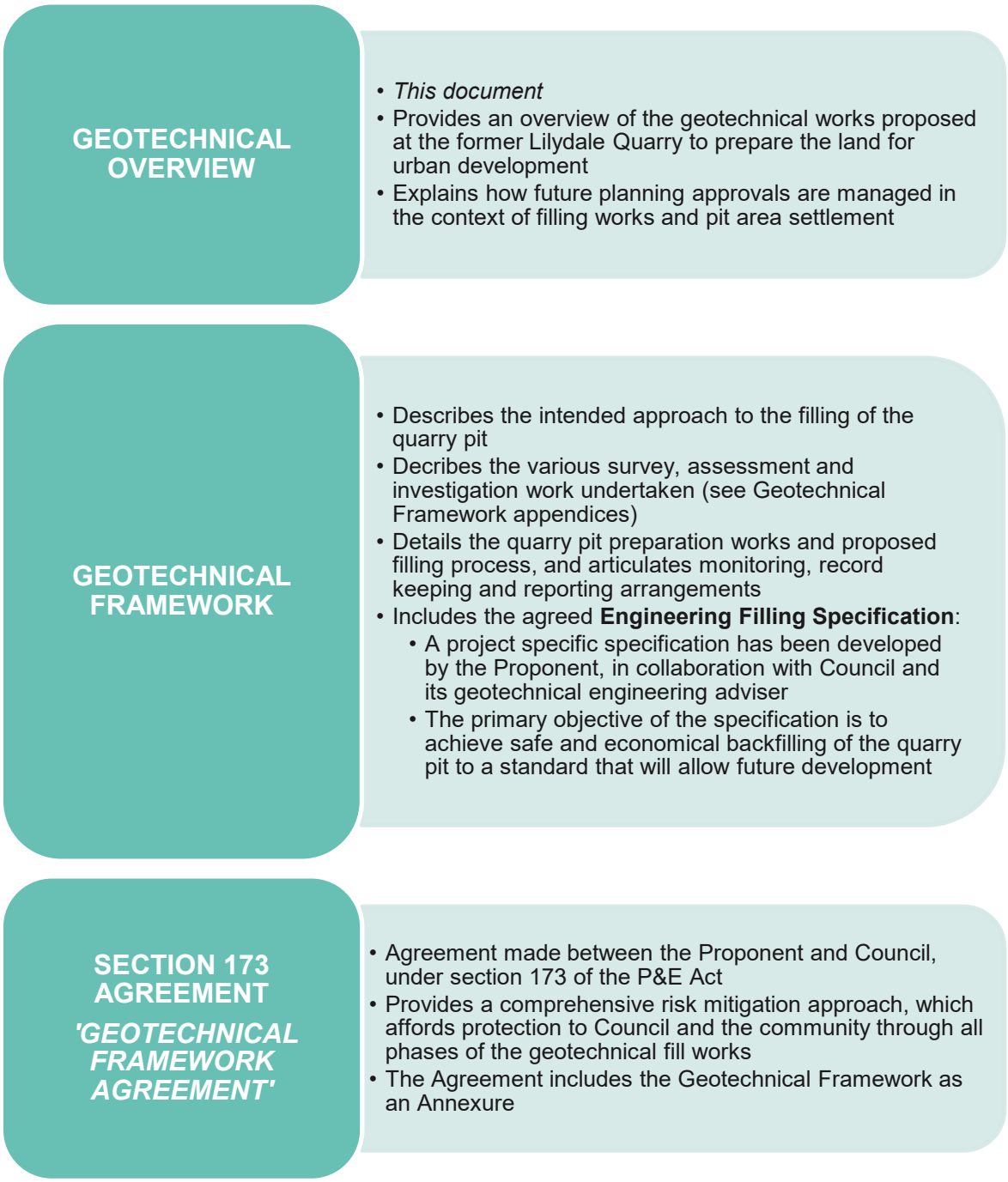

Figure 6: Geotechnical document suite

DISCLAIMER

This report is dated 30 October 2020 and incorporates information and events up to that date only and excludes any information arising, or event occurring, after that date which may affect the validity of Urbis Pty Ltd **(Urbis)** opinion in this report. Urbis prepared this report on the instructions, and for the benefit only, of HBI Lilydale Pty Ltd **(Instructing Party)** for the purpose of preparation of an Overview Document for proposed geotechnical works at the former Lilydale Quarry **(Purpose)** and not for any other purpose or use. To the extent permitted by applicable law, Urbis expressly disclaims all liability, whether direct or indirect, to the Instructing Party which relies or purports to rely on this report for any purpose other than the Purpose, and to any other person which relies or purports to rely on this report for any purpose whatsoever (including the Purpose).

In preparing this report, Urbis was required to make judgements which may be affected by unforeseen future events, the likelihood and effects of which are not capable of precise assessment.

All surveys, forecasts, projections and recommendations contained in or associated with this report are made in good faith and on the basis of information supplied to Urbis at the date of this report, and upon which Urbis relied. Achievement of the projections and budgets set out in this report will depend, among other things, on the actions of others over which Urbis has no control.

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Whilst Urbis has made all reasonable inquiries it believes necessary in preparing this report, it is not responsible for determining the completeness or accuracy of information provided to it. Urbis (including its officers and personnel) is not liable for any errors or omissions, including in information provided by the Instructing Party or another person or upon which Urbis relies, provided that such errors or omissions are not made by Urbis recklessly or in bad faith.

This report has been prepared with due care and diligence by Urbis and the statements and opinions given by Urbis in this report are given in good faith and in the reasonable belief that they are correct and not misleading, subject to the limitations above.

APPENDIX A APPROVAL GATEWAYS

APPROVAL GATEWAYS (GEOTECHNICAL MATTERS)

PLANNING PHASES	GATEWAY 1	GATEWAY 2	GATEWAY 3	GATEWAY 4	GATEWAY 5
PLANNING SCHEME AMENDMENT (rezoning to Comprehensive Development Zone) **AND APPROVAL OF COMPREHENSIVE DEVELOPMENT PLAN**	Geotechnical Framework submitted to YRSC (addressing site context and conditions, filling approach, contamination management, site monitoring). Section 173 Agreement executed, addressing: • Agreed Performance Specifications for land to be used and developed for open space and infrastructure and urban development • Council Indemnity in relation to claims by third parties relating to negligence or non-compliance with the requirements of the agreement by the Proponent Environmental Audit Overlay (EAO) applied to the Eastern Land to ensure potential contamination is managed prior to development.				
PREPARATION OF DETAILED PLANS FOR PRECINCTS 1-3 (excluding Precinct 4 quarry pit)	Filling of quarry pit in accordance with updated WA199. Ongoing monitoring of settlement in line with instrumentation/ settlement monitoring plan. All work performed under Level 1 Supervision as per AS3798. Prior to the granting of a permit for land in Precincts 2 and 3, a Statement/Certificate of Environmental Audit must be issued pertaining to the affected land. No further geotechnical approvals required for precincts outside the quarry pit at this gateway (noting that overburden fill will be removed to natural ground level).				
QUARRY FILLING COMPLETED		Ongoing settlement monitoring and reporting post fill completion, in accordance with the instrumentation/monitoring plan.			
PREPARATION OF DETAILED PLANS FOR PRECINCTS 4 (Filled quarry pit)			Submission of report from geotechnial engineer evidencing compliance with the Performance Specifications accompanied by a supporting report from a similarly qualified and independent geotechnical engineer. No building construction permitted to take place in this precinct until permit applications for development are secured at Gateway 5. Open space and in ground Infrastructure may be constructed and handed over to Council once Section 173 requirements have been satisfied. Prior to the granting of a permit for subdivision or development on land within Precinct 4, a Statement/Certificate of Environmental Audit must be issued pertaining to the affected land.		
PERMIT APPLICATIONS IN PRECINCT 4				Planning permit applications for buildings and works in Precinct 4 to be accompanied by a geotechnical engineering report that confirms the performance reported at Gateway 4 is continuing or improved and specifying the ground classification as Type P or better. Structures to be designed to engineering principles in accordance with AS2870, or other applicable standards. Dual certification required for the footing/foundation design of all proposed buildings and works within Precinct 4 to be obtained by Proponent.	
CONSTRUCTION OF DEVELOPMENT (BUILDINGS) IN PRECINCT 4					Building and engineering approvals secured prior to construction. Works carried out in accordance with Construction Management Plan. Building and engineering certification prior to occupancy.

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