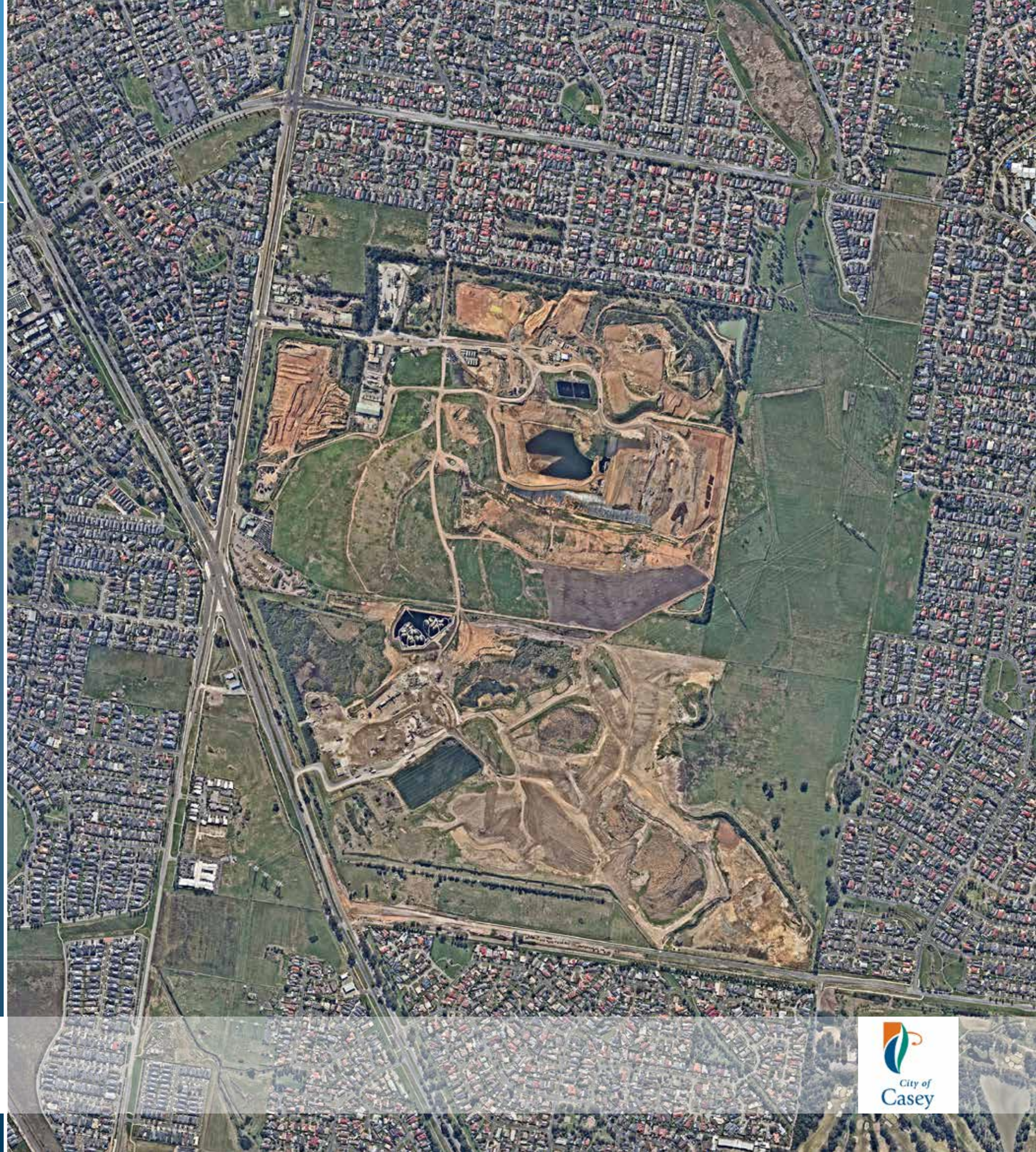
Hallam Road Waste and Resource Recovery Hub, Hampton Park

Urban Design Interface and Context Report

City of Casey

May 2022

Global South



Contents

1.0

Introduction

1.1 Project purpose

This report has been prepared by Global South Pty Ltd, an urban design and strategic planning consultancy for, and in collaboration with the City of Casey.

It focuses on the Hallam Road Waste and Resources Recovery Hub, a State-Significant hub containing a range of landfill and resource processing operations.

This study is intended to support and inform the new Hampton Park Hill Development Plan and Planning Scheme Amendment, by considering interface treatments where sensitive uses (including existing residential development) interfaces with employment and waste recovery facilities. Specific objectives of the project were identified in the Brief as follows:

- *To understand visual and amenity impacts of existing and future land uses on the surrounding area*
- *To understand the appropriateness of landscape treatments along the interfaces*
- *To seek recommendations on how employment use and development can be designed to prevent adverse amenity impacts from waste and resource recovery land uses*
- *To seek recommendations for interface treatment between land uses*
- *To provide design requirements and guidelines to achieve these interface treatments.*

As the Hallam Road landfill closes, the hub will transition away from waste disposal activities and focus on waste transfer activities and the resource recovery of inert materials, while also providing valuable public open space to the City of Casey. Landfill closure provides opportunities for future development after remediation.

The newly defined expectation of ongoing waste and resource recovery land uses, as well as employment land, required further review of the context and interface treatment between the land uses which has been addressed by this report.

Please note:

Recommendations of this report may need to be altered by Council based on the outcome of the Hampton Park Hill Development Plan review outcomes.

1.0

1.2 Project limitations

This report addresses a very large precinct, which is affected by numerous technical issues and constraints, and which will transition over a long period of time. It provides planning guidance for the long-term future.

The proposals and recommendations are therefore conceptual, speculative and aspirational, with very limited detail.

While extensive work has been undertaken to understand and respond to the complex site conditions, technical issues, constraints and opportunities, substantial further work would be required to achieve these (or other) outcomes, while responding to changing conditions over time.

It is also noted that existing fundamental issues, such as housing with buffer areas to impactful uses, cannot be directly changed or addressed through this project. While the off-site impacts would be expected to reduce over time, as current operations evolve, the recommendations below seek to mitigate or reduce impacts through built form and landscape interventions.

Further, the concepts and recommendations in this report have not been tested or assessed by technical experts, such as in acoustics or air quality, for their potential performance in mitigating current off-site impacts.

1.3 Process

In preparing this report, our team initially conducted background research and reviews of existing documents, as summarised below, as well as analysis of the study area, to build our understanding of the context. In response to the Brief, our analysis focussed on the study area's interfaces, and how these might affect or potentially mitigate off-site impacts.

Our background analysis and site understanding was expanded by a visit to the study area, and a site tour by SUEZ officers, which provided extensive background and insights into the site's history, current operations and future directions.

The project process then focussed on a one-day 'Inquiry by Design' (IBD) Workshop, a rapid, collaborative, design-focussed process, involving Global South's consultant team and Council officers. This remote workshop involved a series of design sessions to develop proposals for site layouts and conditions at each of the study area's interfaces.

The IBD process supports collaboration between consultants and client/local authority, with external stakeholder inputs where required, to encourage knowledge sharing, testing and refinement of proposals, and mutual 'buy in' to the proposals developed. The IBD us intended to result in conceptual proposals as the key project outputs.

For this project, the workshop design sessions involved Council's urban design team, with other Council officers participating in interim reviews of thew work, during the workshop.

This report captures the outputs from the IBD, with further development and refinement since the workshop, including coordination with the findings of other parallel consultancy studies for the Development Plan area.

1.4 Study area outline

The Hallam Road Waste and Resource Recovery Hub ('the Hub') is a State Significant facility in Melbourne's south-east. The main function of the Hub is an operating landfill, owned and operated by SUEZ. The Hub was formerly a sand quarry. Parts of the landfill area are already complete and 'capped' and landscaped, with ongoing gas extraction.

The precinct also contains a Waste and Resource Transfer Station (with public access), a concrete batching plant, owned and operated by HOLCIM, and a Construction and Demolition processing facility.

The study area is surrounded by suburban residential development.

Two separate land parcels within the area are occupied by nursery/garden supplies outlets. The eastern part of the area is also privately owned land, used for grazing and grass/hay production.

A long-term plan for conversion of the landfill to public open space (active and passive) has been established. SUEZ advised that the landfill operation is expected to continue until 2030-2035 approximately, followed by a required maintenance period of some 25 years. Therefore, the planned open space is expected to be established around 2060.

The study area is also constrained by a major electricity transmission corridor running through it, and a below-ground high-pressure gas pipeline.

This report recognises that, while the study area is highly constrained, challenging and impactful, it also provides a range of essential functions for urban development, including waste management, resource recovery, energy transmission, and construction materials preparation.

Lynbrook Blvd

Ormond Rd

Hallam Rd

Main site access

Matured native tress

S Gippsland Hwy

Evans Rd

Glasscocks Rd

Site Features

Legend

- Urban Floodway Zone
- 100m Concrete Batching Plant Buffer
- 300m Reverse C&D Recycling Buffer
- 275m High Pressure Gas Pipeline Buffer
- 500m Landfill Buffer
- Electricity Transmission Corridor
- 30m Transmission Powerline Buffer
- High Pressure Gas Pipeline
- Existing Waterways
- Topography - 0.5 and 2.5 m Contours
- Open Spaces
- Hub Boundary

0 100 200m

Movement and Access Network

Source of aerial photo: City of Casey, December 2021
Source of bus stops, road and paths types: Glasscocks Road, City of Casey, December 2021; Bus Stops, City of Casey, December 2021 and https://roadprojects.vic.gov.au/projects/hallam-road-upgrade

Current Hub Activities and Buffers

Lynbrook Blvd

Ormond Rd

Hallam Rd

Evans Rd

S Gippsland Hwy

Glasscocks Rd

Legend

- Garden Nursery
- Slimes Drying (landfill)
- Concrete Batching Plant
- Transfer Station
- Landfill
- Stockpile Area
- Grazing
- Remediation
- Construction & Demolition Processing
- Vacant Land
- 100m Concrete Batching Plant Buffer
- 300m Reverse C&D Recycling Buffer
- 275m High Pressure Gas Pipeline Buffer
- 500m Landfill Buffer
- Electricity Transmission Corridor
- 30m Transmission Powerline Buffer
- High Pressure Gas Pipeline
- Hub Boundary

0 100 200m

Lynbrook Blvd

Ormond Rd

Hallam Rd

Evans Rd

S Gippsland Hwy

Glasscocks Rd

Zoning

Legend

- General Residential Zone 1&2 (GRZ1, GRZ2)
- Special Use Zone 1 (SUZ1)
- Urban Floodeway Zone (UFZ)
- Public Park and Recreation Zone (PPRZ)
- Public Use Zone-Education (PUZ2)
- Commercial 1 Zone (C1Z)
- Road Zone-Category 1 (RDZ1)
- Hub Boundary

0 100 200m

2.0

Background documents

In preparing this study, we have received and reviewed several relevant background reports and studies, which are identified with brief summary notes below.

EPA Guideline: Recommended separation Guideline distances for industrial residual air emissions

This guideline provides advice on recommended separation distances between industrial land uses that emit odour or dust, and sensitive land uses, to:

- Inform and support strategic land use planning decisions;
- Prevent new sensitive land uses from impacting on existing industrial land uses;
- Prevent new or expanded industrial land uses from impacting on existing sensitive land uses;
- Identify compatible land uses that can be established within a separation distance area.

It therefore provides a useful reference for consideration of existing land uses and buffers, and potential future land uses, in the precinct.

EPA Guideline: Assessing planning proposals within the buffer of a landfill

This document provides information and advice on assessing planning permit applications and planning scheme amendments that would lead to development within the buffer of an operating or closed landfill.

It therefore provides a useful reference for consideration of potential land uses/development within the existing Hallam Road landfill buffer, including post-closure of the landfill.

Hampton Park Employment Land Needs Assessment (Final Draft, dated 06/05/2022)

This report informs the employment land potential and uses for the vacant land surrounding and within the Hallam landfill.

It identifies four (4) precincts, totalling 153 ha (excluding the waste recovery, C&D facilities, existing landfill and concrete batching plant), to establish employment growth opportunities and suitable land uses, to limit land use conflict in the study area and surrounds.

The land use configuration plan identities the following land use directions, based on in-depth analysis and land conditions, zoning, areas and regional catchments:

- Eastern corridor: Horticultural uses;
- Southern area (Glasscocks Road frontage): Light industry - Prioritised land;
- Western corridor (Hallam Road and South Gippsland Highway frontages): Light industry - secondary land;
- North-west corner: Long-term potential, non-employment uses.

DELWP Planning Practice Note 92: Managing buffers for land use compatibility

This document provides guidance for land use compatibility, addressing buffers and sensitive uses in the context of the Planning Policy Framework, and how these are measured and implemented in policy terms.

It also refers to EPA guides (see above) and processes.

This guide is understood to be informative to the implementation process for this project, but provides a useful reference for considering existing zoning and buffers within and surrounding the study area.

2.0

Hallam Road Waste and Resource Recovery Hub Plan (February 2021)

This Plan states that *the Hallam Road Waste and Resource Recovery Hub is a valuable, well placed site for waste and resource recovery infrastructure to service the City of Casey, the region and the state. As the Hallam Road landfill closes, the hub will transition away from waste disposal activities and focus on waste transfer activities and the resource recovery of inert materials, while also providing valuable public open space to the City of Casey.*

The plans objectives are:

- *Support the long-term waste and resource recovery activities on the site*
- *Encourage complementary land uses in the hub and buffer areas*
- *Provide support for industry investment and development of infrastructure at the site*
- *Improve management of amenity and reverse amenity in the hub and surrounding areas*
- *Integrate planning for the hub with other neighbouring hubs of state importance.*

This plan identifies challenges for the hub, including the encroachment of residential development around the landfill's buffer, and other exclusion zones affecting the site.

It identifies that the imminent closure of the landfill presents the opportunity to review land uses and to manage planning to support ongoing resource recovery activities. It provides a range of detailed recommendations to support this process.

City of Casey: Employment Land Design Guide (Draft, July 2021)

This document provides design principles and guidance for employment-focussed development, to assist planning assessments, encourage sustainable development, and facilitate better design outcomes.

The guide is structured around six (6) urban design themes, as follows:

- Urban Structure and Interfaces;
- Accessibility and Movement;
- Built Form and Architecture;
- Landscaper and Environment;
- Public Realm and Amenity;
- Services and Maintenance.

Each theme contains sub-categories and relevant guidelines for development.

Casey Design Excellence

The new Casey Design Excellence program builds on the recognition that design excellence provides economic, social and environmental benefits to cities. It articulates Casey's pledge to build its future on design excellence, becoming A Design City, and achieving the highest quality design across all elements of the built environment.

This pledge is reflected in 10 commitments:

- *Design that leads*
- *Design that puts sustainability first*
- *Design a city for people*
- *Design for all*
- *Design for this place*
- *Design that makes sense*
- *Design for the future*
- *Design that Inspires*
- *Design processes that work*
- *Design together.*

Hampton Park Development Plan (updated 21 May 2019)

This Development Plan applies to the Development Plan Overlay Schedule 1 (DPO1) area, which includes the study area for this project (the hub).

It identifies the Quarry/Landfill environments and public open spaces, which have the potential to create adverse amenity impacts, which require EPA inputs.

It includes proposed commercial areas and potential residential development that needs to be reviewed as part of this work. Noting general planning and design principles considered where relevant.

Study area excludes some residential areas to the north as per Development Plan Overlay.

It is understood that the Development Plan is being updated, informed by this study, as noted in Chapter 1.

City of Casey Activity Centres Strategy (September 2020)

This document is for background reference only for the current study, because the study area does not contain any existing or proposed activity centres. There is a local neighbourhood activity centre on adjoining land at the south-west corner of the Hub precinct.

The current study area is close to two Medium Neighbourhood Activity Centres to the east (Amberly Park, Narre Warren South) and west (Lynbrook Village, Lynbrook), and a proposed Local Neighbourhood Activity Centre to the south (South Gippsland Highway, Cranbourne/Lynbrook).

3.0

Constraints, issues and opportunities

3.1 Constraints

High pressure gas pipeline

- A high-pressure gas pipeline runs along the south-western and southern parts of the precinct and continues towards the south-east
- This generates a 275m wide buffer which affects future land use and development potential
- It is understood that development is permitted within this 275m wide buffer, but a smaller 20m wider 'no build' buffer applies along the pipeline alignment, which can be crossed by roads. This reflected existing conditions in the developed area south of the study area
- Council officers have advised that this pipeline may be decommissioned in the future which may remove the buffer requirements.

Transmission Line

- An electrical transmission line (and easement) runs along the eastern part of the precinct, then angles to the south-west across the precinct, and across the South Gippsland Highway near Glasscocks Road
- This transmission corridor generates an easement approximately 150m in width (30m from the outside lines), within which no constriction is permitted
- The transmission corridor divides the precinct into two parts physically and visually, and limits development within and nearby the corridor
- Casey City Council are currently exploring land use options for transmission line easements, including passive recreational use (e.g. dog parks, bike/skate tracks and discovery trails).
- It is possible that in the long term, this transmission line could be reconfigured underground, but noting the high expected cost of this.

Current land uses and buffers

- Existing landfill (waste and resource recovery) activities generate a 500m buffer which restricts land use activities due to amenity impacts and risk to human health. However extensive residential development exists within this buffer
- The landfill buffer will remain with the same extent after the closure of the landfill, to manage the risk of landfill gas migration impacts on neighbouring development (existing and potential)
- Any future use and development recommended within amenity buffers of the Waste and Resource Recovery Hub must consider relevant EPA guidelines
- Surrounding residential land uses present a potential constraint to ongoing and future commercial/industrial activities, due to amenity impacts within buffer zones. Future land uses within the study area should not further impact the safety, health and amenity of the surrounding area
- The precinct contains significant areas of encumbered land (landfill gas generation, service corridors across site, flood prone areas)
- The concrete batching plant is an ongoing operation, under separate, private land ownership, and creates off-site impacts including noise and dust. This area is at a significantly lower elevation than the adjoining property to the north
- The Construction and Demolition processing facility is also seen as an ongoing operation (owned by a Joint Venture between SUEZ and ResourceCo).

Flooding

- The eastern side of the precinct is zoned as Urban Floodway Zone (UFZ) and is subject to flooding.

Major roads and traffic

- South Gippsland Highway and Hallam Road are major traffic routes and wide roads, forming barriers to cross-movement for pedestrians and cyclists in particular, between the precinct and areas to the west
- Major roads also have limited potential for vehicle movements to/from the local streets.

Existing development patterns

- Residential 'backs' (property back fences) is the prevailing interface conditions along Hallam Road (west side, facing the precinct), Glasscocks Road (south side, facing the precinct), and the northern and western edges of the precinct. This presents potential safety and activation issues, and limits activation/passive surveillance opportunities.

3.2 Issues

Amenity impacts on nearby residential development

- Odour, dust and noise from landfill activity are impacting residential areas surrounding the precinct, as well as intermittent odour issues extending to nearby suburbs, reported to the EPA in recent years
- Dust from the existing concrete batching plant also affects nearby residential areas, including those across Hallam Road
- Traffic noise from heavy vehicle flows on Hallam Road and South Gippsland Highway affects housing along these corridors, including significant truck movements to-from the Hub throughout the day
- While extensive landfill gas extraction and storage/re-use is carried out on the site, landfill gas generation affecting residential development has been reported. This may be a result of landfill odour rather than methane gas
- The visual impact of the electricity transmission corridor impacts nearby residential areas and roadways.

3.0

Residential encroachments on existing buffers

- Existing houses across Hallam Road are within the 500m landfill buffer
- Existing houses between the landfill precinct and Ormond Road are within the 500m landfill buffer
- Existing houses across South Gippsland Highway and Glasscocks Road are within the 275m high pressure gas pipeline buffer (but it is understood this is permitted and acceptable)
- Some houses north of the precinct encroach into the 100m concrete batching plant buffer.

Impacts of existing activities on proposed land uses

- Noise, dust and odour from existing activities may impact upon the proposed public open spaces and potential employment-based development in the study area.

Movement and access

- Limited crossing points across Hallam Road and South Gippsland Highway affect pedestrians' safety and limit accessibility to the precinct. While pedestrian access to the precinct is not currently required, it will be more relevant when future development occurs
- Trucks and heavy vehicle traffic in Hallam Road and South Gippsland Highway impacts pedestrians' safety and experience
- The precinct contains just one operational vehicle access point (from Hallam Road)
- There is no access to the north to be able to connect to Ormond Road
- Limited access and pedestrian crossings to the precinct from the west GRZ area.

Built form

- Lack of active frontages along roads adjoining the precinct discourage walking
- Some private open spaces and dwellings along the northern edge are directly abutting the hub, with lack of surveillance of this interface. There has been illegal dumping of waste across the fence into the Hub precinct from these properties
- The existing garden supplies/nursery premises fronting Hallam Road contain low-scale, low-grade built form and extensive underutilised car parking and open storage areas
- The electricity transmission corridor affects the visual perception of the precinct
- Existing trees along the northern edge of the precinct form a visual barrier between future open space (planned) and adjacent residential areas
- The 'back fences' interface and lack of street connections along the northern edge of the precinct limit future access and permeability
- Rows of trees limit visual access to the site from South Gippsland Hwy (but also provide visual amenity and visual separation between waste processing and the road corridor)
- Existing grazing activity in the eastern part of the precinct is incongruous with the suburban location, but this land is heavily constrained for other uses.

3.3 Opportunities

Public realm and landscape

- Varied topography in some parts of the precinct may limit future pedestrian accessibility
- The major roads are generally uninviting for pedestrians, due to noise, exposure and lack of shade, as well as environmental impacts, and a lack of sense of enclosure and definition in the roadscape
- The large extent of the precinct potentially creates long walking distances, or a reliance on private cars for access to future facilities
- The precinct is largely not visible from surrounding roads due to landform buffers and fences, which may affect future access and safety, when the precinct contains other, publicly accessible activities
- Open spaces to the east are spread across and lacks
- Lack of destinations to encourage people to walk or cycle within the surrounding neighbourhoods.

Movement and access

- Enhancing existing access points to form the main entrances to the proposed passive and active public open spaces
- Establishing legibility and wayfinding systems to support pedestrian and cycling access and movement across the precinct
- Developing the transmission corridor as a landscape cycling/walking path across the precinct
- Utilising the floodway to create natural habitats and native wetland environments (but noting this is on privately-owned land)
- Footpath widening and enhanced landscaping along Hallam Road, South Gippsland Highway and Glasscocks Road
- Enhancing off-road (separated) bike lane opportunities in Hallam Road, South Gippsland Highway and Glasscocks Road (where not already in place)
- Developing a new cycling/walking path network across the precinct, connected to existing and future paths
- Increasing pedestrian access into and through the precinct from surrounding residential areas.

Built form and land use

Note: All proposed land uses in this report are suggested but not necessarily preferred by Council, but are related to preferred Urban Design outcomes. These recommendations should be read in conjunction with the *Hampton Park Employment Land Needs Assessment 2022*, and the *Hampton Park Hill Development Plan*.

- Facilitating sustainable, intensive horticulture where existing grazing/livestock activity occurs
- Establishing an advanced employment hub focused on innovation, resources and waste recovery, and other environmental disciplines
- Developing a distinctive place character for this part of Hampton Park and future open space facilities, through built form and landscape design
- Facilitating fence removal and increased pedestrian permeability
- Enhanced built form and landscape presentation to major road corridors
- Providing active and visually distinctive frontages to roads and open spaces
- Utilising existing topography and height differences in the land to provide a natural buffer and manage views where appropriate, and to support distinctive landscape design
- Reinforcing green and softscape buffers between residential areas and Hub activities.

Public realm and landscape

- Promoting environmentally sound and sustainable waste management activities through landscape design
- Establishing new, attractive open spaces after the planned landfill closure for community benefit
- Building an active, healthy and people-friendly environment
- Utilising planned passive open space as a buffer to reduce the impact of odour and noise of waste and resource recovery on existing surrounding residential and future employment land uses
- Proposed public open spaces can provide a green and visually permeable interface to industrial activities
- Proposed public open spaces can provide recreational functions and amenity for current and future commercial premises in the precinct
- Selecting planting and landscape elements to support the preferred future character of the area
- Enhancing site entrances from Hallam Road to be more prominent, accessible and welcoming
- Use site topography with landscaping to conceal ongoing activities such as transfer station and concrete batching plant
- Enhance the area's fauna by creating more habitats and improving ecosystem conditions.

Shared path, Merri Creek Trail. Source: https://walkingmaps.com.au/walk/3549

Site topography with landscaping, Darebin Creek Trail. Source: https://www.alltrails.com/trail/australia/victoria/darebin-creek-trail

Open space. Source: https://landezine.com/husby-barbecue-area/

Passive open space, Kerr Park, Oklahoma City, USA. Source: https://www.pps.org/projects/kerr-park

3.4 Background directions for future planning/design

- EPA recommends that the sites are not suitable for residential and other sensitive land uses
- EPA states that the default distances are the same for both operating and closed landfills, and the buffer for closed landfills is to manage the risk of landfill gas impacts only
- According to Hallam Road Waste & Resource Recovery Hub Plan, the ideal land uses within the hub or buffer areas, would fit the following criteria:
  - Non-residential
  - Resilient to dust, noise and odour
  - Promote the principles of a circular economy
  - Build industrial ecology relationships between businesses in the hub (e.g. one business uses a by product of another business).
- Provide visible entrances
- Provide bike lanes
- Improve climate comfort conditions for pedestrians
- Reference the City of Casey's Employment Land Design Guide and follow design principles for employment land interface.

4.0

Interfaces analysis

This section provides a series of analytical plans and cross-sections of the four interfaces or edges to the hub precinct, as a basis for considering urban design treatments at these interfaces to improve amenity conditions, presentation and spatial quality.

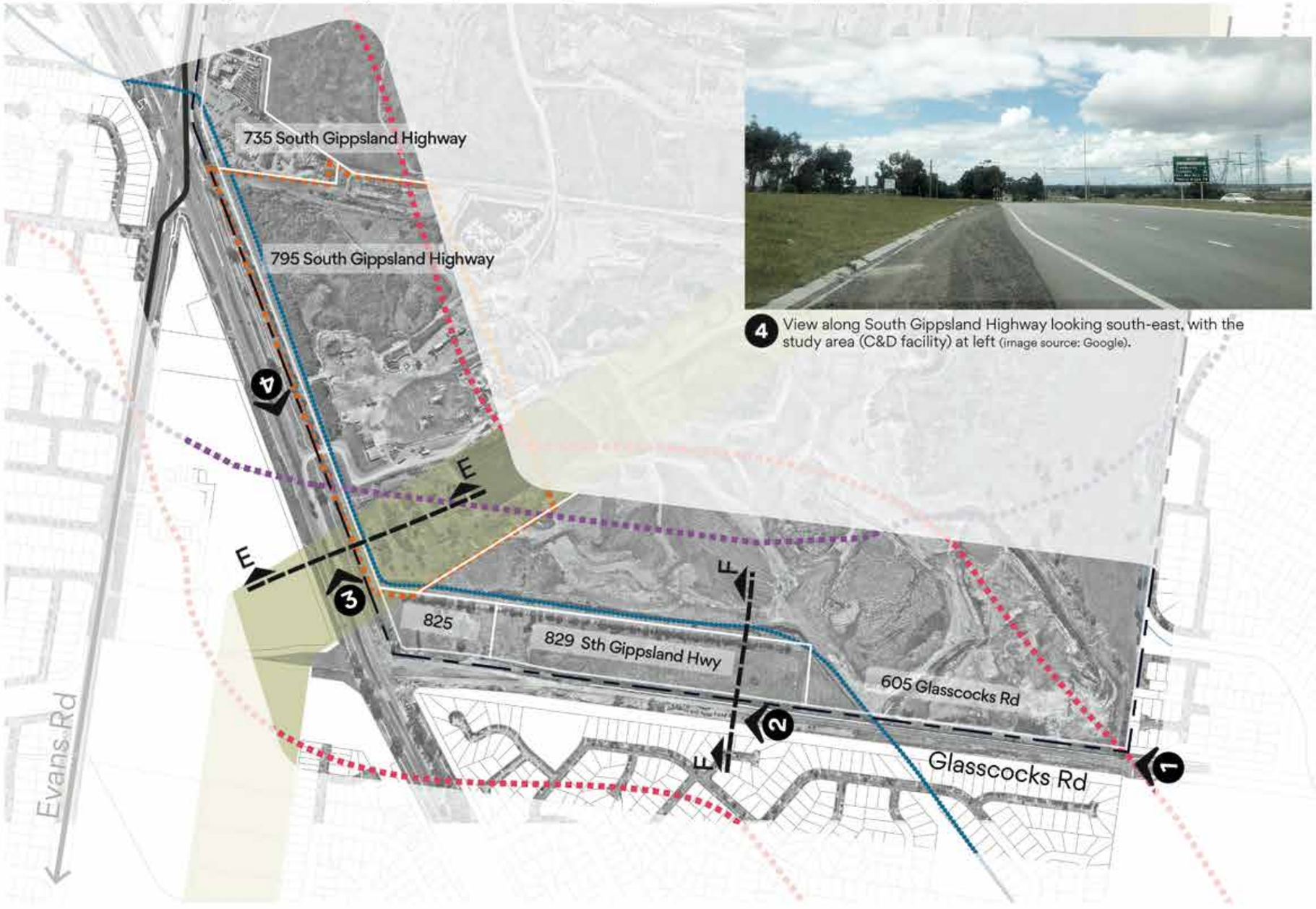
4.1 South interface

1 Glasscocks Road (under construction)

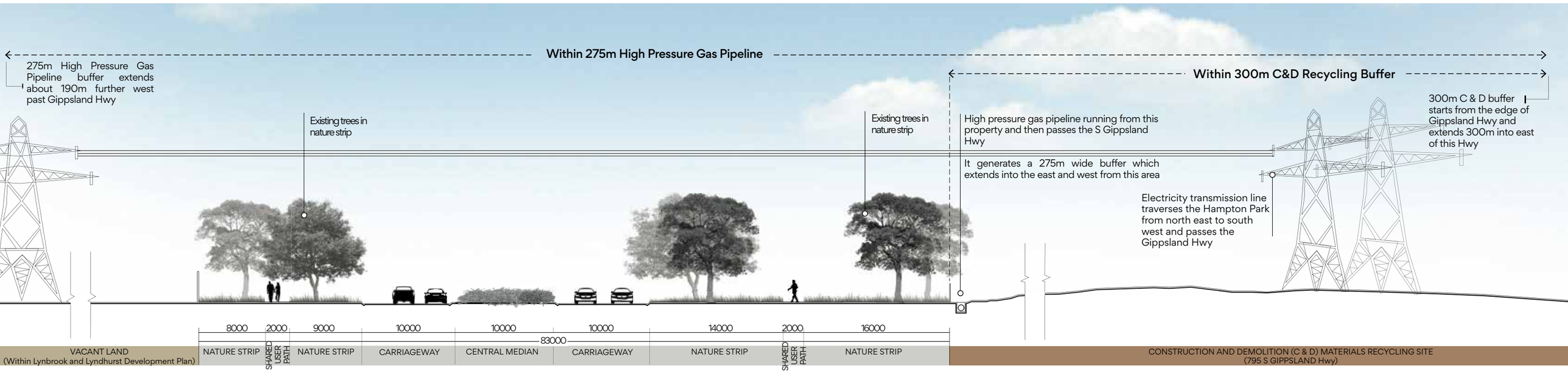
2 View along former Golf Club Road (now constructed as Glasscocks Road) looking west, with the subject landstudy area at left (image source: Google).

3 View along South Gippsland Highway looking north-west, with the study area at right (image source: Google).

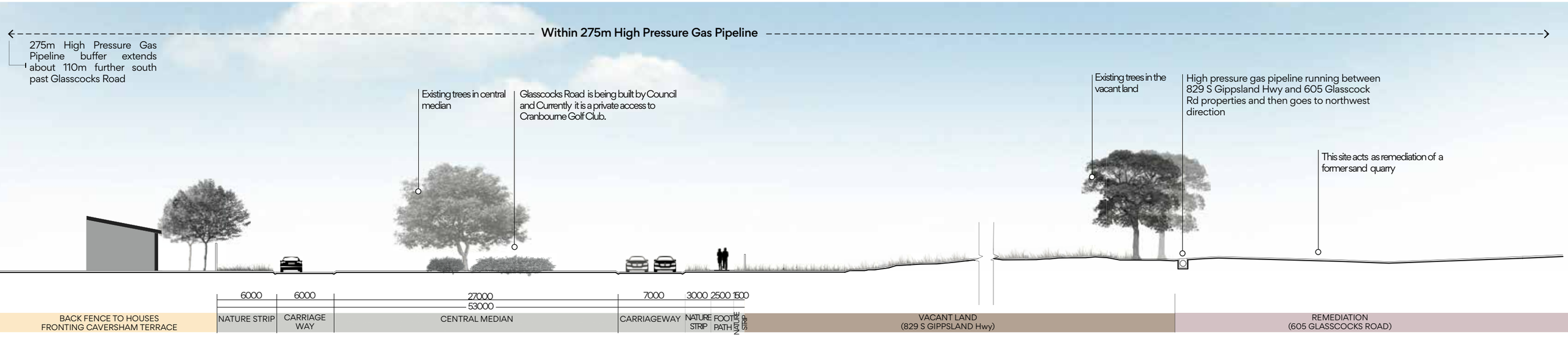
South interface



4 View along South Gippsland Highway looking south-east, with the study area (C&D facility) at left (image source: Google).

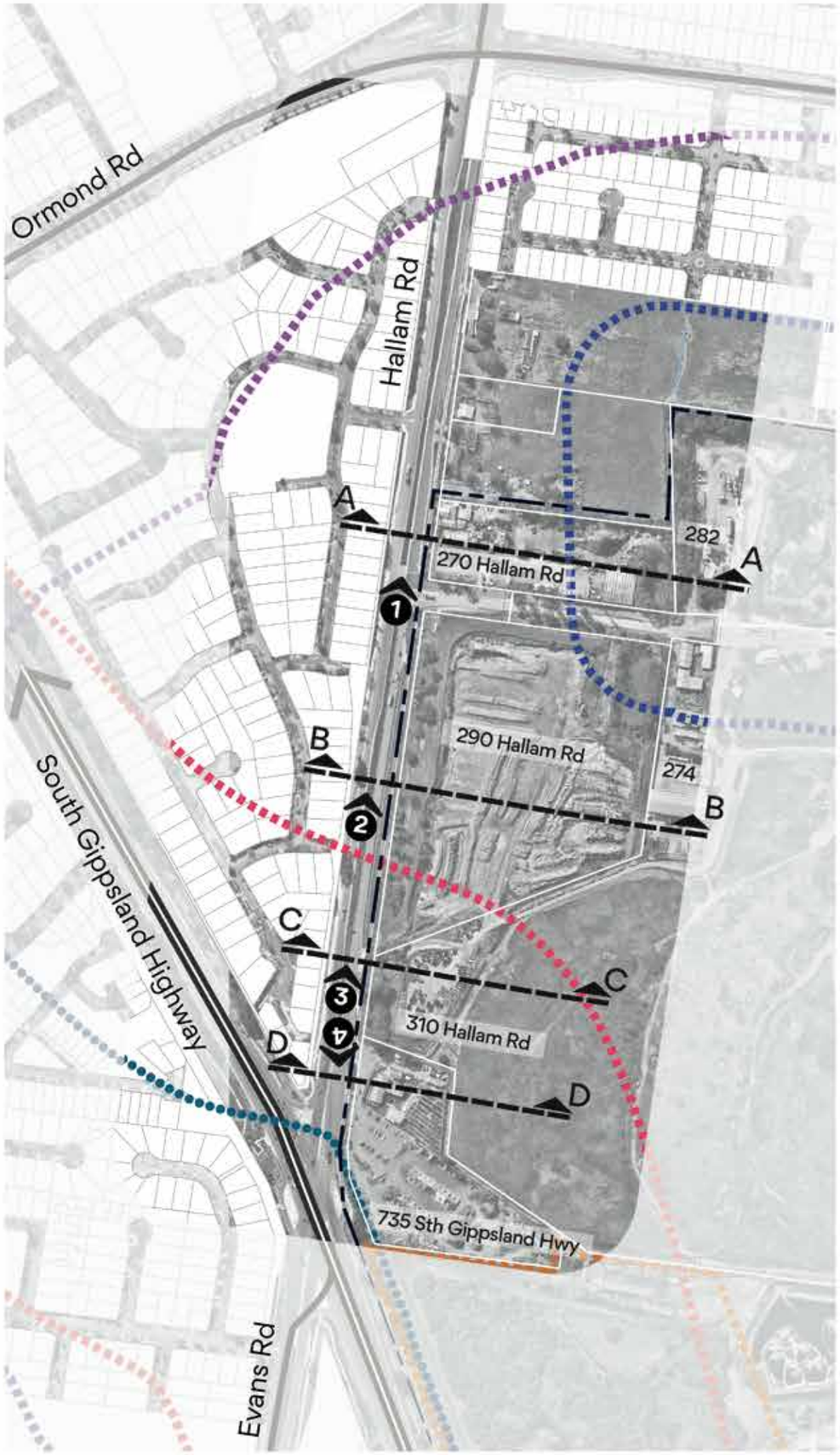


Section E is through South Gippsland Highway and the existing Construction and Demolition (C & D) material recycling site at 795 South Gippsland Highway.
It Illustrates High Pressure Gas Pipeline that is running from the site and addresses the vacant land west of South Gippsland Highway, within the 275m High-Pressure Gas Pipeline buffer.
It also addresses the Electricity Transmission Line that traverses Hampton Park and passes the South Gippsland Highway.



Section F is through Glasscocks Road and the existing vacant land at 829 South Gippsland Highway and remediation site at 605 Glasscocks Road.
It addresses the residential interface south of Glasscocks Road, within the existing 275m High-Pressure Gas Pipeline buffer.

4.2 West interface



Legend

- Residential
- 100m Concrete Batching Plant Buffer
- 300m Reverse C&D Recycling Buffer
- 275m High Pressure Gas Pipeline Buffer
- 500m Landfill Buffer
- High Pressure Gas Pipeline
- Hub Boundary

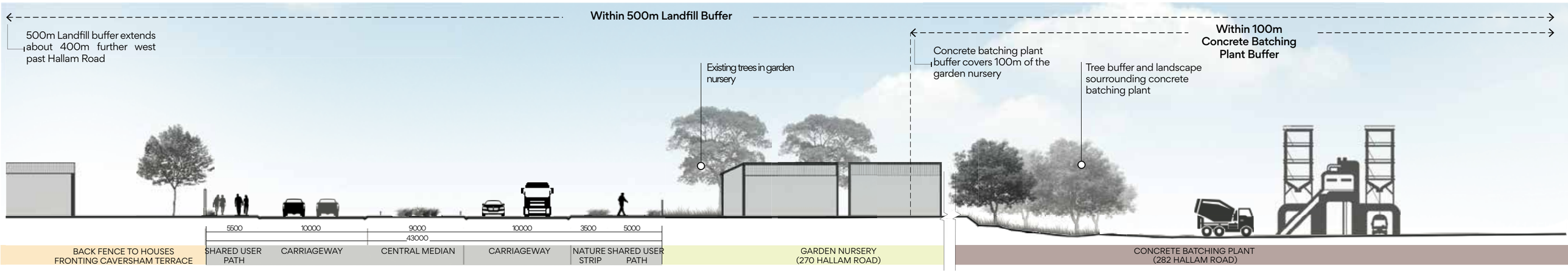
0 100 200 N

1 Hallam Road, looking north, at interface to Garden Nursery at 270 Hallam Road (image source: Google).

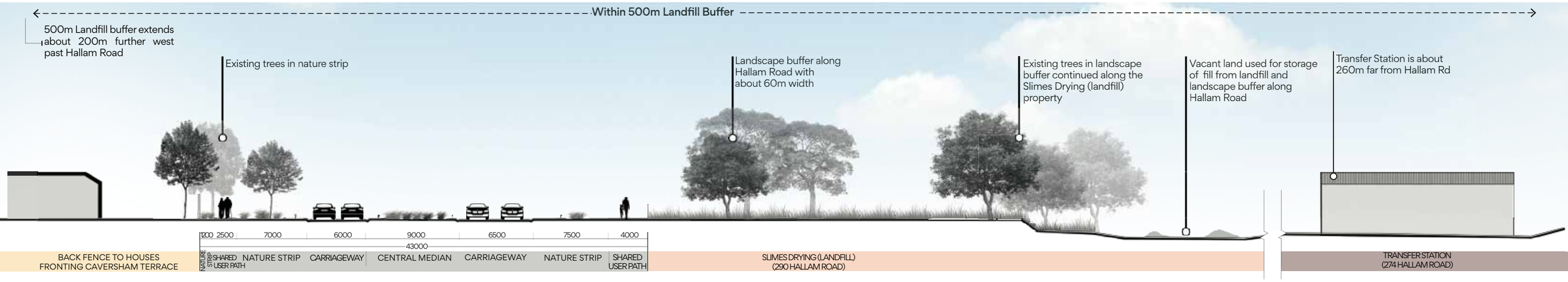
2 Hallam Road, looking north, near interface to existing slimes drying area at 290 Hallam Road (image source: Google).

3 Hallam Road shared path (west side), looking north, near interface to landfill frontage at 310 Hallam Road (image source: Google).

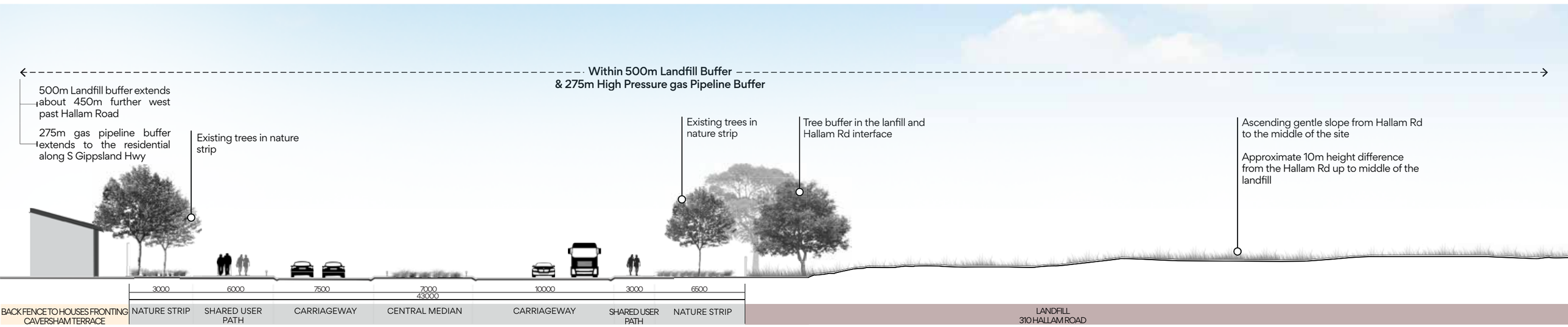
4 Existing Garden Nursery at 735 South Gippsland Highway (corner Hallam Road) (image source: Google).



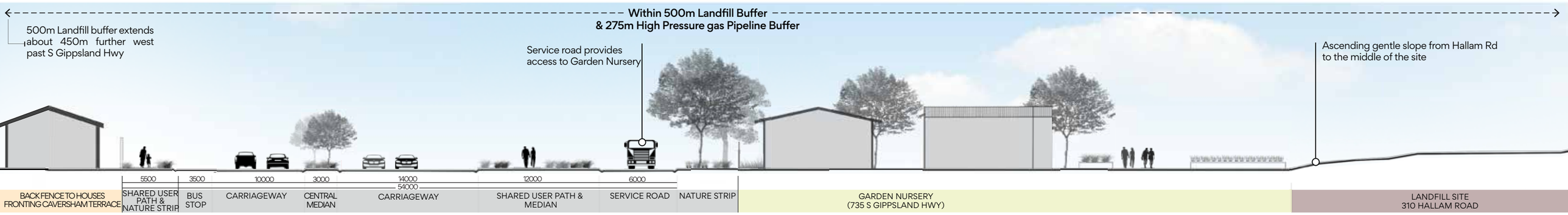
Section A is through Hallam Road and the existing Garden Supplies premises and Concrete Batching Plant at 270 and 282 Hallam Road, respectively.
It addresses the residential interface west of Hallam Road, within the existing 500m Landfill buffer, and also part of the study area within 100m Concrete Batching Plant buffer.



Section B is through Hallam Road and the existing Slimes Drying and Transfer Station premises at 290 and 274 Hallam Road, respectively.
It addresses the residential interface west of Hallam Road, within the existing 500m Landfill buffer.



Section C is through Hallam Road and the existing Landfill site at 310 Hallam Road.
It addresses the residential interface west of Hallam Road, within the existing 500m Landfill and 275m High-Pressure Gas Pipeline buffers.



Section D is through Hallam Road (near the Hallam Road and South Gippsland Highway) and the existing Garden Supplies premises at 735 South Gippsland Highway.
It addresses the residential interface west of Hallam Road, within the existing 500m Landfill and 275m High-Pressure Gas Pipeline buffers.

4.3 North and East interfaces

4 Redwood Avenue, looking east, with the study area at right (landfill stockpile area) (image source: Google).

3 Existing access trail along northern edge of the study area, looking east.

2 Existing houses interfacing the study area on Langbourne Dive, east of the study area, with transmission lines visible beyond (image source: Google).

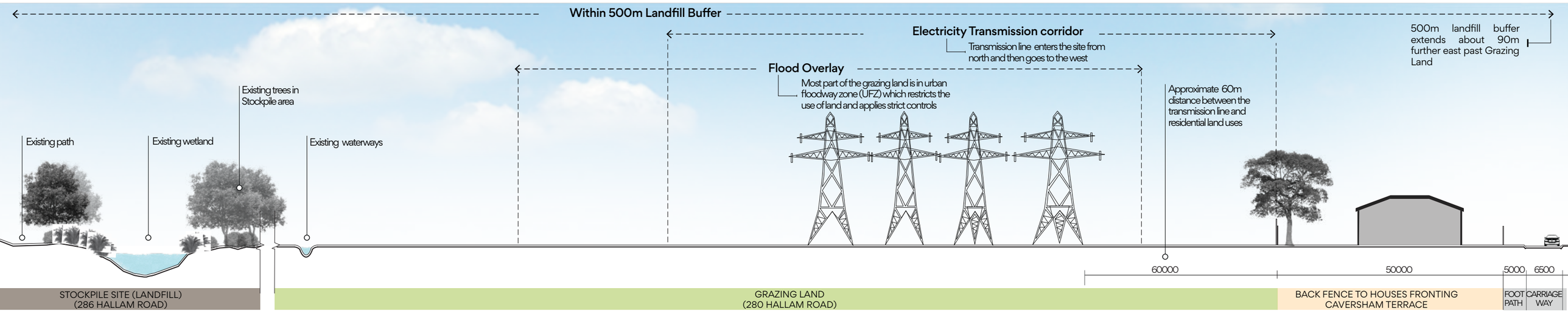
1 Kingston Avenue looking south, with the study area (existing grazing land) at right (image source: Google).

Legend

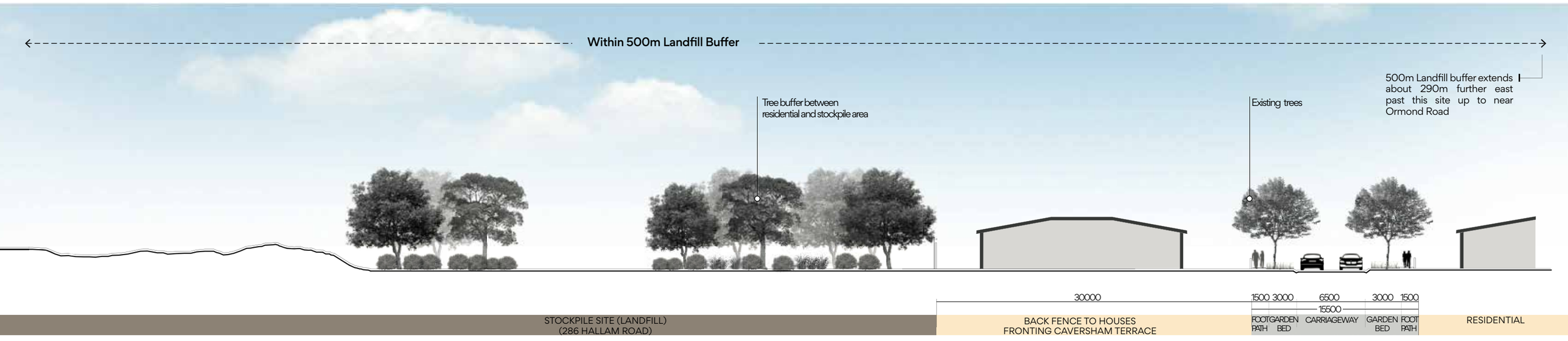
- Residential
- 300m Reverse C&D Recycling Buffer
- 275m High Pressure Gas Pipeline Buffer
- 500m Landfill Buffer
- Electricity Transmission Easement
- High Pressure Gas Pipeline
- Existing Waterways
- Hub Boundary

0 100 200m

N



Section G is through eastern residential interface and the existing Grazing Land and Stockpile site at 280 and 286 Hallam Road, respectively.
It addresses the residential interface east of Hampton Park, within the existing 275m High-Pressure Gas Pipeline buffer.
Also Illustrates the Grazing Land within the Urban Floodway Zone.



Section H is through northern residential interface, Redwood Avenue and the existing Stockpile site 286 Hallam Road.
It addresses the residential interface north of Hampton Park, within the existing 500m Landfill buffer.

5.0

Urban Design Principles

The following principles build on the preceding analysis and provide a foundation for the urban design concepts and guidelines later in this report.

They were developed to inform and guide the concept design process for this project. The Principles and supporting Strategies focus specifically on urban design considerations, rather than technical or operational aspects.

Principle 1:

Limit odour impacts on future open spaces and existing and future development within the landfill buffer.

Strategies:

- Increase tree planting along edges of the precinct, including densely planted 'buffer' edge zones and large trees;
- Provide dense planting and utilise increased plant species with air quality benefits in the planned public open space;
- Ensure the open space design provides for optimal air movement and natural ventilation;
- Facilitate screening and other constructional interventions to limit dust from the concrete batching plant;
- Facilitate the development of rehabilitation plans and aftercare management and monitoring programs.

Principle 2:

Reduce traffic noise impacts from heavy vehicle flows around the precinct, on residential and open space areas.

Strategies:

- Provide densely planted 'buffer' edge zones along edges of the precinct
- Locate footpaths with maximum separation distance from roads, where possible.

Principle 3:

Incorporate landfill gas migration risk mitigation measures in all new development.

Strategies:

- Carry out an appropriate risk assessment for landfill gas migration, based on the landfill size, type and age, to determine the level of risk
- Incorporate passive landfill gas mitigation measures in new buildings, based on the risk assessment, such as:
  - reinforced building floor construction with concrete slabs and gas-resistant membranes
  - underfloor venting
  - in-ground vertical venting wells to create a preferential pathway for gas to escape before reaching a building.
- Incorporate active landfill gas mitigation measures in new buildings, as required based on the risk assessment, such as:
  - extraction from the ground; or
  - maintaining a positive pressure of air to prevent gas from entering under or within a building.
- Avoid land uses which are sensitive to potential landfill gas migration, with buffer areas.

Principle 4:

Minimise the potential impacts of flooding on the eastern portion of the precinct on the proposed open spaces and employment land.

Strategies:

- Reinforce existing topography and height differences between the Urban Floodway area and proposed public open spaces
- Utilise the floodway for public realm and ecological benefits such as through wetlands development
- Provide green and softscape buffer between Urban Floodway area and proposed open spaces and future employment development.

Principle 5:
Optimise land use activities in response to the constraints of the precinct.

Strategies:

- Develop the transmission corridor as a landscaped walking/cycling route across the precinct, as part of a wider network
- Integrate existing topography and water bodies into future open spaces and development settings.

Principle 6:
Minimise the visual impacts of the transmission corridor.

Strategies:

- Increase tree planting and landscaping around the transmission line
- Develop enhanced frontages and visual presentation to roads and interfaces to residential areas.

Principle 7:
Limit potential visual and amenity impacts of future industrial land uses on the precinct and surrounds.

Strategies:

- Apply the City of Casey Employment Land Design Guide (Draft) in the siting and design of commercial buildings
- Provide landscaped front setbacks to future light commercial/industrial land on Glasscocks Road, South Gippsland Highway and Hallam Road, to enhance the roadscape and support visual amenity
- Ensure well-designed commercial/industrial buildings along Hallam Road, South Gippsland Highway and Glasscocks Road
- Ensure sensitive design responses in commercial/industrial development at interfaces to residential areas
- Locate car parking to the side or rear of the future commercial and industrial buildings, rather than at road frontages
- Avoid overshadowing of residential properties by future industrial/commercial development
- Locate commercial loading areas away from residential interfaces and road frontages, where possible.

Principle 8:
Enhance the streetscape presentation of the precinct.

Strategies:

- Ensure future commercial development creates positive frontages to the street
- Locate loading and parking zones and the rear of commercial properties
- Facilitate cohesive landscaped frontages to commercial developments
- Avoid installing fence backing onto streets
- Avoid dominating the street interfaces with loading docks and blank walls
- Provide a high level of visual interest and design quality in future building façades that are visible from adjoining streets/roads
- Establish enhanced presentation through orderly and efficient signage and wayfinding in response to Casey's Advertising Signs Design Guide
- Respond to the Casey Image Strategy.

Principle 9:
Facilitate light industrial/commercial development at eastern and southern areas of the precinct.

Strategies:

- Establish an integrated, accessible layout and urban structure for the southern area, to accommodate an advanced commercial/light industrial precinct
- Establish a strong landscape/public ream structure, suitable to commercial development
- Provide adequate separation and landscape buffers (where appropriate) between sensitive uses and industrial land uses
- Ensure that future development provides positive, engaging street frontages.

Light industrial/commercial frontage. Source: https://landezine.com/werkspoorkathedraal-utrecht-by-flux/

Principle 10:
Maximise public access to future open space and facilities.

Strategies:

- Address the existing shortfall in public open space in the Hampton Park area through new and enhanced spaces and facilities
- Create visible, accessible entrances at key locations, including:
  - Hallam Road, at intersection with South Gippsland Highway
  - Hallam Road, at existing entrance
  - South Gippsland Highway, near the existing local road
- Enhance crossings over Hallam Road near existing entrance, South Gippsland Highway and Glasscocks Road
- Separate public entrances and walking/cycling routes, from heavy vehicle routes to/from the precinct where possible.

Principle 11:
Facilitate convenient pedestrian and cyclist access and movement to/from and across the precinct.

Strategies:

- Footpath widening and enhanced landscaping along Hallam Road, South Gippsland Highway and Glasscocks Road
- Provide off-road (separated) bike lane opportunities in Hallam Road, Gippsland Hwy and Glasscocks Road
- Develop new cycling/walking path network across the precinct
- Provide clear and visible way-finding signage for the pedestrian and cyclists
- Enhance the pedestrian and cyclist experience through public art or landscape features
- Improve climate comfort conditions for pedestrians and cyclists.

Principle 12:
Enhance safety and security in the precinct and adjoining streets/roads.

Strategies:

- Arrange pedestrian approach paths with clear sightlines to support wayfinding, and to align with existing road crossings and street layouts
- Ensure that future commercial development creates active frontages to new internal streets in the precinct to support passive surveillance
- Ensure that Casey's public places and spaces are designed with a gender safety focus.

Principle 13:

Develop a distinctive urban/ landscape character which integrates the planned public open space with surrounding residential areas, as well as future commercial development.

Strategies:

- Establish a distinctive landscape design approach and planting/materials palette to support a cohesive character
- Establish a precinct-wide lighting strategy to support a cohesive place character
- Additional architectural and landscape expressions in entrances to create landmarks for the overall precinct
- Utilise wayfinding signage, furniture and other elements to support a cohesive precinct character.

Distinctive landscape character in entrances.
Source: https://www.landscapearchitectureprojects.com/projects/2018/8/9/wembley-link-pathway-public-art

Distinctive landscape character in entrances.
Source: https://www.codaworx.com/projects/mountain-range-and-river-of-light-john-muir-medical-center/

Principle 13:

5.0

Landscape integrated with public art relevant to the area, Melbourne's EastLink Trail. Source: https://kgrahamjourneys.wordpress.com/2013/07/16/melbournes-eastlink-trail/

Principle 14:
Ensure environmentally sustainable design in future developments and public realm initiatives.

Strategies:

- Embed net-zero carbon outcomes from built form and landscape development
- Utilised on-site landscaping to manage and offset current and future emissions impacts
- Require application of recognised sustainable building rating tools towards international best practice outcomes
- Apply Water Sensitive Urban Design (WSUD) measures in the design of streets, spaces and interfaces
- Require the use of recycled and locally sourced materials.

Principle 15:
Encourage and facilitate good design in future developments.

Strategies:

- Apply the City of Casey Employment Land Design Guide (Draft) in the assessment of development proposals
- Consider a 'Design Quality Team' and/or 'Casey Design Excellence panel' to review all proposals in the precinct
- Consider the Casey Design Excellence Guide where relevant in the design development and assessment of future proposals.

Water sensitive urban design (WSUD) initiatives. Source: https://landezine.com/wala-open-air-facilities-by-gluck-landschaftsarchitektur/

6.0

Design guidelines

These guidelines are intended to guide future planning and development at the hub's interfaces, and to inform future planning tools applicable to the precinct.

6.1 Land uses

Note: All proposed land uses in this report are suggested but not necessarily preferred by Council, but are related to preferred Urban Design outcomes. These recommendations should be read in conjunction with the Hampton Park Employment Land Needs Assessment (Draft), 2021, and the Hampton Park Hill Development Plan.

- Develop the precinct as an advanced, specialised employment precinct with a focus on sustainability, energy and resources
- Facilitate new land uses through analysis of current and evolving waste/resources activities in the precinct, and resultant potential land use conflicts
- Encourage a transition to low-impact activities when the landfill closes, to allow the precinct to transition to a cleaner, publicly accessible place
- Post-landfill closure, analyse activities and locations within the precinct for new development, to reduce off-site impacts ad avoid land use conflicts
- Promote active synergies between land uses in the precinct, such as between food processing businesses, and commercial activities relating to sustainable waste and resource management
- Facilitate advanced, clean industrial and commercial activity in the precinct
- Facilitate renewable energy production on underutilised land within the precinct.

6.2 New development

- Facilitate commercial/light industrial redevelopment to achieve active frontages to Hallam Road and South Gippsland Highway and Glasscocks Road
- Encourage built form which is responsive to the local context, providing a sense of openness and space (such as through spacing between buildings and recessive upper level forms to reduce bulk), while achieving activation and outlook at road frontages
- Ensure that new development provides visually interesting, active frontages to existing and new streets and roads
- Ensure future development interfaces positively with future public open spaces in the precinct
- Facilitate advanced, sustainable horticulture activities in the eastern part of the precinct
- Facilitate incremental residential redevelopment on sites interfacing with the precinct, including properties across Hallam Road and Glasscocks Road from the precinct, to achieve active residential frontages (rather than back fence interfaces) and passive surveillance outcomes.

6.3 Public open space

- Future public open space should be highly accessible and legible for pedestrians and cyclists
- Encourage and facilitate new public open space on land which is unsuitable for other purposes, including easements and privately owned land.

6.4 Landscaping

- Implement locally-specific, native vegetation throughout the precinct
- Design landscaping to support pedestrian amenity, visual permeability and safety in streetscapes and public outdoor spaces
- Ensure landscaping design and species selection are drought-tolerant and climate responsive
- Facilitate landscaping along the transmission corridor, integrated with potential future development.

6.5 Access and connectivity

- Provide shared path connections between local access roads and the surrounding residential areas
- Encourage and facilitate future east-west public linkages through the eastern part of the precinct, to future public open space within the precinct
- Encourage and facilitate shared path connections along the electricity transmission corridor
- Provide view corridors from eastern side to the planned public open spaces.

6.6 Road frontages

- Enhance the public realm experience of roads adjoining the precinct through landscaped frontages providing shade, weather protection and visual amenity
- Provide landscaped setbacks to future development/ built form at precinct road frontages, of approximately 20m in width
- Provide new landscaping including WSUD/drainage, grasses and shrubs utilising native vegetation species
- Facilitate frontage landscaping to visually screen future development and existing/future industrial activities
- Retain existing native trees in road corridors and setback areas wherever possible.

7.0

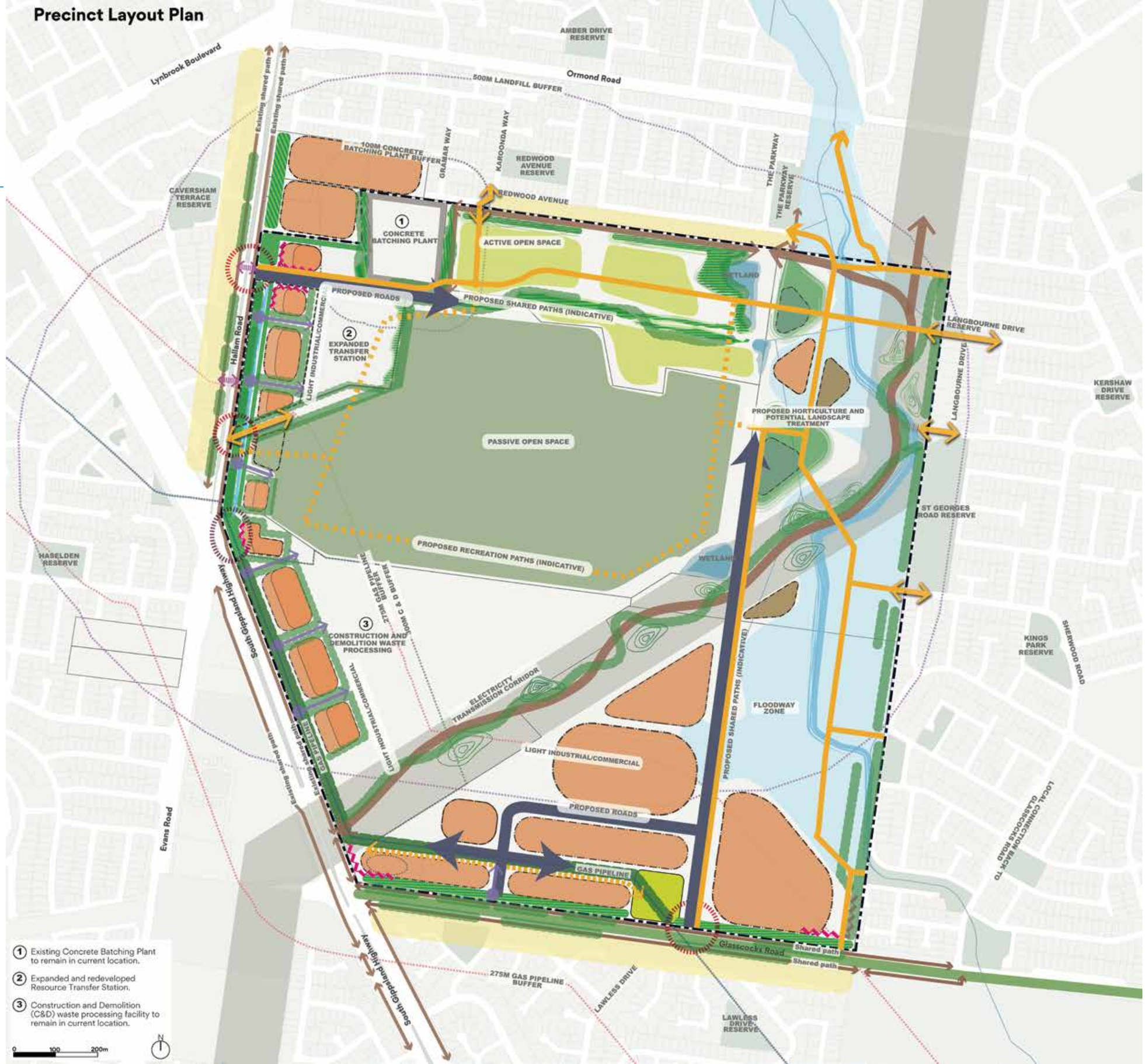
Precinct layout (outline/provisional)

The design consideration of the Hub precinct's interfaces through this study has generated an outline, diagrammatic precinct layout, comprising general spatial allocations and development areas, and an 'urban structure' of potential future entry points and connections across the precinct, as indicated below.

This plan is provided to indicate long-term, high-level potential opportunities only, and is not intended as a site plan or urban design framework. The future site configuration would be subject to significant further analysis and assessment. However, this indicative suggests a potential approach which seeks to:

- Integrate the precinct with surround urban development;
- Facilitate and promote public access to future public assets;
- Facilitate employment-based development;
- Support a legible, accessible network of streets and paths;
- Respond to the site constraints and existing land uses, and planned evolution of land uses over time.

Precinct Layout Plan



8.0

Interface directions and conceptual frameworks

This section sets out the proposed directions and conceptual frameworks for each edge where the existing hub interfaces with its surrounds, as developed during the Inquiry by Design Workshop, through concept plans and sections, reference images and explanatory notes,

8.1 South interface

8.1.1 Outline

This interface focuses on the newly-built Glasscocks Road (not yet fully opened at the time of visiting), between the South Gippsland Highway and Cranbourne Golf Club to the east.

Established suburban residential development exists to the south of Glasscocks Road, characterised by a highly circuitous and discontinuous street network, with many cul-de-sacs.

The southern part of the study area incorporates the high-pressure gas pipeline running parallel with, and approximately 100m north of, Glasscocks Road, as well as the Construction and Demolition (C&D) processing facility north of the electricity transmission line, and generally unused land south of the transmission line.

8.1.2 Development/built form proposals

- New 'clean tech' commercial/industrial development fronting Glasscocks Road, south of the gas pipeline, to create active frontages and employment opportunities
- Active recreation facilities, such as gymnasiums
- Incremental residential redevelopment along south side of Glasscocks Road, to creates active frontage and reduce/remove back fence interface conditions
- Mark/reinforce prominent corners along major roads with more substantial built form
- Ensure all new buildings meet technical requirements for mitigation of gas migration risk.

8.1.3 Movement network proposals

- Potential signalised intersection linking to new street connection into the Hub precinct, to increase connectivity with the established residential area to the south
- New north-south street connecting to Glasscocks Road from the Hub precinct
- New rear access lane along the southern edge of the 20m gas pipeline easement, to service future development fronting Glasscocks Road, as a street, shared path or similar.

8.1.4 Landscape proposals

- Landscaped setback (approximately 20m) to new buildings fronting Glasscocks Road
- Glasscocks Road enhanced/reinforced as linear green corridor, containing a roadway, building on its existing (newly established) character (see photograph below)
- Gas pipeline (if retained) developed as linear park behind frontage development (20m wide).

Glasscocks Road as linear green corridor.

8.1.5 Hub precinct layout implications

A new access point and connection to Glasscocks Road, extending as a new north-south connection through the precinct, can support enhanced integration of the precinct with its surroundings.

The proposal for non-sensitive development fronting Glasscocks Road allows the existing C&D processing facility to continue operation. Alternatively, this area fronting South Gippsland Highway can be redeveloped for similar commercial uses over time.

The frontage development layout responds to the location of the existing gas pipeline, but if this is decommissioned in the future, the layout may be more flexible.

8.1.6 Principles addressed

2: Reduce traffic noise impacts

- Extensive planting along Glasscocks Road will reduce noise impacts on residential area to the south, from traffic on the road and within the precinct
- New built form fronting Glasscocks Road may reduce noise from heavy vehicle movements within the precinct, by forming a sound barrier or buffer.

3: Landfill gas migration risk mitigation

- New buildings/development will avoid below-ground works, and will meet technical requirements for mitigation of gas migration risk, to meet EPA guideline (EPA publication 1642).

5: Optimise land use

- Underutilised land along the southern edge of the precinct is used for employment-generating development
- The eastern part of the precinct is used for more intensive urban agriculture or horticulture.

6: Minimise visual impacts of the transmission corridor

- New development along Glasscocks Road may (partly) conceal the transmission lines from view from the roadway and houses to the south.

7: Limit potential visual impacts of industrial uses

- Existing and future heavy industry in the centre of the precinct would be screened by frontage development along Glasscocks Road.

8: Enhance streetscape presentation

- New, high-quality frontage development and landscaped setback areas will enhance the presentation of the precinct to Glasscocks Road.

9: Facilitate light industrial/commercial

- This interface proposal focuses on this type of employment-focused development with an emphasis on advanced, clean industry and potential links to waste/resources and energy technologies.

10: Maximise public access

- The new linkage from the southern residential area substantially increases connectivity for those dwellings to the south, while new linkage(s) through the precinct will provide future public access and integration of the precinct with its surrounds.

11: Convenient pedestrian and cyclist access

- The new linkage from the southern residential area will provide convenient access for residents living south of Glasscocks Road
- The Glasscocks Road corridor will become a convenient access route for pedestrians and cyclists.

Precedent images for reference

13: Distinctive urban/landscape character

- A broad landscape buffer integrating with the Glasscocks Road environment presents the opportunity to reinforce the local landscape character, as well as integrating with the other precinct interfaces.

14: Environmentally sustainable development

- The proposal established a potential 'Circular Economy' relationship, as follows:
  - Food growing (east area);
  - Food processing (commercial development);
  - Food waste (by product of food processing);
  - Food/organic waste management/processing (within the Hub);
  - Food growing utilising by-product above.

15: Good design

- New development would be required to demonstrate design excellence, noting that this will be linked to commercial viability of this type of development, and therefore significant Economic Development work to establish a viable commercial precinct here.

New 'clean tech' commercial/industrial development. Source: https://is.gd/j88OMH

Prominent corners with more substantial built form and landscape setback.
Source: https://www.todayonline.com/singapore/construction-hyundais-electric-car-manufacturing-plant-singapore-begins.

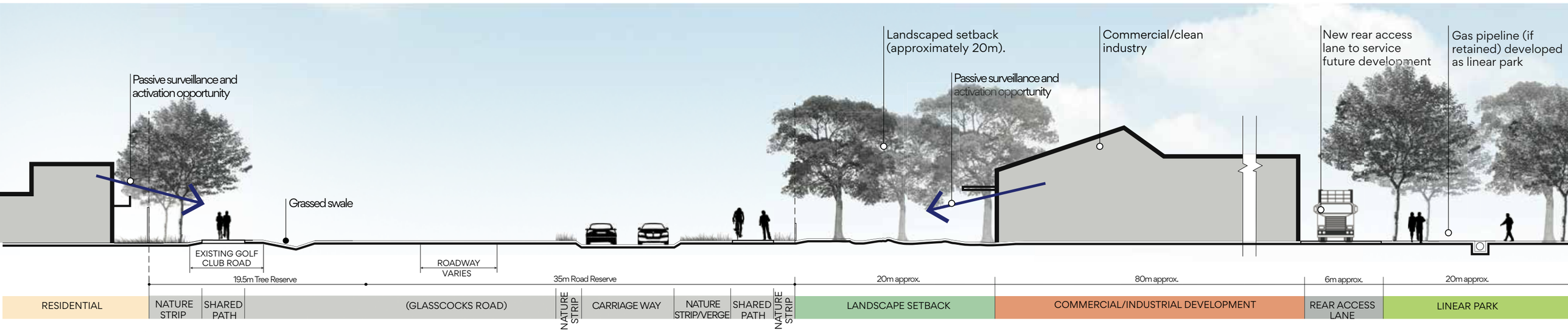
8.1.7 Challenges/constraints

Glasscocks Road design/layout and verges

- Further, more detailed investigation of the new Glasscocks Road layout is required
- The potential for extensive planting in the road corridor requires investigation, but this is not essential to the concept proposal.

Landfill gas migration risk

Landfill gas migration (below ground) is a significant risk for development close to existing and closed landfill sites and within landfill buffer areas. New development should limit or avoid below-ground works (such as basements or lift cores), and should incorporate appropriate risk mitigation devices as required, to meet relevant EPA guidelines and Council requirements, and based on an appropriate risk assessment.



South Interface Proposed Section

South Interface (1/2)

Evans Road

Pronounced architectural and/or landscape gateway treatments at corners and entry points.

Soft edge treatment to the major road environment.

New development for Commercial and Office space along the South Gippsland Highway frontage.

South Gippsland Highway

Gas pipeline (if retained) developed as linear park (20m wide).

New rear access lane to service future development fronting Glasscocks Road, as a street, shared path or similar.

Existing shared path

Existing shared path

GAS PIPELINE

Mark/reinforce prominent corners with more substantial built form.

Existing Shared path along South Gippsland Highway.

Views and access from the Highway and public realm.

CONSTRUCTION AND DEMOLITION WASTE PROCESSING

Shared path/ access way.

275M GAS PIPELINE BUFFER

300M C & D BUFFER

South Gippsland Highway

Shared path

Shared path

Potential active recreation facilities, such as gymnasiums.

Glasscocks Road enhanced/reinforced as linear green corridor.

0 100 200m

N

South Interface (2/2)

ELECTRICITY TRANSMISSION CORRIDOR

Shared path extending north.

Extension of this north-south access route through the Hub precinct, to the precinct's northern interface.

FLOODWAY ZONE

New 'clean tech' commercial/industrial development.

Views and access from the roadway and public realm.

Landscaped setback (approximately 20m).

Gas pipeline (if retained) developed as linear park (20m wide).

GAS PIPELINE

Glasscocks Road enhanced/reinforced as linear green corridor.

New rear access lane to service future development fronting Glasscocks Road, as a street, shared path or similar.

Glasscocks Road

Shared path

Shared path

Proposed shared path along Glasscocks Road.

275M GAS PIPELINE BUFFER

New signalised intersection/new road entrance.

LAWLESS DRIVE

Small Neighbourhood Park near entrance from Glasscocks Road.

Incremental residential redevelopment along south side of Glasscocks Road, to create active frontage and reduce/remove back fence interface conditions.

LAWLESS DRIVE RESERVE

0 100 200m

8.2 West interface

8.2.1 Outline

This interface focuses on the frontage to Hallam Road, which includes the precinct's only existing vehicle entry point. A second (disused) gate exists off Hallam Road near the South Gippsland Highway intersection. This was formerly the access gate and path to the original homestead on the site.

This interface also incorporates two nursery/garden supplies outlets, and the former market gardens area, now used for landfill slimes drying.

An existing raised elongated mound runs along this interface between Hallam Road and the Transfer Station.

Hallam Road incorporates recently-completed off-road shared paths.

8.2.2 Development/built form proposals

- New development for commercial and light industrial space along the Hallam Road frontage
- Potential for long-term non-employment uses in currently vacant north-west area fronting Hallam Road
- Pronounced architectural and/or landscape gateway treatments at corners and entry points
- Stepping back of built-form at upper levels
- Encouragement of residential redevelopment along western side of Hallam Road to provide active frontages
- Potential early release/redevelopment of former Market Gardens site (currently slimes drying area).
- Ensure all new buildings meet technical requirements for mitigation of gas migration risk.

8.2.3 Movement network proposals

- New left-in (only) vehicle access off Hallam Road at location of original homestead gateway (retaining significant tree adjacent to entrance)
- Potential further landscape/tree planting on the western side of Hallam Road.

8.2.4 Landscape proposals

- Built form setbacks of 20m for landscape buffer to Hallam Road, which includes Water Sensitive Urban Design (WSUD) initiatives such as a meandering swale
- Continuous planting of native vegetation to maintain and reinforce the landscape character
- Removal of fencing
- Soft edge treatment to the major road environment
- Retention of existing native trees
- 10m landscape buffer north of the site.

8.2.5 Hub precinct layout implications

New development fronting Hallam Road would potentially have a rear interface to future parkland behind it, presenting an interface/design challenge. This may be resolved through well-designed 'dual frontage' built form, or a rear lane, with further development to the east fronting a new street, which interfaces to the future parkland.

Frontage development, including the planned Transfer Station expansion, may work to 'conceal' the future parkland from the main road frontage, requiring initiatives to make the public asset look and feel accessible and open.

Creation of a secondary entry point off Hallam Road, and an internal roadway following the original alignment of the homestead driveway, would make the precinct more permeable and integrated with its surrounds.

8.2.6 Principles addressed

1: Reduce odour impacts on residential

- New built form and landscaping/tree planting along the Hallam Road frontage may reduce the extent of noise and pollutants reaching residential areas west of Hallam Road
- Future development may occur post-closure of the landfill, when impacts are likely to be significantly reduced.

2: Reduce traffic noise impacts

- New frontage development and landscaping may 'shield' future public open space from Hallam Road traffic noise.

3: Landfill gas migration risk mitigation

- New buildings/development will avoid below-ground works, and will meet technical requirements for mitigation of gas migration risk, to meet EPA guideline (EPA publication 1642).

5: Optimise land use

- This interface design makes use of the frontage area along a major roadway for new mixed-use, employment-focussed development opportunities.

7: Limit potential visual impacts of industrial uses

- New development and landscaping along Hallam Road would screen internal industrial uses such as the concrete batching plant and transfer station (if development was to occur while these industrial operations continued operation).

8: Enhance streetscape presentation

- Attractive new landscape and well-designed built form along the Hallam Road frontage would significantly enhance the presentation and activation of this road environment, making it more pedestrian-friendly and amenable.

9: Facilitate light industrial/commercial

- This interface concept focuses on commercial/mixed-use development opportunities, utilising the prominent Hallam Road frontage, as a new 'front door' to the precinct.

10: Maximise public access

- Enhancement of the existing entrance, and development of additional entrances of Hallam Road into the precinct will increase public access when the precinct evolves to public use
- Removal of fencing along Hallam Road will also make the precinct more permeable and accessible
- Landscaped frontages will create a more welcoming, engaging frontage.

11: Convenient pedestrian and cyclist access

- Enhanced and additional entry points from Hallam Road will improve access to the precinct
- Frontage development and landscaping will improve the pedestrian and cycling experience on Hallam Road.

13: Distinctive urban/landscape character

- A broad landscape buffer integrating with the Hallam Road environment, utilising native planting species and WSUD, presents the opportunity to reinforce the local landscape character, as well as integrating with the other precinct interfaces.

14: Environmentally sustainable development

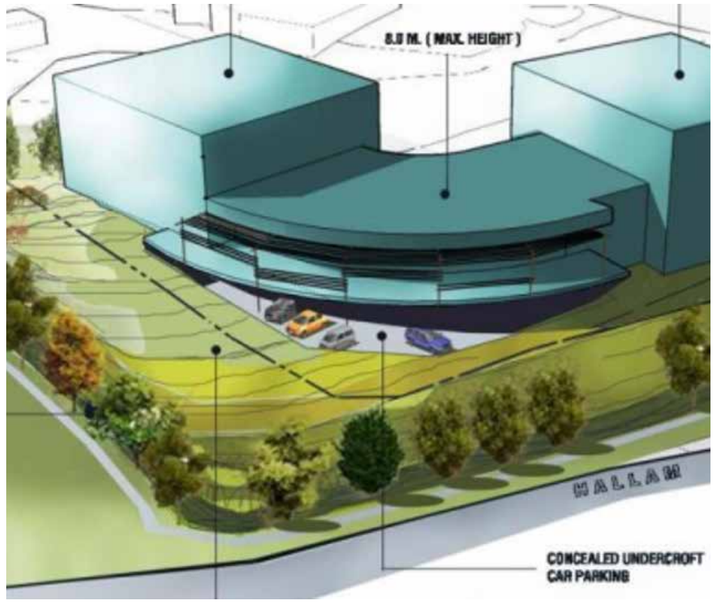
- WSUD initiatives along the Hallam Road frontage support sustainable water management
- Substantial new native species planting will also improve the environmental performance of the precinct, towards net-zero carbon outcomes
- New built form can deliver high-level ESD performance.

15: Good design

- New development would be required to demonstrate design excellence, noting that this will be linked to commercial viability of this type of development, and therefore significant Economic Development work to establish a viable commercial precinct here.

Precedent images for reference

Landscape buffer in between residential and potential commercial/bulky goods, Cranbourne, Victoria.
Source: GoogleEarth, street view



Pronounced architectural and landscape gateway treatments at corners.

Landscape promenade with water sensitive urban design (WSUD) initiatives, Tally Ho Business Park. Source: https://is.gd/G2catJ

8.2.7 Challenges/constraints

Interface between potential frontage development, and future public open space

As noted above, the rear interface of frontage development to future major public open space will require careful planning, to ensure the open space is not at the 'rear' of development, and that is feels open, accessible and safe.

WSUD component implementation

New water systems will require consideration of how they connect to the wider water network.

Ground/soil contamination may impact the potential for WSUD initiatives.

Introduction of non-employment land use (long term)

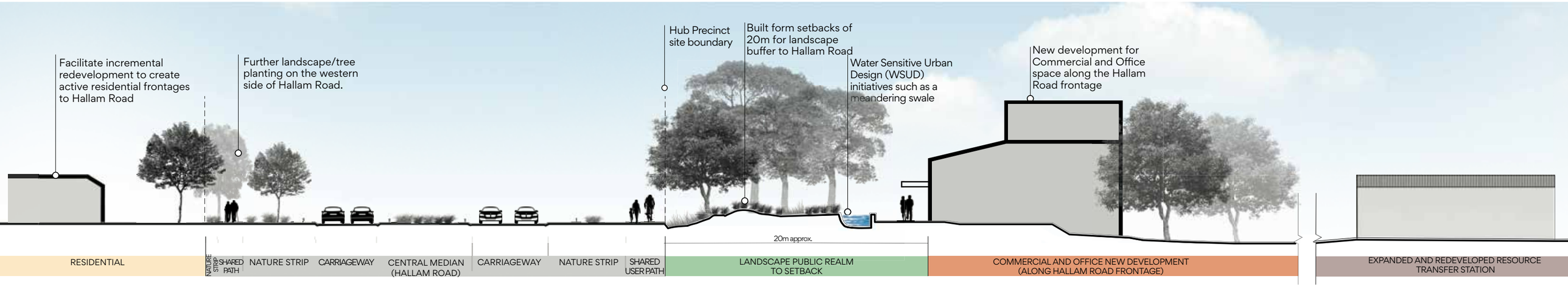
Integrating potential residential development in the north-west land parcels (between Hallam Road and the Concrete Batching Plant), will require extensive planning consideration, in terms of zoning, amenity, and potential impacts on commercial development nearby.

Staging (multiple land-owners)

Parts of this interface (such as the nursery sites) are under separate, private land ownership.

Landfill gas migration risk

Landfill gas migration (below ground) is a significant risk for development close to existing and closed landfill sites and within landfill buffer areas. New development should limit or avoid below-ground works (such as basements or lift cores), and should incorporate appropriate risk mitigation devices as required, to meet relevant EPA guidelines and Council requirements, and based on an appropriate risk assessment.



West Interface Proposed Section

West Interface

Pronounced architectural and/or landscape gateway treatments at corners and entry points.

Reduce/remove back fence interface conditions to create active frontage.

New left-in (only) vehicle access off Hallam Road at location of original homestead gateway (retaining significant tree adjacent to entrance).

Potential further landscape/tree planting on the western side of Hallam Road.

Soft edge treatment to the major road environment.

Continuous planting of native vegetation.

Potential pedestrian crossing.

Break-up built form to enable views from residential access.

CAVERSHAM TERRACE RESERVE

Existing shared path along Hallam Road.

Existing Shared path along South Gippsland Highway.

Pronounced built-form at entry points.

New development for Commercial and Light Industrial uses along the Hallam Road frontage.

SOUTH GIPPSLAND HIGHWAY

HALLAM ROAD

Removal of fencing.

Built form setbacks of 20m for landscape buffer to Hallam Road, which includes Water Sensitive Urban Design (WSUD) initiatives.

Potential future development site, subject to further investigation.

Stepping back of built-form at upper levels.

Potential long-term non-employment land uses.

10m landscape buffer north of the site.

EXPANDED TRANSFER STATION

CONSTRUCTION AND DEMOLITION WASTE PROCESSING

Gas pipeline (if retained) developed as linear park (20m wide).

Potential early release/redevelopment of former Market Gardens site (currently slimes drying area).

275M GAS PIPELINE BUFFER

300M C & D BUFFER

PASSIVE OPEN SPACE

CONCRETE BATCHING PLANT

100M CONCRETE BATCHING PLANT BUFFER

GRAMMAR WAY

0 100 200m

8.3 North interface

8.3.1 Outline

The precinct's northern boundary interfaces with suburban residential development south of Ormond Road, and between Hallam Road to the west, and the River Gum Creek corridor to the east.

The operating landfill area spans the eastern part of this interface, and meets a continuous back fence interface to residential houses fronting The Parkway and Redwood Avenue. Within the precinct, this interface incorporates an unsealed roadway/trail, and densely landscaped linear mound rising from the fence level.

The western part of the interface is occupied by privately owned land parcels, in the General Residential Zone (GRZ), but in the buffers of the landfill and concrete batching plant.

Given the long-term proposed transition of the landfill, it is reasonable to speculate that adjoining residential areas would also undergo redevelopment or other changes of the next 35-40 years. This presents opportunities for development interfaces which are more integrated with the future public open space.

8.3.2 Development/built form proposals

- Potential long-term non-employment (residential) development on the GRZ land fronting Hallam Road
- Screening wall/enclosure (or similar) to concrete batching plant site, to limit dust emission impacts on adjacent residential development
- Potential redevelopment of interface residential properties (post landfill closure) to create more open frontages to the future open space, and increased passive surveillance opportunities
- Ensure all new buildings meet technical requirements for mitigation of gas migration risk.

8.3.3 Movement network proposals

- New street connection (potential) from Redwood Avenue (at Karoonda Way or Gramar Way) into the precinct, to provide accessibility from residential area to the north, and to integrate future public open space assets with surrounding residential areas:
- Extension of existing entrance road off Hallam Road as internal local access road
- Utilisation of existing edge roadway as a future shared path between future open space and residential areas to the north.

Precedent images for reference

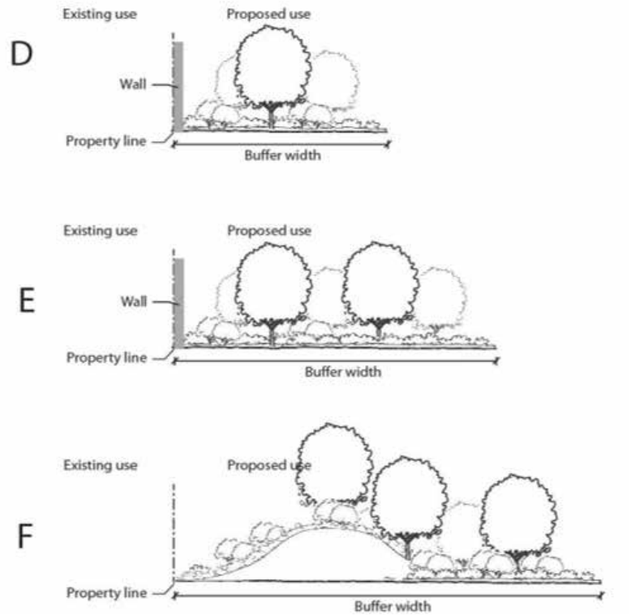
8.3.4 Landscape proposals

- Reinforcement of proposals for active and passive public open space on the landfill site (long term)
- Utilising existing topography buffer along northern edge of the precinct, but with breaks and links to support visibility and access from the north
- Creating varying levels in between the residential area to delineate public and private space
- Reinforcement of a landscape buffer to limit views to the proposed expansion of the transfer station
- Retaining the majority of the existing topography, in reference to the history of the site
- Potential retention and enhancement of the existing water body in the north-east corner, and its connection to an enhanced flooding/biodiversity corridor, and to Melbourne Water retarding basins to the north of the precinct.

8.3.5 Hub precinct layout implications

A potential new street connection from the precinct to Redwood Avenue to the north, helps to establish an integrated internal movement network, together with the extension of the existing east-west roadway linking to Hallam Road.

Screening wall and landscape buffer for sensitive residentials.
Source: https://landezine-award.com/the-willingdon-linear-park/



Built form and landscape proposals.
Source: file:///C:/Users/vbesh/Downloads/DC%20Section%209.0100.pdf

Built form and landscape proposals.
Source: https://is.gd/iQdpSZ

8.3.6 Principles addressed

1: Reduce odour impacts on residential

- New commercial built form in north-west corner provides a 'buffer' between existing industrial to the south-east, and residential areas to the north
- Enhanced landscaping/tree planting along the northern edge may reduce the extent of noise and pollutants reaching residential areas to the north
- New screening walls to the concrete batching plant site may limit the extent of dust and noise impacts on residential areas.

2: Reduce traffic noise impacts

- New commercial built form in north-west corner may reduce Hallam Road traffic noise for future open space in the precinct.

3: Landfill gas migration risk mitigation

- New buildings/development will avoid below-ground works, and will meet technical requirements for mitigation of gas migration risk, to meet EPA guideline (EPA publication 1642).

4: Minimise impacts of flooding

- The retention of existing wetland(s) and other landscape features may assist in mitigating potential flooding impacts.
- New commercial built form in north-west corner may reduce Hallam Road traffic noise for future open space in the precinct.

5: Optimise land use

- Underutilised land in north-west corner of the precinct is used for commercial, employment-generating development.

7: Limit potential visual impacts of industrial uses

- Landscaping along the extended east-west entry/local access road will screen visibility of the Transfer Station to the south.

8: Enhance streetscape presentation

- New development fronting Hallam Road will enhance thee frontage conditions
- Landscaping along the extended east-west entry/local access road will help to establish this link as a 'street'.

9: Facilitate light industrial/commercial

- This interface proposal incorporates commercial development on existing vacant land in the north-west corner.

10: Maximise public access

- The potential new linkages from the northern residential area substantially increases connectivity for those dwellings to the north, while new linkage(s) through the precinct will provides future public access and integration of the precinct with its surrounds.

11: Convenient pedestrian and cyclist access

- The new linkages from the northern residential area will provide convenient access for residents living south of Ormond Road
- The proposed east-west local access road and shared path along the northern edge of the precinct will also support pedestrian and cyclist access into and through the precinct.

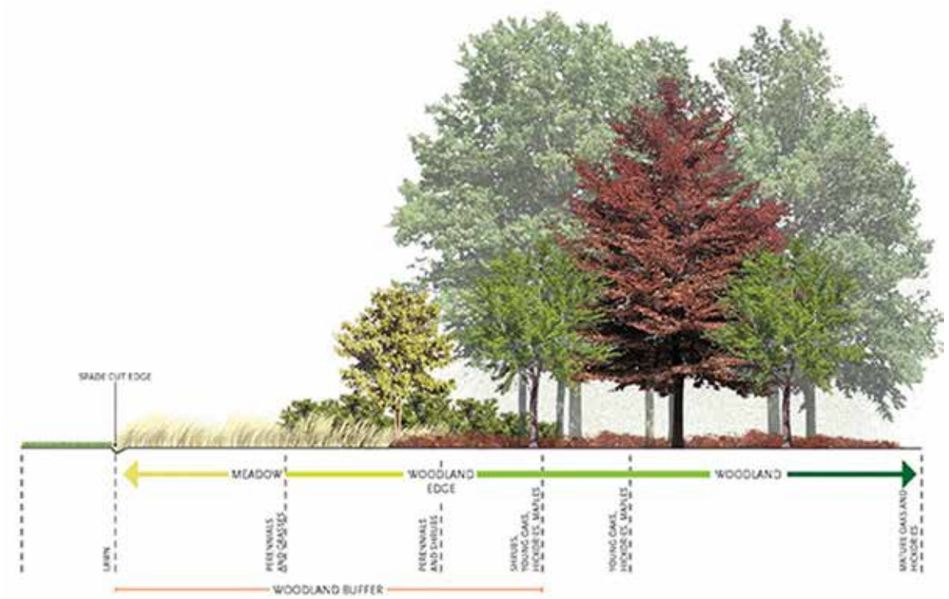
12: Enhance safety and security

- Designing interface to enable surveillance from the incremental residential area and the landscape buffer.

13: Distinctive urban/landscape character

- Retention and reinforcement of landscape, water and topographic features will support a strong landscape character which references the site's current and former uses
- New and expanded landscape areas will contribute to a clearly defined character, in concert with the design of future open spaces.

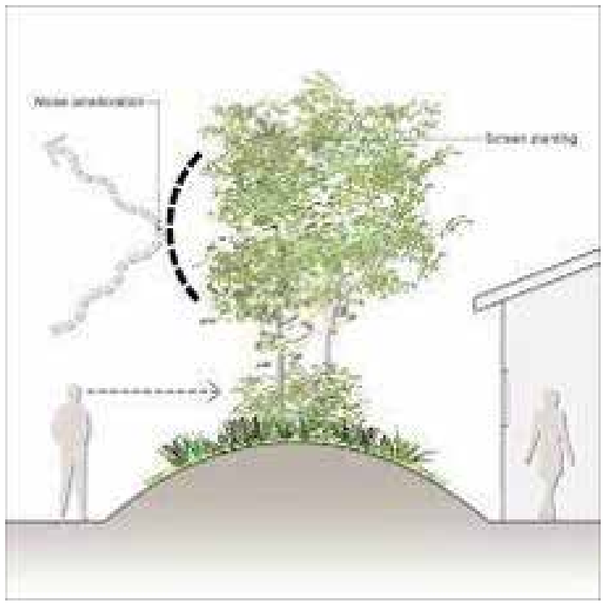
Precedent images for reference



Landscape and topography buffer.
Source: https://swtdesign.com/woodland-buffers-play-critical-role-in-the-landscape/

Soft edge treatment. Source: https://is.gd/8ZK3he

Soft edge treatment. Source: https://www.pinterest.com/pin/490118371920944285/



Landscape and topography buffer. Source: https://swtdesign.com/woodland-buffers-play-critical-role-in-the-landscape/

8.3.7 Challenges/constraints

Existing landscape/topographic edge condition

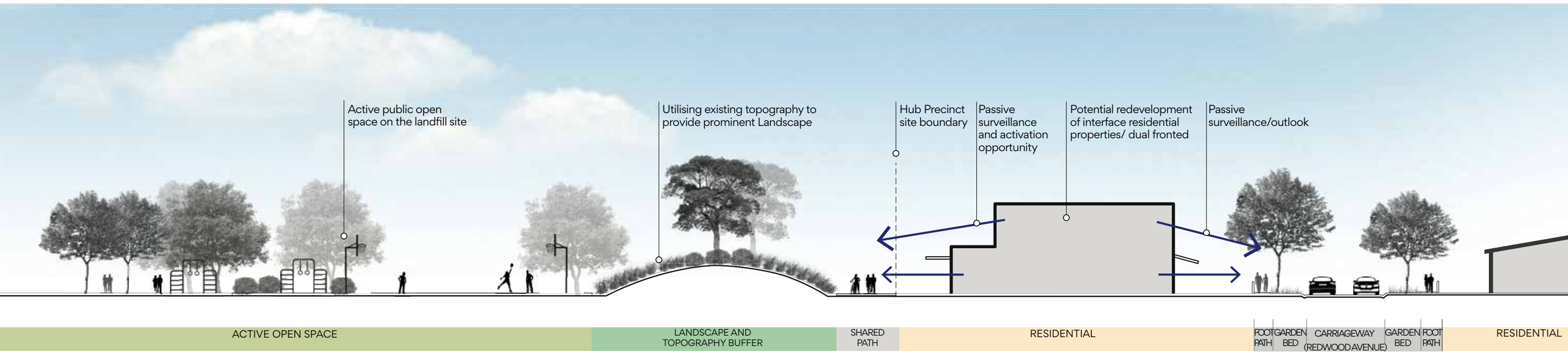
The existing mounding and dense planting along the northern edge provides a visual buffer or separation/barrier to residential development to the north. This may restrict achieving desirable connectivity and accessibility in the future (post-landfill closure).

Privately owned residential land (vacant)

The vacant sites in the north-west corner of the precinct would require further analysis and planning work towards potential long-term residential development.

Landfill gas migration risk

Landfill gas migration (below ground) is a significant risk for development close to existing and closed landfill sites and within landfill buffer areas. New development should limit or avoid below-ground works (such as basements or lift cores), and should incorporate appropriate risk mitigation devices as required, to meet relevant EPA guidelines and Council requirements, and based on an appropriate risk assessment.



North Interface Proposed Section

North Interface

Existing shared path

Existing shared path

AMBER DRIVE RESERVE

Ormond Road

500M LANDFILL BUFFER

New commercial built form in north-west corner may reduce Hallam Road traffic noise for future open space.

Screening wall/enclosure to concrete batching plant site, to limit dust emission impacts on adjacent residential development.

Potential redevelopment of interface residential properties to create more open frontages to the future open space, and increased passive surveillance opportunities.

100M CONCRETE BATCHING PLANT BUFFER

GRAMAR WAY

KAROONDA WAY

Reinforcement of proposals for active public open space on the landfill site (long term).

REDWOOD AVENUE RESERVE

Utilising existing topography buffer, but with breaks and links to support visibility and access from the north.

THE PARKWAY

New commercial development of the current GRZ land as a transitional use between industrial and residential.

REDWOOD AVENUE

Utilisation of existing edge roadway as a future shared path between future open space and residential areas.

Potential for Commercial uses at Ground Floor and Residential above.

CONCRETE BATCHING PLANT

ACTIVE OPEN SPACE

New street connection from Redwood Avenue, at Karoonda Way or Gramar Way.

INDICATIVE SHARED PATH / ACCESS WAY

WETLAND

Retaining the majority of the existing topography.

EXPANDED TRANSFER STATION

Reinforcement of a landscape buffer to limit views to the proposed expansion of the transfer station.

Extension of existing entrance road off Hallam Road as internal local access road.

Retaining the existing wetlands linking to the flooding/biodiversity corridor.

0 100 200m

8.4 East interface

8.4.1 Outline

The precinct's eastern interface comprises privately-owned, highly constrained land, spanned by the electricity transmission corridor, and interfacing to suburban residential development to the east.

The eastern corridor is also subject to flooding.

These constraints result in very limited land use/ development potential in the area.

It is understood that the landowners of the northern part of this interface, which currently accommodates intermittent grazing activity, are seeking Planning Permission to develop horticultural facilities (including greenhouses) for flower growing.

8.4.2 Development/built form proposals

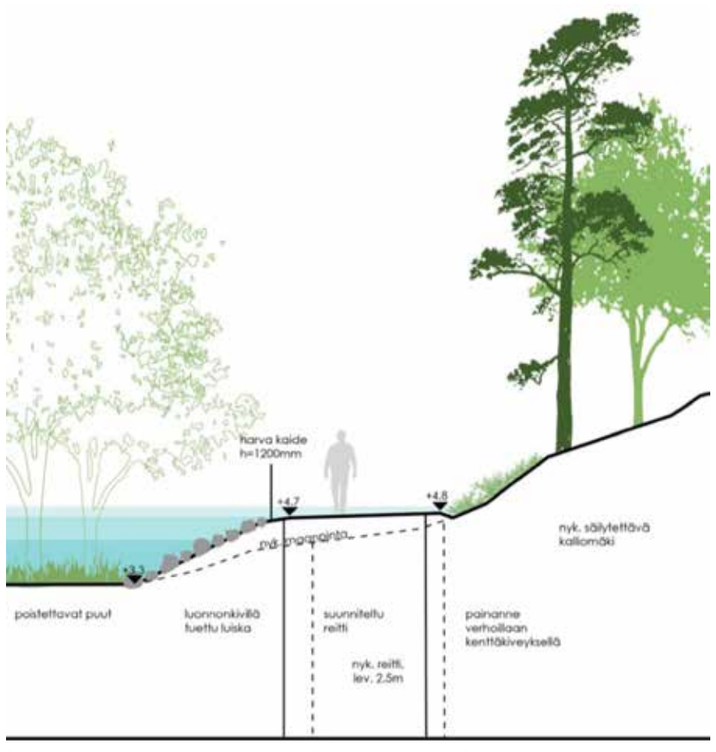
- Horticultural development (as currently proposed by the landowners). No details of the current proposal are known
- Potential landscape-integrated community building(s) associated with landscape proposals along transmission corridor
- Ensure all new buildings meet technical requirements for mitigation of gas migration risk.

8.4.3 Movement network proposals

- New shared path connections (indicative) to provide accessibility form, residential areas to the east of the Hub precinct, at:
  - Langbourne Drive, existing path near Seebeck Drive
  - Langbourne Drive, existing link near Malabar Court
  - St Georges Road, at southern edge of St Georges Road Reserve
  - Kingston Avenue, near Dunoon Road
  - Menzies Close, existing path along drainage reserve.
- The northern (Langbourne Drive) connection could link across to the extended east-west roadway and the existing precinct entrance of Hallam Road to the west
- The southern (St George's Road) link could also connect across to future streets or paths within the precinct, to support local access and integration of the precinct with its surrounds
- The transmission line corridor will incorporate pedestrian/ cycling pathways within a landscape setting.

8.4.4 Landscape proposals

- Extensive landscaped setting for public access, comprising:
  - Topographic variation and new green 'landforms';
  - Wetlands and water retention bodies;
  - Water corridor following existing River Gum Creek alignment/floodway;
  - Extensive planting as a buffer to residential areas.



Landscaped environment integrated with water management/treatment, wetlands and shared path.
Source: https://landezine.com/kirkkojarvi-flood-park/

8.4.5 Hub precinct layout implications

The potential new street connections from the east reinforce an internal movement network or street structure for the precinct, integrating it with surrounding residential areas.

If these cross-connections are not able to be achieved due to the private land ownership, future public access to the precinct from the east will be significantly restricted, although Glasscocks Road can provide an important access linkage along the precinct's southern edge.

Source: https://landezine.com/forest-park-by-plat-studio/

Pedestrian/cycling pathways within a landscape setting.
Source: https://landezine.com/dorpsweide-by-atelier-loos-van-vliet/

Pedestrian/cycling pathways within a landscape setting.
Source: https://landezine.com/dorpsweide-by-atelier-loos-van-vliet/

8.4.6 Principles addressed

3: Landfill gas migration risk mitigation

New buildings/development will avoid below-ground works, and will meet technical requirements for mitigation of gas migration risk, to meet EPA guideline (EPA publication 1642).

4: Minimise impacts of flooding

- An integrated landscape proposal incorporating water management devices will contribute to flood mitigation and water management.

6: Minimise visual impacts of the transmission corridor

- A new landscaped setting in this area would reduce the visual starkness of the transmission corridor.

10: Maximise public access

- The potential new linkages from the eastern residential area substantially increases connectivity for those dwellings to the east, while new linkage(s) through the precinct will provide future public access and integration of the precinct with its surrounds.

11: Convenient pedestrian and cyclist access

- A new path network along the transmission line corridor will accommodate pedestrian and cyclist movement within an attractive landscaped setting
- The potential new linkages from the east would provide convenient access for residents living east of the precinct
- The proposed east-west local access road and shared path along the northern edge of the precinct will also support pedestrian and cyclist access into and through the precinct.

13: Distinctive urban/landscape character

- The proposed new landscaped environment, potentially integrating productive farming activity, would contribute to a distinctive character.

14: Environmentally sustainable development

- The proposed new landscaped environment, integrating large-scale water management/treatment, would support water conservation and ecological protection.

15: Good design

- The new landscape setting, if well-designed, could provide a unique, distinctive and enjoyable environment.

Precedent images for reference

Horticultural development and landscape setting.
Source: https://landezine.com/
bendigo-botanic-garden-garden-for-the-future-by-tcl/

Landscape-integrated buildings.
Source: https://www.ceramica.
info/en/progetto-galleria/integrated-with-nature/

Landscape-integrated buildings.
Source: https://www.pinterest.com/pin/101190322847558023/

Horticultural development and landscape setting.
Source: As above.

Landscape-integrated buildings. Source: https://landezine.com/parliament-of-victoria-member-annex-landscapes-by-tcl/

8.4.7 Challenges/constraints

Privately owned land

Because this eastern area comprises large, private land holdings, achieving any public outcomes, such as landscaped areas and through-site connections, would require extensive negotiation and joint investments.

Transmission corridor requirements

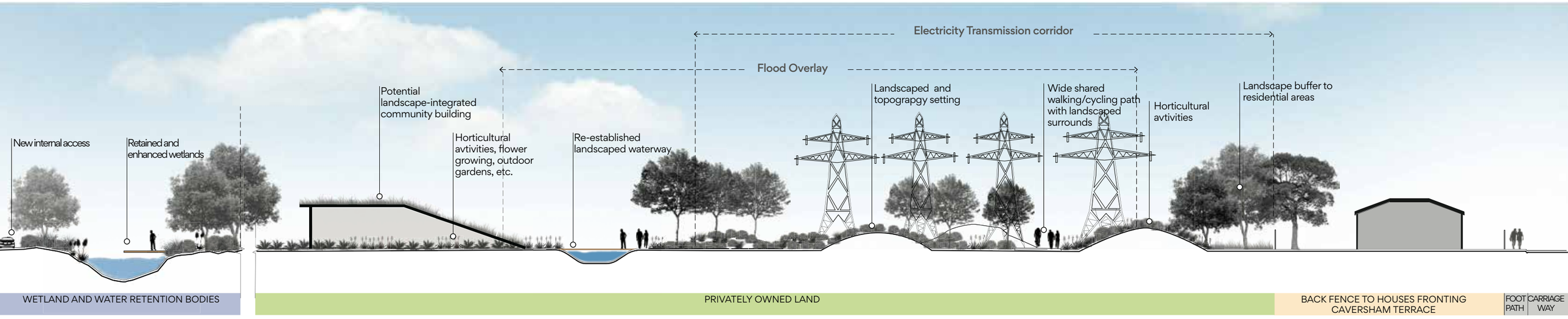
While it is understood that landscaping works and paths are permissible within transmission corridors, the potential for topographic variation may be restricted, given regulatory and access requirements and constructional challenges.

Floodway zoning

The potential for land use change is substantially constrained by the extent of the Urban Floodway Zone.

Landfill gas migration risk

Landfill gas migration (below ground) is a significant risk for development close to existing and closed landfill sites and within landfill buffer areas. New development should limit or avoid below-ground works (such as basements or lift cores), and should incorporate appropriate risk mitigation devices as required, to meet relevant EPA guidelines and Council requirements, and based on an appropriate risk assessment.



East Interface Proposed Section

East Interface

New shared path connections to existing streets.

KINGS PARK RESERVE

New shared path connection at the southern edge of St George's Road Reserve which links to Glasscocks Road to the south, via Sherwood Road, Community Parade and Chatswood Drive.

Potential link across to the extended east-west roadway and the existing precinct entrance of Hallam Road to the west.

Extensive planting as a buffer to residential areas.

New shared path connections to existing streets.

LANGBOURNE DRIVE RESERVE

LANGBOURNE DRIVE

Re-established landscaped waterway.

ST GEORGES ROAD RESERVE

Horticultural development in the northern part of the east interface.

Incorporating pedestrian/cycling pathways within a landscape setting in the transmission line corridor.

Water corridor following existing floodway.

Connection through end of sub-division.

Potential commercial development.

Potential landscape-integrated community building(s) associated with landscape proposals along transmission corridor.

FLOODWAY ZONE

WETLAND

WETLAND

Extensive landscaped setting for public access including wetlands and water retention bodies.

Potential Horticultural activities, comprising outdoor gardens and/or greenhouses.

0 100 200m

N