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# Wantirna Health City

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## Masterplan Report

Prepared for



Issued  
27 April 2020

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# Quality Assurance

Wantirna Health City  
Masterplan Report

Prepared for Victorian Planning Authority

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# Introduction



## 1.1 Project Overview

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Tract in collaboration with the Victorian Planning Authority (VPA) has undertaken an Urban Design Study for the Wantirna Health Precinct (WHP) as part of the preparation of an evidence base for a Masterplan and Planning Scheme Amendment.

The VPA is working in partnership with Knox City Council (KCC) and State Agencies, which include Department of Transport (DOT), the Department of Health and Human Services (DHHS), and Eastern Health to establish a new integrated future for the WHP.

The WHP is envisaged as an integrated 'Health City' anchored by a best-practice new public hospital with complementary health, research, education and innovation facilities. The precinct is imagined as an integrated, connected and comprehensive centre that promotes patient, carer and staff well-being within a lush and green park-like setting. It is expected to become a vibrant and sustainable place for the community and a nationally recognised health centre in Melbourne's eastern region.

The Masterplan for the WHP will be an adaptable and flexible framework that provides a 'road map' guiding future development initiatives in the precinct. It will outline a vision for the 'Health City' that builds upon other allied ongoing initiatives of the Victorian Government.

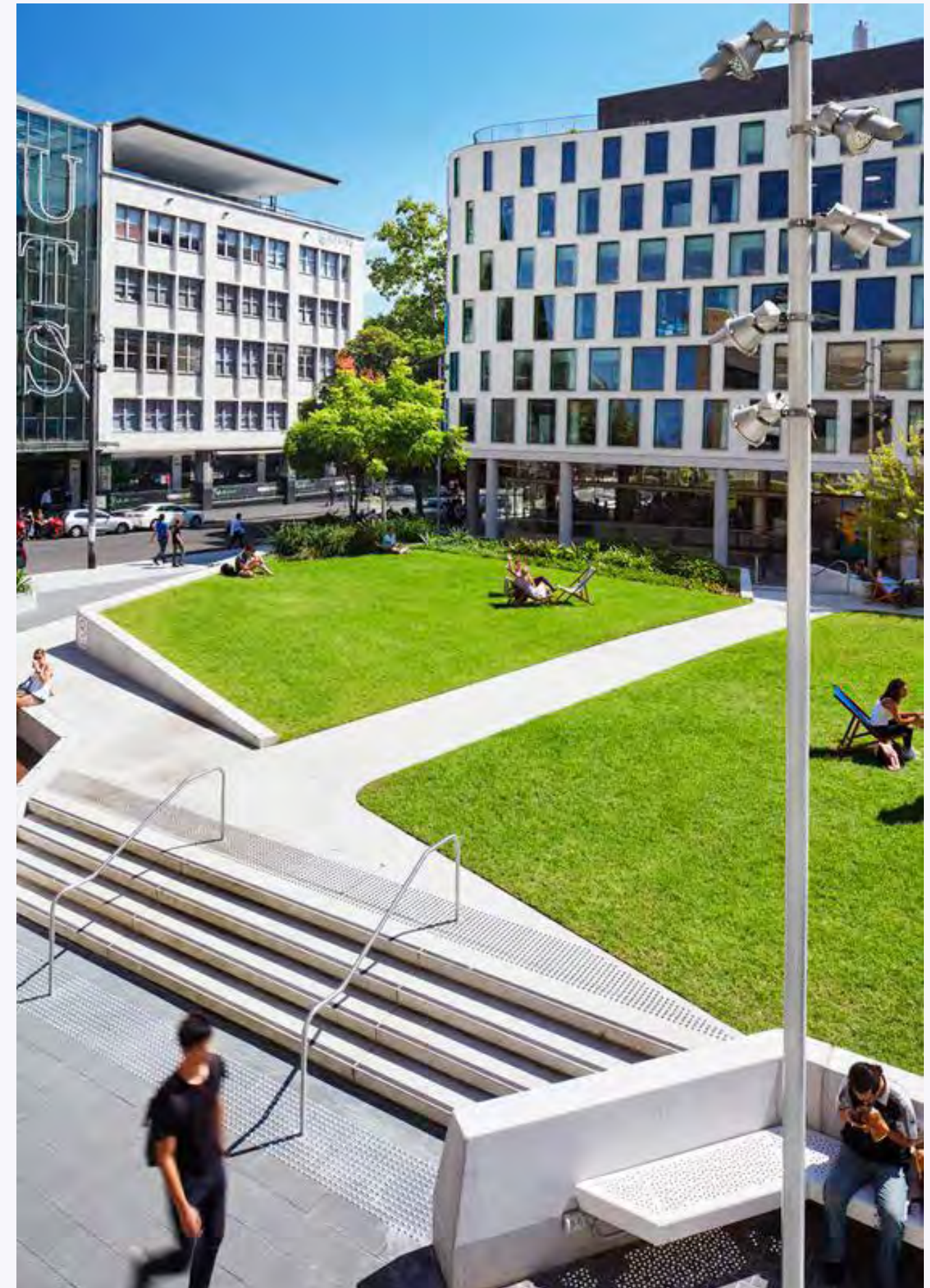
## 1.2 Purpose of this Document

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A Background Report was previously prepared by Tract to provide an overview of the planning and urban design considerations for the WHP, in order to guide the Masterplan for the site. This included an analysis of the physical and policy context and identified emerging issues and opportunities.

The purpose of this Masterplan Report is to provide a framework to help guide future land use and development outcomes within the WHP. It sets the overarching vision and strategic principles for the precinct, and includes a series of plans and diagrams relating to the future land use, built form, access and movement and public realm.

The content within this report will be translated into a Comprehensive Development Zone (CDZ) that will include specific urban design objectives, requirements and guidelines for the precinct. The CDZ will become the planning tool used to assess future applications within the WHP.



University of Technology Sydney

Source: UTS



# 1.3 Project Area

The WHP is a 21.8ha site located within the north-western area of the City of Knox municipality, generally bounded by major roads including EastLink freeway to the west, Boronia Road to the north, Wantirna Road to the east and Mountain Highway to the south-east.

The precinct abuts the Hungarian Community Centre to the west and a future residential development to the south (on the former Wantirna Caravan Park), with a permit for 248 townhouses. Wantirna Health, a 64 bed Palliative and Geriatric Medicine Hospital, occupies the north-eastern corner of the site.

Of particular relevance for the proposed Health City is the adjacent Knox Private Hospital - a 359 patient-bed facility providing a 24 hour Emergency Department, operating theatres, a large range of medical and acute services, an Intensive Care Unit, a Day Procedure Unit and other allied health and medical services.

The balance of the surrounding urban fabric and neighbourhood is largely suburban residential in scale and character, with local shops to the north east in Wantirna Mall.

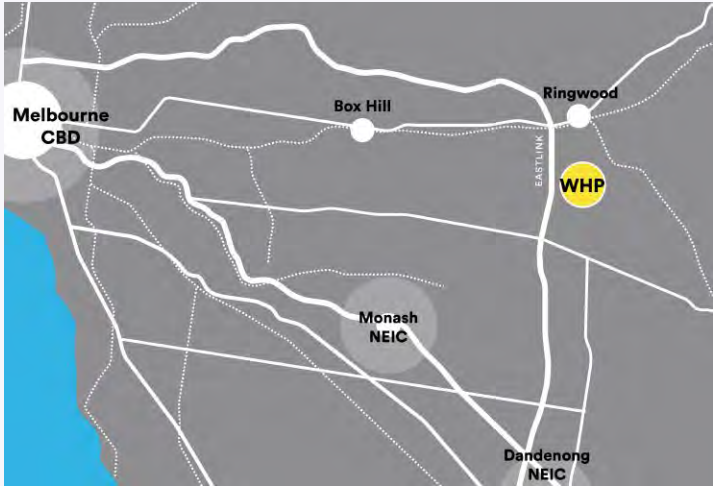


Figure 1. Project Location



Figure 2. Project Area

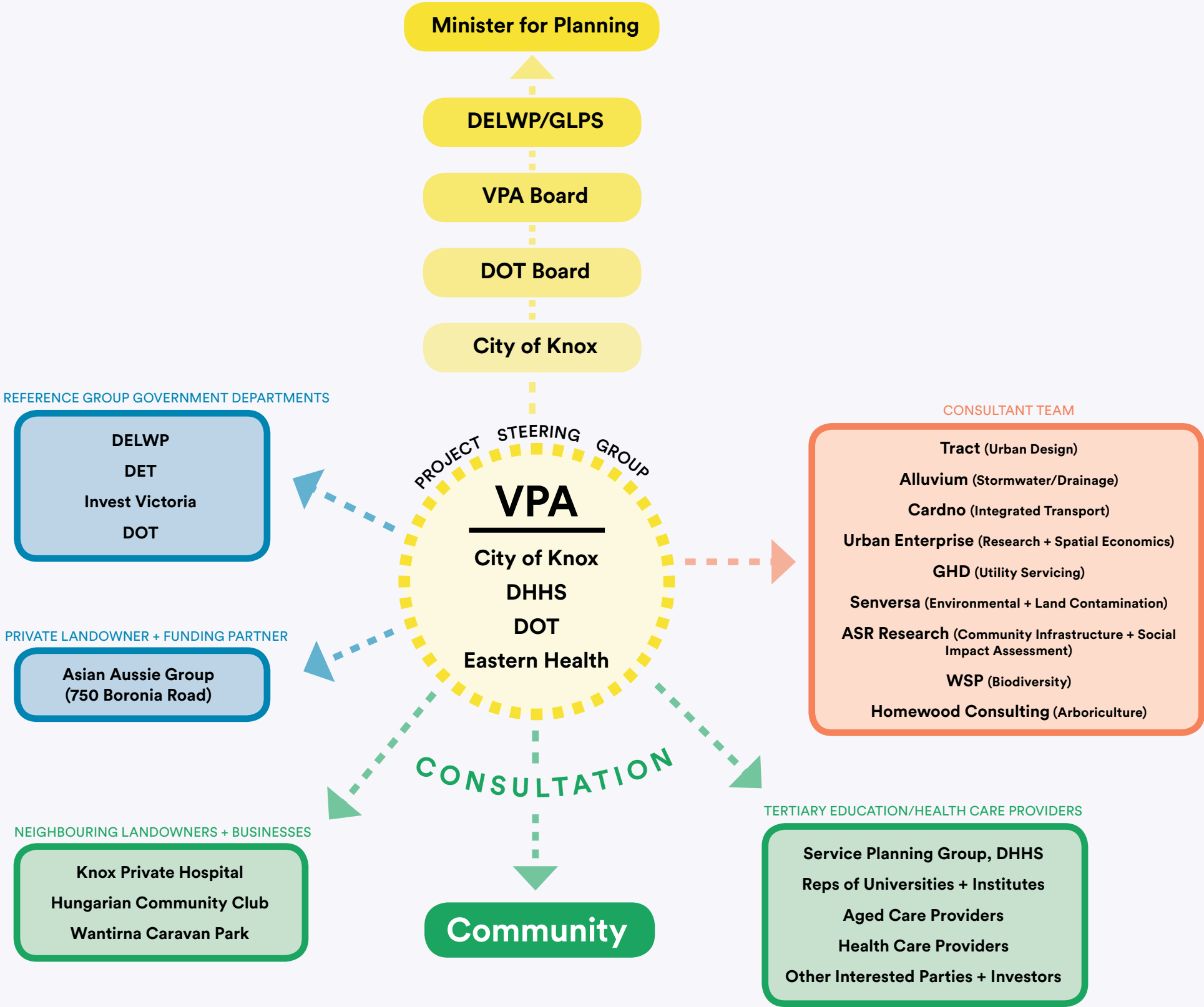




Aerial Photo of Site

# 1.4 Key Stakeholders

The Project Steering Group (PSG) for WHP is being led by VPA and includes City of Knox, DHHS, DOT and Eastern Health. Consultation with neighbouring landowners/businesses, tertiary education/health providers and the wider Wantirna community has occurred throughout the project timeline. The adjacent diagram details the project governance structure.





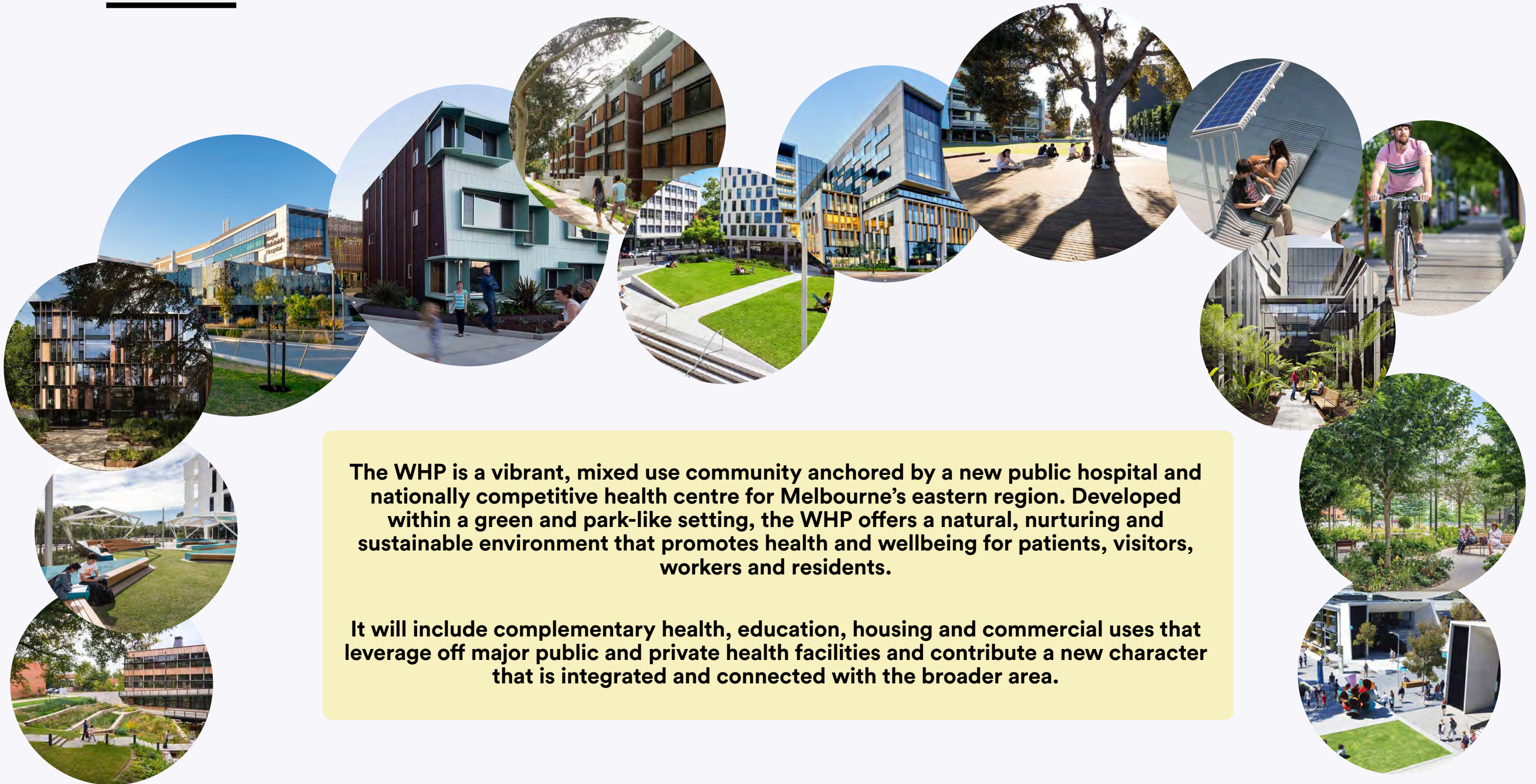
Monash University, Clayton Campus Source: Andrew Lloyd

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# Vision



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## 2.2 Strategic Principles



### ICONIC

- Celebrate the prominence of the site and location on major metropolitan transport corridors to create a landmark for Wantirna.
- Create a strong 'sense of place' through distinct, high-quality architecture and public realm.
- Utilise the topography of the site to create an interesting and site responsive design.
- Celebrate views to local valued landmarks such as the Dandenong Creek corridor.

### VIBRANT

- Create a true mixed-use community (live, work, play) through a diversity of curated and co-located land uses including health, education, commercial, retail, residential and community uses.
- Create a 24hr economy and a place that is active both day and night with vibrant, safe streets and public spaces.
- Create a health and wellbeing environment that welcomes patients, workers, visitors and residents at all times of the day and night.

### HEALTHY

- Create a healthy community that promotes the health and wellbeing of patients, workers, visitors and residents.
- Provide a series of precinct-based walking and cycling paths that encourage exercise and active transport modes.
- Provide a high-quality public realm that provides opportunities for social interaction, exercise, relaxation and respite.

### NATURAL

- Provide a green, park-like environment that connects people to nature, open space and water, and provides broader connections to the Dandenong Valley Parklands/Creek corridor.
- Reinforce the 'bush boulevard' character of Mountain Hwy and extend this treatment to improve the Boronia Road corridor.
- Provide views to Dandenong Creek and the Dandenong Ranges.
- Create a precinct-based approach to the ecology of the site that prioritises local water and landscape management and regeneration.





## CONNECTED

- Provide a series of pedestrian and cycle connections with wayfinding that helps link surrounding destinations including Knox Hospital, Wantirna Mall and Dandenong Creek.
- Investigate opportunities to improve public transport to the site and create a new public transport node.
- Provide convenient access for vehicles and emergency services without compromising pedestrian and cycle movement.
- Future-proof the precinct and community to adapt to changes in public transit and mobility services as they evolve.

## SMART

- Embed a 'smart cities' approach that establishes the precinct as an innovative, leading edge precinct, enhancing its economic development and vitality.
- Provide a 'systems thinking' approach integrating urban design and strategic thinking.
- Foster strategic partnerships to enable innovative outcomes.
- Create opportunities for cross-boundary and precinct-based systems for water, waste and energy.
- Plan and future-proof the precinct where possible for evolving smart cities systems.

## FLEXIBLE

- Create a place that is flexible to respond to change over time.
- Ensure flexibility of land uses to support the maximum economic agglomeration of uses.
- Embed a 'deliverability' and stageability to the precinct to ensure it grows over time.
- Create opportunities to leverage Government funding and development processes as they arise.

## SUSTAINABLE

- Create a healthy place that reduces environmental impact through efficient use of water, energy, materials and waste.
- Create a naturally cooler environment with habitats for biodiversity and wildlife.
- Ensure buildings are designed to be low-carbon and energy efficient.
- Ensure resilience for current and future climatic conditions.

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# Masterplan



# 3.1 Masterplan Framework

The WHP Masterplan Framework is an integrated plan to realise the vision for the wider precinct. It outlines the range and diversity of complementary uses across the precinct in a legible and accessible urban environment that is consistent with the aspirations of a ‘Health City’.

The land-uses have been informed by the ‘Best Practice Research and Spatial Economic Assessment’ (July 2019) undertaken by Urban Enterprise, which identified the following hierarchy of uses as critical to the success of the precinct over time.

**‘Primary Uses’ - to be the focus of the precinct**

- A new Public Hospital
- Allied Health Services

**‘Secondary Uses’ - to complement the primary uses and reinforce/increase their effectiveness**

- Aged Care
- Education
- Research

**‘Tertiary Uses’ - to support the effective delivery of the primary and secondary uses**

- Retail (limited to support the primary health uses)
- Office and Commercial
- Short-Term Accommodation
- Public Space
- Residential
- Community

**The Public Hospital** is the centrepiece of the precinct, and will anchor the allied health, wellbeing and education uses that comprise the WHP vision.

**Office/Commercial buildings** will maximise the Boronia Road and EastLink exposure and accommodate a range of uses supporting the Hospital and the allied health and wellbeing uses of the precinct.

**A convenience lifestyle** offering and the key public open spaces will focus activity at the Boronia Road entry. These will be destinations where people meet, socialise and do business around finer grain convenience retail and other allied tenancies, supporting the workers and visitors of the Hospital, as well as the workers and residents of the wider precinct.

**Health, education and research uses**, located through the core of the precinct, will deliver ongoing support for established and emerging businesses, and institutions that complement the Hospital and allied learning and medical fields.

The central **Green Spine** allows all of the uses to be united through the entirety of the precinct around a generous, shared green space. This landscape corridor follows its way down the natural topography to the Local Park/Stormwater Management Reserve at the western end of the precinct. Along the Spine, a diverse range of uses will engage with the different areas of this grand public space at different times of the day and night, each week and across seasons.

To the western and southern edges of the precinct, a range of **residential uses** are incorporated to support a new community living and working within the precinct - from key worker housing, aged care, forms of affordable housing, short-stay accommodation and dedicated work/live housing options.

The framework locates and integrates the mix of uses with the alignment of the individual land parcels and boundaries in mind, to ensure deliverability and stageability of the Masterplan is considered. It also allows the individual land holdings to be developed, and realised over time in an integrated way, that is independent of each other. This gives the Masterplan Framework a resilience and adaptability over time, that any precinct of the scale and aspiration of WHP needs to ultimately be successful.

In this way, a complete new community will be created by the Masterplan Framework, supporting the growth and evolution of the WHP into the future.

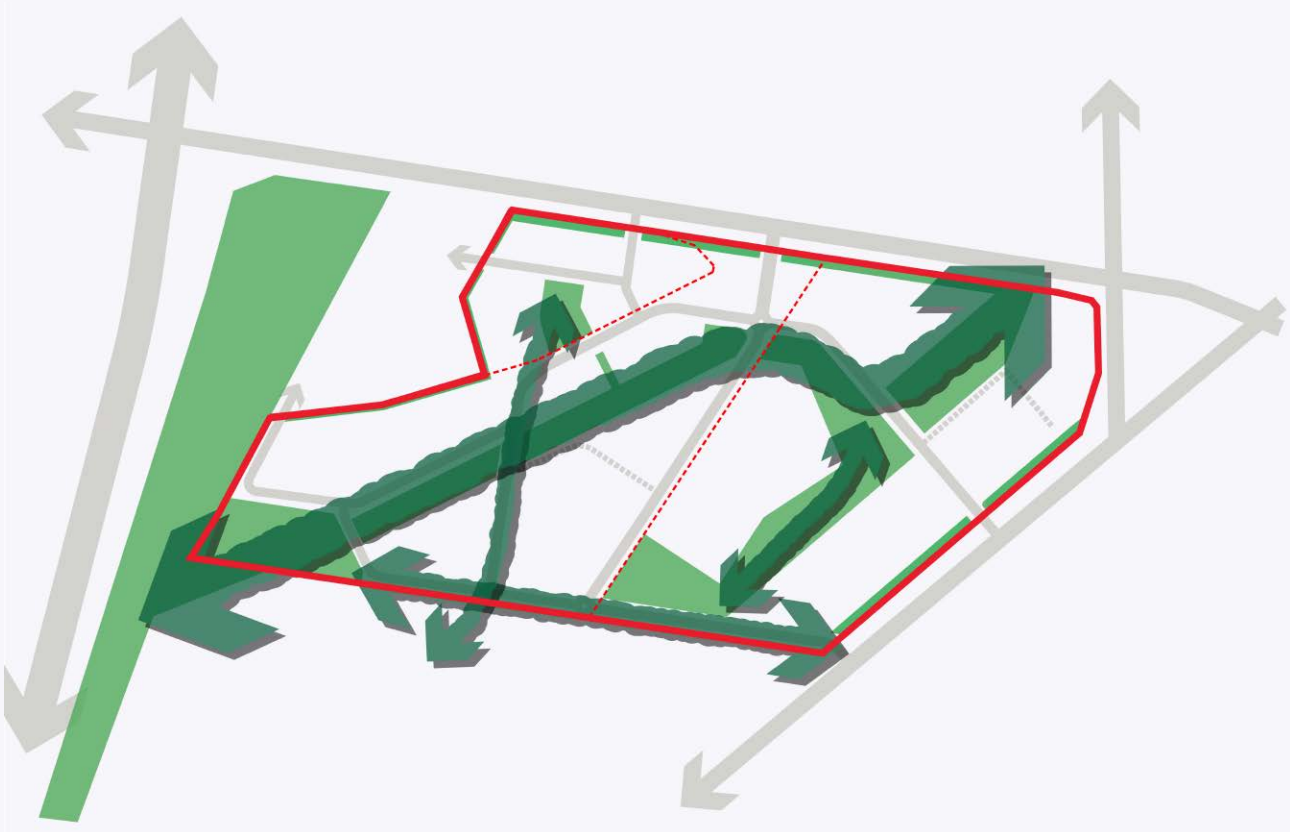
Wantirna Health City

*“a specialised health precinct that includes a wide range of complementary medical services, employment, education and research facilities, training opportunities, accommodation, access and transport”*



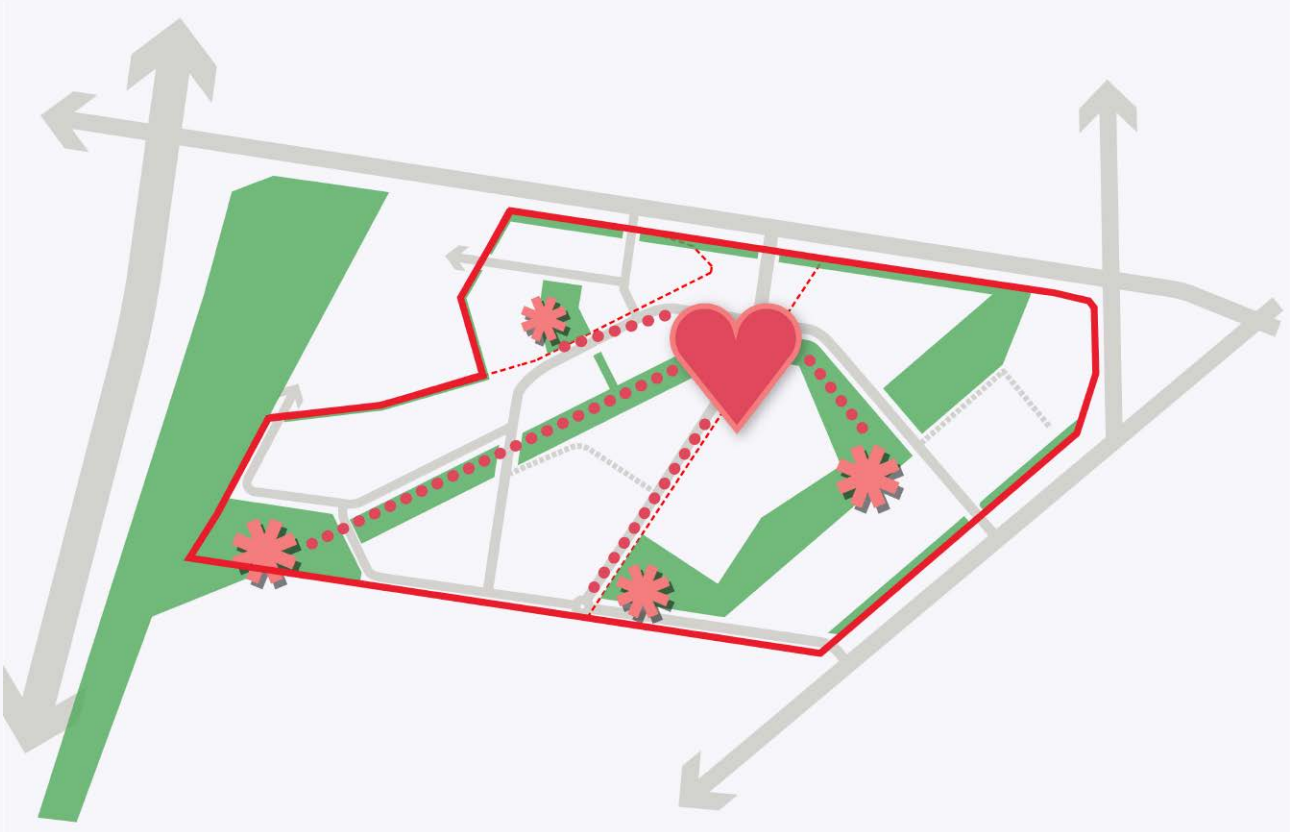
Note: Hatched areas on buildings indicate future capacity subject to further technical assessments.

## 3.2 Design Principles



### The Green Spine

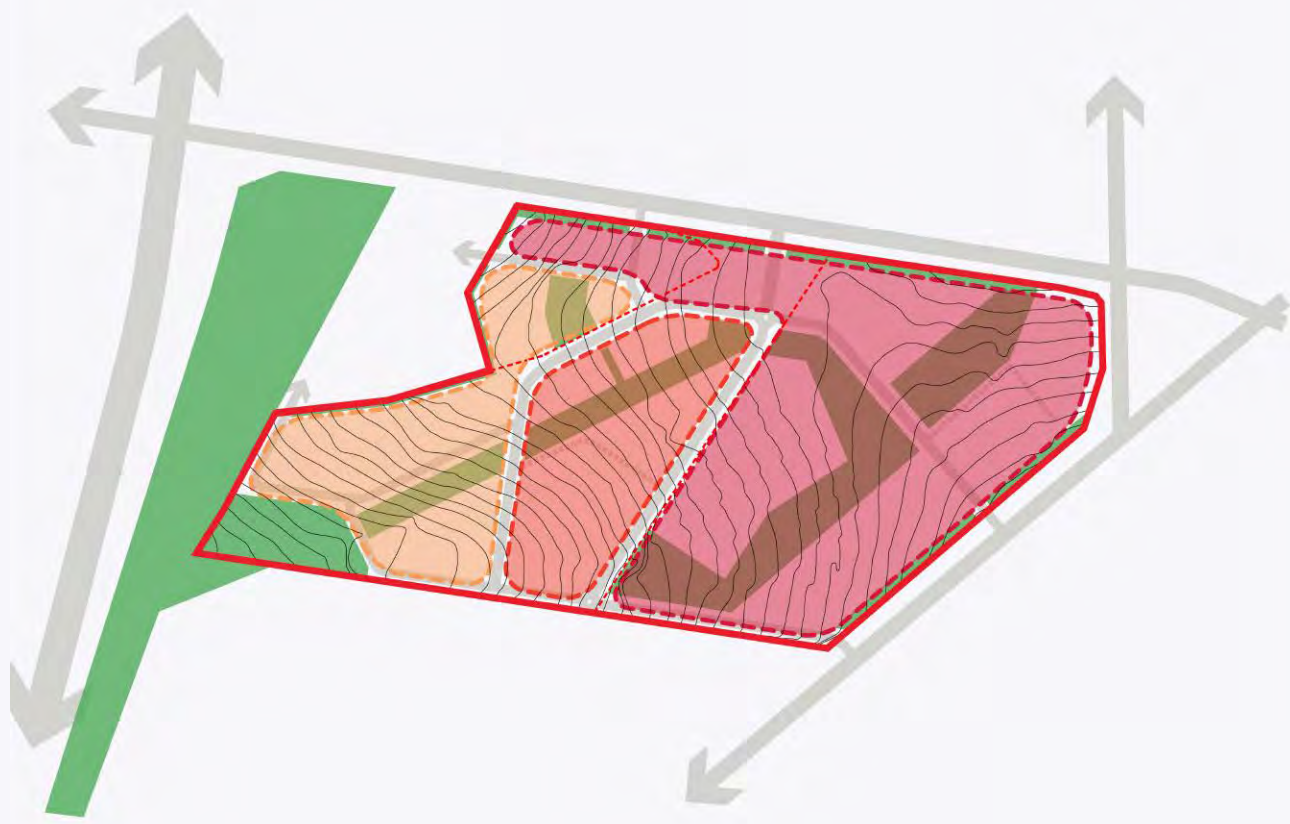
- Forms the main organising element for the site, and links people and activity across the precinct.
- Forms a central movement corridor supporting high quality walking and cycling paths connecting the Hospital with other uses down to the wetlands and further beyond to Dandenong Creek.
- Runs down the natural topography of the site, aligning viewlines west to the Dandenong Creek corridor along the Green Spine.
- Creates opportunities within the Green Spine for precinct-scale water sensitive urban design initiatives.
- Creates opportunities within the Green Spine for precinct-scale placemaking, activation and community building initiatives.



### A Precinct Heart

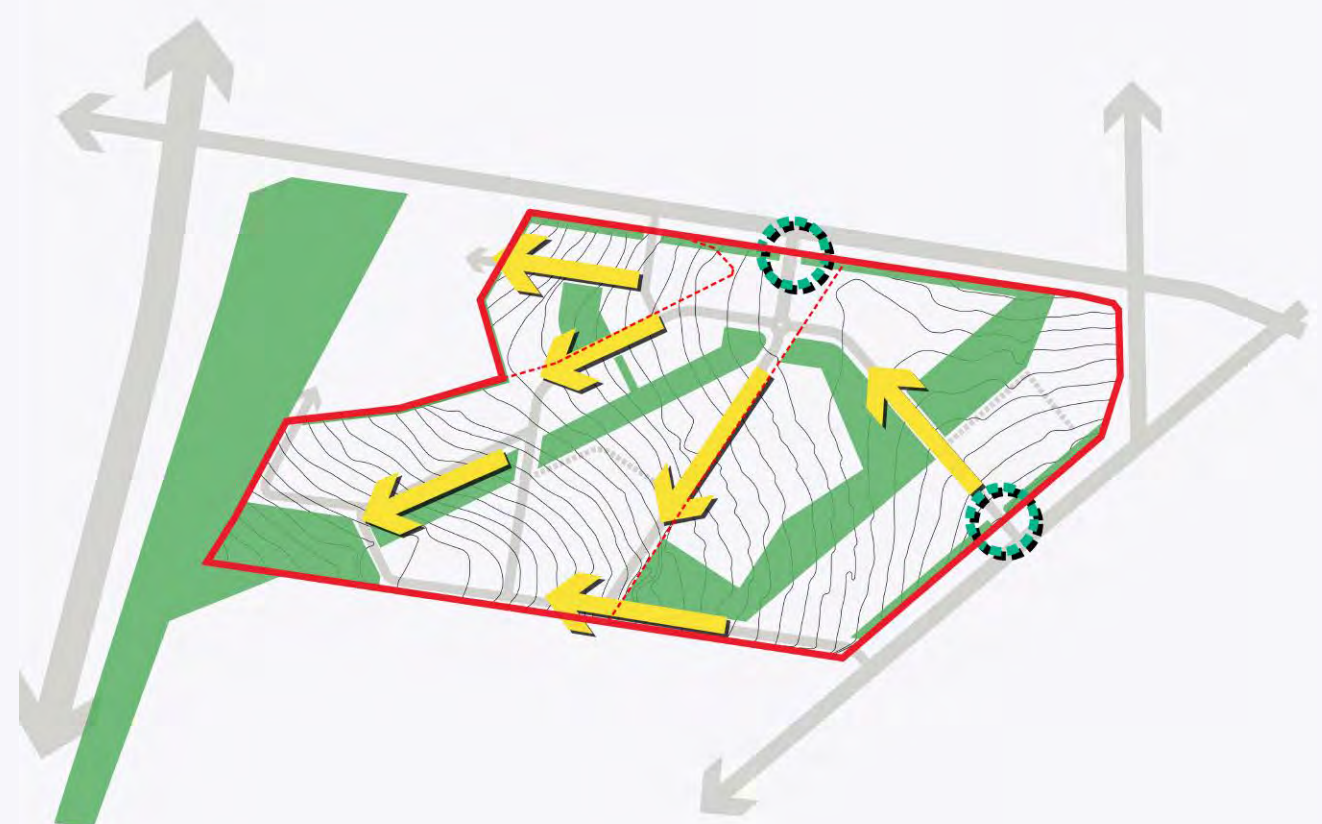
- A focus on creating a 'precinct heart' for the WHP, located centrally within the site at the entry from Boronia Road.
- Located at the top of the Green Spine, the 'precinct heart' forms a key node along the major pedestrian routes and is linked to a series of other public spaces including Local Parks and the Hospital Plaza Gardens.
- The 'precinct heart' comprises the Urban Square, allowing retail, convenience and social public realm uses, as well as offering a place for people to meet, gather and socialise.
- This space will be a community based 'heart' that serves the local neighbourhood, specifically the people living, staying and visiting the precinct.





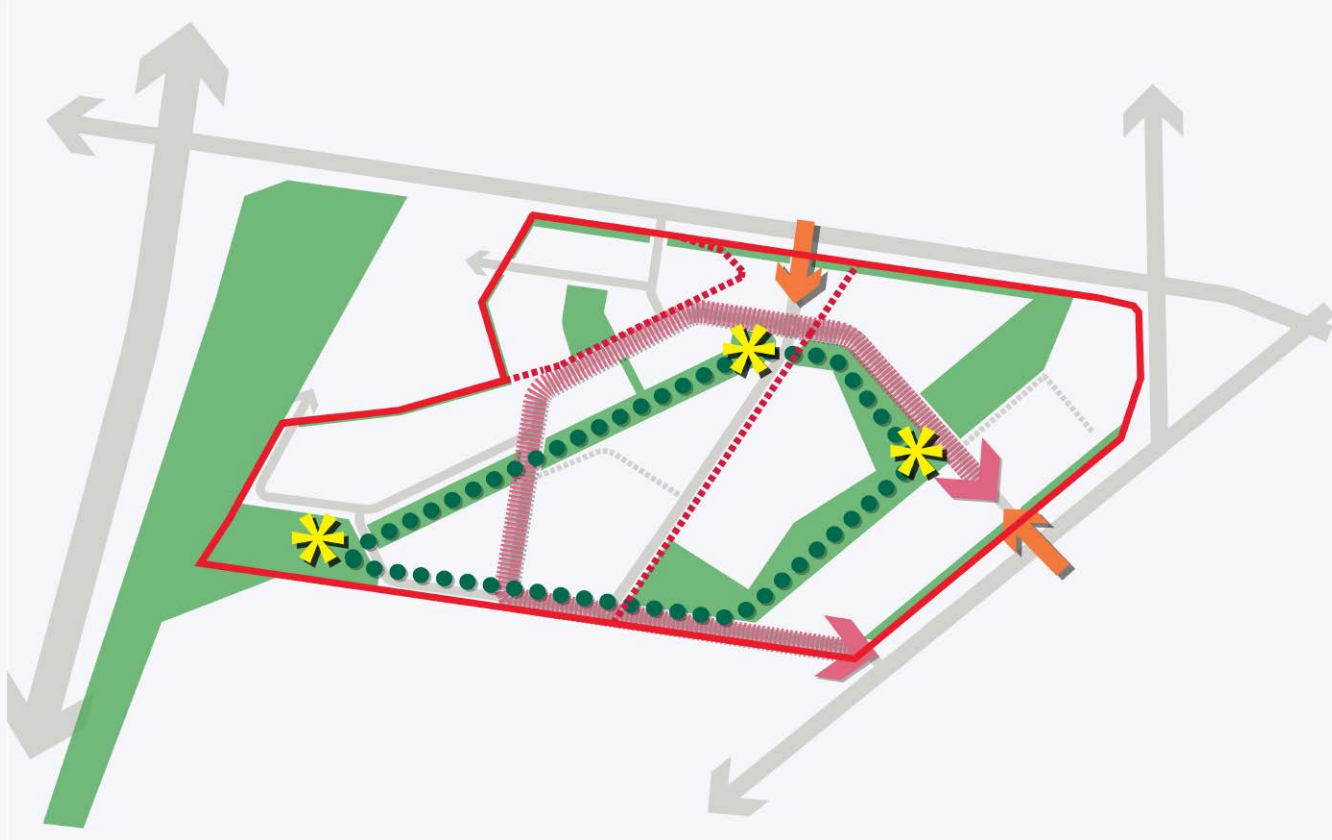
## Uses Supporting a ‘Health City’

- Ensuring that all future uses across the site contribute to the delivery and operation of a health-based precinct by:
  - Providing appropriate health services;
  - Facilitating research and training opportunities;
  - Supporting employment growth and future floorspace requirements across multiple sectors;
  - Supporting business growth; and
  - Promoting health and wellbeing outcomes for the community.
- A diversity of land uses across the sub-precincts and within the buildings will contribute to the precinct that delivers a 24hr ‘health city’.
- Health, medical, education and commercial uses are located on optimal, flatter land along the major roads, to the eastern and northern areas.
- Residential uses are located towards the south-western corner, better connected to the adjoining local neighbourhoods.
- Ultimate uses across the site will be subject to a range of factors, including land constraints, private sector demand, and public investment timing and scale.



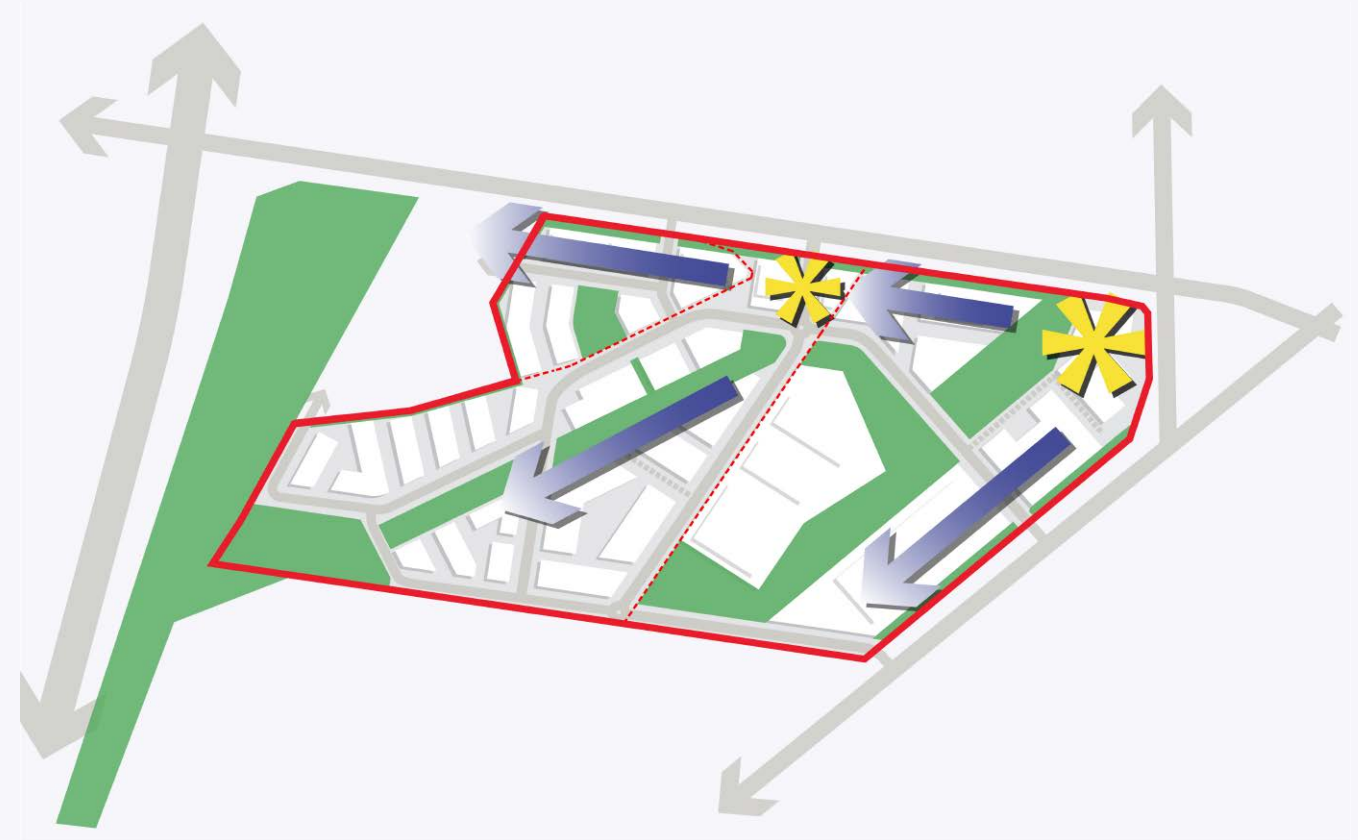
## Streets + Slope

- Streets are designed to manage internal access arrangements and water flow, and are aligned to maximise views to open space and water.
- Creation of a clear, logical new urban structure providing a connected and legible layout.
- New signalised intersection to Boronia Road forming the key entry into the precinct from the north.
- Connection into the existing signalised intersection on Mountain Hwy.
- Allowing opportunities for pedestrian connections to the adjoining neighbourhoods to the south, maximising community connections.
- Considered building interfaces to new street reserves to ensure active and engaged streets within the precinct.



## Accessibility

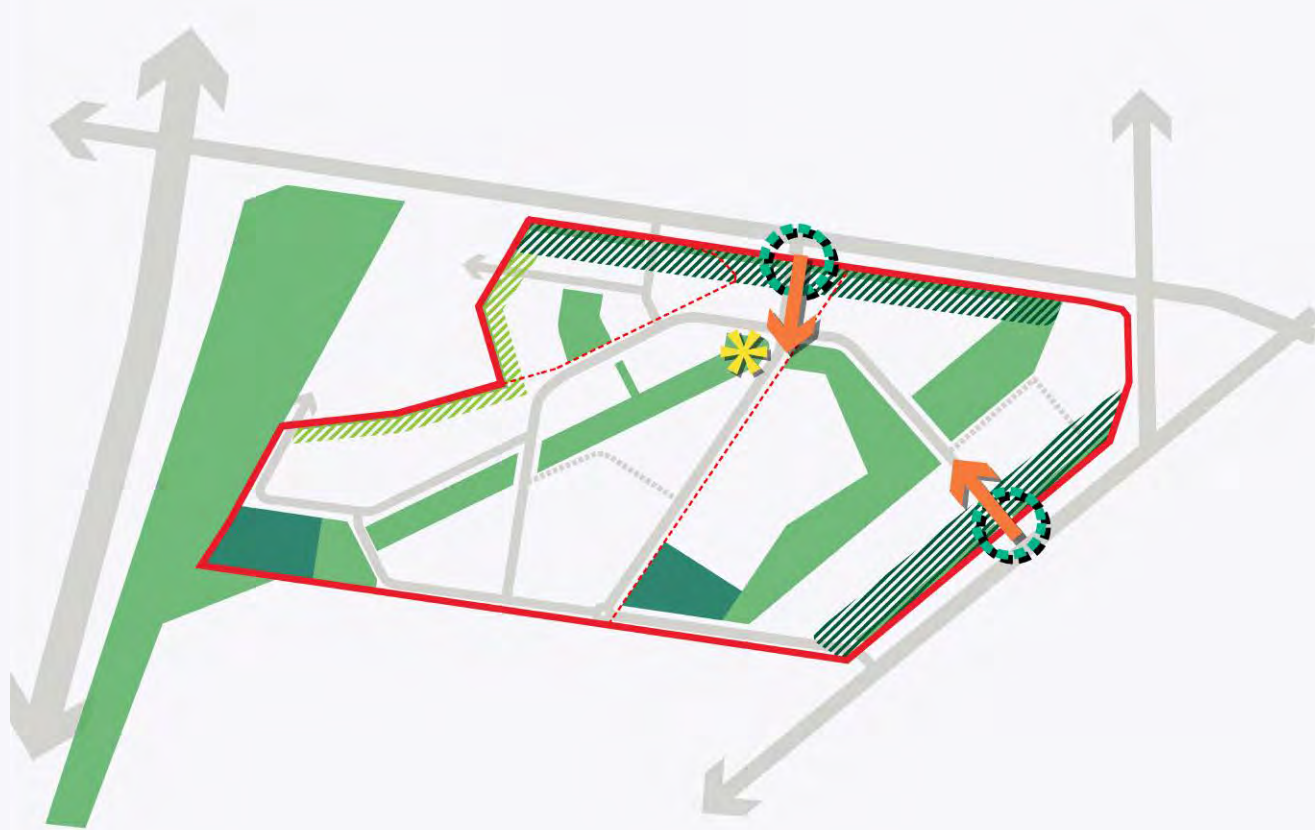
- An urban structure that facilitates the diverse accessibility needs for future residents, workers, hospital visitors and service deliveries.
- Provision of safe, convenient access for services, deliveries and logistics to be contained from the Boronia Road entry.
- Creation of a convenient pedestrian loop to encourage walking/cycling within the precinct, linking key destinations and public open space nodes.
- A vehicle network that provides a logical internal movement that links the key destinations and connects Boronia Road and Mountain Highway.
- Provision of a series of local, slow-speed pedestrian friendly streets and laneways.



## Building Form

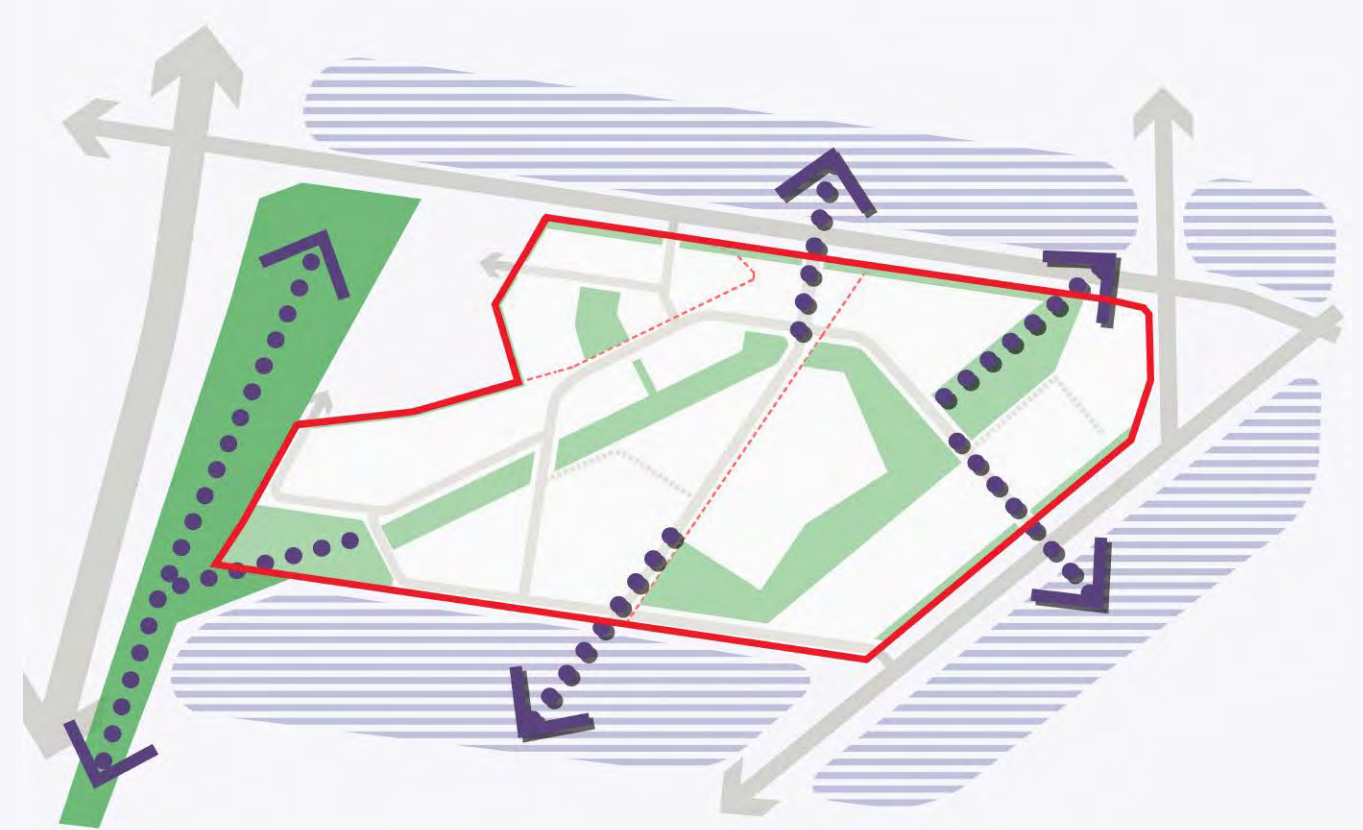
- Creation of a built form framework that responds to the topography, and the surrounding context of the precinct.
- Reflection of an active 'Health City' of State-significance through a denser urban form than that of the surrounding fabric of Wantirna.
- Generally, higher and more prominent built form is located along the Boronia Road and Mountain Hwy frontages.
- Built form heights, scale and massing scaling down from these areas towards the western and southern boundaries, following the topography of the land.
- Buildings are generally of a medium scale between 4-12 storeys.
- In line with the DHHS Masterplan 2017, the most prominent built form located on the elevated land at the north-eastern corner of the site, creating a landmark corner as a wayfinding and legibility element for the precinct.
- Higher built form also located at the entry from Boronia Road to create a gateway and strong sense of arrival into the precinct.
- Considered transition of building heights to the adjacent residential interfaces to the south.





## Responsive Landscape

- Creation of a park-like environment with the landscape values of wellbeing, healing and health benefits at its core.
- Entry points into the precinct signify arrival through high-quality landscape and built form elements.
- Landscape buffers along the major roads reference the Knox 'bush boulevard' character, providing a natural, green edge. A consistent setback provision to the Hungarian Community Centre and EastLink Reserve provides opportunities for landscaping at the sensitive interfaces.
- Creation of the Urban Square at the entry from Boronia Road and as the 'front door' to the new hospital.
- Incorporation of green space, wetlands and plaza spaces through the hospital buildings as break out and external spaces supporting the health and wellbeing objectives of the health services.
- A Green Spine that transitions as it moves west down the topography, from civic and hospital spaces further east, through health/education uses in the centre, to the Local Park supporting residential uses at the south western corner.
- Wetland areas providing a natural and calming environment, as well as significant habitat for flora and fauna.



## Integration

- Streets and open space provide connections with the broader Knox community, creating a place that is well-integrated with its surrounds.
- Shared paths from the EastLink reserve and the Dandenong Creek corridor beyond, link to the internal pedestrian loop, allowing people multiple walking and cycling options through and beyond the site.
- The Green Spine connects the users, workers and residents of the precinct directly east to Boronia Road and beyond to the local retail centre of Wantirna Mall.
- Connections into the existing neighbourhood to the south ensures the community is well connected and can easily walk to new convenience and health services/facilities.



### 3.3 The Masterplan

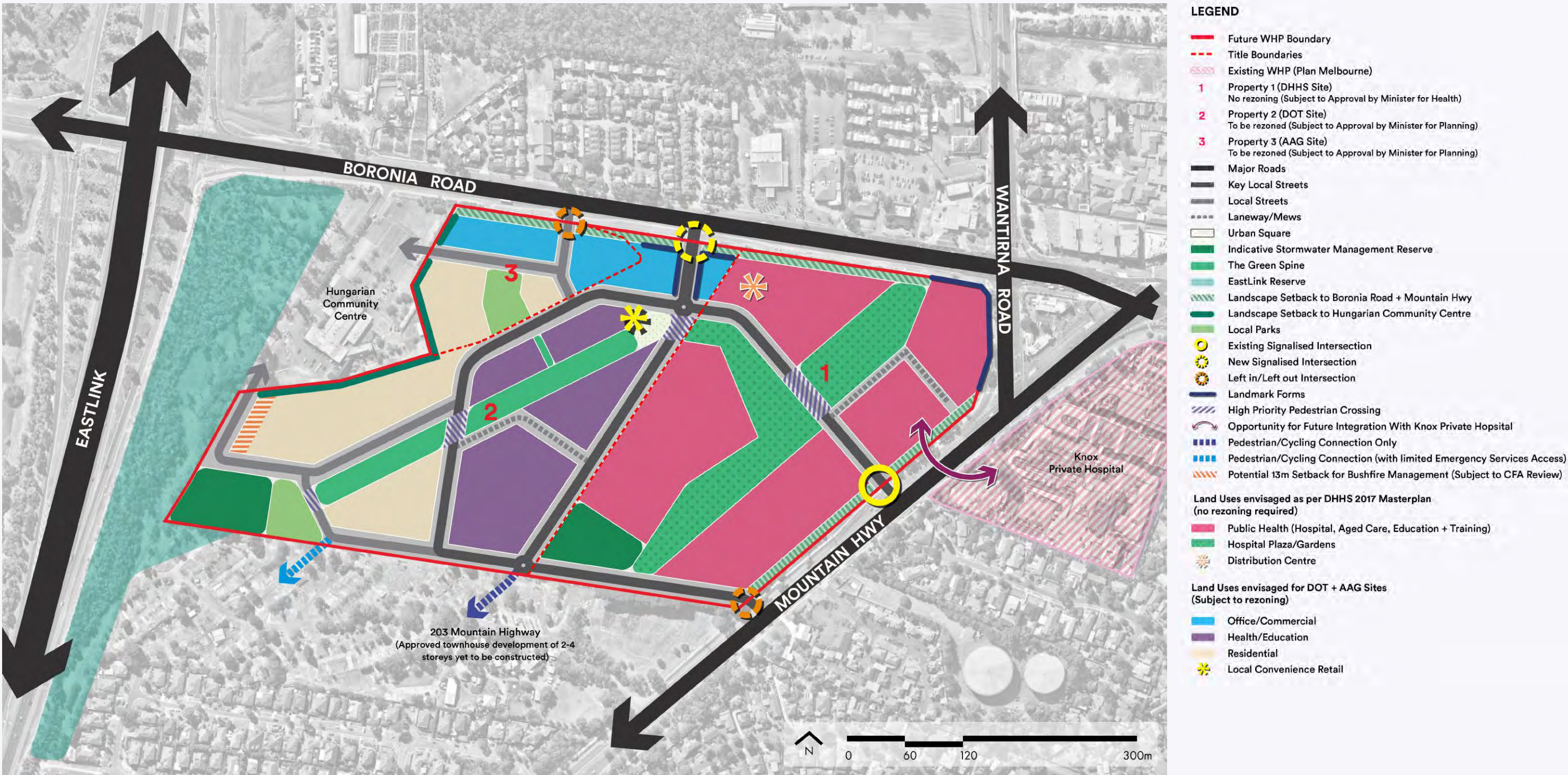


Figure 3. The Masterplan



### 3.4 Sub-Precincts

**Sub-Precinct 1** will be developed in line with DHHS’ strategic program. This sub-precinct will remain in the Public Use Zone (PUZ), however this document provides guidance and principles for future development and integration of the DHHS land with other sub-precincts. It is expected that the sub-precinct will generate significant employment through acute and sub-acute public hospital services and health related mix of uses. The sub-precinct will create opportunities for agglomeration of complementary uses in the surrounding sub-precincts.

**Sub-Precinct 2** forms part of the northern gateway to the precinct and will be the commercial edge which provides a buffer to the residential sub-precinct to the south. This sub-precinct will comprise office and commercial buildings which accommodate a range of complementary uses to support the WHP, e.g. medical centres, specialist consulting suites, GP clinics, medi-hotels and offices. This sub-precinct will act as the gateway to the WHP and celebrate views to the north given its location at the top of the ridge.

**Sub-Precinct 3** is a health, education and research sub-precinct which will leverage off its connection to the public hospital/facilities and provide TAFE/tertiary education and research opportunities. The sub-precinct will also include private health uses such as allied health services, as well as daily convenience uses, including public spaces, food/drink and convenience retail.

**Sub-Precinct 4** is a residential sub-precinct which will provide a diverse range of housing opportunities for the new workforce and future residents. This sub-precinct will consider housing typologies that accommodate for all life stages including diverse housing typologies, key worker housing, aged care and opportunities for affordable housing to support the ‘health city’ vision. The sub-precinct will seamlessly integrate with the wetlands and highlight the natural topography of the land. The sub-precinct also provides an appropriate transition with the future residential development to the south and the Hungarian Community Centre to the north-west.

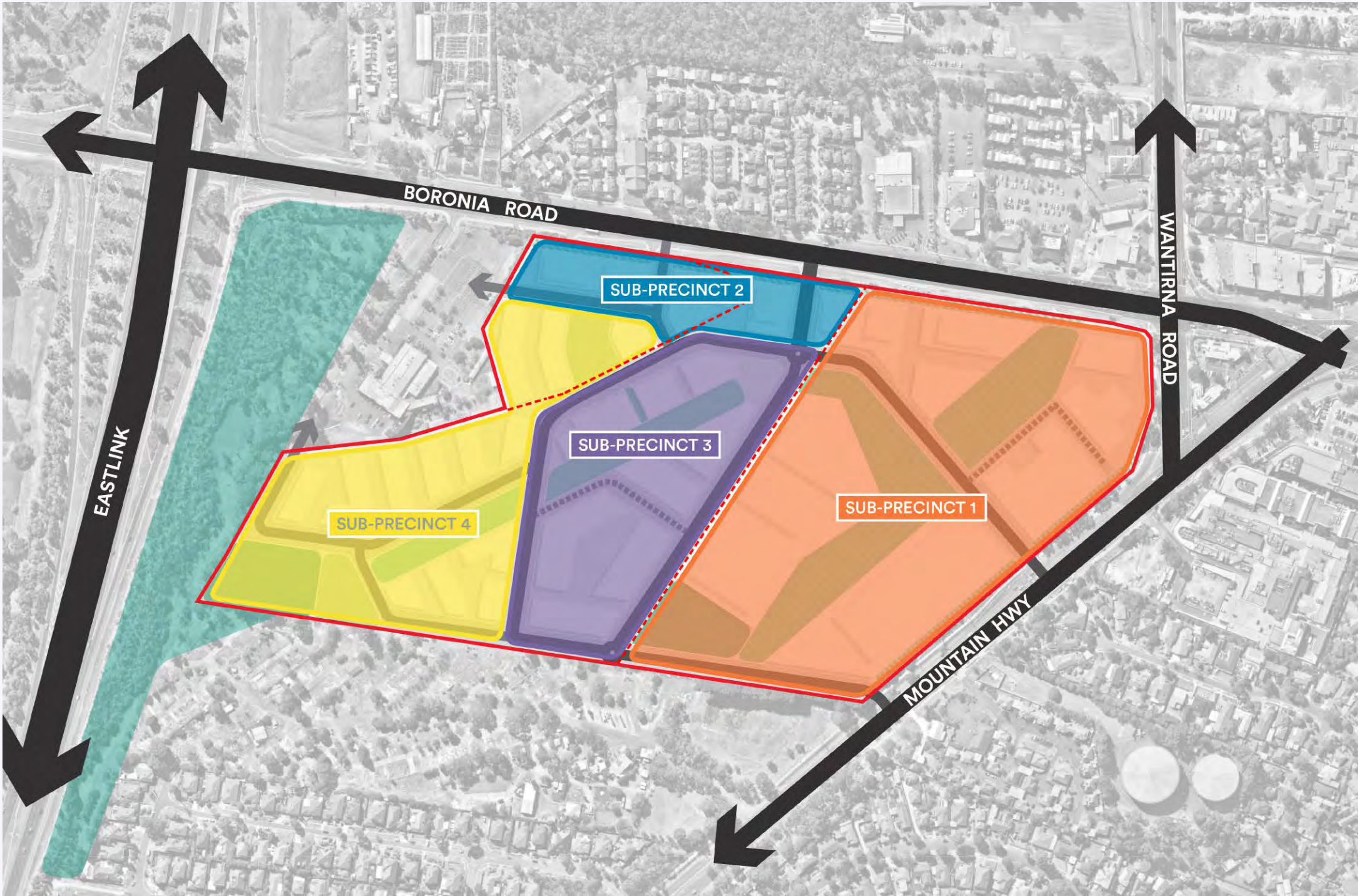


Figure 4. Sub-Precincts



# 3.5 Built Form Rationale

The WHP is located in a wider context that is largely suburban in character and scale, however the precinct itself visually presents as a stand-alone site given the surrounding context of major arterial roads and freeways, and the topography of the land.

As such, the precinct is relatively unconstrained in terms of built form height and massing when compared to other similar infill or urban precinct redevelopments.

In order to determine and test built form height within the Masterplan, there are a number of considerations;

- Benchmarking the local and wider context for current and proposed examples of development or built form that provides appropriate examples of building heights in a similar suburban context (where possible and appropriate),
- Reinforcing important corners within the precinct, fronting the arterial roads and providing a sense of visual landmarks for the WHP (particularly considering the scale of the surrounding roads and EastLink corridor),
- Ensuring a ‘good neighbour’ approach to development in the precinct by transitioning to building heights at the boundaries that are consistent with the character of surrounding neighbourhoods,
- Ensuring that the future built form doesn’t unreasonably overshadow key public realm areas and surrounding properties and;
- Ensuring that the future built form maximises the positive contribution of the public realm and ‘people spaces’ to the amenity of the precinct.

## Key Objectives for Built Form



Frame important corners for wayfinding and visual legibility by locating the highest building form at key corners and entry points for the WHP.

This will include the important corner of the two major roads at the Boronia Road and Mountain Highway intersection, and the corners at the entry from Boronia Road into the precinct.



Create a transition in building heights, from the taller built form at the north-eastern corner of the site, and along Boronia Road, tiered down to lower built form that is consistent with the scale and character of the adjoining residential neighbourhoods.

The scale of the built form will be appropriate for a specialised urban Health Precinct, with good visibility of the new allied services from the main entries on Mountain Hwy and Boronia Road. It will also incorporate an appropriate design response to the interfaces with the Hungarian Community Centre, the EastLink landscape reserve, and the adjacent residential streets.





Provide excellent solar access to the key public open spaces in order to encourage year-round connection between internal building uses, and adjoining public realm within the precinct. This will create a series of spaces that support a range of activities and uses, formal and informal, that underpin the life of the precinct.

Solar access particularly to the Local Parks, Green Spine and Urban Square will be maximised. The framework also minimises potential overshadowing of surrounding residential properties to the south of the precinct, and on the south-eastern side of Mountain Highway.



Ensure that built form is designed at a comfortable human scale that integrates with the public realm environment and creates a positive and high-quality human experience.

This includes the provision of carefully considered street-level setbacks, to encourage ground floor uses to engage with the street and for building users to spill out into the public spaces throughout the precinct. Considered articulation and built form massing will ensure the buildings relate to the local streets and spaces, and that all buildings contribute positively to a high-quality, pedestrian-friendly environment.



## Key Conclusions for Built Form

Based on the built form benchmarking and testing, it is concluded that:

- There is a growing scale of 4-12 storey developments in the adjoining and nearby suburbs, with higher buildings often used to define important corners or intersections of arterial roads (or on key viewlines). The inclusion of buildings over and above the 10-12 storey scale is rare, and largely responds to residential demand adjacent to good public transport or convenience retail services. Therefore, building heights between 4-12 storeys are deemed an appropriate response for the site (refer to **Appendix A - Built Form Height + Scale Benchmarking** for further details).
- A building height of 12 storeys is the tallest built form that can be achieved to the corner of Mountain Highway/Boronia Road to create a gateway built form without overshadowing the residential properties on the south-eastern side of Mountain Highway. This has been tested as block massing, noting there may be ability for greater heights subject to built form setbacks and detailed design.
- A building height of 12 storeys at the entry from Boronia Road also provides a gateway entry from this location whilst holding the Boronia Road/Mountain Highway corner as the major landmark corner for the site.
- A general tiering down of building heights from 12 storeys to 4 storeys along the southern and western boundaries provides an appropriate interface with the future residential properties to the south and the Hungarian Community Centre (refer to **Appendix B - Built Form Analysis** for further details).
- Building heights north of the key public open spaces (Urban Square, Local Parks and Green Spine) are appropriate heights to ensure that at least two-thirds of these spaces receive sunlight at the equinox (refer to **Appendix C - Solar Analysis** for further details).



### 3.6 Built Form

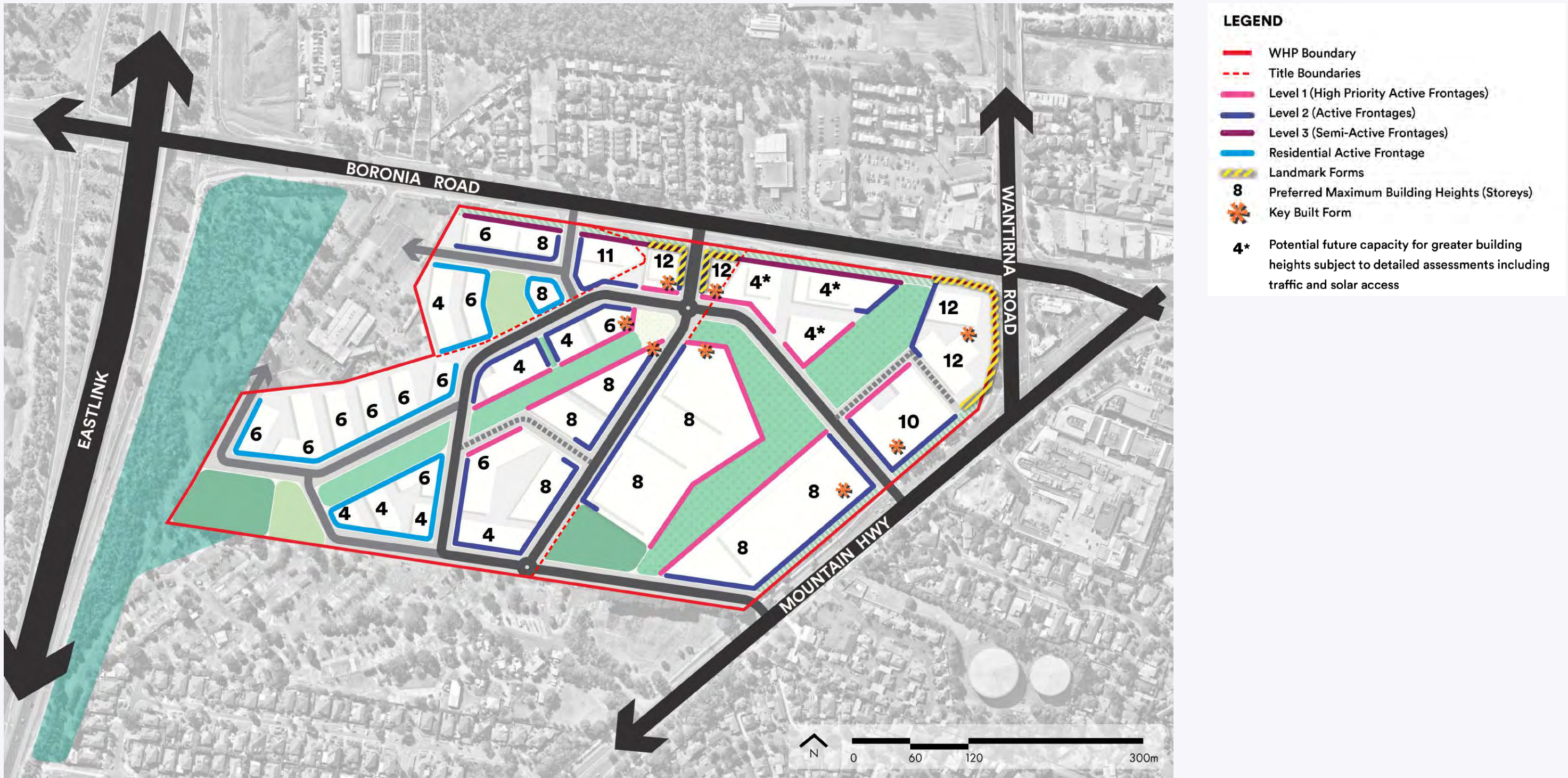


Figure 5. Built Form



Note: Hatched areas on buildings indicate future capacity subject to further technical assessments.



**Sub-Precinct 1** - Building heights responding to the provision of the new Hospital, the creation of a landmark to the Mountain Highway and Boronia Road intersection, as well as reinforcing the central boulevard.

**Sub-Precinct 2** - Building heights demarcating the site gateway at the Boronia Road frontage with bookend forms located on either side of the entry road. The corner forms minimise overshadowing of the public open spaces and ensure a comfortable transition towards the Hungarian Community Centre to the west.

**Sub-Precinct 3** - Building heights reinforcing the core of the WHP, complementing the hospital on the central boulevard and lining the Green Spine with lower built form to the northern side to ensure good solar access. The overall scale of the sub-precinct transitions down towards the southern boundary.

**Sub-Precinct 4** - Building heights transitioning down from the commercial buildings to a residential scale, fronting the Green Spine and Local Parks, and providing a complementary interface to the Hungarian Community Centre to the west and future residential development site to the south.



# 3.7 Setbacks

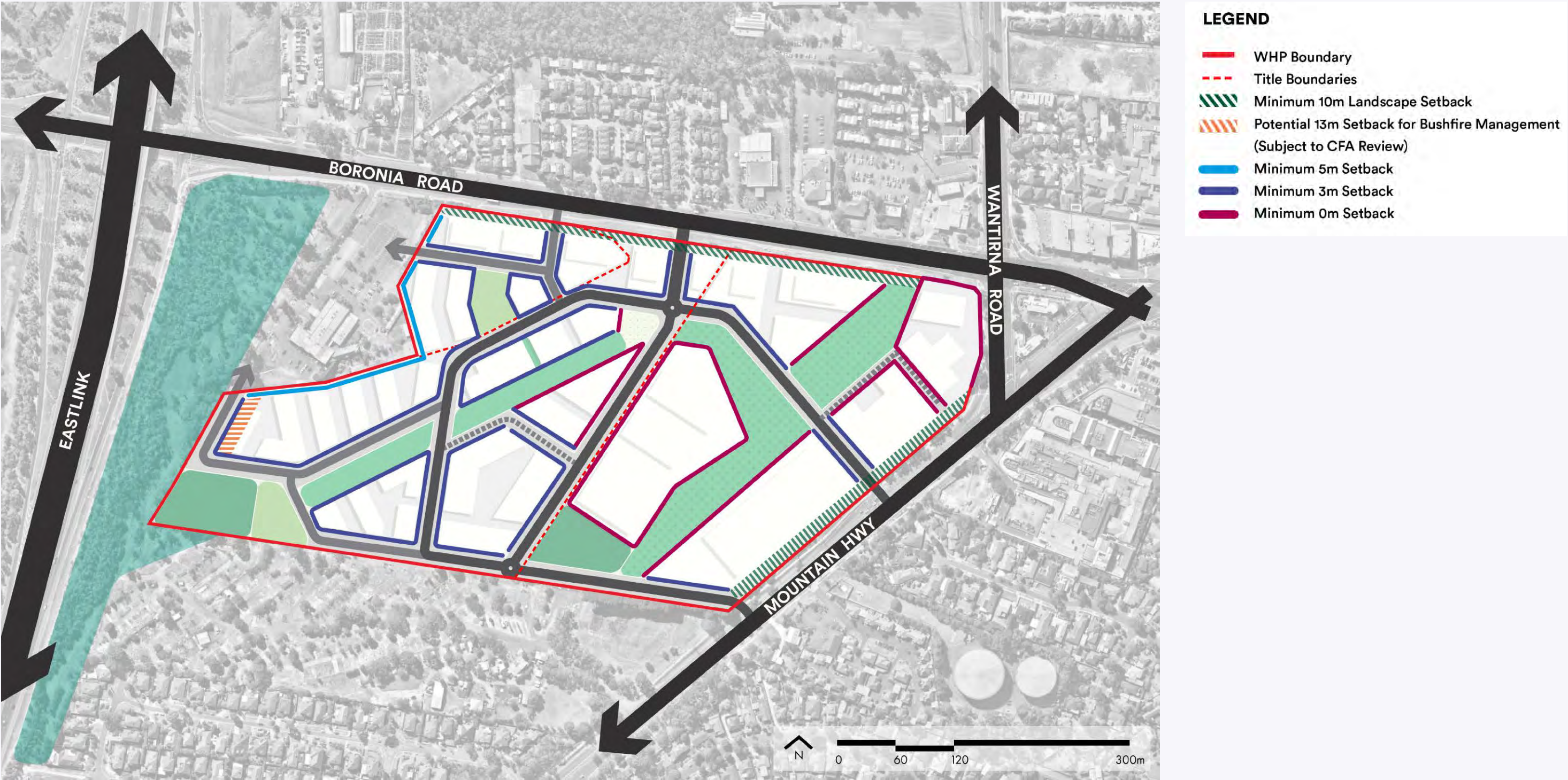


Figure 6. Minimum Setbacks



Building setback and the street-level interface are important components of creating a ‘human scale’, high quality pedestrian environment for the WHP. The approach to building setbacks across the precinct is to create an urban character that allows space for landscaped building settings to soften the built form interfaces and maximise the internal/external connections between building tenancies and the landscaped precinct.

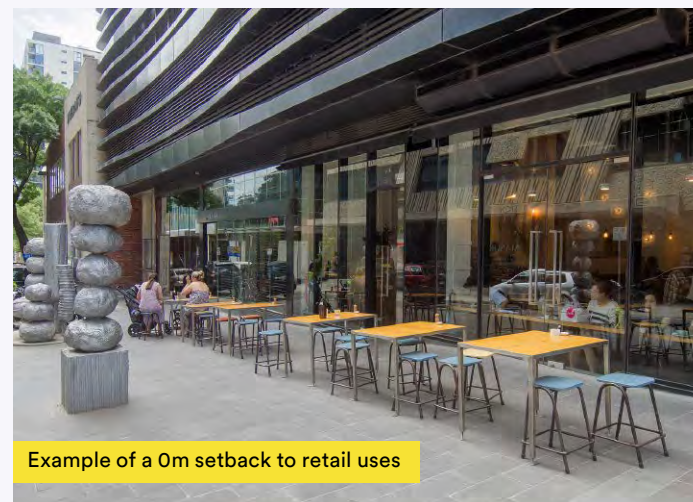
In order to achieve this, a minimum 3m setback is generally applied throughout the precinct which allows for:

- Opportunities for low-level landscaping and mature trees for ‘greening the street’.
- The ability to sensitively treat the site topography and transition across the site slope (e.g. ramps/steps).
- The ability to clearly delineate entries to key buildings.
- The incorporation of building services in a considered way which doesn’t visually impact the streetscape.
- Opportunities for outdoor seating spaces to be located on private land.
- Opportunities for street-level open space/gardens which are essential for residential uses.

Zero setbacks are applied along the central boulevard to create a more urban character within the heart of the precinct between the most intensive land uses (hospital and health/education). These are generally applied to buildings abutting open space to create a strong built form edge. Where overshadowing may impact key public spaces, a minimum 3m setback is shown to help mitigate this effect (i.e. for the buildings directly north of the Green Spine).

To reference the ‘bush boulevard’ character that exists along Mountain Highway and Boronia Road, a 10m setback is generally applied along these frontages, providing a generous landscape area that will help to visually soften the larger scale buildings fronting these roads. This also aids with the delivery of entry sequences and traffic and pedestrian management at key entry points into the site.

A minimum 5m setback to the Hungarian Community Centre will provide an appropriate buffer with opportunities for landscaping.



Example of a 0m setback to retail uses



Example of a minimum 3m setback to non-residential uses to accommodate level changes



Example of a 3-5m residential setback to allow for private open space/front gardens



Examples of 10m landscaped setbacks



# 3.8 Access + Movement

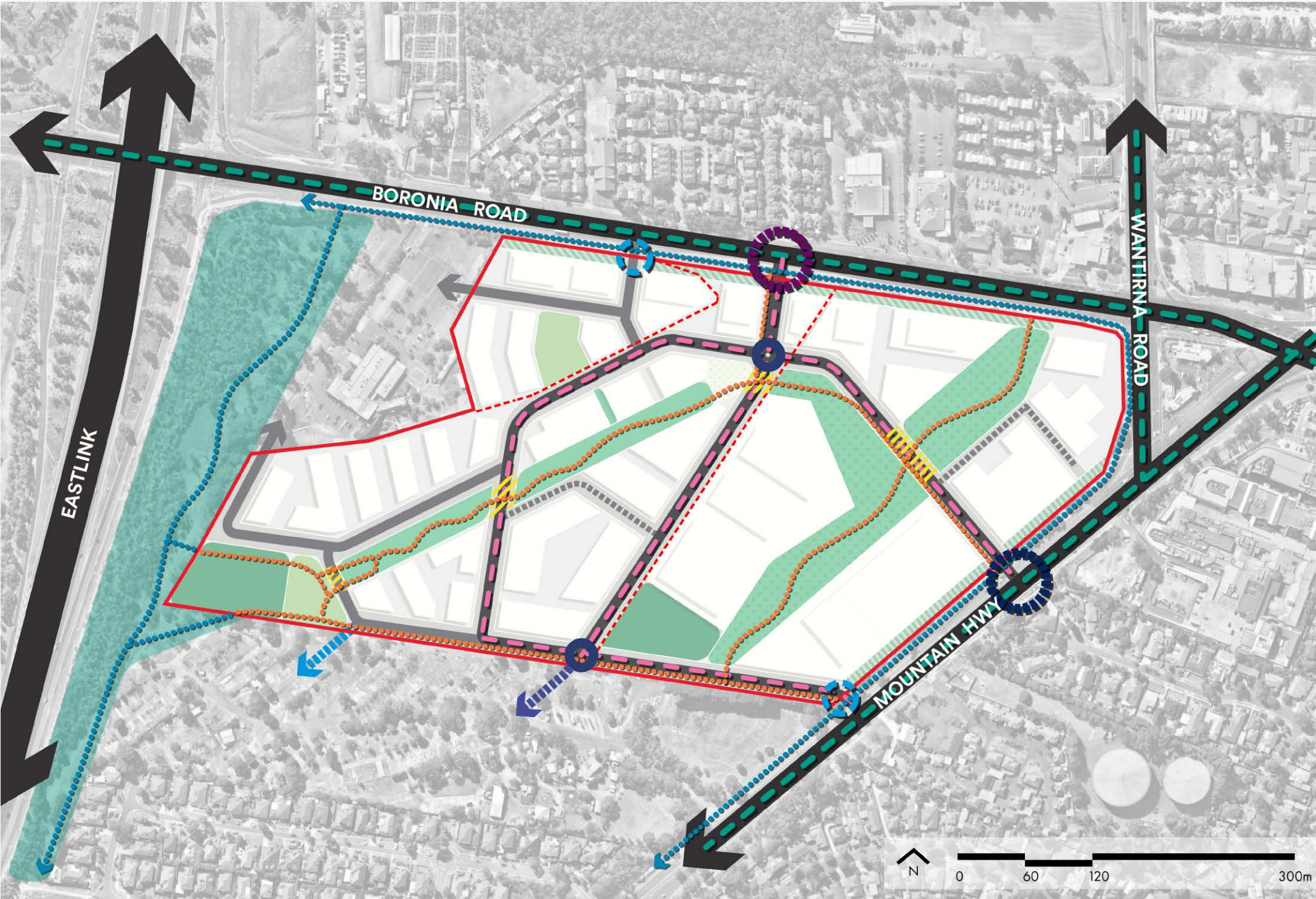


Figure 7. Access + Movement

LEGEND

WHP Boundary

Title Boundaries

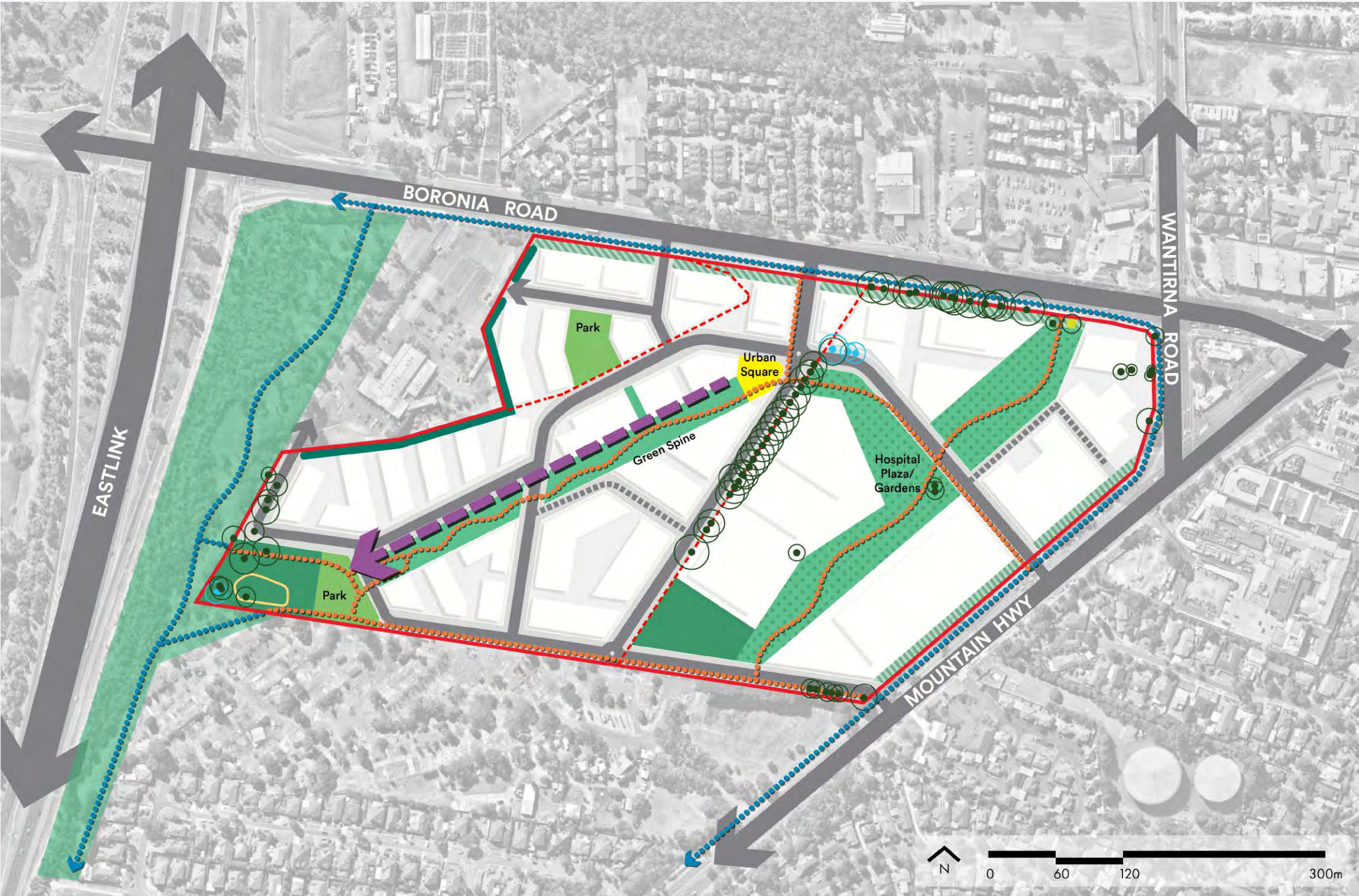
As a ‘health city’, the promotion of active travel is fundamental to improving the health and wellbeing of the people living, working and visiting the WHP. As such, the precinct has been designed with a permeable street network that enables people to walk easily within the precinct, connecting key destinations and public realm areas. In particular, the Green Spine will be the primary spine of activity and pedestrian movement, running through the heart of the precinct connecting a range of different uses. An extensive shared path network enables cyclists to ride safely off-road, within and around the precinct.

The road network has been designed to enable larger vehicles (e.g. service trucks and ambulances) to easily access the hospital precinct via the Boronia Road/Mountain Highway intersections and keep them off the local street network. The key local streets will provide convenient access and movement of vehicles (and the opportunity for buses) to the range of different uses within the precinct. The balance of the street network will be characterised by local streets and laneways/mews, which will be designed as pedestrian prioritised streets whilst allowing the movement of vehicles at slow speeds.

Given the proposed hospital and allied health and aged care services across the precinct, universal access for people of all abilities, whether they are residents, workers, patients or the elderly is critical. Disability access requirements will need to be designed at implementation stage to ensure that footpaths are safe and comfortable for these users. In particular, footpaths will be aligned to ensure they are not too steep (generally no greater than 1:20) and will safely accommodate people using wheelchairs, prams and mobility aids (minimum width 1.8m).



# 3.9 Public Realm



LEGEND

WHP Boundary

Title Boundaries

Urban Square

Indicative Stormwater Management Reserve

The Green Spine

Hospital Plaza/Gardens

Landscape Setback to Boronia Road + Mountain Hwy

Landscape Setback to Hungarian Community Centre

Local Parks

Key View

Shared Paths within WHP

Shared Paths outside WHP

Very High Retention Tree

High Retention Tree

TPZ- Tree Protection Zone (Very High/High Retention Trees)

Scattered Trees

TPZ- Tree Protection Zone (Scattered Trees)

HZ1- Herb-rich Woodland

The Masterplan framework is underpinned by a public realm strategy which emphasises a placemaking and ‘people-centric’ approach to the WHP. The public places and spaces throughout the precinct, and the connections between them are pivotal to the uses across the precinct coming together into a unified sense of a ‘Health City’.

The wider health benefits of landscaping, greenery and a natural setting in a hospital or allied health environment are well documented. The public realm strategy weaves the sense of external landscape throughout the site, from the ‘bush boulevard’ treatments of the main arterial road interfaces, through the hospital plaza and garden spaces, down the Green Spine to the Local Park at the lower (west) end of the site. It will concurrently support Hospital patients, staff and visitors (northern end), office and commercial workers and visitors through the core of the precinct, and residents at the western end of the precinct, in a variety of flexible public spaces. These interconnected landscape spaces will enable each of the varied buildings and uses on site to spill out directly onto an adjacent key public space, and allow people to move easily through the precinct by foot.

The public realm strategy creates a series of high-quality public spaces providing opportunities for respite, relaxation, community activities and social interaction. It ensures that as the precinct develops, it supports a health and wellbeing environment that welcomes patients, workers, visitors and residents at all times of the day and night, and across seasons.

Figure 8. Public Realm



# The Green Spine



The Green Spine is the primary open space for ‘people activity’ and pedestrian movement, forming an axis between the Local Park and the Urban Square, connecting all the main uses, residents, workers and visitors within the WHP and beyond.

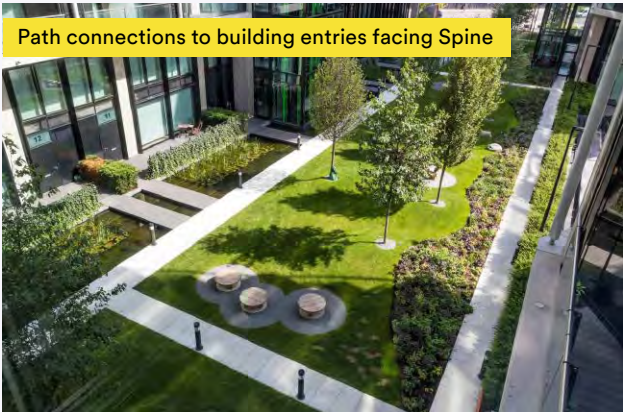
The Spine will have a lush, green character comprised of predominately grassed and softscape areas with high tree-canopy coverage. A wide shared path will provide a connection from the top of the Spine to the bottom and will be designed to ensure it is safe and comfortable for the disabled and elderly, with a maximum grade of 1:20 to avoid excessive use of switchbacks and hardscape areas. Refer to **Appendix D Open Space Benchmarking** which compares a range of open spaces at various slopes to demonstrate the grade of the Green Spine.

A number of activity nodes will be incorporated along the Spine, providing areas for relaxation and low-level recreation/play. Potential public art/ educational/interactive elements will encourage people to move up and down the Spine and provide opportunities to stop and engage along the journey.

Buildings fronting the Spine will be designed with active frontages facing the reserve, providing opportunities for uses and activities to ‘spill out’ into the Spine, as well as passive surveillance over the open space.



Wide shared path at maximum 1:20 grade linking the Urban Square to the Local Park



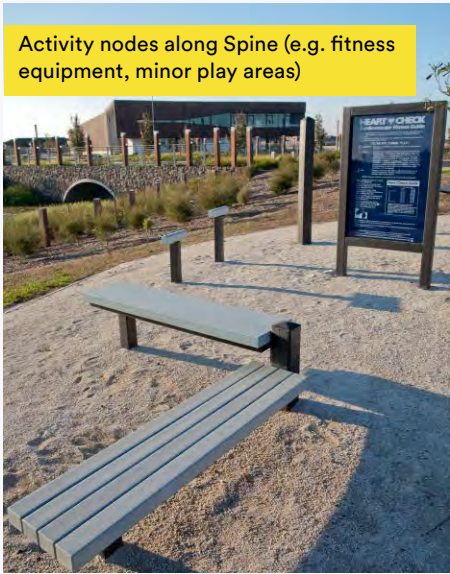
Path connections to building entries facing Spine



Pedestrian-scaled lighting to enhance safety



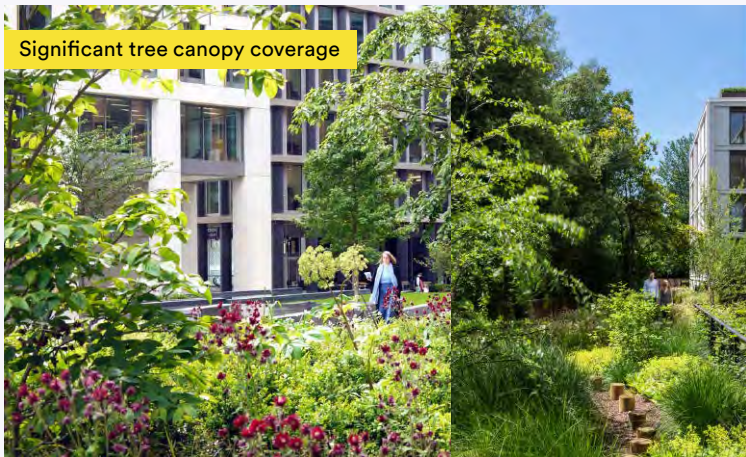
WSUD opportunities



Activity nodes along Spine (e.g. fitness equipment, minor play areas)



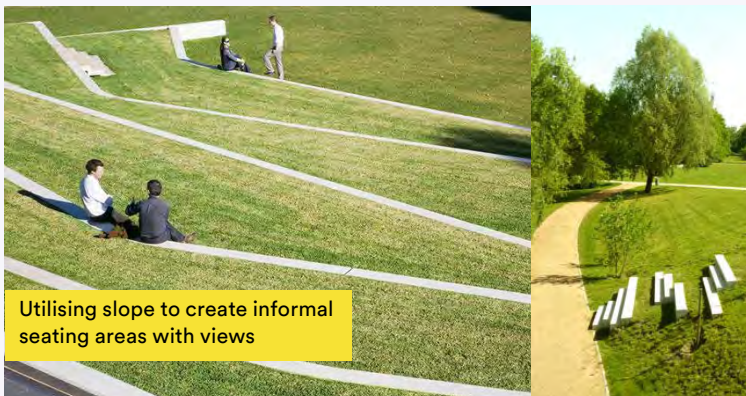
Predominantly softscape with large grassed areas for relaxation



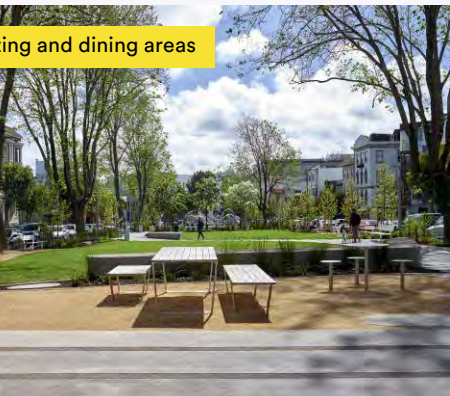
Significant tree canopy coverage



Potential public art + interactive elements reflecting the health/education focus



Utilising slope to create informal seating areas with views



Formal seating and dining areas



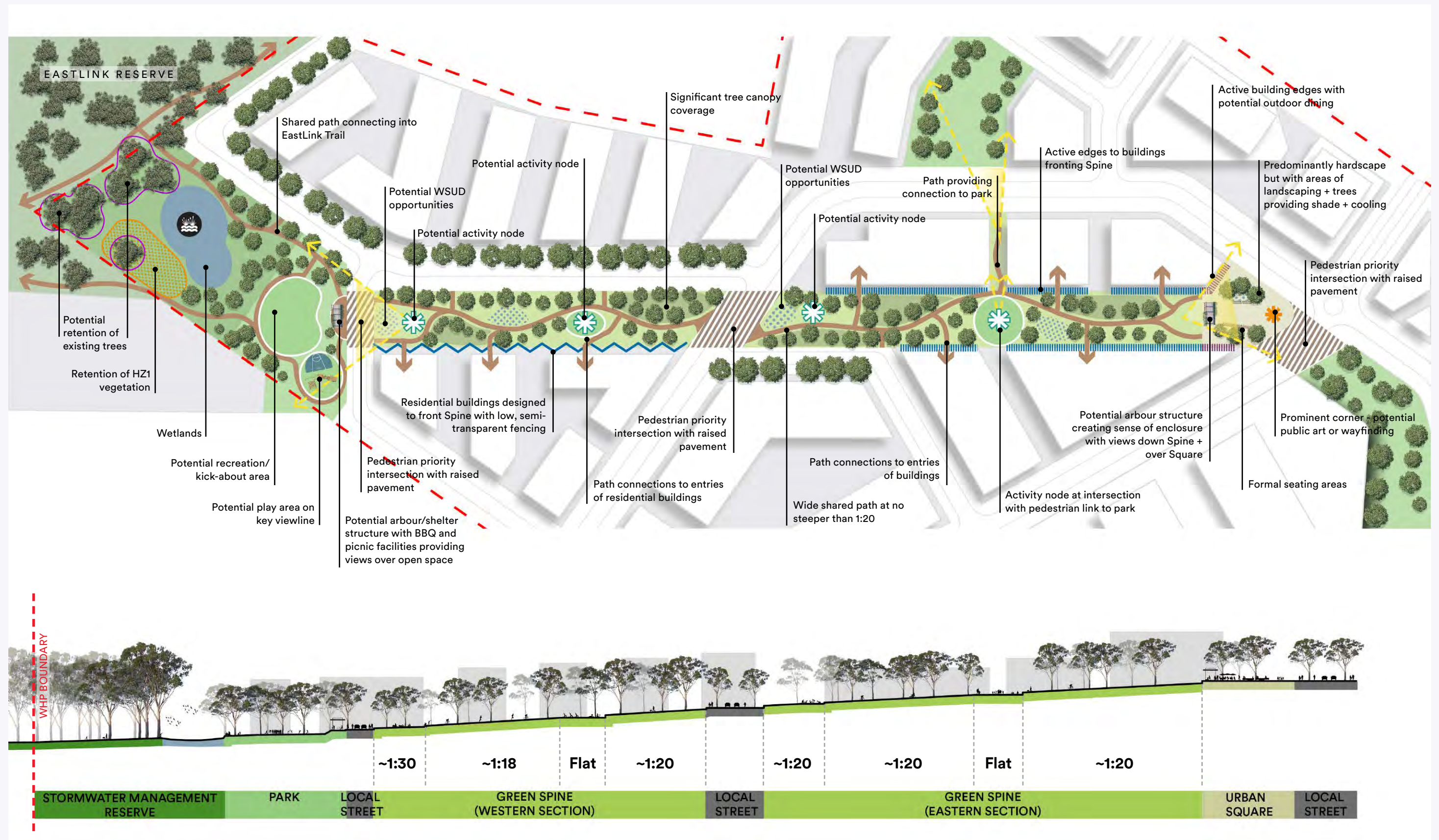


Figure 9. Indicative Green Spine Concept

Note: This concept plan communicates the key design principles for the Green Spine and provides an indicative example of how it could be developed.



# The Urban Square

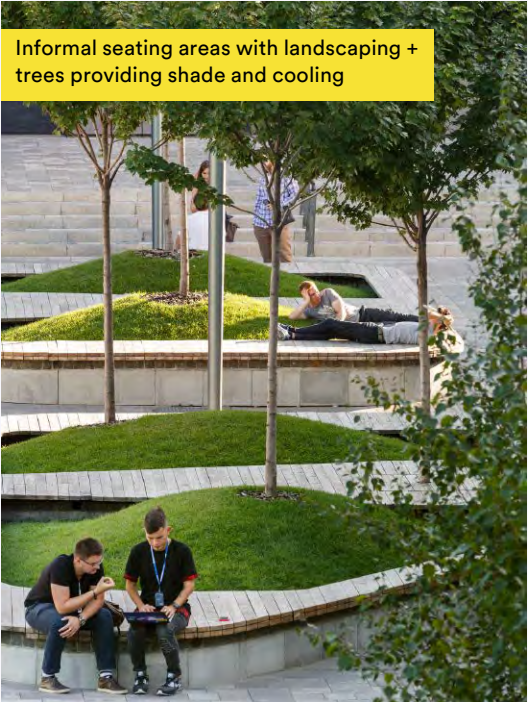
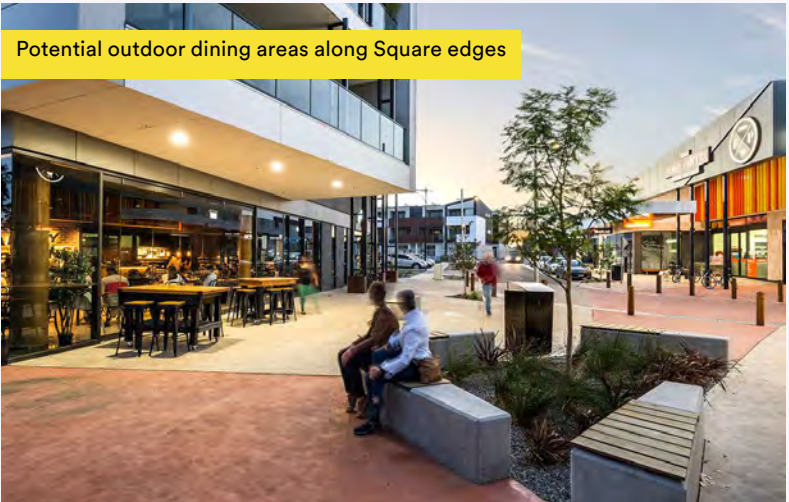
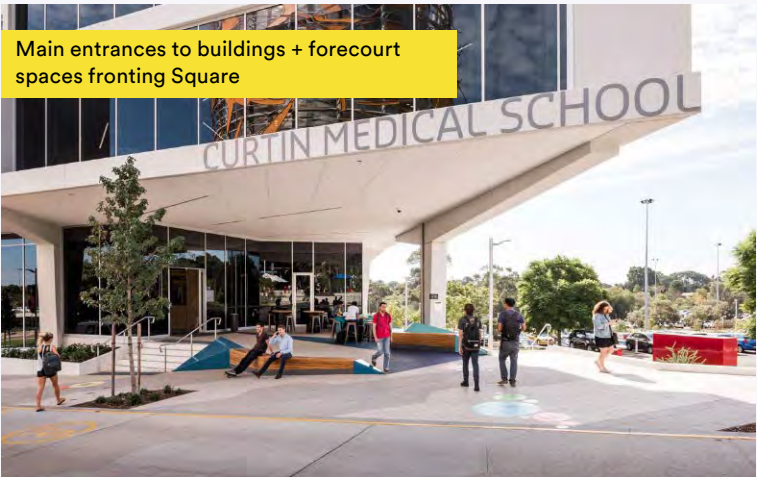


Located adjacent to the main entry to the WHP from Boronia Road and on the axis of the Green Spine, the Urban Square is the main public, social and gathering point for people working and visiting the WHP. It is the public forecourt to the health/education buildings and potential retail, and has a strong connection to the Hospital and its sequence of public spaces.

Predominately hardscape, the Square will have a contemporary, urban character with ample seating opportunities. It will also incorporate landscaping and trees to provide shade, cooling and tree canopy coverage.

Buildings facing the Square will have highly activated edges with their main entrances facing the Square and potential outdoor dining areas to support retail uses. Distinct edge treatments will be provided to the other sides of the Square to create a sense of enclosure whilst allowing visibility into the Square from the surrounding streets and the Green Spine.

Public art and wayfinding elements will help people navigate around the precinct whilst creating a distinct character and identity for the WHP.





# The Local Park + Stormwater Management Reserve



This open space is the major destination space for the local community. Located in the south-western corner of the WHP, the open space connects into the adjoining EastLink Reserve, providing opportunities for shared path connections further beyond to Dandenong Creek.

Situated at the lowest point of the site, the western area of the space plays a drainage function with a large wetlands. The eastern area of the space will provide a local neighbourhood role for the surrounding residents, with opportunities for passive recreation, larger-scale play and landscaped community gathering spaces (e.g. playground, kick-about area, BBQ and shelter).

Overall, the space will have a green and natural character with a number of existing trees being retained. Connection to nature and water will create a therapeutic and healing environment that promotes health and wellbeing.



Kick-about and picnic areas



Recreational walking trails connecting to Dandenong Creek



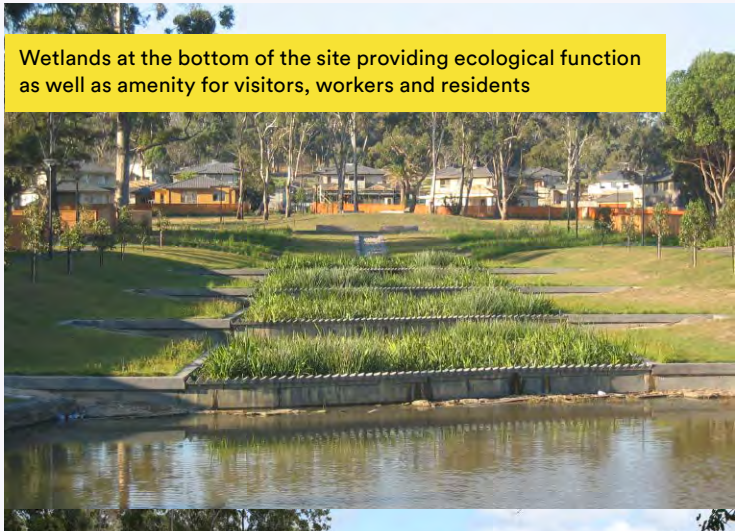
Residential properties overlooking open space



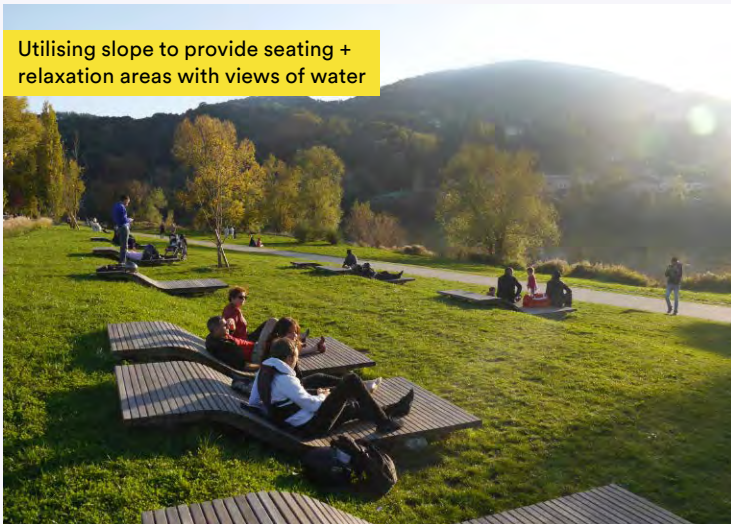
Wayfinding helping people navigate the precinct and further beyond to the EastLink Trail + Dandenong Creek



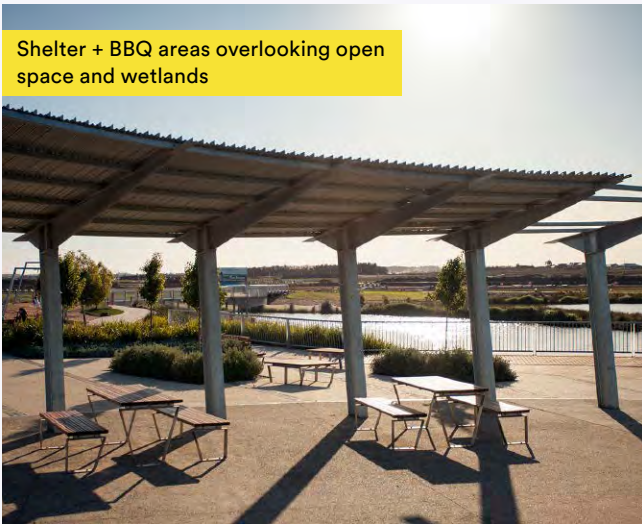
Potential playground areas



Wetlands at the bottom of the site providing ecological function as well as amenity for visitors, workers and residents



Utilising slope to provide seating + relaxation areas with views of water



Shelter + BBQ areas overlooking open space and wetlands





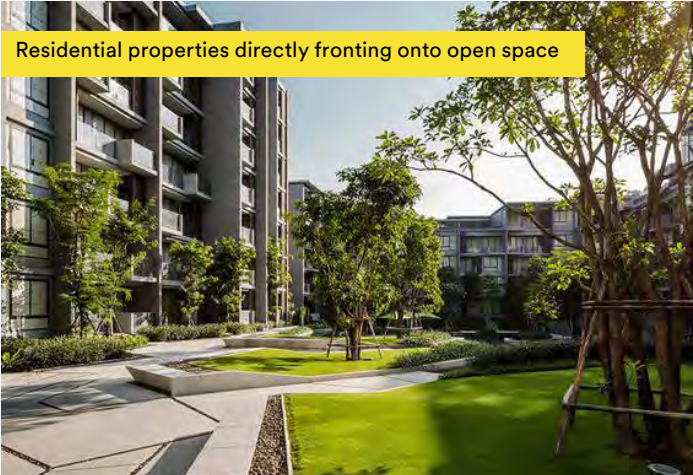
# The Local Park



The Local Park located at the centre of the AAG site is an open space designed to service the adjacent residential and office/commercial uses.

It will provide usable open space for the residents of the adjoining residential buildings as well as a place for the workers from the surrounding office/commercial buildings to enjoy on their breaks, encouraging them to get outdoors and enjoy the sunshine.

The park will have a contemporary, urban character with large grassed areas, significant trees and landscaping, and opportunities for passive recreation/play areas.



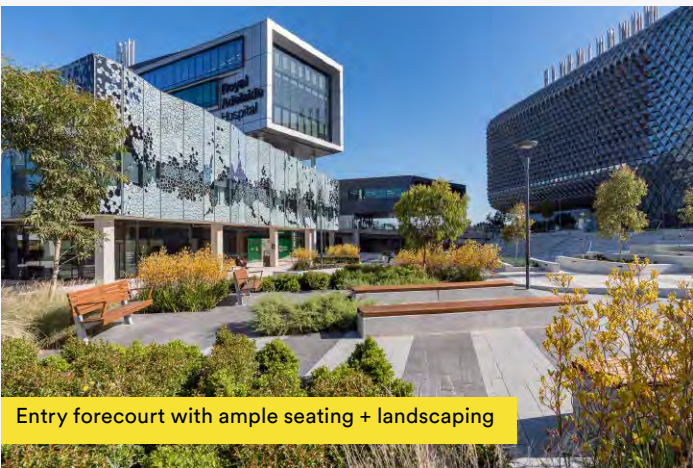
# The Hospital Plaza Gardens



Located centrally on the DHHS land, the Hospital Plaza Gardens is a large open space associated with the hospital and supporting health uses.

It will include an entry forecourt to the hospital as well as landscaped gardens to provide the hospital's patients, workers and visitors with access to open space, sunlight and fresh air, creating a natural, healing and therapeutic environment.

The vision and character for this space will be developed in detail by DHHS together with the hospital design.





# 3.10 Existing Vegetation + Habitat

A ‘Preliminary Tree Assessment’ was prepared by Homewood Consulting Pty Ltd to provide an assessment of the existing trees on site. The report recommended that 1 ‘Very High’ retention value tree (Asset ID 342 – located within the north-eastern corner of the DHHS site) and all 63 ‘High’ retention value trees be retained and incorporated into the masterplan design.

WSP also conducted an ecological assessment of the site. Their report recommended the retention of the higher quality Creekline Herb-rich Woodland (HZ1) located in the south-western corner of the site. It also recommended retention of all four scattered trees, the planted native vegetation along Boronia Road within VP01 as well as along Wantirna Road and Mountain Highway, and the large Radiata Pines along the southern portion of the western boundary within VP02. However, it is noted that these Radiata Pines are listed as a ‘very serious threat to one or more vegetation formations and it is recommended that VPA and Council negotiate the retention and removal priorities of these trees’.

Knox Urban Design Framework 2020 (UDF) identifies Boronia Road and Mountain Highway as ‘Bush Boulevards’. The Knox 2020 UDF sets an objective ‘to link the landscape corridors of Knox to the landscape of the hills with visually appealing road corridors that reflect the landscape character of the area.’ The UDF prioritises native or indigenous tree types as well as indigenous understorey. It is noted that Boronia Road and Mountain Highway are VicRoads roads and the UDF identifies the need for Knox to negotiate with VicRoads (now Department of Transport) for the implementation of the Bush Boulevard objectives.

Knox Street Tree Asset Management Plan 2016, and the Knox Green Streets Policy 2019, outline the program and requirements of planting in Council road reserves. With these policies Knox aims to improve canopy cover and support street tree diversity by including a mix of native and indigenous species.

In response to the recommendations from these reports, the masterplan has been designed;

- To ensure the protection of the very high retention value tree, located in open space within the DHHS site.
- To ensure the protection of the scattered tree in the south-western corner of the site, located in open space.
- To ensure the retention of the HZ1, located within open space in the south-western corner of the site.
- To encourage the protection of the high retention trees where they have a positive contribution to the character of the area. However, these trees are exotic species and where possible, should be replaced with Australian native trees to reflect the desired ‘Bush Boulevard’ character.
- The 3 scattered trees on the DHHS site are proposed to be removed by the new Aged Care facility, which has already been permitted under the planning approval for the site.



High retention value trees on DHHS site



Higher quality Creekline Herb-rich Woodland (HZ1)



Very high retention value tree (Tree ID 342)



High retention trees along DHHS western boundary





Note: Hatched areas on buildings indicate future capacity subject to further technical assessments.



# 4

# Appendices

# Appendix A Built Form Height + Scale Benchmarking

To determine an appropriate built form height and scale for the proposed WHP, a benchmarking study has been undertaken of a number of similar developments recently approved in the surrounding area.

There are a number of local residential developments and buildings (either proposed or completed) in surrounding suburbs that illustrate building heights in the range that is being considered for the WHP. Less common currently are the office/commercial or employment-based developments from which to draw suitable conclusions.

As noted in Plan Melbourne, Melbourne is going through substantial change both in population and in the nature of work. For many years the City of Knox has seen low retention rates for work relative to its population, and the WHP with its focus as a ‘Health City’ will contribute significantly to the local growth of employment uses.

The middle suburbs of metropolitan Melbourne are also seeing substantial change with development in Activity Centres such as Box Hill exceeding 30 storeys in some instances whilst in other locations such as Glen Waverley, Footscray and Moonee Ponds, development in excess of 20 storeys has been supported through recent approvals.

In areas such as Kew, similar mid-rise 7 to 12 storey development has been supported as appropriate within Major Activity Centre contexts. Similarly, within the southern and eastern corridors substantial development scale has been supported in and around Southland Shopping Centre, Moorabbin, Sandringham, Mentone, Elsternwick, Carnegie and Caulfield, with development of up to 6 to 8 storeys.

The examples on the following pages illustrate a built form scale and massing that is appropriate for the WHP.



**Knoxia - 456 Burwood Hwy, Wantirna South**

- 6 storey building height,
- Located opposite Knox City Shopping Centre,
- Residential medium rise apartments,
- Takes advantage of significant convenience, and community offering close by.

**Conclusions for WHP:**

- Example of a local ‘mid-rise’ development and scale (albeit residential only).



**Kubix - Burwood Highway and Stud Road, Wantirna South**

- 8 - 9 storey building height,
- No podium level articulation or setback,
- Residential medium rise apartments,
- Significant visual landmark built form to a major arterial road corner/ intersection of Stud Road and Burwood Road.

**Conclusions for WHP:**

- Example of a local ‘mid-higher rise’ development and scale (albeit residential only),
- Example of built form holding an important corner and creating a visual landmark for major viewlines.



**M-City - Dandenong Road and Blackburn Road, Clayton**

- 10 - 15 storey building height,
- Mix of retail, commercial, residential apartments and a hotel (short-stay accommodation),
- Located within the Monash NEIC, in close proximity to Monash University,
- Significant visual landmark built form to a major arterial road corner/intersection of Dandenong Road and Blackburn Road.

**Conclusions for WHP:**

- Example of a local ‘mid-higher rise’ development and scale with a mixture of residential and commercial uses,
- Example of built form holding an important corner and creating a visual landmark for major viewlines.





#### Caribbean Park - Scoresby

- 5 - 8 storey building heights,
- Predominately office/commercial with supporting uses (e.g. child care, gym, cafés),
- Located adjacent to EastLink, south of WHP, with visibility from EastLink corridor,
- Significant focus and investment in the public realm landscape to support the campus-style built form.

#### Conclusions for WHP:

- Example of a local 'mid-rise' office/commercial development at a precinct scale,
- Example of a clearly 'commercial' architecture, materiality and design aesthetic at a 5-10 storey scale,
- Example of built form with greater separation and setbacks in a 'campus-style setting' interspersed with high quality public space.



#### Nexus Corporate Park - Mulgrave

- 6 - 15 storey building heights,
- Mixed-use business precinct with hotel/short-stay accommodation,
- Located in Mulgrave adjacent to Monash Freeway, similar context to the WHP,
- Diverse range of significant commercial tenants in an integrated masterplanned precinct.

#### Conclusions for WHP:

- Example of a local 'mid-higher rise' office/commercial development at a precinct scale,
- Example of a clearly 'commercial' architecture, materiality and design aesthetic at a 6-15 storey scale,
- Example of significant built form used as a visual landmark for the precinct, when viewed from key arterial roads and the freeway.



#### 254 Wellington Road, Mulgrave

- 8 storey building height,
- Commerical/office development with supporting retail at ground level,
- Located within the Monash NEIC.

#### Conclusions for WHP:

- Example of a local 'mid-rise' office/ commercial development at a precinct scale,
- Example of a clearly 'commercial' architecture, materiality and design aesthetic at a 5-10 storey scale.



#### Ringwood Holiday Inn - 301 Maroondah Hwy, Ringwood

- 6 - 16 storeys,
- Hotel and residential apartments,
- Located adjacent to EastLink, in close proximity to Eastland Shopping Centre and Ringwood Station.

#### Conclusions for WHP:

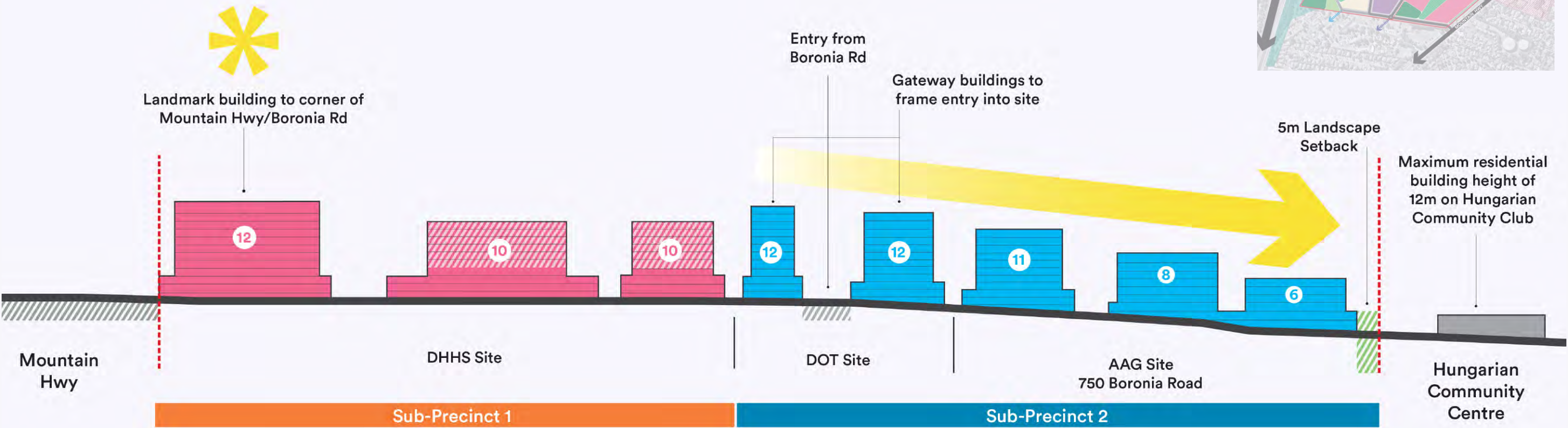
- One of the few examples over 10-12 storeys, incorporating largely residential apartment uses,
- Example of a scale of development - residential/ hotel - that can be supported when located adjacent and convenient to good public transport and retail offering.

# Appendix B Built Form Analysis

The diagrams below and on the subsequent page illustrate the transitioning of building heights from the north-eastern corner of the site and along Boronia Road, to the surrounding residential neighbourhoods.

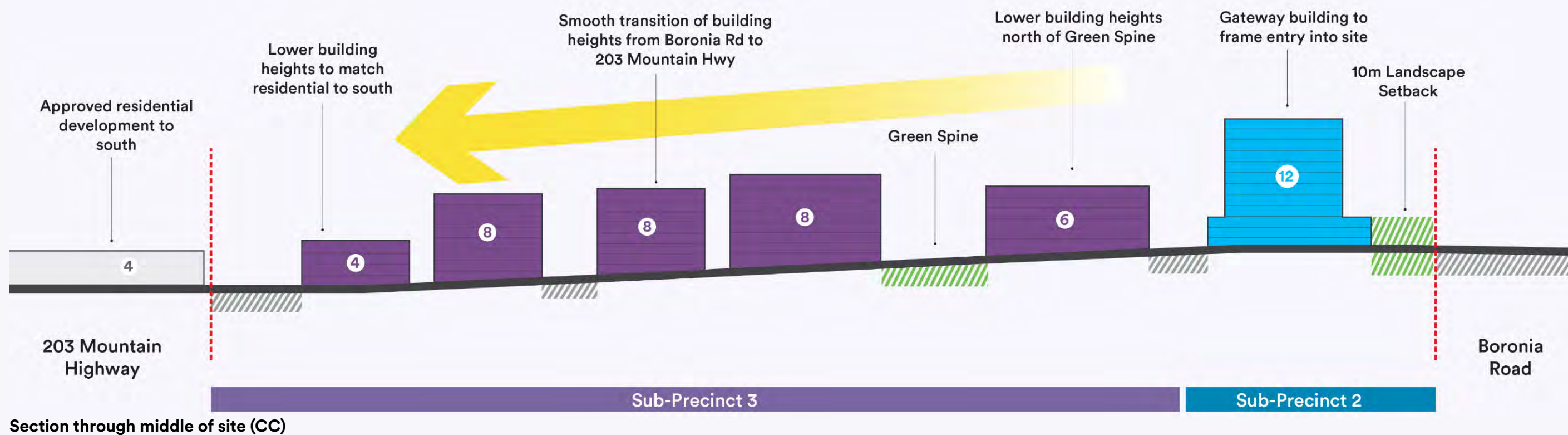
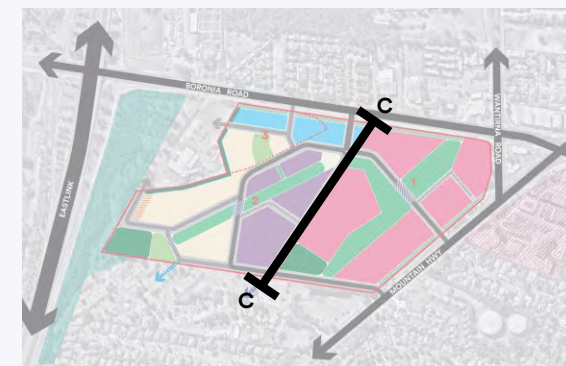
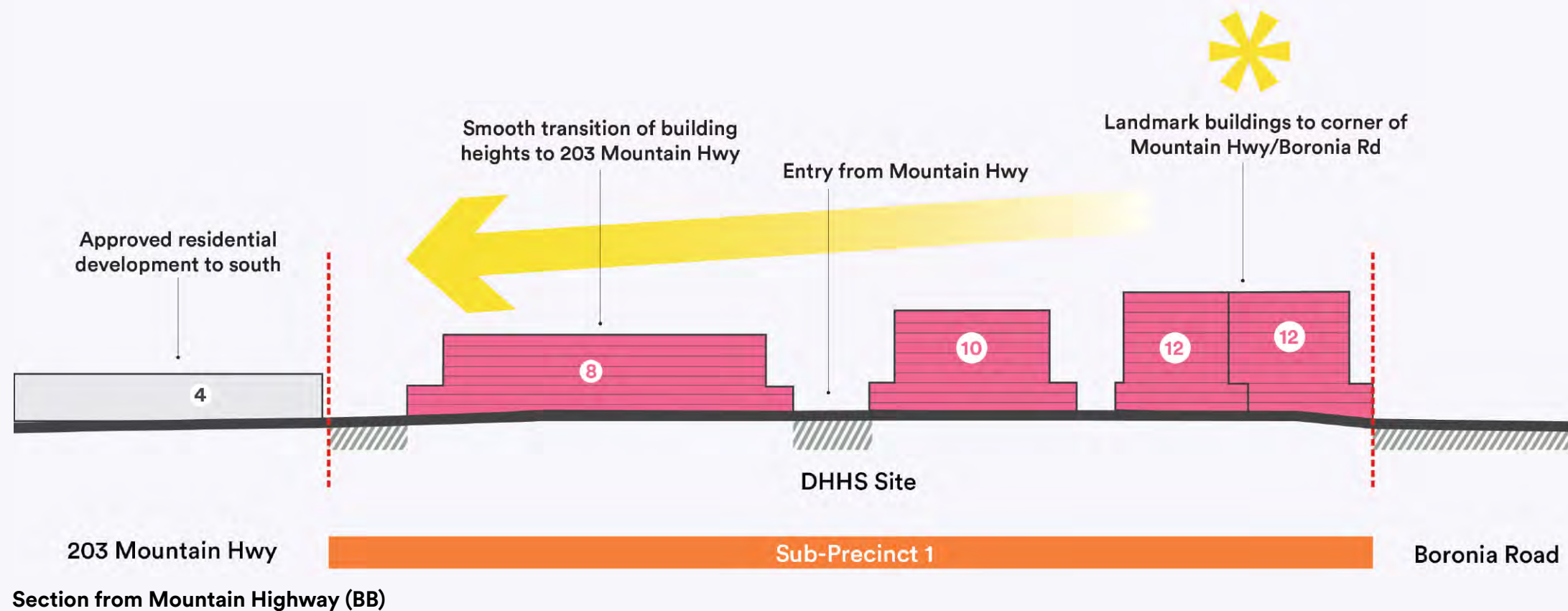
The preferred maximum building height for the landmark corner building is 12 storeys, as this is the maximum height that can be achieved without overshadowing the residential properties on the south-eastern side of Mountain Highway (tested as block massing model at

- potential for greater building heights subject to built form setbacks and detailed design). The lower building heights to the site interfaces and boundaries are typically 4 storeys, providing a transition towards the approved townhouse development up to 4 storeys to the south and maximum allowable height of 12m on the Hungarian Community Centre site. These 4 storey height limits are located primarily along the interface with the residential to the south.



Note: Hatched areas on buildings indicate future capacity subject to further technical assessments.







# Appendix C   Solar Analysis

Solar aspect and open space amenity for the public and external spaces in and around the future Hospital are important contributors to the health and wellbeing aspect of the WHP. Whilst these have been incorporated and analysed in the framework plan, it is acknowledged that the detailed design of the hospital, to be undertaken by DHHS, will address and reinforce these spaces in detail. As such, the final architectural form of the hospital, particularly given the site topography, will significantly frame and inform these external public spaces and their final solar aspect.

Solar studies have been undertaken to test building envelopes and assess overshadowing of public open space and major pedestrian networks through the WHP, as well as overshadowing of surrounding properties.

For the purposes of the solar study, the key areas to be protected include:

- Residential properties on the south-eastern side of Mountain Highway.
- Future residential properties south of the WHP.
- The Green Spine.
- The Urban Square.
- The Local Parks.

To avoid overshadowing the residential properties on the south-eastern side of Mountain Highway, preferred maximum building heights have been set for the buildings fronting Mountain Highway. The future residential properties south of the WHP are also protected from overshadowing via reduced building heights adjacent to the southern boundary and a 20m wide road reserve located along the southern property boundary, providing the necessary separation.

In terms of solar access to the key public open spaces, Knox City Council does not currently have a specific policy relating to performance criteria or acceptable thresholds of solar amenity for public realm. For simplicity and clarity in applying solar aspect criteria to the WHP at a masterplan and framework level, a ‘two thirds’ approach has been adopted (noting this is applied in the absence of policy or empirical criteria). This incorporates at least ‘two thirds’ of any dedicated open space to be protected from overshadowing at the equinox, to ensure built form does ‘not unreasonably reduce the amenity of public spaces’.

As such, the following principles for solar aspect have been adopted to develop an appropriate built form response that does not cast unreasonable shadowing on the adjoining residential neighbourhood and internal public spaces.

- Ensure that the development of the precinct does not overshadow the residential properties surrounding the site at the equinox.
- Ensure that at least two-thirds (66% minimum) of a dedicated open space receives sunlight between 11.00am and 2.00pm at the equinox.

The diagrams on the following pages indicate the maximum overshadowing potential of the developed sites at 11am and 2pm at the equinox (September 22).

In conclusion, it is stated that between 11am and 2pm at the equinox:

- The Urban Square receives sunlight to at least two-thirds (66% minimum) of its area.
- The Local Parks receive sunlight to at least two-thirds (66% minimum) of their area.
- The Green Spine receives sunlight to at least two-thirds (66% minimum) of its area, noting there is some overshadowing from the health/education/research buildings that abut the spine to the north, subject to detailed design.



# Solar Study - 11am, 22 September



Note: Hatched areas on buildings indicate future capacity subject to further technical assessments.



# Solar Study - 2pm, 22 September



Note: Hatched areas on buildings indicate future capacity subject to further technical assessments.



# Appendix D Open Space Benchmarking

To better understand the slope of the Green Spine, a benchmarking study has been undertaken comparing a range of open spaces around Melbourne.

The purpose of this benchmarking was to specifically look at the gradient of generally linear open spaces and the design measures implemented to manage the slope. The purpose was not to look at the types of activities or uses within the spaces.

The key findings from the study are:

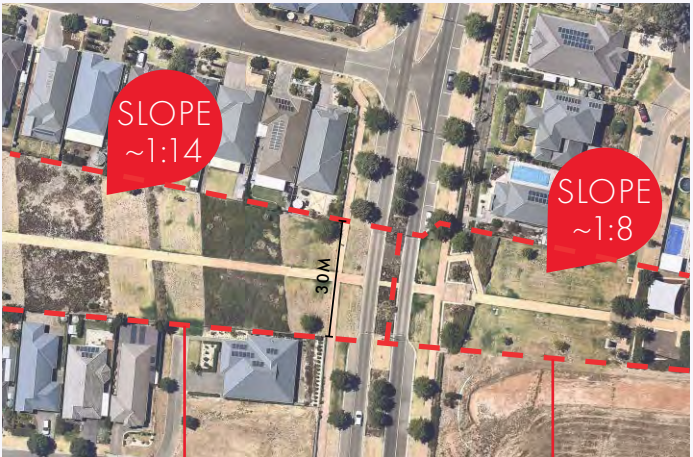
- The slope of the Wantirna Green Spine is gentle enough to accommodate paths to achieve DDA access without the need for excessive ramps, switchbacks and hardstand areas.
- The width of the Wantirna Green Spine is sufficient to allow room for paths as well as generous areas for softscape (grass, landscaping and trees).
- Drawing on the findings of **Appendix C Solar Study**, the width of the Wantirna Green Spine (particularly the western section) is a sufficient width to ensure it is not overshadowed from surrounding buildings.

Based on these findings, it is concluded that the slope and width of the Green Spine is adequate, traversable and workable, in order to achieve the desired open space vision sought within the Masterplan.



### The Green Spine, Wantirna Health Precinct

- 25m wide linear reserve running from Urban Square to Local Park/Stormwater Management Reserve at the bottom of the hill.
- Combination of buildings directly fronting reserve and local road frontage.
- Overall slope approx. 1:20 which complies with universal access grades.



### Parkindula Linear Reserve, Mt Barker, SA

- Linear reserve connecting to playground at bottom of hill (similar width to Wantirna Green Spine).
- Slope of eastern section ~1:8 (significantly steeper than Wantirna Green Spine) and requires stairs and level landings to accommodate slope.
- Slope of western section ~1:14 (closer to Wantirna Green Spine but still steeper) allowing for central path and large landscaping areas.



### Main Drive, Kew

- Slope approx. 1:14 (steeper than Wantirna Green Spine).
- Wide linear reserve running down slope of a scale and width similar to Wantirna Green Spine.
- Footpaths either side provide access to residential properties.
- Central grassed area for relaxation and recreational opportunities.





#### Cascade Walk Reserve, Springthorpe

- Slope approx. 1:17 (similar to Wantirna Green Spine albeit still steeper).
- Narrow linear reserve with 2 footpaths running adjacent to residential properties.
- Footpaths achieve DDA access running up slope with no need for stairs, handrails or transition grades.



#### Stables Circuit Park, Tullamore, Doncaster

- Slope approx. 1:10 (much steeper than Wantirna Green Spine).
- DDA accessible paths with significant areas of softscape/landscaping.
- Residential properties directly fronting open space.



#### Brookwood Ave Linear Reserve, Doreen

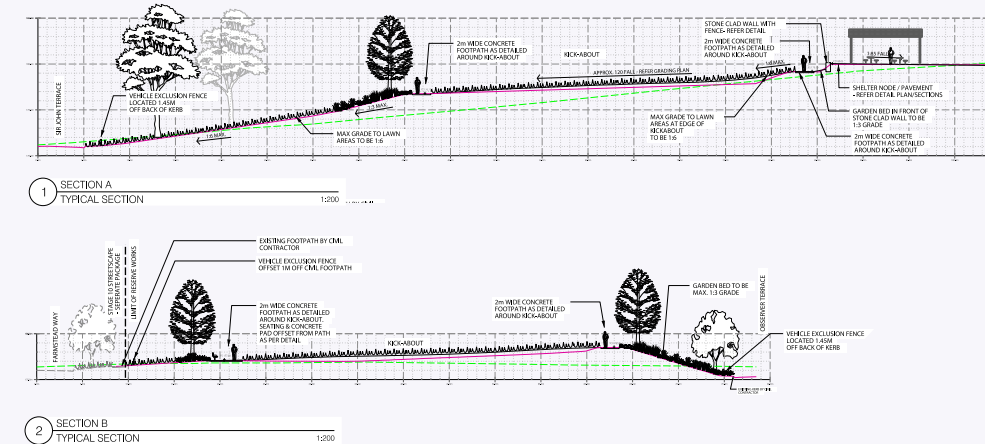
- Slope approx. 1:10 (much steeper than Wantirna Green Spine).
- Linear park providing pedestrian link to hilltop reserve (similar width to Wantirna Green Spine).
- Residential dwellings siding onto reserve.
- Curved footpath to achieve DDA access.



#### Cowes Foreshore, Phillip Island

- Overall slope approx. 1:10 (much steeper than Wantirna Green Spine).
- Series of grassed and landscaped areas to accommodate slope.
- Diagonal ramp to achieve DDA access with minimal switchbacks and hardscape areas.





- Logistic business park with office, warehouse buildings, expansive parkland, retail areas and lifestyle facilities. Similar mix of uses and interfaces to those anticipated for WHP.
- Landscape spine includes water feature, hardscape areas, generous landscaped areas and ample seating.
- Level changes accommodated through stairs and terraced landscape areas.
- Stairway areas are much steeper than Wantirna Green Spine, but the scale and width of open space to building heights is a useful reference.

- Neighbourhood park located on top of hill with approx. 1:10 slope (much steeper than Wantirna Green Spine).
- Includes playground and kickabout area on flat land on top of hill with max. 1:6 grade to grassed areas and 1:3 to landscaped areas.
- DDA accessible ramps throughout park to easily traverse grade.



# Appendix E Indicative Masterplan Renders



Note: Hatched areas on buildings indicate future capacity subject to further technical assessments.





Note: Hatched areas on buildings indicate future capacity subject to further technical assessments.





Note: Hatched areas on buildings indicate future capacity subject to further technical assessments.

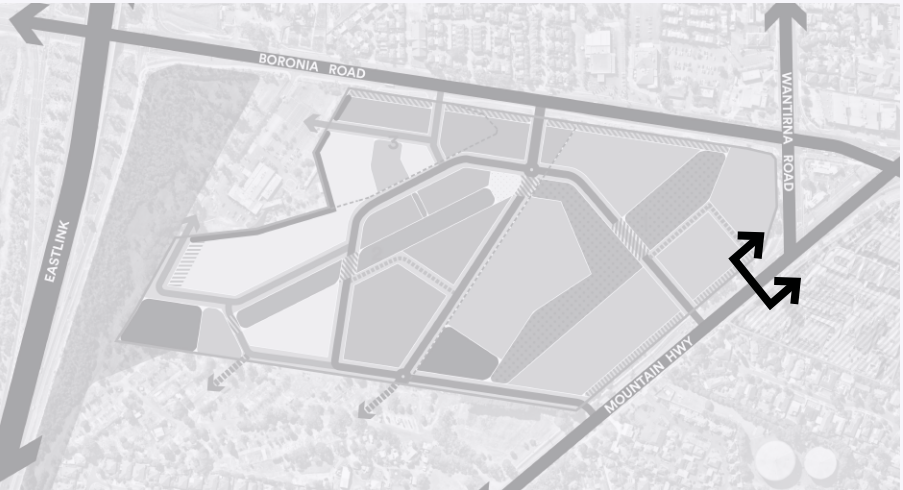




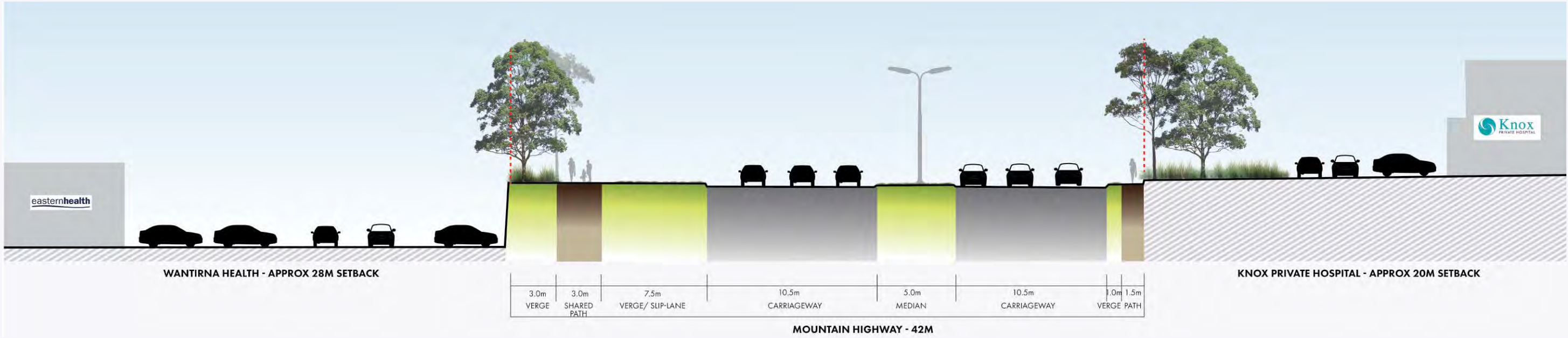
Note: Hatched areas on buildings indicate future capacity subject to further technical assessments.



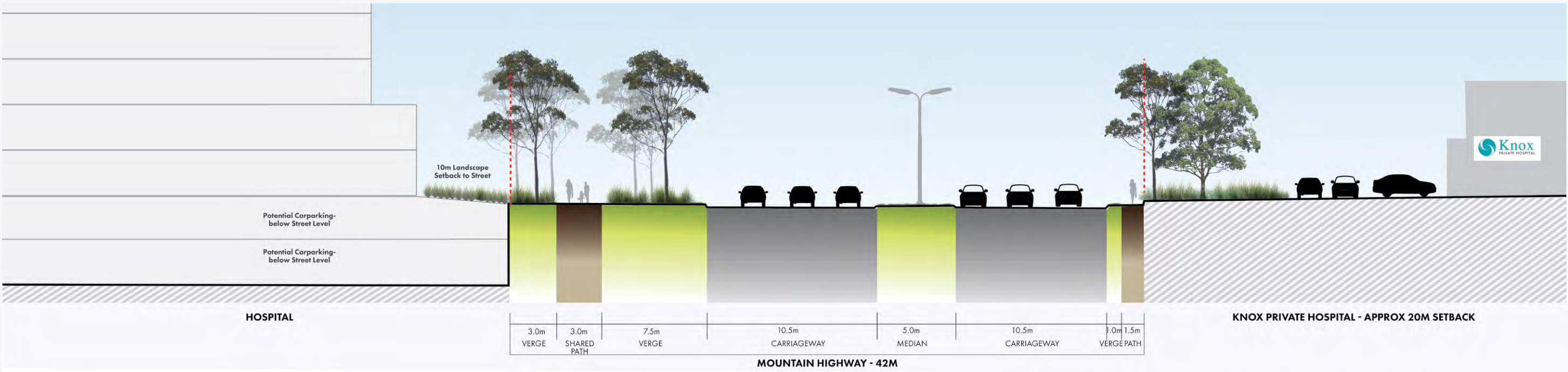
# Appendix F Site Sections & Interfaces



Mountain Highway - Existing Section



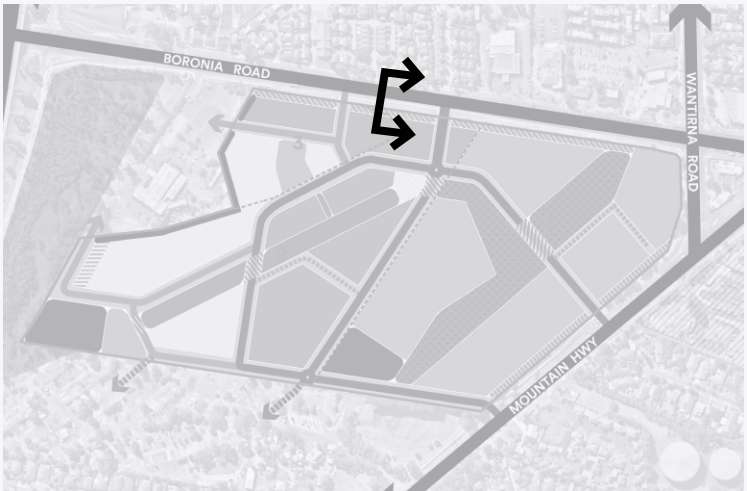
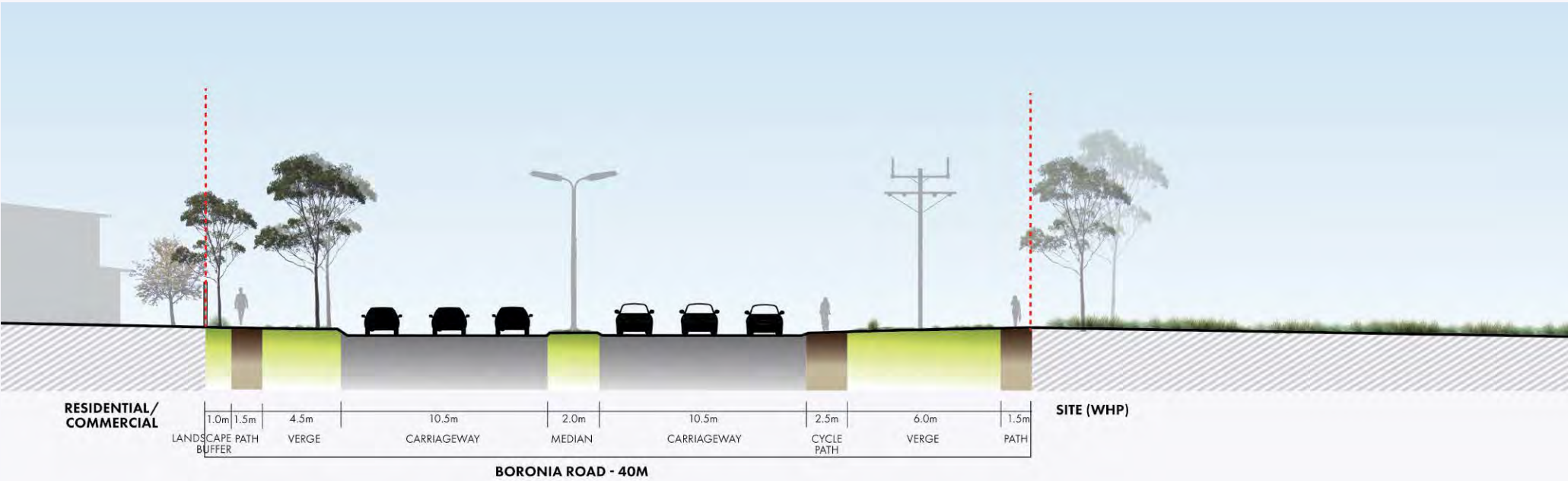
Mountain Highway - Proposed Section



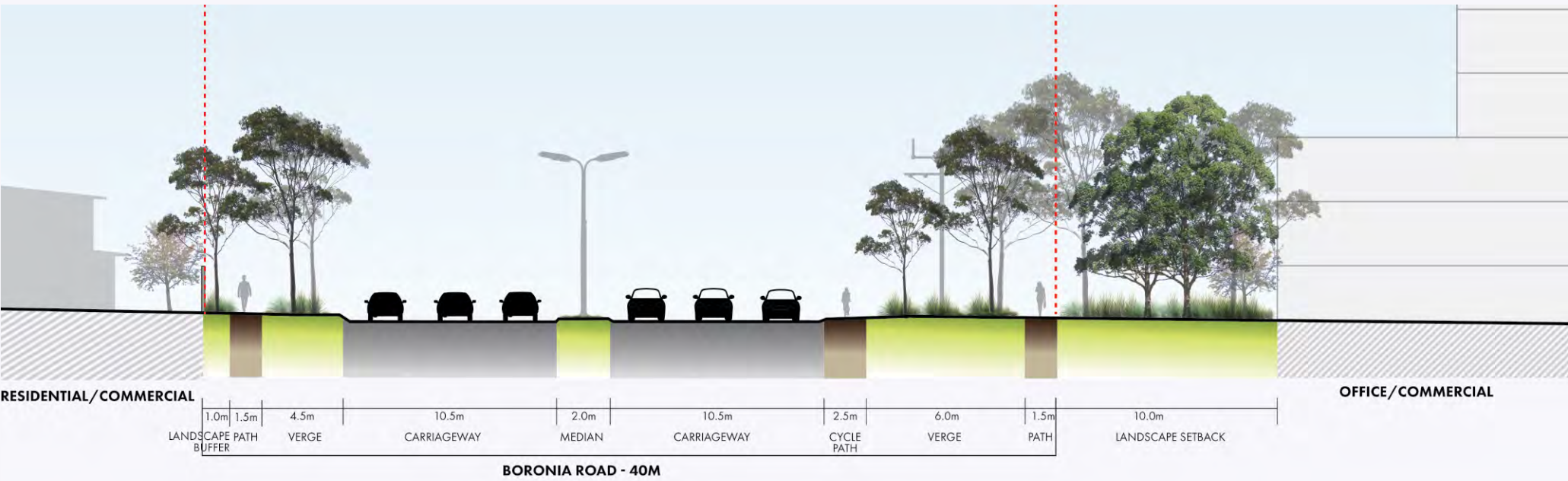


# Site Sections & Interfaces

## Boronia Road - Existing Section

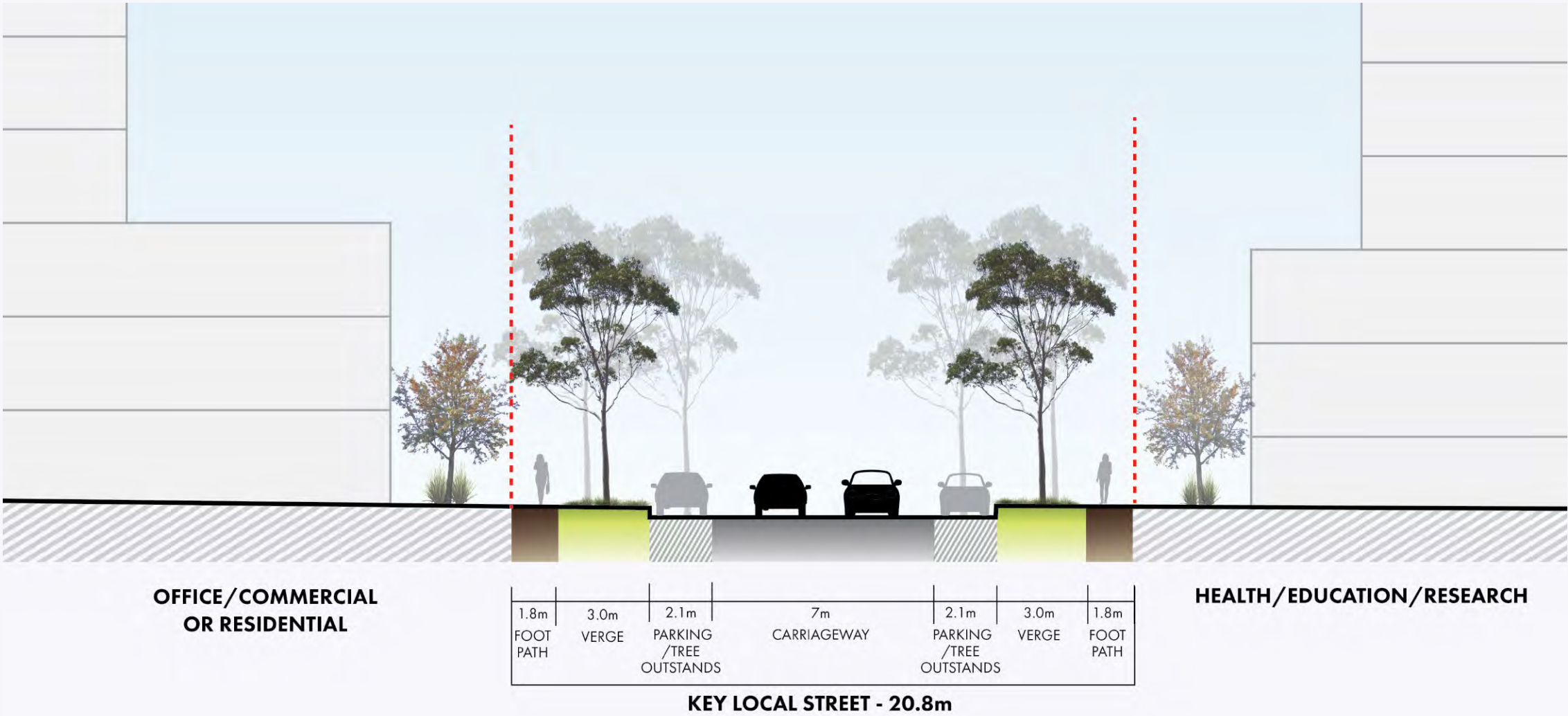
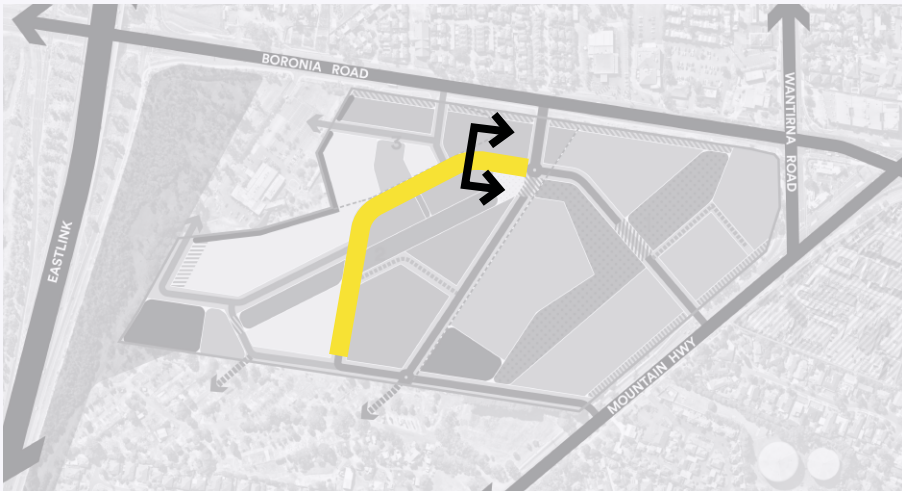


## Boronia Road - Proposed Section



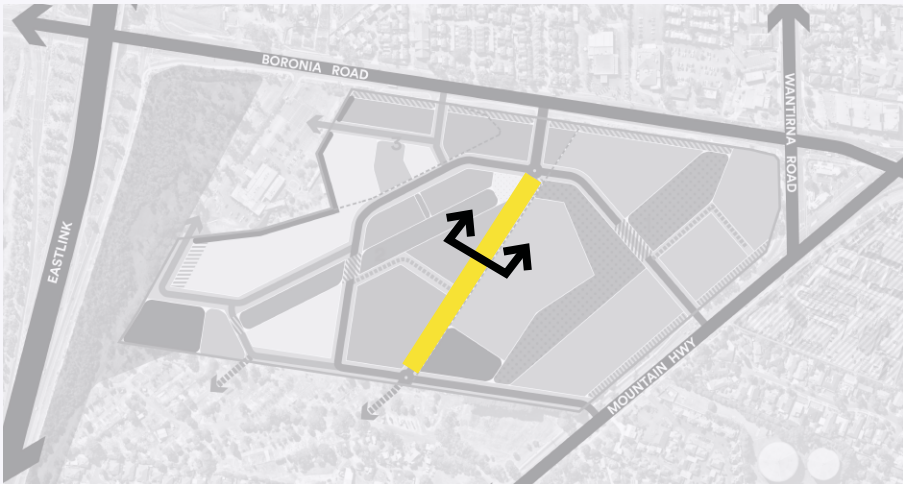


# Site Sections & Interfaces





# Site Sections & Interfaces



HEALTH/EDUCATION/RESEARCH

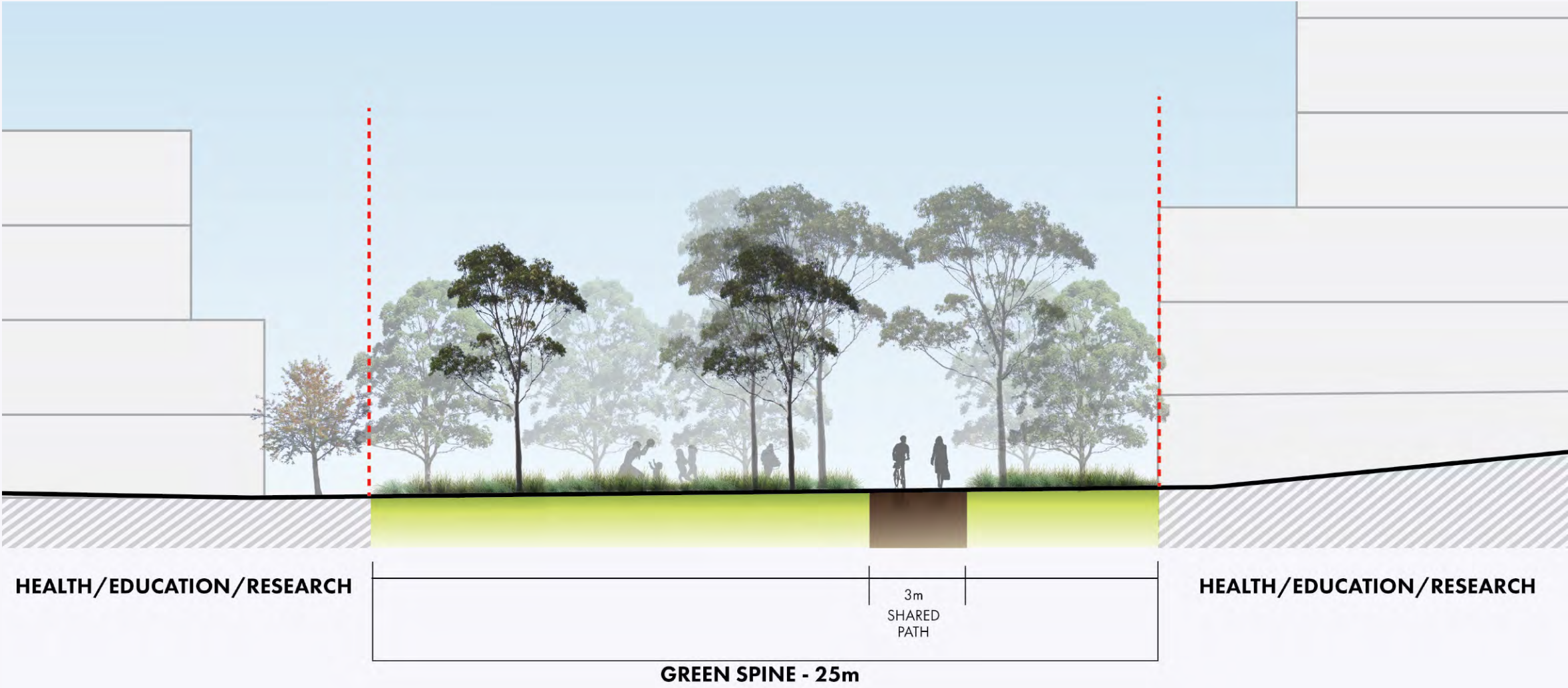
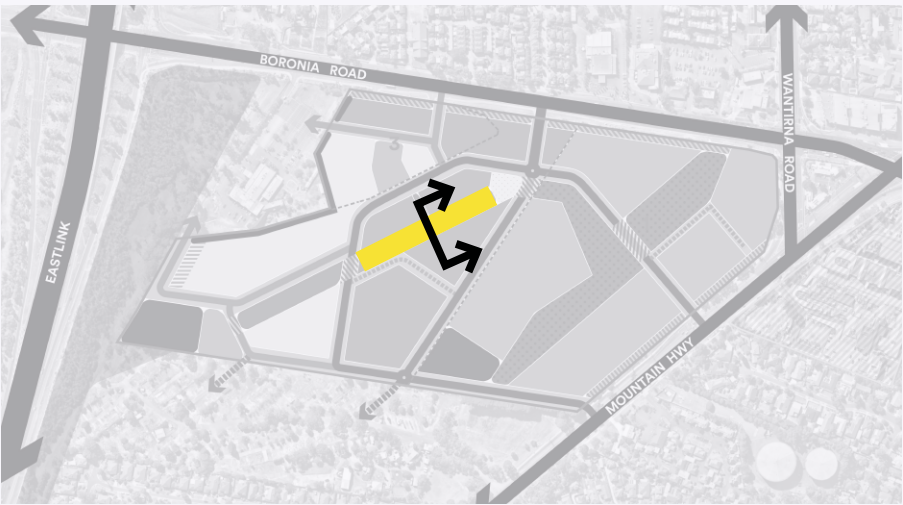
1.8m	3.0m	2.1m	7m	2.1m	3.0m	1.8m
FOOT PATH	VERGE	PARKING/ TREE OUTSTANDS	CARRIAGEWAY	PARKING/ TREE OUTSTANDS	VERGE	FOOT PATH

HOSPITAL

KEY LOCAL STREET - 20.8m



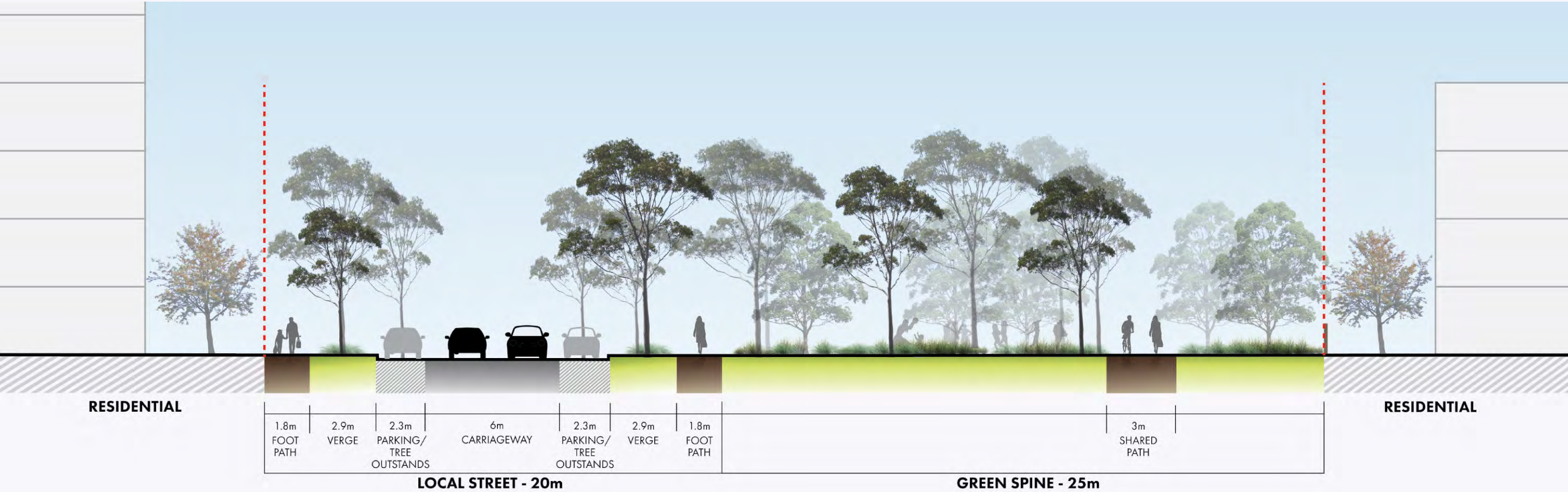
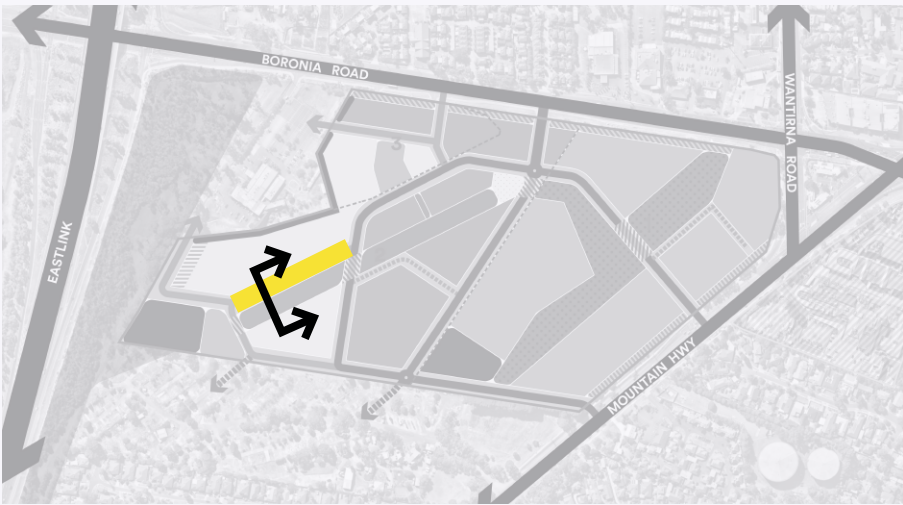
# Site Sections & Interfaces



Note: Shared path to meander through Green Spine. Exact location to be confirmed at detailed design stage.



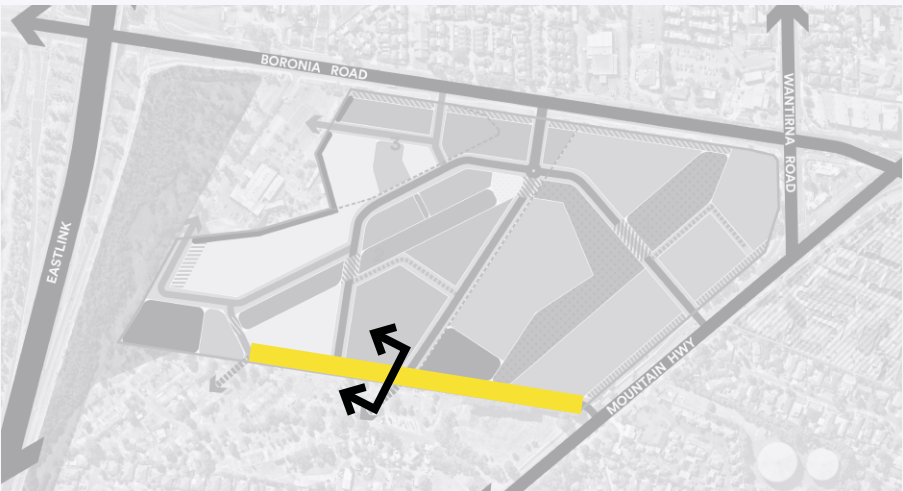
# Site Sections & Interfaces



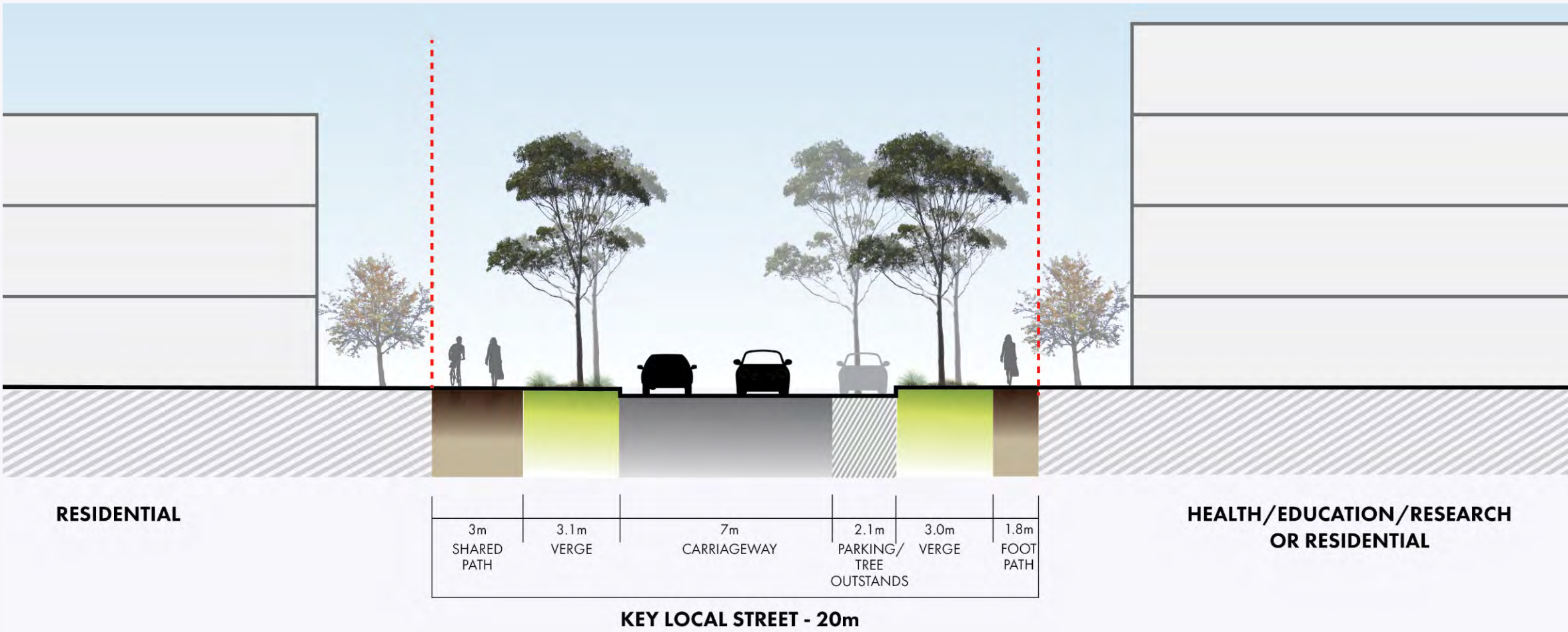
Note: Shared path to meander through Green Spine. Exact location to be confirmed at detailed design stage.



# Site Sections & Interfaces



## Southern Interface





# Appendix G Indicative Residential Yield

Indicative Residential Yield	
Heights*	4-8 storeys
GFA**	79,380m <sup>2</sup>
NLA***	63,504m <sup>2</sup>
Floorplate efficiency	80%
Average apartment size	65m <sup>2</sup>
Dwellings****	882
Car parking configuration^	Basement, undercroft, at-grade

Note: All masterplan and building layouts are derived from the high level, schematic concept to inform the WHP Structure Plan. As such, any areas or yield implications are indicative only, and subject to future detailed concept development and detail.

\*The building heights are consistent with the Masterplan Built Form Plan, which has incorporated an urban design response to building heights through detailed site analysis, synthesis of a significant number of specialist studies, and built form testing approach including assessment of components such as (but not limited to) overshadowing of public streets, and proposed public open space. As such, the building heights are subject to more detailed concept development and architectural design to establish the final detailed building form.

\*\*Building footprint areas are highly indicative, and while not as essential component of the structure plan, they have been incorporated schematically to aid in the explanation of the masterplan layout, and to help support master plan assessments such as overshadowing, viewlines and vistas, and also potential precinct yields at a high level.

\*\*\*The calculation of Net Lettable Area (NLA) or Net Saleable Area (NSA) is premised on the Gross Floor Area, and then allowing for a number of key building spatial components that would typically occur within residential buildings, and would reduce the overall final area that could be saleable, or leased. This percentage has been assumed as 80% of the GFA, which reflects a reduction of 20% in overall floor area to typically account for elements such as stairs, lift cores, circulation areas, back of house and service areas, foyers and entries etc.

\*\*\*\* In order to calculate a high level estimate of dwelling yield, an assumption is made for the average dwelling size as a 65sqm apartment. This takes into account typical one bedroom apartments at approx. 45-55sqm, and typical two bedroom apartments at approx. 60-75 sqm, and typical three bedroom apartments at approx. 80 – 100 sqm or greater. It also takes into account a typical yield breakdown which might include something like 15% three beds, 45% two beds, and 40% one beds. These assumptions contain a number of variables, and are subject to change on any given development – but initially provide a sense of the range of overall yield for planning purposes.

^ Given there is no detailed architectural concept or layout for each building, the carparking strategy - basement carparking, undercroft, at-grade or combination – is not known at this stage. However, in order to still give a reasonable estimate of overall yield, it is fair to adopt an assumption that a portion of the ground level floorplate should be deducted to allow for either carparking spaces, or ramps /circulation to basement etc. A typical deduction is 50% of the ground floor GFA, which has been adopted in this case. Hence the reduction in equivalent dwellings to reflect this.



