02.03 Strategic Directions

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02.03-1 Settlement

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Settlement framework

Knox has the complex settlement pattern of an established urban municipality. It is located between the Dandenong Creek Valley and Dandenong Foothills regional green wedges in Knox that buffer Melbourne's expanding suburbs.

To accommodate a growing residential and work population, and manage character expectations and significant environmental features and risks, a fine-grained settlement strategy is applied in Knox. The strategy is based around:

- Activity centres.
- Significant business locations.
- Residential areas.

Green wedges

Green wedge land in Knox contributes to the significant landscapes that shape the overall identity and character of the municipality.

Green wedges strategic directions:

- Protect the Dandenong Foothills, Sites of Biological Significance, and other areas of significant biological and landscape value from inappropriate development.
- Protect existing and potential aesthetic, biodiversity, landscape, amenity, cultural and agricultural values of green wedge land.

Activity centres

Most activity centres in Knox have good access to a range of public transport options and offer a range of activities to support living locally. Retail growth is anticipated in activity centres.

The increasing demand for housing within activity centres is changing their traditional nature and role and resulting in competing demands between commercial and residential uses.

Some activity centres are performing with low levels of activity and vitality and revitalisation is encouraged.

The role and function of each Activity Centre is set out in the table below.

The five major activity centres each have a clear direction:

- Knox Central (Wantirna South - Knox Central, known as Knox Central) Major Activity Centre is a regional level centre with significant opportunities for mixed use and medium to high density residential development. It has a major bus interchange and there is potential to support extending the tram network.
- Bayswater, Boronia and Rowville Major Activity Centres each serve a municipal catchment and have significant opportunity for retail, office and housing growth.
- Mountain Gate Major Activity Centre meets the everyday needs of the local community. There are moderate housing opportunities in and around the commercial centre. Poor public transport access impacts the potential of the centre.

Type of centre	Centres	Characteristics
Major activity centre	Bayswater	Outlined above.

Type of centre	Centres	Characteristics
	Boronia Knox Central Mountain Gate Rowville	
Large neighbourhood activity centre	Scoresby Village Studfield, Wantirna South Wantirna Mall, Wantirna	Provide convenience retail and commercial activities. Have a SmartBus Route and local bus routes. Housing opportunities include villa units and townhouses, with some apartments or mixed-use development along arterial roads. Apartment opportunities above ground floor in the Commercial 1 Zone.
Medium neighbourhood activity centre	**Alchester Village, Boronia** **Ferntree Gully Village** Knox Gardens, Wantirna South Knoxfield Rowville Lakes, Rowville **The Basin** The Orchards, Wantirna South **Upper Ferntree Gully** Wellington Village, Rowville	Provide convenience retail and commercial activities. Ferntree Gully and Upper Ferntree Gully each have a train station but are constrained by environmental values and risks. Other centres have access to at least one local bus route. Housing opportunities include apartments above commercial uses in the Commercial 1 Zone.
Small neighbourhood activity centres	Anne Road/Kathryn Road, Knoxfield Boronia Road/ Scoresby Road, Boronia Burwood Highway Corridor (east of Dorset Road between Newtown Street and Forest Oak Drive), Ferntree Gully and Upper Ferntree Gully Burwood Highway Corridor (west of Dorset Road/east of Westley Street), Ferntree Gully Cavell Street/Armin Street, Scoresby **Dorset Road/Landscape Drive, Boronia** **Glenfern Road/Mason Street, Ferntree Gully** Harcrest Boulevard, Wantirna South Lewis Road/Coleman Road, Boronia Manuka Drive/Loretto Avenue, Ferntree Gully	A limited range of shops and services which serve convenience needs. Have access to local bus routes or are within walking distance of a SmartBus Route. Housing opportunities include apartments above commercial uses in Commercial 1 Zone and Mixed Use Zone. However, this is limited by the smaller size of these centres and their interface with sensitive land uses.

Type of centre	Centres	Characteristics
	Mountain Highway/Kumala Road, Bayswater Stud Bay (Stud Road, north of Leonard Street), Bayswater	
Future neighbourhood activity centre.	Caribbean Park	Scale to be determined through planning.

Note: Bolded activity centres are within the Dandenong Foothills area, and additional policy applies.

Activity centre strategic directions:

- Maintain a network of viable activity centres that provide access to a wide range of goods and services proportional to their role and function.
- Minimise growth within activity centres in the Dandenong Foothills.
- Minimise out of centre retail activity that weakens the role and viability of designated activity centres.
- Support a greater range and increased densities of residential development.
- Improve amenity, accessibility and connectivity.

02.03-2 Environmental and landscape values

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Biodiversity

Knox has many sites of national, state, regional and local biological significance. These sites provide attractive and distinctive landscapes but are at risk of being degraded and lost to development.

Up to one half of remaining flora species will be lost within two decades if no preventative action is taken. It is also important to preserve indigenous flora and fauna outside the recognised sites.

Biodiversity strategic directions:

- Retain and enhance the remnant native vegetation.
- Minimise any reduction in indigenous vegetation from land use fragmentation and development pressure.
- Maximise opportunities for the survival of indigenous species amid climate change.
- Protect natural environments, native vegetation and major environmental and landscape features, including the Dandenong Foothills, Dandenong Creek Valley and Sites of Biological Significance.
- Minimise loss of habitat and biodiversity.
- Control pest plants.
- Promote biodiversity protection to benefit the health and wellbeing of the community, including amenity, recreation, social interaction, health and improved liveability.

Creek corridors

Knox is traversed by a series of small creeks that create a corridor network. These spaces have the potential to contribute significantly to Knox's landscape and recreation resources.

Creek corridors strategic directions:

- Create amenable open space networks of walking and cycling paths, public spaces, landscape and ecological corridors along creek corridors.
- Activate creek corridors and interfaces by improving connectivity between public and private spaces.

Significant environments and landscapes

The most significant landscape characteristic of Knox is its suburban area set in a larger natural and rural landscape.

Canopy trees, including trees in suburban backyards, are an integral component in Knox's natural environment and maintaining its green skyline and leafy green landscape character.

The Dandenong Foothills provide a scenic backdrop to views from the eastern suburbs of Melbourne. They are a major defining element of Knox's character and identity.

The Dandenong Foothills have high environmental and social values of metropolitan significance. Residential development and urban consolidation objectives must not outweigh the environmental and landscape objectives for the Foothills.

A large part of the regionally significant Dandenong Valley Parklands are within Knox.

Rural land in Knox contributes to its significant landscapes. The residential areas located within the Dandenong Foothills also contribute to the significance of this landscape.

Knox has identified significant road corridors. 'Bush Boulevards' are arterial roads with wide reservations planted with informal avenues of native trees. In the Foothills the roads become 'Paths into the Hills', with roadside verges containing understorey and canopy vegetation. Buildings along these roads contribute to this landscape character with setbacks from the street, and canopy tree planting. These road corridors link the suburbs of Knox to the landscape character of the Dandenong Foothills. They also provide environmental benefits, supporting local biodiversity, providing wildlife corridors, enhancing remnant native bushland and mitigating the effects of climate change.

'Gateways' in Knox are entry points into the City that intersect with the significant landscapes of the Dandenong Foothills, the Lysterfield Valley and the Dandenong Creek Valley. 'Dandenong Creek Valley Gateways' have a sense of openness and views into the creek valley, promoting the City's green landscape identity. 'Tourist Gateways' are on the tourist route for visitors to the Dandenong Ranges.

Significant environments and landscapes strategic directions:

- Retain canopy trees as the single most important factor in defining Knox's landscape character and its natural environment.
- Strengthen Knox's green and leafy streetscapes and its identifiable landscape character.
- Maintain the unique landscape character, amenity and natural values of Knox's significant landscapes, including the Dandenong Foothills, Lysterfield Valley and the Dandenong Creek Valley.
- Protect the heavily treed canopy and unique character of the Dandenong Foothills as a landscape of metropolitan significance by avoiding additional residential development and urban consolidation.
- Maintain views of the Dandenong Foothills from within the municipality and around metropolitan Melbourne by:
  - Retaining canopy trees.
  - Designing and siting buildings and works to sit below the dominant tree canopy height.
- Create attractive road corridors that link the suburbs with the landscape of the Dandenong Foothills.
- Enhance landscape-dominant gateways that uniquely identify the City of Knox.

- Provide landscape character and a green skyline, particularly along ridgelines and creek valleys, within major views and vistas and as a backdrop to urban and rural areas.
- Avoid the fragmentation of land.

02.03-3 Environmental risks and amenity

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Environmental risks

Climate change impacts the environment and people, and exacerbates environmental risks such as drought, changes in temperature and the urban heat island effect, and extreme weather events.

Bushfire risk is significant in parts of Knox with the greatest risk at the interface between urban development and the foothills of the Dandenong Ranges and bushland in Lysterfield.

Parts of Knox are prone to flooding, including existing urban areas where natural overland flow paths have been lost over time.

There are several potentially contaminated sites within Knox that may be redeveloped to a sensitive use in the future.

Other environmental issues affecting Knox include air quality, energy efficiency, noise, water quality, catchment management, land development, the loss of vegetation and waste management.

Environmental risk strategic directions:

- Adapt the built environment to mitigate the impacts of climate change.
- Minimise the intensification of high-risk areas.
- Encourage sustainable design in all developments.
- Reduce demand for the use of private cars.
- Green urban areas.
- Manage flood risk from an increased frequency of intense storms.
- Reduce risk to life and property from bushfire by directing new development to lower risk areas and managing bushfire risk along natural corridors.
- Develop tailored, site specific responses in the Dandenong Foothills and Lysterfield to mitigate bushfire risk whilst also achieving protection of landscape and biodiversity values.
- Identify, test and remediate contaminated and potentially contaminated land to a standard suitable for any intended new use or development.

Land use compatibility

Conflict between incompatible land uses, particularly the encroachment of sensitive land uses on key industrial areas, former landfills, quarries, materials recycling and transfer stations, may lead to risks to human health and amenity.

Knox has two closed landfills that contained putrescible waste. Sensitive land uses and development sites are located within the EPA recommended buffer distances.

Residential areas require some complementary non-residential uses for the convenience of residents and to provide some local employment. These uses can include medical centres, veterinary centres, display homes, convenience shops, child minding centres, places of assembly and places of worship.

Licensed premises bring important economic, social and cultural benefits to Knox. However, they can also have detrimental amenity and public safety impacts.

Gaming machine gambling is a legitimate form of recreation but it also has the potential to cause harm in the form of problem gambling. Knox has a higher than average gaming machine density and gaming machine loss per capita compared to Metropolitan Melbourne.

Land use compatibility strategic directions:

- Assess environmental risks, including land contamination and gas migration prior to use and development of closed landfill sites and their surrounds.
- Manage interfaces with the Knox Transfer Station and other heavy industrial sites, to support the ongoing operation without exposing residents to adverse effects.
- Maintain the viability of employment land by protecting it from the encroachment of other uses that do not support industry and a production economy.
- Ensure new industrial development minimises potential adverse impacts on surrounding sensitive uses.
- Locate non-residential uses in and around activity centres and other commercial precincts, to support local employment opportunities and reduce dependence upon car-based travel.
- Limit social harm from the cumulative impact of packaged liquor outlets.
- Minimise harm by appropriately locating and managing electronic gaming machines and venues.

Natural resource management

Agriculture

Rural land shapes the overall identity and character of the municipality, and is predominantly located in the foothills of the Dandenong Ranges, including the Lysterfield Valley.

Agriculture strategic directions:

- Protect existing and potential aesthetic, biodiversity, landscape, amenity, cultural and agricultural values of rural land.

Resource exploration and extraction

Three extractive quarries support Melbourne's construction industry.

Resource exploration and extraction strategic directions:

- Manage the interfaces between active quarries and sensitive or commercial land uses in order to support the ongoing operation of these facilities without exposing residents to adverse effects.

02.03-4 Built environment and heritage

27/02/2025
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Urban design and building design

There is demand for high-quality architectural design and more liveable and sustainable outcomes for built form and public spaces.

Knox takes a 'whole of city' approach to the creation of liveable and sustainable environments, with a focus on place-based planning.

Development should be accessible, sustainable and adaptable to meet existing and future community needs. Future urban form should play a stronger role in developing and respecting local character and identity.

Much of Knox's industrial and commercial areas have a high quality and distinct character. Good design is important for more efficient utilisation of limited land while maintaining high levels of functionality and amenity.

All people in Knox should feel and be safe. Design for safety principles can reduce the fear and incidence of crime and improve quality of life and wellbeing.

Urban design and building design strategic directions:

- Facilitate a strong City character, identity, sense of place and culture.
- Integrate built form and landscape outcomes along *Bush Boulevards* and *Paths into the Hills* .
- Strengthen the arrival experience at the Basin and Upper Ferntree Gully *Tourist Gateways* to capitalise on their Foothills setting and local character by integrating built form and landscape outcomes.
- Reinforce the design elements within industrial and commercial areas which contribute to the success of these areas.
- Support urban design that activates creek corridors and improves the interface and connectivity between public and private spaces.
- Ensure well designed development to create functional, architecturally attractive, sustainable and accessible places and buildings.
- Facilitate design that responds positively to the public realm and the open space and waterway corridors and improves public amenity.
- Facilitate design that prioritises the needs of pedestrians and cyclists.
- Support building design that addresses the needs of changing commercial and residential markets and household structures.

Neighbourhood character

A strong green and leafy landscape is the unifying element of the neighbourhood character of Knox. The scaled approach to development in four residential typologies contributes to this character creating a liveable, high amenity municipality while protecting environmental values.

Neighbourhood character strategic directions:

- Strengthen the unifying ‘green and leafy’ character of Knox across all residential areas.
- Ensure development responds to the residential typologies and the desired future character, built form, and natural environmental elements that make up the neighbourhood character of each residential area.

Healthy neighbourhoods

The Knox population is increasing, ageing and diversifying, creating a need to ensure equitable access to community facilities, including mobility and accessibility.

Parts of the community in Knox:

- Have rates of obesity above the State average.
- Are vulnerable to social isolation.
- Are car dependant with poor walkability of neighbourhoods.

Liveable neighbourhoods strategic directions:

- Promote social, cultural and community health and wellbeing.
- Promote:
  - Living and working locally.
  - Active transport.

– Opportunities for increased social interactions.

– Improved services for an ageing and more diverse population.

Sustainable development

Spatial development has predominantly comprised low-density built form, leading to car-dependency. The result is an increased use of resources and air pollution, reducing amenity for Knox residents.

There is a need to reduce greenhouse gas emissions, improve air quality, minimise water use, protect important vegetation and waterways, and reduce waste. Facilitating sustainable land use and development is critical to achieving these goals.

Sustainable development strategic directions:

- Implement environmentally sustainable design in development to improve housing liveability and amenity for occupants.
- Reduce reliance on non-renewable resources.
- Minimise car dependency and improve the use of sustainable transport modes.
- Reduce waste and pollution during all stages of the construction process.
- Protect environmentally sustainable landscapes and natural habitats.
- Reduce maintenance and utility costs.

Signs

Signs provide important information and support economic growth, however they can have detrimental impact on the visual amenity of local areas.

Signs strategic directions:

- Minimise the visual impact of new signs on built form, streetscape, views and vistas, and local amenity.

Heritage

Local Aboriginal cultural heritage and post-European settlement heritage contributes to the diverse cultural heritage and identity of the City.

Heritage strategic directions:

- Protect places of historic and Aboriginal cultural significance.
- Reinforce the significance of places of Aboriginal cultural heritage in built and natural environments.

02.03-5 Housing

27/02/2025
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The residential population is forecast to grow significantly. The current housing stock is inadequate to respond to the demand for smaller, more diverse and accessible dwellings, particularly as the community ages and diversifies.

There is an undersupply of affordable housing, which has contributed to high levels of mortgage stress within some parts of the municipality. Knox's supply of social housing is below the Melbourne Metropolitan average.

Four distinct residential typologies have been identified that support a scaled approach to residential development. These are shown in the table below. A different level of change is anticipated within each typology to respond to the City’s current and future housing needs.

Strategic Investigation Sites are sites not currently used for residential purposes, but where the land use is likely to change in a short to mid-term timeframe or has recently changed to residential purposes. Strategic Investigation Sites are identified on the Strategic Framework Plan at Clause 02.04.

Residential area	Characteristics
Bush suburban	**Limited change** Two distinct areas: the Dandenong Foothills and Sites of Biological Significance. Both areas have distinctive and significant biological values. Residential development is low scale.
Knox neighbourhood	**Minimal change** The majority of Knox's residential areas. A sense of spaciousness within the public and private realm. Characterised by detached dwellings or dual occupancies, with large backyards that contribute to the area's green and leafy character, and villa units on larger lots.
Local living	**Incremental change** Focused around Major Activity Centres and the larger neighbourhood activity centres. Residential development is predominantly medium scale.
Activity area	**Substantial change** Located in Knox's Major Activity Centres and areas located along major bus routes. Residential development will predominantly be higher-density development.

Strategic directions for housing:

- Support a scaled approach to housing growth in line with each residential topology:
  - Limit residential development to low scale in bush suburban areas to protect significant environmental values.
  - Maintain minimal change that reflects the existing character in Knox neighbourhood areas.
  - Support incremental change in the form of medium scale residential development that contributes to the green and leafy character in local living areas.
  - Facilitate substantial change that includes increased densities and diversity of residential development in Activity areas.
- Respond to changing housing needs and improve housing affordability by supporting the development of different housing styles, types, forms and sizes.
- Facilitate incremental residential growth with design guidelines in strategic investigation areas.
- Encourage ageing in place through increasing the supply of aged care facilities, social housing and smaller dwellings.

02.03-6
27/02/2025
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Economic development

Significant business locations

Knox is a high employment generator and contains significant business locations that are expected to grow over the next fifteen years.

Core employment land areas and local employment land areas are defined. Core employment land is a major concentration of employment and economic activity to be protected from encroachment from other uses given its strategic and economic value. Local employment land supports smaller businesses, providing services to Knox residents and businesses.

Knox has a network of activity centres with each centre having a preferred role in accommodating economic activity as outlined above.

Significant business location	Characteristics and role
Scoresby-Rowville-Knoxfield (Core Employment Land Area)	Important for investment and employment and is recognised as a regionally-significant employment cluster. Contains the highest number of jobs.
Bayswater Business Precinct – Bayswater Major Activity Centre (part) (Core Employment Land Area and Local Employment Land Area)	Straddles Knox and two other municipalities. It is a regionally important investment and employment cluster. The largest in area and includes part of the Bayswater Major Activity Centre. Includes Strategic Investigation Site number 2.
Knox Central Major Activity Centre	The premier activity centre in Knox, and serves a regional base.
Burwood Highway East Corridor (Local Employment Land Area)	Primarily small-medium-sized businesses serving the local community. Includes Strategic Investigation Site number 3.
Wantirna Health Precinct	Provides health, community, and education services. Includes Strategic Investigation Site number 1.
Strategic investigation areas sites – economic, number 4 and 5	Opportunity areas that may potentially incorporate employment and business land.

Significant business location strategic directions:

- Maintain a strong and sustainable local economy.
- Maintain a supply of serviced, high-amenity business land to meet future demand, attract business investment and provide employment opportunities for the growing population.
- Support Strategic investigation sites as opportunities to accommodate a range of housing, retail and employment uses, depending on their classification on the Strategic Framework Plan at Clause 02.04.
- Maintain an ongoing supply of Local employment land areas.
- Facilitate employment growth in *Significant Business Locations* .
- Maintain the identified Core employment land areas for employment generating and productive economic uses and protect from encroachment by non-employment generating uses.

Diversified economy

Manufacturing will remain a key industry but the development of other industries is supporting a more diverse, knowledge-intensive economy.

Knox has identified several *Propulsive Industry Sectors* that are key drivers of the local and regional economy. These are construction, wholesale trade, manufacturing, other services, and health care and social services. Planning is focused on providing sufficient suitable land for these industry sectors.

Diversified economy strategic directions:

- Support *Propulsive Industry Sectors* within Core Employment land areas.
- Support industries that diversify the Knox economy, support working locally, and create a premier destination for high-quality businesses and investment.

02.03-7 Transport

27/02/2025
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Knox developed around the rail corridor and local bus routes; however, recent development created low-density suburbs dependant on cars for mobility, with large parts of the municipality poorly served by public transport.

Knox has an extensive network of transport corridors and bicycle and pedestrian paths. Opportunities exist to improve linkages and transport infrastructure in the region and to facilitate further transit-oriented development so that growth is more sustainable.

Transport strategic directions:

- Facilitate an integrated transport system that connects movement networks to create efficiencies and reduce travel times.
- Provide quality and connected infrastructure for walking and cycling to promote sustainable active travel.
- Provide for integrated transport options and convenient alternative transport choices to reduce high rates of private car usage.
- Improve accessibility and mobility for all people.
- Provide good access to Knox's Significant Business Locations to support business and job access.

02.03-8 Infrastructure

27/02/2025
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Community infrastructure

Knox has a growing and ageing population, which will increase pressure on health and medical facilities.

There are three hospitals in Knox. The Wantirna Health Precinct provides opportunity to cluster health, education and community services to improve service availability, quality and convenience across the region.

Knox provides learning opportunities in public and private education facilities, libraries, community houses and other training providers.

Planning for health and wellbeing is focused on increasing levels of community activity, social connectedness and cohesion.

Community infrastructure strategic directions:

- Support the development of the Wantirna Health Precinct as a health precinct to serve a growing and ageing population.
- Support the establishment of education facilities to serve a growing and diverse population, including skills-based training opportunities.

- Support whole-of-life education opportunities and positive employment outcomes that are locally accessible.
- Ensure equitable access to community facilities and services.
- Support flexible, multipurpose community facilities to accommodate changing community needs.
- Maximise and diversify utilisation of, and improve access to, community facilities.
- Support the assessment of social impacts when considering significant land use planning and development proposals to better inform decision making, achieve social benefits and sustainable outcomes.
- Design new community facilities to be accessible, located close to existing public transport networks and activity centres, and integrated with surrounding uses.

Open space

Knox has over 890 hectares of open space distributed across 887 places.

Knox's open space network links with a shared pathway system, contributing to the City's character, outdoor lifestyle and the health and wellbeing of the community. The vegetation provides, yields many benefits including shade, amenity, landscape character, natural and ecological functions, and helps to mitigate the impacts of climate change and urban heat island effect.

Some areas are underprovided with open space or lack access to it. Opportunities exist to improve the functionality and design of open space areas to improve both the quality and diversity of open space and recreation activities, and services for the whole community.

Open space strategic directions:

- Provide open space with good services, amenity, and functionality to:
  - Meet the needs of the community.
  - Sustain the green and leafy identity of Knox
  - Contribute to community wellbeing and social interaction.
  - Create a desirable place to live, work and play.
  - Support biodiversity, improve stormwater quality, reduce the heat island effect and the impact of climate change.
- Utilise creek corridors to create open space networks for walking and cycling, public spaces, landscape and ecological corridors.
- Improve access and connectivity to creek reserves.
- Consolidate disjointed component parklands and reserves in the Dandenong Valley Parklands.

Development infrastructure

Established areas have ageing infrastructure that requires maintenance or replacement. Adequate infrastructure is also required to support population and business growth areas.

Knox has an integrated water management approach that seeks to manage all water resources in an efficient, equitable and sustainable manner.

Development infrastructure strategic directions:

- Ensure developers and servicing agencies contribute towards the provision of new and upgraded social and physical infrastructure on a fair and reasonable basis.
- Protect the ecological health of waterways by reducing the amount of and improving the quality of stormwater entering waterways.

- Increase the use of alternate water sources to reduce reliance on potable water and reduce stormwater runoff.

Support the development of water assets that respond to population growth and climate change to improve water security and resilience.