LA TROBE UNIVERSITY
BENDIGO FLORA HILL CAMPUS
MASTER PLAN REPORT

PREPARED BY MGS ARCHITECTS
JUNE 2015

LA TROBE UNIVERSITY

4____MASTER PLAN STRATEGIES

INTRODUCTION

MASTER PLAN THEMES

The Master Plan Strategies section establishes campus-wide themes and strategies that underpin the La Trobe University Bendigo Flora Hill Campus Vision for the establishment of a thriving campus precinct and active contribute to the University City brand for Bendigo. Each theme and strategy has been incrementally developed through a process of research, consultation, testing, review and approval throughout the Master Planning process.

The Master Plan Themes were established at project inception and have formed a framework around which the Master Plan has developed.

Each Master Plan Theme and its focus is noted adjacent:

4.1 ACCESS, WAYFINDING AND HUMAN MOVEMENT

— Sustainable transport initiatives and the campus arrival experience.
— Regional and campus public transport.
— Private vehicle access road infrastructure, car parking and deliveries.

4.2 CAMPUS PRECINCT

— Student, staff and private sector housing.
— Teaching, learning and research environments.
— Campus life, arts and cultural offerings

4.3 PUBLIC REALM

— Formal and informal campus landscapes.
— Ecology and biodiversity matters.
— Campus amenity, safety and security.

4.4 BUILT FORM AND SERVICES

— Campus building conditions.
— Space planning throughout the campus.
— Sustainability and waste matters.
— Energy and water infrastructure requirements.

MASTER PLAN STRATEGY COMPONENTS

The Master Plan Strategies provide a campus-wide approach to resolving existing issues and aligning future development so that it best achieves the institutional and campus vision. Each Master Plan Strategy consists of the following elements:

Context
Details the context, including discussion on current issues affecting the campus.

Vision
Outlines the vision of the Strategy – an ambitious statement of intent.

Directions
Provides a list of directions, or actions, that will over time combine to realise the vision.

EARLY WINS

Early Wins are listed for each Strategy and align with the following categories:

— A project that can be delivered in the early stages of the Master Plan.

— An inexpensive project or initiative.

— A project with considerable support from the University and broader community.

— Processes or behaviour-change projects that can be delivered with limited resources.

ALIGNMENT WITH RFAs

In order to fulfil its ambitious research goals, the University has developed five Research Focus Areas (RFAs):

— Building healthy communities.

— Securing food, water and the environment.

— Sport, exercise and rehabilitation.

— Transforming human societies.

— Understanding disease.

The Master Plan Strategies have been developed through the distinctive lens of the RFAs to ensure that the physical development of the campus is aligned with the University's core teaching and research agenda.

LA TROBE UNIVERSITY
BENDIGO FLORA HILL CAMPUS
MASTER PLAN REPORT

4.1 ACCESS, WAYFINDING AND HUMAN MOVEMENT

PREPARED BY MGS ARCHITECTS
JUNE 2015

LA TROBE UNIVERSITY

BENDIGO-WIDE ACCESS STRATEGY

CONTEXT

Demographics

There are two distinct types of travel to the campus, local and regional. Of the total students and staff population, 55% live within 10km of the campus.

They have a number of travel options to the campus including walking, cycling, public transport or car. The remaining populace, who live very far from Bendigo, have significantly fewer options: taking the train and then bus or car. It is important that both types of travel (local and regional) are accommodated for in La Trobe University's access strategy.

Road Network and Wayfinding

Private vehicle accessibility is generally very good in Bendigo. The campus is located approximately 2.2km south-east of railway station and 2.8km from the centre of the Bendigo CBD. Due to the indirect and meandering nature
of the local road network to the campus, actual travel distances are at least 20% higher. Signage and wayfinding to the campus is primarily focused on one access corridor along Ellis Street.

Public Transport

Train services to Bendigo operate from Echuca, Swan Hill and Melbourne. Three existing bus routes service the campus at 30 to 60 minute intervals.

A new bus network has been recently proposed by Public Transport Victoria (PTV). This network is expected to be implemented by the end of 2015. The new network also has three routes servicing La Trobe University Bendigo, including routes that link to the north of campus and a 'shuttle' service to the Bendigo railway station.

La Trobe University's 2014 Transport Modeshare Survey showed only 5% of the campus population arrived via public transport. There is potential for significant growth in public transport mode share as up to 32% of students and staff at the campus could be served by PTV's proposed bus network (those who live in Bendigo but beyond 2km from the campus).

A key feature of La Trobe University's Bendigo community is that staff and students live across every suburb of Bendigo – they are not concentrated in any particular corridor or suburb. Therefore, improving public transport options for local access needs to address access to every Bendigo suburb (not just one corridor).

Walking and Cycling

Bendigo has a growing network of on-road and off-road cycling lanes. Dedicated cycling lanes exist on a number of roads between the University, major activity centres and key residential corridors however they are often discontinuous and indirect.

Currently, there are many bicycle lanes on roads leading to the campus (and linking back to Bendigo CBD). However, there is no formally advertised preferred cycling route between the Bendigo CBD and the campus. This results in new cyclists being less sure of the best route to take and dispersal of riders (which reduces motorist awareness and cyclist priority and safety).

VISION

The campus will strengthen its connections with the rest of Bendigo, improving the access and wayfinding between the campus and key locations such as the train station, Bendigo CBD and other La Trobe University locations such as the Visual Arts Centre and the Clinical Teaching Building at Bendigo Health.

Clear and easy to follow routes from the Bendigo CBD and surrounds to the campus will be defined for all modes of transport. World-class facilities for alternative modes of transport (bus waiting amenities, end-of-trip bike facilities) will be provided, helping promote a modal shift away from private vehicle access to the campus.

DIRECTIONS

Vehicular Access

— Define a preferred vehicle route from the Bendigo CBD to the campus (via Condon Street and Edwards Road). This route will bring visitors to main car parks on the east of the campus.

— Collaborate with VicRoads to promote the preferred vehicle route as the primary access arterial (via signage, wayfinding infrastructure and road amenities).

Public Transport Access

— Connect University serving bus routes with routes heading to other suburbs in Greater Bendigo. This will allow key corridors to have single seat journeys to the University. In PTV's proposed network, only 15% of the campus' population will be within 400m of a bus service that directly connects to the University.

— Combine certain bus routes to allow direct services between the Edwards Road Campus, the Visual Arts Centre and the Clinical Teaching Building at Bendigo Health.

— Retain and improve the arrival times of the direct bus connection to Strathfieldsaye.

— Bring the proposed shuttle bus on to the campus, with a bus interchange in a central location.

Bicycle Access

— Define two main arrival routes for cyclists: Ellis Street and Keck Street. Keck Street will become the primary arrival route for casual and new cyclists as it offers an easy uphill ride with a low gradient. The Ellis Street route is maintained as a more direct (but steep) route for more experienced riders.

— Collaborate with VicRoads and the City of Greater Bendigo to facilitate the implementation of cycling lanes, smooth crossovers and wayfinding signage on the preferred cycling routes.

EARLY WINS

— Co-ordinate with VicRoads to improve vehicular wayfinding to campus.

— Co-ordinate with the City of Greater Bendigo to patch gaps in bicycle network and introduce a wayfinding, such as totems and finger-pointing signs, from the train station to the campus.

ALIGNMENT WITH RFAs

BUILDING HEALTHY COMMUNITIES

— Improve the health and wellbeing of the general community by encouraging access on campus for sport, recreation and community facilities and services.

TRANSFORMING HUMAN SOCIETIES

— Challenge the notion that car dependence is the status quo in regional cities.

Wayfinding

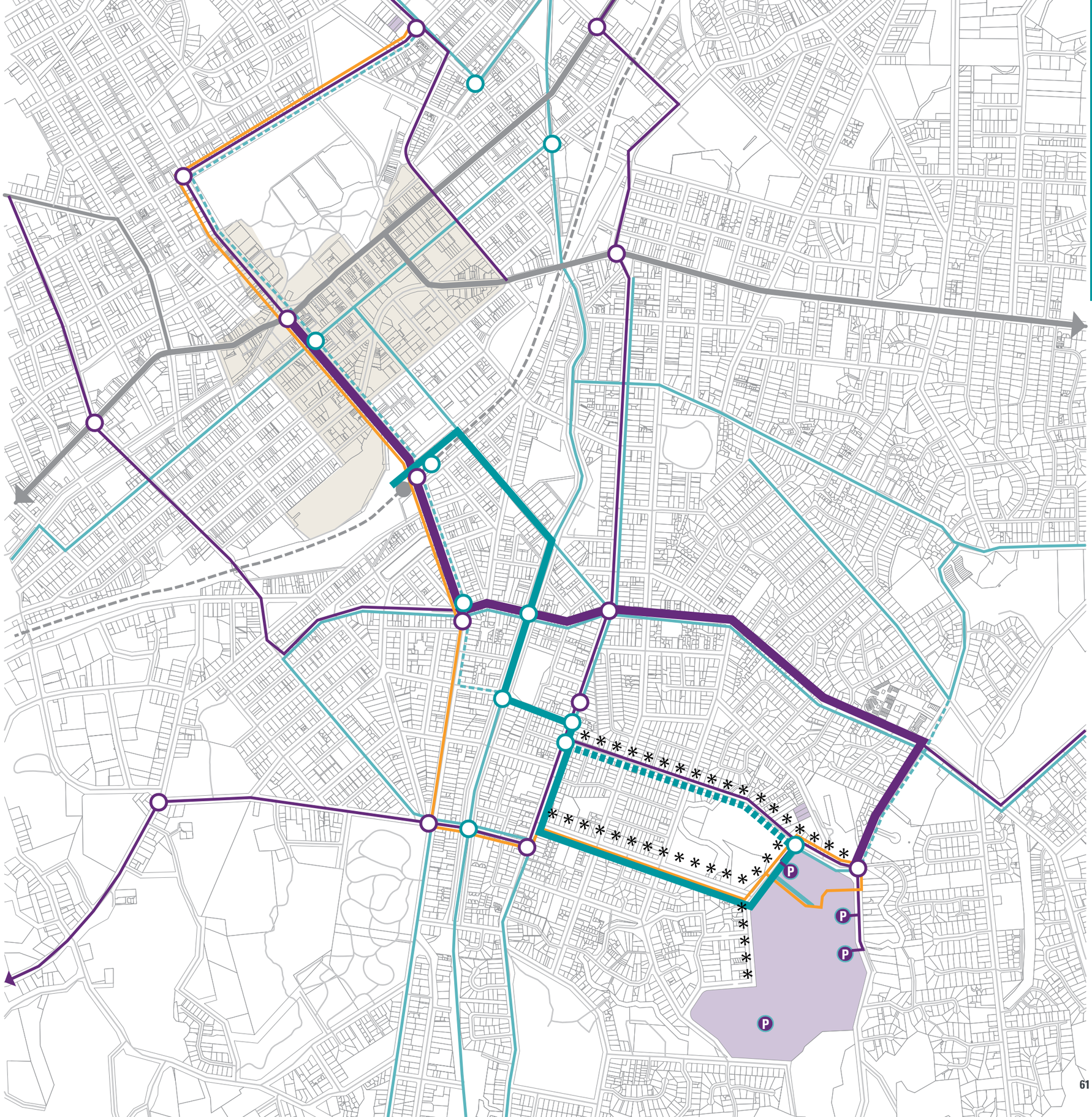
— Collaborate with Public Transport Victoria, VicRoads and the City of Greater Bendigo to locate and install wayfinding signage. Potential vehicular arrival routes and optimal signage locations are shown on the adjacent map.

— Implement elements such unique landscaping in the primary arrival routes, different lighting features or pavement materials and colours that also play a major role in providing effective wayfinding to create an arrival sequence that is well defined and memorable.

LA TROBE UNIVERSITY
BENDIGO FLORA HILL CAMPUS
ARRIVAL EXPERIENCE AND CONNECTIONS STRATEGY

0 50 100m

- Major road
- Preferred CBD - campus vehicle route
- Vehicle route to campus
- Road signage to campus
- Campus car park node
- Railway track and station
- New specialised La Trobe University to Bendigo CBD shuttle bus route
- Preferred CBD - campus cycle path from CBD
- Existing bicycle network
- New additional bicycle network
- Bicycle network signage opportunity
- Potential tree-lined avenue
- Bendigo CBD



PEDESTRIAN STRATEGY

CONTEXT

Traffic studies completed by student research group Plan B (*Transport Modeshare Survey 2014*) have shown that 40% of staff and students arrive on campus by foot. This includes both people who live in the surrounding area and those who take advantage of the free parking in Brennan Park and the surrounding residential streets. Once on campus, the compact nature of the campus allows students and staff to move quickly by foot between teaching spaces and facilities. However the movement network is not clearly defined and pedestrians often walk on service roads or through car parks. Pedestrian routes are often confusing, indirect and lack disability compliance, given the variations in topography experienced on the campus site.

Improving pedestrian access to and within the campus would improve the amenity of the campus and the campus experience for all users.

VISION

— The campus will be a place that is easy to walk to and walk within. Pedestrians will be given priority over other road users at every opportunity. Ongoing encouragement will be given to people walking to campus with a focus on those who live within 2km. In addition, pedestrian movement on the campus will be concentrated on a small number of high-quality links across the campus.

DIRECTIONS

Develop a primary pedestrian network

— Establish a new primary pedestrian network on the campus to improve accessibility and wayfinding. This will involve developing new and strengthening existing pedestrian connections into and out of the campus. It will provide direct and clear access to key facilities, especially for first time visitors.

— Pedestrianise the campus core focusing on a main pedestrian spine that will provide structure and clarity to the campus as well as creating a space for interaction.

— Provide pedestrian connections in three dimensions, acknowledging the varied topography and existing building levels. Elevated bridges between buildings will improve access especially for those with a disability. However it is important to maintain a connection to the ground plane and not duplicate pedestrian routes.

— Deliver a primary pedestrian network in stages that ensures it is consistent in proportion and material and include amenity features such as seating, lighting, drink fountains and bicycle parking.

— Improve campus safety will be by developing a safe night walk linking the residential college precinct, the core campus and local key destinations including sports facilities and Strath Village shopping centre.

— Introduce a network of generous paths that will create a more permeable campus, and facilitate direct connections with the surrounding neighbourhoods. The local community will feel welcomed on campus due to high-quality pedestrian spaces and clear routes across campus and to public facilities.

Improve pedestrian connections on the fringe

— Improve the pedestrian environment on the fringe of the campus and introduce a periphery running and walking 'tan' track. Pedestrian paths will be widened, streetscaping improved and pedestrian crossings strengthened to provide a safe pedestrian environment and attractive interface with the community.

— Enhance pedestrian connections to surrounding facilities such as the Bendigo South East College, the Brennan Park Swimming Pool and the Strath Hill and Strath Village shopping centres.

— Improve pedestrian safety and their experience to reach the main bus stop in Keck Street. If and when the bus stop is relocated onto campus, this pedestrian connection across Sharon Street will remain useful for local pedestrian movements.

Connection to walking trails

— Enhance connections to the surrounding bush land, allowing the campus to become a gateway to the One Tree Hill Regional Park.

Encourage walking as the preferred access mode

— Promote positive messages about walking which focus on the health and financial benefits of walking. Highlight how far people can walk in 15 minutes (half your daily exercise requirement) has been effective in other locations. These messages can be reinforced through gamification apps such as the 'Ground Miles' app by Bupa (http://groundmiles.bupa.com).

— Prioritise pedestrian and public realm improvements that will be most effective at getting the University community walking. Publicity about improvements can also include statements that encourage behaviour change such as "this improvement was installed to make it easier for you to walk to campus".

EARLY WINS

— Introduce a strong pedestrian spine through the campus and begin a staged roll out of the primary pedestrian network.

— Reclaim road space within the core campus for pedestrians by consolidating car parks and service roads.

— Improve pedestrian crossing facilities at highly active roads, primarily the intersections of Keck and Sharon Streets and Ellis Street and Edwards Road.

— Improve the pedestrian connections between the campus and Bendigo South East College.

ALIGNMENT WITH RFAS

BUILDING HEALTHY COMMUNITIES

— Improve the health and wellbeing of students, staff and the general community by providing sustainable transport, improving choice, and reducing carbon emissions.

— Reduce the need to convert economically and environmentally valuable land into additional road infrastructure for private vehicles.

SPORT, EXERCISE AND REHABILITATION

— Create opportunities for walking and running throughout the campus.

TRANSFORMING HUMAN SOCIETIES

— Challenge the notion that car dependence is the status quo in regional cities.

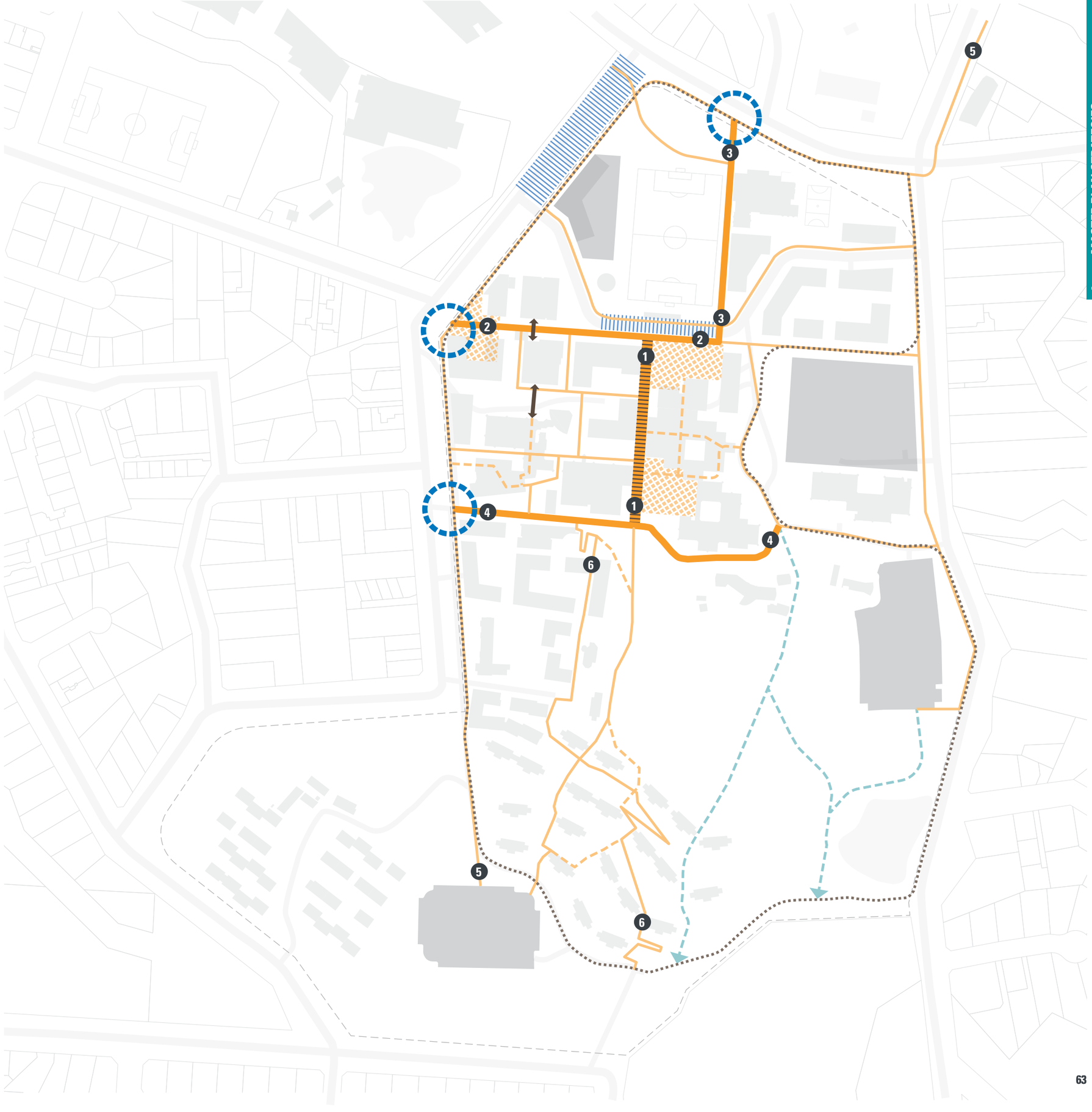
UNDERSTANDING DISEASE

— Promote and facilitate walking and cycling to reduce the risk of heart disease.

LA TROBE UNIVERSITY
BENDIGO FLORA HILL CAMPUS
PEDESTRIAN STRATEGY

0 50 100m

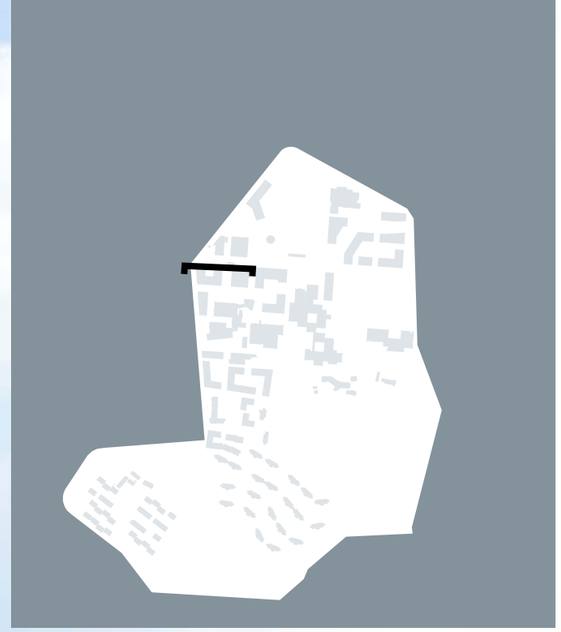
- Main pedestrian spine
- Primary pedestrian network
  - 1 Campus Walk
  - 2 La Trobe Boulevard
  - 3 Sports Walk
  - 4 Arts Way
- Secondary pedestrian network
  - 5 Bendigo Walk
  - 6 Bushland Walk
- Tertiary pedestrian network
- Upper level bridge connections
- Running and walking 'tan' track (2.5km)
- Bushland path and connection to Greater Bendigo National Park
- Shared pedestrian and vehicle zone
- Consolidated car parking nodes
- Pedestrian gateway
- Plaza



APPLIED SCIENCE 2 BUILDING

LA TROBE BOULEVARD

NEW LIFT ACCESS



NEW ACADEMIC BUILDING

SHARON STREET

UNIVERSAL ACCESS STRATEGY

CONTEXT

The campus is built on a varying topography providing challenges for universal access. Additionally, many of the buildings constructed in the 1970s such as the Student Union and Arts buildings were built to follow this topography, resulting in variable levels within buildings. Some buildings were not built with universal access in mind and now need elevators to be added retrospectively.

The current solution to allow access for those with a disability is to provide disability designated car parking spaces throughout the campus. Staff and students with limited mobility are expected to drive between classes and other destinations.

VISION

The accessibility of the campus will be improved for all staff, students and visitors, especially those with limited mobility. Accessible paths will be clearly signed, with consistent paving, lighting and street furniture.

DIRECTIONS

Primary pedestrian network

— Provide DDA compliant gradients and access to all public realm spaces.

— Ensure that the primary pedestrian network complies with universal access standards, creating an accessible pathway network throughout the campus.

— Provide equality of access and building entries throughout the primary pedestrian network.

— Ensure pedestrian networks provide DDA compliant passing widths.

— Eliminate locations shown as accessible that also have 'steep gradient' (such as the southern end of Campus Walk). These should all be made fully accessible.

— Ensure any new link that is created (such as through CLT) is fully accessible to comply with Commonwealth legislation.

Car Parking

— Provide car parking in convenient location with ease of access into the core campus.

— Ensure that disabled access car parks are accommodated close to prominent areas of activity.

— Provide DDA accessible lift access at all car park levels.

— Provide disabled access parking en masse in Car Park 2. The current ramp will be reviewed to ensure that it is an accessible gradient. The future management of parking in Car Park 2 will ensure priority for people with a disability.

— Take a similar approach will be taken with parking at the front of buildings in Sharon Street. This will remove the need for any disabled parking bays in the Edwards Road car parking and reduce the impact of steep gradients between that parking and the campus core.

Building upgrades

— Ensure that internal building signage indicates the location of amenities on all floors, and the location of lifts, ramps and fire escapes.

— Establish a DDA Compliance Management Plan to ensure progressive upgrading of the campus to meet these requirements.

— Ensure furniture elements are compliant and meet the needs of those with disabilities.

— Provide for universal accessibility to all buildings and ensure access to all, irrespective of age or ability.

— Provide DDA compliant access to and throughout all libraries and learning environments, where practical (some areas of high density shelving and storage may be excluded). Access shall be integrated into primary access points, preferably without the need for segregation of those with disabilities

Public Transport

— Provide raised platform stops will be required to achieve universal access requirements.

— Promote transport services that include low-floor vehicles.

— Increase inter-campus connectivity through the provision of improved DDA compliant bus services.

— Ensure all pathways and transit stations should be designed with consideration of the Florida Safe School Design Guidelines.

EARLY WINS

— Introduce a strong pedestrian spine through the campus and begin a staged roll out of the primary pedestrian network.

— Introduce a lift and skybridge to the Applied Science buildings to improve access.

ALIGNMENT WITH RFAS

BUILDING HEALTHY COMMUNITIES

— Improve the health and wellbeing of students, staff and the general community by providing a campus that is accessible to all.

SPORT, EXERCISE AND REHABILITATION

— Reduce the reliance on cars for those with reduced mobility, improving possibilities for rehabilitation.

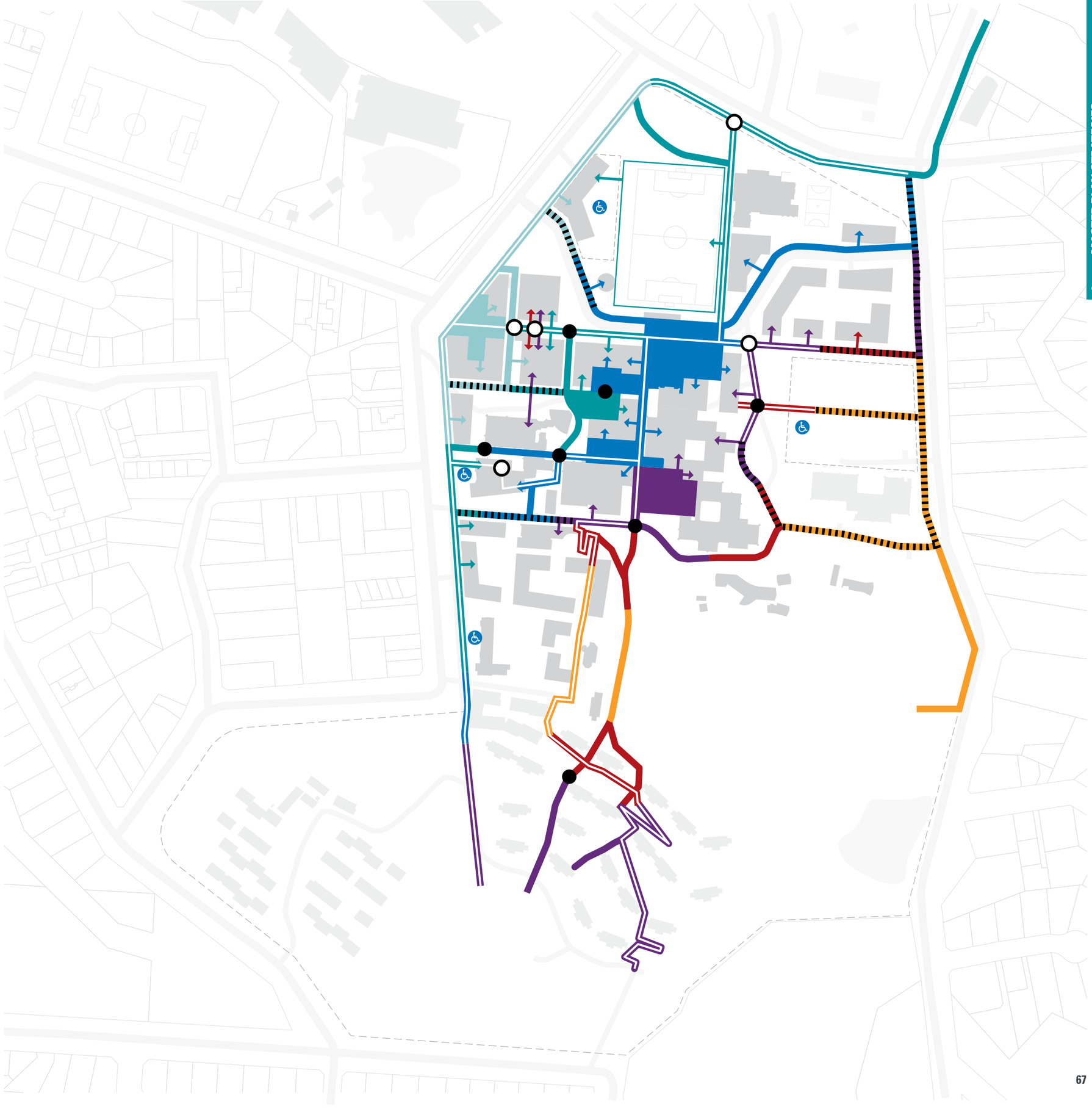
TRANSFORMING HUMAN SOCIETIES

— Use the campus as a showcase for mobility improvements in a difficult steep site.

LA TROBE UNIVERSITY
BENDIGO FLORA HILL CAMPUS
UNIVERSAL ACCESS STRATEGY

0 50 100m

- 260 -263 RL
- 264 -267 RL
- 268 - 271 RL
- 272 - 275 RL
- 276 -279 RL
- 280+ RL
- Accessible network
- Steep gradient
- Accessible Ramp
- Stair
- Primary building entry point



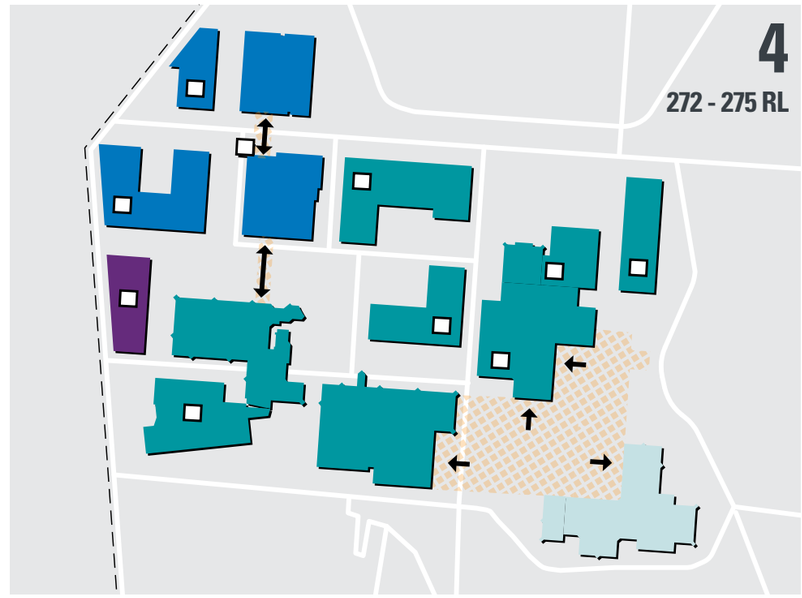
4.1___ACCESS, WAYFINDING AND HUMAN MOVEMENT

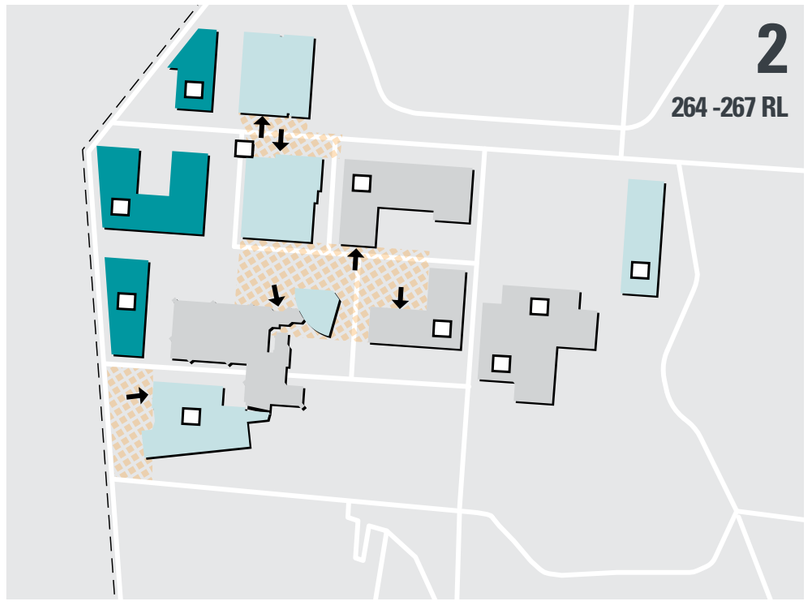
UNIVERSAL ACCESS STRATEGY

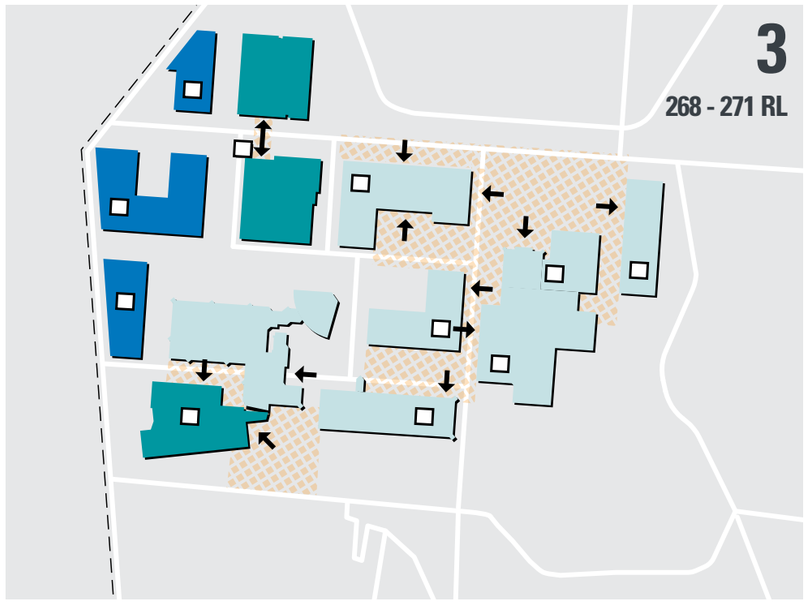
These six diagrammatic maps take a horizontal slice through the core campus every four metres, describing the complex topography of the site. They relate to the universal access strategy plan on the previous page. Each map represents one of the six relative level (RL) ranges.

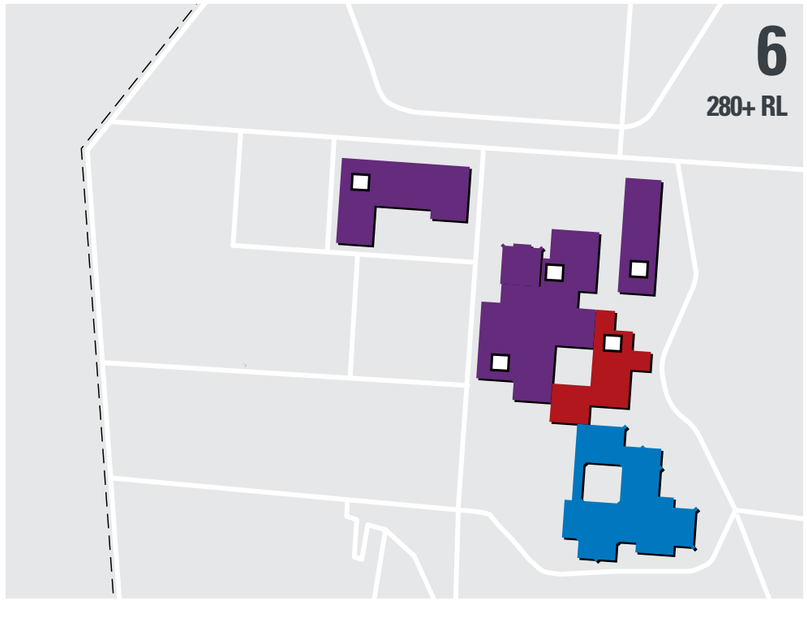
These maps illustrate how staff, students and visitors will move through the campus, with both existing and proposed buildings shown. The ground plane and sky bridges are shown in yellow, demonstrating how people will move between the buildings. The colour of each building floor indicates which level of that building you are seeing.

While some skybriges are introduced to easily move between buildings at a higher level, this model should not be used extensively as is preferrable to bring pedestrians down to the ground level. Bringing staff, students and visitors down to the main pedestrian paths will help activate these public spaces, and help people to orientate themselves within the campus.









FOUR METRE LEVEL SECTIONS

- Basement
- Ground
- Level 1
- Level 2
- Level 3
- Level 4
- Ground Plane
- Building Entry
- Elevator

CYCLING STRATEGY

CONTEXT

Bendigo has an extensive and expanding bicycle network, including on-road bike lanes and off-road paths that provide regional connections to campus. A 'Parkiteer cage' facility is located near the Bendigo railway station that provides free and secure parking for up to 26 bicycles.

The campus has 66 bicycle lockers available for hire throughout the campus as shown on the map of the opposite page.

End-of-trip facilities are available at the Sports Centre, Ironbark Centre, Health and Human Sciences 1 and 2 and Business and Technology buildings.

A new bicycle repair station has been built at the campus. While the information presented above is available online (with the exception of the bicycle repair station), the information is not up to date with the Bendigo 'Locker and Shower Map' last updated in 2009. Currently, no shared secured facility (bike cage) is available on or near the campus.

However, despite these networks and facilities the recent mode share survey completed by La Trobe University (Transport Modeshare Survey 2014), showed that only 1.7% of staff and students currently cycle to the campus. Low usage rates for bicycle facilities such as lockers have being reported by the Infrastructure and Operations team during the consultation process.

VISION

Cycling will become a more desirable mode of transport for La Trobe University Bendigo staff, students and visitors through improvements in the bicycle infrastructure. Clear routes will be signposted from the train station to the campus, a safe and generously scaled cycle network will be developed through the campus, and bicycle end-of-trip facilities will be improved.

DIRECTIONS

— Introduce 'green streets' that prioritise pedestrians, cycling and public transport and provide one clear route between the campus and the Bendigo CBD. Ensure such routes are well signposted and have improved streetscaping, increasing La Trobe University's presence and connection to the City of Greater Bendigo.

— Ensure that 'green streets' are coupled with a new bike share system, with bike facilities and hire available at the campus, the train station, the Clinical Teaching Building and the Visual Arts Centre, to allow easy access between these sites and increasing La Trobe University's presence in the city.

— Develop a coherent, consistent, safe and generous cycle network throughout the campus, that links to the already established regional network. This will provide on-campus residents a more direct and attractive route to the Strath Village precinct.

— Introduce centralised end-of-trip bicycle facility such as a bicycle arrival station. These should be located is near the Applied Science buildings, which are adjacent to the proposed main arrival frontage of La Trobe University Bendigo.

— Expand bicycle end-of-trip facilities will expand as the campus population grows to ensure that cycling is considered connecting a convenient mode.

— Implement an annual or bi-annual review of bike users and facilities. The review will gather information on high-demand bicycling parking areas, primary destination buildings of cyclists and usages rates of existing end-of-trip facilities. It will help inform the implementation of more efficient cycling infrastructure and facilities on the campus.

EARLY WINS

— Introduce a centralised end-of-trip cycling facility.

— Co-ordinate with the City of Greater Bendigo to patch gaps in bicycle network and introduce a wayfinding, such as totems and finger-pointing signs, from the train station to the campus.

— Introduce a new bike share system, with La Trobe University branding, that has sites in and around the Bendigo CBD. This will be coupled with improved bike path signage.

ALIGNMENT WITH RFAs

BUILDING HEALTHY COMMUNITIES

— Improve the health and wellbeing of university students, staff and the general community.

— Improve campus connections and provide transport choice for staff and students.

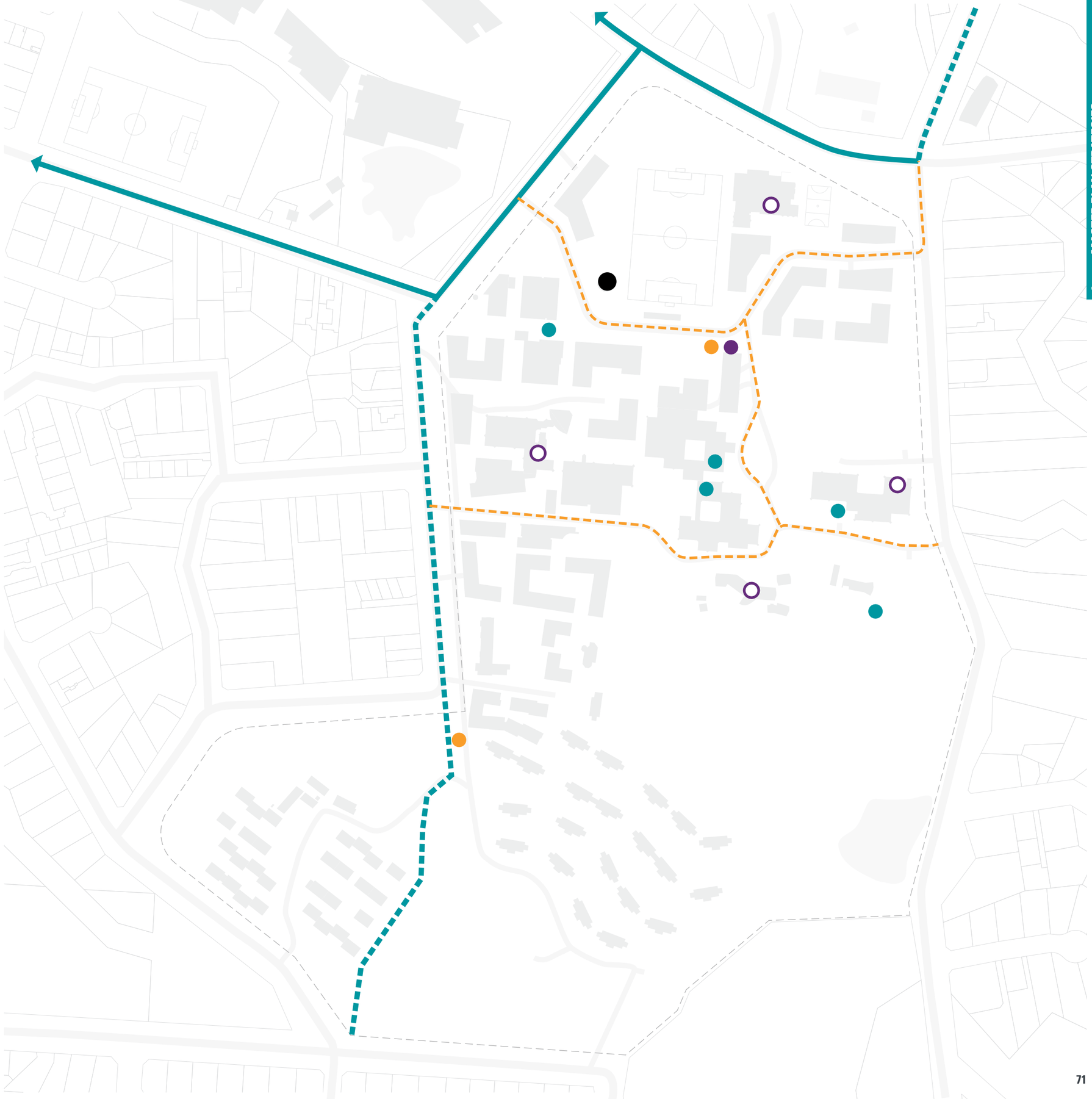
SPORT, EXERCISE AND REHABILITATION

— Ensure that adequate bicycle facilities are available for the staff and student population.

LA TROBE UNIVERSITY
BENDIGO FLORA HILL CAMPUS
CYCLING STRATEGY

0 50 100m

- Campus cycle lane (shared paths)
- Existing on-road cycle lane
- Future cycle links
- Existing bicycle lockers
- Existing end-of-trip facilities
- Future end-of-trip facility
- Bike arrival station with change rooms
- Future bicycle share docking station



PUBLIC TRANSPORT STRATEGY

CONTEXT

Central Bendigo is served by V/Line train services that run between metropolitan Melbourne, Echuca and Swan Hill. The campus is served by three separate bus routes that provide connections to the Bendigo city centre, Bendigo rail station and the suburbs of Strathdale and Strathfieldsaye. The bus routes serving the campus are:

— Route 11: Bendigo – La Trobe University

— Route 14: Bendigo – Strathdale

— Route 16: Bendigo – Strathfieldsaye

The Transport Mode Share Survey conducted in 2014 by La Trobe University showed that only 5% of La Trobe University's staff and students arrive to the campus by public transport.

The *Future Ready: Strategic Plan 2013-2017* also includes a specific goal to lobby government to improve public transport connections (and journey times) to the campus. This could be achieved in many ways, for example combining bus Routes 5 and 11 would provide a seamless connection between all physical locations of the campus. Alternatively, bus Route 11 could be made more direct so that the journey from campus is not 80% longer than the journey to campus (as is currently the case).

VISION

The campus will be linked to key locations in Bendigo as part of a convenient and effective public transport network which provides a real alternative to the private vehicle.

High frequency bus services will be delivered to the heart of the campus in an effort to maximise accessibility to the campus and provide an improved sense of arrival.

DIRECTIONS

Develop a sustainable transport strategy.

— Collaborate with the City of Greater Bendigo to develop a sustainable transport strategy that focuses on using transport to improve the health of people working and studying at the campus. The strategy will be developed in conjunction with the Flora Hill Precinct Plan that is expected to be led by the Council. The sustainable transport strategy would further investigate the options identified in the campus Master Plan.

New shuttle bus to the Bendigo CBD

— Collaborate with the City of Greater Bendigo to create more direct connections between the campus and key nodes, such as the city centre, key development areas and the expanded hospital.

— Align campus bus operations with the City of Greater Bendigo's Integrated Transport Strategy (November 2014). As part of that strategy, the campus is identified as a 'specialised activity centre' and a direct bus route is proposed between the campus, the CBD and the train station. This new bus route is proposed to run every five to ten minutes and there is a suggestion that the route could be a free public transport zone.

Connections to Bendigo suburbs

— Work with PTV and the City of Greater Bendigo to introduce more bus routes through Bendigo CBD to the campus. Some Route 3 services already provide a seamless service for customers so this could be rolled out to additional existing services, better connecting the community and university (particularly on Routes 3 and 5 or 1 and 8).

Bring the bus on campus

— Introduce a new bus route through campus, creating an east-west connection between Science Drive and Service Drive. This will allow for a centralised stop within the campus located between the existing library and the sports field. This will provide a bus stop that serves the heart of the campus and allows for high-quality waiting facilities to be built in a single location.

— Provide a centralised bus stop that will double the frequency of buses departing the campus for the Bendigo rail station, as both routes pass through one stop not two separate stops.

— Refer to *5.4.1 Bus route and terminal* in this document for more information.

Bendigo Metro

— Ensure the University is actively involved in discussions around the state governments recently announced 'Bendigo Metro'. Work with this taskforce to ensure they understand the travel needs of the La Trobe University Bendigo community.

EARLY WINS

— Work with the City of Greater Bendigo to fast track the new frequent and direct bus route to the Bendigo CBD, that aligns with V/Line train timetables.

— Create a centralised bus terminal that services the campus core.

ALIGNMENT WITH RFAs

BUILDING HEALTHY COMMUNITIES

— Improve the health and wellbeing of students, staff and the general community by providing new 'green streets' improving choice, supporting sustainable transport and in turn reducing carbon emissions.

— Improve the health and wellbeing of university students, staff and the general community by providing sustainable transport, improving choice, and reducing carbon emissions.

— Reduce the need to convert economically and environmentally valuable land into additional road infrastructure for private vehicles.

SPORT, EXERCISE AND REHABILITATION

— New 'green streets' provide well define bike routes to the CBD promoting cycling in Bendigo.

TRANSFORMING HUMAN SOCIETIES

— Challenge the notion that car dependence is the status quo in regional cities.

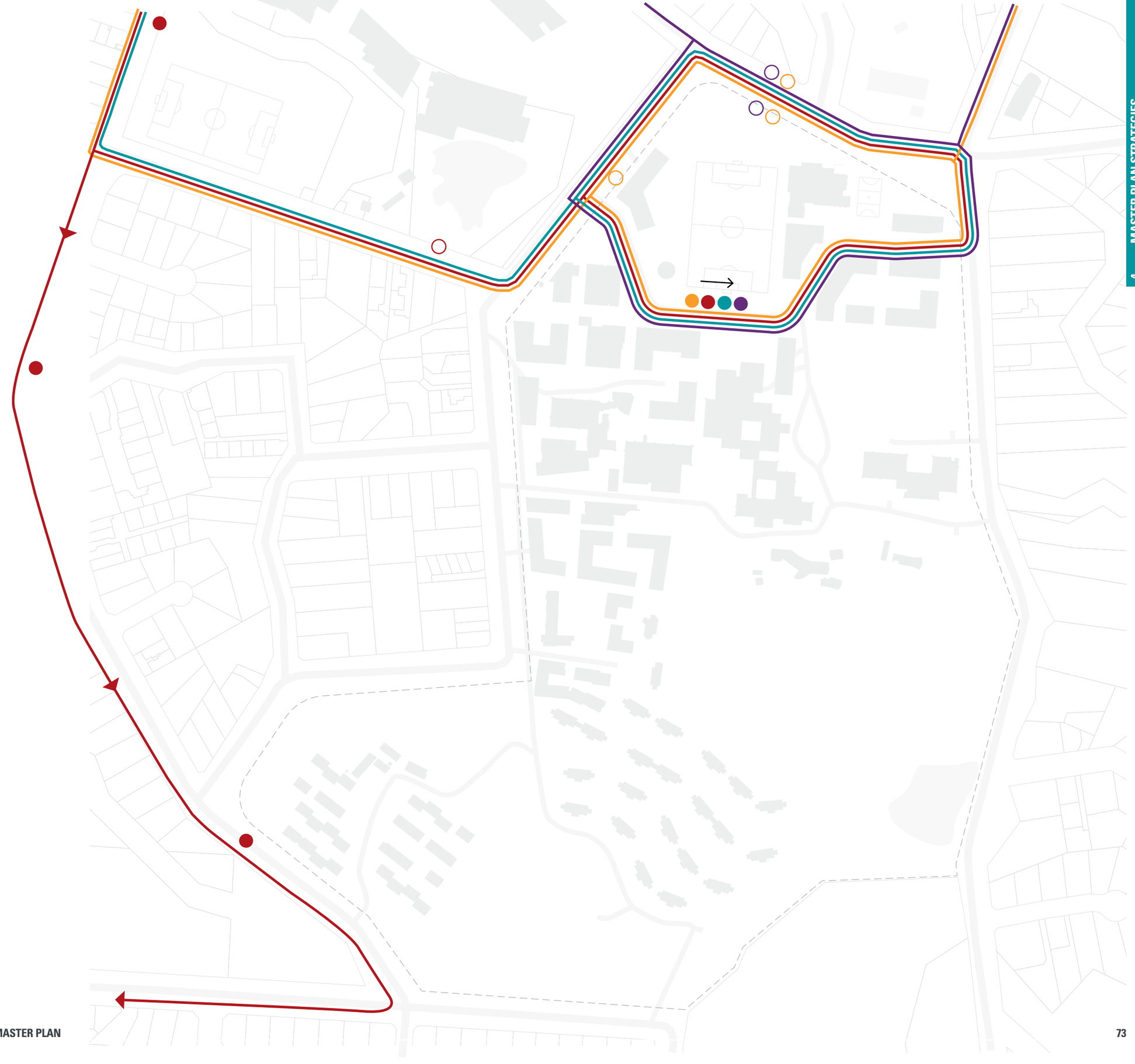
UNDERSTANDING DISEASE

— Promote and facilitate walking and cycling to reduce the risk of heart disease.

LA TROBE UNIVERSITY
BENDIGO FLORA HILL CAMPUS
PUBLIC TRANSPORT STRATEGY

0 50 100m

- Revised bus route 11
- Revised bus stop route 11
- Revised bus route 14
- Revised bus stop route 14
- Revised bus route 16
- Revised bus stop route 16
- Shuttle bus to station route
- Bus stop for shuttle bus
- Former bus stop



VEHICLE AND OPERATIONAL ACCESS STRATEGY

CONTEXT

Seventy-seven per cent of La Trobe University Bendigo's staff and student community live outside a two kilometre walking distance from the campus. While many from this subset have the option to use alternative transport modes, private vehicle traffic is often the most attractive mode due to the convenience it provides and the relatively cheap cost of parking compared to alternate modes. These factors, along with the unrestricted car use and access culture previously emphasised since the University's construction, has built a strong reliance on private vehicle traffic by staff, students and visitors.

Access to the campus is quite good, with Arts Drive allowing for east-west permeability.

La Trobe University will work closely with the City of Greater Bendigo to develop a consistent vision for vehicular access and local area traffic management in the Flora Hill Precinct.

VISION

Vehicular access to the core campus will be consolidated to improve the pedestrian experience and reduce vehicle short-cutting, while maintaining appropriate access for service delivery, maintenance and emergency access.

DIRECTIONS

Collaborative local area traffic management

— Work collaboratively with the City of Greater Bendigo and VicRoads to investigate and improve traffic management in the Flora Hill neighbourhood. Focus on healthy and safe outcomes, wider travel options (particularly walking and cycling) rather than speed and volume of cars through intersections.

Internal road conversion

— Provide a strengthened east-west pedestrian connection and reduce pedestrian and vehicle conflicts near the campus core by converting Arts Drive and Central Drive into a shared road.

Internal road decommissioning

— Decommission unused core campus roads following removal of the many small car parks.

— Retain the Central Drive loop and the loading bay behind Applied Sciences 2. This will provide access for emergency and delivery vehicles.

Restricting access to the inner core

— Implement further strict zoning control in the campus core, improving the pedestrian amenities and allowing for a more pedestrian and cycle friendly campus.

— Implement pinch points for roads leading into the campus core to limit traffic in the core to just delivery vehicles and staff vehicles accessing the inner car parks.

— Install automated bollards will to monitor cars coming into the campus core.

Sharon Street partial closure

Advocate for a partial road closure of approximately 100m of Sharon Street, between the Ellis Street intersection and the entrance to Car Park 2 (Gate 5). If implemented, this would:

— Promote linkages to the Bendigo South East College

— Reduce cycling and pedestrian conflicts for those arriving from the north-west direction on Ellis Street.

— Maintain access to Car Park 2.

— Maintain bus access if necessary.

EARLY WINS

— Implement pinch points or automated bollards around the campus to limit vehicular access to delivery, operations or staff vehicles accessing the inner car parks.

— Decommission the section of Sharon Street between Ellis Street and Car Park 2 to better link the sports precinct with the nearby college.

— Limit vehicular access along Arts Drive and Central Drive to reduce 'rat-running' across the campus.

ALIGNMENT WITH RFAs

BUILDING HEALTHY COMMUNITIES

— Improve the health and wellbeing of students, staff and the general community by providing an easily walkable campus and reducing reliance on the private vehicle.

SECURING FOOD, WATER AND THE ENVIRONMENT

— Reduce the amount of stormwater runoff into sensitive waterways by reducing the amount of impermeable surfaces on the campus.

— Lower carbon emissions by reducing the reliance on private vehicle travel to the campus.

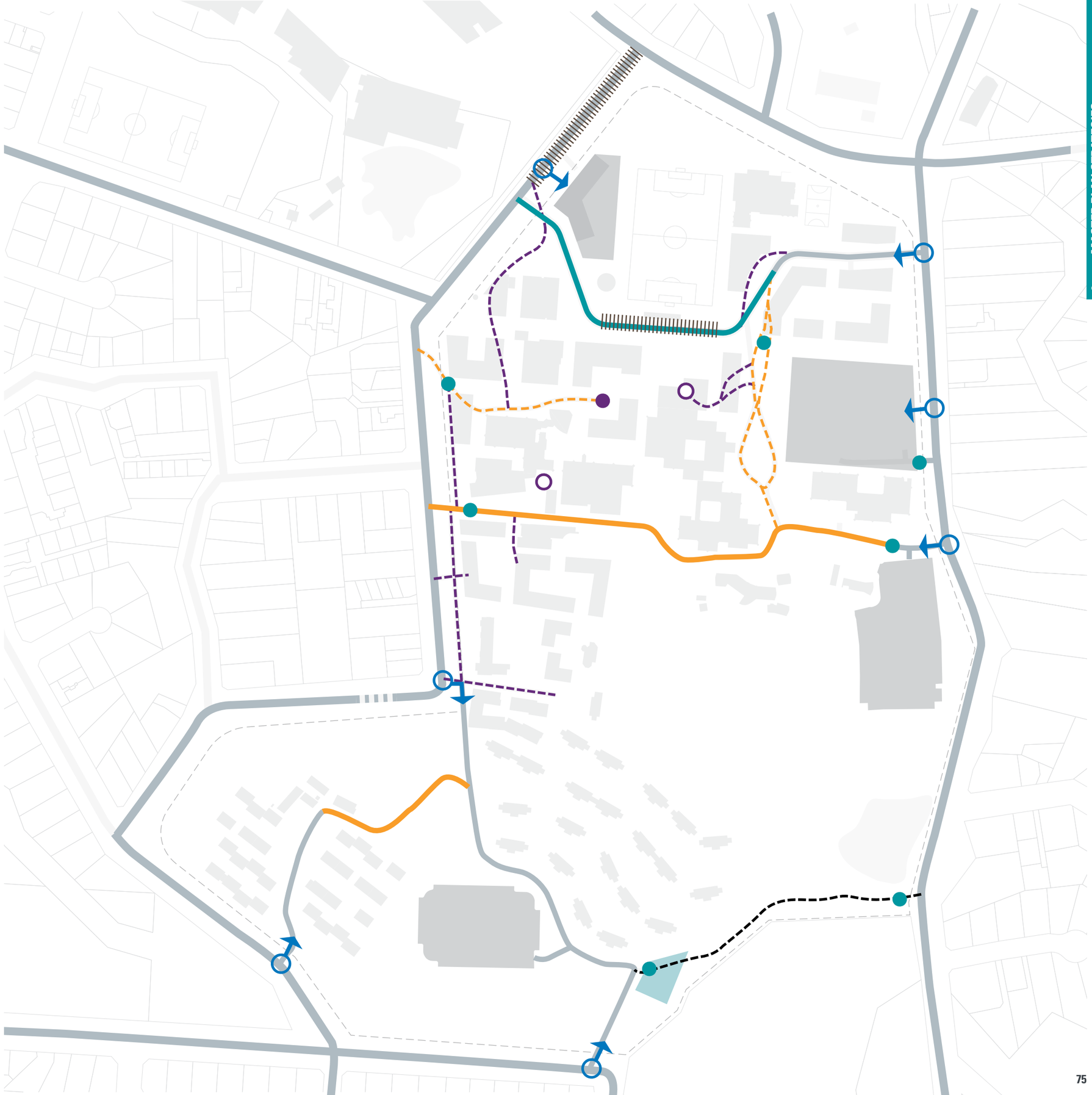
SPORT, EXERCISE AND REHABILITATION

— Strengthening the campus sports precinct by removing the barrier caused by Sharon Road.

LA TROBE UNIVERSITY
BENDIGO FLORA HILL CAMPUS
VEHICLE AND OPERATIONAL ACCESS STRATEGY

0 50 100m

- Existing roads
- New road
- Decommissioned roads
- Repurposed roads (Pedestrian priority with controlled vehicle access)
- Service road
- Shared pedestrian and vehicle zone
- Consolidated campus loading zone
- Decommissioned loading zone
- Restricted access point
- Vehicle gateway
- Fire access road
- Maintenance yard
- Car parking node



CAR PARKING STRATEGY

CONTEXT

The emphasis on providing for the car has led to a campus environment that has a significant proportion of the site dedicated to either roads or car parking. The existing campus has almost 1300 car parking spaces, however over 46% of these are in small, fragmented parking areas that are dispersed around the campus. Car Parks 1, 3, 4, 6, 20, 22 and 23-26 are regularly over 85% occupied.

Due to the low cost of parking, as well as the convenience arising from 'door-to-door' travel, driving to the campus is the most popular mode of transport for staff and students at La Trobe University Bendigo, with a mode share of around 53%.

Many buildings typically have 2-5 car parking spaces directly adjacent to it. These spaces are fragmented and increase the need for cars to roam within the campus core. The car spaces are difficult to service, inefficient and reduce the pedestrian amenity.

General student car parking is priced at $2 per day or $64.50 per annum, which equates to a charge of around 34 cents per day if attending 5 days per week during each semester. The current fee does little to discourage car parking, and in fact discourages the use of sustainable modes such as public transport, which costs more in comparison. The fee is also inequitable, given that staff pay grades across all La Trobe University campuses are equal, yet parking charges for staff are not.

In the streets surrounding the campus there are many free, unrestricted on-street car parking spaces. The use of these car parks by students has caused some friction with the local residents. Any car parking strategy for the campus should also include the management of these on-street car spaces.

VISION

Car parking will be consolidated into several key car parks on the periphery of the campus, freeing up land in the campus core to improve the public spaces between buildings. Over time, fewer car parking spaces will be provided per student, coupled with careful consideration of pricing based on the car park location.

DIRECTIONS

Reclaiming car parking space in the campus core

— Relocate core campus car parking spaces into consolidated car parking spaces along the campus perimeter. Significant car parks that can potentially be relocated include Car Parks 4, 5a, 5b and 24.

— Reclaim the land used by the smaller premium at-grade car parking within the campus road network. This will reduce the vehicle traffic in the campus core allowing for a more attractive pedestrian environment.

— Develop a network of basement/multi-deck car parking could be developed to keep at-grade car parking to a minimum. Possible sites include Car Parks 1, 2, 9 and 28.

— Promote Car park 2 as the premium location for car parking for people with disabilities due to the intensification of campus activity in the surrounding area.

— Ensure disabled access car spaces are accommodated close to prominent areas of activity with compliant access.

Increase the cost of car parking

— Update the pricing system and rates for car parking at the campus to reflect the benefits of alternative modes.

— Increase the cost of premium car spaces within the campus core, similar to the Melbourne campus, where premium car parks have recently been approved to cost around $1,200 per annum.

Other opportunities

— Expand incentives to improve car-pooling to the campus, Car-pool parking spaces are to be located in premium locations and the University should investigate the use of car-pooling software to assist students and staff.

— Spread contact hours strategically throughout the week, to allow an even spread in attendance (car parking need) throughout the week. This strategy will significantly reduce the peak parking demand.

— Provide car share services in ideal car parking spaces.

EARLY WINS

— Begin to remove and consolidate car parking spaces from the core campus.

ALIGNMENT WITH RFAS

BUILDING HEALTHY COMMUNITIES

— Improve the health and wellbeing of students, staff and the general community by providing sustainable transport, improving choice, and reducing carbon emissions.

— Reduce the need to convert economically and environmentally viable land into at-grade car parking.

SECURING FOOD, WATER AND THE ENVIRONMENT

— Reduce the amount of stormwater runoff into sensitive waterways by reducing the amount of at-grade car parking on the campus.

— Reduce carbon emissions by reducing the reliance on private vehicle travel on the campus.

LA TROBE UNIVERSITY
BENDIGO FLORA HILL CAMPUS
CAR PARKING STRATEGY

0 50 100m

Decommissioned car park

General car park
(Potential to become multi-deck in future)

3 minute walking radius from general car park (200m)

Affordable car park

3 minute walking radius from affordable car park (200m)

Basement car park

3 minute walking radius from basement car park (200m)

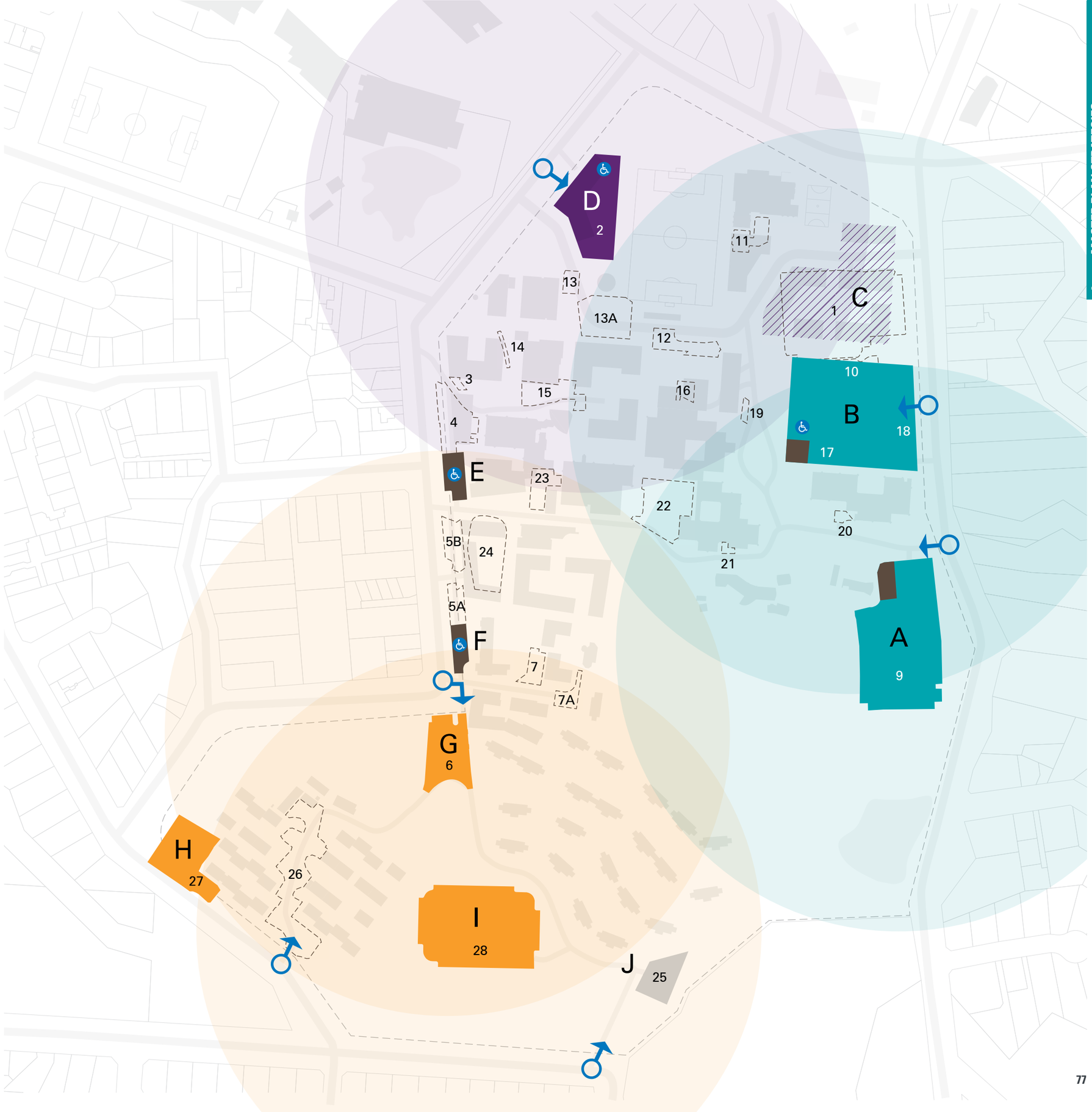
Visitor short term car park

Universal access car spaces

Basement car parking below development

Vehicle gateway

Maintenance yard



MODAL SHIFT STRATEGY

CONTEXT

The La Trobe University Transport Modeshare Survey 2015 report shows that 53% of students arrive at the campus in private vehicles, 22% by walking, 6% by public transport and 2% by cycling.

With little or no change to the transport network and with the continued provision of parking on campus, it is assumed that the current mode split will continue. With the proposed growth of the student population, significantly more car parking spaces will be required to meet the demand. As this approach is undesirable from an environmental and health perspective, an alternative approach must be adopted to encourage other modes of transport to support the growing student body.

VISION

The future transport needs of the student population will be met by increasing active and public transport modes of transport, instead increasing on-campus car parking numbers. This growth in active and public transport trips will be encouraged through the transport strategies outlined in this chapter.

WALKING

The residential population of the campus will grow in the coming decades. Currently, there are 620 on-campus residents at La Trobe University Bendigo (10% of the student population). By growing the residential population, it is assumed that all of those students will be accessing the campus as pedestrians.

CYCLING

Cycling in Victoria is experiencing a substantial growth in popularity as people are increasingly recognising its benefits such as reduced cost, convenience, reliability and improved health. In the coming decade, rising costs of campus car parking will continue to drive this trend. Providing a cycle-friendly campus environment that is well connected to the developing regional bicycle network will further increase the attractiveness of the mode. Currently, only 2% of university arrivals were by bicycle, however the mode has significant potential as 39% of La Trobe University Bendigo's community live within an easy cycling distance of five kilometres.

PUBLIC TRANSPORT

To ensure alternative modes of transport remain viable and attractive, train and bus connections must be improved, and the frequency and route of current bus services need to be addressed. The key to ensuring that train and bus patronage grows will be strengthening connections to the Bendigo CBD and Bendigo railway station.

PRIVATE VEHICLES

It is not possible to cater for private car access to the same extent if the student population is continuing to grow. The car will continue to play a role for those who have limited mode choices based on their home location, however it is assumed that public transport access will have improved considerably, providing viable alternative modes for many.

CAMPUS CAR PARKING

To enable the University to meet its growth aspirations, there will need to be a shift in the way people access the campus. If the campus population is to grow in size, the University will not be able to continue to meet the current extent of car parking provisions, given the cost and land required to achieve it. In line with the desire to encourage alternative modes to the car, contribute to the sustainable transport agenda and align with the international best practice in transport management at university campuses, it is proposed to establish a net zero increase in on-campus parking levels with a view to reducing them over time.

REFERENCES

Transport Modeshare Survey 2015

The aim is to reduce private vehicle trips to the campus replacing them with active transport and public transport journeys.