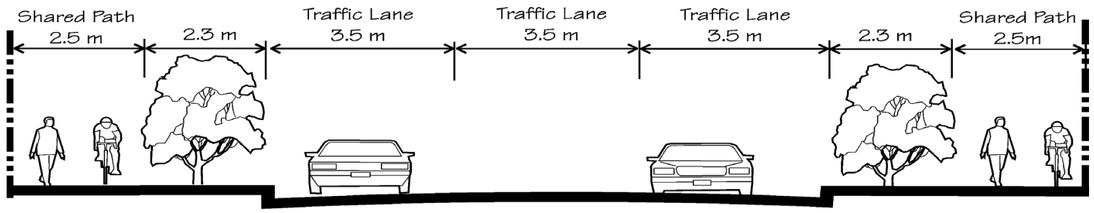
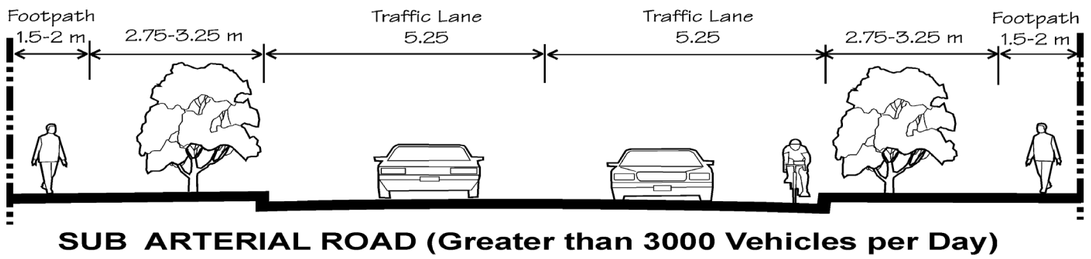
Figure 3.8(b) Typical cross sections for Sub-Artertial, Collector and Local Roads



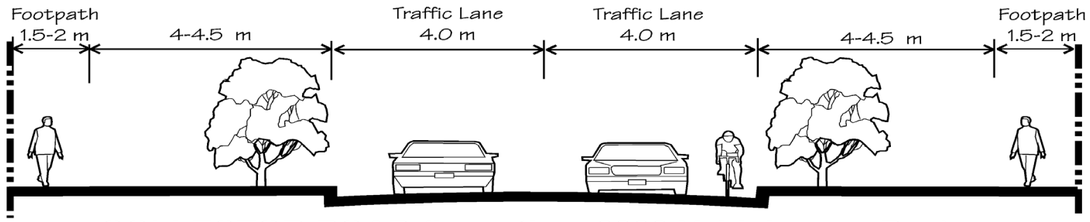
SECONDARY ARTERIAL ROAD - YAN YEAN ROAD

20 m Road Reserve
2 Lane Undivided Carriageway with central turning lane at intersections
Off-pavement Bicycle Lanes



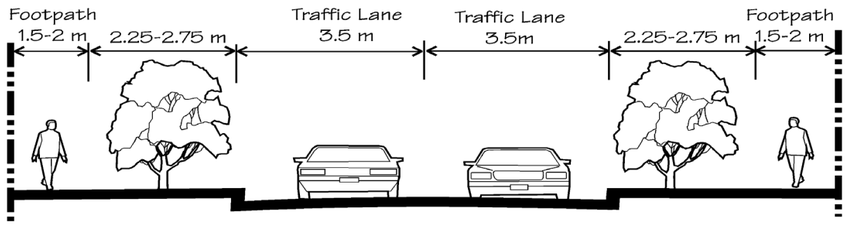
SUB ARTERIAL ROAD (Greater than 3000 Vehicles per Day)

20 m Road Reserve
2 Lane Undivided Carriageway
On Road Bicycle Lane



COLLECTOR ROAD (Less than 3000 Vehicles per Day)

20 m Road Reserve
2 Lane Undivided Carriageway
On-road Bicycle Lane

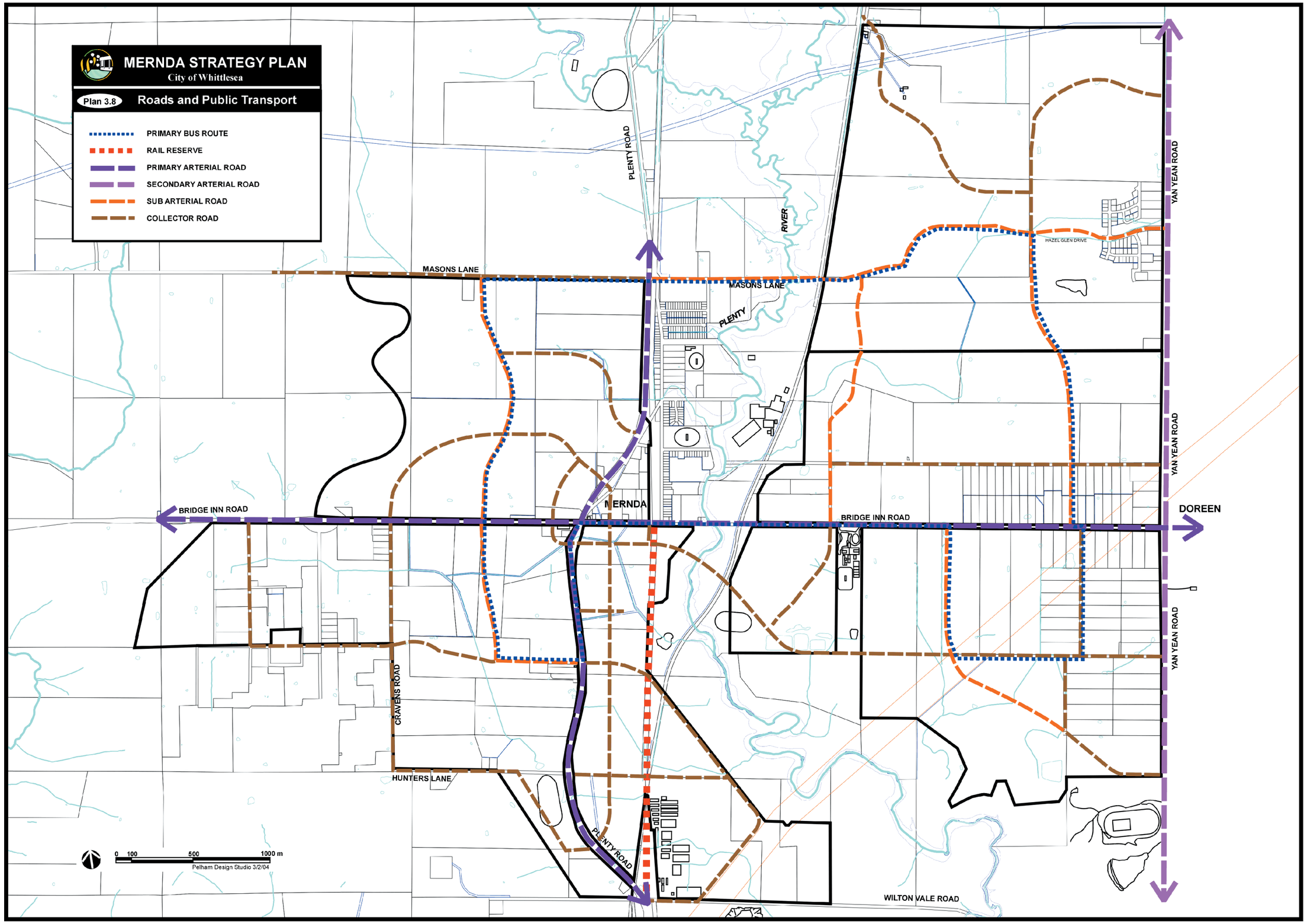


LOCAL ROAD - ACCESS STREET

15.5 m Road Reserve
2 Lane Undivided Carriageway

Table 3.2 — Description of Road Types

Road Type	Function / Characteristics	Target Speed Max (km/h)	Indicative ultimate VPD	Reservation	Ultimate Road Geometry	Works Required under Mernda DCP	Public Transport	Cycle Lanes	Provision Trigger (No. Occupied Lots)
Primary Arterial									
Plenty Road	Form the regional grid of traffic routes and will serve regional, local and commercial transport.								
· South of Bridge Inn Road	To be fronted by service roads wherever possible.	80	43,000	40m	2 x 10.5m carriageways	Duplicate existing road to provide two lanes in each direction	Light rail or express bus lane in central median.	Dedicated off-pavement cycle lane	2,500
· North of Bridge Inn Road	Intersections limited – signal controlled	80	21,000	40m	2 x 8.0m carriageways	Duplicate existing road to provide two lanes in each direction	Light rail or express bus lane in central median.	Dedicated off-pavement	2,500 (north of Bridge Inn Rd)
Bridge Inn Road									
· E6 to SP Boundary		80	21,000	36m (widening to the south)	2 x 8.0m carriageways	Duplicate existing road to provide two lanes in each direction	Express bus lane	Nil	Construction of E6
· SP Boundary to Plenty Rd		80	21,000	36m (widening to the south)	2 x 8.0m carriageways	Duplicate existing road to provide two lanes in each direction	Express bus lane	Dedicated off-pavement	2,500 (west of Plenty Rd)
· Plenty to Yan Yean Rd		80	22,000	36m (widening to south)	2 x 8.0m carriageways	Duplicate existing road to provide two lanes in each direction	Express bus lane	Dedicated off-pavement	5,000 (east of Plenty Rd)
E6 Roadway									
· Bridge Inn to Findon Road		80	13,000 – 16,000 (Mernda) 12,500 (Epping Nth)	36m	2 x 8m carriageways	Construction of single carriageway. Epping Nth to construct a second carriageway south of Harvest Home Road.	Express bus lane	Nil	7,500
Secondary Arterial									
Yan Yean Road	Single lane in each direction with sufficient with to accommodate off-pavement bicycle lanes. Direct vehicle access from adjoining property limited								
· Arthurs Creek Road to Bridge Inn Road		70	17,500	20m	1 x 10.5m carriageway	Intersection treatments and climbing lanes as required	Bus on road	Dedicated off-pavement	As required
· Bridge Inn Rd to SP Boundary		70	10,000	20m	1 x 10.5m carriageway	Widen roadway to provide auxiliary turning and passing lanes	Bus on road	Dedicated off-pavement	3,000 (East of Plenty Road)
Collector Roads	Predominantly residential frontage. Provide major connections between neighbourhoods and activity centres.	60	>5,000	20m	1 x 10.5m carriageway	Full construction	Bus on road	On-pavement with widened kerbside	As required
	Typically 2-lane undivided with widened kerbside for cyclists. Should offer convenient access to arterial roads.	60	<5,000	20m	1 x 8.0m carriageway	Full construction	Bus on road	On pavement with widened kerbside	As required
Local Streets	Local environment is dominant. High amenity streetscapes should promote pedestrian and social activity. Safe for cyclists. Street trees provide shade and visual interest. All streets should have development or open space frontage.	50	3,000	15.5m	1 x 7-7.5m carriageway	Full construction	Nil	On-pavement shared with vehicles	As required


MERNDA STRATEGY PLAN
City of Whittlesea
Plan 3.8
Roads and Public Transport
PRIMARY BUS ROUTE
RAIL RESERVE
PRIMARY ARTERIAL ROAD
SECONDARY ARTERIAL ROAD
SUB ARTERIAL ROAD
COLLECTOR ROAD
PLENTY ROAD
RIVER
YAN YEAN ROAD
HAZEL GLEN DRIVE
MASONS LANE
MASONS LANE
PLENTY
BRIDGE INN ROAD
MERNDA
BRIDGE INN ROAD
DOREEN
YAN YEAN ROAD
YAN YEAN ROAD
CRAVENS ROAD
HUNTERS LANE
PLENTY ROAD
WILTON VALE ROAD
0 100 500 1000 m
Pelham Design Studio 3/2/04

MERNDA STRATEGY PLAN
City of Whittlesea

Plan 3.9 Bicycle/Pedestrian Trail Network

- MERNDA TOWN CENTRE
- PRECINCT ACTIVITY CENTRE
- RAIL STATION / MODAL INTERCHANGE
- SCHOOLS
- POSSIBLE DENOMINATIONAL SCHOOL SITE
- OPEN SPACE
- RETARDING BASINS

TRAIL NETWORK:

- OFF-ROAD TRAILS WITHIN STRATEGY PLAN AREA
- TRAILS WITHIN ARTERIAL ROAD RESERVATIONS
- TRAILS WITHIN OTHER ROAD RESERVATIONS (FOOTPATH WIDENED TO 2.0M MINIMUM)
- REGIONAL TRAILS (PROPOSED)
- PARKS VICTORIA TRAILS (PROPOSED)

PLENTY ROAD
RIVER
PLENTY
MASONS LANE
MASONS LANE
HAZEL GLEN DRIVE
YAN YEAN ROAD
YAN YEAN ROAD
YAN YEAN ROAD
DOREEN
BRIDGE INN ROAD
BRIDGE INN ROAD
Future opportunity to extend to Epping North
MERNDA
P
P-12
P-12
D
P
P
P
CRAVENS ROAD
HUNTERS LANE
Future opportunityto link to Quarry Hills Parkland
PLENTY ROAD
WILTON VALE ROAD
0 100 500 1000 m
Pelham Design Studio 8/8/07

3.3 Environmental Conservation

Key Objective:

To protect and enhance environmental values by applying the principles of ecologically sustainable design to the designation of open space and the construction of urban areas.

Strategic Actions:

3.3.1 Native Vegetation and Habitat Management

- The open space network has been configured to encompass most sites supporting significant patches of remnant vegetation. The design has been informed by the environmental assessment undertaken by TBLD (2000).
- Where remnant vegetation falls outside the designated open space network, it should be preserved through the use of tree-reservations, pocket parks, widened nature strips, or larger residential lots with appropriate building envelopes. The removal of native vegetation should only occur as an absolute last resort.
- All decisions relating to the protection and clearance of native vegetation must contribute to the "net gain" goals contained in *Victoria's Native Vegetation Management – A Framework for Action*. The concept of Net Gain is defined as:

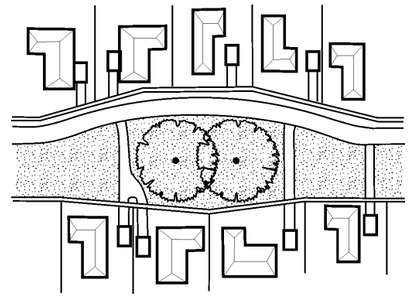
  Net Gain is the outcome for native vegetation and habitat where overall gains are greater than overall losses and where individual losses are avoided where possible. Losses and gains are determined by a combined quality-quantity measure and over a specified area and period of time. Gains may be either required off-sets for permitted clearing actions or as a result of landholder and government efforts that are not associated with clearing.

- To achieve Net Gain outcomes in Mernda, it is required that Development Plans include:
  - An appropriate assessment of any potential impacts on native vegetation and management options that avoid clearing
  - Consideration of clearing in the context of sustainable land-use change
  - Complete explanation of any losses associated with clearing are mitigated by commensurate gains through appropriate offsets
- *Development Plans* must follow a three-step approach to native vegetation management and Net Gain:
  - To avoid adverse impacts, particularly through vegetation clearance
  - If impacts cannot be avoided, to minimise impacts through appropriate consideration in planning processes and expert input to project design or management
  - Identify appropriate off-set options

3.3.2 Areas Requiring Environmental Protection

- *Plan 3.10 – Areas Requiring Environmental Protection* identifies the sites within the *MSP* area that have environmental significance. These have been categorised as either: Key Conservation, Link Conservation or Vegetation Protection areas. Where Development Plans affect these areas, consideration must be given to the recommendations of the report prepared by TBLD (2000).
- *Key Conservation* areas will need to be treated carefully due to their high ecological and landscape value. Where a Development Plan affects a Key Conservation area, the plan should address issues such as:
  - weed and vermin control, revegetation and exclusionary fencing
  - buffer planting treatments on adjoining residential land
  - the use of indigenous street trees
  - habitat improvement treatments
- Where a site of environmental significance falls outside the designated open space system, adjoining development must be sensitive to underlying environmental values. These sites have been nominated as "environmentally sensitive design areas" on the *Precinct Plans (Plans 3.2 – 3.7)*. In these locations the retention of all remnant vegetation is a high priority. Urban design should allow the environmentally sensitive design areas to be linked to the open space system by tree canopies. Figure 3.15 shows some possible design treatments that are applicable to environmentally sensitive design areas.

Figure 3.15 – Possible design treatements to preserve remnant vegetation that falls outside the designated open space network.
Source: W.A. Planning Commission, (1997)



MERNDA STRATEGY PLAN
City of Whittlesea

Plan 3.10 Areas of Environmental Significance

- KEY CONSERVATION AREA
- VEGETATION PROTECTION AREA
- LINK CONSERVATION AREA

(Source: Mernda Strategy Plan - Environmental Assessment Thompson Berrill Landscape Design, June 2000)

MASONS LANE
PLENTY ROAD
RIVER
YAN YEAN ROAD
HAZEL GLEN DRIVE
MASONS LANE
PLENTY
YAN YEAN ROAD
MERNDA
BRIDGE INN ROAD
BRIDGE INN ROAD
DOREEN
YAN YEAN ROAD
CRAVENS ROAD
HUNTERS LANE
PLENTY ROAD
WILTON VALE ROAD

0 100 500 1000 m
Pelham Design Studio 3/2/04

3.4 Activity Centres

Key Objective:

To establish a series of diverse and pedestrian-friendly precinct activity centres that complement a mixed-use Mernda Town Centre of sub-regional status.

Strategic Actions:

3.4.1 Activity Centre Hierarchy

- The *MSP* area will be supported by a three-tiered hierarchy of activity centres comprising: the Mernda Town Centre; precinct activity centres, and local convenience centres. Their distribution is shown on Plan 3.11 – Activity Centres.
- When fully developed the Mernda Town Centre is expected to have the following characteristics:
  - a footprint of approximately 50 hectares and contain around 30,000m2 of retail floorspace and up to 80,000m2 of other business/commercial floorspace
  - support medium/high density housing and community buildings in appropriate locations
  - excellent integration with the transportation system
  - a rail station and associated transport interchange
  - a compact form with pedestrian-friendly streets and public spaces
  - high architectural and urban design standards that generate local identity
  - attractive sites for anchor tenants
  - suitable sites for "highway sales" developments with arterial road frontage
  - promote local employment and economic development
- Precinct activity centres should typically contain a small supermarket, a basic range of convenience shops, and a limited number of specialty shops.
- Local convenience centres should be distributed to service walkable residential catchments with a radius of approximately 600m. These centres should typically contain two or three shops providing basic goods and services. Other attractions such as telephone boxes, a bus stop, and post boxes should also be provided in these locations.

3.4.2 Employment and Economic Development

- The Mernda Town Centre will be a driver of economic activity. It should be capable of accommodating a substantial amount of non-retail commercial land use and a range of home business opportunities.
- The Mernda Town Centre is well-positioned to attract a significant "one-off" development such as a higher-education campus or research centre. This option should be preserved in the detailed design of the activity centre.

3.4.3 Activity Centre Design

- Activity centres should be positioned on arterial or major collector roads to aid retail exposure and accessibility. Traditional activity centre design based on a "main street" is encouraged. Commercial buildings should be orientated towards pedestrian-friendly streets, plazas or open space. Facades should be varied and articulated to create visual interest and make streets and public spaces more engaging for pedestrians. Multi-level buildings that enable a vertical mixing of uses are encouraged. *Figure 3.16* provides a set of images that describe urban environment envisaged for the Mernda Town Centre.
- The design of precinct activity centres should

Figure 3.16 – Images of the main street environment envisaged for the Mernda Town Centre

draw on local character elements to create a sense of place. These centres should become a point of difference between respective precincts.

- Activity centre design should seek to integrate the civic and commercial spheres. Public buildings should occupy prominent sites and be of high architectural quality. Refer to Figure 3.17.
- The setback of commercial buildings in activity centres should be minimal and they should not be fronted by expansive car parks. Where car parking needs cannot be met on-street, it should be provided at the rear of buildings as depicted in Figure 3.18.
- Highway-sales or bulky-goods retail development should be restricted to sites on Plenty Road and Bridge Inn Road within the limits of the Mernda Town Centre footprint.
- Water sensitive urban design (WSUD) treatments should be implemented throughout activity centres. Run-off from carparking and impervious areas can be diverted to swales and/or wetland areas. This run-off can be used for irrigating landscaped areas. Porous pavements should be used where possible and the collection of roof run-off considered for reuse. WSUD should also be integrated into landscaped areas within activity centres. Potable and groundwater resources should be augmented or replaced by recycled water where potable standards are not required.

Figure 3.17 Streets should frame views to community buildings, natural features and open space.
Source: Calthorpe (1993)

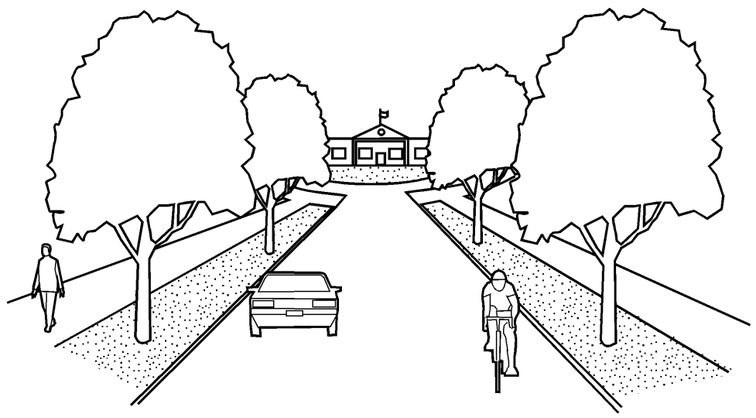


Figure 3.18 Car parks should be located at the rear of retail and commercial buildings in the Mernda Town Centre. Buildings should present strongly to the street.
Source: Calthorpe (1993)

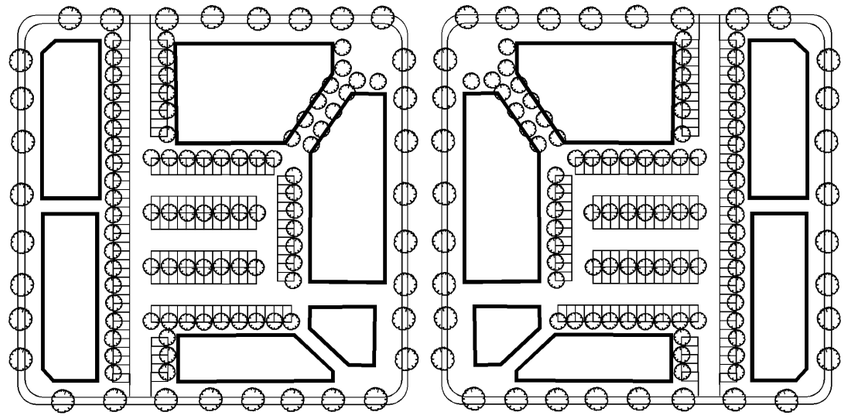


Figure 3.19 Gently sloping grassed area in parking lot.
Source: Melbourne Water (1999)

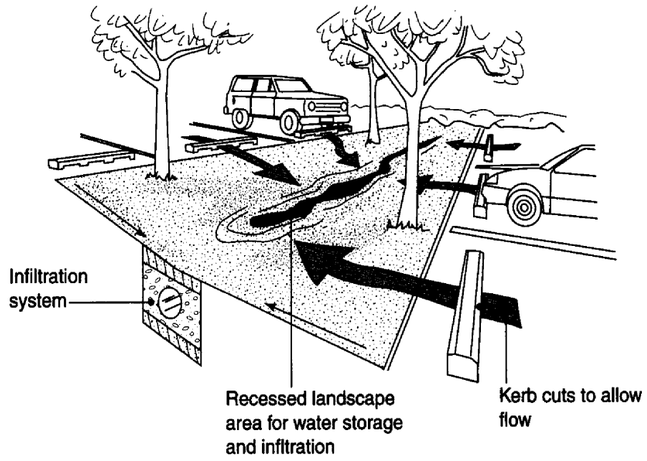


Figure 3.20 On site detenstion for large sites
Source: Melbourne Water (1999)