## 1 Infrastructure

#### 1.1 Infrastructure

### **Background**

Infrastructure is critical to the social and economic well-being of people and communities. This section provides a framework for the development, operation, repair, maintenance and upgrading of infrastructure.

The development, operation, repair maintenance and upgrading of infrastructure can have a range of adverse effects on the environment, visual amenity of an area, and public health and safety. Equally, some infrastructure produces adverse effects beyond the boundary of the site. The sensitivity of adjacent activities, particularly residential, to these effects can lead to complaints and ultimately constraints on the operation of infrastructure. Managing these reverse sensitivity effects is critical.

Detailed infrastructure provisions (zones and precincts), such as the Auckland Airport precinct and the Strategic Transport Corridor zone are also provided throughout the plan and should be referred to where applicable.

## **Objectives**

- 1. The benefits of infrastructure are recognised.
- 2. The adverse effects of infrastructure are managed.
- 3. Safe, efficient and secure development, operation and upgrading of infrastructure is enabled, to service the needs of existing and planned use and development
- 4. The resilience of Auckland's infrastructure is improved.
- 5. Auckland's significant infrastructure is protected from reverse sensitivity effects and incompatible subdivision, use and development.

#### **Policies**

#### Benefits of infrastructure

- 1. Recognise the positive social, economic, environmental and cultural effects that infrastructure provide, including:
  - a. enabling enhancement of the quality of life/standard of living for people and communities
  - b. protecting public health and safety
  - c. enabling the functioning of businesses
  - d. enabling economic growth
  - e. protecting the environment
  - f. enabling the transportation of freight, goods, people
  - g. enabling interaction and communication

## Reverse sensitivity

2. Prevent reverse sensitivity effects from inappropriate subdivision, use and development which may compromise the operation and capacity of existing or approved significant infrastructure.

#### Provision of infrastructure

- 3. Provide for a range of infrastructure to operate throughout Auckland by recognising:
  - a. operational and technical requirements
  - b. location, route and design constraints
  - c. the complexity of infrastructure services and that infrastructure is generally managed as a connected network
  - d. the benefits of infrastructure to the wider community, Auckland and/or New Zealand
  - e. the need to respond quickly to service disruptions.
- 4. Require the development, upgrading, operation, repair and maintenance of infrastructure to avoid or mitigate adverse effects on the:
  - a. health, well-being and safety of people as a result of nuisance from noise, vibration, dust and odour emissions and light spill
  - b. safe and efficient operation of other networks
  - c. visual amenity values of the streetscape and/or adjoining properties
  - d. natural and physical environment from temporary and ongoing discharges
  - e. intrinsic values of any scheduled sites or overlay areas.
- 5. Assess the adverse effects of development of new infrastructure, considering:
  - a. the degree to which the environment has already been modified
  - b. the duration timing and frequency of the adverse effects
  - c. the impact on the network and levels of service if the new work is not undertaken
  - d. the need for the infrastructure in the context of the wider network
  - e. the benefits to the wider community and/or Auckland provided by the infrastructure.
- 6. Encourage new linear infrastructure to be located in roads and other identified corridors where practical.

### Undergrounding of infrastructure in urban areas

- 7. Require new or major upgrades to electricity and telecommunications lines to be located underground in urban areas unless there are significant economic reasons.
- 8. Enable the coordinated undergrounding of existing electricity and telecommunications lines in the road and other identified corridors, particularly where the opportunity exists when network improvements are undertaken.

## New technologies

- 9. Provide flexibility for infrastructure operators to use new technological advances that:
  - a. improve access to, and efficient use of, services
  - b. allow for the re-use of redundant services and/or structures where appropriate
  - c. result in environmental benefits and enhancements
  - d. support a competitive economy.

#### Road network

10. Provide for the construction, use, operation, maintenance and development of the road network in a manner which:

- a. contributes to the operation of the single integrated multi-modal transport system
- b. provides for the transport movement and accessibility functions of the road
- c. provides for the placemaking functions of the road
- d. provides for a range of transport infrastructure, streetscape amenities, and network utility services within the road.
- 11. Provide access to the road network which is safe and efficient and minimises conflict between the placemaking, movement and access functions of roads.
- 12. Undertake or require works to be undertaken in an existing or planned road, in a manner which will achieve positive movement, access and placemaking outcomes taking into account:
  - a. the functions, priorities and operational characteristics of the road
  - b. the characteristics of the location
  - c. the place/context design typology which is appropriate to the design of a road in the particular location.
  - d. any historic heritage or special character context
  - e. the selection, location and installation of streetscape amenities, such as seating, cycle parking, plaques and memorials, public art, litter bins, public toilets and drinking fountains, to:
    - i. enhance the street environment
    - ii. avoid visual clutter
    - iii. avoid impeding or causing a hazard for people including those with mobility or visual impairments, aged people or children
  - f. design principles for streets and the street design process.

## **1.2 Transport**

#### **Background**

To support the operation and development of an integrated transport network, this section provides for public transport facilities and walking and cycling facilities which may be located outside the road network (which is covered in 1.1 Infrastructure) and are not otherwise provided for in the Unitary Plan.

Parking is an essential component of Auckland's transport system as it can have major implications for the convenience, economic viability, design and layout of an area. It is important that parking is managed and provided in a manner that supports urban amenity and efficient use of land. It can also be managed to have a significant influence on reducing car use, particularly for commuter travel. This in turn reduces the growth in traffic, particularly during peak periods, and achieves a more sustainable transport system.

The approach to parking provided with an activity or development is outlined below:

- there is no requirement for activities or development to provide parking in the following zones and locations:
  - the City, Metropolitan, Town and Local Centres (with the exception of identified non-urban town and local centres) zones
  - the City Centre Fringe overlay
  - · the Terrace Housing and Apartment Buildings zone and the Mixed Use zone
- instead, a maximum limit has been set on the amount of parking that can be provided on a site. This
  approach supports intensification and public transport and recognises that for most of these areas,
  access to the Rapid and Frequent Service Network will provide an alternative means of travel to private
  vehicles
- in all other areas, a minimum level of parking is required to accompany any activity or development. A maximum limit is set on the amount of parking that can be provided for offices.

Standalone parking facilities which are not accessory to activities or development on the same site are provided for and will be individually assessed.

To support cycling and other active transport modes, such as walking and cycling, some activities and developments are required to provide cycle parking as well as end-of-trip facilities. Off-road pedestrian and cycling facilities are also provided for to complement facilities located in the road network.

The Unitary Plan's approach to parking will be supported by the development and implementation of comprehensive parking management plans for centres, with particular priority given to the metropolitan centres. Comprehensive parking management plans assist with the integrated management of both off-street and onstreet parking in centres, and will provide guidance for assessing applications which affect the supply of parking.

This section also addresses loading, the design of parking and loading, access from activities and developments to the road, and access around road/rail level crossings.

In addition to the Auckland-wide Transport rules, Auckland Transport's Code of Practice (ATCOP) provides further guidance around parking, loading and access, and it sets out Auckland Transport's engineering standards for the construction of vehicle crossings. NZTA manages access to state highways under the Land Transport Management Act 2003.

Activities or subdivision which generate higher amounts of traffic, and which seek to locate outside of the most intensive centres and residential zones, are required to demonstrate how the proposal would integrate with the transport network. This includes addressing the transport impacts of the proposal on the effective, efficient and

safe operation of the local transport network.

## **Objectives**

- 1. Land use and all modes of transport are integrated in a manner that enables the adverse effects of traffic generation on the transport network to be managed.
- 2. An integrated public transport, walking and cycling network is provided for.
- 3. The number, location and type (short-term or long-term, public or private) of parking and loading spaces, including cycle parking and associated end-of-trip facilities, support:
  - a. intensification in the following locations:
    - i. the City, Metropolitan, Town and Local Centres zones
    - ii. the City Centre Fringe overlay (as identified on the planning maps)
    - iii. the Terrace Housing and Apartment Buildings zone
    - iv. the Mixed Use zone.
  - b. the effective, efficient and safe operation of the transport network
  - c. the use of more sustainable transport options including public transport, cycling and walking
  - d. the economic activity of businesses
  - e. the efficient use of land.
- 4. Parking and loading is designed, located and accessed safely and efficiently for pedestrians and vehicles within and outside the site and in a manner which contributes to quality design of the built environment.
- 5. Development provides access between the road and activities by:
  - a. facilitating the effective, efficient and safe operation of the transport network
  - b. prioritising pedestrian safety and amenity along public footpaths
  - c. achieving a balance between the placemaking, movement and access functions of the road.
- 6. Safety is not compromised by access, buildings and structures adjacent to road/rail level crossings.

## **Policies**

## **Traffic Generation**

- 1. Require high traffic generating activities or subdivisions which:
  - a. are proposed outside of the following zones:
    - i. the City, Metropolitan, Town Centres zones
    - ii. the Terrace Housing and Apartment Buildings zone; and
  - b. do not already require an Integrated Transport Assessment under clause 2.7.9 of the General provisions.
  - c. to mitigate and manage adverse effects on and integrate with the transport network by measures such as travel planning, providing alternatives to private vehicle trips, staging development, or undertaking improvements to the local transport netwok

### **Parking**

- Limit the supply of on-site parking in the following locations to support the planned growth and
  intensification provided for in the Unitary Plan, recognise the existing and future accessibility of these
  locations to the Rapid and Frequent Service Network, and support walking and cycling:
  - a. the City, Metropolitan, Town and Local Centres zones

- b. the City Centre Fringe overlay (as identified on the planning maps)
- c. the Terrace Housing and Apartment Buildings zone
- d. the Mixed Use zone.
- Require activities and development located outside the areas covered by policy 2 above to provide a
  minimum level of on-site parking in recognition of the more limited alternatives to private vehicle travel
  unless it can be demonstrated that a lesser amount of on-site parking is needed for a particular site or
  proposal.
- 4. Limit the supply of on-site parking for office development in all locations to:
  - a. minimise the growth private vehicle trips by commuters travelling during peak periods
  - b. support the approach taken to providing for larger scale office developments in the Metropolitan Centre, Town Centre, Mixed Use, General Business and Business Park zones.
- 5. Provide for flexible approaches to parking, including shared, consolidated and off-site parking, which use land and parking spaces more efficiently, and reduce incremental and individual parking provision.
- 6. Provide for non-accessory parking and off-site parking where:
  - the proposal and the type of parking proposed e.g. visitor or commuter, short-term or long-term, private or public, will reinforce the efficient use of land or planned growth and intensification provided for in the Unitary Plan for the site or locality
  - b. there is an undersupply or projected undersupply of parking to service the area having regard to:
    - the availability of alternative transport modes, particularly access to the existing and planned Rapid and Frequent Service Network
    - ii. the type of parking proposed
    - iii. existing parking survey information
    - iv. the type of activities in the surrounding area.
  - c. any off-site parking is generally in close walking distance of the donor site(s) unless it is shown that a greater separation distance is reasonable and practicable.
- 7. Avoid the development of long-term parking (non-accessory) in the City Centre zone and the City Centre Fringe overlay to:
  - a. recognise and support the high level of accessibility these areas have to the Rapid and Frequent Service Network
  - b. minimise the growth in private vehicle trips by commuters during peak periods.
- 8. Control the development of long-term parking (non-accessory) in the Metropolitan, Town and Local Centre zones and in the Mixed Use zone so that the parking does not undermine:
  - a. the efficient use of land or growth and intensification provided for in the Unitary Plan for the site or locality
  - b. public transport in these zones.
- Encourage facilities for parking (non-accessory) to provide for alternatives to the private car and single occupant cars, or promote use of smaller or more energy efficient cars. This may include:
  - a. parking spaces allocated to car share or car pool vehicles
  - b. parking spaces allocated to small cars or hybrid vehicles
  - c. spaces allocated to scooter or motorcycle parking
  - d. free, secure and covered parking for cycles

- e. end-of-trip facilities such as secure lockers, showers and changing facilities
- f. charging points for electric vehicles.
- 10. Provide for park-and-ride and public transport facilities which are located and designed to support the public transport system by:
  - a. locating in proximity to public transport stations, stops and terminals
  - b. growing public transport patronage to assist in relieving congested corridors by encouraging commuters to shift to public transport
  - c. making public transport easier and more convenient to use, thereby attracting new users
  - d. improving the operational efficiency of the public transport system, particularly the Rapid and Frequent Service Network
  - e. extending the catchment for public transport into areas of demand where it is not cost-effective to provide traditional services or feeders
  - f. reinforcing existing and future investments on the Rapid and Frequent Service Network
  - g. providing free, secure and covered parking for cycles.
- 11. Support increased cycling and walking by:
  - requiring cycle parking to be included in larger residential developments and in developments including offices, retail, industrial activities, education facilities, medical facilities and entertainment or community facilities
  - b. requiring end-of-trip facilities, such as lockers, showers and changing facilities, to be included in developments with high employee and student numbers
  - c. providing for off-road cycle and pedestrian facilities to complement facilities located within the road network.

### Loading

- 12. Require sites and activities to have access to loading facilities to support their operations and minimise disruption on the adjacent transport network.
- 13. Provide for alternative loading arrangements, including on-street loading or shared loading areas, particularly in locations where it is desirable to limit access points for reasons of safety, amenity and road operation.

# Design of parking and loading

- 14. Require parking areas to be designed and located to:
  - a. avoid adverse visual effects on the amenity of the streetscape
  - b. provide safe access and exit for vehicles, pedestrians and cyclists
  - c. reduce potential conflicts between vehicles, pedestrians and cyclists.
- 15. Require loading areas to be designed and located to:
  - a. avoid adverse visual effects on the amenity of the streetscape
  - b. provide for the separation of service and other vehicles where practicable
  - c. reduce conflicts between service vehicles, pedestrians and cyclists.
- 16. Require parking and loading areas to be designed so that reverse manoeuvring of vehicles onto or off the road does not occur in situations which will compromise:

- a. the effective, efficient and safe operation of arterial roads
- b. pedestrian safety and amenity, particularly within the Centre and Mixed Use zones
- c. safe and functional access where driveways are longer, or serve rear sites or more than four parking spaces.
- 17. Require the location, design and external appearance of park-and-ride, non-accessory and off-site parking facilities, public transport facilities, and off-road pedestrian and cycling facilities to:
  - a. complement adjacent uses and developments with any buildings or structures to be of similar or compatible scale to those existing or provided for in the surrounding area
  - b. meet the design outcomes identified in this Unitary Plan for the site and/or location generally
  - c. provide screening, such as exterior panelling, for any parking building
  - d. be accessible, safe and secure for users with safe and attractive pedestrian connections within the facility and to adjacent public footpaths.
  - e. provide an attractive interface between any buildings, structures or at-grade parking areas and adjacent streets. Depending on location and scale, this may include:
    - i. maintaining an active frontage through sleeving and/or an interesting appearance through use of architectural treatments so that the facility contributes positively to the pedestrian amenity and to any retail, commercial or residential uses along the road it fronts
    - ii. planting and other landscaping
  - f. provide for any buildings to be adapted for other uses if no longer required for parking. In particular, the floor to ceiling height of a parking building at street level should be capable of conversion to other activities provided for in the zone.
- 18. Require park-and-ride, non-accessory and off-site parking facilities, and public transport facilities, and their access points to be of scale and design, and to be managed, operated and developed so as to avoid adverse effects on the effective, efficient and safe operation of the transport network including:
  - a. the safety of pedestrians and cyclists
  - b. amenity for pedestrians
  - c. avoiding queuing onto the road and conflict at access points to the facility
  - d. avoiding generating high volumes of traffic onto local roads or areas with high pedestrian amenity
  - e. the operation of public transport services and related infrastructure.

## **Access**

- 19. Require vehicle crossings and associated access to be designed and located to provide for safe and efficient movement to and from sites and minimise potential conflicts between vehicles, pedestrians, and cyclists on the adjacent road network.
- 20. Avoid or restrict vehicle access to and from sites adjacent to motorway interchanges, and on arterial roads, including state highways, so that the:
  - a. location, number, and design of vehicle crossings and associated access provides for the efficient movement of people and goods on the state highway and road network
  - b. any adverse effect on the effective, efficient and safe operation of the motorway interchange arising from vehicle access adjacent to a motorway interchange is avoided, remedied or mitigated.
- 21. Avoid vehicle access to and from sites subject to a Vehicle Access Restriction general within the City Centre zone to:

- a. give high priority to pedestrian movement, safety and amenity along the main pedestrian streets in the City Centre zone
- b. provide for continuity of building frontage and associated activities at street level.
- 22. Avoid vehicle access to and from sites subject to the Key Retail Frontage overlay in the Metropolitan Centre, Town Centre and Mixed Use zones to:
  - a. give high priority to pedestrian movement, safety and amenity
  - b. provide for continuity of building frontage and associated activities at street level.
- 23. Restrict vehicle access to and from sites subject to the Commercial Frontage overlay in Metropolitan Centre, Town Centre and Mixed Use zones to:
  - a. support pedestrian safety and amenity
  - b. provide for continuity of building frontage and associated activities at street level.

## Access to level crossings

- 24. Limit the location of buildings and structures within the sightline areas of road/rail level crossings not controlled by barrier arms and/or alarms.
- 25. Control vehicle access to sites adjacent to all road/rail level crossings to improve safety for vehicles on the road.

## 1.3 Use of designations within the road corridor

#### **Background**

Road corridors are used for transportation, network infrastructure, and by the public.

Within corridors, designations are used to protect and provide for existing and future infrastructure. For example, designations are used for different phases of a project—planning (route protection), construction, and operation and protection of existing infrastructure.

Designations also impose restrictions on others who may have legal rights, such as land owners, to undertake works within the designated area in order to protect the required land or infrastructure.

The use of designations should reflect the range of legal rights to use and access the road corridor that must be considered. There are additional mechanisms for managing and coordinating access to the road corridor such as the National Code of Practice for Utility Operators' Access to Transport Corridors (the CAR process).

Designations in the road corridor should be used sparingly, for specific purposes and tailored to address specific phases. Any notice of requirement, including conditions, should be drafted to minimise the impact of the designation on others entitled to access the road corridor.

### **Objective**

1. Designations in the road corridor are used only where necessary, to protect existing and future infrastructure and provide for infrastructure development, while minimising restrictions on transport functions, utility services and other users of the corridor.

#### **Policies**

- 1. Encourage requiring authorities to designate within the road corridor only when there is no other effective alternative to:
  - protecting the route or locating infrastructure to enable construction and operation where it is likely that future development and uses may impose restrictions and/or result in reverse sensitivity concerns
  - b. protecting existing infrastructure that would present a serious public health and safety risk or result in significant loss of service and incur significant unplanned costs if damaged or interfered with
  - provide for complex projects or works where they cross multiple areas/zones/roads.
- 2. Encourage requiring authorities seeking designations in accordance with the policy above to:
  - explore other mechanisms enabling route or asset protection, such as the Utilities Access Act
     2010 and the CAR process
  - b. where practical, minimise restrictions on other users, especially those involved in ongoing operation, maintenance, upgrading and improvement of the road corridor, and network utility infrastructure located in the road corridor; by:
    - specifying in the notice of requirement how any legal rights of access to the corridor, including those of the corridor manager and network utility operators, will be managed during/after construction
    - ii. reducing the spatial extent of the designation—breadth, depth and height—to the minimum requirement for the relevant phase of development and considering uplifting the designation where practical.
- Specify the information requiring authorities must provide when designating any part of a road corridor, including the spatial extent of the proposed designation—breadth, depth and height—for the different phases of development including planning, construction and operation of the finished work.