

## **Pedestrian Access Routes to Dwellings**

Issues, Analysis & Recommendations in support of Proposed Plan Change 79: Transport Chapter

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# 1. Introduction

The purpose of this report is to identify and analyse the consequential effects of the removal of car parking minimums as required by the National Policy Statement on Urban Development (NPS UD) with respect to pedestrian access routes which are the sole means of access to dwellings (hereafter referred to as 'pedestrian access routes') and make recommendations in order to support the Transport Plan Change.

Pedestrian access routes which are the sole means of access to dwellings can provide pedestrian access to dwellings where no vehicle access is provided to the site (refer Figure 1); or in combination with vehicle access to a parking area (refer Figure 2).



Figure 1: Development with pedestrian access route only (shown in red)



Figure 2: Development with vehicle access and carparking (shown in blue) and pedestrian access route (shown in red)

## 2. Description of the Issues

The NPS UD seeks to enable well-functioning urban environments and as part of this, considers the efficient use of urban land. Policy 11 of the NPS UD states that Councils can no longer have provisions that require a minimum amount of parking for any use or development. Under Part 4.1 of the NPS UD, the minimum parking provisions were removed in February 2022.

In considering the consequences of the removal of car parking minimums, Council has identified that there is a gap in the Auckland Unitary Plan (AUP), in that no standards apply to pedestrian access routes which are the sole means of access to dwellings. Where dwellings are not provided with vehicle access or parking, they will rely solely on pedestrian access routes to access their dwellings. Footpath access can also be provided in conjunction with vehicle access and carparking.

As the AUP does not currently manage pedestrian access routes that are the sole means of access to dwellings (either through standards or guidance), this creates the potential for dwellings to be accessed by unsafe and poorly designed pedestrian access.

Prior to the removal of parking minimums by the NPSUD in February 2022, the Terraced Housing and Apartment Building zone, and studio and one-bedroom dwellings in the Mixed Housing Urban zone, required no parking minimums. As such, a number of developments which rely solely on pedestrian access routes have already been consented and built with variable results. Pedestrian access routes present a number of challenges in terms of practical access for a range of users; safety; wayfinding, convenience; amenity and emergency services (fire, police and ambulance). The removal of car parking minimums across all zones in February 2022 will enable an increase in this development model across all residential zones, with an associated increased risk of poorly designed and unsafe pedestrian access routes.

## 3. Relevant AUP Provisions

### 3.1. Regional Policy Statement

The following objectives and policies under Section B2.3 'A Quality Built Environment' of the RPS are relevant to the consideration of pedestrian access routes that are the sole means of access to dwellings:

#### **B2.3. A quality built environment**

##### **B2.3.1. Objectives**

*(3) The health and safety of people and communities are promoted.*

##### **B2.3.2. Policies**

*(1) Manage the form and design of subdivision, use and development so that it does all of the following:*

- (a) supports the planned future environment, including its shape, landform, outlook, location and relationship to its surroundings, including landscape and heritage;*
- (b) contributes to the safety of the site, street and neighbourhood;*
- (c) develops street networks and block patterns that provide good access and enable a range of travel options;*
- (d) achieves a high level of amenity and safety for pedestrians and cyclists;*
- (e) meets the functional, and operational needs of the intended use; and*
- (f) allows for change and enables innovative design and adaptive re-use.*

*(2) Encourage subdivision, use and development to be designed to promote the health, safety and well-being of people and communities by all of the following:*

- (a) providing access for people of all ages and abilities;*
- (b) enabling walking, cycling and public transport and minimising vehicle movements; and*
- (c) minimising the adverse effects of discharges of contaminants from land use activities (including transport effects) and subdivision.*

## **B2.4. Residential growth**

### **B2.4.1. Objectives**

*(2) Residential areas are attractive, healthy and safe with quality development that is in keeping with the planned built character of the area.*

## **3.2. Auckland-Wide Objectives and Policies**

The following objectives, policies and standards in the Subdivision and Transport chapter are considered to be relevant:

### **3.2.1 Transport Chapter**

#### **E27.2. Objectives**

*(5) Pedestrian safety and amenity along public footpaths is prioritised.*

*(4) The provision of safe and efficient parking, loading and access is commensurate with the character, scale and intensity of the zone.*

#### **E27.3. Policies**

##### *Design of parking and loading*

*(17) Require parking and loading areas to be designed and located to:*

- (a) avoid or mitigate adverse effects on the amenity of the streetscape and adjacent sites;*
- (b) provide safe access and egress for vehicles, pedestrians and cyclists;*
- (c) avoid or mitigate potential conflicts between vehicles, pedestrians and cyclists; and*
- (d) in loading areas, provide for the separation of service and other vehicles where practicable having regard to the functional and operational requirements of activities.*

##### *Access*

*(20) Require vehicle crossings and associated access to be designed and located to provide for safe, effective and efficient movement to and from sites and minimise potential conflicts between vehicles, pedestrians, and cyclists on the adjacent road network.*

#### **E27.6.3.7. Lighting**

*(1) Lighting is required where there are 10 or more parking spaces which are likely to be used during the hours of darkness. The parking and manoeuvring areas and associated pedestrian routes must be adequately lit during use in a manner that complies with the rules in Section E24 Lighting.*

### E27.6.4.3. Width of vehicle access and queuing requirements

Table E27.6.4.3.2 Vehicle crossing and vehicle access widths

Location of site frontage		Number of parking spaces served	Minimum width of crossing at site boundary	Maximum width of crossing at site boundary	Minimum formed access width
(T149)	Residential zone	Serves 1 or 2 parking spaces	2.75m	3.0m	2.5m provided it is contained within a corridor clear of buildings or parts of a building with a minimum width of 3m
(T150)		Serves 3 to 9 parking spaces	3.0m (one way)	3.5m (one way)	3.0m provided it is contained within a corridor clear of buildings or parts of a building with a minimum width of 3.5m
(T151)		Serves 10 or more parking spaces	5.5m (two-way)	6.0m (two-way)	5.5m (providing for two-way movements) The formed width is permitted to be narrowed to 2.75m if there are clear sight lines along the entire access and passing bays at 50m intervals are provided. 1.0m pedestrian access for rear sites which may be located within the formed driveway
(T152)	Centres, Mixed Use and all other	Serves nine or less parking	3.0m (one way)	3.5m (one way)	3.0m provided it is contained within a corridor clear of buildings or parts of a building with

	zones not listed below	spaces			a minimum width of 3.5m
(T153)		Serves 10 or more parking spaces or three	5.5m (two-way)	6.0m (two-way)	5.5m (providing for two-way movements) 1.5m pedestrian access for rear sites
(T154)	General Business, Business Park or Industrial zones	Serves nine or less parking spaces	3.7m (one way)	4.0m (one-way)	3.0m provided it is contained within a corridor clear of buildings or parts of a building with a minimum width of 3.5m
(T155)		Serves 10 or more parking spaces	6.0m (two-way)	7m (two-way)*	6.0m (providing for two-way movements)
(T156)	Rural zones		3.0m	6.0m*	No minimum specified

## Subdivision Chapter

### E38.2. Objectives

*(6) Subdivision has a layout which is safe, efficient, convenient and accessible.*

### E38.3. Policies

*(10) Require subdivision to provide street and block patterns that support the concepts of a liveable, walkable and connected neighbourhood including:*

*(a) a road network that achieves all of the following:*

*(i) is easy and safe to use for pedestrians and cyclists;*

*(ii) is connected with a variety of routes within the immediate neighbourhood and between adjacent land areas; and*

*(iii) is connected to public transport, shops, schools, employment, open spaces and other amenities; and*

*(b) vehicle crossings and associated access designed and located to provide for safe and efficient movement to and from sites and minimising potential conflict between vehicles, pedestrians, and cyclists on the adjacent road network.*

*(16) Require shared vehicle access to be of a width, length and form that:*

*(a) encourages low vehicle speed environments; and*

*(b) provides for the safety of users of the access and the adjoining road network.*

### E38.8.1. General standards in residential zones

#### **E38.8.1.2. Access to rear sites**

**(1) A single jointly owned access lot or right-of-way easement must not serve more than ten proposed rear sites.**

**(2) Vehicle access to proposed sites without direct vehicular access to a formed legal road must be by way of an entrance strip, jointly owned access lot or right-of-way easement over adjoining land, or by a combination of these mechanisms, provided the total width and other dimensions of the access comply with the standards in Table E38.8.1.2.1 Access to rear sites below.**

**Table E38.8.1.2.1 Access to rear sites**

	Total number of rear sites served		
	1	2 – 5	6 - 10
Minimum legal width	3.0m	3.5m	6.5m
Minimum formed width	2.5m	3.0m	5.5m
Minimum service strip	0.5m	0.5m	1.0m
Maximum length	50m	50m	100m Note 1
Maximum gradient	1 in 4	1 in 5	
Minimum vertical clearance from buildings or structures	3.8m		
Minimum inside turning radius for bends	6.5m		

**Note 1**

For accessways greater than 50 metres in length speed management measures should be considered.

- (3) Accessways serving six or more rear sites must provide separate pedestrian access, which may be located within the formed driveway.
- (4) The pedestrian access required by E38.8.1.2(3) must meet all of the following:
  - (a) have a minimum width of 1 metre;
  - (b) can include the service strip; and
  - (c) be distinguished from the vehicle carriageway through the use of a raised curb or different surface treatment.

## 4. Summary of Relevant AUP Provisions

### 4.1 Parking

Prior to the removal of the car parking minimums from all zones in February 2022, no minimum parking standards were required in the Terraced Housing and Apartment Buildings (THAB) zone, for studio and one-bedroom dwellings in the Mixed Housing Urban zone (MHU), and some Business zones<sup>1</sup>.

### 4.2 Vehicle & Pedestrian Access: Land Use Led

Where a land use consent is sought in the residential zones, pedestrian access is only required where there is vehicle access serving 10 or more parking spaces<sup>2</sup>. The pedestrian access is required to be 1.0m in width, and can be contained within the formed driveway (i.e. within the vehicle carriageway).

<sup>1</sup> Transport Chapter E27: Table E27.6.2.3 Parking rates - area 1(T28) and Table E27.6.2.4 Parking rates – area 2 (T37, T38 & T38A)

<sup>2</sup> Transport Chapter E27: Table E27.6.4.3.2 Vehicle crossing and vehicle access widths (T151)

### 4.3 Vehicle & Pedestrian Access: Subdivision

Where a subdivision consent is sought in the residential zones, accessways serving 6 or more rear sites must provide separate pedestrian access, which may be located within the formed carriageway<sup>3</sup>. The pedestrian access is required to be 1.0m in width, can include a service strip (for underground services) and be distinguished from the vehicle carriageway through the use of a raised curb or different surface treatment.<sup>4</sup>

There do not appear to be any specific standards for vehicle or pedestrian access within the Business zones, other than that the subdivision is to be in accordance with an approved land use consent.

### 4.4 Lighting

Lighting is required in all residential and business zones where there are 10 or more parking spaces which are likely to be used during the hours of darkness<sup>5</sup>. The parking and manoeuvring areas and associated pedestrian routes must be adequately lit during use in a manner that complies with the rules in Section E24 Lighting. The AUP does not specify what “adequate” lighting is and E24 only manages light spill and nuisance effects to neighbours. No lighting is required where there is no parking.

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<sup>3</sup> Subdivision Chapter: E38.8.1.2. Access to rear sites Table E83.8.1.2.1

<sup>4</sup> Subdivision Chapter: E38.8.1.2(4)

<sup>5</sup> E27.6.3.7.(1)



## 5. Monitoring Data Analysis

### 5.1 Methodology

Developments relying on pedestrian access routes as the sole means of access to dwellings, particularly those with no onsite car parking, is a new development model and reflects recent market acceptance of reduced, or no onsite carparking. The cause of this is likely due to housing affordability and opportunities for increased development yield.

A total of 62 approved resource consents providing for a total of 854 dwellings were analysed to identify key characteristics associated with pedestrian access routes that are the sole means of access to dwellings. This included developments with no vehicle access or carparking which rely entirely on pedestrian access routes (42% of developments), as well as pedestrian access routes provided in conjunction with vehicle access and some communal carparking (58% of developments). The monitoring methodology was confirmed with Councils consultant economist, Mr Doug Fairgray of Market Economics.

The provision of pedestrian access routes as the sole means of access to a dwelling, or non-provision of carparking in THAB or for studio and 1-bedroom units in MHU does not trigger a reason for resource consent. As such there is no way to search Council's approved resource consents database to identify this form of development. The identification of approved consents was therefore reliant on searching approved resource consents by developers/applicants who commonly provide pedestrian access routes as the sole means of access to a dwelling, as well as sourcing examples from the Regulatory Planning team and the Urban Design Unit's, Design Review Team who provide urban design specialist advice to the regulatory planners. The scale of the development's assessed ranged from six to 62 units and were located across the former legacy Council areas of Waitakere, North Shore, Manukau and Isthmus.

Where statistical findings are represented as percentages, they are rounded up or down to the nearest 1 per cent.

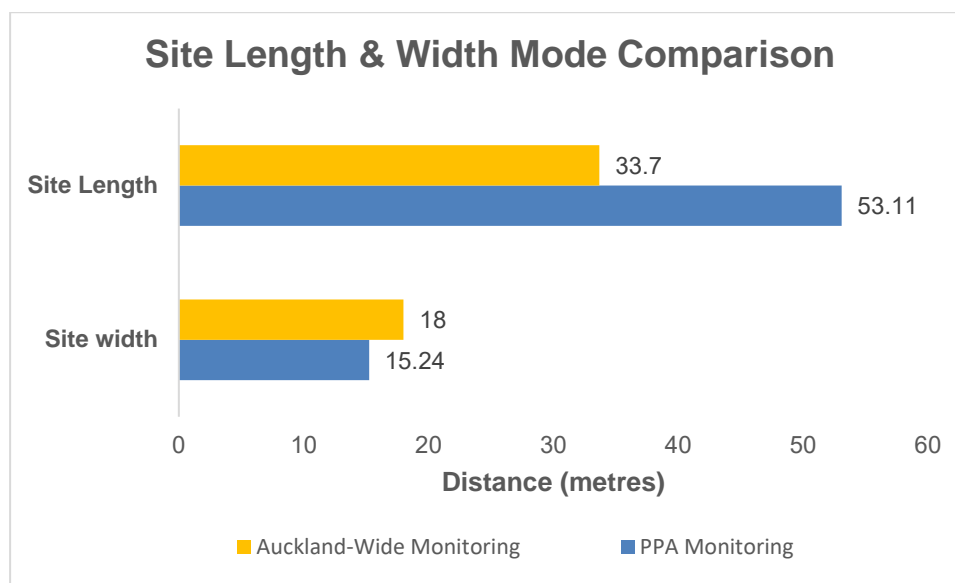
### 5.2 Key Findings

#### 5.2.1 Zone & Dimensions

The majority of sites were located in Mixed Housing Urban zone (48%), following by Terraced Housing and Apartment Building zone (44%) and Mixed Housing Suburban zone (8%). Only 21% of those comprised two or more sites (i.e., comprising more than one certificate of title) and none were formally amalgamated via a subdivision consent prior to land use consent.

The average site width was 24.1m, site width mode was 15.24m, and a maximum width of 48.1m (a corner site). The average site length was 61m, site length mode was 53.11m, with a maximum length of 173m (a site which was formerly an accessway to a public reserve and rezoned as Mixed Housing Urban).

This compares to an average site length of 45m and mode of 33.7m<sup>6</sup> for an Auckland wide analysis of sites zoned THAB, MHU and MHS (excluding rear sites and sites with frontages of less than 7m). The most commonly occurring site width (mode) based on Council's section 35 monitoring was 18m.<sup>7</sup>



Graph 1: Site Length & Width Mode Comparison

The average site size was 1493m<sup>2</sup>, with a minimum site size of 543m<sup>2</sup> and a maximum of 10,997m<sup>2</sup>.

### 5.2.2 Path Widths and Lengths

Analysis shows an average pedestrian access route width of 1.37m, with a minimum width of 0m (refer Figure 3 below) and maximum width of 2m.

<sup>6</sup> Auckland Council GIS Data Analysis 22.09.2021

<sup>7</sup> Auckland Council (July 2022). Auckland Unitary Plan. Resource Management Act 1991, section 35 monitoring: B2.3 quality built environment. Prepared by the Auckland Council Plans and Places Department.

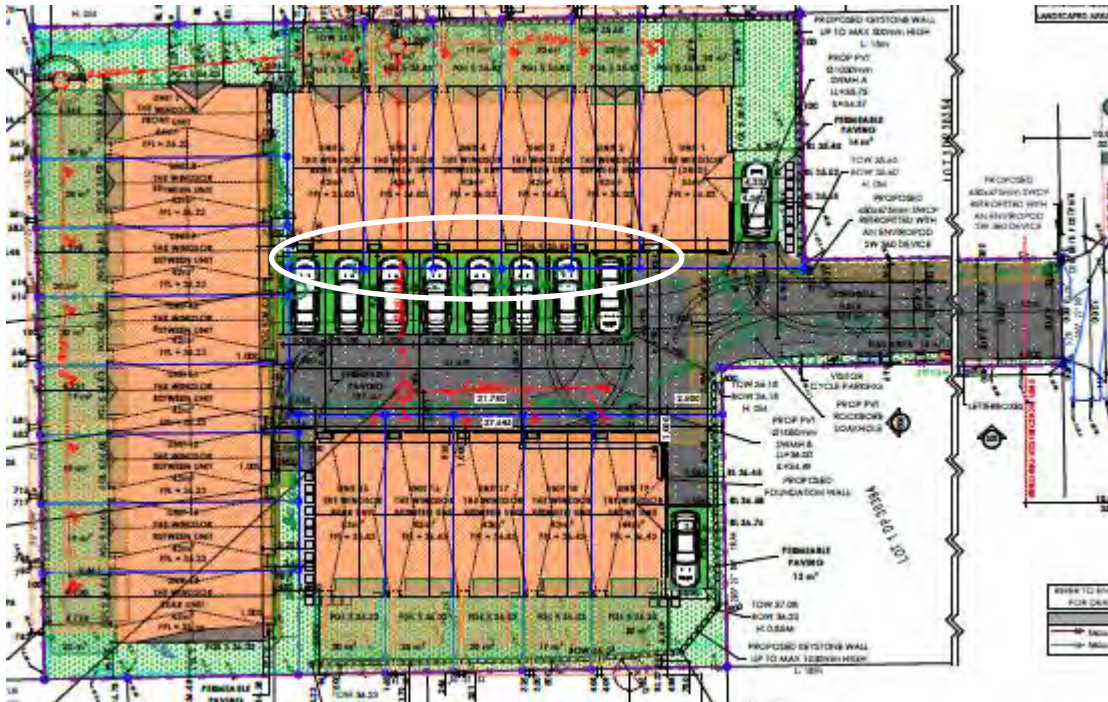
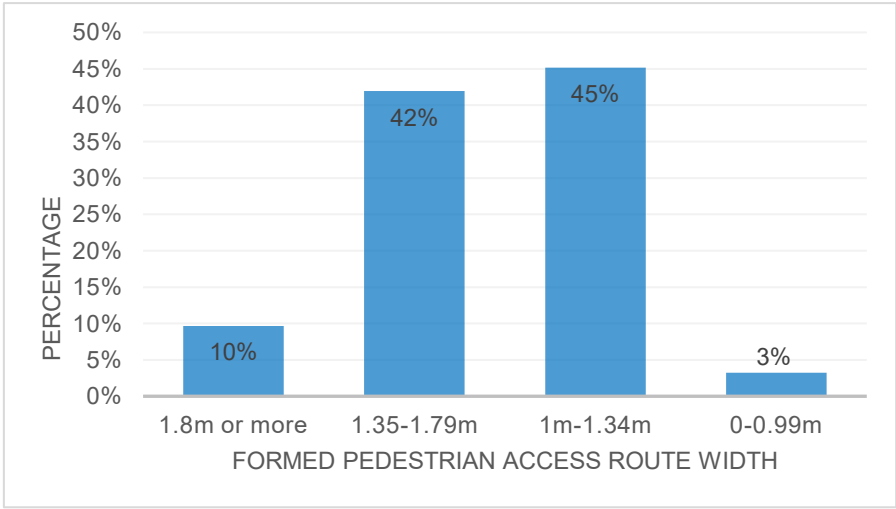


Figure 3: Nineteen unit development in Ellerslie<sup>8</sup>. No pedestrian access route is provided between carparks and Units 1- 6 (circled in white)

The distribution of the formed pedestrian access route widths was as follows:



Graph 2: Pedestrian Access Route Formed Widths

<sup>8</sup> BUN60372186

Pedestrian access route lengths varied from 20m to 173m (see Figure 4 below), with an average length of 61m.

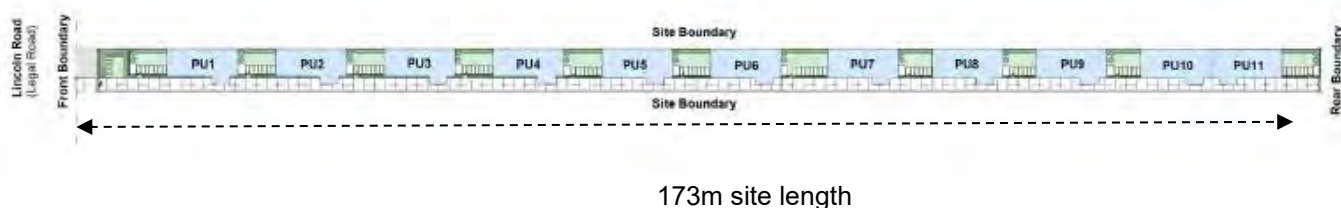


Figure 4: Eleven unit development approved for Lincoln Rd, Henderson<sup>9</sup> with 173m long pedestrian access route

### 5.2.3 Number of Units Served & Carparking

The 62 approved resource consents equate to a total of 854 dwellings. The pedestrian access routes served on average a total of 11 units, with a maximum of 50 units served by a single pedestrian access route. A total of 57% of the approved developments provided for some onsite carparking and had a combination of vehicle and pedestrian access as well as a pedestrian access route as the sole means of access to dwellings.

### 5.2.4 Path Alignment & Passive Surveillance

64% of pedestrian access routes were of a straight alignment, with the remaining 36% either being dog-legged or having multiple routes.

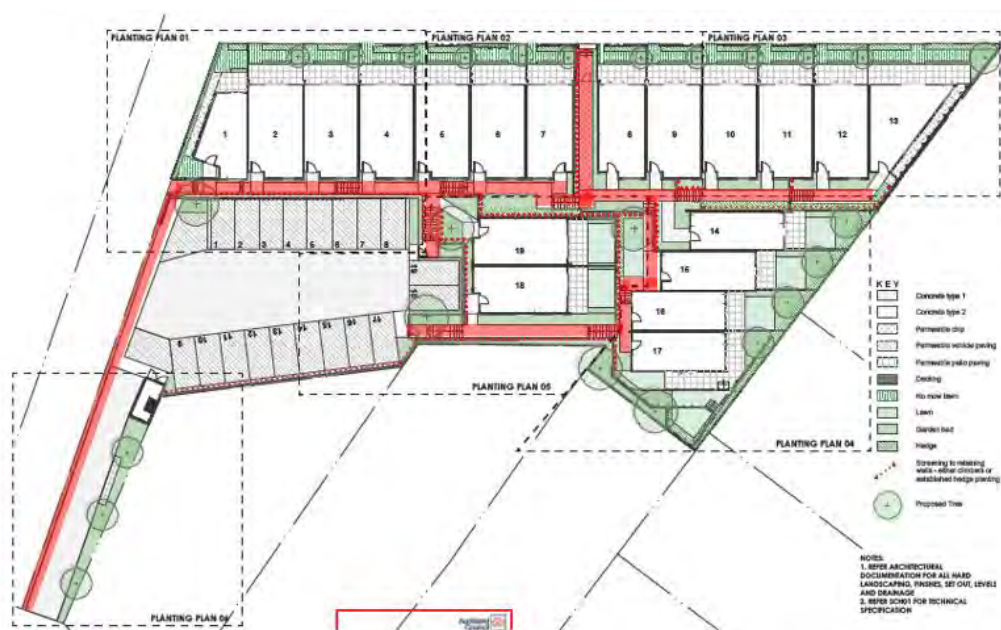


Figure 5: Nineteen unit development at Remuera<sup>10</sup> – Pedestrian access routes shown in red

<sup>9</sup> BUN60371236  
<sup>10</sup> BUN60355210



*Photo 1: Seven unit development in Henderson<sup>11</sup> - Pedestrian access route to dwellings extends behind carparks and dog-legs around communal bin enclosure (white dashed line)*



*Figure 6: Eight Unit development in Henderson<sup>12</sup>, with pedestrian access route shared with vehicle access, located behind carparks (shown as red dashed line), before continuing as a sole pedestrian access route to five rear units (shown as blue dashed line).*

A total of 93% of the pedestrian access routes had some form of passive surveillance or “eyes” over the pedestrian access route from an active ground floor room (kitchen, dining or living room) with only 5% not providing for any passive surveillance

<sup>11</sup> BUN60364205

<sup>12</sup> LUC60342391-A



*Photos 2 & 3: Straight pedestrian access route but poor passive surveillance with blank side elevations, retaining walls and fencing<sup>13</sup>*



*Photos 4 & 5: Kitchen windows and glazed front doors providing opportunities for passive surveillance over the pedestrian access route*

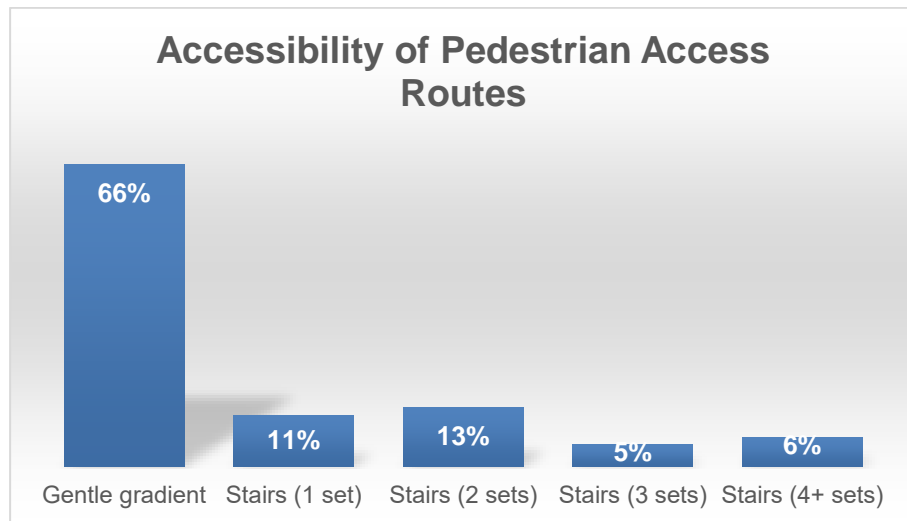
### **5.2.5 Accessibility**

A total of 66% of the pedestrian access routes had gentle gradients (no steeper than 1:12.5), with the remaining 34% having at least one flight of stairs. Of those developments with stairs, 14% provided a ramp alongside. However, none of these was of an accessible gradient (maximum 1:12.5m<sup>14</sup>), and were all 0.6m in width, being less than the minimum width required for a single person (0.65m) and were also too narrow to accommodate a 240 litre council

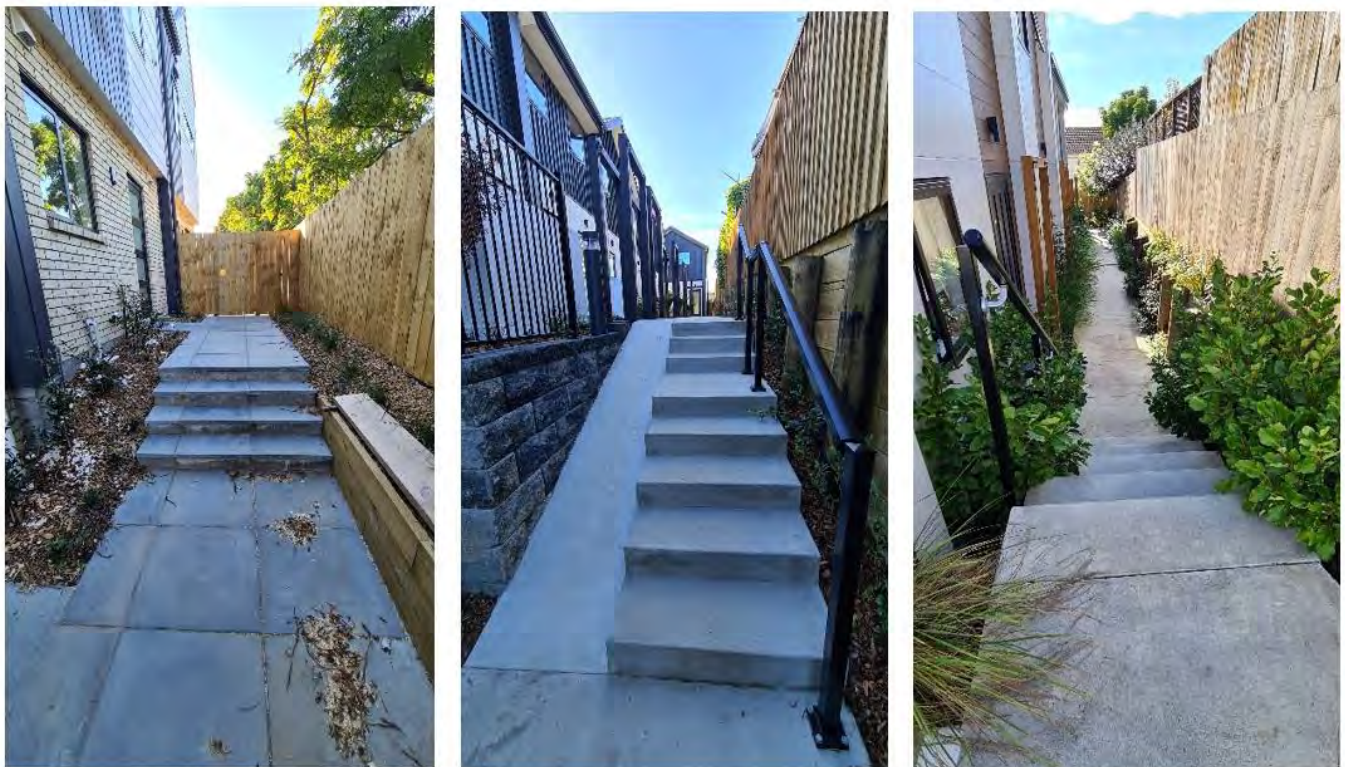
<sup>13</sup> BUN60354680

<sup>14</sup> Maximum footpath gradient of 1:12.5 or 8% as set out in Waka Kotahi Pedestrian Network Guidance (2021) and Auckland Transport: Transport Design manual – Engineering Design Code – Footpath pedestrian facilities and public realm.

recycling bin (width of 0.73m<sup>15</sup>) or a single pram (approximately 0.7m) which need to be transported to the street on collection day.



*Graph 3: Percentage of developments with accessible pedestrian access routes and stairs*



*Photos 6, 7 & 8: Examples of pedestrian access routes with stairs and ramps*

Site visits to completed projects identified that in some instances the internal site pedestrian access routes were not connected to the public street footpath, with infrastructure also located within the grass berm.

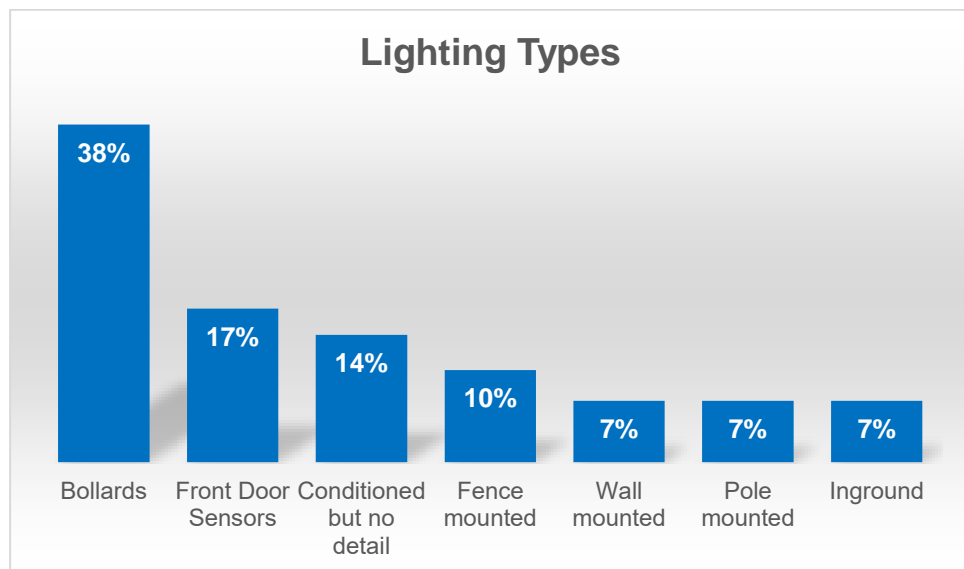
<sup>15</sup> Auckland Council 240l recycling bin - <https://www.aucklandcouncil.govt.nz/rubbish-recycling/bin-requests/rubbish-recycling-bin-information/Pages/rubbish-recycling-bin-options-charges-auckland-central.aspx>



Photos 9 & 10: Pedestrian access routes not connected to public street footpath and utility covers obstructing access

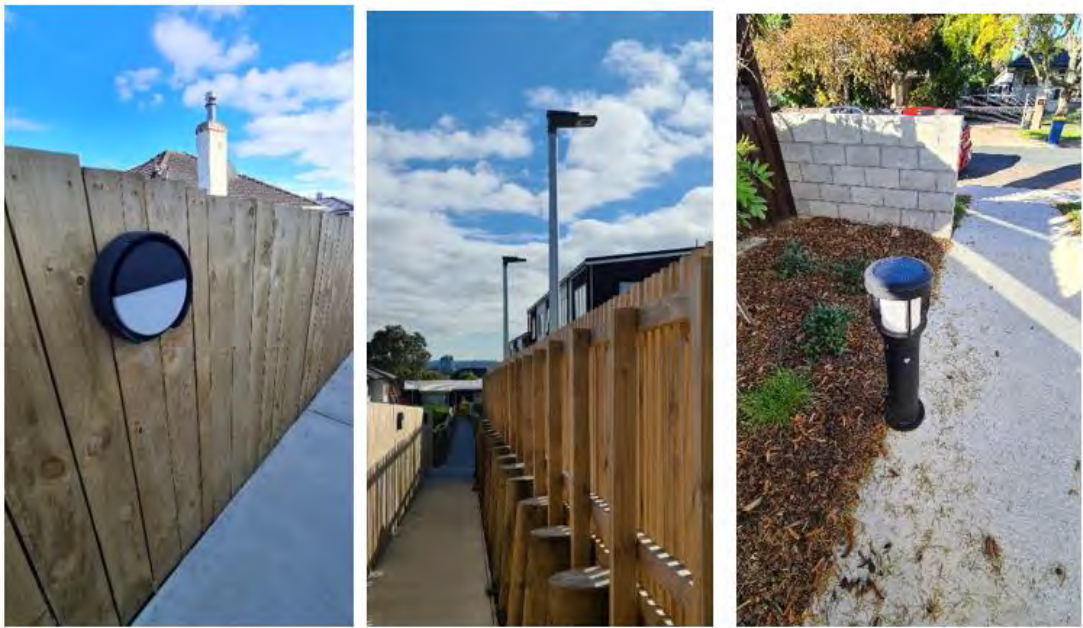
### 5.2.6 Lighting

Less than half (47%) of approved resource consents proposed some form of lighting or lighting was required as a condition of consent. For those developments where lighting was proposed, the lighting type included bollards, sensor lights over front doors, building or wall-mounted lights, in-ground lights and free-standing light poles.



Graph 4: Lighting Types



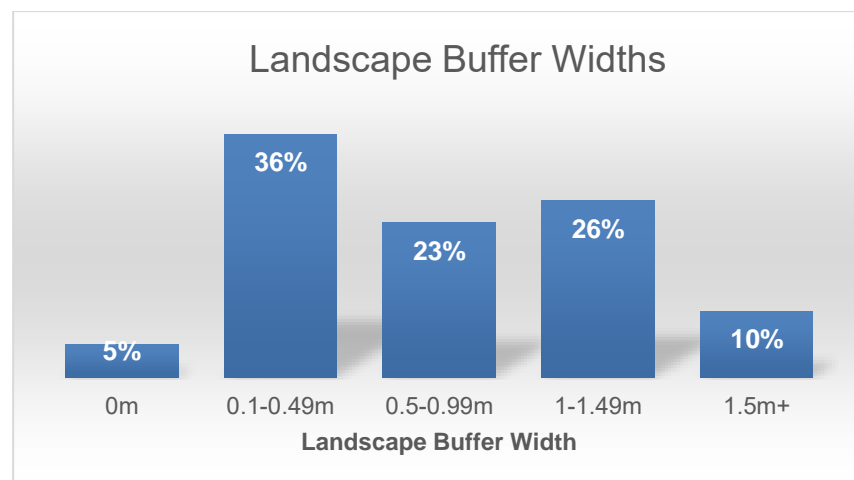


Photos 11, 12 & 13: Examples of fence mounted, pole mounted and solar bollard lighting

### 5.2.7 Landscape Treatment

A planted landscape buffer between a pedestrian access route and dwellings, was provided to the majority of developments, with widths of up to 2m. Landscape treatment was primarily located between a dwelling and the footpath, and sometimes provided between the footpath and the boundary. Landscape treatment buffers provide a physical separation between the dwellings and pedestrian access routes, impeding people from being able to walk directly up to windows, improving security, privacy, and amenity. A landscape buffer also improves the sense of spaciousness, and the feeling of openness and sunlight that collectively improves the overall experience of the pedestrian access route. The absence of landscape buffers, particularly where the pedestrian access route is enclosed with fences, can result in a ‘canyon’ type environment between the fence line and the dwelling.

The majority of developments (41%) provided less than a 0.5m wide landscape buffer between the dwelling and pedestrian access routes. Widths greater than 1m are provided to 36% of developments, which would provide sufficient space for planting of scale and support its long-term survival.



Graph 5: Distribution of Landscape Buffer Widths adjacent to pedestrian access routes



*Photos 14, 15 & 16: Examples of landscape buffers between footpath and dwellings*

Some developments provided a substantially wider communal landscaped plaza which included pedestrian access routes, as well as landscape treatment and other communal facilities including seating and bike parking. In these instances the pedestrian access route was fronted on both sides by dwellings, with the greater separation distance afforded by the communal areas ensuring adequate privacy and amenity to the dwellings (refer photographs 17 & 18 below).



*Photo 17: Toanga Place, Mt Wellington – Communal landscaped plaza space with pedestrian access routes as sole means of access*



*Photo 18: Windross Lane, Mt Wellington: Pedestrian access routes to dwellings and communal landscaped plaza*

### **5.2.8 Waste Management**

Waste management in the form of individual refuse, recycling and food waste bins stored in front of each unit and immediately adjacent to the footpath was provided for 68% of developments. The remaining 29% had communal waste bins provided elsewhere on site, with 3% not identifying any waste storage areas on the approved plans.



*Photos 19, 20 & 21: Individual waste bins stored adjacent to pedestrian access routes to dwellings*



Photos 22, 23 & 24: Communal waste bin enclosures

### 5.2.9 Legal Mechanism and Maintenance

The majority (55%) of developments provided for legal pedestrian access to a site via an easement (e.g., right of way easement). Other forms of legal access included a combination of COALs/JOALs and easements (18%) – this typically contained the vehicle accessway and communal carpark within the COAL or JOAL and the pedestrian access routes were held as an easement. The remaining pedestrian access routes were held in a COAL or JOAL (11%); tenants in common (8%); or Unit Title (2%). No legal mechanism for access was proposed where a land use consent only was granted (6%).

Only 27% of developments required the long-term management and maintenance of pedestrian access routes to dwellings. This was in the form of either an incorporated society, a residents' association or a body corporate.

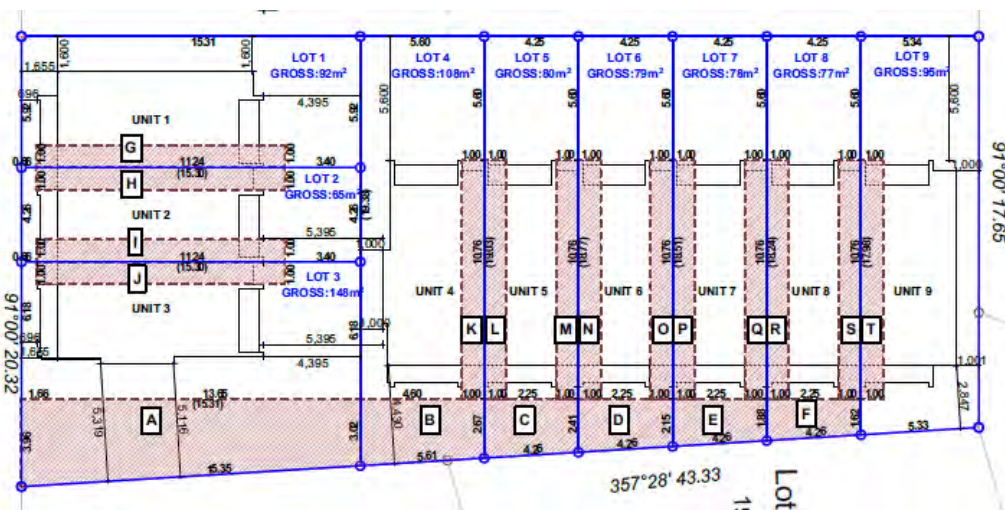


Figure 7: Pedestrian access routes to dwellings held as easements (A-F)<sup>16</sup>

<sup>16</sup> BUN60338100



Figure 8: Pedestrian access routes held as part of JOAL (Lot 15)<sup>17</sup>

## 6.0 PEDESTRIAN ACCESS ROUTES: DESIGN FACTORS

Where developments rely solely or in part on a footpath to access dwellings, there are no objectives, policies, standards or assessment criteria within the AUP that manage the design and location of that footpath. This creates the potential for poorly designed and unsafe pedestrian access. The monitoring analysis undertaken above; consultation with a range of internal and external stakeholders and research of relevant NZ guidelines has identified the following key design factors to ensure well-functioning footpath arrangements.

### 6.1 Inadequate Footpath Width

#### ***Problem Statement***

Pedestrian access routes should be of sufficient width to accommodate a range of users and functions. This includes able-bodied pedestrians, as well as people with reduced mobility (crutch, walking frame and wheelchair users); vision impaired people; as well as small mobility devices including bicycles, prams, mobility scooters and the like. Where the pedestrian access route length and number of dwellings served increase, the potential for a greater number of users and therefore conflicts increase. Unobstructed access from a public street or shared vehicle accessway should also be provided.

#### ***Effects on Users***

The range of potential users of a pedestrian access route and their minimum width requirements are set out in Figure 9 below<sup>18</sup>.

<sup>17</sup> BUN60361725

<sup>18</sup> Accessible width personas taken from the Auckland Design Manual. Accessible Space Dimensions – Sourced August 2022: [https://content.aucklanddesignmanual.co.nz/design-subjects/universal\\_design/Documents/Accessible\\_Space\\_Dimensions.pdf](https://content.aucklanddesignmanual.co.nz/design-subjects/universal_design/Documents/Accessible_Space_Dimensions.pdf)







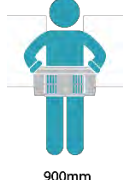






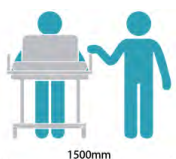
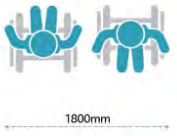
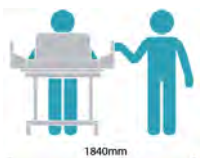

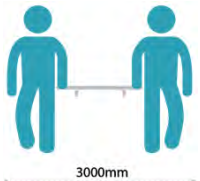
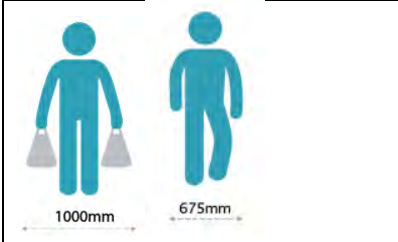
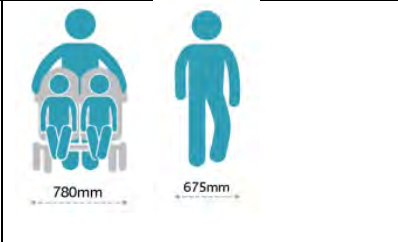
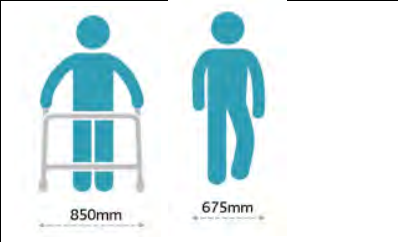
<p>Person Walking</p>  <p>675mm</p>	<p>Person with Single Pram</p>  <p>700mm</p>	<p>Person with Pram</p>  <p>750mm</p>	<p>Person with double pram</p>  <p>780mm</p>
<p>Person on mobility scooter</p>  <p>800mm</p>	<p>Person &amp; walking frame</p>  <p>850mm</p>	<p>Grocery Delivery</p>  <p>900mm</p>	<p>Person with crutches</p>  <p>950mm</p>
<p>Person carrying groceries</p>  <p>1000mm</p>	<p>Couple walking</p>  <p>1200mm</p>	<p>Person walking with bike</p>  <p>1275mm</p>	<p>Two people using sign language</p>  <p>1500mm</p>
<p>Person &amp; wheelchair</p>  <p>1500mm</p>	<p>Paramedic &amp; patient on stretcher</p>  <p>1500mm</p>	<p>Two wheelchair users</p>  <p>1800mm</p>	<p>Paramedic &amp; bariatric patient</p>  <p>1840mm</p>
<p>Cargo Bike</p>  <p>500mm 1000mm 500mm</p>	<p>Firefighters &amp; Ladder</p>  <p>3000mm</p>		

Figure 9: Pedestrian Access Route Users & Dimensions

Combinations of different pedestrian access route users have been analysed (refer Appendix A) and found that 20% of user combinations can be accommodated within a 1.8m width. These are the most commonly occurring interactions between users, such as those below:

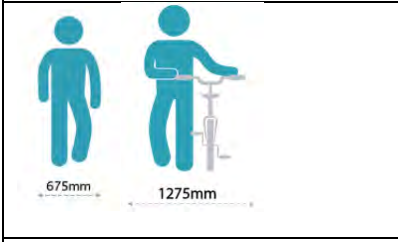
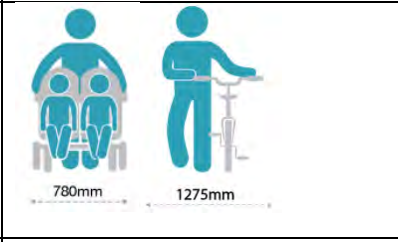
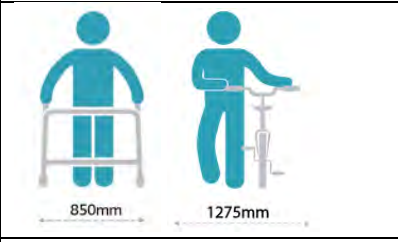
<i>Person carrying groceries passing another person</i>	<i>Person with double pram passing another person</i>	<i>Person with walking frame passing another person</i>
		
<i>1.65m</i>	<i>1.455m</i>	<i>1.525m</i>

*Figure 10: Possible Persona Combinations within a Pedestrian Access Route*

Combinations of users which are less frequent or common, such as a person passing a cargo bike; or emergency services personnel; two people using sign language or two-wheelchairs; cannot be accommodated within a 1.8m width. These account for 80% of possible combinations.

It is understood that as a consequence of removal of carparking minimums, for those sites where no covered carparking is provided, that increased requirements for secure and weatherproof bicycle parking are proposed as part of the broader Transport Plan Change. It is also likely that for those sites with no onsite parking, that there will be an increase in demand for other mobility devices such as E-Bikes, E-scooters and other micro-mobility devices, which would need to be accommodated within the footpath.

On the assumption that bicycles will be wheeled and not ridden on the footpath, an increased width would be required to accommodate a person walking a bike (1.275m) past other users. A minimum width of 1.875m would be required for an able-bodied person to walk past a person walking a bike; and increasing for all other users. Figure 11 below shows some of these combinations:

<i>Person wheeling bike past another person</i>	<i>Person wheeling bike past person with double pram</i>	<i>Person wheeling bike past person with walking frame</i>
		
<i>1.875m</i>	<i>2.055m</i>	<i>2.125m</i>

*Figure 11: Person wheeling bike past another pedestrian access route user*

The effects of narrow pedestrian access routes on the ability for whānau to hold tangihanga at home, should also be considered. Whilst tangihanga are often held on a marae, they can also be held in a community facility or a private home. During this time, the whānau pani stay with the tūpāpaku at all times. Similar practices may also occur for other cultures.

### **Evidence Base**

Mobility is one of the key enablers of a healthy lifestyle in Auckland, it is a vital component in ensuring well-being and full participation in society. The range of combination of different users of pedestrian access routes to dwellings and their space requirements have been analysed (refer Appendix A) and

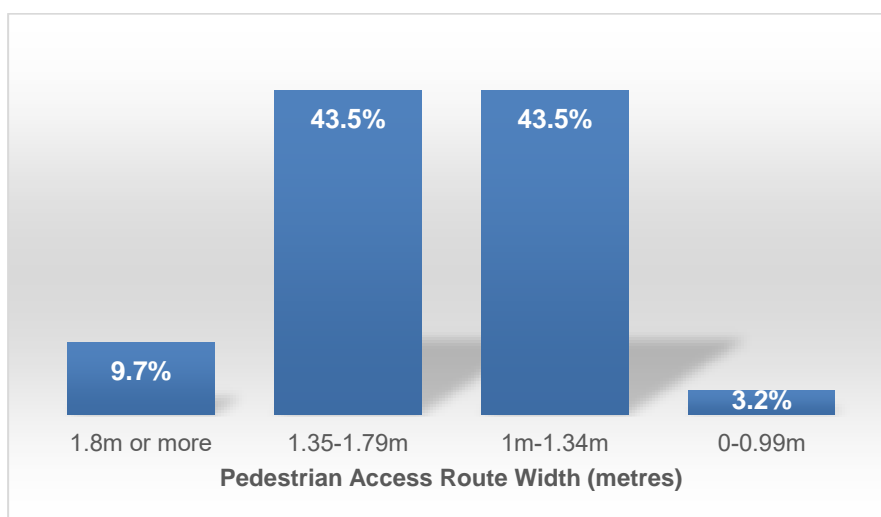
found that the most commonly occurring combinations could be accommodated within a formed pedestrian access route path of 1.8m.

Ten percent (10%) of Aucklanders have a mobility impairment with a further five percent (5%) having an agility impairment<sup>19</sup> and they lack choices in where they can live and whether they can visit friends and family at their homes. As a result, they can experience higher levels of social isolation<sup>20</sup>. Aotearoa also has a rapidly ageing population, with an anticipated 1.2 million people aged over 65 by 2034<sup>21</sup> with 49% of people over the age of 65 having a mobility impairment<sup>22</sup>. The Ministry for the Environment “National medium density design guide” includes principles that seek to ensure that residential developments should “*provide for the day-to-day living for all residents, which incorporates the needs of an aging populations, young children and disabled people (i.e. universal design); and that cater for diversity, accessibility...*”<sup>23</sup>

Providing an adequate pedestrian access route width will ensure that residents and visitors can safely move around sites and to the public street. This includes able bodied people on foot; people with visual impairments using a cane or walking with a guide dog; a person temporarily on crutches; a caregiver with a pram; a senior using a mobility scooter or walking frame; as well as other micro mobility devices. Consideration should also be given to cultural practices such as tangihanga which may be held at home.

### Monitoring Analysis

The monitoring analysis found that nearly half (46.7%) of pedestrian access routes had minimum widths less than 1.35m and were not able to accommodate two able-bodied people walking past each other. The minimum footpath width was 0m<sup>24</sup> and the maximum 2.0m. Only 9.7% of consented pedestrian access routes would be able to accommodate two-way pedestrian movement for a range of users within a 1.8m width.



Graph 6: Width of pedestrian access routes to dwellings

<sup>19</sup> Statistics NZ, New Zealand Disability Survey (2013), <https://www.stats.govt.nz/information-releases/disability-survey-2013>

<sup>20</sup> Holly Walker, “Alone Together: The Risks of Loneliness in Aotearoa New Zealand Following COVID-19 and How Public Policy Can Help,” Post-Pandemic Futures Series (Auckland: The Helen Clark Foundation and WSP, June 24, 2020), <https://helenclark.foundation/wp-content/uploads/2020/06/alone-together-report-min.pdf>

<sup>21</sup> <https://officeforseniors.govt.nz/about-us/>

<sup>22</sup> <https://www.stats.govt.nz/assets/Uploads/Disability-survey/Disability-survey-2013/Disability-survey-2013-additional-documents/Disability-survey-2013-word-version-for-screen-readers.docx>

<sup>23</sup> Ministry for the Environment, May 2022. National medium density design guide.

<sup>24</sup> BUN60372186



## Waka Kotahi Pedestrian Network Guidance

The Waka Kotahi Pedestrian Network Guidance (2021)<sup>25</sup> demonstrates best practice for planning, designing and creating walkable communities throughout New Zealand and provides guidance on minimum footpath widths for residential areas, which is of relevance to pedestrian access routes. It identifies a minimum footpath width of 1.8m for residential areas, with an absolute minimum width of 1.5m (only acceptable in existing constrained conditions). Where a 1.8m footpath cannot be provided, and there is no option to reallocate space from e.g., the berm or carriageway, then passing places should be provided. This however should only be provided where it is not possible to widen the footpath over a longer distance and should not be a low-cost alternative to a full-width footpath. Passing places enable:

- two wheelchairs or pram users to pass each other
- walking pedestrians to pass stationary pedestrians

To allow two wheelchairs to pass comfortably, a clear width of 1.8m is required as shown in the figure below.

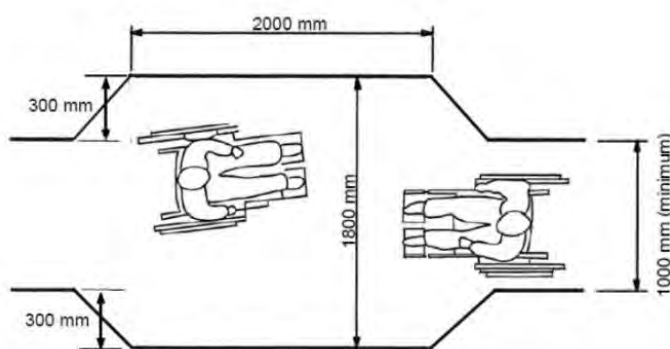


Figure 12: Footpath Passing Areas<sup>26</sup>

Passing places should be installed as follows:

Table: Installing passing places

Reason	Passing place dimensions	Location and spacing
Wheelchair users	Minimum footpath through zone width 1.8m Minimum length 2.0m (see figure above).	At least every 50 m, and preferably more frequently, where the footpath is less than 1.5m wide.
Passing pedestrians	Minimum footpath through zone width 1.8m. Minimum length equivalent to the average group of obstructing pedestrians, plus at least 1.0m.	As required, according to the RCA's assessment of where pedestrians may wait.

Figure 13: Waka Kotahi Passing Places

<sup>25</sup> [Footpath width | Waka Kotahi NZ Transport Agency \(nzta.govt.nz\)](https://www.nzta.govt.nz/footpath-width/)

<sup>26</sup> Ibid

## Auckland Transport, Transport Design Manual

The TDM Engineering Design Code: Footpath Pedestrian Facilities and Public Realm<sup>27</sup> sets out design standards for pedestrian access including various street types according to the adjacent land use. It states that footpaths must be provided on both sides of the road for new subdivisions in brown and greenfield areas. Footpaths or ‘through routes’ in suburban street zones “*provide a path for pedestrian movement that is clear of obstacles, facilitating through access for people walking along a street, regardless of age and abilities. It must be wide enough to allow two wheelchair users or people pushing prams to pass one another.*” The TDM states that footpaths (or pedestrian access routes) within private accessways may be designed according to the principles in the document, and given the scale and intensity of development we are now seeing accessed from private accessways, it is considered that this is an appropriate response.

The TDM states that urban footpath widths should be wide enough for use by all user groups, including people:

- On foot, some with visual impairments using a cane or walking with a guide dog,
- In wheelchairs or on mobility scooters,
- Using small wheel devices,
- Pushing a pram.

Urban footpaths are expected to be constructed on both sides of the road in line with the minimum standards, with a 1.8m footpath required for local roads in residential areas.

Where cycling is to be accommodated within a shared footpath, a minimum width of 4m is recommended. Path width should only be reduced where existing physical constraints cannot be removed, to not less than 2.5m over a length not more than 15m<sup>28</sup>. It is noted however that for the purposes of a pedestrian access route on private property, it is assumed and recommended that cyclists would dismount and walk their bike.

## Kainga Ora

Kainga Ora do not typically provide pedestrian access routes to dwellings, as carparking and vehicle access is usually provided. They do however have some useful guidance which recommends that pedestrian routes are wide enough for two people to comfortably walk side by side and that there is enough space to stop and chat as you pass without holding up other pedestrians or cyclists<sup>29</sup>.

This is further supported by “*A Guide to Driveway Safety for Property Owners*” which while directed at sites with driveways, also recommends that a pedestrian route separate from the driveway is provided from the street or carpark to the dwelling that considers the range of users including families; young children and the mobility impaired (users of wheelchair and mobility scooters), or the frail or elderly and is able to accommodate pedestrians and people with prams, wheelchairs or mobility scooters.<sup>30</sup>

<sup>27</sup> <https://at.govt.nz/media/1985456/5794-tdm-engineering-design-code-footpath-pedestrian-facilities-and-public-realm-version-1.pdf>

<sup>28</sup> [5794-tdm-engineering-design-code-cycling-infrastructure-version-1.pdf](https://at.govt.nz/media/1985456/5794-tdm-engineering-design-code-cycling-infrastructure-version-1.pdf) (at.govt.nz)

<sup>29</sup> Kainga Ora Large-Scale Projects Design Guidelines. Part 1. Module 1b: The Built Environment (dated 03.06.2021) Section 2.3.13 Access and Circulation(v) and (vi). Sourced 11.05.2022: [https://kaingaora.govt.nz/assets/Publications/Design-Guidelines/Part-1b\\_The-Built-Environment\\_2021-06-03.pdf](https://kaingaora.govt.nz/assets/Publications/Design-Guidelines/Part-1b_The-Built-Environment_2021-06-03.pdf)

<sup>30</sup> [A guide to driveway safety for property owners - brochure](https://kaingaora.govt.nz/assets/Publications/Design-Guidelines/Part-1b_The-Built-Environment_2021-06-03.pdf) (kaingaora.govt.nz). Retrieved 11.05.2022.

The recently released MfE design guide recommends that developments “provide accessible common area footpaths between 1.5m and 1.8m”.<sup>31</sup>

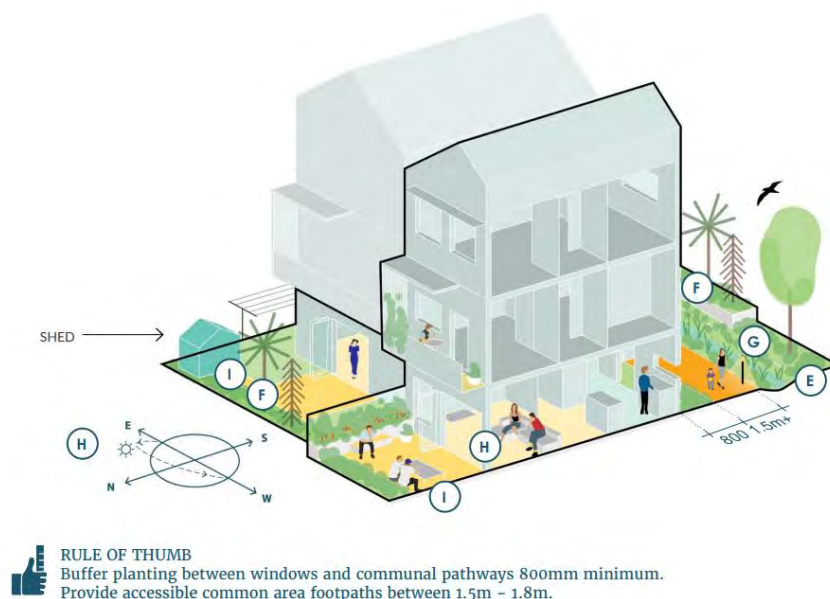


Figure 14: MfE National Medium Density Design Guide (Section 5)

### Flow Recommendations

Flow Transportation Specialists have provided technical advice in respect of pedestrian access route widths which are the sole means of access to dwellings (refer Appendix B) and the provision of passing bays. To allow for a range of users, including pedestrians with bicycles, to safely pass each other, a minimum passing bay width of 2.5m is recommended, over a length of 3.5m with a maximum spacing of 50m.

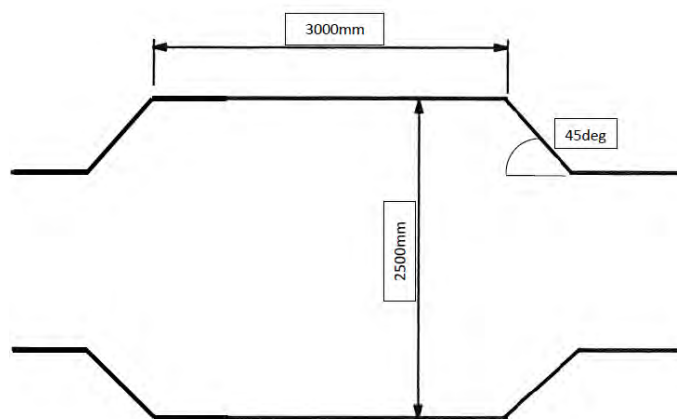


Figure 15: Recommended Footpath Passing Bays

<sup>31</sup> Ministry for the Environment. May 2022. National medium density design guide. 5. Around the house: an integrated landscape. Rule of thumb.

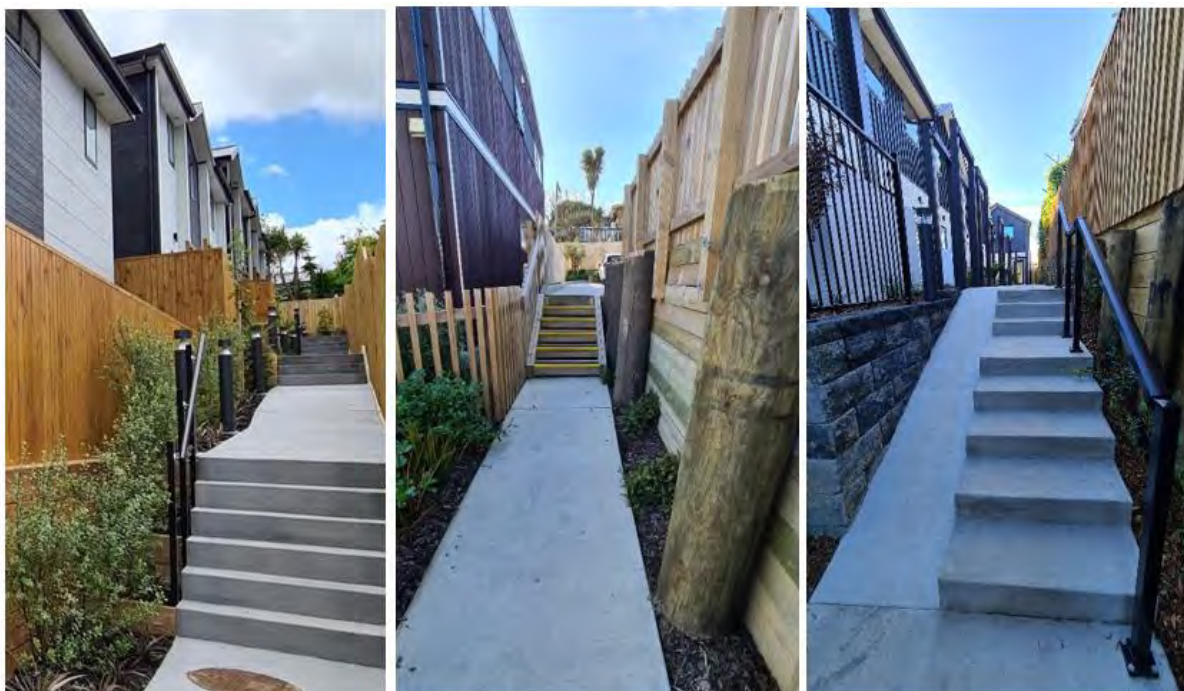
## **Recommendations**

- (a) A 1.8m minimum formed footpath width is required for all pedestrian access routes where they are the sole means of access to dwellings. It is considered necessary to adopt the 1.8m standard where there is no alternate means of access to a dwelling, unlike footpaths adjacent to a vehicle accessway which will also have the carriageway if additional width is needed. Where a footpath is required adjacent to a vehicle accessway it is recommended that the same footpath width is provided over the full length, for the vehicle accessway and pedestrian only component.
- (b) Pedestrian passing bays are provided where the footpath exceeds 50 metres in length. The passing bays should increase the minimum formed width to 2.5m and extend over a length of 3.5m, to allow pedestrians and/or cyclists to safety pass each other.

## **6.2 Inappropriate Gradients**

### **Problem Statement**

Pedestrian access routes to dwellings which are designed with steep gradients and/or the presence of stairs without alternative ramp access and landing places, prevents access to people with reduced mobility (15% of Aucklanders). Other able-bodied users are also limited when pushing prams; carrying groceries; moving waste bins to the street for collection; furniture deliveries and emergency services personnel.



*Photos 25, 26 & 27: Steps and ramps located within a pedestrian access route*

## Effects on Users

It is estimated that 24% of New Zealanders are affected with a disability<sup>32</sup> with the top three impairments for adults including mobility and agility. In addition, caregivers with prams; people carrying groceries; people transporting waste bins to the street on collection day; and larger goods deliveries are also impacted by steep gradients and the presence of stairs.

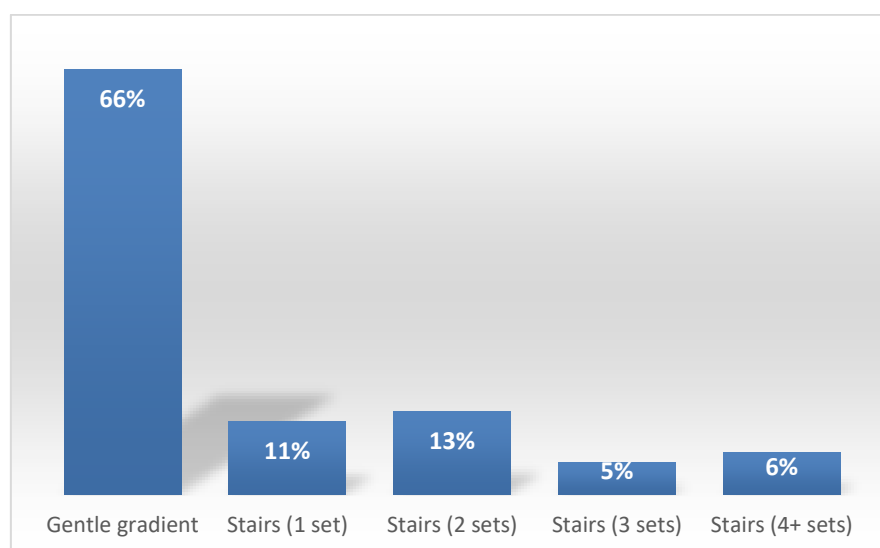
Restricted mobility because of poorly designed pedestrian access can result in reduced health and wellbeing including reduced independence and dignity, social isolation, and compromise mental health.

Firefighters and emergency responders are at greater risk of injury and need to move more cautiously when they are operating on uneven ground, kerbs, stairs and other obstructions. Delays in accessing and responding to an emergency may increase the risk the safety of people and their property.<sup>33</sup>

## Evidence Base

### Monitoring Analysis

The monitoring analysis found that 66% of pedestrian access routes were of a gentle gradient. The remaining 34% of pedestrian access routes had stairs, and only 8% of those had ramps as a non-stair alternative. However, none of the ramps were of an accessible gradient, some being as steep as 1 in 1.5 and pose significant risk for all users.



*Graph 7: Accessibility of Pedestrian Access Routes*

### Ministry for the Environment: National medium density design guide

The MfE National medium density design guide states that in designing at the site level, that pedestrian access routes should be shallower than 1 in 20, with entrance pedestrian access routes with no steps for greater accessibility.<sup>34</sup>

<sup>32</sup> <https://www.health.govt.nz/our-work/populations/maori-health/tatau-kahukura-maori-health-statistics/nga-mana-hauora-tutohu-health-status-indicators/disability#:~:text=The%202013%20New%20Zealand%20Disability,2013%2C%20Statistics%20New%20Zealand>.

<sup>33</sup> Fire Emergency New Zealand. Feedback to Auckland Council on access to pedestrian only developments. February 8, 2022. (refer Appendix D).

<sup>34</sup> MfE, May 2022. National medium density design guide. 1. The Site: A part of the community. Rule of Thumb

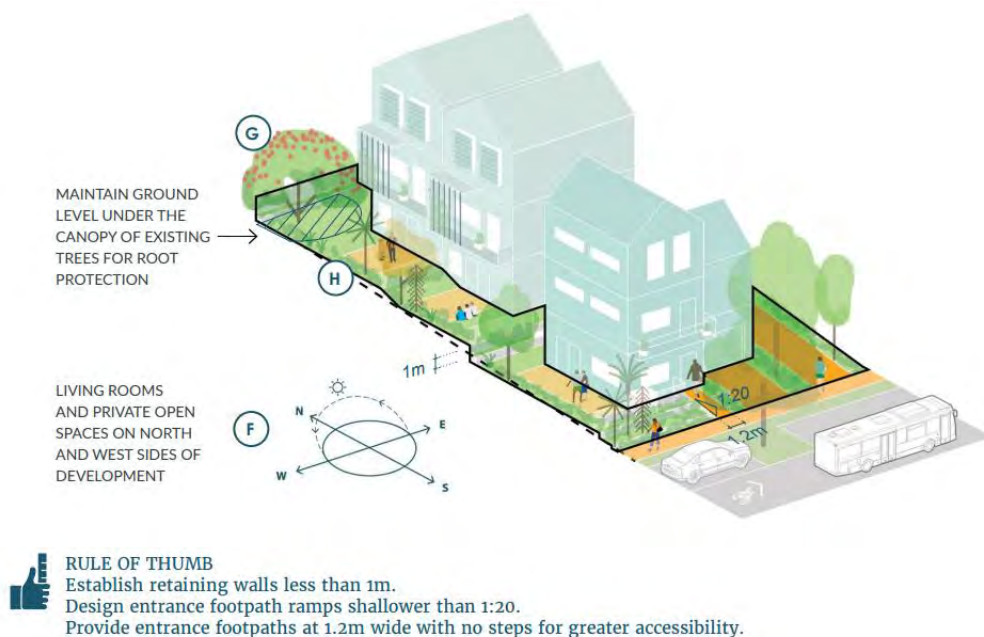


Figure 16: MfE National medium density design guide (The Site: A part of the community)

### Auckland Transport: Transport Design Manual – Engineering Design Code

The AT TDM Engineering Design Code: Footpath Pedestrian Facilities and Public Realm states that the maximum gradient for new footpaths is 1:12.5 (8%)<sup>35</sup>. The Design Code further recommends that, for footpaths exceeding gradients of 3%, rest areas should be provided as shown in Figure 18:

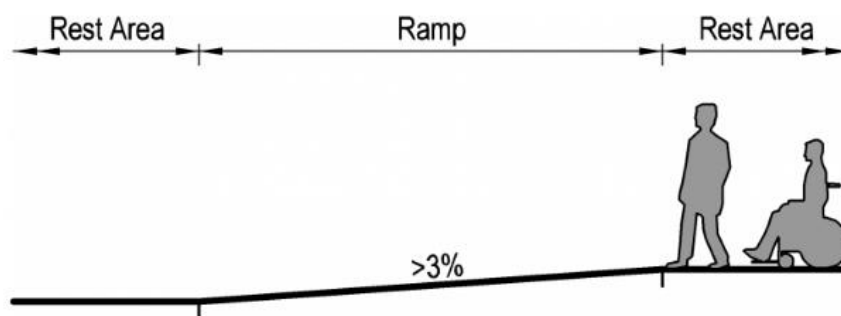


Figure 17: Example of rest areas required when footpath gradients exceed 3%

### Waka Kotahi Pedestrian Network Guidance (2021)

The Waka Kotahi Pedestrian Network Guidance (2021) identifies that, for footpaths exceeding gradients of 3%, rest areas should be provided. Further, it recommends that footpaths do not exceed 1:12.5 (8%). It notes that steps are good for reducing the distance pedestrians have to walk in areas with steep terrain (compared to a switchback ramp) but are a barrier to people with impaired mobility. There should be a step-free option wherever steps are provided.<sup>36</sup>

<sup>35</sup> <https://at.govt.nz/media/1985456/5794-tdm-engineering-design-code-footpath-pedestrian-facilities-and-public-realm-version-1.pdf>

<sup>36</sup> Waka Kotahi Pedestrian Network Guidance (2021). <sup>36</sup> [Footpath width | Waka Kotahi NZ Transport Agency \(nzta.govt.nz\)](https://www.nzta.govt.nz/transport/active-transport/pedestrian-network-guidance/)

## **Recommendations**

- (a) A maximum pedestrian access route gradient of 1 in 33 (3%) is provided.
- (b) Where the pedestrian access route includes steps, a step-free option must be provided as specified in NZS 4121:2001 Design for access and mobility: Buildings and associated facilities. This includes the width of the steps and the associated ramp.
- (c) Where the gradient set out in (a) cannot be achieved, a maximum pedestrian access route gradient of 1 in 20 (5%) is provided with rest areas at 1 in 33 (3%) with a minimum length of 1.2m at intervals not exceeding 45 metres; or
- (d) Where the gradient set out in (a) or (b) cannot be achieved, a maximum pedestrian access route gradient of 1 in 12.5 (8%) is provided with rest areas at 1 in 33 (3%) with a minimum length of 1.2m at intervals not exceeding 45 metres.

## **6.3 Poor Safety Outcomes**

### ***Problem Statement***

The safety of users of a pedestrian access route can be affected by a number of design related considerations including safety from injury (resulting from steep gradients, steps, and surface treatment); safety from crime as a result of poor design and layout; lack of or poor quality lighting and restriction of emergency services access and impacts on life and property.

### ***Effects on Users***

#### Safety from Injury

As outlined in Section 2 above, the gradient of pedestrian access route and the presence of stairs has an effect on accessibility for users and creates potential hazards. The surface treatment also creates potential slip or trip hazards if not a firm, stable and non-slip surface (such as concrete or asphalt). It is noted that monitoring analysis found that many pedestrian access routes are constructed in permeable paving stones, which if not maintained properly, could move and create trip hazards for users.

#### Crime Prevention through Environmental Design (CPTED)

CPTED is a crime prevention philosophy based on site design and effective use of the built environment leading to a reduction in the incidence and fear of crime, as well as improvement in quality of life. CPTED reduces criminal opportunity and fosters positive social interaction among legitimate users of space.<sup>37</sup> The National Guidelines for Crime Prevention through Environmental Design in New Zealand<sup>38</sup> identifies seven qualities that characterise well designed, safer places which are relevant to the design of PPA's:

##### **1. Access: Safe movement and connections**

Places with well-defined routes, spaces and entrances that provide for convenient and safe movement without compromising security.

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<sup>37</sup> Ministry of Justice. National Guidelines for Crime Prevention through Environmental Design in New Zealand. Part 1: Seven Qualities of Safer Places. (November 2005).

<sup>38</sup> Ibid

## 2. *Surveillance and sightlines: See and be seen*

Places where all publicly accessible spaces are overlooked, and clear sightlines and good lighting provide maximum visibility.

## 3. *Layout: Clear and logical orientation*

Places laid out to discourage crime, enhance perception of safety and help orientation and way-finding.

## 4. *Activity mix: Eyes on the street*

Places where the level of human activity is appropriate to the location and creates a reduced risk of crime and a sense of safety at all times by promoting a compatible mix of uses and increased use of public spaces.

## 5. *Sense of ownership: Showing a space is cared for*

Places that promote a sense of ownership, respect, territorial responsibility and community.

## 6. *Quality environments: Well designed, managed and maintained environments*

Places that provide a quality environment and are designed with management and maintenance in mind to discourage crime and promote community safety in the present and the future.

## 7. *Physical protection: Using active security measures*

Places that include necessary, well designed security features and elements.

The design of pedestrian access routes requires consideration of a number of elements to ensure the safety of users including:

- (i) Pedestrian access routes should be clear and logical to support wayfinding, with property numbering and identification incorporated into the design.<sup>39</sup>
- (ii) Pedestrian access route alignment and length should avoid entrapment spots, blind corners and dead ends, which increase the potential for crime and adverse safety outcomes. The potential for entrapment increases where pedestrian access routes are bounded by fencing or walls and form a predictable route.<sup>40</sup>
- (iii) Research<sup>41</sup> shows that users prefer short, wide pedestrian access routes which are well-maintained. Appropriate management and maintenance systems should also be in place.<sup>42</sup>
- (iv) Lack of passive surveillance or “eyes” overlooking the pedestrian access route from active ground floor rooms (such as kitchens) also reduces the perception of safety for users. Enclosed spaces that are not overlooked are perceived as being more dangerous<sup>43</sup>. Ground level building facades should be of a high design quality and provide active frontages to the footpath.

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<sup>39</sup> Ministry of Justice. National Guidelines for Crime Prevention through Environmental Design in New Zealand. Part 1: Seven Qualities of Safer Places. (November 2005).

<sup>40</sup> Western Australian Planning Commission. Reducing Crime and Anti-Social Behaviour in Pedestrian Access Ways. Planning Guidelines. (October 2009)

<sup>41</sup> Herzog, T.R. and Miller, E.J., 1998. The role of mystery in perceived danger and environmental preference. *Environment and behavior*, 30(4), pp.429-449.

<sup>42</sup> Ministry of Justice. National Guidelines for Crime Prevention through Environmental Design in New Zealand. Part 1: Seven Qualities of Safer Places. (November 2005).

<sup>43</sup> National Crime Prevention Council. Crime Prevention through Environmental Design Guidebook. October 2003



- (v) Lighting has a positive effect on personal safety<sup>44</sup> and on reducing levels of crime<sup>45</sup> and should be a primary consideration and integral to the overall design<sup>46</sup>. Lighting should be placed to ensure uniformity of lighting levels over an area, taking into consideration vegetation or other elements; avoiding glare and reducing the contrast between shadows and illuminated areas.<sup>47</sup> Lighting should be subject to a co-ordinated management strategy to ensure ongoing operation.

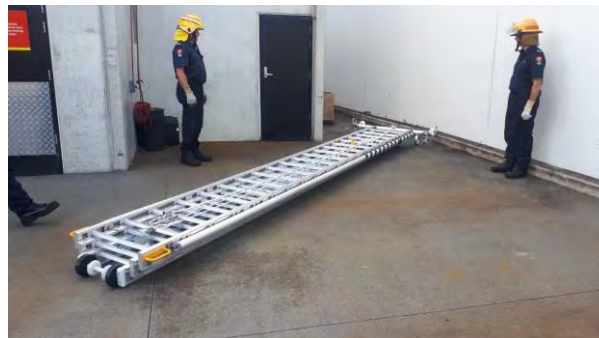
### Access for Emergency Services Personnel

There is an increased risk to life due to delays in emergency service access and egress as a result of inadequate pedestrian access route width and/or excessive length; obstructions/structures; poor/lack of lighting; stairs and poor unit identification.

Effective and efficient response is crucial in an emergency with every one-minute delay in providing CPR or using an automated external defibrillator resulting in a 10-15% reduction in survival rates; and a house fire potentially becoming fatal within 3 minutes.<sup>48</sup> Where no vehicle access or carparking is provided onsite, aerial appliances (ladders) are required, also creating time delays to deploy manual ladders.

Consultation has been undertaken with Fire Emergency New Zealand (FENZ); St Johns Ambulance and New Zealand Police. Of all emergency service providers, FENZ have the most restrictive access requirements due to the equipment required (ladders and hoses). A summary of the access requirements of the three emergency service providers is attached at Appendix C.

FENZ have advised that a minimum clear width of 3m is required to carry ladders onto a site; with a minimum width of 6.2m required on a curved or cornered accessway; and 4.5m space required to position manually deployed ladders (refer Photos 28-30 below). Their detailed feedback is attached at Appendix D to this report.



*Photos 28 & 29: Width and turning arc of Angus 464 Rescue Ladder with Crew (Source: FENZ)*

<sup>44</sup> Nasar JL, Jones KM. Landscapes of Fear and Stress. *Environment and Behavior*. 1997;29(3):291-323.

<sup>45</sup> David P. Farrington & Brandon C. Welsh (2002) Improved street lighting and crime prevention, *Justice Quarterly*, 19:2, 313-342

<sup>46</sup> Ministry of Justice. National Guidelines for Crime Prevention through Environmental Design in New Zealand. Part 1: Seven Qualities of Safer Places. (November 2005).

<sup>47</sup> Ibid

<sup>48</sup> Fire Emergency New Zealand. Feedback to Auckland Council on access to pedestrian only developments. February 8, 2022.

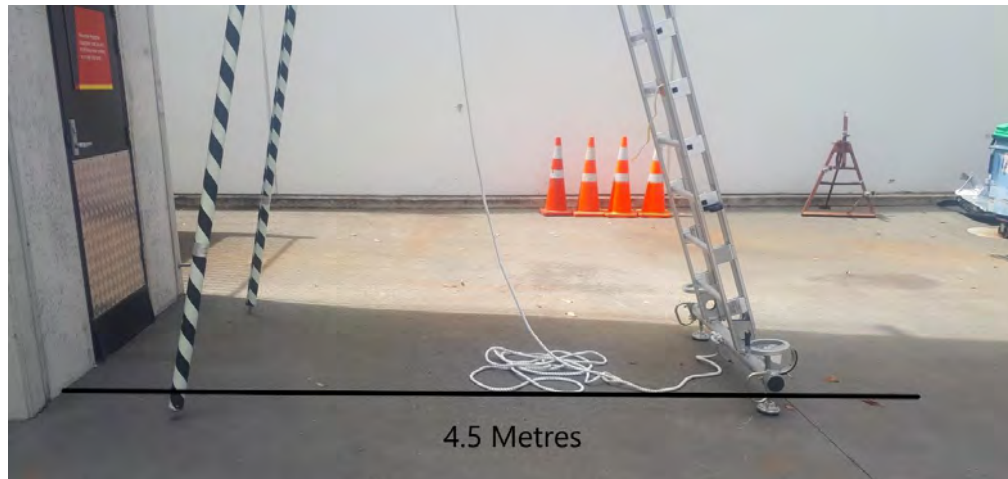


Photo 30: Set out distance of Angus 464 ladder from building (Source: FENZ)

Clause C5 of the New Zealand Building Code (NZBC) regulates access and safety for fire fighting and rescue operations and other emergency services personnel. These standards are predicated on vehicle access being possible to and/or within a site. The NPSUD removal of carparking minimum standards, and case study examples illustrate that more intensive forms of development can be reliant solely on pedestrian access, which may not be adequately managed by the NZBC for the following reasons:

- (i) The Building Code and associated regulations/standards assume provision of vehicle access within the site, which ensures fire service vehicles can park close enough to a building on fire to successfully deploy fire hoses (within 75m) or within easy reach of any sprinkler or hydrant inlets (within 20m), where the fire vehicle is used to pump the water into the building's fire suppression system.
- (ii) Fire appliances will need to park on a public street with the potential for lack of parking and/or streets to be blocked by the appliance and may also add to the slower response times.
- (iii) Sites which result in a distance of more than 75m from vehicle hard stand area (which would be the public street where no vehicle access is provided onsite) would require sprinklers within the affected dwellings. This has a significant cost implication (in the order of approximately \$20,000 per dwelling plus lifetime maintenance and yearly building warrant of fitness requirements).

There is a clear jurisdictional separation between the Building Act 2004 and the Resource Management Act 1991, with Clause C5 of the New Zealand Building Code already regulating access and safety to certain buildings for firefighting and emergency services personnel and their operations. It is understood that it is not appropriate for district plan rules to regulate adequate access to residential dwellings by FENZ or other emergency services personnel with their equipment, which would contradict the performance criteria in the Building Code relating to this matter.

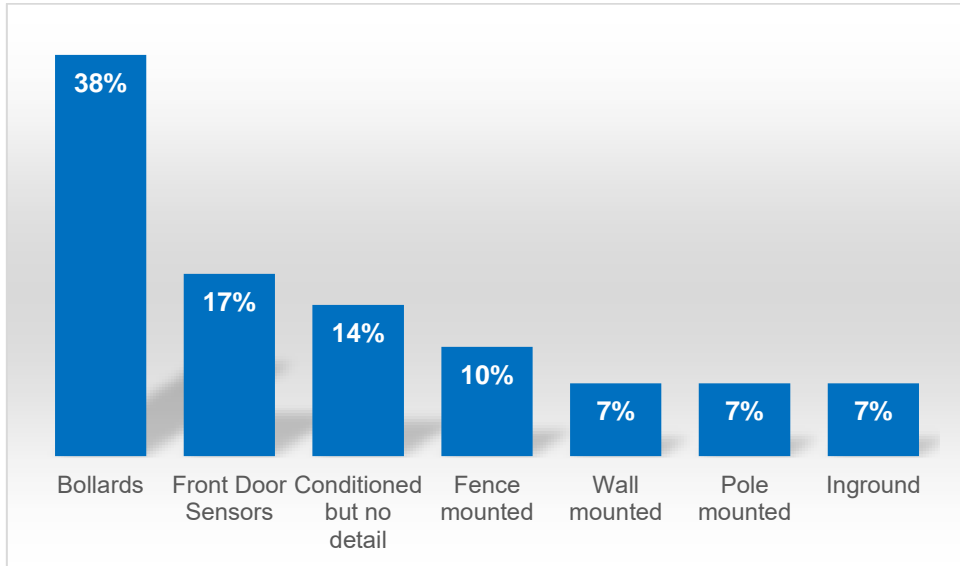
Auckland Council has therefore advocated for amendment to the NZBC via the NZ Building Code Advisory Panel, to introduce minimum performance standards for pedestrian access routes which are the only means of access to dwellings. This should include sufficient footpath widths to carry ladders and set them out from the base of buildings; and manoeuvring of ladders around corners. Adequate access provision for FENZ would also ensure adequate access for St Johns Ambulance and NZ Police.

## Evidence Base

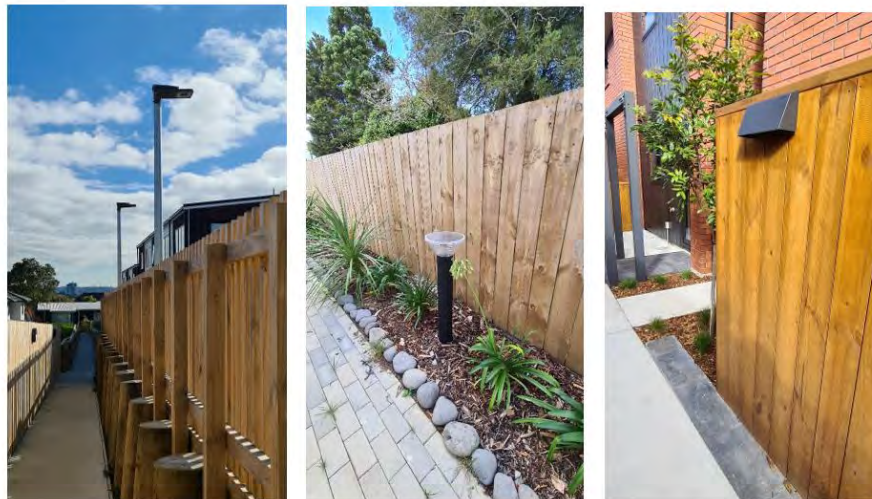
### Lighting Monitoring Analysis

47% of developments proposed lighting as part of their resource consent application. The remaining 53% did not propose any lighting at resource consent stage.

Of those that did indicate lighting at resource consent stage, the majority proposed low level bollards (typically solar). Those developments which included vehicle access and carparking were more likely to have freestanding light poles or fence/building mounted lighting.



*Graph 8: Lighting Types*



*Photographs 31, 32 & 33: Lighting types adjacent to pedestrian access routes*

## Report on Lighting Provisions for Private Pedestrian Access and Private Vehicle

An independent lighting report has been commissioned by Council from Stephenson Turner<sup>49</sup> who have made recommendations for minimum lighting levels for pedestrian access routes as well as vehicle accessways. Their recommendations (at page 47 of their report) are as follows:

*Lighting is required to pedestrian access and vehicle access serving dwellings which will be used during the hours of darkness. Lighting for pedestrian and vehicle areas shall be calculated in accordance with the methods described in the AS/NZS1158 series of standards, and certified in a statement by a suitably qualified and experienced professional. The lighting design shall demonstrate compliance with the following:*

- (a) Lighting shall comply fully with the requirements of AS/NZS1158.3.1.*
- (b) Lighting shall as a minimum provide the lighting subcategory performance determined in accordance with AS/NZS1158.3.1, but not less than the following minimums lighting subcategories:*
  - (i) PR2 minimum for pedestrian access adjacent to vehicle access.*
  - (ii) PC2 is the minimum for car parking.*
  - (iii) PP3 minimum for paths.*
  - (iv) PA3 minimum for connecting elements, steps, stairways and ramps.*
  - (v) PR5 minimum for vehicle access for 4-9 parking spaces or dwellings.*
  - (vi) PR4 minimum for vehicle access for 10-19 parking spaces or dwellings.*
  - (vii) PR2 minimum for vehicle access for 20 or more parking spaces or dwellings.*
- (c) Detail compliance of the design as required by AS/NZS1138.3.1.*
- (d) All light fittings when installed shall not project any light at or above the height of their light source.*
- (e) All light emitted from light fittings shall have a correlated colour temperature of 3000K (Kelvin) or less.*
- (f) Spill light and glare from the lighting to comply with E24 Lighting requirements and these requirements shall include windows of all lawfully established dwellings within the site.*
- (g) The lighting is to have automatic daylight controls such that the lights are on from dusk to dawn, except that automatic presence detection may be included to ensure the lights are only on when presence is detected, maximum on time of 5 minutes but the use of presence sensor control is not always appropriate and therefore requires a CPTED assessment to determine if it is appropriate.*
- (h) Lighting to be supplied from a common supply which cannot be disabled by residents.*
- (i) Where solar lighting is proposed, such lighting will require clear written confirmation of their quality, performance, design, unshaded PV panel locations and maintenance plan.*
- (j) The lighting installation is to be maintained in accordance with AS/NZS1158.3.1.*

It is recommended that these lighting standards apply to all pedestrian access routes which are the sole access to dwellings to ensure an appropriate level of safety and accessibility for all users.

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<sup>49</sup> Report on Lighting Provisions for Private Pedestrian Access and Private Vehicle Access for Proposed Auckland Unitary Plan Change. Stephenson Turner. 4 August 2022

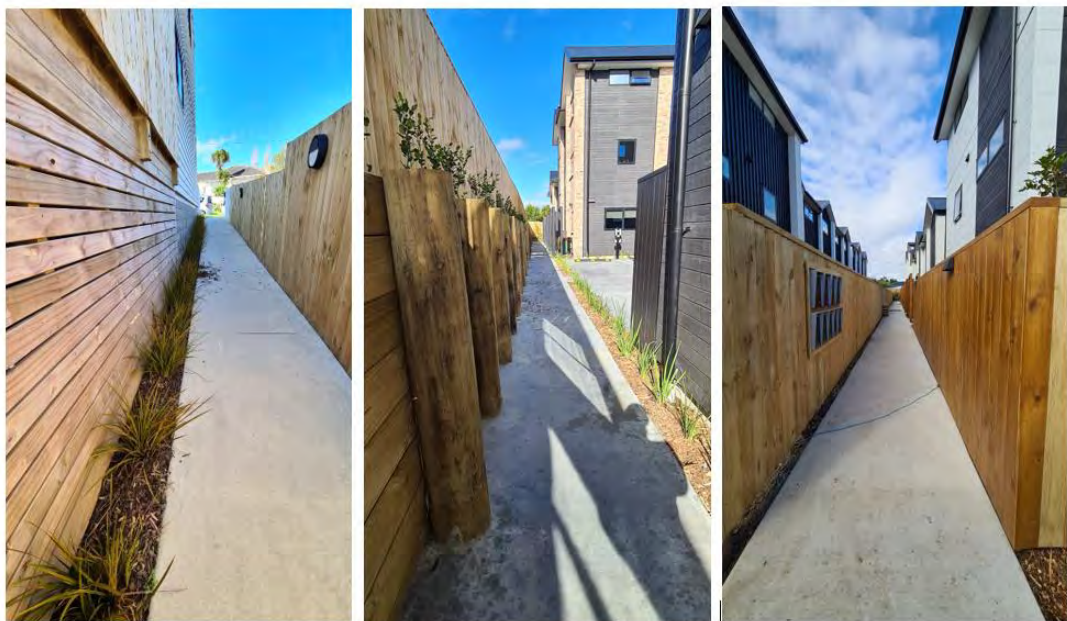
## Passive Surveillance Monitoring Analysis

Passive surveillance from an active ground floor room overlooking the pedestrian access route was provided in 94% of developments. A small percentage (2%) had a ground floor window which overlooked the pedestrian access route but was either obstructed by other structures or set back a significant distance, reducing its effectiveness. Only 4% provided no passive surveillance at ground level.



*Photographs 34, 35 & 36: Passive surveillance at ground level overlooking footpath*

Many pedestrian access routes were bounded by solid fencing and walls, contributing to a sense of enclosure. The majority (65%) were of a straight alignment, with the remaining 35% either having a dog-leg alignment or multi-direction. The majority of pedestrian access routes were dead ends, with no alternative access routes.



*Photographs 37, 38 & 39: Pedestrian access routes adjoined by fencing and retaining walls*

## Ministry for the Environment: National medium density design guide (2022)

The MfE National medium density design guide recognises the importance of passive surveillance, stating that “*if carefully designed, house frontages can provide a good outlook for residents, sense of community and “eyes on the street” for community safety. This is best achieved through generous windows facing the street or accessway, and locating regularly used rooms such as kitchens or living rooms, at ground level.*”<sup>50</sup>

### **Recommendations**

- (i) Pedestrian access routes are designed to allow clear visibility, be logical and direct, and avoid potential hiding spaces and dead ends where possible;
- (ii) Physical elements such as continuous solid fenced, blank walls or planting that impede sightlines and reduce opportunities for passive surveillance are avoided. Landscape features, fences, walls and vegetation must be low or visually permeable to ensure clear visibility along the full length of the pedestrian access route and reduce opportunities for concealment;
- (iii) Pedestrian access routes are overlooked with windows of active ground floor uses such as kitchens, dining and living rooms;
- (iv) Adequate lighting in accordance with AS/NZS 1158.3.1:2020 is provided to pedestrian access routes for the safety of pedestrians and to assist with wayfinding and dwelling identification;
- (v) The pedestrian access route and associated lighting are subject to an appropriate management and maintenance regime; and
- (vi) Auckland Council continues to advocate to central government for changes to the Building Code to support safe and efficient access for emergency service providers along pedestrian access routes which are the sole means of access to dwellings.

## **6.4 Landscape Treatment and Waste Management**

### **Problem Statement**

The quality of pedestrian access routes to dwellings and the adjacent spaces affects visitor and residential experience as they move through the space. A lack of separation between a pedestrian access route, the property boundary and the dwellings can reduce privacy and security for occupants, as well as reduce the overall amenity of the approach to the dwellings.

### **Effects on Users**

The perceived quality of a development, particularly medium density housing including terraced housing, is strongly influenced by the design of the approach, or the transition between the public street and private building. A well-designed pedestrian access route and the adjacent spaces will contribute positively to the sense of arrival to a development from the public street and help to define public, semi-public and private spaces. The MfE National medium density design guide acknowledges this, stating that “*a well-designed house frontage can collectively benefit the public, visitors and*

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<sup>50</sup> Ministry for the Environment. May 2022. National medium density design guide. 2. In the front: a welcoming address (D).

residents through improving public safety, providing convenient access, and a place to welcome visitors”<sup>51</sup>

Developments which front a public street are required to provide a “front yard” with associated soft landscape treatment which contributes to streetscape character; maintains an appropriate level of residential amenity and privacy for occupants and helps to define public and semi-public space (refer photograph 34 below). A front yard is not required for developments which front pedestrian access routes (or vehicle accessways) which are the sole means of access to dwellings.



Photo 34: Landscape treatment within a front yard (Source: Auckland Design Manual)

The absence of any front yard or setback standards for dwellings which front a pedestrian access route may result in a reduced sense of privacy and security for occupants of a dwelling, with people able to walk directly up to windows. Photograph 35 below illustrates how a lack of separation and planting between the pedestrian access route and the dwelling has resulted in trellis being erected as a secondary screening device to provide privacy to the adjacent room.



Photograph 34: Trellis placed over windows due to lack of separation from footpath and privacy conflicts<sup>52</sup>

<sup>51</sup> MfE, May 2022. National medium density design guide. 2. In the front: a welcoming address.

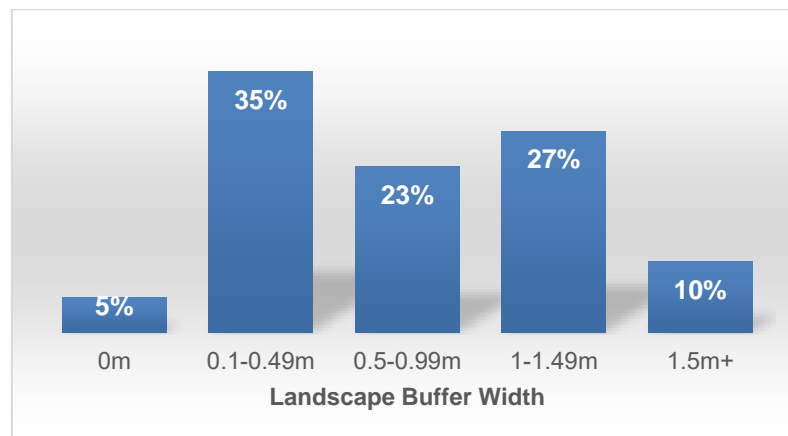
<sup>52</sup> BUN60343656

The provision of planted 'front yard' or landscape buffer contributes to improved privacy for the dwelling; creates an appropriate separation distance to establish public and private space; provides space for softening of retaining walls and fences, as well as improving the overall amenity of the approach to the dwellings.

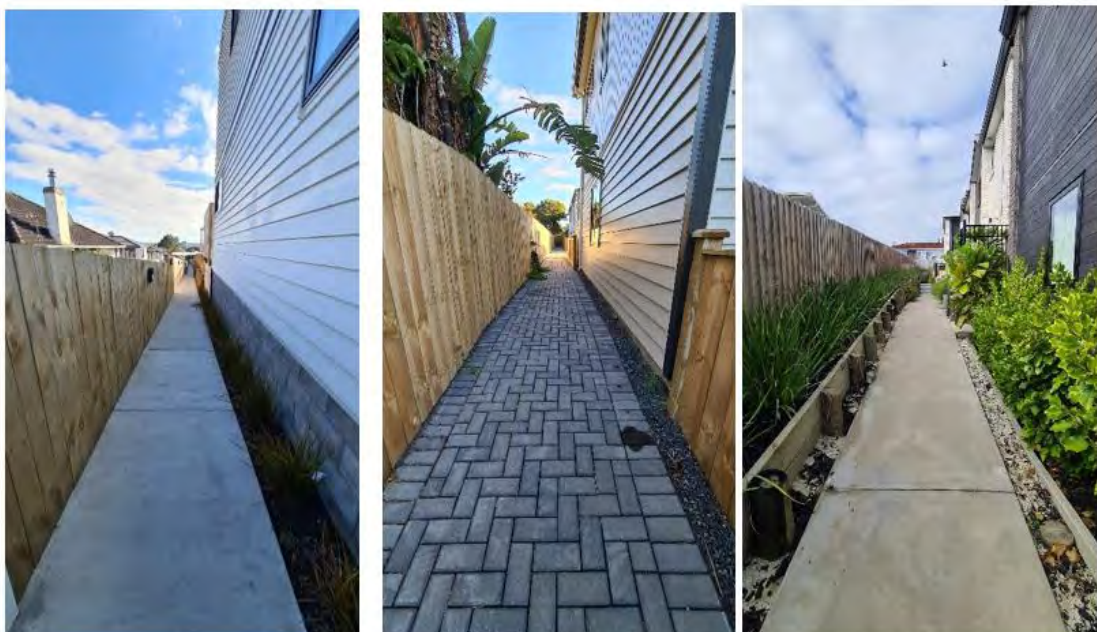
### **Evidence Base**

#### Monitoring Analysis

The majority (95%) of developments provided for some separation between a dwelling and pedestrian access route to dwellings, with 58% providing for widths between 0.1-0.99m, which limited opportunities for planting; the type of species able to be accommodated and the long-term survival of the planting. Those developments with a separation distance of least 1m (37%) were able to accommodate low shrub planting and in some instances trees, which contributed to the privacy of the adjacent unit, as well as the overall amenity of the pedestrian access route.



*Graph 9: Distribution of landscape buffer widths adjacent to pedestrian access routes*



*Photos 35 & 36 illustrate minimal (<0.5m) or no landscape buffer between dwellings and pedestrian access routes. Photograph 37 illustrates a planted landscape buffer (1m) between the footpath and unit frontage/windows.*





*Photograph 38: Landscaped buffers (minimum m) between dwelling and pedestrian access routes as well as additional communal area planting that contributes positively to the amenity of the approach to the dwellings*

The monitoring analysis found that 68% of developments which rely on pedestrian access routes had permanent storage of waste bins adjacent to the footpath. While these can be screened, the bin storage area reduces the space available for landscape treatment, and the presence of fencing on both sides of the pedestrian access route along the property boundary and around the bin storage area, contributes to a sense of enclosure and reduction in overall amenity.



*Photographs 39, 40 & 41: waste storage area screened from pedestrian access route, with no or limited space available for soft landscape treatment*

## Ministry for the Environment: National medium density design guide

The MfE National medium density design guide recognises the importance of planting to “*create an important buffer between the street or accessway and the private home that can enhance the safety and comfort of residents*”<sup>53</sup> and recommends “*buffer planting between windows and communal pathways 800mm minimum*”.<sup>54</sup>

The guide further recommends that “*any front yard services, such as bin storage, need to be balanced with the quality of visitors’ experience and consideration of tapu (prohibited) and noa (common) through separation and screening. Service functions are generally best located in the side or back yard if there is good access.*”<sup>55</sup>

## Ki te Hau Kainga: New Perspectives on Māori Housing Solutions<sup>56</sup>

This design guide recommends that any refuse, recycling and storage areas should be screened from view from the main entry to dwellings. This is to ensure that the entry to dwellings is obvious, welcoming and to assist in positive interactions with manuhiri (guests and visitors).

### **Recommendations**

- (a) That a minimum 1m landscape buffer setback is provided between a dwelling and pedestrian access routes to dwellings
- (b) That the setback is planted to provide physical buffer between a pedestrian access route and dwellings and to contribute to privacy and amenity
- (c) That the 1m setback is free of any buildings, servicing facilities (including waste bins), parking or manoeuvring areas. Preference is given to storage of waste bins away from the main entrance to dwellings. If this not possible, they should be screened and integrated into the overall development, and the 1m landscape buffer provided in addition to the storage area.

## **6.5 Maintenance and Management**

### **Problem Statement**

The overall quality of the environment, and its maintenance can influence both the perception and reality of safety and security. The absence of any legal mechanism for the maintenance of pedestrian access routes presents risks to its long-term success.

### **Effects on Users**

The absence of regular maintenance; clear responsibilities and financial contribution to upkeep can result in the quality and safety of pedestrian access routes reducing over time. This includes repairs to the footpath, ramps and stairs; lighting; trimming of vegetation and removal of obstructions or structures which are critical to maintaining safe and practical access for all users.

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<sup>53</sup> MfE, May 2022. National medium density design guide. 2. In the front: a welcoming address (B).

<sup>54</sup> Ibid. 5. Around the house: and integrated landscape. Rule of thumb

<sup>55</sup> Ibid. 2. In the front: a welcoming address (F).

<sup>56</sup> <https://kaingaora.govt.nz/assets/Publications/Design-Guidelines/ki-te-hau-kainga-new-perspectives-on-maori-housing-solutions.pdf>

## ***Evidence Base***

Monitoring found that only 27% of approved resource consents included a mechanism for the management and maintenance of a pedestrian access route, such as a resident's association, incorporated society or body corporate.

The majority of developments (55%) had the pedestrian access route held as part of the adjacent lot, with a pedestrian right of way easement granted in favour of the other lots. Where a vehicle access site and/or carparking was provided, these were typically held in a JOAL or COAL, but the pedestrian access route remained as an easement rather than a separate lot (18%). Only 11% had the pedestrian access route included as part of a wider COAL or JOAL arrangement.

Research indicates that a lack of ownership presents safety risks, with well-maintained, ordered and clear evidence of ownership and care, being linked to personal safety and security<sup>57</sup>.

## ***Recommendations***

- (a) Maintenance and management of pedestrian access routes to dwellings is addressed at resource consent stage with an appropriate legal mechanism such as a resident's association or an incorporated society which establishes clear responsibilities for the ongoing maintenance of the footpath and associated buffer areas;
- (b) The design of the pedestrian access route takes into consideration long-term maintenance, particularly in relation to footpath surface treatment and lighting.

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<sup>57</sup> Herzog, T.R. and Miller, E.J., 1998. The role of mystery in perceived danger and environmental preference. *Environment and behavior*, 30(4), pp.429-449.

## 7.0 CASE STUDIES

Five of the 62 consented developments that were analysed, were selected for more detailed case studies. The criteria for selection included:

- (i) The development was constructed;
- (ii) The case studies were of varying scales of development;
- (iii) The development demonstrated at least two of the pedestrian access design factors.

Site visits were undertaken in May 2022 to assess the development against the following design factors:

### Pedestrian Access Route Width

- Pedestrian access route is of sufficient width to allow two users to pass each other (minimum 1.35m for two people walking; 1.8m for full range of users including prams, mobility devices, deliveries and bicycles)
- Structures and services are avoided that reduce accessible footpath width (e.g. retaining walls, lighting, waste bins, water tanks, bike parking)

### Wayfinding

- Pedestrian access route is clear, direct and logical
- Dwelling entrances are clearly identifiable
- Wayfinding signage is provided for larger scale developments

### Landscape Treatment, Privacy & Amenity

- Landscape buffer of sufficient width (1m) is provided between the dwelling & footpath and/or property boundary and contributes positively to privacy and amenity
- Permanent waste bin storage is avoided adjacent to the footpath
- Fencing and retaining wall heights are minimised (maximum combined height of 1.8m) to avoid dominance; sense of enclosure and safety risks

### Legal Mechanism For Maintenance

- Pedestrian access route is held in a common access lot or similar arrangement
- Pedestrian access route is subject to management and maintenance structure (e.g. resident's society or similar)

### Safety

- Pedestrian access route design considers Crime Prevention Through Environmental Design ('CPTED') principles including straight alignment; clear line of sight and avoids entrapment spots and dead ends
- Ground floor windows of sufficient size provide passive surveillance or "eyes" over the pedestrian access route
- Adequate lighting is provided to pedestrian access routes during hours of darkness, in accordance with AS/NZS 1158.3.1
- Consideration is given to emergency services access (minimum 4m clear corridor for NZ Fire Service)

### Accessibility

- Pedestrian access route is of a gentle gradient (1 in 20) and where possible stairs are avoided
- Where steps are provided, an alternative accessible ramp is provided (max 1:12.5) with level rest areas
- Pedestrian access route is an even, continuous and non-slip surface
- Pedestrian access route is connected to the public street footpath and is not obstructed

The case studies were scored as having either good, average or unanticipated outcomes and are attached at Appendix E to this report.

## **8.0 MONITORING PHOTOGRAPHS**

In addition to the case studies, site visits were undertaken for 30 of the 62 approved developments, with photographs taken in relation to the above design matters and are attached in Appendix F to this report.

The photographs illustrate the range of pedestrian access routes in terms of their quality, accessibility and safety.

## 9.0 OPTIONS ANALYSIS

### 9.1 *Do Nothing*

This option would allow development to proceed with no car parking or vehicle access and reliance on pedestrian access routes with no design standards such as width. It is also noted that the NZ Building Code does not control the width of access to residential buildings.

The width, accessibility (for all users including emergency service providers) safety and amenity of the pedestrian access route would be unmanaged and could result in unsafe and inaccessible pedestrian routes as outlined previously with risk to human life and reduction in accessibility for a range of users.

It is considered that the do nothing option would not achieve a high level of amenity and safety for pedestrians and cyclists; nor would it provide for the functional and operation needs of the intended use and would be contrary to RPS B2.3.2. Policies (1)(d) and (e). As such the do nothing option is not preferred.

### 9.2 *Non Statutory Guidance*

Non statutory guidance in the form of a design guide or similar could be developed for pedestrian access routes. This would have no statutory weight and compliance with the guidance could not be required through a resource consent process, and instead require negotiation with an applicant and associated costs including the length of time to process the resource consent. The risk of poorly designed and unsafe pedestrian access routes would remain. The standard of access across Auckland would also be inconsistent. For these reasons non statutory guidance is not preferred.

### 9.3 *Plan Change*

A plan change would introduce minimum standards for pedestrian access routes ensuring that it is safe, appropriately designed to accommodate all users, and of a minimum design quality. A plan change would ensure a consistent approach across Auckland. For these reasons a plan change is the preferred approach.

## 10.0 RECOMMENDATIONS

It is recommended that pedestrian access routes which are the sole means of access to the dwellings are subject to the following minimum standards:

- (i) A restricted discretionary activity consent is required for pedestrian access routes serving four or more dwellings. This aligns with the threshold for consent in the Residential chapters, and allows for assessment of qualitative design matters such as safety which cannot be controlled by standards;
- (ii) A 1.8m minimum formed footpath width is required for all pedestrian access routes where they are the sole means of access to dwellings;
- (iii) Pedestrian passing bays are provided where the pedestrian access route exceeds 50 metres in length. The passing bays must increase the minimum formed width to 2.5m and extend over a length of 3.5m, to allow pedestrians and/or cyclists to safely pass each other;
- (iv) A maximum pedestrian access route gradient of 1 in 33 (3%) is provided. Where this cannot be achieved, a gradient between 1 in 33 (3%) and 1 in 20 (5%) with a rest area with a minimum length of 1.2m shall be provided at intervals not exceeding 45 metres; or gradients between 1 in 20 (5%) and 1 in 12.5 (8%) are provided with a rest area with a minimum length of 1.2m shall be provided at intervals not exceeding 9 metres;
- (v) Where the pedestrian access includes steps, a step-free option must also be provided in accordance with NZS4121:2001 including the minimum width of the steps and ramp.
- (vi) Pedestrian access routes must be designed to allow visibility, be clear, logical and direct, and avoid potential hiding spaces and dead ends;
- (vii) Physical elements such as continuous solid fenced, blank walls or planting that impede sightlines and reduce opportunities for passive surveillance must be avoided. Landscape features, fences, walls and vegetation must be low or visually permeable to ensure clear visibility along full length and reduce opportunities for concealment;
- (viii) Pedestrian access routes must be overlooked with windows of active ground floor uses such as kitchens, dining and living rooms;
- (ix) Adequate lighting in accordance with AS/NZS 1158.3.1:2020 is provided to pedestrian access routes for the safety of pedestrians and to assist with wayfinding and dwelling identification;
- (x) Maintenance and management of pedestrian access routes as the sole means of access to dwellings and associated lighting is addressed at resource consent stage with an appropriate legal mechanism such as a resident's society which establishes clear responsibilities for the ongoing maintenance of the footpath and associated buffer areas;
- (xi) The design of the pedestrian access route takes into consideration long-term maintenance, particularly in relation to footpath surface treatment and lighting.

The following recommendations are made with respect to the Residential Plan Change in respect of the 1m landscape buffer:

- (xii) That a minimum 1m landscape buffer setback is provided between a dwelling and pedestrian access routes (including footpaths associated with a vehicle accessway) which are the sole means of access to dwellings;
- (xiii) That the 1m setback is planted with low vegetation to provide a physical buffer between a footpath and dwellings and to contribute to privacy and amenity;
- (xiv) That the 1m setback is free of any buildings, servicing facilities (including waste bins), parking or manoeuvring areas. Storage of waste bins adjacent to the pedestrian access route should be avoided, with a preference for communal bin enclosures. If there is no alternative, then bins should be screened, and the 1m landscape buffer provided in addition to the storage area.

The following non-statutory recommendation is also made:

- (xv) Auckland Council continues to advocate to central government for changes to the Building Code to support safe and efficient access for emergency service providers along pedestrian access routes which are the sole means of access to dwellings.

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## APPENDICES

- A** Universal Design Personas Combinations Spreadsheet
- B** Flow Transportation Specialists: Pedestrian and Cyclist Passing Bays Technical Note. 31 May 2022
- C** Summary of Auckland Council Consultation with Emergency Service Providers: Access Restrictions & Private Pedestrian Access
- D** Fire Emergency New Zealand. Feedback to Auckland Council on Access to Pedestrian- Only Developments
- E** Pedestrian Access Route Case Studies
- F** Monitoring Photographs