

BEACH RESIDENTIAL PRECINCTS / PAEKAKRIKI

CHARACTER ASSESSMENT UP-DATE

RMA [ENABLING HOUSING SUPPLY & OTHER MATTERS]
AMENDMENT ACT & NSP-UD / IMPACT ON CHARACTER



Prepared for Kapiti Coast District Council by

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1 INTRODUCTION

CONTEXT AND BACKGROUND

The Operative Kapiti Coast District Plan identifies four special character areas/precincts with a coastal location at Paekakariki, Raumati, Waikanae Beach and Otaki Beach respectively. These precincts have location-specific issues that are managed through the Operative District Plan.

The District Plan describes these precincts as settlements with ‘a linear form, low key ‘beach’ character and expressive topography enhanced by prominent mature vegetation. Their memorable natural setting contributes to a strong sense of place. While each of the four settlements has its own ambience and individually, they share a range of common features derived from similarities in their coastal location, topography and history of land subdivision”. Further to this, the District Plan provides a list of the common patterns that underpin their ‘beach’ character which relate to both built and natural features and characteristics (refer District Plan, General Residential Zone, Beach Residential Precincts, page 3). These common patterns and characteristic features have been identified by detailed character assessments for each area carried out by the Council in 2011¹.

In recognition of the special character of these precincts the District Plan has made them subject to specific rules and standards ‘to ensure that new development is sensitive to its landscape setting and enhances the collective character, amenity value and public significance of each area’. In addition to the specific rules and standards, the District Plan includes a set of ‘Special Character Area Design Guidelines’ (General Residential Zone/Appendix 3).

The National Policy Statement on Urban Development (2020) (NPS-UD) and subsequent Resource Management (Enabling Housing Supply and Other Matters) Act, call for increasing the existing residential density and are applicable to Kapiti Coast District Council as a Tier 1 local authority. In response, proposed District Plan provisions are being prepared for the General Residential Zone, including the Beach Residential Precincts, with different provisions for the areas within 400m of a Town Centre or 200m of a Local Centre and within 800m of the Paraparaumu Metropolitan Centre Zone or a Rapid Transit Stop.

The increased density provisions have the potential to impact on some of the essential local character attributes associated with each precinct. To understand the potential impact of the new provisions on the key character attributes of each precinct, the Council has commissioned Urban Perspectives Ltd in association with Boffa Miskell to undertake an assessment of the specific ways the character of each precinct might be affected. This report provides an assessment of the Paekakariki Beach Residential Precinct. The other three areas - Otaki Beach, Waikanae Beach and Raumati Beach Residential Precincts are covered in separate reports.

The assessment will help inform the development of District Plan provisions in response to the new legislation and the NPS-UD, while acknowledging the essential local character attributes of Paekakariki Beach Residential Precinct.

¹ Character assessments for the Beach Residential Precincts were undertaken by the Council in 2011 to help identify the key character attributes of each area and identify ways to manage those attributes through the District Plan. The findings and recommendations of those assessments provided the rationale for the current District Plan provisions.

PURPOSE

The purpose of the study is two-fold:

- (a) identify the key/primary character attributes of each precinct that would be most sensitive to change/potential intensification; and
- (b) identify the potential impact (degree and nature of potential change) of the proposed increased density provisions on each character attribute and the collective character of the precinct as a whole.

STUDY AREA & SCOPE OF THE ASSESSMENT

The boundaries of the Paekakariki Beach Residential Precinct PBRP (or precinct) are identified by the District Plan and outlined on the 'context map' (refer Appendix 1/Map 1).

Character Definition ²

For the purposes of this study 'Character' includes both built and natural elements within the private and public realms within an area or neighbourhood. While the individual elements are important, 'character' is largely determined by the relationship between those elements and the unique way they combine to form patterns and create the context and image of an area as a whole. The more pronounced, consistent or continuous those elements, relationships and patterns are, the more distinctive and coherent the overall character of an area feels and the stronger its sense of place is.

Key Character Attributes Assessment

The assessment of the key character attributes is focused on the following aspects of the existing character which are considered most relevant to the assessment:

- Landscape character (landform/topography, vegetation patterns)
- Building height
- Site coverage
- Lot size pattern
- Setbacks

METHODOLOGY/RESEARCH METHODS

Assessment of 'key character attributes'

- Review and up-date analysis of the original 2011 Character Assessments with reference to key character elements that are most relevant to the purpose of this study, including landscape character and patterns relating to the key bulk/location provisions.
- A detailed landform and vegetation assessment to identify key character attributes.
- Mapping of up-dated and additional data based on the methodology used in the original 2011 Character Assessments.

² The definition is a revised version of the definition used for the original 2011 'character assessments'

Establishing the impact of increased density provisions on the local character attributes

- Comparative analysis of the 'character up-date assessment' findings against the operative and new draft provisions to establish the impact of the new provisions on existing character attributes. The analysis is limited to the key 'bulk and location' provisions including site coverage, building height, setbacks and lot size.

The collective use of the identified research/analytical methods allows an objective assessment of the area's character and helps to inform conclusions on the implications of the new increased density provisions.

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2 EXECUTIVE SUMMARY

CHARACTER ASSESSMENT SUMMARY

Sense of place

The Paekakariki Beach Residential Precinct has a strong sense of place derived from its coastal location and associated landscape setting. The distinctive and largely intact landform accentuated by an extensive vegetation cover represents the precinct's most recognisable characteristic. The existing low-rise/low-density residential development integrates well into the landform and, together with the informal character of some streets, contributes to the precinct's low-key 'beach' character and its collective amenity value.

Essential character attributes/patterns/relationships³

- **Primary attributes** - the primary character attributes of the Paekakariki Beach Residential Precinct (the precinct) include:
 - (i) landscape character attributes:
 - distinctive steep relict, and largely intact foredune landforms (dominated by slopes steeper than 1:5 over 76% of the sites); and
 - an extensive vegetation cover of tall trees (8m +) that creates a largely continuous mature vegetation pattern accentuating the landform (vegetation cover above 30% for 84% of the sites)
 - (ii) built character attributes:
 - low-density/low-rise built form comprising 1-2 storey stand-alone dwellings on individual lots that integrates well into and is compatible with the landscape setting.

As integral parts of their coastal setting, landform and vegetation patterns are strongly interrelated. Working in unison with the low-density built form, they represent the precinct's primary character attributes. It is the relationship between the primary landscape and built form attributes of the precinct that define its distinctive character. Managing this relationship is important if the precinct's primary attributes are to be maintained.

The primary character attributes are experienced throughout the precinct, as well as in views from various locations within the wider area.

- **Enabling attributes** - the primary character attributes have been enabled by four interrelated predominant and generally consistent patterns:
 - (i) generous lots size (predominance of lots above 600m² up to 1200m²+). There is a strong correlation between lot size, land slope and vegetation cover, with the larger lots typically occurring on the steepest slopes where the vegetation cover tends to be most pronounced/dense;

³ These have been identified based on the adopted 'Character' definition (page 2 of this report). According to that definition, 'character' includes both built and natural elements within the private and public realms of an area, noting that while the individual elements are important, 'character' is largely determined by the relationship between those elements and the unique way they combine to form patterns and create the context and collective image of an area as a whole. The more pronounced, consistent or continuous those elements relationships and patterns are, the more distinctive and coherent the overall character of an area feels and the stronger its sense of place is.

- (ii) low site coverage - predominance of site coverage below 30% for over three-quarters of the sites. This has allowed: (a) flexibility in building location (most buildings located within the flatter parts of the lot, thus avoiding the need for significant earthworks/landform modifications); and (b) sufficient space around the existing tall trees (8m+) to protect their roots and allow for their establishment and growth as well as provide opportunities for new planting;
- (iii) building height - the predominant low building height (single-storey for two-thirds of the sites) combined with the predominant stand-alone dwelling typology, has facilitated building development of a form and scale that integrates well into the landscape setting; and
- (iv) variable setbacks influenced by and working with the topography - deep setbacks, above 4.5m (typical for about half of the sites), occur in places where the relatively flat part of the site which is easiest to build on is located away from the street frontage. Conversely, shallow setbacks (below 2.5m) relate to sites where the level of the site's frontage is similar to that of the adjacent street allowing for a direct vehicle access.

The existing setback pattern helps to facilitate the 'reading' of the landform and associated vegetation pattern with planted embankments unifying the streetscape character and clusters of dense mid-block vegetation seen in views from within the precinct and from locations within the wider area. 'Informed' by the topography, the existing setback pattern (re both front and rear yards) has enabled a building form that complements its coastal setting.

- **Supporting attributes**

- (i) the informal character of some narrow/secondary streets (no kerb and channel/no footpaths) complements/supports the low-density built form and contributes to the informal 'low-key beach character' of the precinct.

The combination of the enabling attributes - low site coverage, generous lot sizes, low building height and setbacks that work with the topography - has allowed the retention of the underlying landform and associated extensive vegetation cover (the primary landscape attributes) and facilitated a built form character that integrates well and is compatible with the landscape setting. This is further supported by the informal character of some streets.

The character value/significance of the existing landform and vegetation pattern of tall trees and other mature vegetation makes the precinct as a whole generally sensitive to change and especially sensitive to any increased level of intensification. This is most critical for the parts of the precinct where the character of the landform is most pronounced and intact. These most sensitive parts, marked on the annotated 'hill shade' map (Appendix 1/Map 2), cover most of the precinct.

DISTRICT PLAN REVIEW / OPERATIVE & DRAFT PROVISIONS VERSUS PREDOMINANT CHARACTER PATTERNS: KEY FINDINGS

Operative Provisions

The Kapiti Coast District Plan identifies the Paekakariki Beach Residential Precinct as one of four special character areas/precincts with a coastal location. To provide for the management of the special character of these precincts, the District Plan includes provisions '*to ensure that new development is sensitive to its landscape setting and enhances the collective character, amenity value and public significance of each area*'. In addition to these provisions, the District Plan includes a set of 'Special Character Area Design Guidelines' (General Residential Zone/Appendix 3).

The analysis of the operative rules and standards for the Paekakariki Beach Residential Precinct (re site coverage, building height, lots size and setbacks) established that the operative provisions are generally aligned with and reflect the existing character patterns and attributes. Therefore, they facilitate the management of the precinct's primary attributes. The low site coverage and large lot size provisions are most critical in this respect.

Draft Provisions

The comparative analysis of the draft provisions relative to the precinct's primary character attributes established that the draft provisions are markedly different from the existing patterns and, if implemented, would enable a density of development and building character that would be a clear departure from that allowed under the existing provisions. This could have a significant impact on the precinct's primary character attributes by: (a) enabling an increased level of modification to the landform and tree and other vegetation removal compared to the operative provisions; and (b) altering the built form and its relationship to the landscape setting.

CONCLUSIONS

Character

- The Paekakariki Beach Residential Precinct has a distinctive character based on a set of definable character attributes (primary, enabling and supporting attributes) that work together and reinforce each other. The precinct's primary character attributes - the largely intact landform, the unifying pattern vegetation cover, particularly that of tall 8+m trees, and the low-density built form - have been enabled and maintained by the existing patterns of low site coverage, large lot size, low building height and setbacks that work with the topography. This has been further supported by the informal character of some narrow roads which have contributed to the low-key beach character of the precinct.

Operative and Draft Provisions

- The operative District Plan provisions are overall aligned with the precinct's predominant patterns. This has facilitated the management of the precinct's primary attributes.
- The draft provisions enable development with a density and building scale and character that is markedly different from that allowed under the operative District Plan provisions and a departure from the precinct's predominant patterns. This suggests that the primary, most prominent landscape character attributes of the Paekakariki Beach Residential Precinct - the dune complex landform and tall trees vegetation cover, along with its low-density built form that fits well into the landscape - could potentially be significantly affected/alterd under a level of development enabled by the draft provisions. The relationship between buildings and landscape could also be altered by potentially replacing an existing distinctive landscape setting and buildings of compatible form and scale, with a modified (less prominent, less vegetated, less distinctive) landscape dominated by larger, more closely spaced buildings.

Parts of the Precinct that are most sensitive to change/spatial extent

- The largely intact landform and the general continuity of the existing green pattern throughout the precinct and the associated landscape character significance makes the precinct overall sensitive to change and particularly sensitive to any increased level of intensification. This is because an increased level of intensification could impact on both the landscape and built character primary attributes, as well as affect their relationship. It could also alter the informal character of some narrow streets through street up-grade initiatives (i.e. carriageway widening/street parking, kerb and channel/footpaths installation) which are likely to be needed under an increased level of density.
- The sensitivity of the landform to change was determined based on the steepness of its slopes. Sites with slopes steeper than 1:5 were identified as primary/character defining sites that are most sensitive to change; sites with slopes between 1:5-1:12 as contributory (sites contributing to the character); and sites shallower than 1:12 as supporting/neutral sites. The precinct is dominated by primary sites (76%) followed by contributory sites (22%). The percentage of supporting/neutral sites is low (2%).
- The value of the vegetation pattern was determined by the extent of tall tree (8m+) cover on each site. On this basis, sites with a vegetation cover above 30% and up to 80%+ were identified as 'primary' or character defining sites; sites with a vegetation cover

between 20% and 30% as contributory sites (sites contributing to the character); and sites with vegetation cover of below or up to 20% as supporting/neutral sites. Most sites in the precinct are primary sites (84%) followed by contributory sites (11%). Supporting/neutral sites account for 5% of the sites.

- Primary and contributory sites with regard to both landform and tall tree cover (the precinct's primary landscape character attributes) are most sensitive to intensification. Most often primary 'landform' sites are also primary 'vegetation cover' sites.
- The precinct is dominated by primary and contributory sites. Primary and contributory sites re landform account for 98% of the sites. Primary and contributory sites re vegetation cover account for 95% of the sites. This means that the potential collective loss of vegetation and/or the degree of modification to the landform resulting from intensification across the precinct could be significant, which in turn will impact considerably on the precinct's overall character. Even if only some of those sites are to be redeveloped, this could have potential implications beyond the individual site/s.
- Supporting/neutral sites are less sensitive to intensification as: (a) their slopes are shallower, and their vegetation cover is lower/less dense; and (b) collectively they account for a small percentage of the sites. Therefore, the impact on the existing landform and/or tall tree vegetation pattern resulting from their redevelopment would be low.

Possible further investigation on the sensitivity of the landform and vegetation cover

- Not all contributory sites (tall tree cover 20-30%) exhibit an equal density of cover. Similarly, not all contributory sites with an average slope 1:5-1:12 have the same level of sensitivity (noting that average slope is not representative of the actual slope).
- Notwithstanding that the precinct is largely comprised of primary or contributory sites, and these are spread relatively evenly across the precinct, the parts of the precinct where the coastal landform is most prominent and/or intact have a higher degree of sensitivity compared to the remaining parts. The most sensitive parts (identified as significant landforms on 'hill shade' map, Appendix 1/Map 2), cover most of the precinct.
- To establish in more detail the relative sensitivity of contributory sites across the precinct and/or the sensitivity of the parts of the precinct that fall outside the identified most prominent/intact landforms, further investigation re density of vegetation cover and actual slope characteristics could be considered.

3 CHARACTER ASSESSMENT UP-DATE

LANDSCAPE CHARACTER

INTRODUCTION

Geomorphological processes over millennia have created the distinctive dune landforms of the Kapiti Coast, which are part of an extensive dune system that runs from Paekakariki in the south to almost Whanganui in the north. It is New Zealand's largest dune field, covering about 85,000 hectares and its continuity is broken only by the rivers and waterways that cross the coastal plain. The entire dune field could be considered to be a large-scale coastal landform because the dunes were generated at or near the coastline relatively recently and the coastal character of both the older and younger dunes is significant.

The dune field is of Holocene age and probably commenced forming when the sea rose to its present level 6500 years ago, following the last glacial period. The main variables in the formation of the dune fields include the sand supply (largely by longshore transport from the north), the degree of exposure to the prevailing onshore winds, and fluvial processes, including river mouth migration and sediment supply. Furthermore, the Paekakariki, Raumati, Raumati South and Otaki Beach areas contain coastal landforms that are not present elsewhere along the west coast south of Whanganui.

Ecologically, this extensive sand dune complex is recognised as the Foxton Ecological District. The native vegetation that formed on the dune crests, dune slopes and interdunal hollows and along the edges and terraces of the Waikanae and Otaki Rivers and associated waterways, contributed to the natural character of Kapiti Coast and together with the geomorphological elements and processes have collectively contributed to the character of the precincts being considered. A distinction can be made between younger active dunes and older relict dunes that are stabilised by vegetation.

Historically, the Waikanae and Paraparaumu coastal areas would have been vegetated in native duneland and wetland species and lowland podocarp/broadleaf forest in dune slacks. Today little native vegetation remains because of extensive clearance and land use changes. In the residential areas including in the precincts, fragments of the original vegetation remain in a few places.

An assessment of the natural character of the Kapiti coastal environment was recently completed for Kapiti Coast District Council and GWRC (Boffa Miskell 2021). In this study the inland extent of the coastal environment was defined and mapped, and an assessment made as to the extent to which the natural elements, patterns and processes exist, and the level of human modification. Natural character aspects have been described then rated in terms of the degree of physical modification alongside experiential aspects that exist because of the levels of modification remaining apparent. The findings of this assessment, which is broadscale and district-wide, have been reviewed as part of these current more detailed precinct character investigations.

CONTRIBUTION OF LANDFORM TO CHARACTER

Landform and vegetation individually and in combination contribute to an area's character. Both provide environmental limits and opportunities. How the land was shaped by the underlying geology and the subsequent geomorphological processes should significantly influence the nature and scale of any built development. Unfortunately, there is often little acknowledgement given to this and landforms are dramatically altered resulting in major changes to both the original form of the land or to the processes that shaped it. Residential subdivision and development can recognise and be guided by the natural landforms, or it can totally change or modify it. Recognition and acknowledgement of landform helps to create the character of an area; it creates identity and attachment.

Kapiti District's landform together with those districts further north is distinctive given that it is part of New Zealand's largest dune field. Creation of the dunefield complex has involved a range of natural processes resulting in various dune landscapes, including the coastline which is characterised by the cusped (tapering) foreland creating the sweeping form of Waikanae, Paraparaumu and Raumati beaches.

Due to subdivision, particularly near the settlements of Paraparaumu Beach and Waikanae Beach, the dune systems have been largely modified to accommodate housing and urban development. Nevertheless, the cusped foreland remains a legible feature. The dunes at the cusped foreland are formed predominantly from material from the Taupo Eruption and is known as the Taupo Dune (McFadgen, 1997). The Taupo Dune extends from the true left of the Waikanae Estuary to the north of Raumati Beach. Seaward of the Taupo Dune is a small strip of the Younger Waitare Dunes which are thought to be younger than 150 years in age.

Acknowledging the differences in the dune fields and their formation is an important part of defining and recognising landscape character and for each of the precincts these differences are described and explained.

Dune fields comprise sand ridges/‘hillocks’ and sand plains. It is generally the dune ridges and ‘hillocks’ that people recognise and identify with because of their distinctive elevated form. Also, dunes generally retain a semblance of their form even after some disturbance and residential development.

Dune ridges are important geomorphologically as they provide visible and often prominent evidence of the processes that formed them; they are also important in terms of their contribution to landscape character of an area. In places they make a significant contribution to landscape character but not always given that once modified through earthworks and subsequent development they are removed or substantially altered and remain as isolated and disconnected remnants.

However, this is not the case with sand plains because they have a low profile and are not visibly prominent, so they are easily modified; following earthworks and residential development their form is totally obliterated or substantially changed.

Dune Slope

With the higher shore-parallel ridges such as at Paekakariki and Raumati / Paraparaumu, there is a tendency for the eastward facing slopes to be steeper because, when they were forming as high foredunes, sand blown up from the beach and over the crests of higher foredunes may have settled out on the sheltered lee slope at the angle of repose for dry sand (30-35 degrees or around 1.5:1). This would vary because of the effect of differing degrees of foredune vegetation at the time of formation and subsequent degree of natural degradation.

The seaward slope of the ridges may also be steep if coastal erosion repeatedly trimmed the front of the dune after its formation (e.g. the seaward-most ridge (foredune) at Raumati South was trimmed back to a cliff during the 1976 storm), but in general, the inland-facing slope is usually steeper, rendering the ridge asymmetrical. This is well-demonstrated at Paekakariki and Raumati South. Low foredune ridges do not demonstrate this asymmetry to the same extent so it could be argued that the height and asymmetry of dunes in these precincts are inherent characteristics that should be acknowledged and recognised because of their contribution to the character of the precincts.

Mapping Landform

To assist with depicting and understanding the landform, a digital elevation model (DEM) map has been produced with hill shade and 0.5m contours for each precinct overlaid on the cadastre. The DEM is generated from the land surface and excludes buildings and structures. Also shown are the slopes steeper than 1:3.

CONTRIBUTION OF VEGETATION TO CHARACTER

Vegetation is also a significant contributor or creator of character. Native vegetation that has developed on the underlying landform as part of the natural process is especially valuable in terms of contributing to an area’s character. Given that native vegetation in the ‘lowlands’ of New Zealand where most of the population live, exists as very small fragments or remnants, retention and protection of these areas and enhancing them is very important.

Enhancement can be achieved by linking the fragments together, protecting the edges to create a buffer and wind protection and managing them to ensure they endure as permanent features in the landscape rather than allowing them to be compromised by pest plants, damage through root compaction and, drainage and changes to the water table.

Exotic vegetation can also create or contribute to landscape character, albeit a different type of character. In residential areas generally, it is the combination of native and exotic vegetation that is responsible for creating an area's landscape character.

The contribution of vegetation to landscape character, especially the contribution of native vegetation, varies across the four beach residential precincts identified in the District Plan.

Remnant native vegetation where present within the precincts is restricted to individual or very small groups of trees. Most of the tall native trees and other native species present in the beach residential precincts are not original and have been planted; pohutukawa in particular have been widely planted.

Vegetation, especially tall trees (i.e. 8m and above) on properties along the seafront of the beach precincts is often lower-growing or limited because of a combination of two factors – climate, especially strong winds, and landowners seeking to maximise unobstructed sea views from their dwellings and outdoor living areas.

Mapping Vegetation

Several vegetation maps were produced as part of the precinct's assessment. A map with vegetation 2.0m tall and above shows the distribution and pattern of vegetation which is useful but of limited use when assessing its scale and value in residential areas and the potential impact of intensification. Vegetation height and density provides more useful parameters to assessing value and the effects of potential impact of intensification.

While all types of vegetation contribute to character in residential areas, large trees are the greatest contributors because of their age, height, scale and canopy spread. Large trees, especially many native trees species are particularly vulnerable to intensification. A limited amount of vegetation especially tall trees (i.e. 8m and above) in the beach precincts on properties along the seafront also make these areas vulnerable to intensification in that it limits the opportunity to integrate new dwellings within the existing tall vegetation matrix.

A height threshold of trees 8.0m and above was selected and mapped for each precinct. An 8.0m tall tree has a similar scale relationship to the height of a residential dwelling and trees of this height make a significant visual and amenity contribution to an individual lot and also collectively to a neighbourhood.

Two key factors to consider in relation to 8.0m trees and potential intensification of residential development are:

- the spread of the canopy; and
- the extent of the root zone.

As a general rule, the extent of a tree's root zone aligns with at least the spread of the canopy (i.e. the drip zone); any ground disturbance (i.e. excavation and/or ground compaction) or building development should not encroach within the drip line. In residential areas, buildings are often constructed within a tree's dripline with tree roots being cut back to enable building and / or the root zone compacted. Sometimes the effects of this disturbance are evident reasonably quickly, but more often it may take several years before the effects become evident (i.e. often referred to as latent damage). This is especially an issue of concern for native forest remnants/trees.

PAEKAKARIKI BEACH RESIDENTIAL PRECINCT / LANDSCAPE CHARACTER ASSESSMENT

Landform

Recognition and acknowledgement of landform helps to create the character of an area; it creates identity and attachment.

The assessment of the Paekakariki Beach Residential Precinct includes a description of the landform and the natural processes that formed it. Also described, are some of the effects residential development has had on the landform, highlighting those areas where landform warrants recognition as contributing to an area's character.

Paekakariki is at the extreme southern end of the extensive dune system and coastal plain that traverses the western side of the North Island. The settlement is located on a dune system likely to be several thousand years old and all dunes apart from the present smaller foredune are older than 500 years (Gibb 1978).

Paekakariki lies near the junction of a rocky erosional coast to the south and the largely prograding sandy coast to the north. New Zealand's largest dune field covers much of the plain, with the continuity of the dunes and associated sand plains interrupted only by the floodplains, terraces, and estuaries of rivers. At Paekakariki, however, the plain is very narrow and dominated by dune ridges that provide undulating to steep relief. The steepness of the dune faces contributes strongly to the settlement's character.

While most of the dune field to the north is dominated by sand plains and parabolic dunes that migrated many kilometres inland from the coastline, the landforms at Paekakariki consist of relatively high (10-30 m) former (relict) foredunes that run largely parallel to the coast. Their shore-parallel orientation was modified in places where former blowouts and incipient parabolic dunes developed but dune migration inland was very limited in extent.

The large size of the former foredunes can be explained by the more stable location of the shoreline: North of Raumati, the shoreline has advanced by up to 4 km during the past 6500 years whereas at Paekakariki the shoreline only advanced by between 120 m and 600 m during the same period. The relatively stable shoreline provided sufficient time for high foredunes to develop before being succeeded by younger foredunes to seaward (Shepherd 1987). In contrast to the Horowhenua/Manawatu dune fields, where strong onshore winds have eroded older foredunes leading to blowouts and large-scale dune migration inland, the Paekakariki foredunes have survived largely intact owing to their location adjacent to the steep escarpment to the east that buffers and deflects the onshore winds, thereby reducing dune erosion.

In common with Raumati, Paekakariki provides a natural setting with steep relict foredune landforms that contrast markedly with that of all other coastal settlements to the north. The natural landforms have not been modified in major ways by human settlement as the present height and spacing of the buildings generally do not obscure the underlying dune topography.

Paekakariki, unlike the other Kapiti coastal settlements, does not have an integrated sewage system and instead relies on septic tanks, which has constrained development, and this has affected the density and intensity of residential development and the settlement's overall character. The steepness of the dunes has also affected site access with many properties relying on roadside parking and access to dwellings via paths and steps up dune faces.

The coastal natural character assessment study (Boffa Miskell, 2021) subdivided the Kapiti coastal environment into sectors and assessed and assigned a level of natural character to each sector. The sector that includes Paekakariki also includes QE Park and was rated as having a moderate level of natural character.

Vegetation

There is extensive vegetation cover throughout the precinct, including a comprehensive network of tall, mature trees (8m or greater) on private allotments as can be seen on the LiDAR derived overall vegetation map. Refining vegetation coverage further based on trees 8.0m or greater the density of vegetation based on individual site coverage of 30% to 80% and above across the whole settlement is high. There are only small pockets where the 8.0m tall and greater tree coverage is less than 20%.

Tall, spreading pohutukawa, often in groups, form a continuous tree canopy in places. Stands of tall canopy trees are especially dominant on the steeper dune faces. The extent of vegetation generally but especially the tall tree cover has created a unifying pattern throughout the settlement and provides a scale that comfortably accommodates residential buildings.

Tall Norfolk Island pines and macrocarpa as well as many other exotic trees form part of this tree cover. However, unlike many other exotic species, both macrocarpa and Norfolk Island pine because of their size and scale and the potential issues they pose (eg, health and safety from toppling and dropped/broken limbs, shading, amenity) become increasingly difficult to accommodate in residential areas when building density increases.

Buildings of greater height and / or an increased density could adversely affect the character of Paekakariki. Increased building density would also potentially lead to more on-road parking; currently on some streets, cars have to park on narrow roads as property access is restricted by steeply rising dune slopes.

Summary

The dune system defines Paekakariki and because of the configuration of the dunes it has created a series of sub-areas throughout the settlement. Most of the settlement occupies the dune system but it can be divided into one core area and a smaller fragmented and less defined area north of Campbell Park and Paekakariki School as shown on the annotated 'hill shade' map (Appendix 1/Map 2). In the core area, the dunes are more prominent and the most intact.

The pattern and distribution of tall trees above 8.0m generally follow the prominent dune areas, including the secondary area to the north of the core area. Most of the mature tall trees that significantly contribute to the character have been planted. Species such as pohutukawa, which are prominent throughout the precinct have a large canopy spread and root plate and consequently occupy a large footprint on what are generally long narrow sites. Mature exotic conifers such as Norfolk Island pine and macrocarpa are also prominent in places and contribute to the precinct's character; however, long term, the height and scale of these species often make them difficult to accommodate in a residential environment because of the potential hazards they pose.

SLOPE MAPS ANALYSIS

Existing (average) slopes were analysed to understand the potential impact of intensification on landform character. Information on average slope was recorded and mapped within five slope categories as shown on the 'average slope' map (refer Appendix 1, Map 4). A 'hill-shade' map was also created to show the general landform configuration within the precinct (refer Appendix 1, Map 2).

The figures are:

Slopes	Percentage of sites
Slopes steeper than 1:3	35%
Slopes 1:3 -1:5	41%
Slopes 1:5 - 1:8	15%

Slopes 1:8- 1:12	7%
Slopes 1:12 - 1:20	2%

Analysis and Observations

- Over three quarters (76%) of the sites are steeper than 1:5 with slightly less than half of those sites being steeper than 1:3. Most of these steeper sites relate to larger lot sizes (above 700m²) and most have a high vegetation cover (above 40%).
- Sites shallower than 1:5 constitute a quarter (24%) of the sites with most of those sites within a slope range between 1:5-1:8 and only an insignificant number of sites (2%) shallower than 1:12.
- The average slope provides a general indication of the slope across the site but does not reflect the actual slope, which most often is unevenly spread across the site (i.e. includes some flatter and some very steep parts). This means that potential redevelopment under increased density provisions would most likely require modification of the existing landform to provide for building platforms.
- The existing landform and its strong relationship to the precinct's coastal location is one of its primary attributes that largely defines precinct's overall character. The slopes, which are an important characteristic of the underlying, largely intact landform, provide an indication of potential need for earthworks under an increased density provision. In terms of building construction, the steepest sites within the precinct (steeper than 1:5) would typically be associated with the greatest need for earthworks and therefore would have the greatest impact on the landform character.
- On this basis, sites steeper than 1:5 are considered primary sites (sites that define the landform character and are most sensitive to change), sites with slope 1:5 -1:12 - contributory sites (sites that contribute to the landform character might require a lower degree of modification compared to the primary sites); and sites shallower than 1: 12 supporting /neutral sites.

Refer to 'average slope/landform character' map (Appendix 1/Map 5), showing the geographic distribution of primary, contributory and neutral/supporting sites.

Summary

The existing, largely intact landform and its strong relationship to the precinct's coastal location is one of its primary attributes defining the precinct's overall character. In terms of slope characteristics, the precinct is dominated by primary/steep sites (76%), and a smaller number of contributory sites (22%). This indicates that the entire precinct is sensitive to change/increased levels of intensification as this could significantly affect the integrity of the largely intact landform, and particularly the parts associated with the identified 'significant' landforms (refer annotated 'hill shade' map, Appendix 1/Map 2).

VEGETATION MAPS ANALYSIS

Two maps have been prepared to illustrate the characteristics of the vegetation pattern of tall trees (8m and above): (a) 'vegetation coverage' map and (b) 'vegetation' (8m and above) map. The information on both maps relates only to tall trees (8m and above). Tall trees are the most significant contributor to the existing vegetation pattern. However, they represent only part of the actual vegetation cover currently seen on the ground which includes mature vegetation below 8m.

The 'vegetation/8m and above' map (Appendix 1, Map 7) shows the location/distribution of tall trees throughout the precinct and provides an indication of the density of vegetation within each site.

The 'vegetation coverage' map (Appendix 1, Map 6) shows the vegetation cover on each site. Vegetation cover was calculated for each lot and initially recorded within 5 categories with a 20% interval between them (starting with vegetation cover of up to 20%). The 20-40% vegetation cover category was further split into two sub-categories 20%-30% and 30%-40% to provide a more detailed understanding of the coverage within this category. The percentages of lots within each category were identified and their geographic distribution plotted on the 'vegetation coverage' map.

The figures are:

Vegetation cover of tall (8m and above) trees	Percentage of sites
Up to 20%	5%
20%-30%	11%
30%-40%	45%
40%-60%	15%
60%-80% and above	2%

Analysis and observations

- Most sites (62%) have a vegetation cover of above 40% and up to 80%+. This is followed by sites with a vegetation cover between 30-40% which account for 22% of the sites. Sites with vegetation cover of tall trees above 30% (which account for 84% of the sites) make the strongest contribution to the precinct's character.
- Sites with vegetation cover between 20%-30% account for 11% of the precinct's sites. Sites where vegetation cover is below 20% constitute 5% of all sites.
- The extent of vegetation within the precinct generally, but especially the tall tree cover, creates a unifying pattern throughout the precinct. It also and provides a scale that comfortably accommodates residential buildings and aids the integration of 'built' and 'natural' form.
- The intensity of the vegetation pattern of tall trees varies from location to location and/or from site to site, but it is generally continuous throughout most of the precinct. The pattern typically intensifies within the steepest sites where larger prominent clusters of tall trees can be found. These more intense clusters accentuate as well as help to 'protect'/stabilise the underlying landform. The vegetation pattern tends to be less pronounced within some of the flatter parts of the precinct and/or within some of sites closer to the coast where climatic conditions are less favorable. On the whole, there is an obvious correlation between slope and density of the vegetation cover with the steeper slopes associated with denser and higher vegetation cover.
- Density of vegetation cover - which is an important characteristic of the vegetation pattern - has been mapped (refer 'vegetation/8m and above' map) but has not been analysed in detail as 'measuring' vegetation density is a difficult and complex task requiring detailed site investigations. As a general observation though, lots with higher vegetation cover (above 30%) tend to have most of their trees grouped together in larger clusters (resulting in a vegetation cover with a higher density). The density within lots with a vegetation cover below 30% appears lower, as many of the trees there tend to form smaller clusters or are dispersed/spread across the lot.

- The value of the vegetation pattern was determined by the extent of vegetation cover on each site. On this basis the following site categories were identified:
 - primary sites - sites with vegetation cover above 30% where the density of the cover appears most pronounced/dense, make the strongest (primary) contribution to the collective character of the precinct. Primary sites tend to be associated with lots above 600m² and mainly those above 900 m²;
 - contributory sites - sites with a vegetation cover between 20%-30% are considered to be contributory sites (sites that contribute to the vegetation pattern of the precinct but exhibit a lower density of vegetation cover compared to that on the primary sites). While trees within the contributory sites tend to be spread across the site or might appear in smaller clusters (e.g. have a lower density of cover), compared to the dense clusters/larger groupings within the primary sites, they are nevertheless no less important as they: (a) contribute to the continuity of the vegetation pattern; and (b) accentuate the landform and stabilise the land slopes across the precinct. The contributory sites are often found in groups or rows within the same locality. Some of those localities include sites in the vicinity of Marine Parade and around north/eastern end of the precinct (north of Tarawa Street); and
 - supporting / neutral sites - sites with vegetation cover below 20% are considered to be supporting/neutral sites.
- The vegetation pattern of tall trees is comprised mainly from primary sites which account for 84% of the sites within the precinct.

Refer to 'vegetation coverage character' map (Appendix 1/Map 8), showing the geographic distribution of the primary, contributory and neutral/supporting sites.

Summary

The extensive and unifying pattern of tall tree cover is a primary attribute, defining the precinct's overall character - an attribute that is integral to the precinct's coastal setting and associated landform. The obvious correlation between slope and density of vegetation cover (with the steeper slopes having a denser and higher vegetation cover) alludes to the inherent/complementary relationship between the two attributes and their combined character value.

BUILDING HEIGHT

Information on building height was not updated as part of this assessment on the assumption that the findings of the 2011 study are still largely relevant given the permitted height limit under the operative District Plan provisions. The 2011 study found that the area is a mix of one and two storey buildings with a predominance of single-storey buildings.

The figures (percentages of the total) as per the 2011 Character Assessment are:

Building height

1 storey	67.0%
2 storeys	30.0%
3 storeys	2.0%
N/A	1.0%

Observations

The perception of building height within the precinct is influenced by: (a) the existing vegetation which sometimes reduces visibility of buildings from the street or moderates the impact of their actual height; and (b) the topography which can reduce or accentuate the perception of height depending on the building location.

SITE COVERAGE

Up-dated information on site coverage has been supplied by the Council. The information was recorded within four 'site coverage' categories. The 'Site Coverage' map (refer Appendix 1, Map 9) shows the geographic distribution of the lots within the same category.

More than three-quarters of the sites (78%) have a site coverage below 30% with most of the remaining sites with site coverage between 30-40%. Site coverage above 40% accounts for an insignificant number of sites.

The figures (percentage of the total) are:

Site coverage

Below 30%	78.0%
31% - 40%	18.0%
41% - 50%	3.0%
51%-60%	1.0%
N/A	-

Observations

- The area is dominated by low site coverage. There is strong correlation between site coverage and lot size with the lower site coverage explained by the predominant pattern of large lot size and associated steeper slopes. Site coverage (above 30%) tends to be associated with smaller size lots (below 600m²).
- The combination of low site coverage, generous lot sizes and the predominance of sites steeper than 1: 5 has facilitated the establishment and growth of extensive mature vegetation. The mature vegetation, in turn has aided the integration of the existing generally low-rise/low-scale buildings into their sites and the landform, thus further reducing the perception of the low building density in views from the street.

LOT PATTERNS

Up-dated information on lot size was recorded under five lot size categories. The 'Lot Size' map (refer Appendix 1, Map 10) shows the distribution of lots within each category.

The information shows that the area is dominated by lots above 600m² which account for 82% of the sites, including a similar number of lots between 600m²-900m² and between 900m² - 1200m².

The figures are as follows:

Lot size

Under 400m ²	1.0%
400m ² to 599	14.0%
600m ² to 899m ²	42.0%
900m ² to 1200m ²	24.0%
Above 1200m ²	15.0%

Observations

- Overall, the precinct is dominated by medium to large lots. Most of the larger lots (above 900m²) are located at the part of the precinct to the south of Pingau and Tarawa Streets.
- Lots with similar size/proportions tend to be clustered around the same location/street. Most of the smaller lot (between 400m²-600m²) are clustered at the north/west end of the precinct. Some of the lots within that category are associated with slopes shallower than 1:5.
- Most of the larger lots are also very deep (above 100m). Most lots have an elongated and generally regular shape with proportions typically in the order of 1:4 to 1:6.

SETBACKS

Up-dated information on frontage setbacks was recorded within 4 categories: within 1.5m (corresponding to the draft provision), 1.5-2.5m; 2.5-4.5m and above 4.5m (corresponding to the operative provisions) (refer Appendix 1, Map 11).

The figures are as follows:

Frontage setback

Within 1.5m	32.0%
1.5m-2.5m	5.0%
2.5m- 4.5m	12.0%
Above 4.5m	50.0%
N/A	1.0%

Observations

The frontage setback of half of the sites is above 4.5m with most of the remaining sites characterised by shallow setback of up to 1.5m.

Frontage setbacks within the precinct are strongly influenced by the topography. Deep setbacks, which account for half of the sites, typically occur in places where the relatively flat part of the site - the part that is easiest to build on - is located away from the street frontage.

Shallow frontage setbacks (below 2.5m) most often relate to sites where the level of the site's street frontage is similar to that of the adjacent street to utilise the opportunity for direct vehicle access. Setbacks shallower than 1.5m tend to relate to garages.

The frontage setback pattern is not always apparent in views from the street due to the topography and/or vegetation (buildings are often obscured by planted embankments along the street edge and/or by tall/dense vegetation within the front yard).

In many locations existing tall trees in the rear yards of adjacent properties tend to aggregate to create large contiguous green clusters mid-block. This increases the visual separation distances between adjacent buildings and enhances the integration of the built form to the underlying coastal setting.

4 DISTRICT PLAN REVIEW: OPERATIVE & DRAFT PROVISIONS

ESSENTIAL CHARACTER ATTRIBUTES/PATTERNS/RELATIONSHIPS⁴

Based on the up-dated character overview (Section 3 of this report) the following character attributes emerged:

- **Primary attributes** - the Paekakariki Beach Residential Precinct has a strong sense of place derived from its coastal location and associated landscape setting. This, together with the existing low-density residential development that integrates well into the landscape setting, contribute to the low-key beach character of the precinct and its collective amenity value.

The primary character attributes of the Paekakariki Beach Residential Precinct (the precinct) include:

(i) landscape character attributes:

- distinctive steep relict, and largely intact foredune landforms (dominated by slopes steeper than 1:5 over 76% of the sites); and
- an extensive vegetation cover of tall trees (8m +) that creates a largely continuous mature vegetation pattern accentuating the landform (vegetation cover above 30% for 84% of the sites)

(ii) built character attributes:

- low-density/low-rise built form comprising 1-2 storey stand-alone dwellings on individual lots that integrates well into and is compatible with the landscape setting.

As integral parts of their coastal setting, landform and vegetation patterns are strongly interrelated. Working in unison with the low-density built form, they represent the precinct's primary character attributes. It is the relationship between the primary landscape and built form attributes of the precinct that define its distinctive character. Managing this relationship is important if the precinct's primary attributes are to be maintained.

The primary character attributes are experienced throughout the precinct, as well as in views from various locations within the wider area.

- **Enabling attributes** - the primary character attributes have been enabled by four interrelated predominant and generally consistent patterns:
 - (i) generous lots size (predominance of lots above 600m² up to 1200m²+). There is a strong correlation between lot size, land slope and vegetation cover, with the larger lots typically occurring on the steepest slopes where the vegetation cover tends to be most pronounced/dense;

⁴ These have been identified based on the adopted 'Character' definition (page 2 of this report). According to that definition, 'character' includes both built and natural elements within the private and public realms of an area, noting that while the individual elements are important, 'character' is largely determined by the relationship between those elements and the unique way they combine to form patterns and create the context and collective image of an area as a whole. The more pronounced, consistent or continuous those elements relationships and patterns are, the more distinctive and coherent the overall character of an area feels and the stronger its sense of place is.

- (ii) low site coverage - predominance of site coverage below 30% for over three-quarters of the sites. This has allowed: (a) flexibility in building location (most buildings located within the flatter parts of the lot, thus avoiding the need for significant earthworks/landform modifications); and (b) sufficient space around the existing tall trees (8m+) to protect their roots and allow for their establishment and growth as well as provide opportunities for new planting;
- (iii) building height - the predominant low building height (single-storey for two-thirds of the sites) combined with the predominant stand-alone dwelling typology, has facilitated building development of a form and scale that integrates well into the landscape setting; and
- (iv) variable setbacks influenced by and working with the topography - deep setbacks, above 4.5m (typical for about half of the sites), occur in places where the relatively flat part of the site which is easiest to build on is located away from the street frontage. Conversely, shallow setbacks (below 2.5m) relate to sites where the level of the site's frontage is similar to that of the adjacent street allowing for a direct vehicle access.

The existing setback pattern helps to facilitate the 'reading' of the landform and associated vegetation pattern with planted embankments unifying the streetscape character and clusters of dense mid-block vegetation seen in views from within the precinct and from locations within the wider area. 'Informed' by the topography, the existing setback pattern (re both front and rear yards) has enabled a building form that complements its coastal setting.

- **Supporting attributes**

- (i) the informal character of some narrow/secondary streets (no kerb and channel/no footpaths) complements/supports the low-density built form and contributes to the informal 'low-key beach character' of the precinct.

The combination of the enabling attributes - low site coverage, generous lot sizes, low building height and setbacks that work with the topography - has allowed the retention of the underlying landform and associated extensive vegetation cover (the primary landscape attributes) and facilitated a built form character that integrates well and is compatible with the landscape setting. This is further supported by the informal character of some streets.

The character value/significance of the existing landform and vegetation pattern of tall trees and other mature vegetation makes the precinct as a whole generally sensitive to change and especially sensitive to any increased level of intensification. This is most critical for the parts of the precinct where the character of the landform is most pronounced and intact. These most sensitive parts, marked on the annotated 'hill shade' map (Appendix 1/Map 2), cover most of the precinct.

DISTRICT PLAN OPERATIVE PROVISIONS

The Kapiti Coast District Plan identifies Paekakariki Beach Residential Precinct as one of four special character areas/precincts with a coastal location. The District Plan describes these precincts as settlements with 'a linear form, low key 'beach' character and expressive topography *enhanced by prominent mature vegetation. Their memorable natural setting contributes to a strong sense of place. While each of the four settlements has its own ambience and individually, they share a range of common features derived from similarities in their coastal location, topography and history of land subdivision*". Further to this, the District Plan provides a list of the common patterns that underpin their 'beach' character which relate to both built and natural features and characteristics (refer District Plan, General Residential Zone, Beach Residential Precincts, page 3). To ensure the appropriate management of the special character of these precincts the District Plan has made them subject to specific rules and standards *'to ensure that new development is sensitive to its landscape setting and enhances the collective character, amenity value and public significance of each area'*. In addition to the specific rules and standards, the District Plan includes a set of 'Special Area Guidelines' (General Residential Zone/Appendix 3).

The applicable rules and standards for Paekakariki Beach Residential Precinct have been informed by the predominant pattern of the existing environment as identified in the Council's 2011 Character Assessment. This suggests that the operative provisions are generally aligned with and reflect the existing character attributes. Nevertheless, for the purposes of this assessment, a high-level comparative review of the operative provisions against the up-dated character attributes (as identified by this assessment) is relevant to undertake. This will inform the comprehensive understanding of the potential impact of new development under the draft (higher density) provisions on the precinct's character.

DRAFT PROVISIONS [RESOURCE MANAGEMENT (ENABLING HOUSING SUPPLY and OTHER MATTERS) AMENDMENT ACT & NPS-UD]

The draft provisions permit 3 residential units (11m tall) on a site with a total/maximum site coverage of 50%, minimal setbacks (1.5m front yard/1m side and rear yard) and no minimum lot size provisions. Height in relation to boundary is based on a 60° recession plane measured from a point 4m vertically above ground level along all boundaries, except in relation to the road boundary and between the existing or proposed internal boundaries and site boundaries with a common wall.

For the purposes of this assessment, the draft provisions have been assumed to apply to the Paekakariki Beach Residential Precinct as a whole, except that the building height within the part of the precinct within 800m from the Paekakariki railway station would be enabled to rise to 20m/equivalent to 6 storeys.

The proposed provisions promote development with a density and building scale and character that would be distinctly different from that allowed under the operative District Plan provisions (which promote relatively low-density residential development) as well from the existing predominant patterns of lot size, site coverage, building height and frontage setbacks. This suggests that the precinct's primary character attributes could potentially be severely compromised by a level of development enabled by the draft provisions if they were to be implemented.

To understand the specific impact of the draft provisions on the precinct's primary attributes, the draft provisions have been compared to both the existing patterns and the operative provisions.

EXISTING CHARACTER VERSUS OPERATIVE & DRAFT PROVISIONS

This section of the assessment analyses how the existing character attributes compare with both the operative and the draft provisions. The focus is on:

- a. establishing the degree of protection of the precinct's primary character attributes under the operative District Plan provisions; and
- b. identifying the implications of the proposed increased density provisions on the precinct's primary character attributes.

The analysis is carried out in relation to the basic bulk/location provisions that are considered most relevant to the purpose of the assessment. The key observations and findings of the analysis are tabulated below⁵.

⁵ Note the operative provisions, except for those for minimum lot size, are the same for all Beach Residential Precincts.

COMPARATIVE TABLE

SITE (BUILDING) COVERAGE				
Operative Provisions	Draft Provisions	Analysis/Observations Existing Pattern v/s Operative Provisions	Analysis/Observations Existing Pattern v/s Draft Provisions	Summary Findings
<p>Maximum site coverage 35% of the total property area excluding rights of way and access legs</p> <p>Impervious area maximum 70% of total allotment area</p>	<p>Maximum 50% of net site area</p> <p>Impervious area maximum 70% of total allotment area</p>	<p><u>Existing pattern</u> - Most sites have a site coverage below 30% with almost all of the remaining sites with site coverage between 30% and 40%.</p> <p><u>Existing Pattern v/s Operative Provisions</u> - the operative provision of 35% site coverage is closely aligned with the predominant pattern.</p> <p>Applied in combination with the minimum allotment size of 950m², the operative 35% site coverage can largely maintain the integrity of both the landform character and existing pattern of tall trees.</p> <p>Site coverage should be considered in relation to the maximum 'impervious area' provision which technically allows for up to 70% of the site area to be clear of vegetation. This provision has the potential to affect the integrity of the vegetation pattern by allowing vegetation clearance in addition to that allowed by the site coverage. This in turn could affect the landform as vegetation removal, especially on steeper slopes could affect slope stability.</p>	<p><u>Existing Pattern v/s Draft Provisions</u> - the draft 50% site coverage is higher than both the existing predominant pattern and the operative provision.</p> <p>Under the draft provisions, and in the absence of a minimum lot size provision, no precinct-wide protection of existing tall trees beyond those individually listed, and a blanket setback provision and no specific controls for earthworks within 2m of an approved building development, the precinct's primary landscape attributes are likely to be significantly affected. This effect could be exacerbated by the maximum 'impervious area' provision (70%) which could result in further vegetation removal.⁶</p> <p>The impact would be most severe for the steeper sites with higher vegetation cover (i.e. the identified primary and contributory sites under each of the primary landscape character attributes).</p> <p>Note that there are no specific earthwork provisions in relation to creating building platforms on sites with steep slopes to manage the potential impact of large visible retaining walls.</p> <p>The potential impact on sites with shallower slopes and/or lower vegetation cover (below 20%) will be much lower.</p>	<ul style="list-style-type: none"> Operative site coverage provision, which is closely aligned with the existing predominant pattern has the ability to maintain the integrity of both the landform character and the existing pattern of tall trees. This is further supported by the generous minimum lot size provision. Under the draft site coverage provision (applied in tandem with the minimal setback provisions and no provision for minimum lot size) the primary landscape character attributes could potentially be severely compromised. The impact of site coverage on the primary character attributes should be considered in relation to the maximum 'impervious area' provision. This provision, which remains the same under both the operative and draft provisions, technically enables for further clearance of vegetation in addition to that enabled by the site coverage provision.

⁶ The draft provisions include a requirement for a minimum landscaped area of 20% of a developed site with grass or plants. This means that if a site is developed to fully utilise the permitted building coverage of 50% and provides the required 20% landscaped area, most of the remaining 30% of the site area could be an impervious surface. This will increase the potential loss of vegetation, technically enabling clearing of up to 70% of the site area).

BUILDING HEIGHT

Operative Provisions	Draft Provisions	Analysis/Observations Existing Pattern v/s Operative Provisions	Analysis/Observations Existing Pattern v/s Draft Provisions	Summary Findings
<p>Maximum height of 8m and no more than two storeys</p> <p>Maximum floor area ratio of 0.6:1.0</p>	<p>Maximum building height of 11m,</p> <p>except that 50% of a building's roof in elevation, measured vertically from the junction between wall and roof, may exceed that height by 1m where the entire roof slopes 15° or more</p> <p>Maximum height of 20m (equivalent to 6 storeys) for the parts of the precinct within 800m from the Paekakariki Railway Station</p>	<p><u>Existing Pattern</u> - the precinct is a mix of one and two storey buildings with a predominance of single storey buildings.</p> <p><u>Existing Pattern v/s Operative Provisions</u> - the operative height provision appropriately reflects and is aligned with the existing pattern.</p> <p>Supplementing the maximum height with a requirement that limits the actual building height to two-storeys helps to manage situations where three-level taller buildings could be erected through excavations while keeping their height to the permitted 8m above existing ground level.</p> <p>The maximum floor area ratio provision is set up to manage the impact of building bulk. In many respects it complements the provision for limiting the actual height of buildings to two-storeys.</p>	<p><u>Existing Pattern v/s Draft Provisions</u> - under the draft provisions buildings must not exceed 11m for most of the precinct (except for the parts located within 800m from the Paekakariki Railway Station). This could potentially result in 4-storey buildings as a maximum number of storeys has not been specified.</p> <p>For the parts of the precinct located within 800m from the Paekakariki Railway Station, buildings could rise to 20m and up to 6 storeys.</p> <p>The proposed height increase, particularly the potential for 4 and 6 storey buildings, is clearly a departure from the existing pattern. However, increasing the height in itself will not necessarily impact directly on the vegetation cover and/or landform character (i.e. will not necessarily require further vegetation removal or landform modifications). Notwithstanding that, the increased height together with the increased site coverage provision will increase the building bulk, thereby affecting the relationship between the primary landscape and built form character attributes.</p> <p>Given the sloping topography, the draft height will impact on the precinct's overall character with taller (and potentially bulkier) buildings appearing as prominent elements within the landscape setting. This impact will be most pronounced on: (a) elevated sites along and close to the local ridge lines which will be experienced within both the precinct as well as in views from the wider area; and (b) along the seafront parts of the precinct, which are highly prominent and where tall vegetation is often limited, thereby reducing opportunities for integrating the buildings into the landscape.</p>	<ul style="list-style-type: none"> ■ <u>The operative height provision</u> is consistent with the existing pattern of building height and assists in retaining the collective visual character of the existing low-rise built form and its compatible relationship to the landscape setting. ■ The proposed <u>draft height</u> in itself will not necessarily require vegetation removal or landform modifications and therefore might not have a direct impact on the primary landscape character attributes. It will, however, alter the scale relationship between built form and landscape setting and therefore affect the collective character of the precinct in terms of its primary attributes. ■ The impact could be exacerbated by the draft height in relation to boundary provision and the draft 1.5m frontage setback and 1m side yard provisions which: (a) allow buildings of an increased bulk to be positioned close to the street edge, while reducing separation distance between them, thereby increasing the visual impact of height; and (b) could result in potential excavations along the street edge of existing planted embankments and/or front yard vegetation removal.
			<p>The visual impact of height will be exacerbated by the proposed draft 'height in relation to boundary'</p>	

provision which essentially enables reducing separation distances between adjacent buildings, and by the setback provisions thus potentially replacing the existing low-density low-key beach character setting with a building-dominated environment where buildings are no longer compatible with the landform.

This change will be most significant for the parts where 20m tall buildings are to be allowed. These parts cover most of the precinct, including the parts identified as most prominent/intact landforms that are most sensitive to change.

HEIGHT IN RELATION TO BOUNDARY

Operative Provisions	Draft Provisions	Analysis/Observations Existing Pattern v/s Operative Provisions	Analysis/Observations Existing Pattern v/s Draft Provisions	Summary Findings
<p>2.1m vertically above ground level at the boundary, with a 45° recession plane.</p> <p>Applies to all boundaries</p>	<p>4m vertically above ground level along all boundaries with a 60° recession plane.</p> <p>This standard does not apply to:</p> <ul style="list-style-type: none"> boundary with a road, existing or proposed internal boundaries within a site, site boundary where there is an existing common wall between 2 buildings on adjacent sites or where a common wall is proposed 	<p><u>Existing Pattern</u> - the existing pattern has not been studied. However, it appears that buildings comply with the provision given the predominant pattern of single-storey buildings and the generous lot size.</p> <p><u>Existing Pattern v/s Operative Provisions</u> it is assumed that the majority of dwellings comply with the existing provision.</p> <p>Height in relation to boundary provision determines the distance of the building to the relevant boundary based on its height.</p> <p>For example, an 8m tall building volume, which complies with the recession plane under the operative provisions, will need to be setback approximately 6m from the relevant boundary on a flat site. This ensures a generous separation distance between permitted 8m tall/2-storey building volumes built on adjacent sites.</p>	<p><u>Existing Pattern v/s Draft Provisions</u> - the draft provision together with the increased height will allow taller/bulkier buildings located closer to the site boundaries compared to both the existing building character and that permitted under the existing provisions.</p> <p>As a general observation, an 8m tall building (volume) on a flat site, which complies with the recession plane under the draft provisions, will need to be setback from the relevant side or rear boundary approximately 2.5m compared to a 6m setback required for a building volume of the same height under the operative provisions. Similarly, a building volume with the maximum permitted height of 11m under the draft provisions, will require a setback of approximately 4m from the relevant side or rear boundary.</p> <p>The resultant effect will be an increased building bulk and reduced separation distances between adjacent buildings. This, as noted under 'building height' above, will change the visual character of precinct by replacing a low-rise building form fitting in with the landform and partly obscured by existing vegetation with taller/larger building volumes and smaller separation distances</p>	<ul style="list-style-type: none"> The <u>operative height in relation to boundary provision</u> generally reflect the existing character while ensuring a generous separation distance between adjacent buildings on neighbouring sites if they all are built to the maximum building height limit. The <u>proposed height in relation to boundary provision</u> - the proposed provision together with the increased height will allow taller/bulkier buildings located closer to the site boundaries compared to the permitted building volumes under the existing provisions and/or those comprising the current environment. This could change the precinct's overall character by potentially replacing a low-rise building form well integrated into its landscape setting with taller/larger and more closely spaced building volumes.

between them.

SETBACKS				
Operative Provisions	Draft Provisions	Analysis/Observations Existing Pattern v/s Operative Provisions	Analysis/Observations Existing Pattern v/s Draft Provisions	Summary Findings
<p>4.5m setback from the road boundary</p> <p>3m setback from side and rear boundaries for residential units</p> <p>1m setback from side/rear boundaries for accessory buildings</p>	<p>1.5m front yard</p> <p>1m side/rear yard</p> <p>no yard where there is a common wall between 2 buildings</p>	<p><u>Existing Pattern</u> - the precinct is characterised by variable frontage setbacks (including some shallow and some deep setbacks) that reflect the underlying topography.</p> <p>Rear yards also vary in relation to topography.</p> <p><u>Existing Pattern v/s Operative Provisions</u> - the operative provision for a 4.5 frontage setback reflects the pattern of deeper front yards (4.5m+) which accounts for half of the sites. Resource consent applications where the front yard is smaller, need to be assessed against the 'Special Character Area Design Guidelines' (General Residential Zone/Appendix 3). The operative provision appropriately manages the existing pattern of variable frontage setbacks, which in turn assists in managing the character of the existing landform and associated vegetation pattern.</p> <p>The provision for 20m building restriction line, which affects only a small number of sites at the southern end of the precinct, while having a different purpose, helps to protect the steeper parts of the landform within the relevant parts of the precinct.</p>	<p><u>Existing Pattern v/s Draft Provisions</u> - the draft provisions do not reflect the influence of topography on setbacks represented by the predominant pattern.</p> <p>While in some cases the draft provision will be aligned with the existing pattern, as a blanket provision it has the potential to encroach on the existing planted embankments that currently define the edges of many streets within the precinct.</p> <p>This in turn could impact on the precinct's primary landscape attributes. It is also noted that the pattern of tall trees typically intensifies within front and back yards.</p> <p>The reduced frontage setback would enable buildings of an increased bulk to be placed close to the street edge, thereby increasing their visual impact and altering the relationship between the primary landscape and built form character attributes.</p>	<ul style="list-style-type: none"> The <u>operative provisions re front and rear yards</u> appropriately manage the existing pattern of variable frontage setbacks, which in turn facilitates the management of the precinct's primary landscape attributes (the character of the existing landform and associated vegetation pattern). The <u>draft provisions</u> do not recognise the variable setback pattern influenced by the topography. The draft provisions have the potential to: (a) encroach on and diminish the intactness of the existing planted embankments that currently define the edges of many streets within the precinct and/or enable vegetation removal and landform modifications within rear yards; and (b) increase the visual impact of buildings in views from the street - an effect which will most pronounced along some of the narrow streets with informal character. This in turn would affect all of the precinct's primary attributes.

MINIMUM ALLOTMENT SIZE				
Operative Provisions	Draft Provisions	Analysis/Observations Existing Pattern v/s Operative Provisions	Analysis/Observations Existing Pattern v/s Draft Provisions	Summary Findings
<p>Minimum allotment size 950m², lots required to accommodate an 18m</p>	<p>No minimum lot size, shape or other size-related requirements for the following types of</p>	<p><u>Existing Pattern</u> - the predominant pattern is based on large lots within two basic categories 600m² - 900m² and 900m² - 1200m²+. There is a corelation between lot size and topography (i.e. larger lots are typically also steeper lots).</p>	<p><u>Existing Pattern v/s Draft Provisions</u> - the draft provisions do not include a minimum lot size or any shape or other size-related provisions. Under the draft provisions the notional minimum lot size is to be largely determined by the bulk/location provisions.</p>	<ul style="list-style-type: none"> The <u>operative lot size provisions</u> are aligned with and intend to maintain the predominant lot size pattern, thereby facilitating the management of the precinct's primary character attributes. <p>This is further supported by the Restricted</p>

<p>diameter circle</p> <p>Subdivision as a Restricted Discretionary Activity</p>	<p>subdivision:</p> <p>Subdivision where there is an existing residential unit, if the subdivision does not increase the degree of non-compliance with building standards;</p> <p>Subdivision where residential units are provided under a land use consent and no vacant allotments are created.</p> <p>Subdivision as a Controlled Activity.</p>	<p><u>Existing Pattern v/s Operative Provisions</u> - the operative provisions of a minimum lot size of 950m² is aligned with and intended to maintain if not protect the predominant lot size pattern.</p> <p>The additional requirement for each lot to accommodate an 18m diameter circle manages the minimum lot dimension and provides flexibility in terms of building location.</p> <p>The Restricted Discretionary Activity status of subdivision proposals provides an additional layer of control re subdivision outcomes.</p>	<p>The draft provisions are clearly not aligned with the predominant lot pattern. This could impact significantly on the precinct's primary attributes, which have been largely enabled/supported by the consistent and predominant pattern of generous lot size by allowing the original vegetation cover to be established and retained in subsequent subdivision/development while reducing the need for significant landform modifications.</p> <p>The Controlled Activity status of subdivision provides a degree of control over the arrangement of allotments, but no ability to manage or limit the size of allotments.</p>	<p>Discretionary Activity status of subdivision proposals. Note that the provision has not been tested for the subdivision of large lots into multiple smaller lots - a development scenario that has the potential to significantly affect the integrity of the landform and the vegetation pattern of tall trees and the overall coverage of vegetation generally.</p> <ul style="list-style-type: none"> ■ The <u>proposed 'management' of lot size</u> under the total package of draft provisions relies heavily on the proposed bulk/location provisions for site coverage, setbacks and building height/height in relation to boundary. Notwithstanding that the subdivision is a Controlled Activity, the draft provisions are clearly not aligned with the predominant pattern and appropriate 'character' outcomes might be difficult to achieve in the absence of specific rules and standards.
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5 CONCLUSIONS

Character

- The Paekakariki Beach Residential Precinct has a distinctive character based on a set of definable character attributes (primary, enabling and supporting attributes) that work together and reinforce each other. The precinct's primary character attributes - the largely intact landform, the unifying pattern vegetation cover, particularly that of tall 8+m trees, and the low-density built form - have been enabled and maintained by the existing patterns of low site coverage, large lot size, low building height and setbacks that work with the topography. This has been further supported by the informal character of some narrow roads which have contributed to the low-key beach character of the precinct.

Operative and Draft Provisions

- The operative District Plan provisions are overall aligned with the precinct's predominant patterns. This has facilitated the management of the precinct's primary attributes.
- The draft provisions enable development with a density and building scale and character that is markedly different from that allowed under the operative District Plan provisions and a departure from the precinct's predominant patterns. This suggests that the primary, most prominent landscape character attributes of the Paekakariki Beach Residential Precinct - the dune complex landform and tall trees vegetation cover, along with its low-density built form that fits well into the landscape - could potentially be significantly affected/alterd under a level of development enabled by the draft provisions. The relationship between buildings and landscape could also be altered by potentially replacing an existing distinctive landscape setting and buildings of compatible form and scale, with a modified (less prominent, less vegetated, less distinctive) landscape dominated by larger, more closely spaced buildings.

Parts of the Precinct that are most sensitive to change/spatial extent

- The largely intact landform and the general continuity of the existing green pattern throughout the precinct and the associated landscape character significance makes the precinct overall sensitive to change and particularly sensitive to any increased level of intensification. This is because an increased level of intensification could impact on both the landscape and built character primary attributes, as well as affect their relationship. It could also alter the informal character of some narrow streets through street up-grade initiatives (i.e. carriageway widening/street parking, kerb and channel/footpaths installation) which are likely to be needed under an increased level of density.
- The sensitivity of the landform to change was determined based on the steepness of its slopes. Sites with slopes steeper than 1:5 were identified as primary/character defining sites that are most sensitive to change; sites with slopes between 1:5-1:12 as contributory (sites contributing to the character); and sites shallower than 1:12 as supporting/neutral sites. The precinct is dominated by primary sites (76%) followed by contributory sites (22%). The percentage of supporting/neutral sites is low (2%).
- The value of the vegetation pattern was determined by the extent of tall tree (8m+) cover on each site. On this basis, sites with a vegetation cover above 30% and up to 80%+ were identified as 'primary' or character defining sites; sites with a vegetation cover between 20% and 30% as contributory sites (sites contributing to the character); and sites with vegetation cover of below or up to 20% as supporting/neutral sites. Most sites in the precinct are primary sites (84%) followed by contributory sites (11%). Supporting/neutral sites account for 5% of the sites.
- Primary and contributory sites with regard to both landform and tall tree cover (the precinct's primary landscape character attributes) are most sensitive to intensification. Most often primary 'landform' sites are also primary 'vegetation cover' sites.

- The precinct is dominated by primary and contributory sites. Primary and contributory sites re landform account for 98% of the sites. Primary and contributory sites re vegetation cover account for 95% of the sites. This means that the potential collective loss of vegetation and/or the degree of modification to the landform resulting from intensification across the present could be significant, which in turn will impact considerably on the precinct's overall character. Even if only some of those sites are to be redeveloped, this could have potential implications beyond the individual site/s.
- Supporting/neutral sites are less sensitive to intensification as: (a) their slopes are shallower, and their vegetation cover is lower/less dense; and (b) collectively they account for a small percentage of the sites. Therefore, the impact on the existing landform and/or tall tree vegetation pattern resulting from their redevelopment would be low.

Possible further investigation on the sensitivity of the landform and vegetation cover

- Not all contributory sites (tall tree cover 20-30%) exhibit an equal density of cover. Similarly, not all contributory sites with an average slope 1:5-1:12 have the same level of sensitivity (noting that average slope is not representative of the actual slope).
- Notwithstanding that the precinct is largely comprised of primary or contributory sites, and these are spread relatively evenly across the precinct, the parts of the precinct where the coastal landform is most prominent and/or intact have a higher degree of sensitivity compared to the remaining parts. The most sensitive parts (identified as significant landforms on 'hill shade' map, Appendix 1/Map 2), cover most of the precinct.
- To establish in more detail the relative sensitivity of contributory sites across the precinct and/or the sensitivity of the parts of the precinct that fall outside the identified most prominent/intact landforms, further investigation re density of vegetation cover and actual slope characteristics could be considered.

6 APPENDIX 1: MAPS

Map 1: Context

Map 2: Hillshade

Map 3: Slope

Map 4: Average Slope

Map 5: Average Slope Character

Map 6: Vegetation Coverage

Map 7: Vegetation (8m and above)

Map 8: Vegetation Coverage Character

Map 9: Site coverage

Map 10: Lot Size

Map 11: Frontage Setbacks

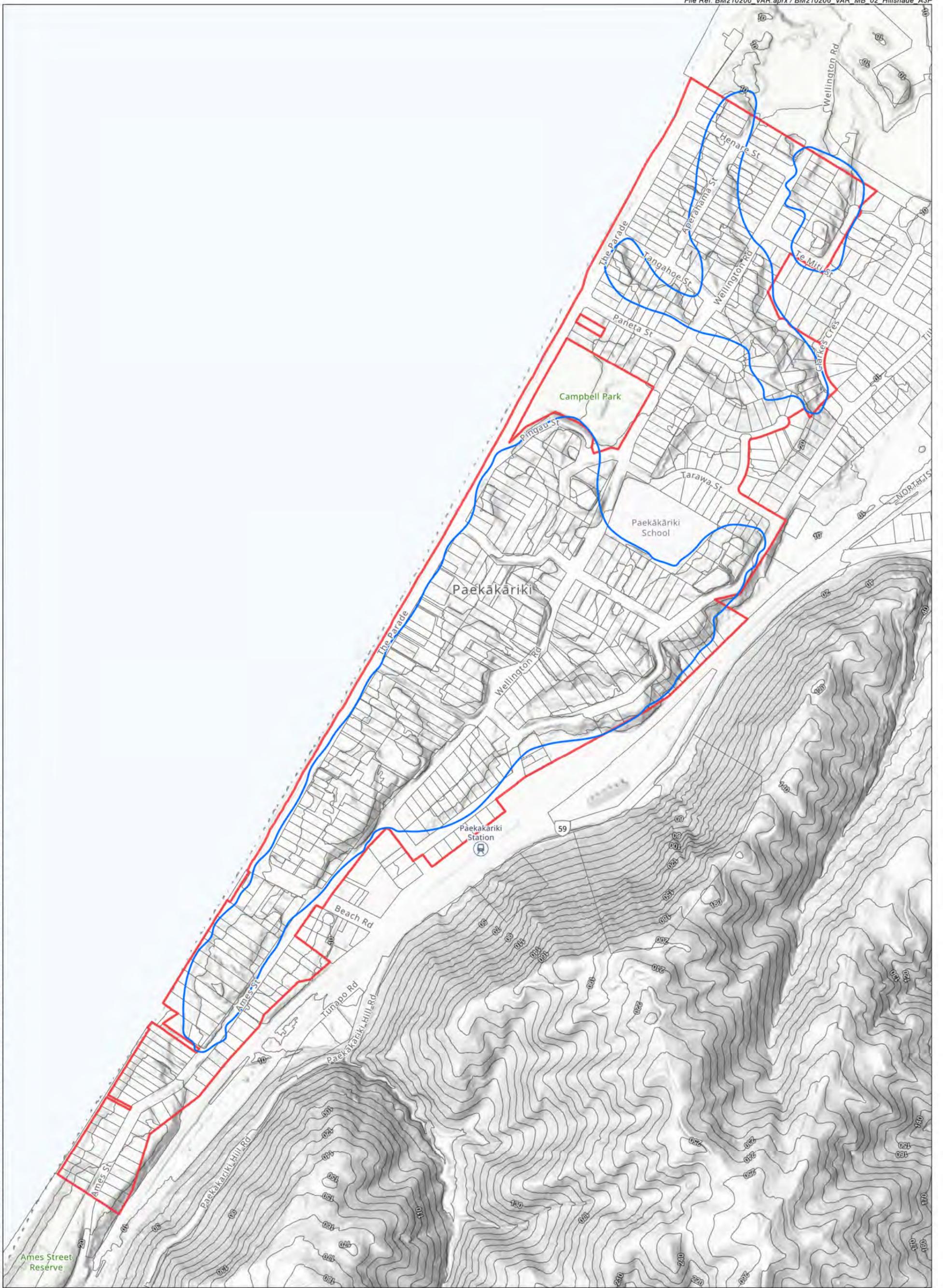
Map 12: Street Network

Map 13. Street Width

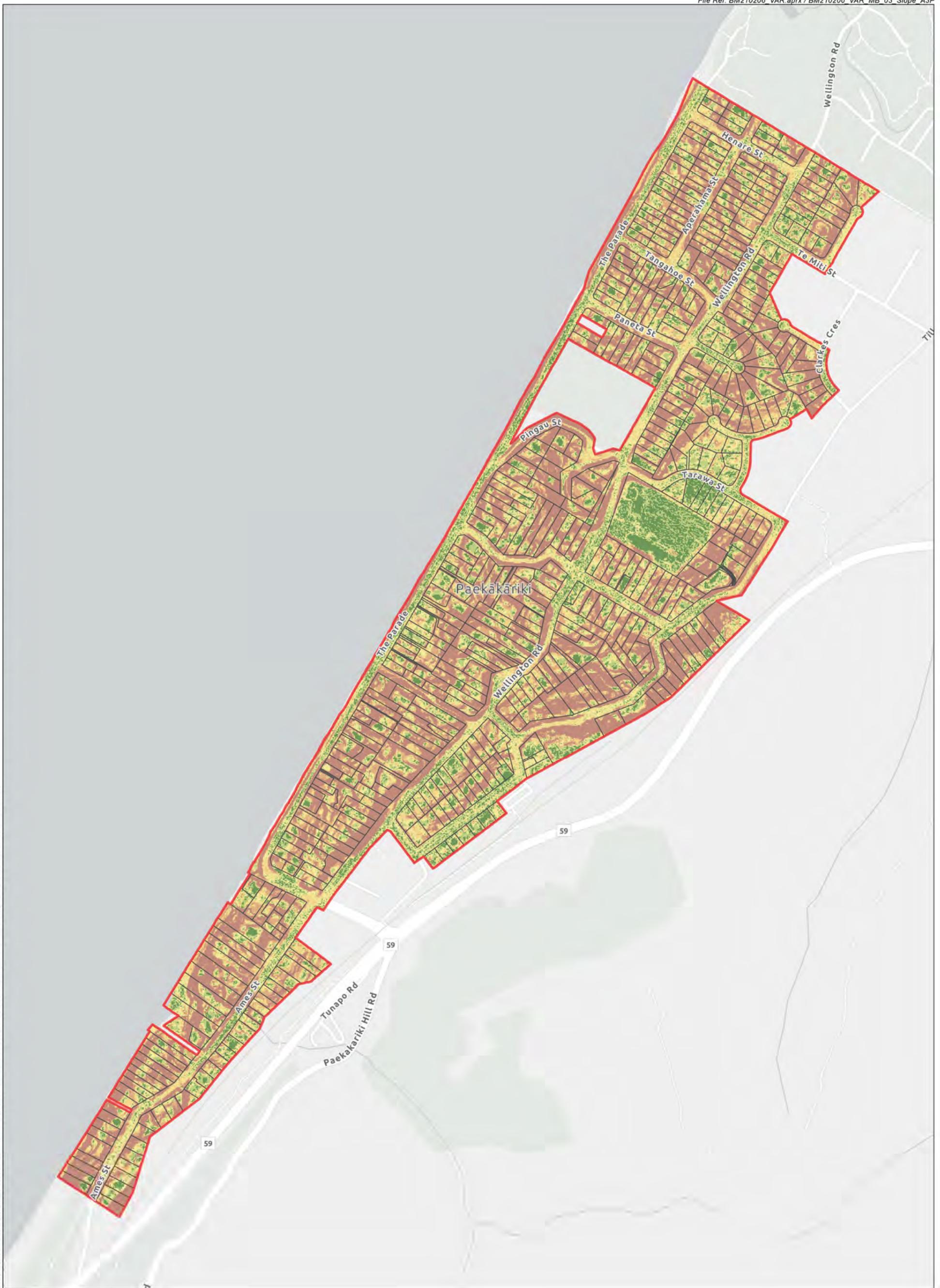
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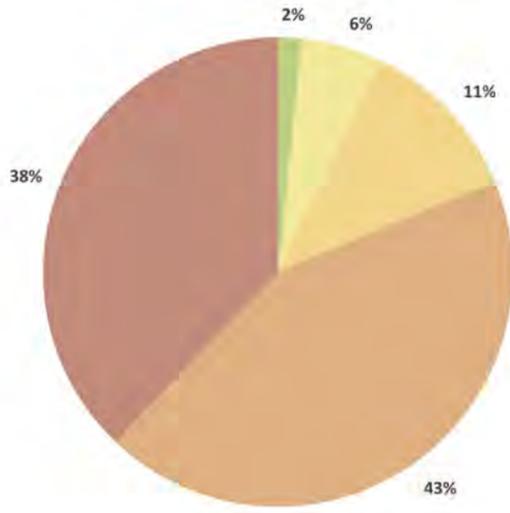
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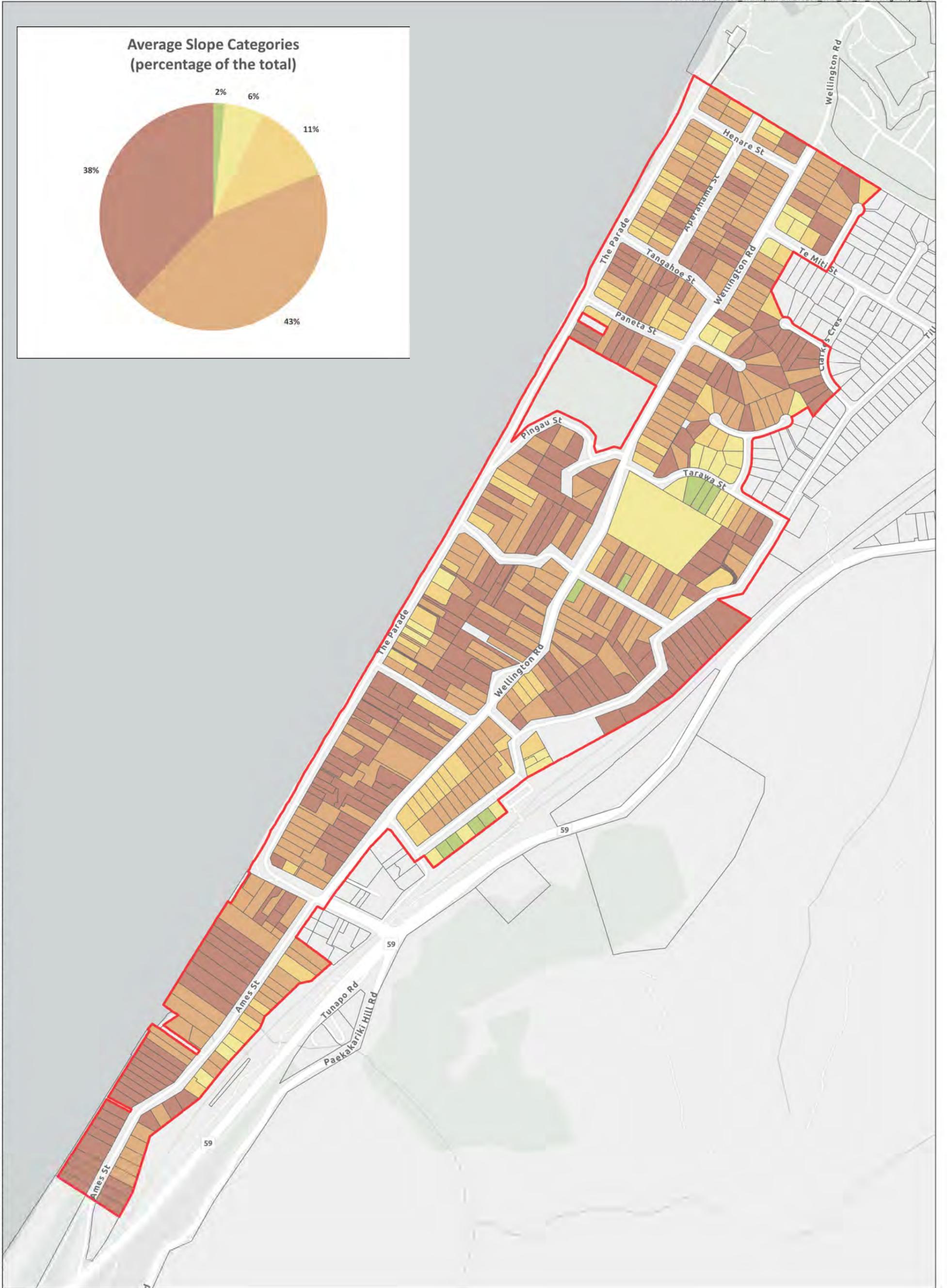
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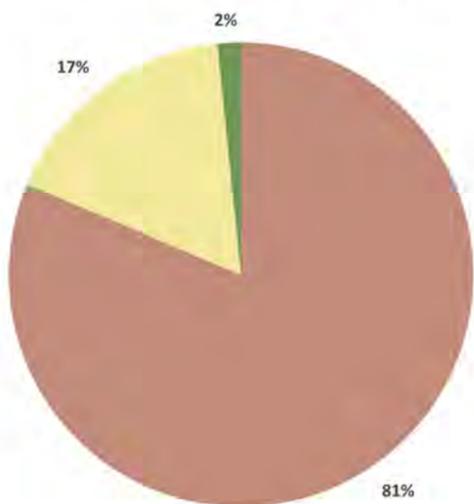
Average Slope Categories (percentage of the total)



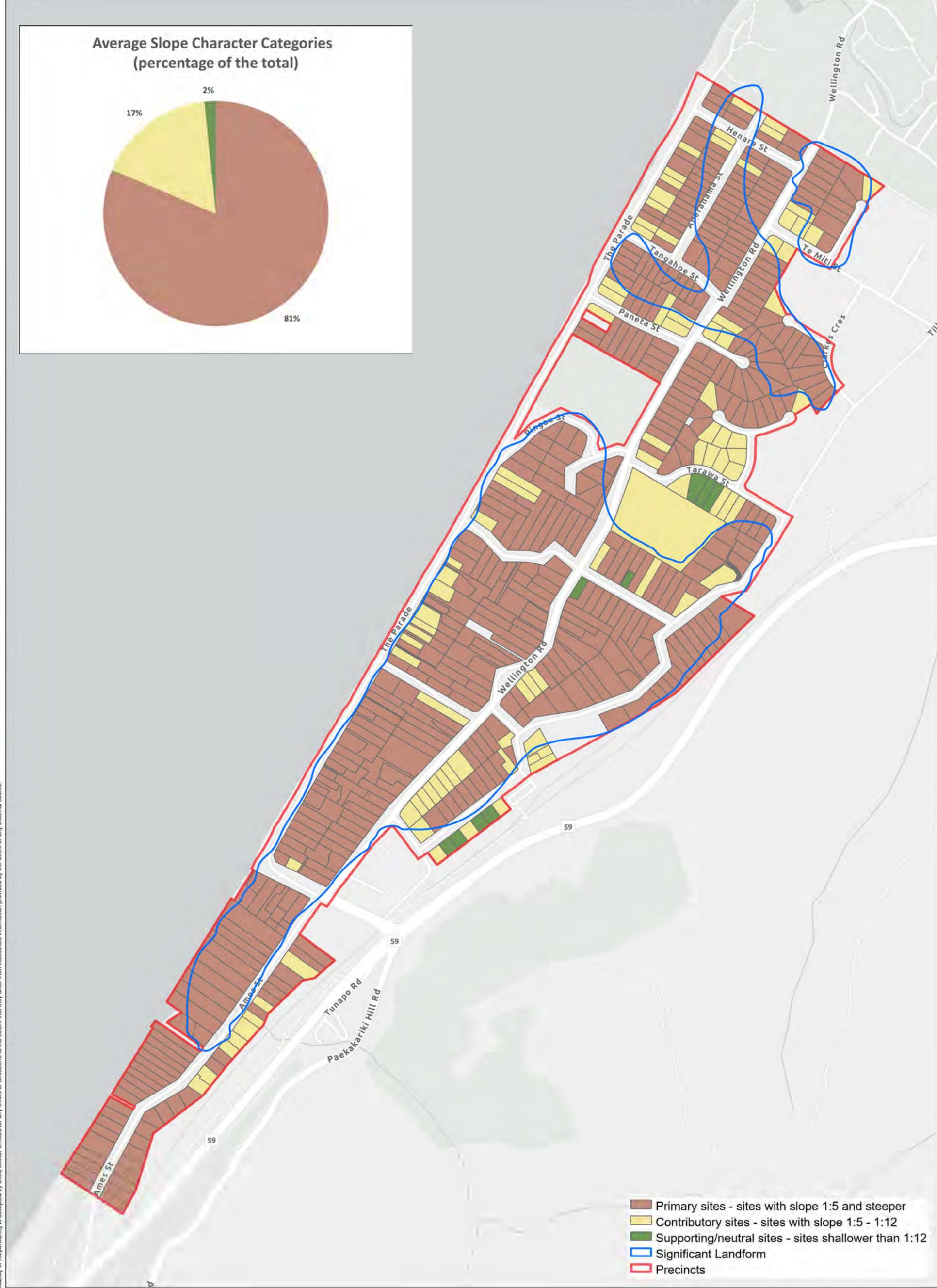
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Average Slope Character Categories (percentage of the total)

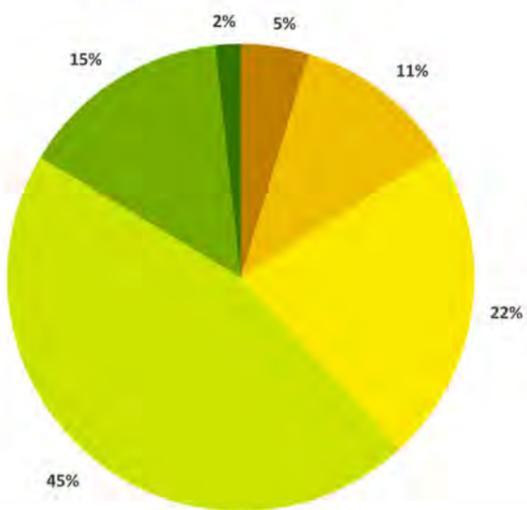


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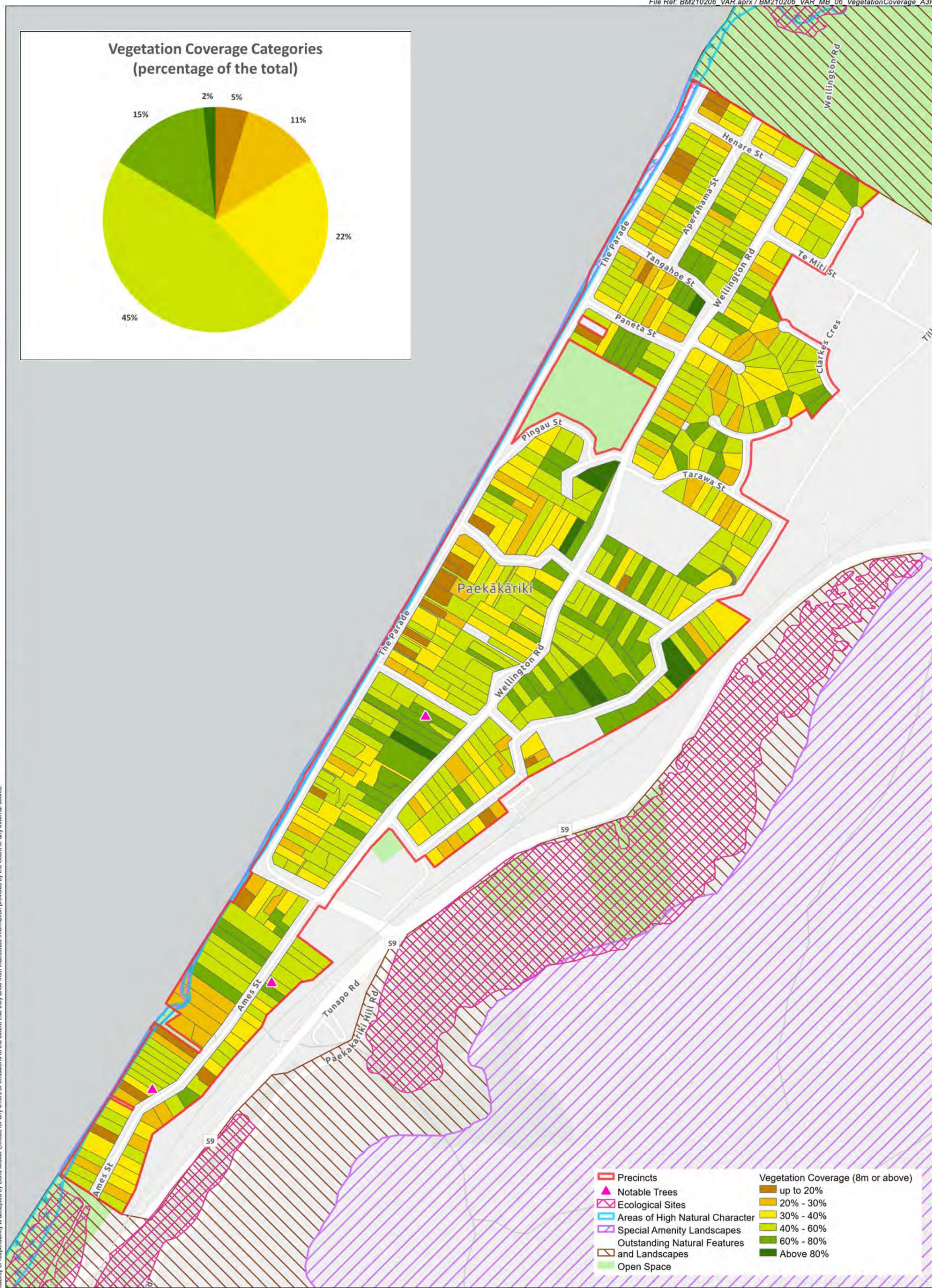


- Primary sites - sites with slope 1:5 and steeper
- Contributory sites - sites with slope 1:5 - 1:12
- Supporting/neutral sites - sites shallower than 1:12
- Significant Landform
- Precincts

Vegetation Coverage Categories (percentage of the total)

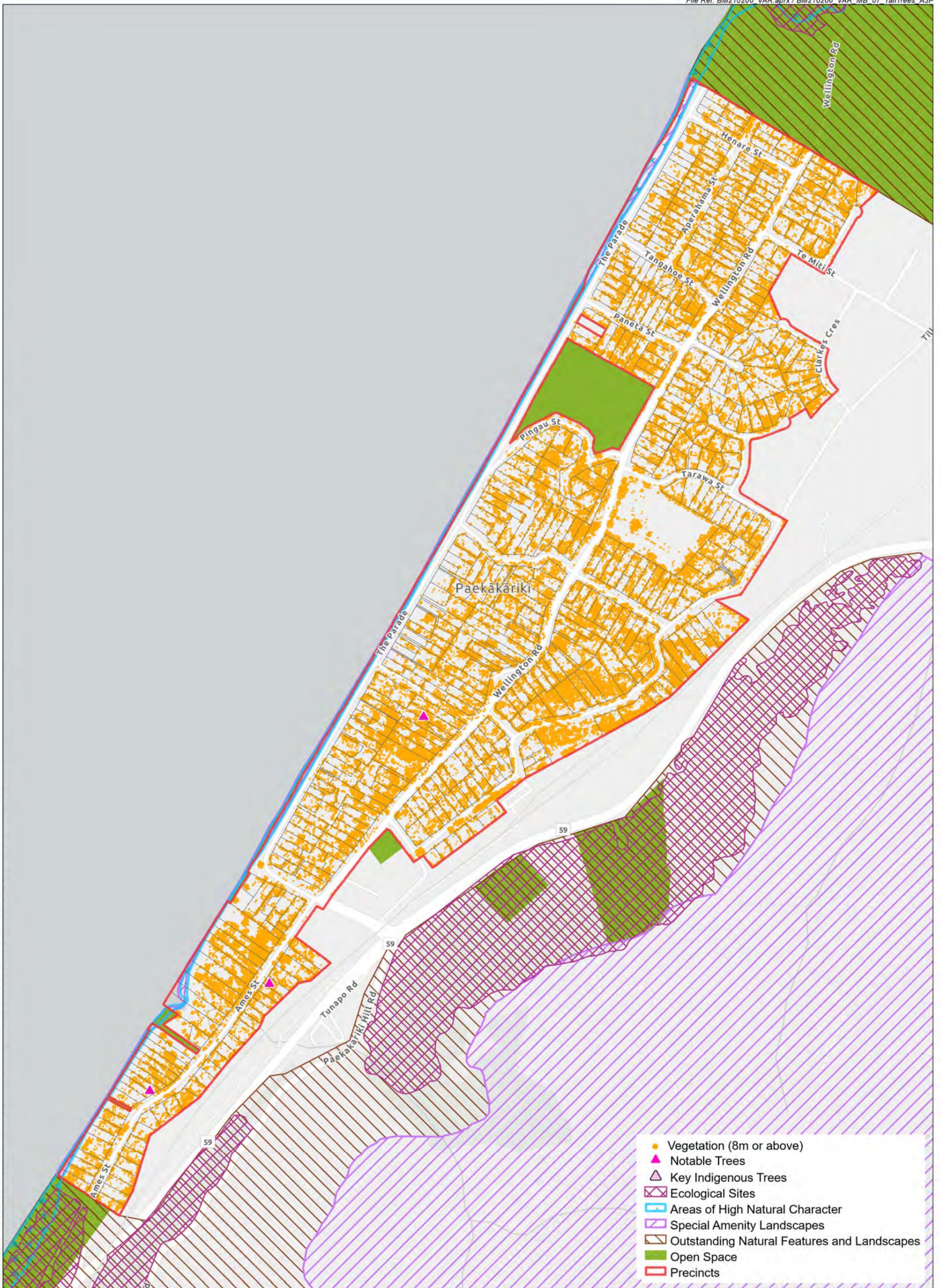


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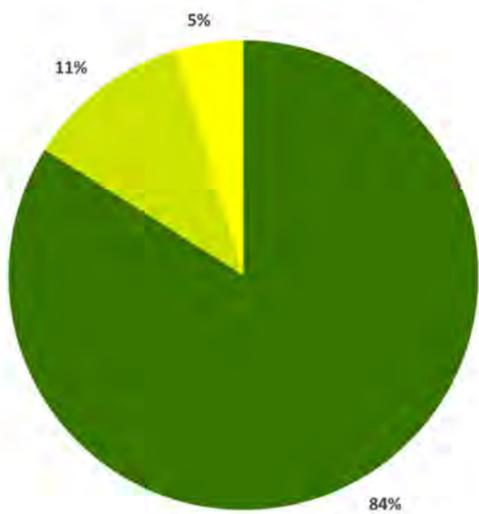
<ul style="list-style-type: none"> ▭ Precincts ▲ Notable Trees Ecological Sites Areas of High Natural Character Special Amenity Landscapes Outstanding Natural Features and Landscapes Open Space 	<p>Vegetation Coverage (8m or above)</p> <ul style="list-style-type: none"> up to 20% 20% - 30% 30% - 40% 40% - 60% 60% - 80% Above 80%
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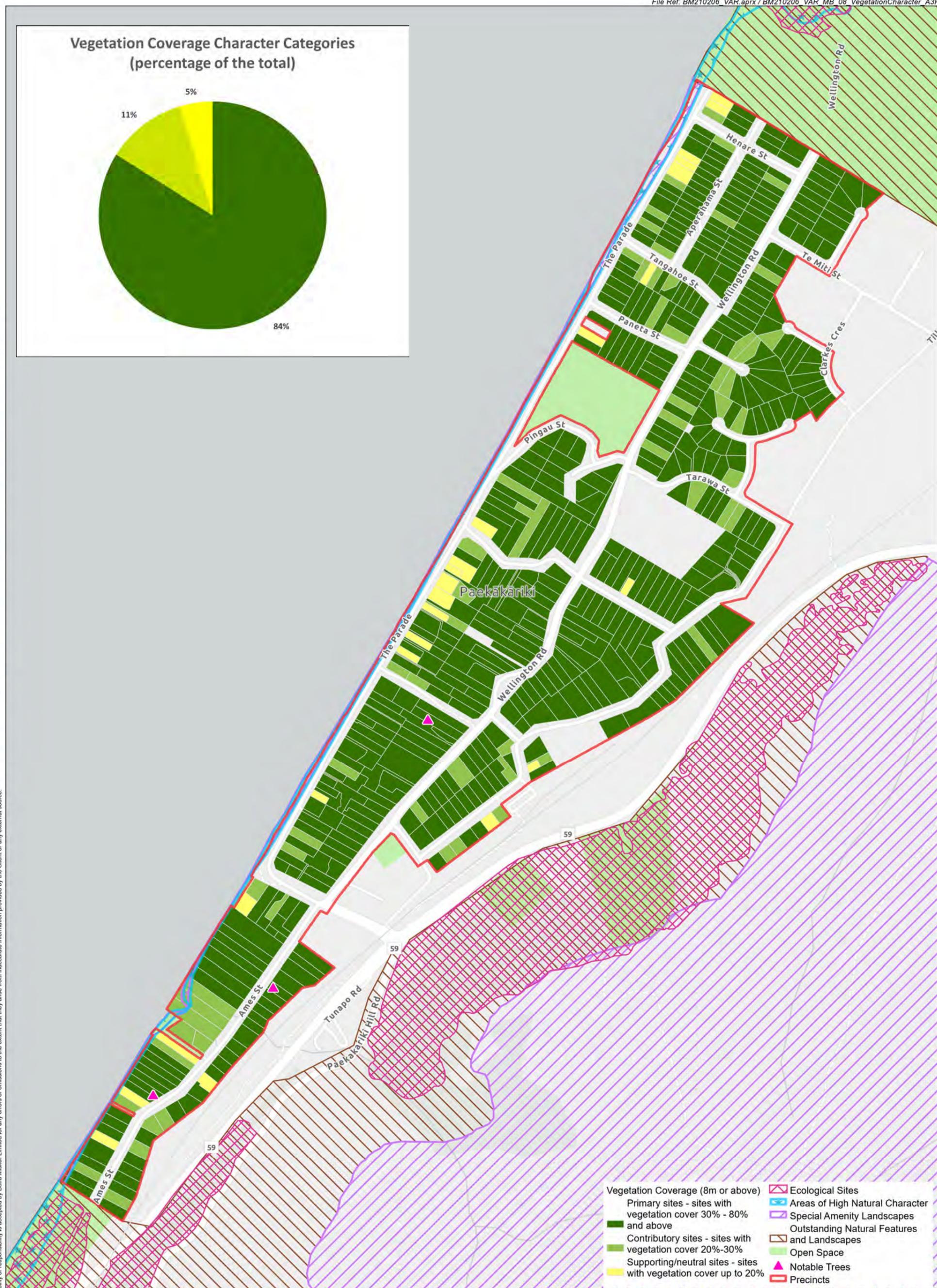


- Vegetation (8m or above)
- ▲ Notable Trees
- ▲ Key Indigenous Trees
- ▨ Ecological Sites
- ▨ Areas of High Natural Character
- ▨ Special Amenity Landscapes
- ▨ Outstanding Natural Features and Landscapes
- Open Space
- ▭ Precincts

Vegetation Coverage Character Categories (percentage of the total)

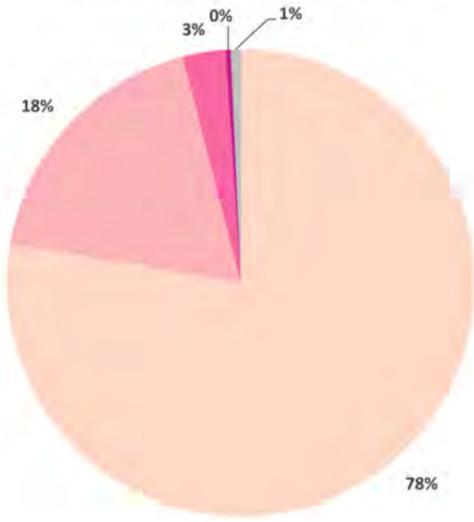


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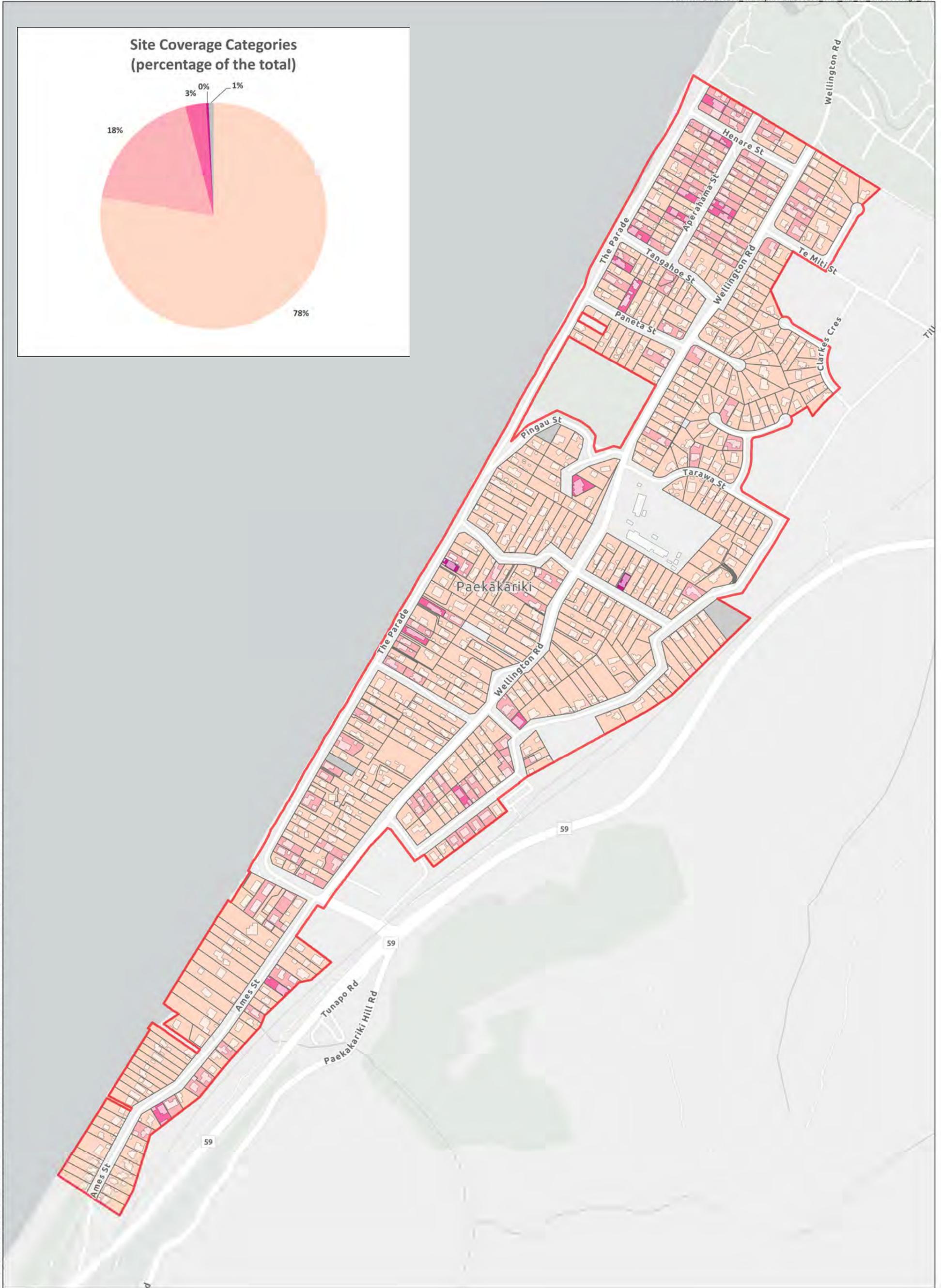


- Vegetation Coverage (8m or above)
 - Primary sites - sites with vegetation cover 30% - 80% and above
 - Contributory sites - sites with vegetation cover 20%-30%
 - Supporting/neutral sites - sites with vegetation cover up to 20%
- Ecological Sites
- Areas of High Natural Character
- Special Amenity Landscapes
- Outstanding Natural Features and Landscapes
- Open Space
- Notable Trees
- Precincts

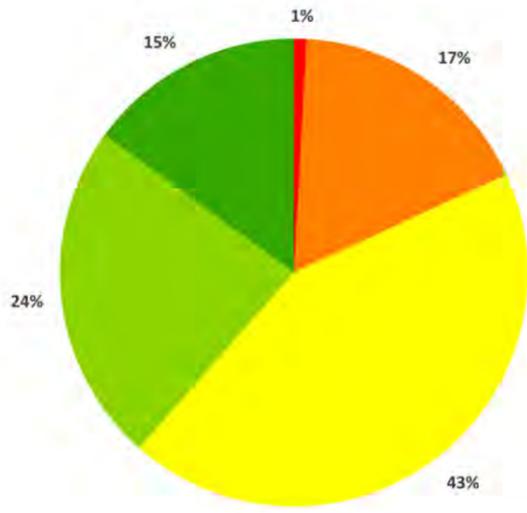
**Site Coverage Categories
(percentage of the total)**



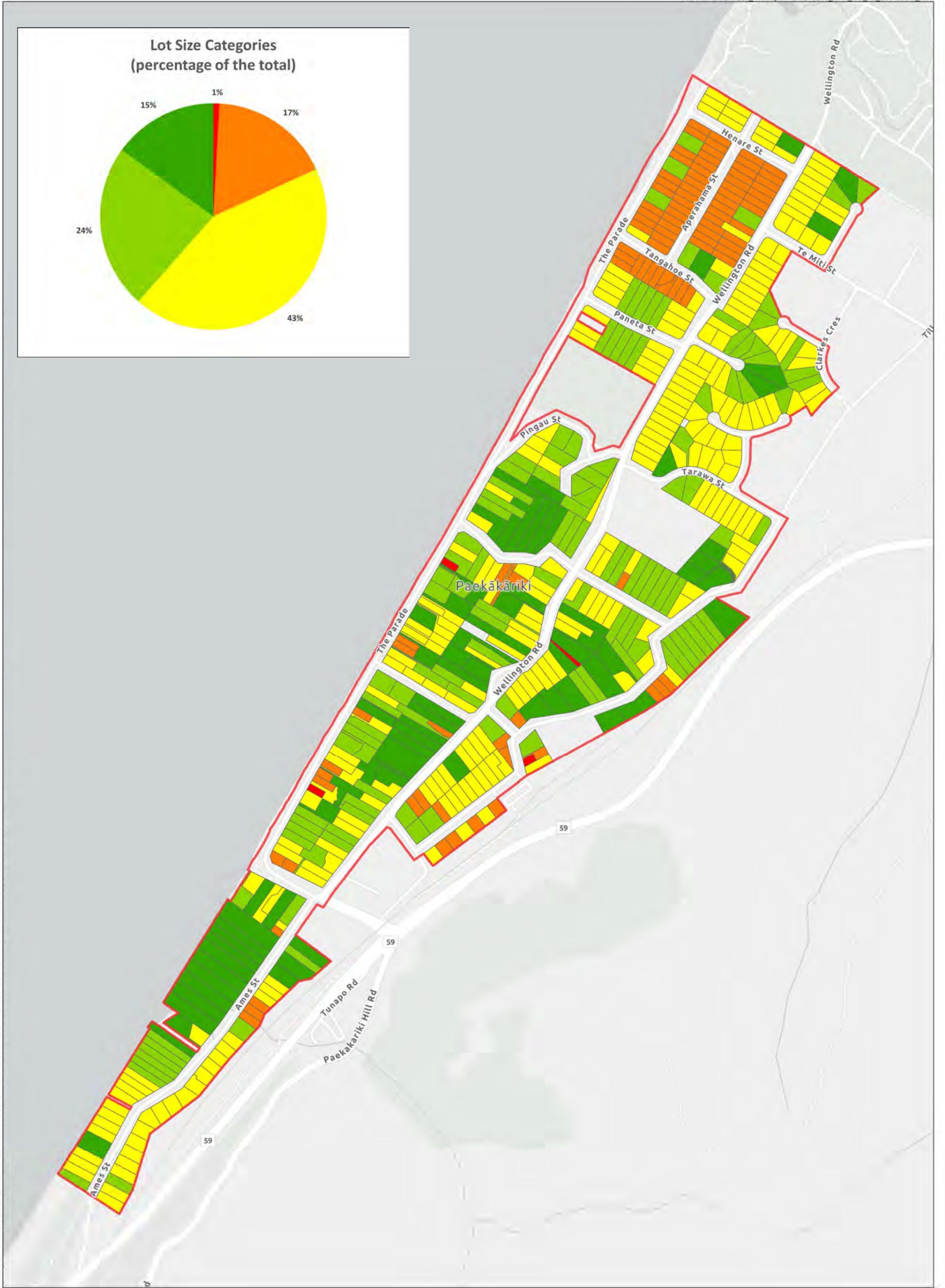
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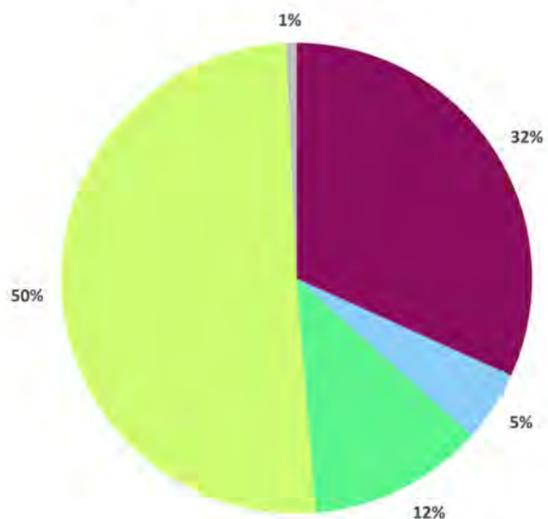
Lot Size Categories (percentage of the total)



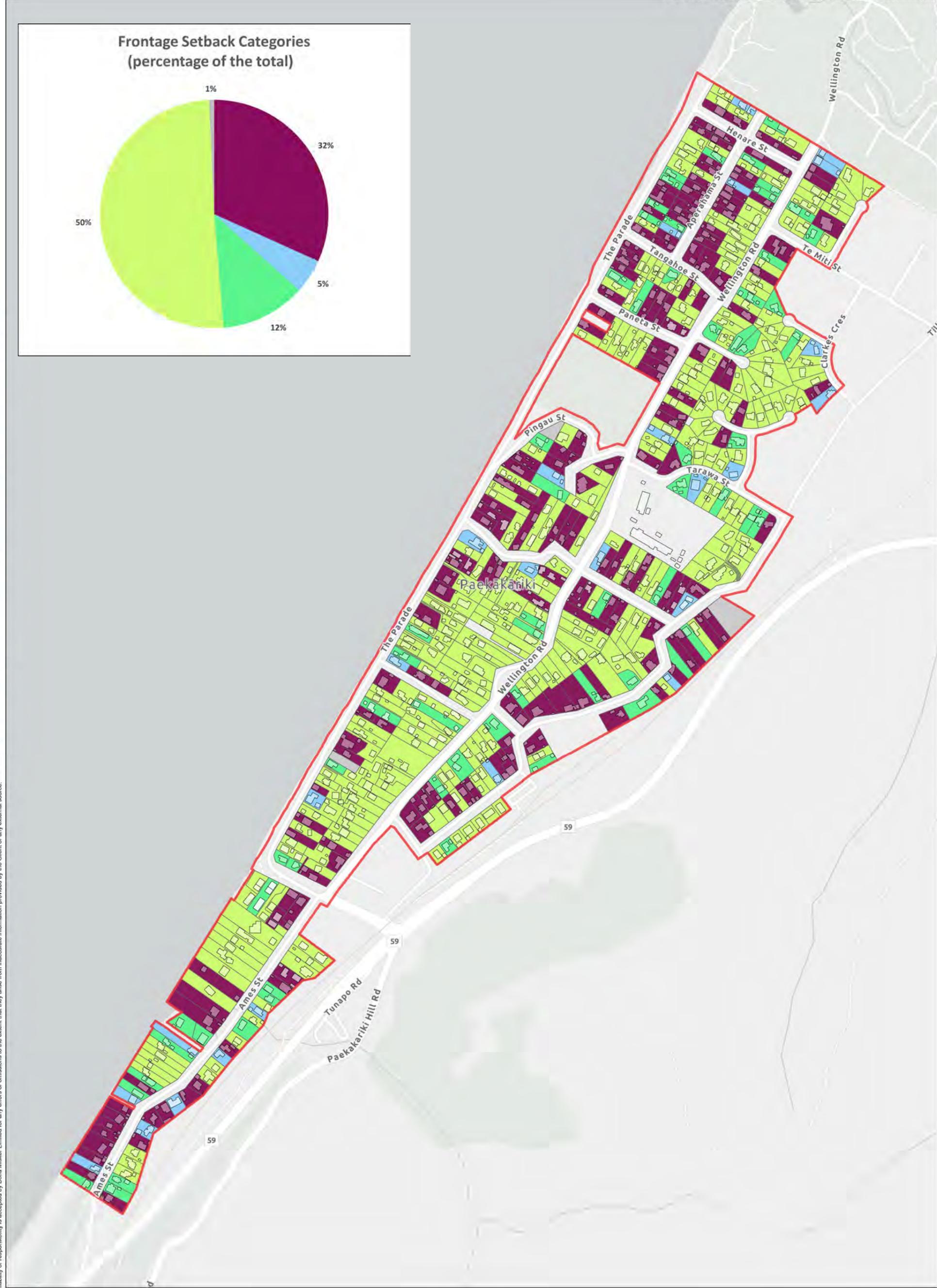
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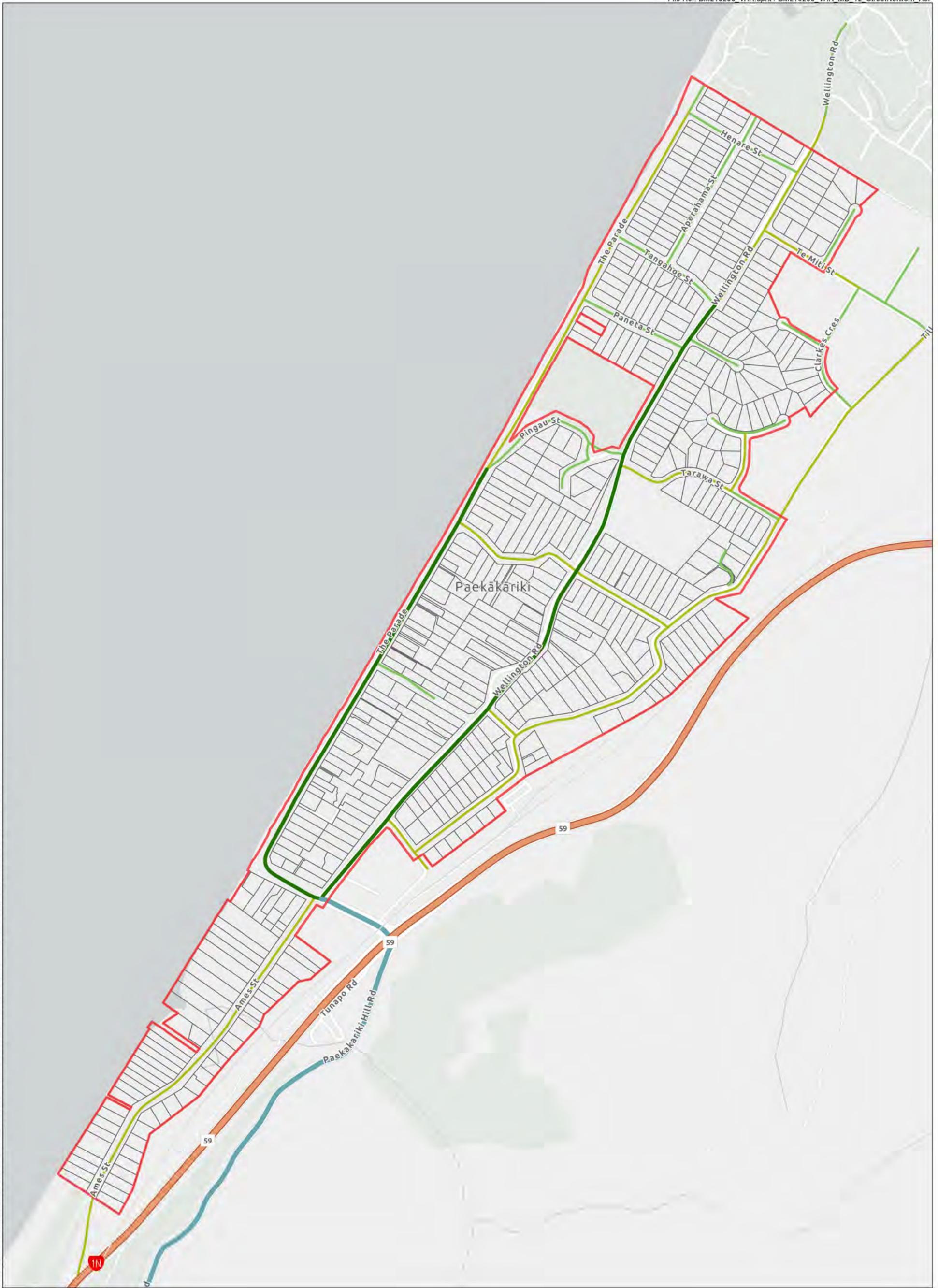
**Frontage Setback Categories
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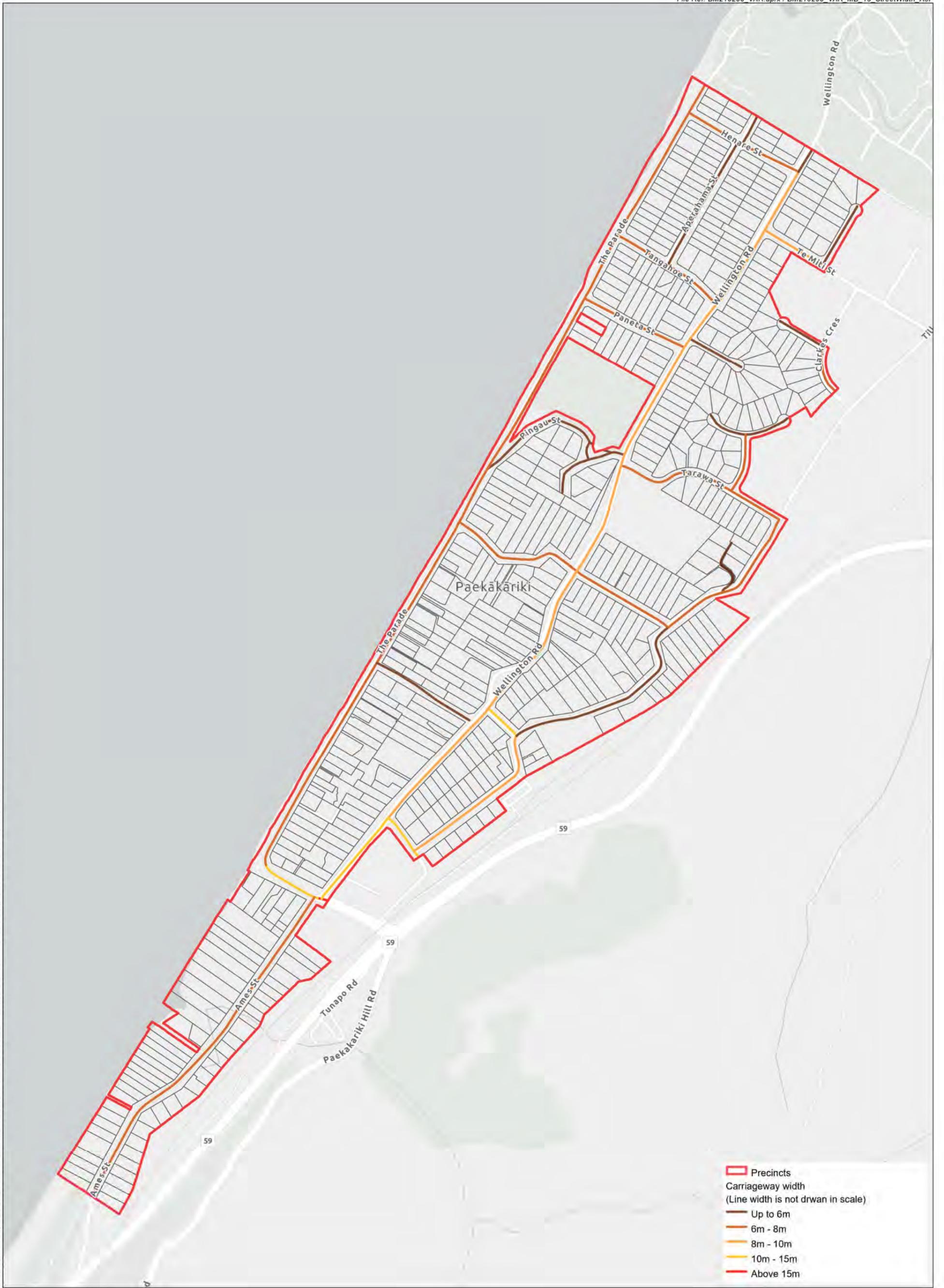
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- Precincts
- Carriageway width
(Line width is not drawn in scale)
- Up to 6m
- 6m - 8m
- 8m - 10m
- 10m - 15m
- Above 15m