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APPENDIX T

Peacocke Structure Plan Review: Recommendedations

Final report

Prepared for: Hamilton City Council

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Document Information

Project Name	Peacocke Structure Plan Recommendations
Status	Final Report
Client	Hamilton City Council
Client Reference	
MRC Reference	NZ3055
File Name	O:\NZ_Root\3. Councils Outside Auckland\Hamilton City Council\NZ3055 HCC Peacocke Structure Plan\2. Issued\NZ3055_Peacocke Structure Plan Recommendations_Issued_20200310.dotx

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Quality Assurance Register

Issue	Description	Prepared by	Reviewed by	Authorised by	Date
1	Final Report	BB	SC	BB	10 March 2020

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1 Introduction

The Peacocke growth area in Hamilton City is subject to a Structure Plan Review. Hamilton City Council (HCC) commissioned MRCagney to provide advice to promote outcomes of inclusive access, mode shift goals, and Vision Zero principles in the Peacocke Structure Plan Review. This work builds on previous community engagement, including a workshop in December 2019 exploring what 'good community' looks like in Hamilton. Specifically, the work aims to identify rules, incentives, and planning processes that can be changed or introduced to achieve this 'good community' as the Peacocke growth area is developed.

This report describes in general terms recommended changes and additions to two separate but related documents or sets of documents. First, Structure Plan provisions are recommended that are aimed at aligning with the desired outcomes. Second, changes and additions to the Regional Infrastructure Technical Specifications are recommended, to ensure that technical standards and design guidance supports rather than undermines the intent and policies of the Structure Plan as well as broader Hamilton City District Plan objectives.

Comments are also made in each section about the design, application and approval processes that is a prerequisite to development. This is because integrating inclusive access, mode shift goals, and Vision Zero principles and translating these to actual built form on the ground will require a paradigm change in street design: from the conventional vehicle focused engineering design and approval processes that typically result in 'Austroads minimum standards' consistent geometric designs to maximise speed profiles, to a people centred approach[1] to street design where the safety and access needs of the most vulnerable road users are considered as a higher priority.

Non-Council developers and their designers, who are designing development for an area or precinct, also need to understand the new approach and need to have certainty that:

- the Council approval processes are open to and encourage people-centred design;
- the Council approval processes support the intent of and objectives included in the structure plan provisions; and
- unconventional designs are supported by Council technical standards.

Developers will then have confidence that their plans will be approved by the Council planners and development engineers as part of the regulatory processes.

Recommendations are listed in bold italics below each section heading.

1.1 A note about change

Recommendation: Establish and maintain open co-design process for the Peacocke Structure Plan with HCC elected members, staff, and stakeholders

The overarching purpose of this work is to provide a means for developers to build streets and places in Peacocke that are most likely to deliver HCC outcomes for community. In doing so, the work acknowledges that there is a disconnect between current outcomes Hamilton seeks, and new infrastructure that falls short of meeting those objectives. Thus, this report recommends change. Change comes with risk; it takes effort to

[1] The Vision Zero principle is that it is not ethically acceptable that people are killed or seriously injured when moving within the road transport system, and this applies to all road users.

work differently, and to challenge preconceived beliefs about what 'best practice' really looks like, and how it is delivered.

To mitigate risk associated with change, open and continuous dialogue between all stakeholders is recommended, as early as possible. Elected members, HCC staff, the development community, professional planners and transportation engineers, and community representatives themselves can all be involved at various stages in developing specific improvements to policy, rules, and process that support the outcomes laid down in local and national policy documents. Early, authentic, and open co-design with stakeholders is the best way to 'de-risk' the change process for HCC.

2 Structure Plan Recommendations

2.1 Objectives and policies

Recommendation: Provide strong Structure Plan Objectives and Policies, aimed at achieving the outcome of 'good community', emphasising people centred design, and aligning with the Outcome Areas for Access Hamilton (Safe; Smart; Choice; Growth).

An effective structure plan has strong objectives, policies, and assessment criteria. The structure plan objectives and policies should aim to achieve the broader HCC Operative District Plan (ODP) objectives, but be articulated to address the specific environmental outcomes sought within the structure plan area. In the case of the Peacocke Structure Plan Area, we think the outcomes related to 'good community' will require greater emphasis on people centred design to be included in the objectives and policies. Examples of this emphasis could be that the policies reference new or different street design standards that more explicitly promote connectivity and inclusive access above ease and efficiency of motor vehicle movement. HCC could develop their own specific standards to be appended to the ODP, and/or reference other design guidance (such as the Auckland Transport Urban Street and Design Guide[2]).

The purpose of any specific structure plan objectives and policies is to communicate to developers that the focus in the Peacocke Structure Plan Area is on connectivity and safety for walking, cycling, and public transport, ahead of provision for private cars, albeit that car will be accommodated. Explicit emphasis of that objective is important as it represents a shift in focus from development that has previously occured in the City, which tends to provide for motor vehicle efficiency before considering other modes which deliver more effectively on Access Hamilton objectives.

The ODP objectives and policies relevant to delivering good community outcomes are summarised in the following excerpts:

1. Policy: Transport Network 25.14.2.1b

Objective: Integrated Transport Network 25.14.2.1: An integrated multi-modal transport network that meets national, regional and local transport needs and is: • Responsive • Efficient • Affordable • Safe • Accessible • Sustainable • Integrated with land use
Policy: The transportation network and related infrastructure is planned, designed, constructed and managed in a manner that: … … iii. Contributes to safe and efficient multi-modal transport corridors serving the Central City, business centres and other key destinations.; iv. Contributes to a transportation network that:

A. Is accessible to all users, including transport disadvantaged and mobility impaired.
B. Maximises opportunities for walking, cycling and passenger transport.

[2] https://at.govt.nz/media/1980686/urban-street-and-road-design-guide.pdf

C. *Creates good connections between residential areas, passenger transport services, schools, employment nodes, recreation areas, shops and other destinations.*
D. *Provides a choice of routes and transport modes for travelling.*

2. Policy: Transport Network 25.14.2.1b [transport]

vi. [Transport] Provides access to and has regard for the safety and needs of the mobility impaired, transport disadvantaged, cyclists, pedestrians, passenger transport users, and others using the transport corridor to move from place to place.

3. 25.15 Urban Design: 25.15.1 Purpose

d) Quality urban design assists to enhance environmental, social, cultural and economic wellbeing by establishing urban environments that:
i. Are competitive, thrive economically and facilitate creativity and innovation.
ii. Provide a choice of housing, work and lifestyle options.
iii. Are healthy and assist to sustain people and nature.
iv. Are inclusive and offer opportunities for all citizens.
v. Are distinctive and have a strong identity and sense of place.
vi. Are well-governed and have a shared vision and sense of direction.
vii. Are well connected and accessible for a range of users.

2.2 Development assessment criteria and incentives

Recommendation: Proactive engagement with the land development community is essential to promoting good process, particularly when expectations for design have changed. Offer open, early, informal engagement to work alongside the land developers, highlighting the outcomes sought from the Peacocke Structure Plan area, and any new processes and tools available to promote those outcomes.

Recommendation: Introduce incentives or guidance for developers to design best-practice streets and communities through exemplar street and community design templates (developed specifically for the Peacocke structure Plan Area, or through reference to other design guidance such as the AT Urban Street and Road Design Guide); and/or require developers to design best practice streets through performance-based criteria that require developments meet Hamilton's objectives for transport.

Recommendation: Include community inclusive access audits (incorporating walking, cycling, and micromobility permeability) as an information requirement of development applications for the Peacocke Structure Plan area, alongside routine safety audit requirements during each phase of design.

The ODP promotes good principles for design but provides limited tools for council to promote best-practice development. Transport design review is limited to the recommendations arising from Integrated Transport Assessments. Such assessments rarely consider the overall impact of a development on Hamilton's District Plan objectives for healthy, environmentally sustainable and accessible communities, largely because there are no agreed mechanisms to assess those outcomes. This problem is not unique to Hamilton City Council. Throughout planning documents review from around New Zealand, there is a lack of a consistent and coherent thread in District Plans that carries through the objectives, policies and assessment criteria that would induce or require a designer / engineer to design for the outcomes sought.

An example of the disconnect between ODP policies and assessment mechanisms is related to design that promotes opportunity for walking and cycling. In general in New Zealand, data linking potential walking and cycling volumes, for example, to health benefits and good design is limited. Trip generation calculations for development are biased towards vehicle movements, because there is good data about vehicle trip generation, but a lack of data available about the potential for walking and cycling in well-designed New Zealand communities. Therefore, transport planners and engineers rely on 'best practice' assessment of motor vehicle traffic flows and trip generation. The outcome can be over-reaction to predicted traffic delays and queues arising from a development, which are then 'mitigated' during the design process with wider intersections and more road space dedicated to motor vehicles. Without tools to promote the value of road space or 'green corridors' dedicated to active travel, outcomes (i.e., car-centric development) can conflict with ODP objectives and policies.

There are three ways that Hamilton City could strengthen the criteria, compared with current District Plan assessment mechanisms:

1. Proactive pre-design forums for land developers to meet with HCC staff to discuss the outcomes sought from Peacocke, and any new processes or tools intended to support delivery of those outcomes (could occur in the form of preapplication meetings)
2. Incentivise (or require) good practice through promotion of principles and process, and performance-based development assessment criteria
3. Introduce community inclusive access audits alongside a strengthened safe system audit process, to promote Vision Zero, mode shift, and inclusive access principles throughout

2.2.1 Proactive pre-design forums

Delivering on HCC objectives for land development requires change from development practices of the past. HCC can 'de-risk' the design process by being proactive about meeting with potential site developers before they begin design. Sharing the vision and desired outcomes for Hamilton generally, and the Peacocke growth area in particular can lead into conversations about new or amended processes, incentives, and rules so that developers are on-board from the start.

Engagement can be in the form of drop-in coffee sessions with HCC staff, where potential design exemplars and visualisations of potential development scenarios can be presented.

2.2.2 Incentivising good practice

Incentivising good development practice works by fostering partnership between Council and Developers. Partnership can mean providing exemplar designs that address multiple objectives. Examples include local street cross-sections that promote walking, cycling, and micromobility, as well as inclusive access and designing for low speeds through appropriate street network form and road geometry, while reducing car dependence; and permeability tools such as multi-functional green corridors that combine water and walking/cycling paths through subdivisions.

The implicit incentive for good practice is an overall increase in community amenity for developments, leading to higher profit for developers. Promoting access for walking and cycling, and connectivity to local public transport translates into narrower streets and smaller intersections, increasing the proportion of land in a development available for residential and commercial uses. Incentives for developers to proactively engage with pre-application meetings could be prioritised consent processing.

The precise nature of incentives, and of designs that promote best practice should be worked through with Council and stakeholders, to provide the greatest chance of success. We recommend that HCC requires minimum levels of connectivity through improved technical specifications (and/or links to specifications from outside of the Waikato Region), drawing on examples of development that promotes permeability and connection (see for example the Waikato District Plan for the Pokeno Structure Plan (Figure 1)). Individual developments must also align with the context of the Peacocke area as a whole, so the design templates should provide for consistency between different developments.

2.2.3 Community inclusive access audits and safe system audits

To promote Access Hamilton outcomes of mode shift and safety, routine safe system audits should be provided (as is usually the case and required by the ODP). The audits should be completed alongside a new community inclusive access audit.

Safe system audits should be required at each stage of design. The outcomes should be articulated alongside design exemplars provided as part of incentivising good practice, so that the story of overarching outcomes is threaded through each stage of the development process. Safe system audits critique a development from the perspective of minimising risk of road death and serious injury.

To promote mode shift and inclusive access, it is recommended that a bespoke community inclusive access audit is also conducted. The purpose of the community audit is to assess the extent to which the design promotes relevant structure plan objectives, thereby carrying them through the design phase and testing development to promote the outcomes intended by the overarching policies:

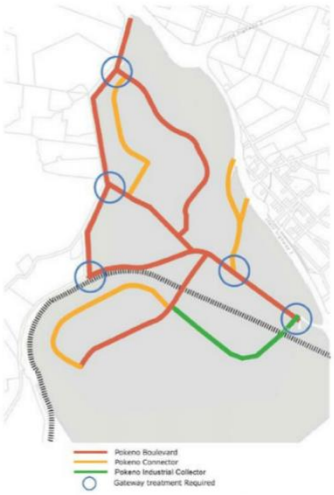
> ODP Policy: Transport Network 25.14.2.1b:
> *The transportation network and related infrastructure is planned, designed, constructed and managed in a manner that…*
> A. *Is accessible to all users, including transport disadvantaged and mobility impaired.*
> B. *Maximises opportunities for walking, cycling and passenger transport.*
> C. *Creates good connections between residential areas, passenger transport services, schools, employment nodes, recreation areas, shops and other destinations.*
> D. *Provides a choice of routes and transport modes for travelling.*

While the new (or referenced) technical design guidance will likely limit risk that designs do *not* provide for inclusive access for all modes, there will remain opportunities for improvements at the design stage, that should be included to avoid costly retrofit post-construction, and to avoid a sub-optimal street layout being established.

Waikato District Plan - Waikato Section

1. In addition to transport engineering and NZS4404:2010 requirements, road cross-sections should be appropriate to the nature of the service they provide and also reflect urban design legibility considerations.

Advisory Note: The Regional Infrastructure Technical Specifications is Council's current Engineering Code of Practice.



Road Treatment Diagram

54.15B Design Element 4: Pedestrian Links and Routes

1. Pedestrian and cycle paths should be primarily accommodated on roads.

2. Links should be short (no greater than 60 to 80 metres in length), wide (6 metre wide corridor accommodating a 2 metre wide footpath) and direct, match desire lines as closely as possible, be of easy gradient (without steps and not exceeding a gradient of 1:12), and include clear and coherent signage.

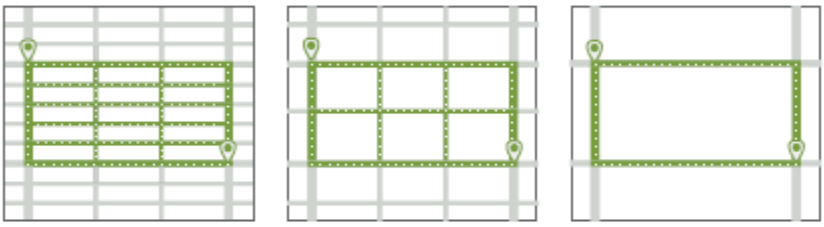
Figure 1: Excerpts from Waikato District Plan, Section 54.15B Design Element 3: Roads and Accessways

Block size

Block sizes have a large influence on the walkability of neighbourhoods. Small blocks offer more route choices and greater ability to filter through built-up areas. Block sizes should be small and designed to absorb a variety of building and housing types. Block sizes in centres and commercial areas should support a variety of land uses and a walkable public realm. Permeability for pedestrians can be made higher than for cars by having mid-block alleys or covered arcades specifically for people on foot.

Blocks that are longer north-south than east-west may provide better for solar access. Mid-block rear lanes may be particularly useful in supporting higher density housing types and other types of land uses.

Smaller block sizes and rear lanes may require a larger investment in linear roadway. This increased length of streets (and associated paths and lanes) can be offset in overall road reserve area by utilising a diversity of street types, including narrow streets.



Pedestrian options for different block sizes

Intersections and intersection density

Intersection density (which is related to block size) may be the most important predictor of walkable neighbourhoods and increased public transport use. Intersection density reflects the ease of moving around and the options that people have for doing so.

Cross (+) type, or four-way intersections, are also associated with high levels of walkability. Four-way intersections are associated with grid-shaped street networks and their utility reflects the ease for pedestrians to cross the street, and the likelihood (if associated with short blocks) for lower vehicles speeds.

1500 Intersections/2.6 km^2 150 Intersections/2.6 km^2 15 Intersections/2.6 km^2

Figure 2 Block size and intersection density to promote access (from Auckland Transport Urban Street and Road Design Guide)

Permeability vs. connectivity

Street networks with a high intersection density and short block lengths have high levels of connectivity, as there are many route options. As street connectivity increases, there are more opportunities to manage permeability differently for various transport modes. Filtered permeability can retain high connectivity, while creating environments that achieve their strategic objectives.

Strategies can be developed that prioritise desired modes along direct routes. For instance, Local Paths (also known as Greenways or Bicycle Boulevards) can prioritise walking and cycling by having walking- and cycling-only links or by restricting vehicle traffic by filtering. Similar techniques can be deployed for public transport routes, where new or designated routes allow for public transport vehicles only. These designs favour the public transport routes with more direct journeys.

The Local Path Design Guide describes how neighbourhood street networks can be retrofitted to prioritise walking and cycling. These same strategies can be applied to greenfield neighbourhoods.

The diagram below illustrates how multiple networks overlap, creating corridors with focuses on different modes.

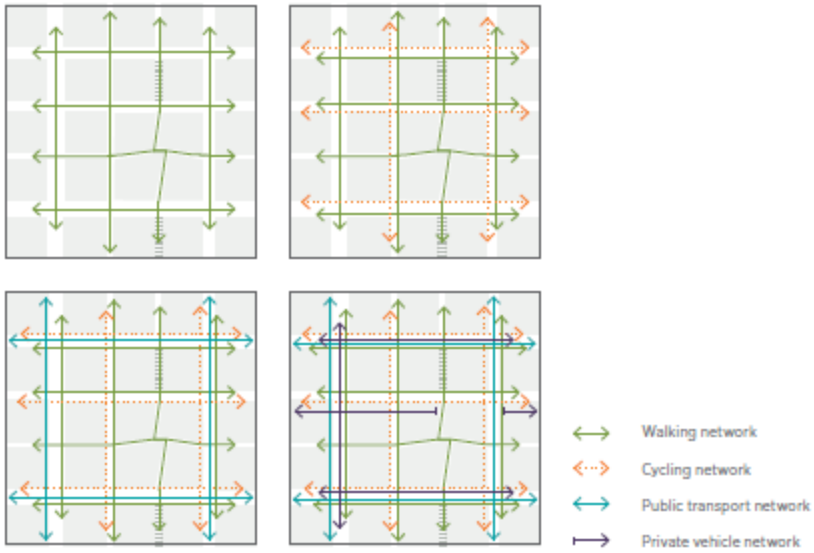


Figure 3 Permeablity and connectivity, from (Auckland Transport Urban Street and Road Design Guide)

Stormwater integration

From a regional perspective, the best way to reduce stormwater impacts is to create well-designed neighbourhoods with compact centres and streets. This is based on the reality that much of the city's impervious coverage is used to provide space for cars; parking lots, driveways, roads and motorways.

Stormwater systems should reflect and support the desired urban context. Some surface-level stormwater designs may be inappropriate in areas where there is a high level of pedestrian or public realm use.

Larger developments may have more opportunities for stormwater solutions that span property boundaries or even streets. To save space, it may be beneficial to seek off-site mitigation solutions.

Stormwater management should be considered as early as possible in the planning and design process. Stormwater management should be integrated into the street design, open space, and landscape design of subdivisions and neighbourhoods.

Main swales and streams
Local treatment and collection
Overland flow paths

1. Centre streets
2. Green streets, rain gardens
3. Swale street
4. Green alley

INTEGRATED STORMWATER MANAGEMENT ELEMENTS

Figure 4 Stormwater management for good community outcomes, from Auckland Transport Urban Street and Road Design Guide

Figure 5 Incorporating green corridors and stormwater management into street design, from Auckland Transport Urban Street and Road Design Guide

3 Regional Infrastructure Technical Specifications

Recommendation: More explicit emphasis of universal design and provision for walking, cycling, and micro-mobility should be included in the RITS. For the Peacocke Structure Plan Area, specific specification details that could be reviewed are listed, in advance of a more comprehensive review of RITS that incorporates best-practice design.

There is opportunity to improve the design guidance provided in RITS to better align with the outcomes sought from the ODP and Access Hamilton. It is noted that although the RITS is a document that sits outside the District Plan and the ODP takes precedence, nonetheless developers rely on standards and guidance in the RITS when designing new development. The Council development engineers also rely on the standards of the RITS to approve detailed designs of infrastructure to confirm it is of an adequate standard to be transferred to public ownership, i.e. to ensure it meets the minimum levels of performance and durability so that it will not be a liability for the Council in the future due to excessive maintenance or replacement requirements.

Some the technical outcomes are linked to ODP criteria, which in some cases promote poor environments in a Vision Zero context. Examples that should be changed include:

1) Conflict between 'minimum sight distance from vehicle crossings' and safe streets for people (See ODP Page 25-122).

Minimum sight distance on a 60km/h arterial road is 150m which encourages high speeds. Note distances are based on Austroads Guide to Road Design, Part 4A: Unsignalised and Signalised Intersections (Equation 1 and 2).' Recent design guidance produced in response to Vision Zero shows that design speed for any street where a significant number of pedestrians cross the road should be no greater than 30km/h. Auckland Transport street design guide suggests a main street arterial should have a speed of less than 30 km/hr, and a mixed use arterial should have a speed of 30-40 km/h in centres (with access limited). The limit on streets without accesses or pedestrians could be 50 km/h. Limits of 60-80km/h should be reserved for peri-urban areas with no accesses and very few pedestrians.

2) Minimum parking requirements (Table 15-1a, appendix 15 of Volume 2 of the ODP)

There are no reasonable objectives and policies that can support minimum parking requirements. These should be removed from district plans.

Some generic themes from the RITS should be changed, as follows:

3) RITS Section3.3.2.1: Collector road intersection

A Collector Road in a residential area does not need to be navigable by a 19m semi-trailer without crossing a centreline. In preference, the occasional articulated truck in a residential area can use both lanes to navigate intersections, with a pilot vehicle where necessary.

4) RITS section 3.3.9.1:Kerb radii

To promote ODP objectives, Vision Zero, and inclusive access, the specifications for kerb radii should be amended to promote low speed environments. For example, the statement *"All road intersections in residential areas should have a kerb radius at intersections of 4m to 6m. An alternative and reduced kerb radius may be considered to enhance pedestrian facility in low speed environments, and shall be subject to the approval of Council."* In this case the assumption should be the other way around, i.e. low kerb radii should be promoted

by default, not by exception. Low kerb radii promote connectivity, low speeds, attractive environments for walking and cycling, and low overall crash risk.

Table 1: Technical specifications recommended for review, from Waikato Regional Infrastructure Technical Specifications

RITS Ref	Description	Recommendation
P40-41: Section 1.13.8	Details rules for 'Cyclists and Pedestrians' at works sites:	Engagement with Hamilton's disability sector suggests that current industry delivery of temporary traffic management is not always inclusive of all people and modes. Strengthen works site audit processes above and beyond current requirements (i.e., more comprehensive and more regular audits of works)
P91: Note Section 3.2.4.5	Maximum walking distances from a Lot to a collector or Arterial Road'	Recommend new criteria to promote walking, cycling, and micromobility permeability above motor vehicle access
P91/92: Section 3.2.5	Audit procedures	Recommend 'Community inclusive access' audit as standard
P92: Section 3.2.6	Design and Access Statement	Include more specific requirements for inclusive access for walking, cycling, and micromobility
P109/110: Section 3.3.16.3	Pedestrian Accessways	Add to clause 3.3.16.3. 'Barriers should not be installed on slopes' due to difficulty negotiating manual wheelchairs and other large mobility devices.
P110: Section 3.3.17	Facilities for Vision Impaired Pedestrians	Revise list of places where facilities for vision impaired pedestrians should be installed (revision to be informed through engagement with Blind & Low Vision New Zealand)
P179	As-built data checklist	Include checklist criteria for footpath width, grade, and crossfall; and kerb and channel measurements to ensure universal access
P195 D3.1.3 / Drawing 3-4	Footpath location, width, crossfall, and grade	Recommend footpath crossfall of 1%, no greater than 2%
P253 D3.10.3 / Drawing 3-62	Paved raised pedestrian ramp	Recommend only smooth (asphaltic concrete or concrete) surfaces for all pedestrian areas

4 Summary and Conclusions

The recommendations arising from a review of planning process within Hamilton and in other places in Australasia are summarised in the timeline below. It is concluded that there are gaps between the vision and outcomes sought by the HCC ODP, and associated strategy documents that are intended to guide investment in a growing city. Mechanisms to bridge those gaps require change. The risk associated with that change is best managed with open and authentic dialogue between HCC and all other stakeholders.

Table 2: Summary of Recommendations

Reference in this report	Scope of recommendation	Description	Recommended commencement date
1 Introduction	Peacocke Structure Plan area	Establish and maintain open co-design process for the Peacocke Structure Plan with HCC elected members, staff, and stakeholders	March 2020
2.1 Objectives and policies	Peacocke Structure Plan area	Provide strong Structure Plan Objectives and Policies, aimed at achieving the outcome of 'good community', emphasising people centred design, and aligning with the Outcome Areas for Access Hamilton (Safe; Smart; Choice; Growth).	March 2020
22 Development assessment criteri.a and incentives	Peacocke Structure Plan area	Proactive engagement with the land development community is essential to promoting good process, particularly when expectations for design have changed. Offer open, early, informal engagement to work alongside the land developers, highlighting the outcomes sought from the Peacocke Structure Plan area, and any new processes and tools available to promote those outcomes.	April 2020
		Introduce incentives or guidance for developers to design best-practice streets and communities through exemplar street and community design templates (developed specifically for the Peacocke structure Plan Area, or through reference to other design guidance such as the AT Urban Street and Road Design Guide); and/or require developers to design best practice streets through performance-based criteria that require developments meet Hamilton's objectives for transport.	April 2020
		Include community inclusive access audits (incorporating walking, cycling, and micromobility permeability) as an information requirement of development applications for the Peacocke Structure Plan area, alongside routine safety audit requirements during each phase of design.	April 2020
3 Regional Infrastructure Technical Specifications	Peaccoke Structure Plan area / City-wide	More explicit emphasis of universal design and provision for walking, cycling, and micromobility should be included in the RITS. For the Peacocke Structure Plan Area, specific specification details that could be reviewed are listed, in advance of a more comprehensive review of RITS that incorporates best-practice design.	June 2020