

BROOKVALE STRUCTURE PLAN

Introduction

This Structure Plan relates to the Brookvale Urban Growth Area identified in Appendix 2 of the District Plan. This Brookvale Romanes area has been identified in the Heretaunga Plains Urban Development Strategy (HPUDS) as an appropriate area for greenfield residential development and necessary to be included within the 10 year planning period in order to provide an on-going supply of residential land. This area has been identified within HPUDS as a replacement new residential greenfield development area for under the Arataki Extension due to reverse sensitivity issues impacting on the suitability of this area in the short to medium term Napier-Hastings Future Development Strategy 2025 (as site HN6).

The Brookvale Urban Growth Area is considered suitable for greenfield development as it adjoins Brookvale Road and the existing Arataki residential area. Its proximity to existing residential areas means servicing efficiencies exist. Furthermore, there are good transport links to State Highway 2 via Napier Road and/or Crosses Road which provide for ease of travel to Hastings and Napier and a direct link to the Havelock North village centre.

Prior to rezoning, the Brookvale Urban Growth Area is currently zoned Plains Production Zone. Land north of the proposed Drainage Reserve (Crombie Drain) and in the vicinity of Thompson and Davidson Roads continues to be used for productive uses and as such the drain and roads have been utilised to create a defined urban edge to manage reverse sensitivity effects and protect the versatile land adjoining this area. For the remainder of the area there are a large number of smaller residential sites fronting Brookvale Road.

Overall, the Brookvale Romanes Urban Growth Area is a logical and practical extension to the Havelock North Residential area. It is essential however, that the approximately 3645 hectares of land within this urban growth area is used in an efficient manner (to offset the loss of this versatile land resource) and to create a vibrant and high amenity residential area that caters for the housing needs of a mixed community. The preparation of a Stormwater Management Plan is fundamental to the development of this area, as it sits within a floodplain.

No commercial node is provided for within the Structure Plan Area, but should a small commercial node akin to Iona be established then it is best located in Area A, either adjoining the reserve or in a location that has good visibility and connections to the existing and proposed residential areas.

Objectives of the Structure Plan

BRSP-O1	That the Brookvale Urban Growth Area develops into a pleasant living environment that is well connected to the adjoining neighbourhoods, parks and recreational areas.
BRSP-O2	That the quality of the environment created within the Brookvale Urban Growth Area reflects best practice urban design outcomes and the New Zealand Urban Design Protocol including the 7C's: <ul style="list-style-type: none"> • Character • Connections • Custodianship • Collaboration • Creativity • Choice • Context
BRSP-O3	That the development provisions that shape the Brookvale Urban Growth Area seek to assist the Council in the achievement of the objectives of the National Policy Statement on Urban Development Capacity 2016 for the District as a medium growth area 2020 as well as the objectives of the Regional Policy Statement and the Heretaunga Plains Urban Napier-Hastings Future Development Strategy (HPUDS) 2025 in terms of development that uses land efficiently while creating a high quality environment.

Purpose of the Structure Plan

BRSP-P1	The District Plan provides for Structure Plans to guide and where appropriate direct subdivision and development in new urban development areas. The purpose of a Structure Plan is to provide a broad framework within which landowners and developers can prepare development proposals in a flexible manner whilst maintaining an integrated approach to development, promoting the efficient use of infrastructure resources and avoiding, remedying or mitigating the potential adverse effects of urban development on the surrounding environment, including roading and utility service networks.
BRSP-P2	This Structure Plan relates to the Brookvale Area identified in Appendix 2 of the District Plan. The Structure Plan sets out design outcomes and design criteria which apply to the assessment of applications for subdivision and development activities, other than Permitted Activities, so as to achieve the above purpose and objectives. Applications for Subdivision or Land Use Consent are to show how these design outcomes and criteria will be achieved. Conditions may be imposed on consents granted to give effect to these design outcomes and criteria

Design Outcomes

(applicable across the entire Brookvale Structure Plan Area — Appendix 13B, Figure 1)

Transportation and the Street Network

BRSP-O1	The primary function of the street network within the Brookvale Structure Plan area is to provide safe and efficient access to properties for all modes of transport while promoting innovation in street design that enhances residential amenity, safety and sense of place.
BRSP-O2	Access to and within the Brookvale Structure Plan area shall generally be achieved from the links to the road network shown on the Structure Plan (Appendix 13B, Figure 1). The Structure Plan shows two types of transportation linkages; those that are located in a fixed position or alignment and those that are indicative. Fixed transportation linkages must be constructed in the alignment shown, however the alignments of those connections shown as indicative have greater flexibility and can be refined or moved as the subdivision design is progressed. Transportation connections shown as fixed are those that are critical to achieving the optimum outcome in terms of urban design of this new residential area and are also essential in providing the greatest level of integrated access through the neighbourhood and connections to adjoining areas. The provision of road frontage along portions of the drainage reserve (in combination with fencing performance standard provisions for the remainder) and around proposed recreation reserves is considered a key component of the Structure Plan and assists best practice urban design outcomes for the development of these areas.

	<p>While there are four indicative road alignments, the outcomes to be achieved are a through road running from Romanes Drive to Thompson Road and two roads running parallel to the Crombie Drainage Reserve. One within the latter part of Area A (Stage 2) and C connecting with the two road legs running northwards from the through road and one on the northern side of the Crombie Drain within Area B. These roads are a key feature of the Structure Plan but essentially float to give flexibility to the stormwater solution. The fourth is a connector between the Romanes Drive and Thompson Road through road and the drain, to show that a connection is intended rather than a landlocked drain-side road.</p> <p>Area D includes a proposed road alignment extending from Areas A and C parallel with Brookvale Road to provide integration across Davidson Road and access to the deferred residential growth area to the east (Area E).</p>
BRSP-O3	<p>The Transportation network will provide for road vehicles, cyclists and pedestrians and will support the off-road pedestrian cycle links throughout the Structure Plan area as shown that utilise stormwater drainage and reserve areas.</p> <p>Pedestrian, cycle and/or reserve links are required to be enabled, generally in accordance with the Structure Plan, to allow for improved connectivity within the area and to the wider area surrounding this new urban development area. Upgrades to the existing roads within the Structure Plan area (Thompson, Brookvale, Thompson and Davidson Roads) will be required to ensure levels of services are maintained as the area transition from rural to urban.</p>
BRSP-O4	<p>Internal streets shall generally comply with HDC Engineering standards for local streets and cul-de-sacs, except that innovative and attractive solutions that enhance residential amenity, safety and sense of place should be provided priority. Council will look favourably on alternative subdivision concepts that achieve safe, pedestrian friendly street design.</p> <p>The internal street network guides the shape of individual subdivisions that will make up this residential area. The long rectangular shape of the growth area south of the Crombie Drain requires a grid like internal street network to ensure adequate connectivity both within the growth area and to connect this area with the existing Arataki residential area.</p> <p>At least one through east-west road shall be provided, running from Romanes Drive to Davidson Road and extending into Area D (and Area E, subject to a future Plan Change to uplift the Deferred Residential status). The portion of this road closest to Romanes Drive is shown as indicative to provide development flexibility, whereas the remainder is fixed due to existing development and to establish the grid layout between Brookvale Road and the Crombie Drain, to ensure subdivision block sizes are of a walkable size. The need for streets to front proposed open space reserves is a key urban design principle that has helped influence the placement of the drain-side roads.</p> <p>Typical sections diagrams of Collector and Local Roads are attached as Figure 2, to this Structure Plan text, to guide road design.</p> <p>However, the following specific transportation design outcomes and criteria for the Structure Plan area and certain roads are outlined below:</p>
	<p>Design Outcome: Romanes Drive and Napier Road</p> <p>Romanes Drive and Napier Road are existing roads that serve collector and arterial functions. It is important that these roads continue to function safely and efficiently so it is intended to keep vehicle access from the development restricted and allow internal access only. Due to this it is important that these roads are treated in such a way that they don't turn their backs on development, so fencing and landscaping controls have been introduced.</p> <p>Design Criteria: Romanes Drive and Napier Road:</p> <ul style="list-style-type: none"> • Points of connection identified on the structure plan for any new roads with internal access otherwise provided for new development; Restricted vehicle access identified on the Structure Plan accordingly; • Provision of cycle lanes and a footpath on the eastern side of the road; • Street trees shall be planted in the road berm areas. Plans outlining the species proposed [1], spacing of trees and location within the berm area shall be provided with any application for subdivision; • Landscaping and fencing controls to ensure good visual connections into the development from Romanes Drive; and • Fencing controls to ensure a high standard of residential amenity to properties adjoining Napier Road. <p>[1] The intention is that street trees species are consistent with species already planted in Havelock North and where the species are established as part of the first subdivision that the same species is used throughout the development</p>
	<p>Design Outcome: Russell Robertson Extension & Romanes Drive to Davidson Road Spine Road Connector (Beecroft Drive)</p> <p>A collector road connection that extends Russell Robertson Drive through to Thompson Road including a bridge/culvert crossing to traverse the Crombie Drain and constructed along the alignment shown on the Brookvale Structure Plan.</p> <p>In the case of the Romanes Drive to Davidson Road spine road connector (Beecroft Drive), this is to be constructed on the alignment shown on the Structure Plan. The exception being a short portion of indicative alignment at the Romanes Drive end to provide development flexibility. This road is also indicated to extend into Area D to provide an integrated roading network for the extended structure plan area east of Davidson Road.</p> <p>Design Criteria: Russell Robertson Extension & Romanes Drive to Davidson Road/Area D Spine Connector (Beecroft Drive):</p> <ul style="list-style-type: none"> • Provision of on-street carparking and cycle lanes and a footpath on both sides of the road; • Provision of on-street carparking on both sides of the road. A combination of parking within the road carriageway or indented bays is appropriate; • Incorporation of traffic calming measures where appropriate; • Incorporation of 'low impact design' stormwater features within the street design and streetscape as a whole; • Street lighting shall be deflected downwards towards the road and footpaths to reduce the impacts of lighting on surrounding properties; and • Street trees shall be planted in an avenue style in the road berm areas. Plans outlining the species proposed [1], spacing of trees and location within the berm area shall be provided with any application for subdivision. <p>The spine road connector shall generally be provided in accordance with the 15m wide corridor — local road cross-section in Figure 2 unless otherwise approved by HDC.</p> <p>[1] The intention is that street trees species are consistent with species already planted in Havelock North and where the species are established as part of the first subdivision that the same species is used throughout the development</p>
	<p>Design Outcome: Roads fronting the Crombie Drain</p> <p>Two local roads are to be constructed alongside the Crombie Drain providing visibility and access into this linear open space reserve area. These are however shown as having an indicative alignment to provide flexibility as the final stormwater solution is not known. Where a road is not identified on the Structure Plan fronting the Drain then specific fencing rules will apply for any residential lots.</p> <p>Design Criteria:</p> <ul style="list-style-type: none"> • Provision of on-street carparking lanes on both sides of the road (off-road cycle and pedestrian paths will be provided within the open space reserve); <ul style="list-style-type: none"> ◦ For the road on the northern side of the Drain, provision for a footpath along the northern side of the road that adjoins and provides access to residential properties; ◦ For the road on the southern side of the Drain, provision for a footpath on the southern side of the road that adjoins and provides access to residential properties; • Incorporation of 'low impact design' stormwater features within the street design and streetscape as a whole; • Street lighting shall be deflected downwards towards the road and footpaths to reduce the impacts of lighting on surrounding properties; and <p>Street trees shall be planted within a median strip between the two traffic lanes that runs the length of these roads. Plans outlining the species proposed [1], spacing of trees and location within the median strip area shall be provided with any application for subdivision.</p> <p>[1] The intention is that street trees species are consistent with species already planted in Havelock North and where the species are established as part of the first subdivision that the same species is used throughout the development</p>
	<p>Davidson Road (adjacent to Area Areas C and the Future Stage as Identified in HPUUSD)</p> <p>The Davidson Road alignment is to remain as existing, but will require upgrades to the road profile, providing new kerb and channel and pedestrian amenities.</p> <p>Design Criteria:</p> <ul style="list-style-type: none"> • Provision of a footpath on both sides of the road; • Provision of on-street carparking on both sides of the road, cycle lane/s and a footpath in indented parking bays; • Incorporation of traffic calming measures;

	<ul style="list-style-type: none"> • Incorporation of 'low impact design' stormwater features within the street design and streetscape as a whole; • Street lighting shall be deflected downwards towards the road and footpaths to reduce the impacts of lighting on surrounding properties; and • Street trees shall be planted in an avenue style in the road berm areas. Plans outlining the species proposed [1], spacing of trees and location within the berm area shall be provided with any application for subdivision. <p><u>The upgrades to Davidson Road shall generally be provided in accordance with the indicative cross-section and plan in Figures 2A and 2B unless otherwise approved by HDC.</u></p> <p>[1] The intention is that street trees species are consistent with species already planted in Havelock North and where the species are established as part of the first subdivision that the same species is used throughout the development</p>
	<p>The Internal Street Network including the loop Road in Areas A and C</p> <p>Design Outcome: A grid street network design that provides connectivity and views to the open space reserve areas and that is constructed as generally shown on the Structure plan map.</p> <p>Design Criteria: The following specific considerations are to be take into account in the design of streets:</p> <ul style="list-style-type: none"> • Provision for pedestrian safety and amenity in a way that contributes to the creation of a distinctive suburban character; • Provision of on-street carparking and cycle lanes (i.e. a lane on both sides of the street) for all those roads identified in a fixed road location or alignment; • Incorporation of 'low impact design' stormwater features within the street design and streetscape as a whole; • Incorporation of a statement identifying departures from the minimum standards of (Road /Street design section) of the HDC Engineering Code of Practice for Subdivision and Land Development, setting out the reasons for the alternative approach adopted and how this is consistent with achieving NZS4404; • Street lighting shall be deflected downwards towards the road and footpaths to reduce the impacts of lighting on surrounding properties; and <p>Street trees shall be planted in an avenue style in the road berm areas. Plans outlining the species proposed [1], spacing of trees and location within the berm area shall be provided with any application for subdivision.</p> <p>[1] The intention is that street trees species are consistent with species already planted in Havelock North and where the species are established as part of the first subdivision that the same species is used throughout the development</p>

Infrastructure Services

BRSP-05	<p>To provide sustainable water, wastewater and stormwater infrastructure solutions for the Brookvale Structure Plan Area.</p>
	<p>Water: The current water reticulation services in the vicinity of the Structure Plan area include bulk distribution mains on Brookvale Road and water mains on Napier Road. There is currently no reticulation in Romanes Drive to support development. The Structure plan area can be supplied via a new water main connected to Brookvale and Napier Roads via Thompson Road. This will create a boundary connection which is important to provide for flow continuity and volumes of supply during peak demand and fire-fighting conditions. The need for a new main is identified on the Brookvale Structure Plan contained in Appendix 13B, Figure 1. Internal service mains (including important loop connections) can then be positioned within the development area to suit road layouts and provide alternative connectivity and continuity for fire-fighting. The booster pump station once operational will assist service this area. Water supply upgrading shall occur in tandem with staged development and be either constructed by the developer(s) or funded through financial contributions. Any easements or other arrangements to provide for conveyance of water supply services are to be demonstrated at the time of any application for subdivision. This includes consideration of existing easements over land within the Structure Plan area and ensuring that connections to water services for these properties are maintained through appropriate mechanisms as part of any subdivision consent approval.</p>
	<p>Stormwater: Stormwater is to be managed and treated by means of a low impact stormwater system that includes an upgrade to the existing Crombie Drain <u>and</u>, a detention pond to the north of the Crombie Drain and adjacent to the Russell Robertson Drive extension, <u>and where required, additional stormwater detention areas including within the proposed Crombie Drainage Reserve. Both of these</u> These areas have been identified on the Brookvale Structure Plan (Appendix 13B, Figure 1) as Stormwater Management Areas. All areas needed for stormwater management purposes will be vested in Council. Roadside drainage features will be used to convey stormwater runoff to the Crombie drain. The final width of the Drainage Reserve (28 metre minimum) and location and size of the ponds/wetlands/detention areas constructed within these Stormwater Management Areas will be confirmed during the first subdivision as part of the preparation of a complete Stormwater Management Plan for the entire Brookvale Structure Plan Area [1] <u>and/or through subsequent Stormwater Management Plans for each stage of development which demonstrate integration with the overall approach for the structure plan. Alternative stormwater management areas may be identified and included within the Stormwater Management Plan at resource consent stage.</u> Remaining land that is not required for stormwater management purposes within the identified stormwater management area (including access for maintenance and for public safety) can then be utilised in accordance with its underlying zoning. This approach is covered under Rule 30.1.7Z(8). The stormwater system is to meet 'the design principles for stormwater attenuation and treatment' set out in the Hawkes Bay Regional Council, April 2009, <i>Hawkes Bay Waterway Guidelines</i>. The system is to achieve best practice from source through to discharge at the boundary so as to mitigate the effects of urban development on stormwater quality and quantity. In particular the system is to:</p> <ul style="list-style-type: none"> • Be in general accordance with the Brookvale Structure Plan map (Appendix 13B) including the cross section minimum width of 28 metres and the Crombie Drain profile attached to this Structure Plan text as Figure 3; • Attenuate stormwater in order to achieve a discharge at the boundary of the developed area that is not greater than predevelopment flow; • Individual site stormwater shall be designed to comply with the HDC Engineering Code of Practice/ District Plan ; • The Drainage Reserve and stormwater management ponds / wetlands [or the specific mitigation devices to be advised] are to be vested in Hastings District Council upon subdivision; • <u>At the time of the first subdivision for Stage 1 of Area A, a 'Stormwater Management Plan' (SMP) is to be provided/prepared for the entire Brookvale Structure Plan area. Subsequent SMPs may be prepared for each stage of development providing that integration with the overall approach for the structure plan is demonstrated.</u> The SMP(s) will demonstrate how 'stormwater neutrality' is to be achieved such that existing rates of runoff are not exceeded. The SMP(s) will specify the mix of measures to be employed including, but not necessarily limited to: <ul style="list-style-type: none"> ◦ Any communal measures and, their capacity, design, management and ownership; ◦ <u>Any areas of the proposed Crombie Drain Reserve that will be set aside for flood storage and mitigation, and associated indicative cross-sections;</u> ◦ Land within the stormwater management areas that is not required for stormwater management purposes but is required for access for maintenance and public safety; ◦ The Whakatomo Place existing overland flowpath and existing concrete lined open swale drain which discharges to the Crombie Drain. Included in this aspect of the assessment consideration needs to be given to the height of Brookvale Road and surrounding properties to alleviate ponding. The existing concrete lined open swale drain or approved alternative is to be accommodated within road corridor or drainage reserve and vested in Council. <p>[1]The stormwater management solution shall have the endorsement of the Hawkes Bay Regional Council prior to it being lodged as part of this application.</p>
	<p>Wastewater: There are fixed points for wastewater connection at Romanes Drive and Napier Road, which are identified on the Structure Plan diagram (Appendix 13B, Figure 1). The existing wastewater services network will need to be extended and upgraded along Davidson Road to slightly north of the Crombie Drain then run west back to the identified point of connection on Romanes Drive. Services can run either within the Drainage Reserve itself or alternatively easements will be required. All other new service infrastructure will be constructed by the developer. Two key features of the wastewater servicing design will be two new pump stations to manage wastewater flow back to the existing HDC network. The</p>

location of these pump stations will not be known until detailed design work is carried out but indicatively are needed within Stage Area B and C (or alternatively within the future stage as identified by HPUDS) D. The pump stations will have all equipment located below ground level except for an equipment box which will be screened by landscaping on all sides except the road frontage to maintain access for maintenance purposes. Legal access to the wastewater pumpstation for Area E will be provided through Area D to future proof this area for residential development. All extension upgraded upgrades need to be constructed in accordance with the HDC Engineering Code of Practice. Sewer reticulation layouts will require a mix of gravity and rising mains due to the naturally sloping ground of the development area towards the Crombie Drain.

Retention of Existing Vegetation

Quality of place is considerably enhanced by retaining established trees and vegetation. It has been identified that there are existing mature trees, hedge rows and ornamental planting that could be retained to assist integrate new development into the environment. Several significant trees have been identified, a significant gum tree (Eucalyptus) opposite Whittaker Place, three mature trees along the Napier Road boundary, a large Elm species near the Romanes Drive intersection and a pine and Fraxinus species within the Redwoods kids site. It is considered that all existing vegetation is worthy of consideration for protection and an assessment criteria built into the subdivision section accordingly

Residential Density

The Heretaunga Plains Urban Development Strategy (HPUDS) suggests a total indicative yield for the entire Brookvale and Romanes Drive areas of 575 dwellings. With a yield target of 15 dwellings per hectare to achieve this.

The total area of the Brookvale Structure Plan area is approximately 3645 hectares of the total approximate 45 hectare area identified in HPUDS. The remaining future stage (as identified on the Structure Plan) will be investigated for rezoning once reverse sensitivity issues are resolved.

Detailed structure planning investigations and resultant infrastructure needs can affect yield, but the plan provisions provide the means to achieve the minimum 15 dwellings per hectare target, and specifically include rules that provide opportunities for comprehensive residential development (including retirement villages) to occur.

Unlike the Structure Plan for Iona there are no areas specifically identified as suitable for Comprehensive Residential Development (CRD) within the Brookvale Structure Plan area (Appendix 13B, Figure 1). However CRD is encouraged within the Brookvale Structure Plan area, particularly where it is located on the opposite sides of streets aligned along the edges of open space reserves (i.e. so that the lots face the reserve), or some amenity feature. Otherwise clusters of small lots shall be distributed amongst larger lots so that small lots do not dominate the streetscape. For example smaller lots located mid-block within a street separated by larger lots.

Design Outcome:

BRSP-O6	An overall residential density that contributes to an efficient use of the land resource while providing for a range of housing options in a high quality residential setting
	<p>Design Criteria</p> <ul style="list-style-type: none"> • A minimum residential density of 15 dwellings per hectare; • A minimum site size for comprehensive residential development sites — Parent sites: 500m², Child sites: 250m² • A range of site sizes shall be provided within a street to encourage the construction of a variety of house types as this diversity will assist with the creation of a new residential character; • Comprehensive residential development (CRD) sites should be located on the opposite sides of streets aligned along the edge of open space reserves (ie so that the lots face the reserve or alternatively some proposed new amenity feature(s) within the CRD development site itself); and • Alternatively clusters of smaller sites resulting from a CRD should be located mid-block within a street separated by larger lots comprising single house developments so that the smaller sites are distributed amongst larger lots and therefore do not dominate the streetscape.

Other Infrastructure Services

New residential development is to be serviced for power, gas and telecommunications utilities by each of the respective network utility providers.

The Green Network — Open Space Zone

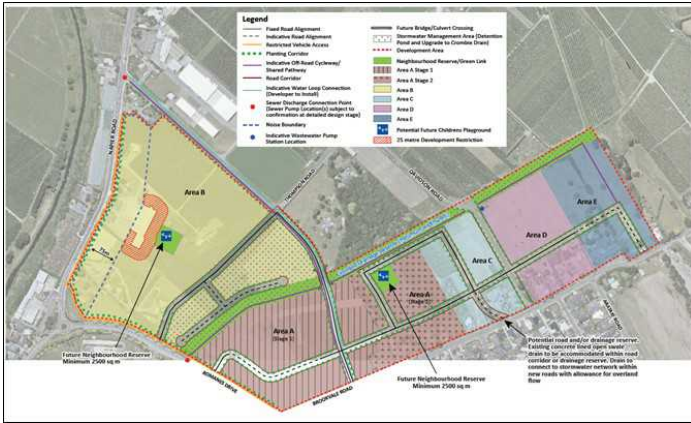
The Open Space Zone within the Structure Plan area comprises two reserve areas and a drainage reserve (Crombie Drain) which will provide opportunity for active and passive recreation and may also accommodate community based activities in accordance with the Open Space Zone requirements of the District Plan (Section 13.1).

The placement of the open space reserves also seeks to reinforce and connect recreational linkages and pathways throughout the residential area ensuring the accessibility of these areas. While these open spaces will primarily provide for recreation activity they also (particularly the Crombie drainage reserve) have a significant role to play in providing for the overall stormwater conveyance and treatment system for the area.

BRSP-O7A	An open space network that is easily accessible and provides a focal point for recreation and social activities for this new residential area.
BRSP-O7B	The creation of two neighbourhood reserves that provide for key neighbourhood playground and provide open space amenity for this residential area.
BRSP-O7C	An open space area that has the primary function of stormwater management while providing a main recreational linkage through the residential area and connection to neighbourhood reserves.
	<p>Design Criteria:</p> <ul style="list-style-type: none"> • That the identified reserve areas shall generally be located and configured as depicted on the Brookvale Structure Plan. The final location of the neighbourhood reserves, particularly that in Area A, Stage B, will be informed by the Stormwater Management Plan and resultant stormwater solution; • That off road cycleway and pedestrian recreational linkages shall be provided through the Crombie Drain Reserve to connect with the street network that provides access to the two local neighbourhood reserves; • That the two neighbourhood reserves are bounded on a minimum of two sides by a road and have minimum site sizes of 2500m²; • That provision for a children’s playground shall be made within each of the neighbourhood reserves; • The size, location and design of the playground and equipment will be subject to community consultation by the Council’s Parks Planning Team following the initial development of the new urban development area; • That the Crombie ‘Drainage Reserve’ is to be vested in the Hastings District Council upon subdivision; and • That the Drainage Reserve has a minimum width of 28 metres for the full length running from Romanes Drive to Davidson Road as depicted on the Brookvale Structure Plan (Appendix 13B, Figure 1) and have the minimum requirements as depicted in the Crombie Drain profile attached to this

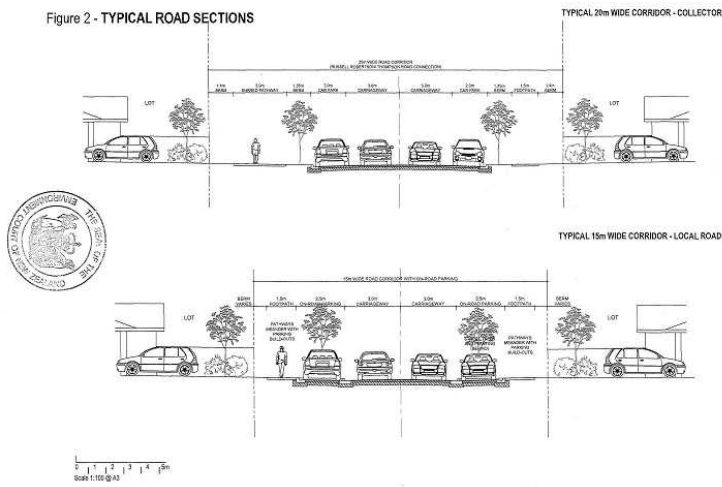
Structure Plan as Figure 3 unless an alternative cross-section is approved by Hastings District Council consistent with the Stormwater Management Plan.

Appendix 13B - Figure 1: Brookvale Structure Plan

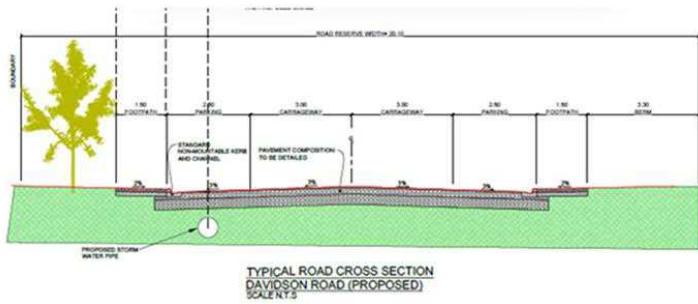


Appendix 13B - Figure 2: Typical Road Sections

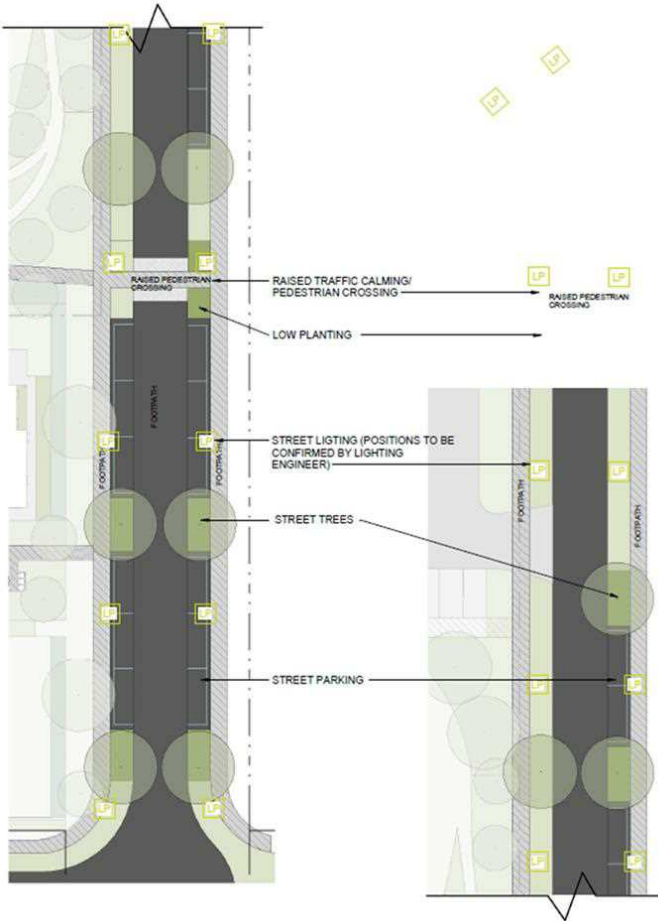
Figure 2 - TYPICAL ROAD SECTIONS



Appendix 13B - Figure 2A: Typical Road Section (Davidson Road)



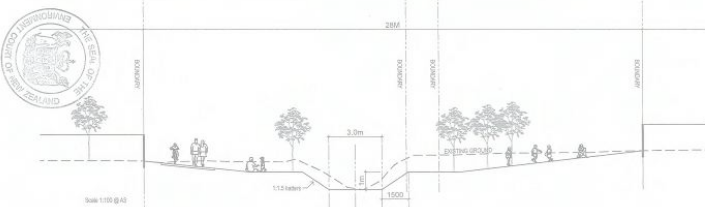
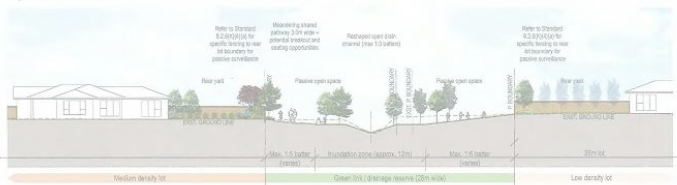
Appendix 13B - Figure 2B: Typical Plan View (Davidson Road)



Appendix 13B - Figure 3: Crombie Drain Profile



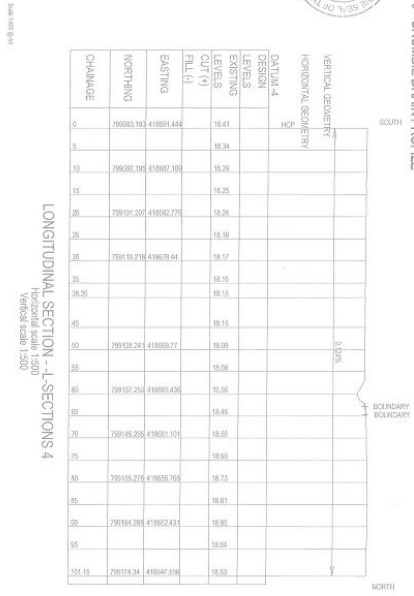
Figure 3 - CROMBIE DRAIN PROFILE



13/09/2019 Revision A



Figure 3 - CROMBIE DRAIN PROFILE



1:500