

VCV

VCV Consulting Ltd.

CENTRAL HAWKES BAY

AREA BASED INFRASTRUCTURE ASSESSMENT

JUNE 2020



**CENTRAL
HAWKE'S BAY**
DISTRICT COUNCIL

INTRODUCTION AND METHODOLOGY

This assessment has been made to inform the Integrated Spatial Plan process as part of the growth management response of Central Hawke's Bay.

The assessment takes the identified, possible future growth areas in the three towns and makes a general assessment of their infrastructure investment needs. The towns have the following areas:

- Ōtāne 6 areas
- Waipawa 8 areas
- Waipukurau 16 areas

The preliminary suitability assessment is necessarily crude but serves as a basis for further consideration. It uses the following information sources:

- Lens maps dated 11 May 2020 (Isthmus)
- Judgement and experience
- NZ topographic maps
- CHBDC Utilities maps/GIS
- CHBDC zoning maps/GIS
- HBRC hazard maps - <https://hbmaps.hbrc.govt.nz/hazards/>
- Personal observations by CHBDC staff based on their knowledge of local conditions and asset management.

A preliminary suitability has been nominated, with four possible categories:

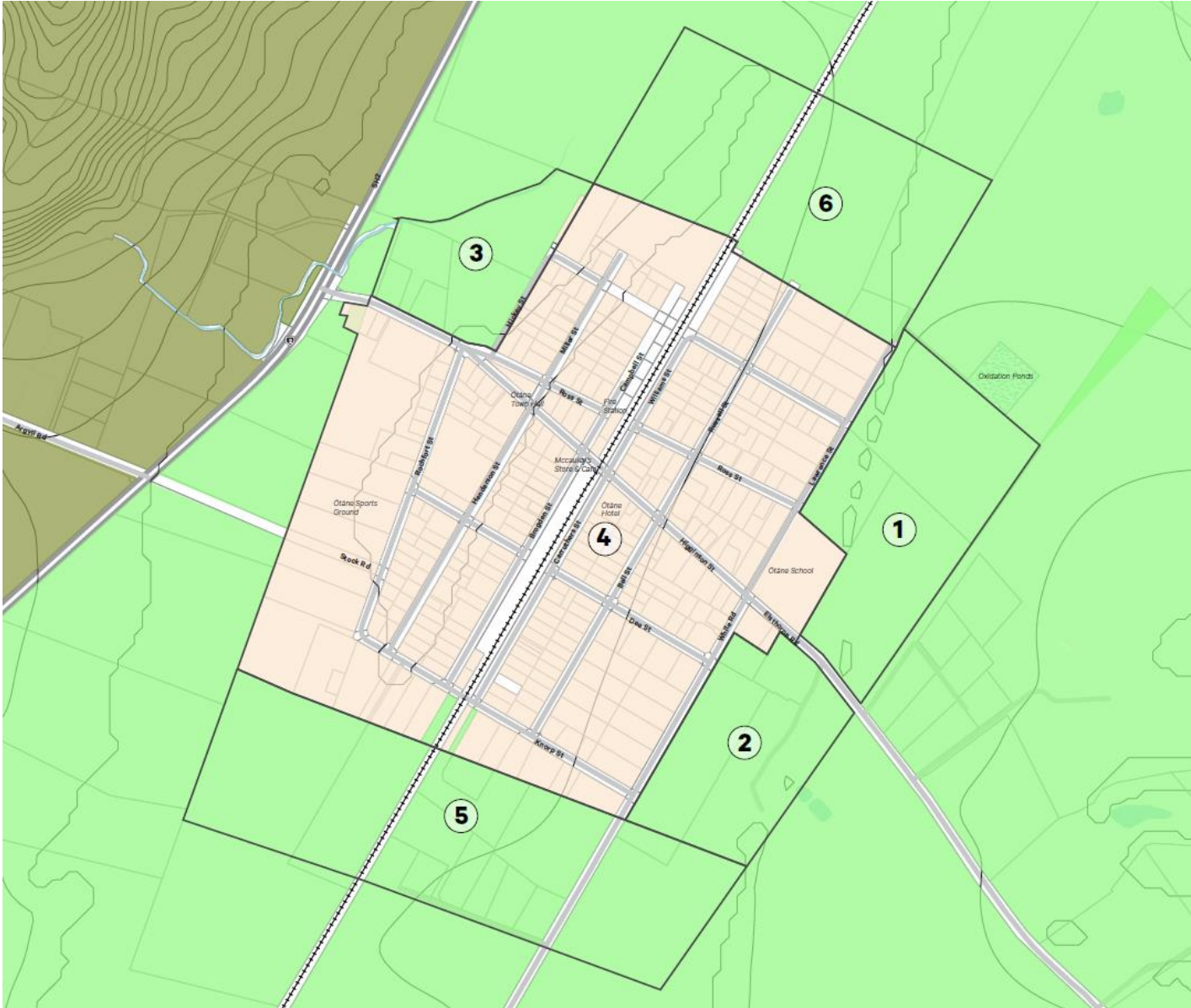
- Moderately challenging
- Highly challenging
- Very highly challenging
- Extremely challenging

The four categories could be likened to *level of expenditure necessary to accomplish development*. i.e. nothing is impossible, it just costs progressively more. No assignment of actual costs has been made. Ideally all (or much of) the cost would be shouldered by the development, without Council contribution. This is easy to say but hard to achieve. However, cost allocation forms a future piece of work. This needs to be linked to CHBDC's Development Contributions policy. And it is acknowledged that even if capital costs can be attributed to development successfully, Council will still inherit the operating costs such as depreciation and operations and maintenance. Several other strands of work relate to this. These include a market assessment. What currently sells and what doesn't? What lot sizes are credible offerings? What yield is possible/likely, given these and other external factors. And finally are there areas where development is currently constrained by issues such as ownership and covenanted land.

SUMMARY

Area	Preliminary Assessment			
	Moderately challenging	Highly challenging	Very highly challenging	Extremely Challenging
Ōtāne – Area 1				
Ōtāne – Area 2				
Ōtāne – Area 3				
Ōtāne – Area 4				
Ōtāne – Area 5				
Ōtāne – Area 6				
Waipawa – Area 1				
Waipawa – Area 2				
Waipawa – Area 3				
Waipawa – Area 4				
Waipawa – Area 5				
Waipawa – Area 6				
Waipawa – Area 7				
Waipawa – Area 8				
Waipukurau – Area 1				
Waipukurau – Area 2				
Waipukurau – Area 3				
Waipukurau – Area 4A				
Waipukurau – Area 4B				
Waipukurau – Area 5				
Waipukurau – Area 6				
Waipukurau – Area 7				
Waipukurau – Area 8				
Waipukurau – Area 9				
Waipukurau – Area 10				
Waipukurau – Area 11				
Waipukurau – Area 12				
Waipukurau – Area 13				
Waipukurau – Area 14				
Waipukurau – Area 15				

Ōtāne



Ōtāne 1 North east quadrant

Development Factor	Initial Comment
Stormwater	Reported to be very wet and hard to service in its current condition. Some of the land may need to be filled/raised. A comprehensive drainage scheme will need to be put in place. There is an opportunity for wetland treatment – i.e. land availability. Likely to need CHBDC owned infrastructure.
Wastewater	Handy to WW ponds. Could be short term reverse sensitivity until ponds become emergency storage only. Buffer required to existing WW pond. This might be reducible longer term if treatment operations move to Waipawa. But will probably need to be lifted up into ponds via pumping.
Water	Potential need for water supply upgrade. There is a 150 mm dia. supply to the Higginson/White intersection.
Topography	Slopes down to the NE corner by existing WW pond.
Hazards / Restrictions - (not including s/w related hazards)	A known north/south faultline traverses the site, diagonally. No demarcated flood areas.
Zoning	Operative – Rural; Draft – Plains production
Transport	Capacity of Lawrence Road needs consideration. If there is population growth beyond a threshold (especially east of the railway line) then an upgrade of the Knorp and/or Higginson railway crossings is triggered.
Notes	
Prelim suitability	Moderately challenging.....Highly challenging.....Very highly challenging.....Extremely challenging

Ōtāne 2 South east quadrant

Development Factor	Initial Comment
Stormwater	Reported to be very wet and hard to service in its current condition. Some of the land may need to be filled/raised. A comprehensive drainage scheme will need to be put in place. There is an opportunity for wetland treatment – i.e. land availability. Likely to need CHBDC owned infrastructure.
Wastewater	May need to be lifted up into ponds via pumping. Would require infrastructure to deliver to pond area.
Water	Good (150 mm dia.) supply along White Road.
Topography	Slopes gently down to the east.
Hazards / Restrictions - (not including s/w related hazards)	Known fault lines. No demarcated flood areas.
Zoning	Operative – Rural; Draft – Plains production
Transport	May require an upgrade of White Road and/or Higginson. If there is population growth beyond a threshold (especially east of the railway line) then an upgrade of the Knorp and/or Higginson railway crossings is triggered.
Notes	

Prelim suitability	Moderately challenging.....Highly challenging..... Very highly challengingExtremely challenging
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Ōtāne 3 NW corner near Kaikora Stream

Development Factor	Initial Comment
Stormwater	Could be discharged into nearby stream through open drain. New infrastructure will be required.
Wastewater	New infrastructure will be required. If too low (near stream) may need pumping.
Water	New infrastructure will be required. Supply available in Higginson St. and Hickey Street.
Topography	Slopes down towards stream.
Hazards / Restrictions - (not including s/w related hazards)	Free of known fault lines. No demarcated flood areas.
Zoning	Operative – Rural; Draft – Plains production
Transport	Proximity to State Highway may need consideration. If there is population growth beyond a threshold (especially east of the railway line) then an upgrade of the Knorp and/or Higginson railway crossings is triggered.
Notes	
Prelim suitability	Moderately challenging..... Highly challengingVery highly challenging.....Extremely challenging

Ōtāne 4 – Infill of existing urban area

Development Factor	Initial Comment
Stormwater	The current, privately-owned stormwater system will not readily cope with significant infill without issues manifesting and becoming of concern. At the small scale, site specific designs will generally pass regulatory tests. However, because the system is informal and not managed by CHBDC it will not easily adapt to further demand placed upon it by infill discharging to informal, non-Council controlled stormwater systems. Problems will worsen over time without readily available, comprehensively thought through solutions. Depending on where the District Plan lands in terms of lot size and infill potential it may be necessary to carry out a comprehensive stormwater management review to identify a strategic rather than an ad-hoc response. There is a known issue in the south west corner where at times uncontrolled runoff from Argyle Road overtops SH2.
Wastewater	Available, although of limited capacity in some areas and often located in private property. There are also known, severe inflow and infiltration issues.
Water	Available, but infill will place additional demand on the system. A fire-fighting capacity investment programme is underway which will assist with current issues.
Topography	Relatively flat.
Hazards / Restrictions	Known fault lines.. No demarcated flood areas.

- (not including s/w related hazards)	
Zoning	Operative – Township; Draft – Rural Township. Removal of the current 350 sq. m. lot size will severely impact upon the opportunity for infill. Many of the existing lots are around the 1000 sq. m size.
Transport	Incremental growth may trigger more requests for footpaths and improved streetlighting and kerb and channel. If there is population growth beyond a threshold (especially east of the railway line) then an upgrade of the Knorp and/or Higginson railway crossings is triggered.
Notes	
Prelim suitability	Moderately challenging.....Highly challenging..... Very highly challengingExtremely challenging

Ōtāne 5 Southern quadrant

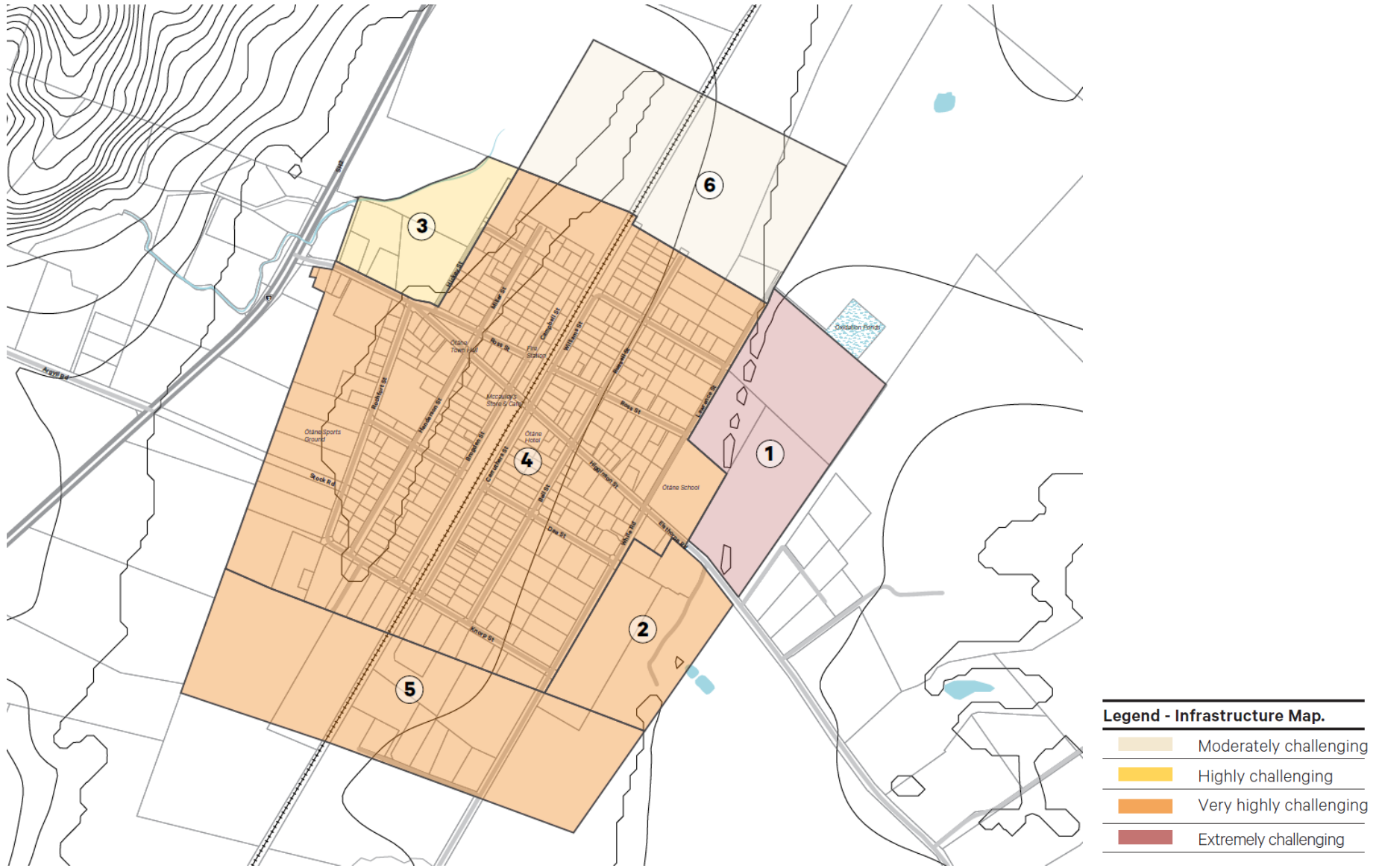
Development Factor	Initial Comment
Stormwater	May need attenuation/treatment. Likely to need CHBDC owned infrastructure. There is a known issue in the south west corner where at times uncontrolled runoff from Argyle Road overtops SH2. This would need to be resolved for development to occur in this area.
Wastewater	Likely to need new gravity main in Knorp Street.
Water	Proximity to White Road main is helpful.
Topography	Flat, with gentle eastwards slope
Hazards / Restrictions - (not including s/w related hazards)	Known fault lines. No demarcated flood areas.
Zoning	Operative – Rural; Draft – Plains production
Transport	Carruthers Street appears to be the best candidate for extension southwards. There are 4 other possible candidates with varying obstacles. Or a new alignment to suit development. It may be awkward to have the new suburb bisected by the railway without a pedestrian or vehicular railway crossing. An extra railway crossing would need to be tested with KiwiRail. If there is population growth beyond a threshold (especially east of the railway line) then a safety upgrade of the Knorp and/or Higginson railway crossings is triggered.
Notes	
Prelim suitability	Moderately challenging.....Highly challenging..... Very highly challengingExtremely challenging

Ōtāne 6 Northern quadrant

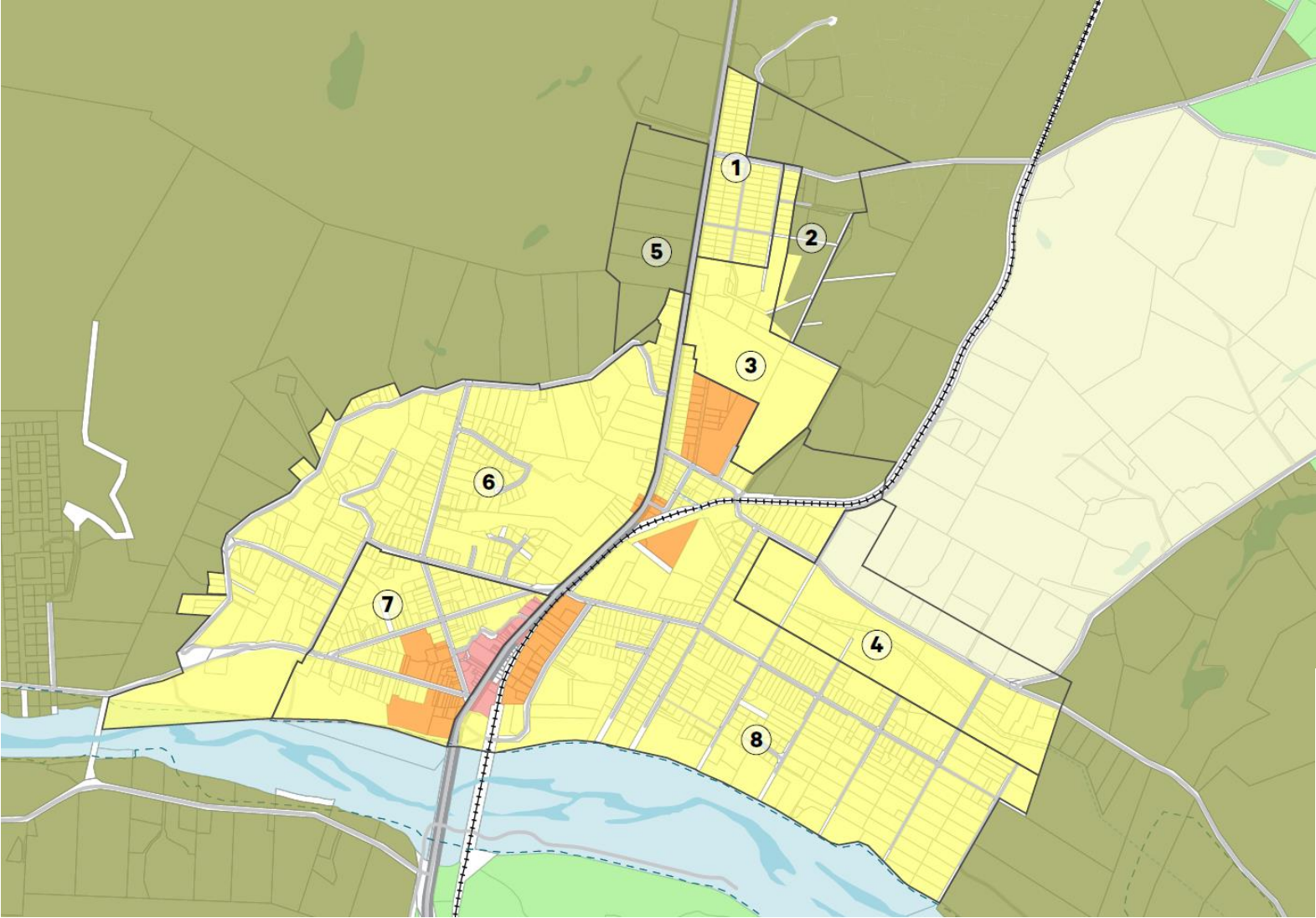
Development Factor	Initial Comment
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Stormwater	Area is unserviced and requires infrastructure. This area is considered to be the least difficult area of Ōtāne to develop from a land/stormwater drainage viewpoint. There is an opportunity for wetland treatment – i.e. land availability. Likely to need CHBDC owned infrastructure.
Wastewater	Quite close to WW ponds. Would need some new infrastructure. Unlikely to require pumping. Buffer required to existing WW pond. This might be reducible longer term if treatment operations move to Waipawa.
Water	Potential need for water supply upgrade. Relatively close to old supply from the west. Four of the roads have 100 mm dia. Mains although only Russell extends to the edge of area 6.
Topography	Slopes to the east and west from a very gentle northward-trending ridge.
Hazards / Restrictions - (not including s/w related hazards)	Two known fault lines traverse the site. Just west of and parallel to the railway and also through the east side of the site. No demarcated flood areas.
Zoning	Operative – Rural; Draft – Plains production
Transport	Six existing roads could be extended northwards without existing obstacles. It may be awkward to have the new suburb bisected by the railway without a pedestrian or vehicular railway crossing. Kiwirail would likely resist an extra railway crossing. If there is population growth beyond a threshold (especially east of the railway line) then a safety upgrade of the Knorp and/or Higginson railway crossings is triggered.
Notes	
Prelim suitability	Moderately challenging.....Highly challenging.....Very highly challenging.....Extremely challenging

Ōtāne Infrastructure Assessment Summary



Waipawa



Legend - District Plan.

	Commercial
	Mixed Use Industrial
	Plains Production
	Residential
	Rural Living
	Rural Production
	Rural Township

Waipawa 1 Watts Street

Development Factor	Initial Comment
Stormwater	The northern portion of this area drains to the north east; the southern portion to the west. Care required in design so development doesn't cause flooding downstream.
Wastewater	Watts Street/Road area serviced by old, flat glazed earthenware pipes. This is at the top end of the network. Any spare capacity may be quite limited. Upgrade possibly needed. Drains by gravity to the south via 225mm dia. GEW in SH corridor. The capacity of the 225mm pipe becomes pivotal.
Water	Good water supply in Racecourse Road. Ringed 100mm dia. AC to the south. Nothing in Watts Street north.
Topography	Moderate land slopes.
Hazards / Restrictions - (not including s/w related hazards)	Free of known fault lines. No demarcated flood areas.
Zoning	Operative – Residential; Draft – Residential.
Transport	Watts Street north is unformed. Racecourse Road has a 20m road reserve. Watts Street, Watts Road, Eagle Street & Richmond Lane are all 10m wide road reserve – i.e. extremely narrow. NZTA may oppose further subdivision fronting SH2. On-site manoeuvring may be required to limit reversing out onto the State Highway.
Notes	This area is already largely developed with residential activity. Most road reserves are very narrow.
Prelim assessment of level of infrastructure challenge	Moderately challenging..... Highly challengingVery highly challenging.....Extremely challenging

Waipawa 2 North east area

Development Factor	Initial Comment
Stormwater	Some of the land may need to be filled/raised. A comprehensive drainage scheme will need to be put in place. There are likely to be downstream limitations that need to be addressed. There is an existing drain through the northern part of the site. It heads to the east. At least part of the area reported to be wet. Some of the land may need to be filled/raised.
Wastewater	Some of Area 2 is below the nearest system, necessitating pumping. Additional reticulation needed and there will be downstream limitations. May necessitate an upgrade of the McGreevy Street pumpstation and/or conveyance infrastructure.
Water	Good water supply in Racecourse Road.
Topography	Rolling type land
Hazards / Restrictions - (not including s/w related hazards)	Free of known fault lines. No demarcated flood areas.
Zoning	Operative – Rural; Draft – Rural Production

Transport	Access would need to be from Racecourse Road. Access from Eagle or Richmond is not considered viable (narrow ROW's)
Notes	
Prelim suitability	Moderately challenging..... Highly challengingVery highly challenging.....Extremely challenging

Waipawa 3 Collins to Watts

Development Factor	Initial Comment
Stormwater	Design would need to consider downstream (Tamumu & Bush) impacts.
Wastewater	May be able to use existing 225mm dia. system heading south to Tamumu Road, if there is spare capacity. Additional reticulation may be needed. And there will be downstream limitations. May necessitate an upgrade of the McGreevy Street pumpstation and/or conveyance infrastructure.
Water	100mm dia. Mains in SH2 (both sides) and Tamumu Road.
Topography	Rolling hilly land
Hazards / Restrictions - (not including s/w related hazards)	Free of known fault lines. No demarcated flood areas..
Zoning	Operative – Residential; Draft – Residential.
Transport	Access would need to be from either SH2 (could be NZTA issues?) or Lyndon Street – west of the rail Xing (Kiwi-rail issues?). Lyndon Street looks preferable, SH2 may be "difficult". This area has a dense network of paper roads.
Notes	
Prelim suitability	Moderately challenging.....Highly challenging..... Very highly challengingExtremely challenging

Waipawa 4 Tamumu Road east

Development Factor	Initial Comment
Stormwater	Stormwater model for Waipawa being developed. Reports of surface water flooding there. Significant issues to be addressed prior to development. Care needed with overland flowpaths. Need to protect downstream properties. Has access to bush drain but this is often at capacity in winter. Upgrade required.
Wastewater	375mm gravity to the south and 315mm rising main alongside Bush drain ex McGreevy pumpstation. Some failed septic tanks in area. WW treatment plant is approx. 1200 m to the east.
Water	All existing streets have 100mm dia. high pressure. Possible that this could service further development.
Topography	Slopes from Tamumu Road down to the existing Bush open drain. Low lying, has ponding issues in winter, couple of existing ponds. Not able to build here without land filling and/or comprehensive drainage scheme.
Hazards / Restrictions	Known fault lines. No demarcated flood areas.

- (not including s/w related hazards)	
Zoning	Operative - Residential and Rural; Draft – Residential and Rural Living.
Transport	Good grid network of roads in this area. Could extend Guy, Bennett or Shanly through to Tamumu. (Tamumu) Road rail crossing protected by bells only – no barrier arms. Upgrade could be required, triggered by further population growth.
Notes	
Prelim suitability	Moderately challenging.....Highly challenging.....Very highly challenging.....Extremely challenging

Waipawa 5 North west area

Development Factor	Initial Comment
Stormwater	Drains towards east. Will be issues if it adds to the loading of the bush drain. May be able to drain towards the north east.
Wastewater	Limited as at top end of the network – has limited capacity.
Water	Reservoir lines to Ōtāne go just to the north making servicing straightforward.
Topography	Slopes to the east. Quite steep in general making development tricky. Significant Geotech required.
Hazards / Restrictions - (not including s/w related hazards)	Known fault lines. No demarcated flood areas.
Zoning	Operative – Rural; Draft - Rural Production.
Transport	Access would need to be from SH2.
Notes	
Prelim suitability	Moderately challenging.....Highly challenging.....Very highly challenging.....Extremely challenging

Waipawa 6 West side (Domain , Matthew, Abbotsford)

Development Factor	Initial Comment
Stormwater	Down roads and gullies. Abbott and Parkland drain to a detention pond and then downstream to the bush drain. It has recorded issues. The southern areas drain out to the Waipawa river near the northern abutment of the rail bridge.
Wastewater	“Spidery” network due to topography.
Water	Near reservoir. Likely pressure problems in high areas.
Topography	Generally steep.
Hazards / Restrictions - (not including s/w related hazards)	Bentonite lenses and fault lines. No demarcated flood areas.
Zoning	Operative – 99% Residential; Draft 99% Residential

Transport	Good network of streets – some steep.
Notes	
Prelim suitability	Moderately challenging.....Highly challenging..... Very highly challengingExtremely challenging

Waipawa 7 CBD west (Church, Rose, Ruataniwha)

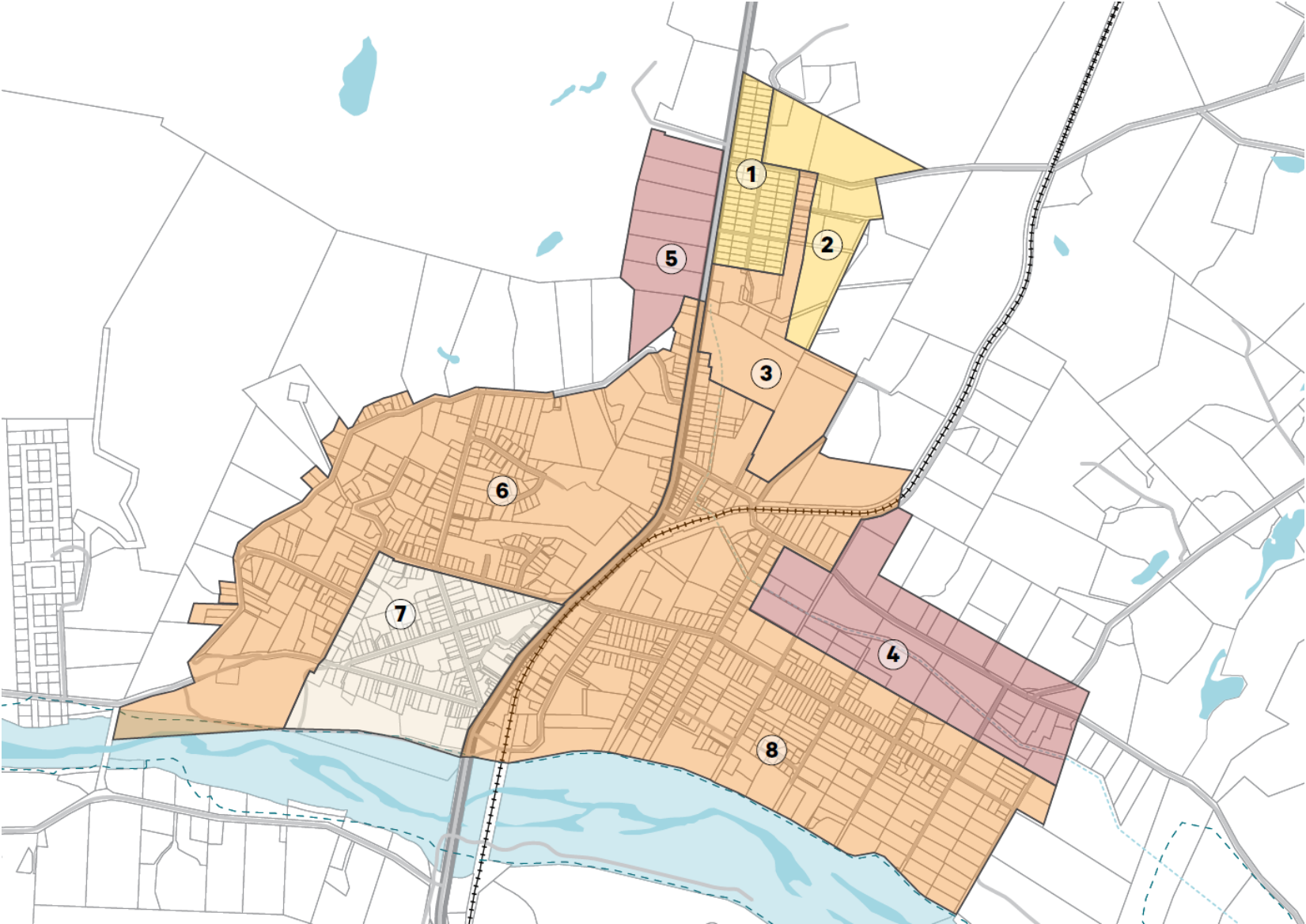
Development Factor	Initial Comment
Stormwater	All piped. Not much at west end. Unlikely to be of sufficient size. Islington Drive area drains to Bush drain (with its known problems).
Wastewater	Well serviced. Some relined.
Water	Good grid network. Church St. is only 100mm dia.
Topography	Slopes moderately towards south east.
Hazards / Restrictions - (not including s/w related hazards)	Known fault lines. No demarcated flood areas.
Zoning	Operative – Residential and Business 1 & 2; Draft – Residential, Mixed use Industrial & Commercial.
Transport	Good network of interconnected streets. NZTA issues on SH2 – traffic density, pedestrian safety and ingress and egress. Nelly Jull Park area presents opportunities. Publicly owned land on the west side of SH2 from Ruataniwha to the river would provide opportunities.
Notes	
Prelim suitability	Moderately challenging.....Highly challenging..... Very highly challengingExtremely challenging

Waipawa 8 The Bush

Development Factor	Initial Comment
Stormwater	Existing SW system somewhat informal. Stormwater model for Waipawa being developed. Reports of surface water flooding here. Significant issues to be addressed prior to further development. Care needed with overland flowpaths. Need to protect downstream properties. Bush drain and Waipawa river both options but may be difficult to convey to those.
Wastewater	Serviced by recently re-lined 375mm dia. gravity plus pumped surcharge system. May be difficult to convey from development sites across to the main. Pumping could be required.
Water	Only two mains across Rail corridor. 180mm dia. MDPE & 100mm dia. AC. Upgrade likely to be required.
Topography	Quite flat and low-lying
Hazards / Restrictions - (not including s/w related hazards)	Known fault lines. Need to keep minimum floor levels above flooding hazard. No demarcated flood areas.
Zoning	Operative – Residential and Business 1 & 2; Draft – Residential & Mixed use Industrial.

Transport	Cross streets have very narrow (10 m) ROW width. But evidence of road ROW widening accomplished via subdivision. (Tamumu) Road rail crossing protected by bells only – no barrier arms. Upgrade could be required, triggered by further population growth. Need to test with KiwiRail.
Notes	Note that this area includes a lobe to the north west. This extends north of the railway in the vicinity of Collins Street and Farmers Transport, and also to Tiffen Lane south of the railway.
Prelim suitability	Moderately challenging.....Highly challenging.....Very highly challenging.....Extremely challenging

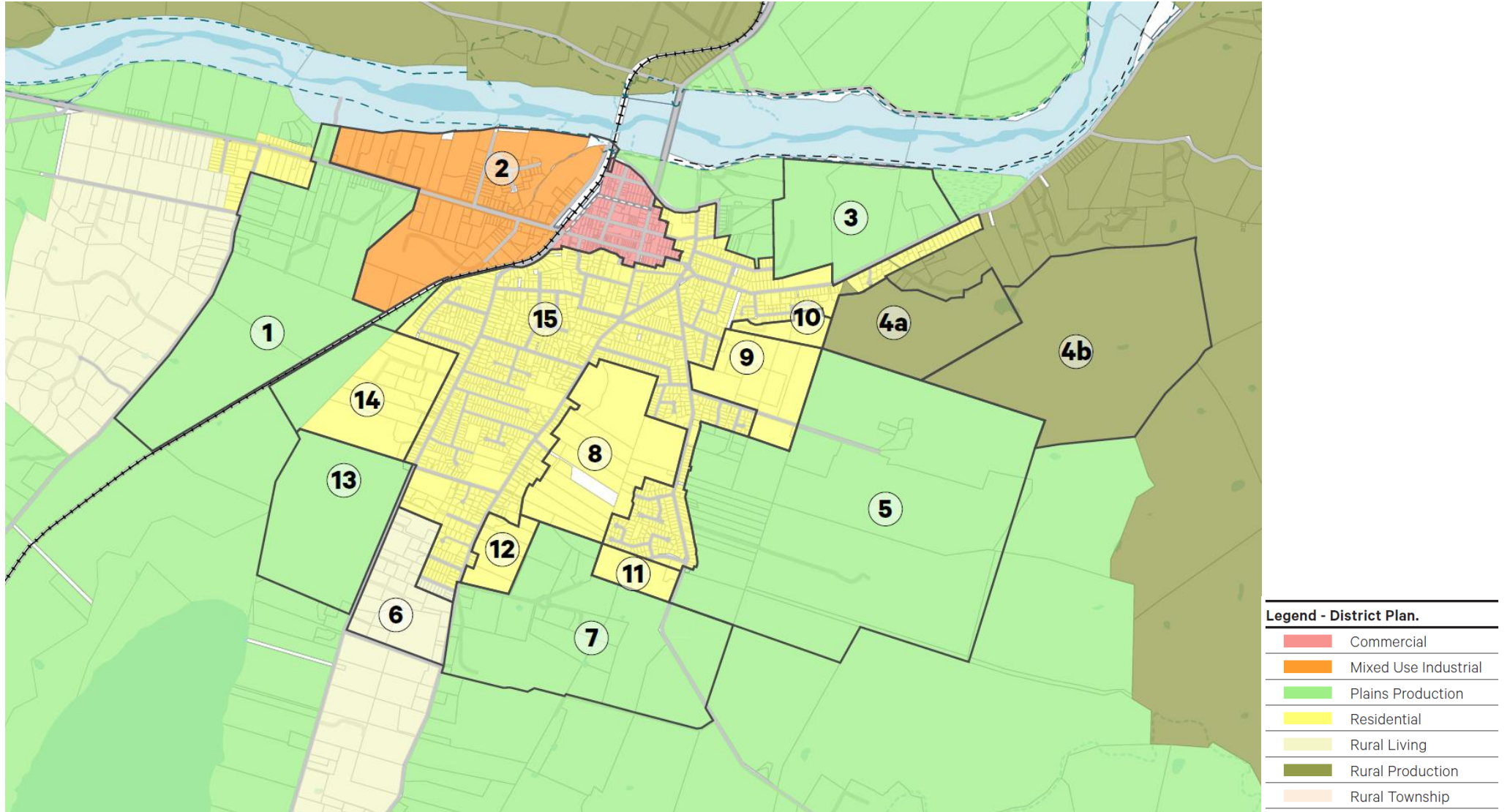
Waipawa Infrastructure Assessment Summary



Legend - Infrastructure Map.

Moderately challenging
Highly challenging
Very highly challenging
Extremely challenging

Waipukurau



Waipukurau 1 Aerodrome

Development Factor	Initial Comment
Stormwater	Drains into Lake Hatuma. This is problematic and will require treatment and consent. May be an opportunity to improve lake water quality if comprehensive upgrade scheme is put in place.
Wastewater	No reticulated system. Will need pumping.
Water	Water supply available from Takapau Road.
Topography	Flat
Hazards / Restrictions - (not including s/w related hazards)	Free of known fault lines. No demarcated flood areas.
Zoning	Operative – Rural; Draft – Plains Production.
Transport	Only public aviation facility in CHB. Hatuma Road is the most likely access option.
Notes	
Prelim suitability	Moderately challenging.....Highly challenging..... Very highly challengingExtremely challenging

Waipukurau 2 Industrial & CBD

Development Factor	Initial Comment
Stormwater	Part of area 2 drains towards Francis Drake Street. Plan Change 4 is relevant to this area. Adding more discharge to this area will be problematic. For Industrial could use open drainage onsite, retention into the river. Needs consideration as land is low lying and could flood around Acklin/Harris Streets.
Wastewater	Not the better side of town for wastewater. Getting close to upper end of network, possible onsite storage then discharge at night option to manage peak requirements.
Water	Better side of town for water. Supply should be ok depending on intensity and type of development. Need to consider firefighting issues.
Topography	Land slopes towards river.
Hazards / Restrictions - (not including s/w related hazards)	Known fault lines. Demarcated flood areas. Refer to District Plan.
Zoning	Operative – Business 2 & 1; Draft – Mixed use industrial & Commercial.
Transport	Access on SH2 needs consideration. NZTA not likely to want further access points. An internal, industrial slip road may be possible to the north.
Notes	Ovation land had development scheme.
Prelim suitability	Moderately challengingHighly challenging.....Very highly challenging.....Extremely challenging

Waipukurau 3 North of Mt. Herbert Road

Development Factor	Initial Comment
Stormwater	Land is currently low lying and would need to be filled to raise above ponding levels. Currently receives runoff from Waipukurau east – this would need to be conveyed through the site. Attenuation and treatment ponds near wastewater ponds are a good option to manage stormwater and to provide odour buffer. Could do work and turn existing drain into wetland corridor or similar.
Wastewater	Three existing gravity sewers traverse the southern portion. May need pumping if sites too low lying. Require buffer for existing ponds.
Water	Will trigger water supply upgrade (unless second supply can be secured on east side of town as is currently being pursued).
Topography	Flat. Currently experiences ponding.
Hazards / Restrictions - (not including s/w related hazards)	Free of known fault lines. No demarcated flood areas.
Zoning	Operative – Rural; Draft – Plains Production.
Transport	River Terrace, Mitchell, Francis Drake and Mt. Herbert provide connectivity options.
Notes	Consequence of Te Waipukurau Pa site unknown. Very close to CBD and sport & recreation facilities.
Prelim suitability	Moderately challenging..... Highly challenging.....Very highly challenging.....Extremely challenging

Waipukurau 4A Golden Hills west

Development Factor	Initial Comment
Stormwater	Will need to discharge to the north.
Wastewater	Will need to determine whether mains north of Mt. Herbert Road have available capacity.
Water	Will trigger water supply upgrade (unless second supply can be secured on east side of town as is currently being pursued).
Topography	Moderate. Falls towards the west.
Hazards / Restrictions - (not including s/w related hazards)	Free of known fault lines. No demarcated flood areas.
Zoning	Operative – Rural; Draft – Rural Production.
Transport	Access would be to Mt. Herbert Road. Important to include pedestrian linkages to the south.
Notes	
Prelim suitability	Moderately challenging.....Highly challenging.....Very highly challenging.....Extremely challenging

Waipukurau 4B Golden Hills east

Development Factor	Initial Comment
Stormwater	Will need to discharge to the north.
Wastewater	Will trigger water supply upgrade (unless second supply can be secured on east side of town as is currently being pursued). The larger lots may utilise on-site wastewater treatment.
Water	Will trigger water supply upgrade (unless second supply can be secured on east side of town as is currently being pursued).
Topography	Moderate. Falls towards the west.
Hazards / Restrictions - (not including s/w related hazards)	Free of known fault lines. No demarcated flood areas.
Zoning	Operative – Rural; Draft – Rural Production.
Transport	Access would be to Mt. Herbert Road. Important to include pedestrian linkages to the south.
Notes	
Prelim suitability	Moderately challenging..... Highly challengingVery highly challenging.....Extremely challenging

Waipukurau 5 Svenson Road

Development Factor	Initial Comment
Stormwater	Very wet in here. Floods regularly. Need significant investment to resolve. Would drain to the north (through Golden Hills) via open drains/swales.
Wastewater	Land is below mains, likely need pump station.
Water	Svenson Street is only 50mm dia., 100mm dia. around college and in Tutanekai Street
Topography	Some areas are low lying
Hazards / Restrictions - (not including s/w related hazards)	Known fault lines. No demarcated flood areas.
Zoning	Operative – Rural; Draft – Rural.
Transport	Tutanekai Street and Svenson Road provide options. Upgrades required?
Notes	
Prelim suitability	Moderately challenging.....Highly challenging.....Very highly challenging.....Extremely challenging

Waipukurau 6 Rose Street

Development Factor	Initial Comment
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Stormwater	Need care consideration. Would drain to the south.
Wastewater	Beyond current extent of gravity mains. May require pumping especially from the southwest portion.
Water	100mm dia. Main currently stops just north of Rose Street. May need to loop to Racecourse Road.
Topography	Slopes to the west
Hazards / Restrictions - (not including s/w related hazards)	Free of known fault lines. No demarcated flood areas.
Zoning	Operative – Rural; Draft – Rural Living.
Transport	
Notes	
Prelim suitability	Moderately challenging.....Highly challenging..... Very highly challengingExtremely challenging

Waipukurau 7 Southeast Porangahau Road

Development Factor	Initial Comment
Stormwater	Known areas of flooding in this area. Drains to south. Will require a comprehensive infrastructure solution.
Wastewater	No wastewater service in this area. Will need to pump towards treatment plant. And will need to avoid overload of existing systems potentially caused by pumping.
Water	Porangahau Road main is 100mm dia. At north west corner of area.
Topography	Slopes down away from Porangahau Road
Hazards / Restrictions - (not including s/w related hazards)	Known fault lines. No demarcated flood areas.
Zoning	Operative – Rural; Draft – Plains Production.
Transport	Access would be from Farm and/or Porangahau Roads.
Notes	
Prelim suitability	Moderately challenging.....Highly challenging..... Very highly challengingExtremely challenging

Waipukurau 8 Hospital and surrounds

Development Factor	Initial Comment
Stormwater	Attenuation needed. Appears to drain towards the north east.
Wastewater	Downstream issues. Pumping likely needed. Would trigger new gravity or rising main east of school heading northwards.
Water	Should be good. Existing high pressure loop from Tavistock to Porangahau Road at southern border.
Topography	Slopes towards the east.

Hazards / Restrictions - (not including s/w related hazards)	Known fault lines. No demarcated flood areas.
Zoning	Operative – Residential; Draft – Residential.
Transport	Winlove, Stiles, Leeton and Tavistock provide options to the east. Porangahau Road to the west.
Notes	
Prelim suitability	Moderately challenging.....Highly challenging..... Very highly challengingExtremely challenging

Waipukurau 9 College

Development Factor	Initial Comment
Stormwater	This area is currently a collection point for stormwater from the south and west. An open drain begins here and conveys water to the north. There is currently undeveloped land here and there is therefore an opportunity to secure the necessary land and implement a comprehensive drainage scheme here. This would include upgrading or securing a corridor for conveyance (probably to the north).
Wastewater	It is likely possible to gravitate from this area towards Mt. Herbert road to the north east.
Water	100mm dia. Main in Tutanekai Street
Topography	Wet up the top of Duck Creek which flows through the land. Damp, creek flows through it.
Hazards / Restrictions - (not including s/w related hazards)	Fault line identified. No demarcated flood areas.
Zoning	Operative – Residential; Draft – Residential.
Transport	Access is available from Svenson Road and Tutanekai Street.
Notes	
Prelim suitability	Moderately challenging..... Highly challengingVery highly challenging.....Extremely challenging

Waipukurau 10 Belgrove

Development Factor	Initial Comment
Stormwater	Current consent is proposing a retention pond
Wastewater	Can connect with capacity
Water	Can connect with capacity
Topography	Easy country.
Hazards / Restrictions - (not including s/w related hazards)	Free of known fault lines. No demarcated flood areas.

Zoning	Operative – Residential; Draft – Residential.
Transport	Connects to Mt. Herbert Road.
Notes	Already has subdivision in place, extension of Belgrove Drive. designed stormwater retention in the system Consent in for this site and under design now
Prelim suitability	Moderately challenging.....Highly challenging.....Very highly challenging.....Extremely challenging

Waipukurau 11 Redwood Drive south

Development Factor	Initial Comment
Stormwater	Needs careful design. Would drain to the south.
Wastewater	Needs pump to get out – at extremities of sewer system.
Water	Would need very short water system extension to this area
Topography	Fairly flat
Hazards / Restrictions - (not including s/w related hazards)	Known fault lines. No demarcated flood areas.
Zoning	Operative – Residential; Draft – Residential.
Transport	Access would be from Farm Road (aka Tavistock Road)
Notes	This is an old truck wash. Right beside pumping station, old truck yard, extremities of sewer system.
Prelim suitability	Moderately challenging.....Highly challenging.....Very highly challenging.....Extremely challenging

Waipukurau 12 East of Eden

Development Factor	Initial Comment
Stormwater	Would probably go south east towards Mangaohara Stream.
Wastewater	No WW nearby. Could gravitate to Redwood – longer term. Pumping if short term.
Water	Near high pressure ring main (150mm dia.) from Porangahau to Tavistock.
Topography	Slopes to the east (away from road).
Hazards / Restrictions - (not including s/w related hazards)	Various fault lines identified. No demarcated flood areas.
Zoning	Operative – Residential; Draft – Residential.
Transport	Access would be from Porangahau Road.
Notes	
Prelim suitability	Moderately challenging.....Highly challenging.....Very highly challenging.....Extremely challenging

Waipukurau 13 Racecourse

Development Factor	Initial Comment
Stormwater	Would require a comprehensive drainage scheme as it drains towards Lake Hatuma.
Wastewater	Would need to be collected and pumped. A discharge point free of downstream problems (i.e. with downstream capacity) would be required.
Water	100mm dia. Mains join at the corner of Lake View and Racecourse. This would likely be inadequate for a development of significant scale.
Topography	
Hazards / Restrictions - (not including s/w related hazards)	Free of known fault lines. No demarcated flood areas.
Zoning	Operative – Rural; Draft – Plains Production.
Transport	Access would be from Racecourse Road. The railway limits and access from the west. There are opportunities of pedestrian linkages to Lake Hatuma.
Notes	
Prelim suitability	Moderately challenging.....Highly challenging..... Very highly challengingExtremely challenging

Waipukurau 14 Viax Lane (north of Racecourse)

Development Factor	Initial Comment
Stormwater	This area drains south west to Lake Hatuma. It may be possible to allow some development without triggering a full scale Hatuma scale solution. This might include treatment to the west beside the railway line.
Wastewater	The area is traversed by a 225mm dia. Main heading to the north. It is unlikely that all of the site could gravitate into this line meaning at least some pumping.
Water	There is a 150mm dia. main in Racecourse Road as far south as Freyburg.
Topography	Flat
Hazards / Restrictions - (not including s/w related hazards)	Free of known fault lines. No demarcated flood areas.
Zoning	Operative – Residential; Draft – Residential.
Transport	Access would need to be from Racecourse Road.
Notes	
Prelim suitability	Moderately challengingHighly challenging.....Very highly challenging.....Extremely challenging

Waipukurau 15 Existing residential

Development Factor	Initial Comment
Stormwater	Part of area 15 drains towards Francis Drake Street. Plan Change 4 is relevant to this area. Adding more discharge to this area will be problematic. On-site detention may enable some lots to be developed in problem areas.
Wastewater	All of this area is serviced meaning that there is WW infrastructure available. There may be capacity problems in some areas.
Water	Around and north of Ruataniwha Street the CBD is served by a low pressure system sourced from the Pukekaihai reservoir.
Topography	
Hazards / Restrictions - (not including s/w related hazards)	Various fault lines identified. Flooding identified in the District Plan in vicinity of Francis Drake Street.
Zoning	Operative – Residential; Draft – Residential.
Community Response	
Transport	Existing roading system likely to cope with infill. Some further requests for footpaths, streetlighting and kerb and channel anticipated.
Ownership	
Power and Utilities	
Market	350 sq. m minimum lot size allows significant potential for infill.
Notes	
Prelim suitability	Moderately challenging.....Highly challenging.....Very highly challenging.....Extremely challenging

Waipukurau Infrastructure Assessment Summary

