



18 November 2019

Kapiti Coast District Council
Private Bag 60 601
Paraparaumu 5254

Dear Amy

Further Information request – 35 Kaitawa Street

With regard to your request for information please find below our responses.

1. **An amended plan with height in relation to boundary shown for:**
 - a. **Water tanks and accessory buildings**
 - b. **Location of the water tanks in relation to the boundaries.**

The water tanks and sheds will be a maximum of 2.0m in height and will therefore comply with the 2.1m plus 45° recession plane requirements. As stated in the application and shown on the plans the water tanks will be located on the boundaries with a 1m yard encroachment which has been applied for as part of the application.

2. **Amend the plan for the outdoor living court.**

The living court provisions are complied with. It will have direct access off the main living area of the dwelling in the form of the deck. Also more than sufficient outdoor space is provided.

3. **Amend the site plan showing the shape factor for both proposed lots.**

Please see the attached plan – this does not comply as the original site is not 18m wide.

4. **Conformation as to whether the dwelling will be constructed prior to the subdivision.**

The dwelling will more than likely be constructed prior to the completion of the subdivision which will result in a technical non-compliance until the subdivision has been completed. This will not result in any greater effect than has already been discussed in detail in the application in relation to residential character and amenity.

5. **Provision of a transport assessment.**

Please see attached assessment.

6. **Provision of comment on compliance with the sight lines**

Please see attached traffic assessment.



7. Provision of an updated services plan.

Please see the attached report.

Regards

A handwritten signature in black ink that reads "Michelle Grinlinton-Hancock". The signature is written in a cursive, flowing style.

Michelle Grinlinton-Hancock
Work Group Manager - Planning and Community Engagement



Memorandum

To	Michelle Grinlinton-Hancock
Copy	
From	Sam Thornton
Office	Wellington Civil
Date	6 November 2019
File	N-H0060.03
Subject	Further Information Request – Resource Consent Application – 35 Kaitawa Crescent (190125)

Dear Michelle,

As requested, please find below a traffic safety assessment addressing the comments in the Further Information Request for the proposed sub-division at 35 Kaitawa Crescent.

My Qualifications

I am a Principal Transportation Engineer at WSP. I have 13 years of experience working in transportation engineering. I hold a bachelor's degree in civil engineering from the University of Canterbury and I am a Chartered Professional Engineer and Chartered Member of Engineering New Zealand.

Background

The proposed sub-division of 35 Kaitawa Crescent, Paraparaumu does not comply with the following rules and standards for a permitted activity regarding parking provision:

11P.1.2 Residential activities

- 1 A minimum of 2 carparks (including garages or carports) per household unit except for in Precincts A1 and A2 and C in the District Centre Zone and Raumati Beach Town Centre Zone. Minor flats are exempt from this standard.

A further information request (as detailed below) has been made following the initial application for sub-division.

In addition, the decision has been made to provide two car parks in a tandem arrangement (cars parking end to end with the front car unable to exit without the back car leaving first) for the rear dwelling. Tandem parking layouts are not identified in AS/NZS 2890.1:2004 which is referenced in the Kapiti Coast District Plan¹.

The proposed sub-division is shown in Figure 1 below and in summary is to:

- Subdivide one existing section (with an existing dwelling which is to be removed) into two new sections;
- The front section will have a 72m² floor area unit with two bedrooms;

¹ Section J.1.2.3

- The back section will have a 139m² total floor area (79m² ground floor area) unit with four bedrooms; and
- Provide a shared driveway with one off-street parks for the front section and a tandem off-street park for the rear-section.

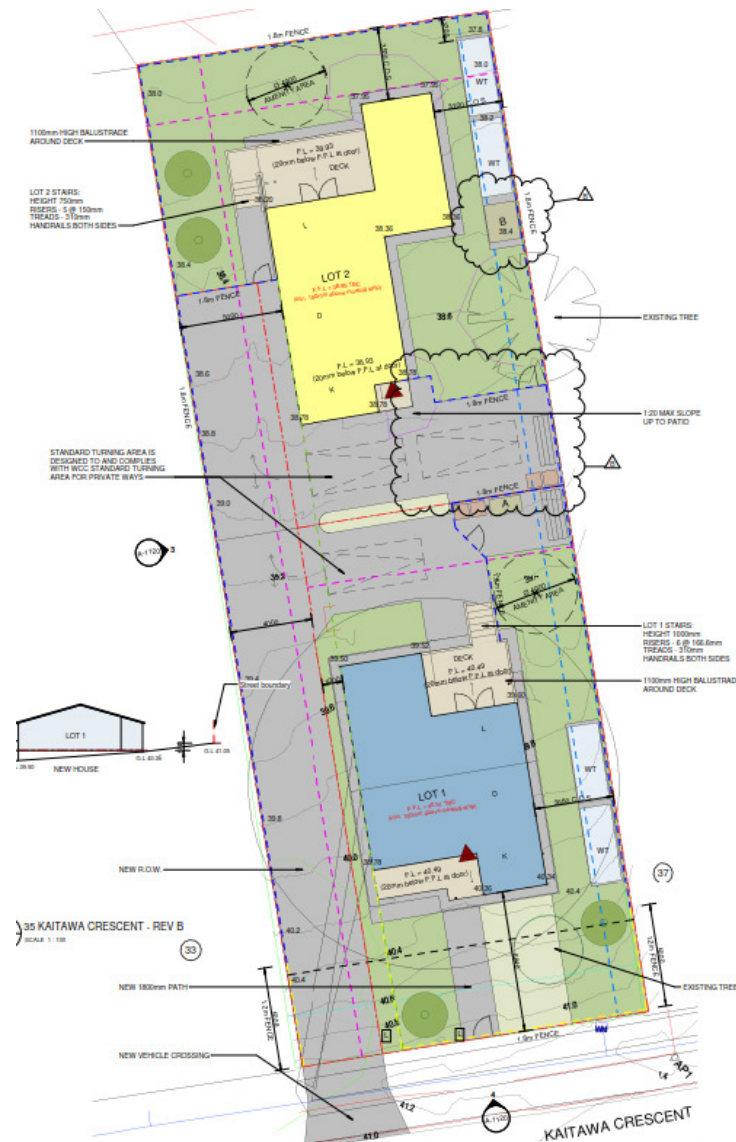


Figure 1: Proposed subdivision

Requested Information

Supply a traffic safety assessment by a suitably qualified person assessing the relevant safety and transport policies and objectives of the Proposed District Plan relating to the non-compliance. Provide an amended Assessment of Environmental Effect assessing all of the relevant objectives and policies relating to the shortfall of parking spaces.

Transport and Land-Use Context

This section provides some brief transport and land-use context.

Transport Network

Figure 2 shows the adjacent transport network, features include:

- Bus route (shown with blue arrows) along Ruapehu Street (only operates Mondays and Wednesdays);

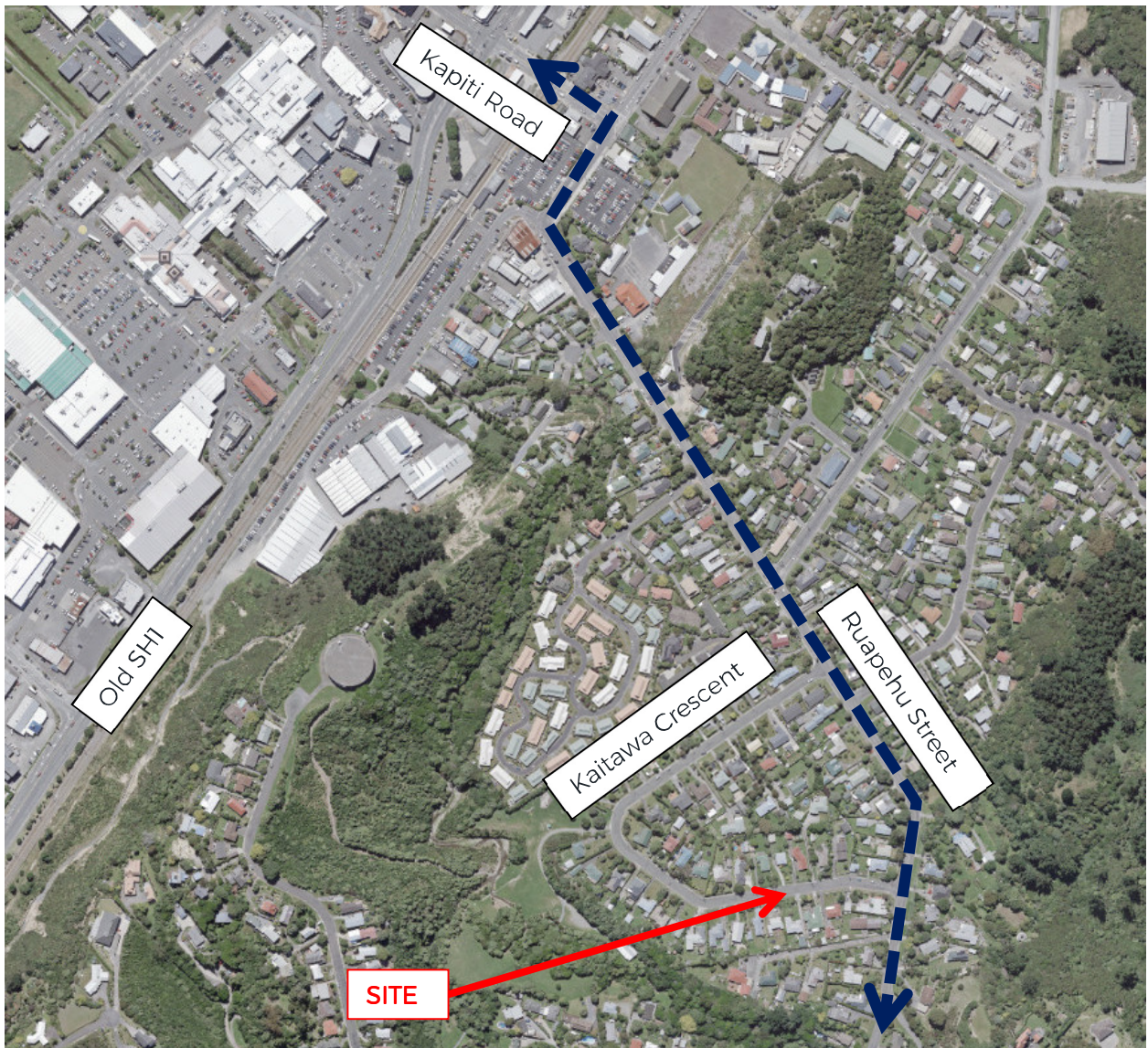


Figure 2: Adjacent transport network

Transport Demands

The traffic demands on Kaitawa Crescent are estimated to be 87 average daily vehicles².

No parking demand information is available. However, review of historic aerial imagery for the past 10 years from Google Earth indicates that demand is low (along the length of Kaitawa Crescent)

Crash History

Ten years (2009-2019³) of crash history have been retrieved from the NZ Transport Agency Crash Analysis System (CAS) for the length of Kaitawa Crescent.

Two crashes were recorded in CAS:

- One non-injury crash occurred at the southern intersection of Kaitawa Crescent and Ruapehu Street with a southbound vehicle on Ruapehu Street doing a u-turn at the intersection being hit by a following car.
- One minor injury crash occurred on Kaitawa Crescent where a northbound vehicle lost control at excess speed in wet conditions and hit two concrete poles.

² <https://mobileroad.org/desktop.html>

³ Retrieved on 11 October 2019

Street Form

Aerial photography⁴ indicates that the road carriageway is approximately 8.0m wide.

NZS 4404 (2010) notes⁵ that a width of 7.2-7.5m provides for either two through movements and one parked car or two parked cars and one through movement.

Census Data

The following information has been retrieved from the 2013 census and has been provided for the following areas:

- Kapiti Coast District;
- Paraparaumu Central Ward; and
- Meshblock 1997400 (the area within the Kaitawa Crescent loop).

Vehicles per household

Figure 3 below shows that approximately 50% of households in the Kapiti Coast District have one vehicle or less and 90% have two vehicles or less. At a more local level, on Kaitawa Crescent, the ownership rates are slightly lower with around 60% having one vehicle or less and around 90% having two vehicles or less.

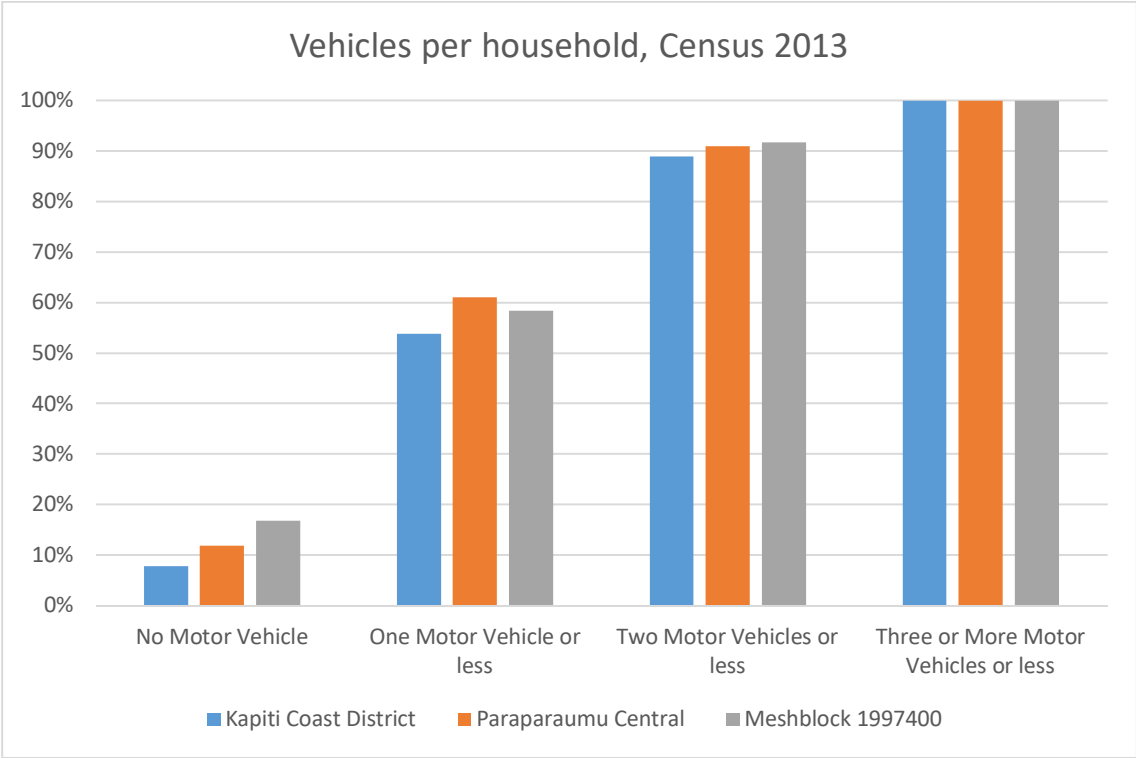


Figure 3: Cumulative vehicles per household, Census 2013

⁴ <https://publicgis.kcdc.govt.nz/LocalMaps/Viewer/>

⁵ Section 3.3.2 (b)

Residents per household

Figure 4 shows that approximately 70% of households in the Kapiti Coast District have two residents or less. At a more local level, on Kaitawa Crescent, the occupancy rates are higher with around 55% having two residents or less

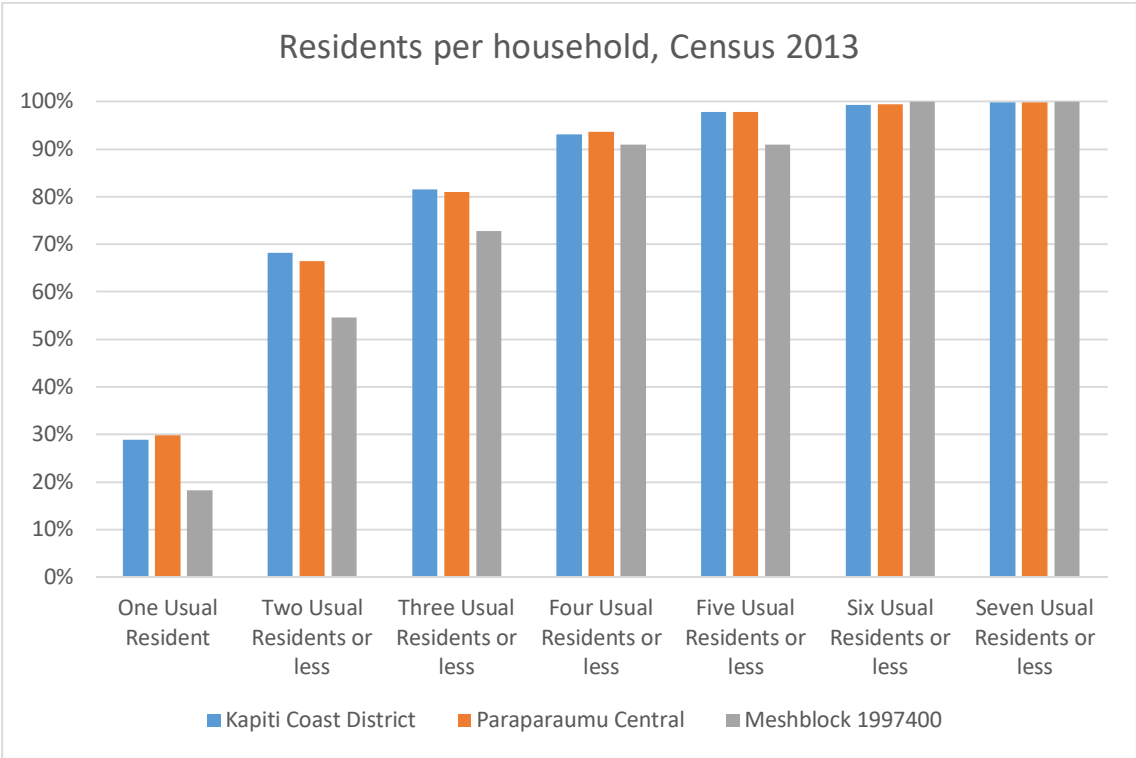


Figure 4: Cumulative residents per household, Census 2013

Bedrooms per dwelling

Figure 5 shows that approximately 30% of dwellings in the Kapiti Coast District have two bedrooms or less with approximately 90% having four bedrooms or less. At a more local level, on Kaitawa Crescent, around 15% of dwellings have two bedrooms or less with around 90% having four bedrooms or less.

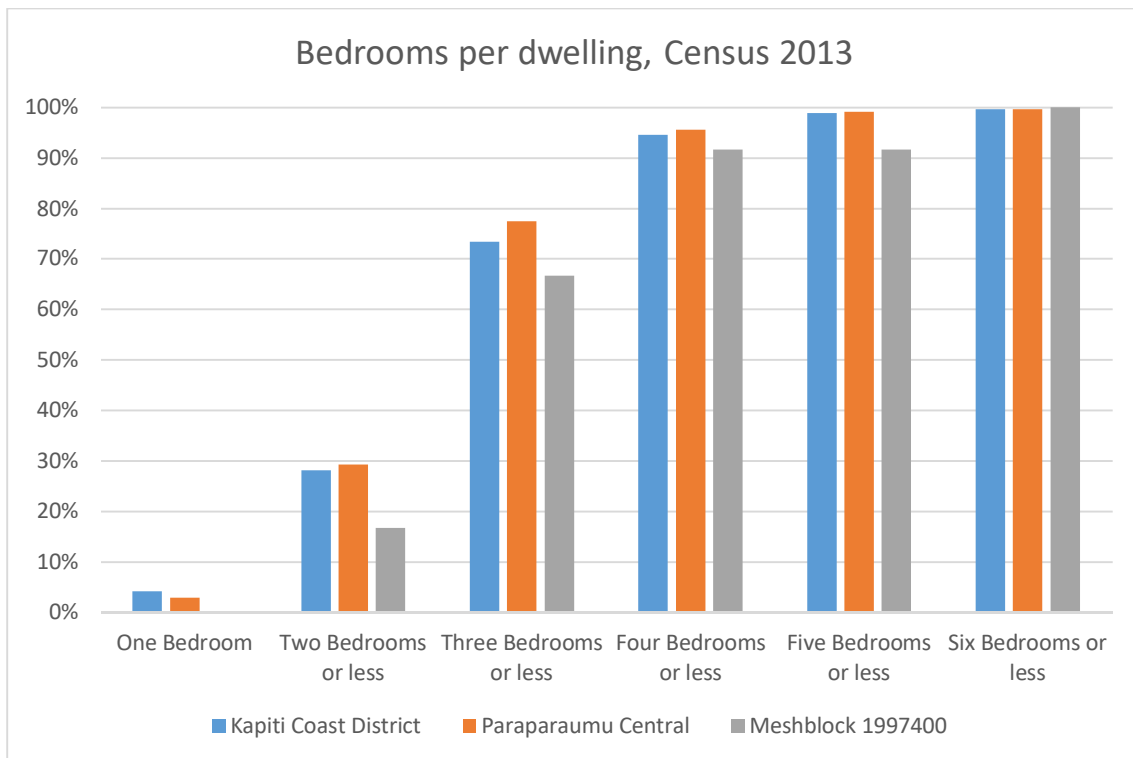


Figure 5: Cumulative bedrooms per dwelling, Census 2013

Summary of Census data

The data above indicates that households / dwellings in and around Kaitawa Crescent have slightly fewer vehicles per household but more bedrooms per dwelling and residents per household when compared to the overall Kapiti Coast District.

The census data indicates that the majority of dwellings in the Kapiti District have more than two bedrooms but less than four bedrooms. Therefore, the proposed front unit is smaller than typical and the rear unit is typical for the district. In addition, the data suggests low car ownership in and around Kaitawa Crescent (60% of households have one vehicle or less) when compared to the overall Kapiti Coast District.

Proposed District Plan

Policies

The following transport policies are relevant to the proposed sub-division regarding the non-compliance associated with the amount of on-site parking provided:

- Policy 11.30 - Integrated Transport and Urban Form
- Policy 11.34 - Effects of Land use on Transport
- Policy 11.36 - Parking

The relevant sub-sections of the policies are expanded in the assessment section below.

Referenced Information

The following information is referenced in the above policies.

Transport Network Hierarchy in Schedule 11.2

Kaitawa Crescent is identified on the transport network hierarchy map as being a Neighbourhood Access Routes (which includes all other Local Roads). Neighbourhood Access Routes are defined as

“Roads providing direct access for residential and other areas of development in urban areas, with more than one intersection to other local or collector roads, and:

- provides access to: local residential neighbourhoods; schools; reserves.
- can include local walkways, beach access, residential lanes;
- will be low speed;
- will have low traffic volume”.

Subdivision and Development Principles and Requirements 2012

The following extracts from the Subdivision and Development Principles and Requirements 2012 are noted as relevant to the proposed sub-division regarding the non-compliance associated with the amount of on-site parking provided:

D (i) Sustainable Transport Strategy

- The Council wishes to encourage pleasant, walkable neighbourhoods, with a low speed environment, which provides increased amenity by, for example, enhancing connectivity, decreasing the area of sealed surfaces, differentiating parking bays and providing associated landscaping.

D (iii) Performance Criteria

- The layout and structure of a road network and its associated amenities shall provide for appropriate car parking, including that associated with reserves.

Assessment of Traffic and Safety

Table 1 below provides an assessment of the proposed subdivision against the Proposed District Plan policies and objectives relating to the non-conformance of the proposed sub-division.

Overall the proposed sub-division is consistent with the Proposed District Plan policies and objectives relating to parking despite the non-conformance in the number of parks for the front unit and the rear units parks not being designed in accordance with AS/NZS 2890.1:2004.

Table 1: Assessment of policies and objectives relating to the non-conformance of the proposed sub-division

Policy / objective	Assessment
<p>Policy 11.30 – Integrated Transport and Urban Form</p> <p>Development and subdivision will be integrated with and consistent with the transport network hierarchy in Schedule 11.2, and undertaken in a manner and at a rate to ensure:</p> <ul style="list-style-type: none"> • a) the transport network is capable of serving the projected demand safely and efficiently; • d) development is consistent with Council’s Subdivision and Development Principles and Requirements 2012; 	<p>Overall the proposed subdivision is consistent with Policy 11.30. Further information is provided below.</p> <p>With regard to 11.30 (a):</p> <ul style="list-style-type: none"> • The transport network is more than capable of serving the minor increase in parking demand that may result from the subdivision (refer assessment of Policy 11.36 below). <p>With regard to 11.30(d):</p> <ul style="list-style-type: none"> • The Subdivision and Development Principles and Requirements 2012 are not directly relevant to the proposed subdivision with regard to parking provision off-street (other than the reference to AS/NZS 2890.1:2004). • However, the subdivision is consistent with the following aspects of the requirements: <ul style="list-style-type: none"> • It is possible for vehicles parking-off-street to enter and exit the subdivision in a forward direction⁶ which is an improvement on the existing situation as the current properties have no formal turning facilities. However, this arrangement can be quite time-consuming, and some users may choose instead to park on the street. • Any overflow parking that does occur and parks on the street will help to control vehicle speeds along Kaitawa Crescent.

⁶ For the tandem park this is based on the assumption that if the car in the front park wants to get out that the back car will reverse into the driveway towards the road and allow the front car to reverse into the driveway away from the road. The back car will then enter the car park area again and the front car can exit the driveway in a forward direction. It is acknowledged that in some circumstances the back car may reverse out to the road instead. There are no issues for the single park for the front unit

Policy / objective	Assessment
<p>Policy 11.34 – Effects of Land use on Transport</p> <p>The potential adverse effects on the transport network from development and subdivision will be avoided, remedied or mitigated by identifying both the key existing transport routes and proposed transport routes likely to be required long term as part of the District’s transport network and having regard to these when considering applications for subdivision or development.</p>	<p>Overall the proposed subdivision is consistent with Policy 11.34. Further information is provided below.</p> <ul style="list-style-type: none"> • The expected transport effects on the transport network associated with the minor increase in parking demand that may result from the subdivision are minor in effect (refer assessment of Policy 11.36 below).
<p>Policy 11.36 – Parking</p> <p>All new subdivision and development shall provide for safe vehicular and pedestrian access and appropriate vehicle parking areas by:</p> <ul style="list-style-type: none"> • a) providing parking numbers, layouts and dimensions consistent with parking standards; • b) supplying adequate off street parking to meet the demand of the land use while having regard to the following factors: <ul style="list-style-type: none"> • i. the intensity, duration location and management of the activity. • ii. the adequacy of parking in the location and adjacent areas. • iii. the classification and use of the road (as per transport network hierarchy in Appendix 11.2), and the speed restrictions that apply. • iv. the nature of the site, in particular its capacity to accommodate parking. • v. the characteristics of the previous activity that utilised the site; 	<p>Overall the proposed subdivision is largely consistent with Policy 11.36. Further information is provided below.</p> <p>With regard to 11.36 (a):</p> <ul style="list-style-type: none"> • For the rear unit, the parking layout of the tandem park is not consistent with parking standards. • For the front unit, the number of off-street parks provided is not consistent with the rules of the District Plan. <p>With regard to 11.36 (b):</p> <ul style="list-style-type: none"> • Parking demand for the proposed subdivision is not expected to be two vehicles for the front dwelling (parking demand for two vehicles is expected for the rear unit). The two vehicles per dwelling standard applies to all dwellings regardless of size and number of bedrooms. Information from the 2013 census indicates that only 30% of dwellings in the Kapiti District have two or less bedrooms. • The proposed front unit dwelling is relatively small by modern standards and only has two bedrooms and therefore is likely to have lower car ownership than might typically be expected in Kapiti. This is supported by the 2013 census data which suggests low car ownership in and around Kaitawa Crescent (60% of households have one vehicle or less) when compared to the overall Kapiti Coast District. • The proposed subdivision provides three carparks which can be used by vehicles to enter and exit the subdivision in a forward direction⁶. • The road frontage of the proposed subdivision is approximately 17m of



Policy / objective	Assessment
	<p>which 4m is used for the vehicle access. The remaining 13m provides sufficient width for two on-street parks (typical parallel parks are approximately 6m long).</p> <ul style="list-style-type: none"> • No parking demand data is available for Kaitawa Crescent, however, based on available information demands are very low, with plenty of capacity for on-street parking. • Kaitawa Crescent is a Neighbourhood Access Routes / Local Road with low traffic demands and sufficient width for parking on one side and two traffic lanes or parking both sides with one traffic lane. Use of on-street parking should help to reduce vehicle speeds and improve safety. • The proposed subdivision is residential which is consistent with its previous use.

12 November 2019

Resource Consent Team
 Kapiti Coast District Council
 175 Rimu Road
 Private Bag 60601
 Paraparumu 5245

Ref: N-H0060.01

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 L9, Majestic Centre, 100 Willis St
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 New Zealand

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 www.wsp-opus.co.nz

35 Kaitawa Crescent(Update): Water Storage and Hydraulic Neutrality

Dear Resource Consent Team

This letter describes minor updates to the stormwater system at 35 Kaitawa Crescent to accommodate an additional 8 m² of permeable paving surface. Tank sizes have been adjusted slightly but still remain within the original tank height and footprint sizes.

There are no changes to the rainwater capture, pumping or soakage systems proposed for these sites.

1.1 Updates to Pumping and Attenuation Sizing

Minor changes to the paving areas are present in Figure 1 and amended stormwater calculations are appended in Appendix A.

Results are summarised in Table 1.

Table 1. Summary of Attenuation Calculations

	Stormwater Results Lot 1	Stormwater Results Lot 2
Pumped Depth	0.30 m	0.33 m
Pumped Volume	2400 L	2640 L
Pumped Capture	24 mm of rainfall	25 mm of rainfall
Pumped Discharge	0.30 L/s	0.30 L/s
Attenuation Depth	0.43 m	0.43 m
Attenuation Volume	3230 Litres	3450 Litres
Orifice Size	20 mm	20 mm

Rainwater tank sizes have been updated slightly. Results are summarised in Table 2.

Table 2. Summary of Tank Selections

	Tank Selection Lot 1	Tank Selection Lot 2
Proposed Tank Volume	12800 Litres	12800 Litres
Tank Height	1.6 m	1.6 m
Attenuation Height	0.40 m	0.43 m

Pumped Height	0.30 m	0.33 m
Storage Height	0.72 m	0.67 m
Headspace	180mm	170 mm
Attenuation Volume	3230 Litres	3450 Litres
Pumped Volume	2400 Litres	2640 Litres
Storage Volume	5730litres	5350Litres
Approx. Base Level	40.1 m	38.1 m
Approx. Orifice Level	40.8 m	38.8 m
Minimum Attenuation Volume to achieve hydraulic neutrality (Note 1)	1310 Litres	1330 Litres
Note 1. The minimum attenuation volume is provided here to demonstrate that this design exceeds the hydraulic neutrality standard. Additional calculations to demonstrate the minimum requirement are included in Appendix D.		

There are no other changes to the proposed stormwater system. We trust that this information is sufficient to allow the resource consent to proceed, please don't hesitate to contact us if anything else is required.

Kind Regards



Tim Strang
Principal Engineer Environmental

2 Appendix A. Attenuation Tank Calculations

STORMWATER ON-SITE DETENTION TANK (OSD) DESIGN 12-Nov-19
100 YEAR ARI STORM with 2 YEAR ARI STORM OUTLET

442 m² Lot with 99 m² house plus 65 m² impervious

NAME Housing NZ Calcs By Tim Strang
 ADDRESS 35 Kaitawa Lot 1
 PHONE 276088998 Date 12-Nov-19

NOTE:
 Only fill in the blue (unprotected) cells

DATA

Depth of Tank 0.4 m
 2 Year Isoheyt Value 80 mm
 100 Year Isoheyt Value 172 mm
 Time of Concentration 10 min. (10,15,20,30,60)

NOTE A "#DIV/0!" message appearing in a cell means that data has been entered incorrectly

	Area (m ²)	`C`	CA (m ²)
Site Area	442		
1. EXISTING SITE COVERAGE			
Existing Roof	60	0.9	54.0
Existing Paved	94	0.85	79.9
Existing Permeable Paving	0	0.5	0.0
Existing Garden	288	0.35	100.8
TOTAL Existing Area	442		234.7
2. PROPOSED DEVELOPMENT			
Additional/Reduced Roof	39	0.9	35.1
Additional/Reduced Paved	-29	0.85	-24.7
Additional Permeable Paving	144	0.5	72.0
Additional/Reduced Lawn/Garden	-154	0.35	-53.9
TOTAL Addition Area (should be zero)	0		28.6
3. REMAINING UNDRAINED AREA (Not routed thru detention tank after development)			
Undrained Roof Area (Normally Zero)	0	0.9	0.0
Undrained Paved Area (Normally Zero)	65	0.85	55.3
Permeable Paving Area	144	0.5	72.0
Undrained Lawn/Garden Area	134	0.35	46.9
TOTAL Extg Not to Tank Area	343		174.2

NOTE The sum of the existing areas must equal the `Site Area`

* NOTE If pre-development lawn areas are reduced a negative number is required to be entered.

CONTROL DATA

Existing `C` 0.53 ($\frac{CA_{extg}}{Site\ Area}$)
 Developed `CA` to OSD tank 89 (m²) ($CA_{extg} + CA_{adds} - CA_{undr}$)
 Additional Area 0 (m²) (A_{add})

0.00 0 0

RUNOFF DATA				for 2 year		for 100 year		Rainfall Intensities (mm)					
								Normalised Rainfall					
								MIN	Depth (l/l ₂₄)	2 Yr (mm/hr)	100 Yr (mm/hr)		
Intensity I		52.80	mm/hr			113.5	mm/hr	10	0.11	52.8	113.5		
Allowable Qmax whole site		3.45				7.41		15	0.14	44.8	96.3		
Lost Flows		2.56				5.50		20	0.16	38.4	82.6		
Reduced Flow (sump capacity)		0.57						30	0.19	30.4	65.4		
Allowable Qmax from tanks =		0.3	l/s			1.91	l/s	60	0.26	20.8	44.7		
Allowable Qave from tanks =		0.2	l/s			1.2	l/s (Qmax * 0.65)	120	0.35	14.0	30.1		
								180	0.46	12.3	26.4		
								240	0.51	10.2	21.9		
								300	0.56	9.0	19.3		
								360	0.60	8.0	17.2		
								420	0.64	7.3	15.7		
								480	0.68	6.8	14.6		
								540	0.71	6.3	13.6		
								600	0.75	6.0	12.9		
								660	0.78	5.7	12.2		
								720	0.81	5.4	11.6		
Orifice Calculation - PROTECTED DO NOT ENTER ANY FIGURES													
d=		19.9	mm										
Q100 outflow=	0.5444026	for h=	0.4										
Q100ave	0.4												
Q=	0.318840139	for h in Q2	0.1372036										
Qave	0.2	Q2											
STORAGE (2 year)						STORAGE (100 year)							
time (min)	depth (mm)	inflow (l)	outflow (l)	storage (l)		time (min)	depth (mm)	inflow (l)	100 yr outflow (l)	Storage (100 yr) (l)			
10	8.8	784	124.34765	660	inflow='CA'dev*depth	10	18.9	1686	212.3170142	1473			
15	11.2	998	186.52148	811	outflow=Qave*time	15	24.1	2146	318	1827			
20	12.8	1140	249	892	diff=inflow-outflow	20	27.5	2452	425	2027			
30	15.2	1354	373	981		30	32.7	2912	637	2275			
60	20.8	1853	746	1107		60	44.7	3985	1274	2711			
120	28.0	2495	1492	1003		120	60.2	5364	2548	2816			
180	36.8	3279	2238	1041		180	79.1	7050	3822	3228			
240	40.8	3635	2984	651		240	87.7	7816	5096	2720			
300	44.8	3992	3730	261		300	96.3	8582	6370	2213			
360	48.0	4277	4477	0		360	103.2	9195	7643	1552			
420	51.2	4562	5223	0		420	110.1	9808	8917	891			
480	54.4	4847	5969	0		480	117.0	10421	10191	230			
540	56.8	5061	6715	0		540	122.1	10881	11465	0			
600	60.0	5346	7461	0		600	129.0	11494	12739	0			
660	62.4	5560	8207	0		660	134.2	11954	14013	0			
720	64.8	5774	8951	0		720	139.3	12413	15287	0			
			Max=	1107					Max=	3228			
SUMMARY													
Tank Volume		3230.0 litres											
100 Year Max Discharge		0.5 l/s											
2 Year Max Discharge		0.3 l/s											
Orifice Diameter		20 mm											

STORMWATER ON-SITE DETENTION TANK (OSD) DESIGN 12-Nov-19
100 YEAR ARI STORM with 2 YEAR ARI STORM OUTLET

400 m² Lot with 105 m² house plus 20 m² impervious

NAME Housing NZ Calcs By Tim Strang
 ADDRESS 35 Kaitawa Lot 2
 PHONE 276088998 Date 12-Nov-19

NOTE:
 Only fill in the blue (unprotected) cells

DATA

Depth of Tank 0.43 m
 2 Year Isoheyt Value 80 mm
 100 Year Isoheyt Value 172 mm
 Time of Concentration 10 min. (10,15,20,30,60)

NOTE A "#DIV/0!" message appearing in a cell means that data has been entered incorrectly

	Area (m ²)	`C'	CA (m ²)
Site Area	400		
1. EXISTING SITE COVERAGE			
Existing Roof	85	0.9	76.5
Existing Paved	20	0.85	17.0
Existing Permeable Paving	0	0.5	0.0
Existing Garden	295	0.35	103.3
TOTAL Existing Area	400		196.8
2. PROPOSED DEVELOPMENT			
Additional/Reduced Roof	20	0.9	18.0
Additional/Reduced Paved	0	0.85	0.0
Additional Permeable Paving	109	0.5	54.5
Additional/Reduced Lawn/Garden	-129	0.35	-45.2
TOTAL Addition Area <small>(should be zero)</small>	0		27.4
3. REMAINING UNDRAINED AREA <small>(Not routed thru detention tank after development)</small>			
Undrained Roof Area <small>(Normally Zero)</small>	0	0.9	0.0
Undrained Paved Area <small>(Normally Zero)</small>	20	0.85	17.0
Permeable Paving Area	109	0.5	54.5
Undrained Lawn/Garden Area	166	0.35	58.1
TOTAL Extg Not to Tank Area	295		129.6

NOTE The sum of the existing areas must equal the 'Site Area'

* NOTE If pre-development lawn areas are reduced a negative number is required to be entered.

CONTROL DATA

Existing `C' 0.49 (`CA'extg/Site Area)
 Developed `CA' to OSD tank 95 (m²) (`CA'extg+`CA'adds-`CA'undr)
 Additional Area 0 (m²) (`A'add)

0.00 0 0

STORMWATER ON-SITE DETENTION TANK (OSD) DESIGN 12-Nov-19
100 YEAR ARI STORM with 2 YEAR ARI STORM OUTLET

442 m² Lot with 99 m² house plus 65 m² impervious

Minimum Volume for Hydraulic Neutrality

NAME: Housing NZ Calcs By: Tim Strang
 ADDRESS: 35 Kaitawa Lot 1
 PHONE: 276088998 Date: 12-Nov-19

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CONTROL DATA

Existing `C'	0.53	(`CA'extg/Site Area)
Developed `CA' to OSD tank	89 (m ²)	(`CA'extg+`CA'adds-`CA'undr)
Additional Area	0 (m ²)	(`A'add)
	0.00	0 0

RUNOFF DATA	for 2 year		for 100 year		Rainfall Intensities (mm)			
					MIN	Normalised Rainfall Depth (l/l ₂₄)	2 Yr (mm/hr)	100 Yr (mm/hr)
Intensity I	52.80	mm/hr	113.5	mm/hr	10	0.11	52.8	113.5
Allowable Qmax whole site	3.45		7.41		15	0.14	44.8	96.3
Lost Flows	2.56		5.50		20	0.16	38.4	82.6
Reduced Flow (sump capacity)	0.00				30	0.19	30.4	65.4
Allowable Qmax from tanks =	0.9	l/s	1.91	l/s	60	0.26	20.8	44.7
					120	0.35	14.0	30.1
Allowable Qave from tanks =	0.6	l/s	1.2	l/s (Qmax * 0.65)	180	0.46	12.3	26.4
					240	0.51	10.2	21.9
					300	0.56	9.0	19.3
					360	0.60	8.0	17.2
					420	0.64	7.3	15.7
					480	0.68	6.8	14.6
					540	0.71	6.3	13.6
					600	0.75	6.0	12.9
					660	0.78	5.7	12.2
					720	0.81	5.4	11.6

Orifice Calculation - **PROTECTED DO NOT ENTER ANY FIGURES**

d= 32.7 mm

Q100 outflow= 1.469477673 for h= 0.4

Q100ave 1.0

Q= 0.888952823 for h in Q2 0.1463833

Qave 0.6 Q2

STORAGE (2 year)					
time (min)	depth (mm)	inflow (l)	outflow (l)	storage (l)	
10	8.8	784	346.6916	437	inflow='CA'dev*depth
15	11.2	998	520.0374	478	outflow=Qave*time
20	12.8	1140	693	447	diff=inflow-outflow
30	15.2	1354	1040	314	
60	20.8	1853	2080	0	
120	28.0	2495	4160	0	
180	36.8	3279	6240	0	
240	40.8	3635	8321	0	
300	44.8	3992	10401	0	
360	48.0	4277	12481	0	
420	51.2	4562	14561	0	
480	54.4	4847	16641	0	
540	56.8	5061	18721	0	
600	60.0	5346	20801	0	
660	62.4	5560	22882	0	
720	64.8	5774	24957	0	
			Max=	478	

STORAGE (100 year)					
time (min)	depth (mm)	inflow (l)	100 yr outflow (l)	Storage (100 yr) (l)	
10	18.9	1686	573.0962926	1113	
15	24.1	2146	860	1286	
20	27.5	2452	1146	1306	
30	32.7	2912	1719	1192	
60	44.7	3985	3439	546	
120	60.2	5364	6877	0	
180	79.1	7050	10316	0	
240	87.7	7816	13754	0	
300	96.3	8582	17193	0	
360	103.2	9195	20631	0	
420	110.1	9808	24070	0	
480	117.0	10421	27509	0	
540	122.1	10881	30947	0	
600	129.0	11494	34386	0	
660	134.2	11954	37824	0	
720	139.3	12413	41263	0	
			Max=	1306	

SUMMARY

Tank Volume **1310.0 litres**

100 Year Max Discharge **1.5 l/s**

2 Year Max Discharge **0.9 l/s**

Orifice Diameter **33 mm**

Minimum Volume for Hydraulic Neutrality

STORMWATER ON-SITE DETENTION TANK (OSD) DESIGN 12-Nov-19
100 YEAR ARI STORM with 2 YEAR ARI STORM OUTLET

400 m² Lot with 105 m² house plus 20 m² impervious

Minimum Volume for Hydraulic Neutrality

NAME: Housing NZ Calcs By: Tim Strang
 ADDRESS: 35 Kaitawa Lot 2
 PHONE: 276088998 Date: 12-Nov-19

NOTE:
 Only fill in the blue (unprotected) cells

DATA

Depth of Tank: 0.43 m
 2 Year Isoheyt Value: 80 mm
 100 Year Isoheyt Value: 172 mm
 Time of Concentration: 10 min. (10,15,20,30,60)

NOTE A "#DIV/0!" message appearing in a cell means that data has been entered incorrectly

	Area (m ²)	`C'	CA (m ²)
Site Area	400		
1. EXISTING SITE COVERAGE			
Existing Roof	85	0.9	76.5
Existing Paved	20	0.85	17.0
Existing Permeable Paving	0	0.5	0.0
Existing Garden	295	0.35	103.3
TOTAL Existing Area	400		196.8
2. PROPOSED DEVELOPMENT			
Additional/Reduced Roof	20	0.9	18.0
Additional/Reduced Paved	0	0.85	0.0
Additional Permeable Paving	109	0.5	54.5
Additional/Reduced Lawn/Garden	-129	0.35	-45.2
TOTAL Addition Area <small>(should be zero)</small>	0		27.4
3. REMAINING UNDRAINED AREA <small>(Not routed thru detention tank after development)</small>			
Undrained Roof Area <small>(Normally Zero)</small>	0	0.9	0.0
Undrained Paved Area <small>(Normally Zero)</small>	20	0.85	17.0
Permeable Paving Area	109	0.5	54.5
Undrained Lawn/Garden Area	166	0.35	58.1
TOTAL Extg Not to Tank Area	295		129.6

NOTE The sum of the existing areas must equal the 'Site Area'

* **NOTE** If pre-development lawn areas are reduced a negative number is required to be entered.

CONTROL DATA

Existing `C' 0.49 ($\frac{CA_{extg}}{Site\ Area}$)
 Developed `CA' to OSD tank 95 (m²) ($CA_{extg} + CA_{adds} - CA_{undr}$)
 Additional Area 0 (m²) (A_{add})

0.00 0 0

RUNOFF DATA	for 2 year		for 100 year		Rainfall Intensities (mm)			
					MIN	Normalised Rainfall Depth (l/l ₂₄)	2 Yr (mm/hr)	100 Yr (mm/hr)
Intensity I	52.80	mm/hr	113.5	mm/hr	10	0.11	52.8	113.5
Allowable Qmax whole site	2.89		6.21		15	0.14	44.8	96.3
Lost Flows	1.90		4.09		20	0.16	38.4	82.6
Reduced Flow (poor soils)	0.00		0.65		30	0.19	30.4	65.4
Allowable Qmax from tanks =	1.0	l/s	2.12	l/s	60	0.26	20.8	44.7
Allowable Qave from tanks =	0.6	l/s	1.4	l/s (Qmax * 0.65)	120	0.35	14.0	30.1
					180	0.46	12.3	26.4
					240	0.51	10.2	21.9
					300	0.56	9.0	19.3
					360	0.60	8.0	17.2
					420	0.64	7.3	15.7
					480	0.68	6.8	14.6
					540	0.71	6.3	13.6
					600	0.75	6.0	12.9
					660	0.78	5.7	12.2
					720	0.81	5.4	11.6

Orifice Calculation - **PROTECTED DO NOT ENTER ANY FIGURES**

d= 33.9 mm

Q100 outflow= 1.635198347 for h= 0.43

Q100ave 1.1

Q= 0.985849415 for h in Q2 0.1562963

Qave 0.6 Q2

STORAGE (2 year)

time (min)	depth (mm)	inflow (l)	outflow (l)	storage (l)	
10	8.8	832	384.48127	447	inflow='CA'dev*depth
15	11.2	1058	576.72191	482	outflow=Qave*time
20	12.8	1210	769	441	diff=inflow-outflow
30	15.2	1436	1153	283	
60	20.8	1966	2307	0	
120	28.0	2646	4614	0	
180	36.8	3478	6921	0	
240	40.8	3856	9228	0	
300	44.8	4234	11534	0	
360	48.0	4536	13841	0	
420	51.2	4838	16148	0	
480	54.4	5141	18455	0	
540	56.8	5368	20762	0	
600	60.0	5670	23069	0	
660	62.4	5897	25376	0	
720	64.8	6124	27677	0	
			Max=	482	

STORAGE (100 year)

time (min)	depth (mm)	inflow (l)	100 yr outflow (l)	Storage (100 yr) (l)
10	18.9	1788	637.7273552	1150
15	24.1	2276	957	1319
20	27.5	2601	1275	1325
30	32.7	3088	1913	1175
60	44.7	4226	3826	400
120	60.2	5689	7653	0
180	79.1	7477	11479	0
240	87.7	8290	15305	0
300	96.3	9102	19132	0
360	103.2	9752	22958	0
420	110.1	10403	26785	0
480	117.0	11053	30611	0
540	122.1	11540	34437	0
600	129.0	12191	38264	0
660	134.2	12678	42090	0
720	139.3	13166	45916	0
			Max=	1325

SUMMARY

Tank Volume **1330.0 litres**

100 Year Max Discharge **1.6 l/s**

2 Year Max Discharge **1.0 l/s**

Orifice Diameter **34 mm**

Minimum Volume for Hydraulic Neutrality

3 Appendix B. Figure



Additional Permeable Paving area

Permeable Paving

CONSTRUCTION MANAGEMENT ZONE
CONSTRUCTION MANAGEMENT ZONE IS INDICATED BY THE COLOURED AREA ON THE PLAN.

HAZARD MANAGEMENT TEMPORARY FENCING
WHERE THE WORK SITE IS NOT COMPLETELY ENCLOSED AND UNAUTHORISED ENTRY BY CHILDREN IS LIKELY IT IS REQUIRED FOR SPECIFIC HAZARDS TO BE FENCED WHEN WORKERS ARE ABSENT FROM THE IMMEDIATE VICINITY.
WHERE A POTENTIAL HAZARD AT A WORK SITE MAKES A SAFETY BARRIER NECESSARY A BARRIER COMPLYING WITH TABLE 1, NZBC F5/AS1 IS AN ACCEPTABLE SOLUTION.

GEOTECHNICAL NOTES
REFER TO THE GEOTECHNICAL ASSESSMENT REPORT AND THE EARTHWORK TECHNICAL SPECIFICATION FOR THE EARTHWORKS REQUIRED FOR FOUNDATION CONSTRUCTION TO THIS SITE.

- GENERAL NOTES**
- BUILDING CONTRACTOR TO CHECK ALL DIMENSIONS PRIOR TO COMMENCING CONSTRUCTION
 - WHERE ITEMS ARE TO BE REMOVED AND/OR DEMOLISHED ALLOW TO MAKE GOOD OR ALLOW PREPARATION FOR NEW WORK
 - CONTRACTOR TO CHECK CONDITION AND HEIGHTS OF EXISTING FENCING. CONFIRM WITH PROJECT MANAGER ON REUSE OF EXISTING FENCE, MAKING GOOD OR NEW FENCE.
 - THIS DRAWING TO BE READ IN CONJUNCTION WITH THE CIVIL AND STRUCTURAL DOCUMENTATION
 - BUILDER IS TO CONFIRM THE LOCATION OF ALL EXISTING IN GROUND SERVICES PRIOR TO THE COMMENCEMENT OF BUILDING WORKS.
 - CONTRACTOR IS TO CONFIRM STAIRS BEFORE CONSTRUCTION
 - INSTALL DPM UNDER HOUSE AND DECK
 - PROVIDE LOCKABLE ACCESS HATCH/DOOR UNDER ALL DECKS

- LEGEND**
- 1 SITE NUMBER
 - SITE BOUNDARY
 - - - 1.2M TIMBER BATTEN FENCE
 - - - 1.8M TIMBER BATTEN FENCE
 - 2 BEDROOM ACCESSIBLE HOUSE
 - 3 BEDROOM + 1 ACCESSIBLE HOUSE
 - A NEW SHED 1530x785x1830
 - B NEW SHED 1830x1530x1980
 - VERANDAH / PATIO
 - FENCED OUTDOOR LIVING (LAWN)
 - UNFENCED OUTDOOR FRONTAGE / SIDE YARDS (MIX OF LAWN AND PLANTING)
 - 4.0M WIDE DRIVEWAY (PERMEABLE SURFACE)
 - NEW FRUIT TREE
 - FRONT DOOR
 - BESPOKE FRENCH DOORS
 - GLAZED SLIDING DOOR
 - CARPARK
 - CLOTHES LINE
 - RUBBISH BINS
 - WT WATER TANK ON CONCRETE PAD (REFER CIVIL DRAWINGS)
 - L LETTERBOX
- PLANNING**
- 3.0m REAR/ 3.0m SIDE BOUNDARY OFFSET (DRIVEWAY)
 - 4.5m ROAD FRONTAGE BOUNDARY OFFSET
 - 1.5m SIDE BOUNDARY
 - 1.0m SIDE BOUNDARY OFF DRIVEWAY
 - HEIGHT IN RELATION TO BOUNDARY (HIRB)
 - 4.0 M DIAMETER OUTDOOR LIVING COURT

NOTES:

SITE NOTES

ADDRESS: 35 KAITAWA CRESCENT, PARAPARAMU
 LEGAL DESCRIPTION: LOT: 62
 DP: 23300
 CT: B1/1459
 TERRITORIAL AUTHORITY: KAPITI COAST DISTRICT COUNCIL
 PLANNING ZONE: RESIDENTIAL ZONE

WIND ZONE: HIGH
 EARTHQUAKE ZONE: ZONE 3
 CORROSION ZONE: ZONE C (MEDIUM)
 SNOW LOADING: N1
 RAINFALL INTENSITY: 60-70

TOTAL SITE AREA: 842m²
 LOT 1 SITE AREA: 442m²
 LOT 1 NET SITE AREA: 336m²
 LOT 1 FLOOR AREA: 72m²
 SITE COVERAGE: 21.5%
 LOT 2 SITE AREA: 400m²
 LOT 2 NET SITE AREA: 384m²
 LOT 2 FLOOR AREA: 79m²
 SITE COVERAGE: 20.6%

NOTE: ALL SITES ARE SUBJECT TO SUBDIVISION

BUILDING TYPOLOGY SETS

FOR HOUSE DOCUMENTATION REFER TO THE FOLLOWING SETS LISTED BELOW:

LOT 1: C1 HOUSE BUILDING SET CONTEXT ARCHITECTS
 LOT 2: 3+1 HOUSE TYPOLOGY HOUSE BUILDING SET WSP OPUS

REVISION	AMENDMENT	APP	DATE
P A	TENDER		08.07.2019
P B	SITE AMENDMENTS FOR LOT 2		01.11.2019

DETAILED DESIGN



Wellington Office
 PO Box 12 003
 Wellington 6144
 New Zealand
 +64 4 471 7000

SCALE	DESIGNED	APPROVED
As indicated @ A1	CSC	SM

PROJECT
HOUSING NEW ZEALAND
35 KAITAWA CRESCENT, PARAPARAMU

BUILDING CONSENT
 TITLE
SITE PLAN - PROPOSED

OPUS PROJECT NO.	SUITABILITY
N-H0060.03	
PROJ-ORIG-VOL-LV-TYPE	SHEET NO. REVISION
NH0060-OIC-03-XX-DR	A-1120 RB

ARCHITECTURE



CONSTRUCTION MANAGEMENT ZONE
CONSTRUCTION MANAGEMENT ZONE IS INDICATED BY THE COLOURED AREA ON THE PLAN.

HAZARD MANAGEMENT TEMPORARY FENCING
WHERE THE WORK SITE IS NOT COMPLETELY ENCLOSED AND UNAUTHORISED ENTRY BY CHILDREN IS LIKELY IT IS REQUIRED FOR SPECIFIC HAZARDS TO BE FENCED WHEN WORKERS ARE ABSENT FROM THE IMMEDIATE VICINITY.
WHERE A POTENTIAL HAZARD AT A WORK SITE MAKES A SAFETY BARRIER NECESSARY A BARRIER COMPLYING WITH TABLE 1, NZBC F5/AS1 IS AN ACCEPTABLE SOLUTION.

- LEGEND**
- ① SITE NUMBER
 - - - SITE BOUNDARY
 - - - 1.2M TIMBER BATTEN FENCE
 - - - 1.8M TIMBER BATTEN FENCE
 - 2 BEDROOM ACCESSIBLE HOUSE
 - 3 BEDROOM + 1 ACCESSIBLE HOUSE
 - A NEW SHED 1530x785x1830
 - B NEW SHED 1830x1530x1980
 - VERANDAH / PATIO
 - FENCED OUTDOOR LIVING (LAWN)
 - UNFENCED OUTDOOR FRONTAGE / SIDE YARDS (MIX OF LAWN AND PLANTING)
 - 4.0M WIDE DRIVEWAY (PERMEABLE SURFACE)
 - NEW FRUIT TREE
 - ▲ FRONT DOOR
 - ⌋ BESPOKE FRENCH DOORS
 - GLAZED SLIDING DOOR
 - ⊞ CARPARK
 - ≡ CLOTHES LINE
 - RUBBISH BINS
 - ⌈ LETTERBOX
- PLANNING (Indicative only TBC)**
- - - 3.0 M REAR/ 3.0M SIDE BOUNDARY OFFSET (DRIVEWAY)
 - - - 6.0 M ROAD FRONTAGE BOUNDARY OFFSET
 - - - 1.5M SIDE BOUNDARY
 - - - HEIGHT IN RELATION TO BOUNDARY (HIRB)
 - 4.0 M DIAMETER OUTDOOR LIVING COURT

NOTES:

SITE NOTES

ADDRESS: 35 KAITAWA CRESCENT, PARAPARAMU
 LEGAL DESCRIPTION: LOT: 62
 DP: 23300
 CT: B1/1459
 TERRITORIAL AUTHORITY: KAPITI COAST DISTRICT COUNCIL
 PLANNING ZONE: RESIDENTIAL ZONE

WIND ZONE: HIGH
 EARTHQUAKE ZONE: ZONE 3
 CORROSION ZONE: ZONE C (MEDIUM)
 SNOW LOADING: N1
 RAINFALL INTENSITY: 60-70

TOTAL SITE AREA: 842m²
 LOT 1 SITE AREA: 336m²
 LOT 1 FLOOR AREA: 72m²
 SITE COVERAGE: 21.5%

LOT 2 SITE AREA: 350m²
 LOT 2 FLOOR AREA: 72m²
 SITE COVERAGE: 20.6%

DRIVEWAY ALLOTMENT AREA: 156m²
 R.O.W.

BUILDING TYPOLOGY SETS

FOR HOUSE DOCUMENTATION REFER TO CONTEXT ARCHITECTS DRAWINGS. TYPOLOGY SETS ARE LISTED BELOW:

LOT 1: C1 HOUSE BUILDING SET
 LOT 2: TBC INFO FROM HNZ REDD HOUSE BUILDING SET

GENERAL NOTES

1. BUILDING CONTRACTOR TO CHECK ALL DIMENSIONS PRIOR TO COMMENCING CONSTRUCTION

2. WHERE ITEMS ARE TO BE REMOVED AND/OR DEMOLISHED ALLOW TO MAKE GOOD OR ALLOW PREPARATION FOR NEW WORK

3. CONTRACTOR TO CHECK CONDITION AND HEIGHTS OF EXISTING FENCING. CONFIRM WITH PROJECT MANAGER ON REUSE OF EXISTING FENCE, MAKING GOOD OR NEW FENCE.

4. THIS DRAWING TO BE READ IN CONJUNCTION WITH THE CIVIL DOCUMENTATION

REVISION	AMENDMENT	APP	DATE

DETAILED DESIGN



Wellington Office
 PO Box 12 003
 Wellington 6144
 New Zealand
 +64 4 471 7000

SCALE	ORIGINAL SIZE
As indicated @ A1	A1
DRAWN	DESIGNED
CSC	CSC
DRAWING VERIFIED	DESIGN VERIFIED
Checker	APPROVED DATE

PROJECT
 HOUSING NEW ZEALAND
 35 KAITAWA CRESCENT, PARAPARAMU

BUILDING CONSENT
 TITLE
 SITE PLAN - PROPOSED

OPUS PROJECT NO.	SUITABILITY
N-H0060.03	S0
PROJ-ORIG-VOL-LV-L-TYPE	SHEET NO.
NH0060-OIC-03-XX-DR	A-1120
	REVISION

ARCHITECTURE

DRAWING IN PROGRESS
 DRAWING EDITED SINCE LAST ISSUE



10 June 2020

Marnie Rydon
Principal Resource Consents Planner
Kāpiti Coast District Council
175 Rimu Road, Paraparaumu, New Zealand

Further Information Response - Resource Consent Application - Kāinga Ora - 35 Kaitawa Crescent, Paraparaumu

KCDC Reference: RM190125 / WSP Reference: N-H0060.03

Dear Marnie,

In response to your letter dated 24 April 2020, please find below Kāinga Ora's response to the further information request following review of the submissions received from the notification of the resource consent application for a two-lot subdivision and development at 35 Kaitawa Crescent, Paraparaumu.

Requested Information

1. Details of the water pumps proposed to be used including a noise assessment demonstrating whether the permitted activity standards of the Proposed District Plan Appeals Version 2018 are met or not.
2. Model and function details of the pumps to be used particularly for stormwater disposal around the ability of the pumps to fail and the mechanisms in place to alert the dwelling occupiers the pump is failing.

Response

One pump is proposed per lot. Each pump provides dual functions, being stormwater discharge and rainwater supply. The proposed pump is the Davey D23A/B submersible pump. Details of the pump are attached to this letter.

Although the pump has no noise-rating, it is submersible. Almost all noise will therefore be absorbed by the tank. A detailed noise assessment is not considered necessary at this stage considering the submerged pump is unlikely to infringe the permitted activity standards of the Proposed District Plan Appeals Version 2018.

To ensure the pumps comply with the relevant permitted activity standards once installed and to avoid any adverse noise effects on neighbouring properties, the applicant agrees to include a noise condition as part of their resource consent application requiring a noise report be provided to Kāpiti Coast District Council within a set time. The following wording is proposed:

At the request of the Kāpiti Coast District Council, and within 20 working days of that request, a suitably qualified acoustic professional engaged by the consent holder shall provide to Kāpiti Coast District Council, a report that:

- a. *measures and assesses noise emitted from the pump on each proposed lot.*

- b. *determines the extent of any compliance or breach of the noise limits specified in Table 12.D.1, Permitted Activity 1, Standard 1 in the Proposed District Plan Appeals Version 2018 (Kāpiti Coast District Council).*
- c. *recommends specific actions, in the event of a breach, that will ensure compliance with the noise limits specified in Table 12.D.1, Permitted Activity 1, Standard 1 in the Proposed District Plan Appeals Version 2018 (Kāpiti Coast District Council).*

In the event of a breach all specific actions outlined in the report provided by the suitably qualified acoustic professional shall be implemented, to the satisfaction of Kāpiti Coast District Council, within 20 working days from the provision of the report.

In the event that the recommendations and actions referred to above are not implemented within the period specified in this condition, the activity directly associated with the source of the noise shall cease until such time that the recommendations are implemented.

With regards to stormwater disposal, the proposed pumps will supply water for toilet flushing and garden watering as well as providing a means of reducing the flow of stormwater to 7 Kaitawa Crescent (rear adjacent property). The stormwater system has additional storage and soakage components to ensure hydraulic neutrality is still achieved if the pumps are not operating. If the pump in either lot fails:

- The toilet will no longer flush, signalling that prompt maintenance is needed to repair or replace the pump.
- Once the pumped storage volume is full, the attenuation volume in the rainwater tank will start to fill. The attenuation volume has been designed to be hydraulically neutral up to a 1 in 100-year event. The flow of water out of the attenuation volume is controlled by the orifice.
- Water leaving the attenuation volume will flow into the soakhole at the rear of the property. The soakhole has sufficient capacity for a 60-minute, 1 in 100-year event.

The proposed development has been designed to be hydraulically neutral up to a 1 in 100-year event. This means that the flow of stormwater to the adjacent downstream property (7 Kaitawa Crescent) will be no greater than what existed prior to the development. In addition, because the system works by storing water and pumping it at a low rate to the street, there will be a reduction in the amount of stormwater that flows to 7 Kaitawa Crescent during regular rainfall events.

Whether the stormwater is pumped up to the street or flows overland through 7 Kaitawa Crescent, it still ends up in the same downstream stormwater system. The stormwater attenuation has been designed to ensure that there is no increase in the flow of stormwater and therefore no additional pressure on the Kāpiti Coast District Council stormwater system.

The Flowpave system does require maintenance at regular intervals and comes with clear descriptions of how that can be achieved. The system is designed to be trafficable. The design will still achieve hydraulic neutrality if around 50% of the rainfall runs off the paving surface, and this should allow some flexibility in the scheduling of maintenance procedures.

Should you have any further queries, please do not hesitate to contact me on +64 27 317 3901 or mat.marois@wsp.com.



Regards,

A handwritten signature in black ink, appearing to read 'MM' or 'Mat Marois'.

Mat Marois
Consultant Planner

027 317 3901
mat.marois@wsp.com



D23A/B Sump Pump

Submersible sump pump specifically designed for low head and low flow applications.

APPLICATIONS

- Lawn & garden irrigation
- Sump emptying to low heads.

WHY CHOOSE THE D23A/B SUMP PUMP?

Float switch fitted for automatic operation.

Double mechanical seal, one in the oil bath on the motor and an extra mechanical seal on pump for superior reliability and a long service life.

Corrosion resistant 304 stainless steel shaft, motor shell and fasteners for longer service life.

Centrifugal multi-stage 3 impeller design for low flow applications.

In-built automatic thermal overload to protect the motor in the event of blockage or voltage supply problems.

HO7RNF oil resistant leads, 10 meters long with 3 pin power plug for longer life in dirty water and easy connection to the mains power supply.

Suitable Fluids

Clean water of neutral pH containing up to 1% small solids. Some wear should be expected if pumping hard solids in suspension.

Priming and Operation

Use a rope to position and retrieve the pump. Do not lower or retrieve the pump using the power lead as this may damage the cable entry seals, causing water leaks and unsafe operation.

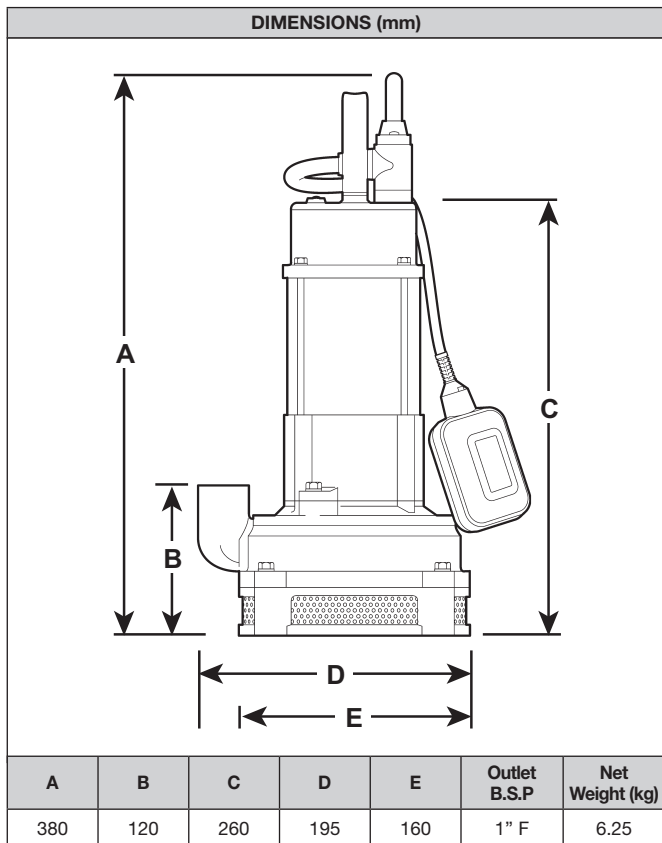
Don't use this product for recirculating or filtering swimming pools, spas, etc.

While these pumps are built to high safety standards, they are not approved for installations where people will be in the water while they are operating.

Don't pump abrasive materials. Sand and grit in the water being pumped will accelerate wear, causing shortened pump life.

Keep your pump clean, particularly in situations where lint, hair or fibrous materials may get bound around the pump shaft. Inspection every 6 months and cleaning will extend pump life.

Make room for the float switch to operate. Automatic models have a float switch to turn them on when the water level rises and turn them off again when it has been pumped down to the safe operating level of the pump. If the float switch is not free to rise and fall, correct pump operation may not be possible.



OPERATING LIMITS	
Capacities to	52 lpm
Maximum total head	22.5m
Maximum submergence	7m
Maximum pumped water temperature	40° C
Minimum soft solids	1mm O.D.
Outlet size	1" F

ELECTRICAL DATA	
Supply voltage	220-240V
Supply frequency	50Hz single phase
Speed	2 pole, 2850rpm
Full load current	1.8A
Locked rotor current	14A
Input power (P1)	0.38kW
Output power (P2)	0.2kW
IP rating	X8
Insulation class	Class I
Lead	10m long

MATERIALS OF CONSTRUCTION	
Part	Material
Impeller	Polycarbonate & fiberglass
Lock nut	304 Stainless Steel
Pump casing	Polyoxymethylene & Fiberglass
Diffuser and blanking ring	Polyoxymethylene
Mechanical seal - pump	Carbon / ALOX
Mechanical seal - motor	Silicon Carbide / ALOX
Pump shaft	410 Stainless Steel
Orings	Nitrile Rubber
Motor shell	304 Stainless Steel
Bottom bearing housing	Acrylonitrile Butadine Styrene
Upper motor cover	Nylon 66
Handle	Acrylonitrile Butadine Styrene
Fasteners	304 Stainless Steel
Float & power supply leads	Blended Rubber

