

## Report / Decision on a Non-notified Subdivision Consent Application

Sections 95A / 95B and 104 and 104C

<b>Application Number:</b>	<b>RMA/2020/3053</b>
<b>Applicant:</b>	Sovereign Palms Limited
<b>Site address:</b>	31 Hawkins Road (adjacent 20 Mills Road and 201 Prestons Road)
<b>Legal Description:</b>	Lot 2 DP 512441, Lots 2 and 3 DP 24826, Lot 1 LT 512479 and Lot 2 DP 301363
<b>Zoning:</b>	Residential New Neighbourhood, Balance Lot 4000 includes Commercial Local zoned land
<b>Overlays and map notations:</b>	Liquefaction Management Area (LMA); Flood Management Area (FMA) - part
<b>Activity Status - subdivision:</b>	Restricted discretionary
<b>Activity Status - land use:</b>	Restricted discretionary (earthworks and NES matters)
<b>Description of Application:</b>	37 lot residential subdivision, plus lots for roading, recreation reserve and utility reserve and balance development lot. Land use consent for earthworks depths and volumes, earthworks in proximity to street trees, and land contamination.

### The proposal

The site lies within the Residential New Neighbourhood zone and is covered by appendix 8.10.26 (Highfield Park (North) Outline Development Plan). The extent of the development site is shown in the image below which is a copy of Figure 1 in the application report under section 2.1 – The Application Site. The lot layout for Stage 1 of the development can be seen also above the Prestons Road text.

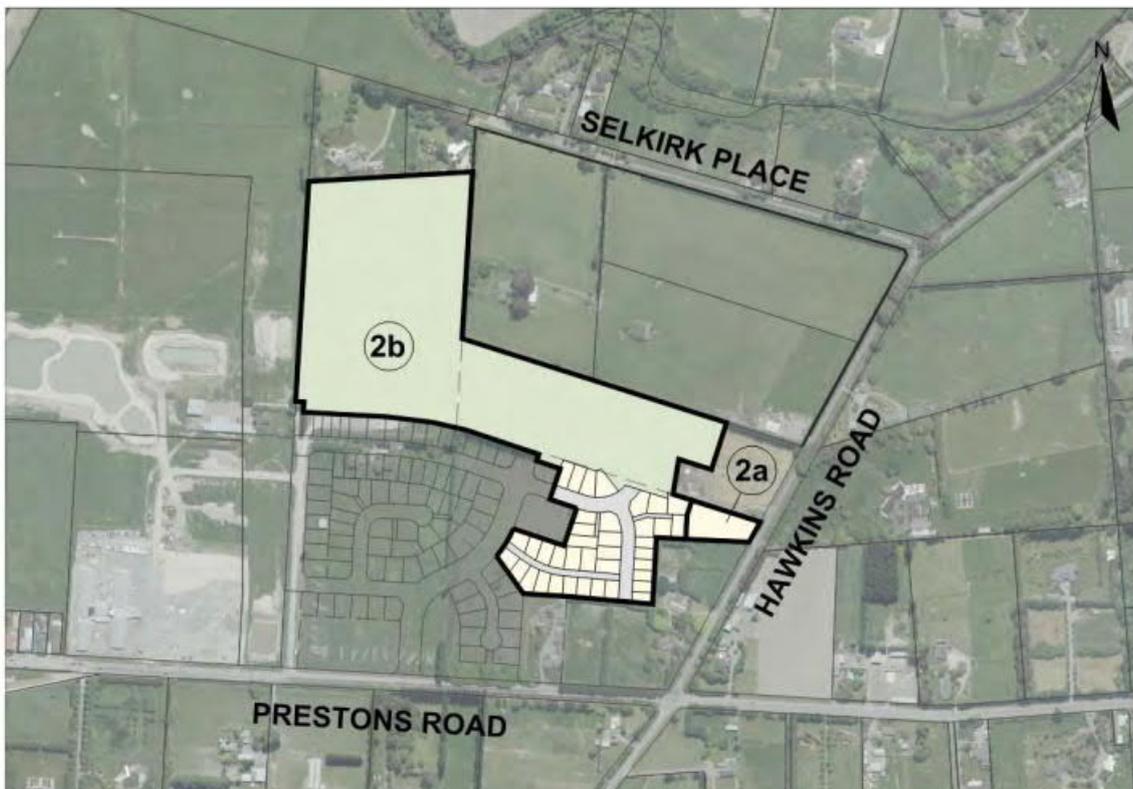


Figure 1: Application site

This application is to subdivide existing fee simple titles into 37 fee simple allotments, and allotments for access and roading. Balance lot 4000 remains after the development of this stage of residential allotments and is to be developed under future stages as yet unconsented.

Lot 84 is created around the existing dwelling. That lot is to retain its current servicing arrangements and access from Hawkins Road. Any future additional development of Lot 84 will be serviced from Hawkins road – the applicant has noted that since it controls land along Hawkins Road to the north this remains feasible. The premise has been accepted by Council's water and waste engineers. Retention of the dwelling on Lot 84 has no overall impact on dwelling density as the balance land is subject to encumbrance under other consents to require delivery of the requisite density for the entire land area under the developer's control north of Prestons Road.

The adjoining land in stage 1 of the Oakbridge development is under development having been consented under RMA/2017/2059 and associated variations. That consent, like this one, provides for shortfalls in required density to be delivered in later stages, with appropriate legal mechanisms to be registered on balance land to protect this outcome.

The site will be subject to cut and fill operations 3800m<sup>3</sup> of earthworking approximately (840m<sup>3</sup> cut and 3040m<sup>3</sup> fill) including the importation of clean fill for volumes above the cut of topsoil. Maximum depths of excavation are projected as being around 0.5 metres, and of filling 0.7 metres (700mm) – although that depth of filling is over a small very localised area fill generally is limited to 400mm or less. The detail of earthworking including cut and fill plans and associated protections including erosion and sediment control methods will be detailed in engineering plans to be accepted by Council prior to commencement of physical works. Section 4.0 of the application details the earthworks proposed at a preliminary level suitable for the issue of consent.

Some contaminated material is also to be excavated and removed in accordance with a remedial action plan (RAP) supplied with the application. Remaining soils will be validation tested for residential use at the completion of earthworking. It is noted that surplus soils are unlikely to be utilisable offsite as clean fill.

The proposal includes fully serviced allotments, and a geotechnical report and allied Statement of Professional Opinion (SOPO) on the suitability of the site for subdivision is included in the application to cover matters related to natural seismic hazards. Conditions have been agreed between the applicant and relevant council engineering departments over these matters.

Stormwater treatment and detention is provided in the first development stage within first flush basins and wetlands along the Prestons Road frontage. Eventual discharge is to the Styx River via existing drainage structures and waterways. Stormwater in this stage of the development is captured through piping to kerb and channel, and collection in sumps and then piped conveyance to the facilities in the Stage 1 development.

Power and telecommunications reticulation will be provided to all allotments.

No recreation reserve is required in this stage of the development.

The main entry point to the subdivision development is a new signalised intersection east of Mills Road. The roading layout in this stage continues from Stage 1 and provides linkages for development of the land in the balance allotment.

The bulk of the developable land in this part of the zone (north of Prestons Road and east of Hawkins Road) is in the ownership of the applicant here. While this stage of the development does not include explicit linkage to Hawkins Road this matter is to be addressed in later stages of the development, in order to achieve an additional connection to Hawkins Road to complement the current fixed location access point to the block provided by Selkirk Place as indicated on the ODP.

To the west of this application site (including the stage 1 development of Oakbridge) a retirement village development is currently underway (that site lies also within the ODP area). Further west the Northern Arterial road project is completed. Prestons Road bridges over the northern arterial road here. I note that the outline development plan includes a number of transport matters in the development requirements section. One of these relates to the intersection of Grimseys and Prestons Roads and a suitable upgrade taking place prior to development. That intersection has been subsumed within a designation by the NZTA, it is not apparent that the NZTA will upgrade the intersection as part of the Northern Arterial project. At this time no intersection treatment at this intersection has been agreed or proposed. I note further that the upgrade of the Marshland and Prestons Road intersection has already been completed.

In terms of required upgrading to the Prestons Road section between the northern arterial and the Hawkins / Hills Road intersection, this has commenced, partly subsumed by northern arterial project works, and continued along the frontage of the retirement complex to the west of the subject site. The frontage of the Oakbridge development site will also be upgraded under this proposal to an urban state. The final design detail of this treatment is being agreed between Council and the applicant and will be detailed in the final version of engineering plans supplied for acceptance prior to construction of the access point to the subdivision block.

The details of the proposal itself are set out in the application at section 3, and the earthworks in section 4. I accept this as an accurate description of what is proposed.

### Description of site and existing environment

The application site and surrounding environment are described in section 2 of the AEE submitted with the application. I accept and adopt the applicant's description. Any further comment I consider relevant on surrounding activity is included above in the introductory section of this report.

### Activity status

#### Christchurch District Plan

The site is zoned Residential New Neighbourhood. The New Neighbourhood Zone generally includes new areas of green-field land where large-scale residential development is planned. The zone will allow a wide range of residential house types and section sizes to provide for a wide spectrum of household sizes and make possible affordable housing. Families will therefore be able to remain within the neighbourhood throughout their lifetime as they move to housing types that suit their life stage. These areas are intended to achieve higher overall residential densities than traditionally achieved in suburban developments (specifically in this instance at least 15 households per hectare).

The New Neighbourhood Zone will be developed in accordance with an Outline Development Plan to ensure a more integrated and sustainable development is achieved. Key development features and constraints are required to be recognised and provided for. Residents will have good access to local services and facilities, open space and recreational activities. New housing areas will also be well integrated with existing neighbouring areas. Where facilities and amenities are not already provided by adjoining residential neighbourhoods and suburban centres, the new neighbourhood will deliver new services and facilities of an appropriate scale.

It is important to set out here that the ODP includes an illustration and is accompanied by text which addresses context, guidance, development form and design and development requirements, In terms of the text, only the development requirements sit as rules in the District Plan for subdivision and land use applications (refer to 8.6.11(a) and Rule 14.12.2.16). Development requirements also have elevated importance in terms of Policy 8.2.2.9(c) and 14.2.5.1(a) in so far that use, development and subdivision shall generally meet the development requirements or otherwise achieve a similar or better outcome. The remaining text of the ODP is still a relevant consideration for any relevant resource consent application and are referenced in the matters of control and discretion for this application. They also in my view aid in the interpretation of wider objectives in Chapter 8 and 14 and help inform the anticipated environment.

Non-compliances are set out below, and recorded in the application document in section 5.

#### Land Use Rules

The proposal requires land use consent for a restricted discretionary activity as it is captured by the following rules:

- Chapter 5 Rule 5.5.2 C1 – Subdivision creating vacant allotments in the Liquefaction Management Area the development site is covered by the LMA, the activity is controlled – the matters of control are dealt with by provision of geotechnical reporting and associated recommended conditions below under the section 106 assessment.
- Chapter 8 Rule 8.9.2.3 RD1 – for an activity listed in 8.9.2.1 P1 or 8.9.2.2 C1 that does not meet depth and volume maximum parameters. The proposed earthworking is substantially in excess of permitted limits per site for depth and volume (as expected in a greenfield subdivision situation) being in the order

of 3800m<sup>3</sup> and up to a depth of 0.7 metres maximum as opposed to a 20m<sup>3</sup> volume per site and 0.6 metres permitted depth.

- Chapter 9 Rule 9.4.4.1.3 RD8 – proposed earthworks within 5m of a street tree to facilitate installation of vehicle crossings and thus not meeting 9.4.4.1.1 P12.

### **Subdivision Rules**

The proposal requires resource consent for a restricted discretionary activity as it breaches the following rules:

- Chapter 8 Rule 8.5.1.3 RD2 as C5 cannot be satisfied given breaches of 8.6.11.a (outline development plan).

The proposed subdivision layout differs from that in the ODP in terms of staging – roading upgrade along the entire length of Prestons Road through to the Hills Road intersection have not been completed; additional setback requirements (from internal boundaries with sites not under further development) not met in terms of the required five metre planning buffer.

### **National Environmental Standard**

The National Environmental Standard for Assessing and Managing Contaminants in Soil to Protect Human Health (NES) controls subdivision of land and soil disturbance where an activity on the Hazardous Activities and Industries List (HAIL) is being carried out or is more likely than not to have been carried out.

In this case it is more likely than not that a HAIL activity is being or has been undertaken on the site. The applicant has submitted a detailed site investigation (DSI) stating that the soil contamination exceeds the applicable standard. Pursuant to Regulation 10(2) a restricted discretionary activity resource consent is required, with Council reserving discretion over the adequacy of the detailed site investigation, the suitability of the land for the activity, the approach to remediation, the adequacy of the site management plan, the transport, disposal and tracking of soil, the requirements for and conditions of a financial bond, the timing and nature of review conditions and the duration of the consent.

The application and associated supporting documents have been reviewed by Council's Environmental Health Officer Ms Isobel Stout. Ms Stout has provided comments and recommended conditions to mitigate effects of the proposed disturbance of contaminated ground and the change of use from rural to residential. I note that Ms Stout recommends that the conditions imposed on the stage 1 consent are re-imposed here under the same RAP and DSI.

I include Ms Stout's comments below:

*"Stage 2 of the development begun under RMA/2017/2059.*

*The application includes a full DSI that also supported stage 1 and has revealed areas of contamination from former activities such as sheep dips and waste disposal.*

*The contamination is at levels above standards for a residential land use as so the activity of subdivision, earthworks and land use change is restricted discretionary.*

*The application also includes a specific Remediation Action Plan that meets the matters listed under Reg 10.*

*It makes sense (to me anyway!) to repeat the conditions agreed to in the stage 1 consent as they will be perfectly adequate for stage 2.*

*I've copied them out below.*

- 1. All works shall adhere to the procedures set out in Davis Ogilvie RAP/SMP including the appropriate engagement of the persons/companies described in the roles and responsibilities section of this document. All site workers must be familiar with the accidental discovery protocols of the RAP/SMP. A copy of the RAP/SMP shall remain on site and must be accessible to all workers and contractors on site;*
- 2. All contaminated soils removed from the site will not be suitable to be disposed of at a cleanfill facility and must be disposed of at a facility whose waste acceptance criteria permit the disposal;*
- 3. Evidence of disposal to authorised facilities such as weighbridge receipt weighbridge receipts or waste manifest and shall be included in the site validation report;*

4. *In the event of contamination discovery e.g. visible staining, odours and/or other conditions that indicate soil contamination, then work must cease until a Suitably Qualified and Experienced Practitioner (SQEP) has assessed the matter and advised of the appropriate remediation and/or disposal options for these soils. Any measures to remediate the soil contamination shall be reported to and approved by the Christchurch City Council;*
5. *Only cleanfill materials as defined in the Christchurch District Plan can be used as imported fill;*
6. *Validation soil testing shall be undertaken in accordance with the MfE Contaminated Land Guideline No. 5.*
7. *Prior to the issuance of section 224 certificate, a site validation report (SVR) shall be provided to the Council for Council's approval. The SVR shall be prepared by the project's contaminated land specialist and outlining the works undertaken. The SVR shall include at least the following:*
  - a. *A summary of remedial works and other soil disturbance works undertaken;*
  - b. *Analytical results and interpretation of validation sampling of the excavation;*
  - c. *Phot logs of soil disturbance activities undertaken;*
  - d. *Evidence of disposal to an offsite facility;*
  - e. *Location/s of areas where soil will be reused within the application site;*
  - f. *Confirmation of imported clean fill and volumes; and*
  - g. *A statement of the volumes of soil disturbed by the works*

*The site validation shall be emailed to [envresourcemonitoring@ccc.govt.nz](mailto:envresourcemonitoring@ccc.govt.nz).*"

I accept Ms Stout's comments and conditions. I note that the applicant has also accepted the conditions proposed above. I consider that should the conditions be imposed as set out above and agreed, the effects associated with management of contaminated land will be less than minor and acceptable. I do not consider that any party will be adversely affected, neither will there be adverse effects on the wider environment,

Aside from the insertion of the accepted conditions into the final recommended set below the NES is not further dealt with here.

#### **Effects on the environment and adversely affected persons [Sections 95D, 95E and 104(1)(a)]**

Sections 95A(3)(a) and 95B(2) of the RMA enable an application to be processed without public or limited notification on any affected persons where a rule in a Plan or a National Environmental Standard provides for this.

Rule 8.4.1.1 of the District Plan provides that any application for a controlled or restricted discretionary subdivision consent shall be non-notified and will not require the written consent of affected persons (except in relation to applications seeking access on to a State Highway).

The earthworks aspect of the application requires consent under land use provisions rather than subdivision provisions and is thus not exempt from notification. The earthworks and associated effects are designed to be able to implement anticipated development of the land subject to the application. The effects do not extend beyond immediately adjoining sites, consequently I do not consider that notification (public) of the earthworks aspect is either warranted or possible. Matters relating to adversely affected persons are addressed further below.

There are, in my opinion, no special circumstances that would warrant public notification pursuant to section 95A(4) for either the subdivision or earthworks aspects of the proposal.

As a restricted discretionary activity the assessment of the effects of the subdivision is limited to the matters over which the Council has limited its discretion outlined in Chapter 8 of the Christchurch District Plan. As noted above assessment of matters relating to natural hazards under Chapter 5 and specifically the LMA is dealt with by assessment here and in particular under the section 106 discussion below. In short the LMA is addressed by design of subdivision earthworks, foundation design requirements and requirements for engineering of all infrastructural elements in terms of durability in seismic events. This is reinforced with specific

conditions accepted by the applicant and applied as a standard response to the risk of liquefaction and associated land settlement potential.

In my opinion the remainder of effects of this proposal relate to servicing, transport/access, ODP compliance; and the physical and nuisance effects of earthworking.

### **Servicing**

The proposed subdivision is in accordance with anticipated type of development within the zone, and I consider that any adverse effects on the environment can be adequately mitigated by the recommended conditions of consent. Council's infrastructure planning staff have provided conditions of consent and these have been accepted by the applicant in relation to water supply, sewer and stormwater. Standard conditions apply in relation to roading, telecommunications and electricity supplies. These are also accepted.

Council has installed high pressure water main in Prestons Road which will supply the development through Stage 1. Council has also installed a trunk pressure main sewer in Prestons Road which services this stage via Stage 1 also. The sewer system is a low pressure system and has the standard requisite installation of storage chambers and pumps on individual sites at building consent stage. This matter is covered by consent notice and condition below.

### **ODP non-conformity and Transport**

The proposal has been reviewed by Council's Transport Network Planner Mr Mike Calvert and Council's Asset Engineer Mr Weng-kei Chen. Mr Calvert has subsequently left Council's employ.

The proposed road layout and dimensions in this stage have not raised any concern – relevant roading standards are complied with and acceptance of final engineering detail will be required prior to construction. The layout and connection of the two private ways covered by Lot 800 has been arrived at after discussion between Council and the Applicant/Agents regarding both access and general servicing for infrastructure and refuse removal. Lot 800 remains private.

The applicant also notes a non-compliance with staging requirements in terms of the ODP provisions. This relates to the upgrade of the entire Prestons Road frontage back from the Hills / Hawkins Road intersection to the east. It is proposed (and required by Council) that the frontage of this application site and the area around the main intersection being created with Prestons Road is upgraded under this consent to an urban standard in particular the works on the south side of Prestons Road will be subject to completion as part of this consent. The north side of Prestons Road having been completed under RMA/2017/2059. The retirement village to the west is providing upgrading of that part of its frontage not covered by works associated with the northern arterial roading project. On development of other sites the remainder of the road frontage will be upgraded. While this is technically a non-compliance there is an element of fairness in terms of requiring one developer to upgrade the whole frontage including sites owned by other parties. No particular adverse effect is anticipated to arise the urbanisation of the area under the ODP will be completed over time.

### **Land Use non-compliances (earthworks)**

As noted above the proposal includes substantial breaches of volume and depth of permitted earthworks in the RNN zone per site. The proposal suffers initially as the whole of the project area here is considered a single site and subject to restrictions of 20m<sup>3</sup> and 0.6 metres depth. That volume spread over the site would be undetectable.

In order to cater for site drainage and deal with ground conditions earthworks in excess of permitted levels are proposed.

The applicant has made an assessment of nuisance and land stability matters (as set out in the matters of discretion relevant to the activity in 8.9.4.1 and 8.9.4.3) which I generally accept and adopt. I consider that suggested (and agreed) conditions will mitigate these effects to an acceptable level that does not impact on adjoining or nearby sites and persons. I note however that other effects associated with end use of the site once filled and developed (as per assessment matters under 8.9.4.6 and partially 8.9.4.3) have not been particularly addressed I deal with these below. It is likely that some rural boundary trees will need to be removed with the right landowner approvals in place.

The subject site here is being created from an earlier rural site, with a house lot being subdivided off to contain the existing dwelling, while residential development is to occur on the bulk of the balance land. The remaining dwellings to the southeast remain on what are now for the RNN zone very large sites (notwithstanding that they are on redevelopment required to yield and equivalent of 15/hha as are other sites in the zone). Separation distances are thus large in residential terms. The neighbouring sites immediately south east (the only sites

potentially subject to nuisance issues related to privacy and overlooking) are in the order of 5400m<sup>2</sup> and 2.2 hectares in area, and the existing dwellings sits approximately 40 metres from their respective boundaries with the subject site. Given the intervening space I consider that the depth of filing along this boundary indicated on the cut fill plan (up to 400mm on the eastern shared boundary, and a similar maximum in spots along the southern shared boundary) will not give rise to adverse effects in terms of overlooking or privacy. The principal issue is the shift from rural activity to residential and that is anticipated (and required even) by the zoning provisions.

A condition is included below requiring acceptance of boundary treatments once engineering design is confirmed, and retaining structure and drainage (to deal with nuisance effects) will be overseen through this process.

In terms of the earthworks depth and volume non-compliance, any effects on the adjoining property are considered to be less than minor for the reasons set out above.

Pursuant to Section 95E(1) of the Act a person is not deemed affected by an activity where the adverse effects are less than minor, hence I consider that written approval is not required for the earthworks depth and volume non-compliance.

The application also seeks to carry out earthworks within five metres of street trees (newly established by the development) where these might be required on development of individual allotments with dwellings. This is becoming a standard part of greenfield subdivision approvals, and will, given that most street trees are newly established and not of large scale, be minimal in actual effect being limited to a minimum two metre separation from the trees for any works associated with the creation of access points and dropped kerbs for site development. No parties are considered to be affected by the proposed works in this regard. Any effects will be indiscernible, and are mitigated by standard conditions that the applicant has accepted.

#### Conclusion as to scale of effects

When viewed holistically in light of the Plans provisions and intent for development of this zone I consider that the activity as proposed will generate adverse effects at only a very low level that does not warrant notification of any person, and does not create effects on the wider environment. I consider that the effects are acceptable and indeed to a large extent anticipated in the conversion of rural land to residential use. The effects on the environment are less than minor and there are no affected parties.

### **Notification assessment [Sections 95A and 95B]**

Sections 95A and 95B set out the steps that must be followed to determine whether public notified or limited notification of an application is required.

#### **Public notification**

- Step 1. The application does not meet any of the criteria for mandatory notification in section 95A(2).
- Step 2. The application must not be publicly notified as:
  - Rule 8.4.1.1 a. precludes public notification for restricted discretionary subdivision consents and Rule 8.9.1a. precludes public notification of the land use activity (section 95A(5)(a)).
- Step 3. There are no rules or NES requiring public notification, and any adverse effects on the environment will be no more than minor (section 95A(8)).
- Step 4. There are no special circumstances that warrant public notification (section 95A(9)).

#### **Limited notification assessment**

- Step 1. There are no affected groups or persons as outlined in section 95B(2) and (3).
- Step 2. The application does not meet any of the criteria in section 95B(6) precluding limited notification, as there are no rules precluding it and the application is not for a controlled activity land use consent.
- Step 3. As discussed above, no persons are considered to be affected under section 95E (sections 95B(7) and (8)).
- Step 4. There are no special circumstances that warrant notification to any other persons (section 95B(10)).

## Conclusion on notification

There is no requirement for public or limited notification of either the subdivision or land use aspect of this application.

### Other Section 104 matters

The application is:

- In keeping with Part II of the Act as it will maintain amenity values and the quality of the surrounding environment, and adequately manages any risk from natural hazards.
- Consistent with the relevant objectives, policies and matters of control / matters of discretion in the District Plan which essentially seek to maintain or enhance the amenities of the built environment, and ensure that the creation of new allotments does not adversely impact on physical infrastructure or the cost of its provision.
- Consistent with the relevant objectives and policies in Chapter 8 and 14 of the District Plan, as the new allotments will be appropriately designed and serviced for the anticipated purpose, enable the recovery of the City through development of an identified greenfield area at appropriate densities, and achieve similar or better outcomes than that indicated by the ODP in terms of key infrastructural moves.
- Consistent with natural hazard policies in Chapter 5 in that the risk of liquefaction (and other seismic issues) has been appropriately identified and assessed and can be appropriately mitigated by design of sites and infrastructure, and conditions of consent for future uses of proposed allotments.
- Able to be granted consent without public notification, pursuant to Section 104(3)(d).

The applicant is seeking or holds regional consents for construction discharge (stormwater); dewatering and earthworks.

### Relevant provisions of a National Environmental Standard, National Policy Statement, Regional Plan, Regional Policy Statement or Coastal Policy Statement [Section 104(1)(b)]

The NES for Assessing and Managing Contaminants in Soil to Protect Human Health is relevant to the application as a HAIL activity is being carried out or is more likely than not to have been carried out on the land. The relevant provisions are discussed in previous sections of this report.

The National Policy Statement on Urban Development Capacity is relevant to large scale subdivision, applications. Policies PA3 and PA4 are relevant neither is threatened by the proposed development, which seeks to deliver residential sites in accordance generally with District Plan provisions regarding efficiency and choice.

The site is not in the coastal environment.

### Any other matters which are relevant and reasonably necessary to determine the application [Section 104(1)(c)]

There are no other matters relevant to the consideration of this application.

### Part II of the Resource Management Act 1991 [Section 104(1)]

The above considerations are subject to Part II of the Act which outlines its purpose and principles. The proposal is considered to be consistent with Part II matters as it will maintain the amenity and quality of the surrounding environment, in accordance with Section 7(c) and 7(f).

Section 6(h) - management of significant risks from natural hazards - is relevant to the proposed activity. I note that as discussed below under the section 106 heading the matter of natural hazards has been appropriately investigated and assessed in relation to the proposed activity. Suitable conditions will be imposed on the consent to delimit effects associated with natural hazards on the subject site.

**s106 Consent authority may refuse subdivision consent in certain circumstances**

- (1) A consent authority may refuse to grant a subdivision consent, or may grant a subdivision consent subject to conditions, if it considers that—
- (a) there is a significant risk from natural hazards; or
  - (b) (repealed)
  - (c) sufficient provision has not been made for legal and physical access to each allotment to be created by the subdivision.
- (1A) For the purpose of subsection (1)(a), an assessment of the risk from natural hazards requires a combined assessment of—
- (a) the likelihood of natural hazards occurring (whether individually or in combination); and
  - (b) the material damage to land in respect of which the consent is sought, other land, or structures that would result from natural hazards; and
  - (c) any likely subsequent use of the land in respect of which the consent is sought that would accelerate, worsen, or result in material damage of the kind referred to in paragraph (b).

This section of the Act is particularly relevant in relation to geotechnical concerns following the Canterbury earthquakes. The land is identified as being within the Liquefaction Management Area in the Christchurch District Plan and rule 5.5.2a applies.

The applicant has submitted a geotechnical report prepared by Davis Ogilvie Ltd which has been reviewed by Council's Senior Subdivision Engineer Ms Yvonne McDonald.

I repeat Ms McDonalds assessment of the application material below:

“Geotechnical

*The geotechnical report and assessment are the same as presented for stage 1.*

*Davis Ogilvie undertook the following investigations to support their geotechnical report and associated liquefaction assessment for the whole development:*

- *A desktop study, including a review of the Aurecon Geotechnical Report for 171 Prestons Rd, which was categorised as TC2/TC3 in the south, TC3 centrally and TC1/TC2 in the north.*
- *A site investigation including 45 Dynamic Cone Penetrometer (DCP) tests – 2 in stage 2, 43 test pits to a maximum depth of 4.6m – 9 in stage 2, two hand augers to 3.0m depth and 62 Cone Penetration Tests (CPT) to a maximum depth of 18.5m – 21 in stage 2.*
- *Twelve piezometers were installed to 1.7-6.0m bgl – 3 in stage 2.*

*The geotechnical report looked at all stages of the development.*

*The subsoils were found to comprise topsoil up to 0.4m deep and subsoils of interbedded silt and sand over gravel. Peat lenses and organic silt were not found in stage 2. Gravel was dense in places. The groundwater was indicated by soil colour and mottling as 1.0-3.8m bgl, with piezometers monitored between December 2016 and May 2017 finding it between 13.27-15.05m CDD (2.0-2.5m bgl) in stage 2 and rising as winter approached. The water table levels assumed for the liquefaction analysis were those from the subsoil colouration i.e. the gleysol, which are generally higher than those found in the piezometer monitoring. 21 CPT tests (CPT 11, 14-19, 23, 25-27, 36, 43-44, 50, 60-62, 76005-76006) to depths between 3.0m (maximum tip resistance termination) to 15.0m target depth suggested the gravel layer is at 3.0 - 15.0m depth across stage 2. Of the 21, 7 carried out by Davis Ogilvie exceeded the 10m depth required for settlement.*

*The applicant states settlement under the Canterbury Earthquake Sequence (CES) is likely to have been between 87-151mm and aerial photographs indicate soils may be susceptible to liquefaction. The site was not 'sufficiently tested' for the SLS event under the CES, under the MBIE criteria. The liquefaction analysis was carried out using Boulanger & Idriss 2014 liquefaction triggering procedures, for the following PGAs: 0.13g  $M_w$ 7.5 SLS, 0.19g  $M_w$ 6.0 SLS and 0.35g  $M_w$ 7.5 ULS. The lot/site investigation test ratio is the 0.25/lot ratio recommended by MBIE.*

*There are no existing or planned vertical faces in stage 2 of this development so Davis Ogilvie do not consider lateral spread a risk for this stage. I agree with this assessment.*

Settlements under the SLS<sub>1</sub> event ranged from 0-40mm, under the SLS<sub>2</sub> event from 0-70mm and under the ULS event from 0-120mm. Davis Ogilvie determined that settlements suggest the land performance can generally be defined as TC1 and TC2. Two areas in the southwest and the east, shown in Figure 14, are susceptible to liquefaction, performing poorly under the SLS and ULS events. Suggested treatment for those lots performing as TC2/TC3 is “a geogrid reinforced 600 mm (minimum) well graded gravel or non-liquefiable stabilised crust, certified to NZS4431:1989...(to).. create suitably seismic resilient platform in which to construct TC2 style foundations.” I accept this recommended treatment and have suggested conditions relating to the application of the recommended treatment and requiring confirmation that the treatment returns the design land categorisation. No ground improvement treatment has been suggested for the roading or below ground infrastructure.

Davis Ogilvie generalise for the Liquefaction Resistance Index zoning they have determined for the site, that the site is LRI 2 (settlement 50-250mm, lateral displacement 40-200mm) and 3 (settlement 20-50mm, lateral displacement 20-40mm). They therefore state that PVC-u is appropriate for water supply reticulation and that gravity is appropriate for the wastewater network. IDS Part 7 states PVC-u pipework is only appropriate in LR3 areas. Stage 2 is LRI 2. As previously required for stage 1, the sewer should be PSS and the water supply PE pipe. The need for engineering input into the detailing of the manholes to avoid uplift is acknowledged and should be addressed at the engineering design stage. I have suggested a condition regarding the design of vested infrastructure in liquefaction risk areas to Infrastructure Design Standard requirements.

Davis Ogilvie have suggested that NZS 3604 foundations as suitable for TC1 type areas and that site specific investigations will be needed to support NZS 3604 Type A, B & C foundations (options 2 or 4 of the MBIE “Repairing and rebuilding houses affected by the Canterbury earthquakes” 2012) in the TC2 type areas. These foundations are dependent on the treatment returning the TC3 type areas to a TC2 type classification. I suggest the same condition as for stage 1, requiring confirmation of the categorisation and a consent notice to address foundation options.

Davis Ogilvie suggested the following geotechnical conditions relevant to stage 2:

- 1) Shallow geotechnical site investigations are required on all individual lots, at building consent stage, to confirm ground bearing capacity and the appropriate foundation design. The recommended density and type of shallow geotechnical testing is defined in NZS 3604:2011.
- 2) Where areas have been categorised as TC2 or an area requiring ground improvement, foundation systems will require specific engineer design, construction observation and certification by a suitably qualified and experienced Chartered Professional Engineer (CPEng).
- 3) Ground improvement will need to be implemented during the civil construction to ensure TC2 style land performance is achieved, as illustrated upon Figure 14 of the Geotechnical report. This shall consist of a minimum of 600 mm of engineered fill placed in accordance with NZS 4431:1989.

Slippage, falling debris and erosion are not generally considered a risk on the flat land considered under this consent so have not been specifically addressed in the conditions, beyond the normal earthwork conditions.

Ms McDonald suggests a suite of conditions covering both earthworks generally and geotechnical matters. These are incorporated below.

I note that the applicant has viewed and accepted the conditions suggested by Ms McDonald.

I accept the advice provided to me regarding the risk of natural hazards, and conclude that there are no grounds to refuse consent under section 106(1)(a). In terms of section 106(1)(c) I am satisfied that adequate legal and physical access is provided to each allotment.

## Recommendations

### LAND USE CONSENT (earthworks)

- (A) That the application be processed on a **non-notified** basis in accordance with Sections 95A – 95E of the Resource Management Act 1991.
- (B) That the application **be granted** pursuant to Sections 104, 104C, and 108 of the Resource Management Act 1991, subject to the following condition:
  1. The development shall proceed in accordance with the information and plans submitted with the application – the cut and fill plan is stamped as an approved plan. Relevant conditions are found in section 12 of the subdivision consent conditions below, and will be monitored and enforced through the subdivision engineering process associated with the development.

### Works within 5 metres of Street trees

2. This consent only allows works within 5m of the trunk of a street tree, within 5 years of the date of the title being issued for the lot to which the crossing applies.
3. Any earthworks within the legal road associated with the construction of a new vehicle crossing and to install water supply connections shall be setback a minimum of 2m from the trunk of any street tree.

Note: The minimum separation distances between street trees and driveways specified in the Christchurch City Council [Infrastructure Design Standards](#) (IDS) must be adhered to (refer IDS 10.9.11 Location of trees in streets).

4. No other works or parking of vehicles or stockpiles or storage of materials are permitted within 5m of the trunk of a street tree, except that vehicles may park on the carriageway of the road.
5. Prior to the commencement of works, a temporary protective fence shall be erected around the tree at a minimum distance of 2m from the trunk of the tree, except that this can be reduced to 1.5m where the vehicle crossing is to be installed or to the edge of any sealed area (such as a footpath or kerb and channel).
6. The temporary protective fence shall be constructed of mesh material with a "post" system spaced at intervals of at least a metre apart and consisting of a type that has no underground strip footing.
7. The temporary protection fence shall be maintained at all times during the construction process. If the protective fencing is damaged it shall be repaired immediately.
8. No water used to wash down machinery (e.g. concrete mixers) likely to contain concrete or fuel shall be disposed of within 5m of the trunk of a street tree.
9. At the completion of works any exposed earth within the berm shall be reinstated and planted with grass.
10. Any person undertaking works within 5m of a street tree under this consent shall notify Christchurch City Council no less than five working days prior to works commencing, (email to [rcmon@ccc.govt.nz](mailto:rcmon@ccc.govt.nz)) of:
  - a. the earthworks start date and the name and contact details of the site supervisor.
  - b. the temporary protective fence being erected (provide photographic evidence)
  - c. a schedule/list of activity.
11. Within 5 working days of sealing the vehicle crossing photographs of the site shall be taken and forwarded to [rcmon@ccc.govt.nz](mailto:rcmon@ccc.govt.nz).
12. The site manager shall keep a copy of this consent on site at all times and will be responsible for informing the labour force with regard to the conditions of the consent.

### SUBDIVISION CONSENT

- (A) That the application be processed on a **non-notified** basis in accordance with Sections 95A – 95E of the Resource Management Act 1991.
- (B) That the application **be granted** pursuant to Sections 104, 104C and 106 of the Resource Management Act 1991, subject to the following conditions imposed pursuant to Sections 108 and 220 of the Resource Management Act 1991:
  1. **Compliance with Application Information**

The survey plan, when submitted to Council for certification, is to be substantially in accordance with the stamped approved application plan.
  2. **Roading**
    - 2.1 New Road to Vest

The new road, being lot 1004, is to be formed and vested in the Council to the satisfaction of the Subdivision Engineer with underground wiring for electricity supply and telecommunications.

## 2.2 Prestons Road Frontage Upgrade

The frontage of the site (of Stage 1 under RMA/2017/2059) along Prestons Road (South Side) is to be upgraded to an urban standard as part of the development. Engineering plans are to be submitted for acceptance along with plans for the intersection layout and design. A detailed design safety audit for the intersection and internal road network shall form part of the engineering design acceptance package presented to Council and shall also deal with timing of signalisation of the intersection.

## 3. Engineering General

### 3.1 Asset Design and Construction

All infrastructure assets to be vested in the Council are to be designed and constructed in accordance with the Christchurch City Council's Infrastructure Design Standard (the IDS) and the Construction Standard Specifications (the CSS).

### 3.2 Quality Assurance

The design and construction of all assets is to be subject to a project quality system in accordance with Part 3: Quality Assurance of the IDS.

- A. Submit a Design Report, Plans and Design Certificate complying with clause 3.3.2 to the Subdivision Engineers (Planning Team 1). The Design Report and engineering plans are to provide sufficient detail to confirm compliance with the requirements of the IDS and this consent including compliance with Condition 13.2 and Condition 13.4 Ground Improvement. This report can be submitted as two individual design reports addressing infrastructure as one part and the second part as a Geotechnical Report.
- B. Prior to the commencement of physical works on site, the Consent Holder shall submit a Contract Quality Plan for review by the Council and an Engineer's Review Certificate complying with clause 3.3.3 of the IDS, for review and acceptance by Council under Clause 2.11 of the IDS 2018.

*Physical works shall not commence until a Council Engineering Officer confirms that the above documentation has been received and accepted.*

- C. Prior to the issue of certification pursuant to section 224(c) of the Resource Management Act, the Consent Holder shall submit to the Planning Team - Subdivision Engineers an Engineer's Report and an Engineer's Completion Certificate complying with clause 3.3.4 of the IDS, for review and acceptance under clause 2.12 of the IDS 2018. The Engineer's Report shall provide sufficient detail to confirm compliance with the requirements of the IDS and this consent, including compliance with consent conditions requiring mitigation measures with respect to any liquefaction hazards.

*An Engineer's Report is a document specific to a project, which describes how the project was managed and administered in compliance with the IDS, the Construction Standard Specifications, the Contract Quality Plan and the resource consent or project brief. It provides background information to the release of the 224(c) certificate.*

*Note: Part 3 of the IDS sets out the Council's requirements for Quality Assurance. It provides a quality framework within which all assets must be designed and constructed. It also sets out the process for reporting to Council how the works are to be controlled, tested and inspected in order to prove compliance with the relevant standards. It is a requirement of this part of the IDS that the applicant provides certification for design and construction as a pre-requisite for the release of the 224c certificate. The extent of the documentation required should reflect the complexity and/or size of the project.*

*Any reference to 'Engineering Acceptance' under further conditions of consent refers to the process set out in conditions 3.1 and 3.2 above.*

In addition to the above, the applicant is to design all infrastructure to resist the effects associated with earthquake induced liquefied soils. All liquefaction hazard mitigation shall be designed for a 1 in 150 year return period serviceability limit seismic design event and a 1 in 500 year return period ultimate limit state seismic design event as defined in NZS1170.5.2004.

### 3.3 Traffic Management

An approved Traffic Management Plan (TMP) shall be implemented and no works are to commence until such time as the TMP has been installed. The TMP shall be prepared by an STMS accredited person and submitted to and approved by the Christchurch Transport Operation Centre – please refer to [www.tmpforchch.co.nz](http://www.tmpforchch.co.nz)

### 3.4 Survey Plan Requirements

The surveyor is to forward a copy of the title plan and survey plan to the Subdivision Planner (that issued the consent), Resource Consents & Building Policy Unit as soon as the plan has been lodged (or earlier if possible) for checking at Land Information New Zealand for entering into the Council GIS system.

### 3.5 Laterals for rear Lots

All private sewer and stormwater laterals (serving rear lots) shall be installed under a single global Building Consent by a Licensed Certifying Drain Layer and the Code Compliance Certificate forwarded to Council's Subdivision Team as part of the Sec 224c application.

### 3.6 CCTV Inspections

Pipeline CCTV inspections are to be carried out on all gravity pipelines in compliance with the Council Standard Specifications (CSS):

<https://www.ccc.govt.nz/consents-and-licences/construction-requirements/construction-standard-specifications/pipeline-cctv-inspections/>

### 3.7 Services As-Built Requirements

As-Built plans and data shall be provided for all above and below ground infrastructure and private work in compliance with the Infrastructure Design Standards (IDS):

<https://www.ccc.govt.nz/consents-and-licences/construction-requirements/infrastructure-design-standards/as-built-survey-and-data-requirements/>

*Note: this includes RAMM and costing data*

As-Built Plans are to be provided for any easements in gross over pipelines.

The plans are to show the position of the pipelines relative to the easements and boundaries.

## 4. Water Supply

- 4.1 The point of water supply for the subdivision shall be the DN355 PE100 water main connection in Prestons Road. The connection to Prestons Road is to be constructed via Lot 1004 (road to vest) and southwards within the new collector road under RMA/2017/2059 (Oakbridge Stage 1).
- 4.2 The water supply shall be designed by a suitably qualified person in accordance with the Infrastructure Design Standard and in general accordance with the NZ Fire Service Fire Fighting Water Supplies Code of Practice NZS 4509:2008 to the satisfaction of the Water & Wastewater Asset Planning Team. Engineering drawings supported by hydraulic model outputs shall be sent to the Subdivisions Engineer for Engineering Acceptance by the Three Water & Waste Asset Planning Team prior to the commencement of any physical work.
- 4.3 All water mains and submains for the subdivision shall be installed in road to be vested in Council.
- 4.4 Water mains shall be extended along the full length of roads to vest and be terminated with temporary hydrants as per the requirements of the Infrastructure Design Standard.
- 4.5 All water supply reticulation within this development shall be polyethylene (PE80B and PE100).
- 4.6 The construction of Council vested water infrastructure shall be carried out by a Council approved water supply installer at the expense of the applicant.
- 4.7 All lots shall be served with a water supply to their boundary. Submains shall be installed to 1m past each lot boundary.

- 4.8 Any rear lot or lot within a R.O.W or legal access lot shall be serviced by its own lateral within a shared access. An easement for the right to convey water shall be created over the lateral in favour of the lot serviced by the lateral.

Laterals shall be installed by a Licensed Certified Plumber and shall not cross the boundary of the net site area of other sites.

*Advice Note: This will require a Building Consent unless the consent holder obtains a Building Consent exemption for the installation of the private laterals. A water connection for Lot 84 is not available through this subdivision. Water supply to Lot 84 will remain via private water supply bore until water supply infrastructure is available in Hawkins Road.*

- 4.9 Where laterals are installed under a building consent exemption, construction shall be in accordance with the Construction Standard Specifications (CSS) and the Infrastructure Design Standard (IDS). Dummy connection boxes shall be installed at the entrance of the shared access or R.O.W. at the public road boundary or in the event that the water main is extended into the R.O.W, in an area set aside within the R.O.W and as close as possible to the terminal fire hydrant.
- 4.10 Lot 84 is served by existing water supply arrangements. Future development will require provision of reticulated water supply.

*This is an ongoing condition which will be secured by consent notice in terms of Section 221 of the Resource Management Act*

## **5. Sewerage**

- 5.1 The subdivision shall be serviced by a Local Pressure Sewer System designed in accordance with Council's Infrastructure Design Standards and Construction Standard Specifications. Engineering drawings supported by hydraulic calculations shall be sent to the Subdivisions Engineer for Engineering Acceptance by the Three Water and Waste Planning Team prior to the commencement of any physical work.
- 5.2 The approved sanitary sewer outfall shall be the DN110 PE100 pressure sewer connection in Prestons Road. The connection to Prestons Road is to be constructed via Lot 1004 (road to vest) and southwards along the new collector road under RMA/2017/2059 (Oakbridge Stage 1).
- 5.3 The consent holder shall put in place measures to enable the initial operation of the local pressure sewer system within and from the subdivision during the build phase, including (but not limited to) ensuring self-cleansing flow and limiting sewage retention time within the system when the design number of pressure sewer tanks are not yet in operation. These measures shall be reported to the Subdivisions Engineer prior to seeking section 224(c) certification.
- 5.4 Each lot shall have a Boundary Kit located within the legal road or R.O.W. outside the boundary of the lot. The pressure lateral from the Boundary Kit is to extend at least 600mm into the net site of each lot.
- 5.5 Properties in a R.O.W. shall be serviced by a single pressure main. An isolation valve shall be installed on the pressure main at the boundary of the R.O.W and the public road. Easements in gross shall be created over Pressure Sewer Systems in private R.O.Ws.
- 5.6 The following conditions shall be recorded pursuant to Section 221 of the RMA in a consent notice registered on the titles of each residential lot:
- This property shall be served by a local pressure sewer unit comprising a pump and storage chamber which can accommodate at least 24 hours average dry weather flow to be supplied by either Aquatec or EcoFlow and installed by a Council Authorised Drainlayer (Pressure Sewer Tanks) at building consent stage in accordance with the Requirements for Local Pressure Sewer Units specified under a Building Consent. The local pressure sewer unit will be supplied complete with an IOTA OneBox Control Panel.
  - Ownership and control of the local pressure pump, chamber, boundary kit and OneBox Control Panel shall be vested with Council. The property owner shall enter into a Deed with the Christchurch City Council, drafted in terms approved by the Christchurch City Council, vesting ownership in the system prior to Code Compliance Certificate being issued for a dwelling on the relevant site.

- The Council and its agents or contractors shall have the right of access to the property for the purpose of maintenance, monitoring or renewal of any part of the local pressure sewer system vested with Council.
- The property owner shall ensure that the local pressure sewer unit is connected at all times to an electricity supply and shall remain responsible for the cost of the electricity required to operate it.
- The property owner shall adhere to the user requirements of the local pressure sewer unit. In the event that the local pressure sewer unit is damaged as a result of a breach of this obligation, the Council may recover the costs of repair from the property owner.

*Advice Note: This is an on-going condition and a consent notice will be issued under section 221 of the Act at the time of section 224(c) certificate.*

- 5.7 Lot 84 is served by existing sewerage disposal arrangements. Future development will require provision of sewerage reticulation.

*This is an ongoing condition which will be secured by consent notice in terms of Section 221 of the Resource Management Act*

## **6. Stormwater**

- 6.1. The stormwater management system shall be comprised of channels, sumps, pipes and/or swales. In addition to the below conditions, the system shall meet the requirements of the CCC Waterways, Wetlands and Drainage Guide (WWDG 2003 including updated Chapters 6 & 21), the Infrastructure Design Standard (IDS 2018) and the Construction Standard Specifications (CSS 2018).
- 6.2 The consent holder shall demonstrate that authorisation for the discharge of construction and operational phase stormwater has been obtained from Christchurch City Council, otherwise separate authorisation from Environment Canterbury shall be obtained.
- 6.3 Prior to issuance of Section 224c certification, the consent holder shall submit an Engineering Design Report for acceptance by the Council 3 Waters and Waste Unit and Resource Consents Unit. The Engineering Design Report shall demonstrate how the design will meet all of the applicable standards and shall contain all of the plans, specifications and calculations for the design and construction of all stormwater and surface water management systems.
- 6.4 Unless otherwise approved by the Council Engineer, stormwater generated from all roofs, roads and hardstanding areas within all allotments shall be collected via channels, sumps, pipes or swales and discharged into the Oakbridge Stage 1 stormwater mitigation facility constructed under RMA/2017/2059.
- 6.5 The stormwater management system shall be designed to ensure complete capture and conveyance of all stormwater runoff from the site and upstream contributing catchments (assuming Maximum Probable Development) for all rainfall events up to and including the critical two percent annual exceedance probability storm. This will require internal reticulation and conveyance to meet Council's inundation standards as specified in the WWDG. A combination of primary and secondary conveyance systems may be used to ensure this level of service is achieved.
- 6.6 The primary stormwater reticulation network shall be designed to convey (at minimum) the critical twenty percent annual exceedance probability storm event from the site and contributing upstream catchments. No flooding of private property shall occur during the critical ten percent annual exceedance probability storm event and no flooding of buildings shall occur during the critical two percent annual exceedance probability storm event.
- 6.7 The designer of the stormwater management system identify all overland flow paths proposed for storm events that exceed the capacity of the stormwater management system. All overland stormwater flow paths shall be identified and protected by an easement in favour of Christchurch City Council, if required.
- 6.8 Unless otherwise approved by Council engineers, any subsoil drainage systems designed to permanently manage groundwater shall be designed and constructed in accordance with WWDG

Section 5.3. The outfall for any subsoil systems expected to generate dry-weather flow shall be confirmed with Council engineers at the detailed design phase.

- 6.9 Stormwater laterals shall be laid at least 600mm inside the boundary of all allotments at the subdivision stage. Unless otherwise approved by Council Engineers, the laterals are to be laid at sufficient depth to ensure protection and adequate fall is available to serve the furthestmost part of the lot.
- 6.10 Safe and adequate access to all stormwater management facilities for operation and maintenance shall be provided and designed in accordance with WWDG Sections 6.8 & 6.9.
- 6.11 The consent holder shall provide easements in gross over all stormwater infrastructure located outside of legal road or Local Purpose Reserves to be vested with Council.
- 6.12. The consent holder shall operate and maintain stormwater infrastructure to vest into Council for at least 12 months following the issue of the Section 224(c) certificate, after such time Council may accept responsibility for operation and maintenance.
- 6.13. The consent holder shall provide as-built plans of the stormwater management systems and confirm that they have been constructed in accordance with the approved plans and comply with the IDS, particular Part 3: Quality Assurance and Part 12: As-Builts.
- 6.14 Erosion and Sedimentation Control  
An Erosion and Sediment Control Plan (ESCP) is to be submitted for review as part of the design report. The ESCP is to include (but is not limited to):
- Site description, i.e. topography, vegetation, soils etc.
  - Details of proposed activities.
  - A report including the method and time of monitoring to be undertaken.
  - A locality map.
  - Drawings showing the site, type and location of sediment control measures, onsite catchment boundaries and offsite sources of runoff.
  - Drawings and specifications showing the positions of all proposed mitigation areas with supporting calculations if appropriate.

The performance criteria for the ESCP, unless directed by Council through the engineering acceptance process, will be based on Environmental Canterbury's Erosion and Sediment Control Guidelines: <http://escscanterbury.co.nz/>

The ESCP is to be implemented on site during the subdivision construction phase and no works are to commence until such time as the ESCP has been accepted.

The ESCP is to be designed by a suitably qualified person and a design certificate supplied with the plan. (Use the certificate from Appendix IV of the CCC Infrastructure Design Standard Part 3)

*Note: Pursuant to Section 128 of the Resource Management Act 1991 Council reserves the right, during the construction phase, to review this condition to impose further controls in respect to Sedimentation Control and Management*

- 6.15 Lot 84 is served by existing stormwater arrangements. Future development will require provision of stormwater control, retention/detention and treatment including reticulation.

*This is an ongoing condition which will be secured by consent notice in terms of Section 221 of the Resource Management Act*

## **7. Access Construction Standards**

The access formation shall be designed and constructed in accordance with the CCC Infrastructure Design Standard. Physical works shall not commence until a Council engineering officer confirms that the Design Report, Plans and Design Certificate complying with clause 3.3.1 of the IDS and the Contract Quality Plan and Engineer's Review Certificate complying with clause 3.3.2 has been received by Council.

## **8. Street Lighting**

Street lighting is to be installed in the new road(s) to vest in compliance with Part 11 (Lighting) of the Infrastructure Design Standard.

## **9. Engineering Plans**

- 9.1 Engineering plans for the construction of the new road(s) and Prestons Road frontage and new intersection, access to rear lots, street lighting, drainage, sediment control, water supply, earthworks, landscaping and tree planting shall be lodged with the Subdivisions Engineer and accepted prior to the commencement of any physical works. All works are to be in accordance with Council's Infrastructure Design Standard.
- 9.2 Engineering works are to be installed in accordance with the accepted plans.

## **10. Health of Land / NES for contaminated land**

- 10.1 All works shall adhere to the procedures set out in Davis Ogilvie RAP/SMP including the appropriate engagement of the persons/companies described in the roles and responsibilities section of this document. All site workers must be familiar with the accidental discovery protocols of the RAP/SMP. A copy of the RAP/SMP shall remain on site and must be accessible to all workers and contractors on site.
- 10.2 All contaminated soils removed from the site will not be suitable to be disposed of at a cleanfill facility and must be disposed of at a facility whose waste acceptance criteria permit the disposal
- 10.3 Evidence of disposal to authorised facilities such as weighbridge receipt weighbridge receipts or waste manifest and shall be included in the site validation report.
- 10.4 In the event of contamination discovery e.g. visible staining, odours and/or other conditions that indicate soil contamination, then work must cease until a Suitably Qualified and Experienced Practitioner (SQEP) has assessed the matter and advised of the appropriate remediation and/or disposal options for these soils. Any measures to remediate the soil contamination shall be reported to and approved by the Christchurch City Council.
- 10.5 Only cleanfill materials as defined in the Christchurch District Plan shall be used as imported fill.
- 10.6 Validation soil testing shall be undertaken in accordance with the MfE Contaminated Land Guideline No. 5.
- 10.7 Prior to the issuance of section 224 certificate, a site validation report (SVR) shall be provided to the Council for Council's acceptance. The SVR shall be prepared by the project's contaminated land specialist and outlining the works undertaken. The SVR shall include at least the following:
  - a. A summary of remedial works and other soil disturbance works undertaken;
  - b. Analytical results and interpretation of validation sampling of the excavation;
  - c. Phot logs of soil disturbance activities undertaken;
  - d. Evidence of disposal to an offsite facility;
  - e. Location/s of areas where soil will be reused within the application site;
  - f. Confirmation of imported clean fill and volumes; and
  - g. A statement of the volumes of soil disturbed by the worksThe site validation shall be emailed to [envresourcemonitoring@ccc.govt.nz](mailto:envresourcemonitoring@ccc.govt.nz) .

## **11. Plans for Geodata Plot**

As soon as practical after the Section 223 certificate has been issued the consent holder is to advise the handling officer that the digital dataset for the subdivision is available in Land online and can be used for creation of the parcels in Council's digital database.

## **12. Earthworks / Filled Land**

- 12.1 Earthworking shall be in accordance with the stamped approved cut and fill plan.

- 12.2 The earthworks and construction work shall be under the control of a nominated and suitably qualified engineer.
- 12.3 All loading and unloading of trucks with excavation or fill material shall be carried out within the subject site.
- 12.4 All works on site shall be subject to a Traffic Management Plan (TMP) which must be prepared by a suitably qualified person and submitted for acceptance prior to the commencement of earthworks. No works are to commence until the TMP has been accepted and installed.

The TMP shall identify the nature and extent of temporary traffic management and how all road users will be managed by the use of temporary traffic management measures. It shall also identify the provision of on-site parking for construction staff. Activities on any public road should be planned so as to cause as little disruption, peak traffic safety delay or inconvenience to road users as possible without compromising safety. The TMP must comply with the Waka Kotahi NZTA Code of Practice for Temporary Traffic Management (CoPTTM) and the relevant Road Controlling Authority's Local Operating Procedures.

The TMP shall be submitted to the relevant Road Controlling Authority through the web portal [www.myworksites.co.nz](http://www.myworksites.co.nz). To submit a TMP a Corridor Access Request (CAR) must also be submitted. A copy of the accepted TMP and CAR shall be supplied to the Council's resource consent monitoring team (via email to [rcmon@ccc.govt.nz](mailto:rcmon@ccc.govt.nz)) at least 3 working days prior to the commencement of works under this consent.

Note: Please refer to <https://ccc.govt.nz/transport/legal-road/traffic-management-news-and-information> for more information.

- 12.5 The Erosion and Sediment Control Plan shall show the positions of all stockpiles on site. Temporary mounds shall be grassed or covered to prevent erosion until such time as they are removed. Topsoil should be reworked as little as possible to protect the integrity of the soil microbes.
- 12.6 All filling and excavation work shall be carried out in accordance with an Environmental Management Plan (EMP) which shall include an Erosion and Sediment Control Plan (ESCP) and the Remedial Action Plan/Site Management Plan presented with the application. Unless approved as part of the ECan resource consent for stormwater discharge or ECan resource consent for excavation/filling the EMP will require formal acceptance by Christchurch City Council's Subdivision Engineer (email to [rcmon@ccc.govt.nz](mailto:rcmon@ccc.govt.nz)) prior to any work starting on site. The accepted EMP shall be implemented on site over the construction phase and no works are to commence until such time as the EMP has been installed. The EMP shall be designed by a suitably qualified person and a design certificate (template available on request) supplied with the EMP for acceptance at least 5 days prior to the works commencing. The performance criteria for erosion and sediment control will be based on ECan's Erosion and Sediment Control Toolbox for Canterbury <http://escanterbury.co.nz/>. The EMP shall include (but is not limited to):
- The identification of environmental risks including erosion, sediment and dust control, spills, wastewater overflows, dewatering, and excavation and disposal of material from contaminated sites;
  - A site description, i.e. topography, vegetation, soils, etc;
  - Details of proposed activities;
  - A locality map;
  - Drawings showing the site, type and location of sediment control measures, on-site catchment boundaries and off-site sources of runoff;
  - Drawings and specifications showing the positions of all proposed mitigation areas with supporting calculations if appropriate;
  - Drawings showing the protection of natural assets and habitats;
  - Emergency response and contingency management;
  - Procedures for compliance with resource consents and permitted activities;
  - Environmental monitoring and auditing, including frequency;

- Corrective action, reporting on solutions and update of the EMP;
- Procedures for training and supervising staff in relation to environmental issues;
- Contact details of key personnel responsible for environmental management and compliance.

*Note: IDS clause 3.8.2 contains further detail on Environmental Management Plans.*

12.7 The accepted ESCP shall be implemented on site over the construction phase. No earthworks shall commence on site until:

- The contractor has received a copy of all resource consents and relevant permitted activity rules controlling this work
- The works required by the ESCP have been installed.
- An Engineering Completion Certificate (IDS – Part 3, Appendix VII), signed by an appropriately qualified and experienced engineer, is completed and presented to Council. This is to certify that the erosion and sediment control measures have been properly installed in accordance with the accepted ESCP.

12.8 Dust emissions shall be appropriately managed within the boundary of the property in compliance with the *Regional Air Plan*. Dust mitigation measures such as water carts or sprinklers shall be used on any exposed areas. The roads to and from the site are to remain tidy at all times.

12.9 All loading and unloading of trucks with excavation or fill material shall be carried out within the subject site.

12.10 The Consent Holder shall notify Christchurch City Council no less than three working days prior to works commencing, (email to [rcmon@ccc.govt.nz](mailto:rcmon@ccc.govt.nz)) of the earthworks start date and the name and contact details of the site supervisor.

12.11 Any change in ground levels shall

- not cause a ponding or drainage nuisance to neighbouring properties.
- not affect the stability of the ground or fences on neighbouring properties.
- maintain existing drainage paths for neighbouring properties.

12.12 The fill sites shall be stripped of vegetation and any topsoil prior to filling. The content of fill shall be clean fill.

12.13 All filling exceeding 300mm above excavation level shall be in accordance with the Code of Practice for Earthfill for Residential Purposes NZS 4431:1989. At the completion of the work an Engineers Earthfill Report, including a duly completed certificate in the form of Appendix A of NZS 4431, shall be submitted to Council at [rcmon@ccc.govt.nz](mailto:rcmon@ccc.govt.nz) for all lots, including utility reserves, within the subdivision that contain filled ground. This report shall detail depths, materials, compaction test results and include as-built plans showing the location and depth of fill and a finished level contour plan.

12.14 The consent holder shall submit a report and calculations detailing any filling proposed against existing boundaries and the means by which to comply with condition 12.11 in respect to adjoining properties. Any retaining wall construction shall be included and certified as part of the Earthfill Report in condition 12.13.

Note: Any retaining wall that exceeds 6m<sup>2</sup> is regarded as a building and requires a separate resource consent if not specifically addressed within the application supporting this consent.

Note: This report may be presented as part of the Design Report for the subdivision works under condition 1.

12.15 At the completion of the earthworks operations, the berm areas outside the line of the roadway construction shall be sown down with grass seed.

12.16 All bared surfaces shall be adequately topsoiled and vegetated as soon as possible to limit sediment mobilisation.

12.17 Any public road, shared access, footpath, landscaped area or service structure that has been damaged, by the persons involved with the development or vehicles and machinery used in relation

to the works under this consent, shall be reinstated as specified in the Construction Standard Specifications (CSS) at the expense of the consent holder and to the satisfaction of Council.

- 12.18 Should the Consent Holder cease or abandon work on site for a period longer than 6 weeks, or be required to temporarily halt construction during earthworks, they shall first install preventative measures to control sediment discharge / run-off and dust emission, and shall thereafter maintain these measures for as long as necessary to prevent sediment discharge or dust emission from the site.

*Advice Note:*

*It is the consent holder's responsibility to ensure that the activity, including where carried out by contractors on their behalf, complies with the below district plan standard - failure to do so may result in enforcement action and the need for additional land-use consent:*

- *Rule 6.1.6.1.1 P2 - All earthworks related construction activities shall meet relevant noise limits in Tables 2 and 3 of NZS 6803:1999 Acoustics - Construction Noise, when measured and assessed in accordance with that standard.*
- *Rule 8.9.2.1 P1 Activity Standard e. - Earthworks involving mechanical or illuminating equipment shall not be undertaken outside the hours of 07:00 – 19:00 in a Residential Zone. Between the hours of 07:00 and 19:00, the noise standards in Chapter 6 Rule 6.1.5.2 and the light spill standards at Chapter 6 Rule 6.3.6 both apply.*

### **13. Geotechnical**

- 13.1 All liquefaction hazard mitigation on site shall be designed in accordance with the recommendations in the Davis Ogilvie and Partners Geotechnical Report for Subdivision, 203 Prestons Rd, Oakbridge Subdivision, Job 34300 dated 22 August 2017.

- 13.2 All infrastructural assets to be vested in the Council shall be designed and constructed in accordance with the Infrastructure Design Standard (IDS) 2018 and the Construction Standard Specifications (CSS).

Asset structures shall include but not be limited to gravity and pressure pipelines, manholes, chambers, valves, hydrants, stormwater treatment devices, culverts or any other physical asset to be vested in Council including road pavements. Bridges and pump stations shall be designed to importance level 3 (IL3) as defined in NZS 1170.

In addition to the above, to be considered suitable in terms of section 106(1A)(a) and (b) of the Resource Management Act, all proposed infrastructure shall be designed to resist the effects associated with earthquake induced liquefiable soils and lateral spread from a seismic event as defined in condition 13.3.

- 13.3 To mitigate liquefaction (vertical settlement) hazards and lateral spread (horizontal displacement), any proposed asset structures shall be designed for a seismic event with a 25 year return period under the serviceability limit state (SLS) event and with a 500 year return period for the ultimate limit state (ULS) event as defined by NZS 1170.5:2004.

Beyond a SLS seismic event, it is recognised asset structures may become progressively less serviceable.

- 13.4 Ground Improvement

Site earthworks and remediation shall be carried out to improve the ground performance in terms of the MBIE guidelines 'Repairing and rebuilding houses affected by the Canterbury earthquakes' (3<sup>rd</sup> Edition 15 March 2017) or subsequent revisions. Ground performance shall achieve a minimum technical categorisation on all residential lots equivalent to TC2. The technical category will be confirmed in the Engineers Report prepared for the section 224(c) certificate under condition 4.

- 13.5 Foundation design

Any structure requiring a Building Consent, in terms of Building Act provisions, shall have specific foundation design by a suitably experienced chartered engineer or by an appropriately qualified geotechnical engineer. The design shall take into consideration the potential for liquefaction and associated effects (vertical settlement and lateral spread) appropriate for Technical Category 2

land and shall be investigated and designed in accordance with MBIE Guidelines 'Repairing and rebuilding houses affected by the Canterbury earthquakes' (3<sup>rd</sup> Edition 15 March 2017) or subsequent revisions."

Note: These requirements are contingent upon TC1 and TC2 land equivalence being achieved by the proposed earthworks and remediation works.

*This is an ongoing condition which will be secured by consent notice in terms of Section 221 of the Resource Management Act be registered on the titles for all lots that are categorised in the Final Geotechnical Report as TC2 equivalent land.*

#### 13.6 Geotechnical Completion Report

Prior to the request for the section 224 certificate the Consent Holder shall supply a Final Geotechnical Report on the mitigation measures put in place during the construction phase to minimise both the liquefaction and lateral spread potential of the land during the SLS and a ULS seismic event in condition 3.2. The report shall recommend the Technical Category of the land in terms of the MBIE guidance document 'Repairing and Rebuilding Houses Affected by the Canterbury Earthquakes' and include a Statement of Professional Opinion on the Suitability of Land for Building Construction, using the template in IDS Part 4 Appendix II.

#### 14. Telecommunications and Energy Supply

All lots shall be provided with the ability to connect to a telecommunications and electrical supply network at the boundary of the net area of each lot. "Ability to connect" means that ducts or cables must be laid to the boundary of the net area.

As evidence of the ability to connect, the consent holder is to provide a copy of the reticulation agreement letter from the telecommunications network operator and a letter from the electrical energy network operator, or their approved agent.

#### 15. Right of Way Easements (Private Ways)

The rights of way easements as set out on the application plan shall be duly granted or reserved.

The registered users of the right of way shall maintain the access and the liability and apportionment of the costs of maintenance shall be written into the legal document granting or reserving the right of way easement.

#### 16. Service Easements

The service easements as set out on the application plan or required to protect services crossing other lots shall be duly granted or reserved.

Easements over adjoining land or in favour of adjoining land are to be shown in a schedule on the Land Transfer Plan. A solicitor's undertaking will be required to ensure that the easements are created on deposit of the plan.

#### 17. Existing Easements over areas of Road to Vest

Any existing easements that extend over any area proposed as road to vest are to be surrendered.

#### 18. Easements in Gross

The legal instruments for any easements in gross in favour of the Council are to be prepared by Council's consultant solicitor at the consent holder's cost. The consent holder's solicitor is to contact Anderson Lloyd Lawyers (Mike Kerr) requesting the preparation of the easement instruments.

#### 19. Road and/or Lane Names

The new roads are to be named.

A selection of names in order of preference is to be submitted for each new road. For historical purposes a brief explanation of the background for each submitted name is preferred. The names are to be in accordance with the Council's Policy on Naming of Roads and Rights of Way dated 2 November 1993.

The allocated names when approved are to be shown on the survey plan submitted for certification.

*Advice Note: Road names are required to be approved by the Community Board. Community Board meetings are only held approximately once a fortnight, however Council Reports need to be completed two weeks prior to the meeting date. It would be in your interest to start the naming process early so that this process does not hold up this development as it can take up to six weeks. To request a road name, find the form and more information at <https://ccc.govt.nz/consents-and-licences/resource-consents/subdivision-consents/road-and-right-of-way-naming/>*

The consent holder shall order and install the road's nameplates. The nameplates shall be designed and installed in accordance with the IDS and CSS.

The location of the nameplates shall be submitted to Council's Subdivision Engineer for approval prior to their installation.

*Advice Note: Nameplates usually take six weeks to manufacture. The location of the nameplates can be submitted in a plan which identifies the road's landscaping and location of street lighting as required by this application. The consent holder is responsible for the cost of providing and installing the nameplates.*

## **20. Public Utility Sites**

Any public utility site and associated rights of way easements and/or service easements required by a network operator are approved provided that they are not within any reserves to vest in the Council.

## **22. Consent Notice**

The following consent notice pursuant to Section 221 of the Resource Management Act 1991 will be issued by the Council:

All residential lots:

### **Foundation design**

Any structure requiring a Building Consent, in terms of Building Act provisions, shall have specific foundation design by a suitably experienced chartered engineer or by an appropriately qualified geotechnical engineer. The design shall take into consideration the potential for liquefaction and associated effects (vertical settlement and lateral spread) appropriate for Technical Category 2 land and shall be investigated and designed in accordance with MBIE Guidelines 'Repairing and rebuilding houses affected by the Canterbury earthquakes' (3<sup>rd</sup> Edition 15 March 2017) or subsequent revisions."

*This consent notice, as detailed in condition 13.5, in terms of Section 221 of the Resource Management Act, be registered on the titles for all Stage two residential lots that are categorised in the Final Geotechnical Report as TC2 land.*

### **Sewerage system**

- This property shall be served by a local pressure sewer unit comprising a pump and storage chamber which can accommodate at least 24 hours average dry weather flow to be supplied by either Aquatec or EcoFlow and installed by a Council Authorised Drainlayer (Pressure Sewer Tanks) at building consent stage in accordance with the Requirements for Local Pressure Sewer Units specified under a Building Consent. The local pressure sewer unit will be supplied complete with an IOTA OneBox Control Panel.
- Ownership and control of the local pressure pump, chamber, boundary kit and OneBox Control Panel shall be vested with Council. The property owner shall enter into a Deed with the Christchurch City Council, drafted in terms approved by the Christchurch City Council, vesting ownership in the system prior to Code Compliance Certificate being issued for a dwelling on the relevant site.
- The Council and its agents or contractors shall have the right of access to the property for the purpose of maintenance, monitoring or renewal of any part of the local pressure sewer system vested with Council.
- The property owner shall ensure that the local pressure sewer unit is connected at all times to an electricity supply and shall remain responsible for the cost of the electricity required to operate it.

- The property owner shall adhere to the user requirements of the local pressure sewer unit. In the event that the local pressure sewer unit is damaged as a result of a breach of this obligation, the Council may recover the costs of repair from the property owner.

Lot 84:

**Services**

Any development of this property will require reticulated services (water supply, sewer and stormwater) to be installed in accordance with the IDS (Infrastructure Design Standard) and CSS (Construction Standard Specification). Upgrading of roading and access may be required.

*The Council will prepare the Consent Notice.*

**23. Goods and Services Taxation Information**

The subdivision will result in non-monetary contributions to Council in the form of land and/or other infrastructure that will vest in Council. Council's GST assessment form is to be completed to enable Council to issue a Buyer Created Tax Invoice.

**24. Duration of Consent**

The period within which this consent may be given effect to shall be 5 years from the date on which consent was granted. The consent will be given effect to when the survey plan has been certified pursuant to Section 223 of the Resource Management Act 1991.

**ADVICE NOTES FOR CONSENT HOLDERS TO BE READ IN CONJUNCTION WITH THE DECISION**

**Your Rights of Objection**

If you do not agree with the Council's decision on this resource consent application, the conditions, or any additional fees that have been charged, you may lodge an objection with the Council under Section 357 or 357B of the Resource Management Act 1991. You have 15 working days from the date you receive this letter within which to lodge your objection **to the decision**. Objections **to additional fees** must be received within 15 working days of the date on which you receive the invoice. Your objection must be in writing and should clearly explain the reasons for your objection.

**Commencement of this consent**

The commencement date for your resource consent is the date of this letter advising you of the Council's decision, unless you lodge an objection against the decision. The commencement date will then be the date on which the decision on the objection is determined.

**Lapsing of this consent**

This resource consent for subdivision will lapse 5 years after the date of commencement of consent (i.e. the date of this letter) unless it has been given effect to by the Council issuing a certificate pursuant to Section 223 of the Resource Management Act 1991.

Application may be made under Section 125 of the Resource Management Act 1991 to extend the duration of the resource consent, and this must be submitted and approved prior to the consent lapsing.

**Lapsing of s223 Certification**

The s223 certification will lapse 3 years after the date of issue, the Section 223 certificate will lapse (if that certified plan has not been deposited in accordance with Section 224 of the Resource Management Act 1991). The s223 certificate can be re-certified only if the subdivision consent has not lapsed.

**Fencing and retaining**

A land use consent may be required for retaining and fencing where rules in relation to building setback or fencing height are not complied with at site boundaries. This will be known clearly at the time plans for this aspect of the earthworking are supplied under Condition 15.9

**Archaeological Sites**

This site may be an archaeological site as declared by Heritage New Zealand Pouhere Taonga. Under Section 43 of the Heritage New Zealand Pouhere Taonga Act 2014, an archaeological site may be any place that was associated with human activity in or after 1900, and provides or may be able to provide, through investigation by archaeological methods, significant evidence relating to the historical and cultural heritage of New Zealand.

Please contact Heritage New Zealand Pouhere Taonga on [infosouthern@heritage.org.nz](mailto:infosouthern@heritage.org.nz) or (03) 357 9629 before commencing work on the land.

#### **New Street Numbers**

Street number allocation was not available at time of granting this consent. For street number allocation enquiries please email [informationsservices@ccc.govt.nz](mailto:informationsservices@ccc.govt.nz)

#### **Lighting in Private Ways**

The Council does not require lighting within private ways, nor will it accept the ongoing maintenance or running costs associated with lighting within the private way. Any proposal to light the private way shall include a method of payment of the ongoing costs by the benefiting owners.

#### **Building consent requirements**

This subdivision consent has been processed under the Resource Management Act 1991 and relates to planning matters only. You will also need to comply with the requirements of the Building Act 2004. Please contact a Building Consent Officer (941-8999) for advice on the building consent process.

**Reported and recommended by:** Sean Ward, Principal Advisor – Resource Consents **Date:** 24/09/2021

<b>Decision</b>
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That the above recommendations be adopted for the reasons outlined in the report.

**Delegated officer:**



Paul Lowe  
Team Leader Planning  
01/10/2021 09:20 AM