WAIMAKARIRI DISTRICT COUNCIL

REPORT

FILE NO:	RC215276 / 221101189245
VALUATION NO:	2154017402
DATE:	26 October 2022
REPORT TO:	Planning Manager – Ian Carstens
FROM:	Consultant Planner – Stewart Fletcher
SUBJECT:	The establishment of a landfill and associated earthworks at 513 Trig Road within an area currently being used as a quarry.
ACTIVITY:	Waimakariri District Plan – Discretionary Activity

1. APPLICANT

Woodstock Quarries Limited

2. PROPERTY LOCATION

513 Trig Road, Oxford

3. LEGAL DESCRIPTION

Lot 1 DP 481768

4. ZONING

Operative Waimakariri District Plan – Rural

Proposed Waimakariri District Plan – Rural General

5. DESCRIPTION OF PROPOSED ACTIVITY

5.1 Resource consent is sought to establish and operate a landfill operation including earthworks associated with the establishment of ancillary facilities, such as container terminal. The landfill is to be located within an area subject to quarrying and will utilise areas where quarrying has resulted in removal of material, thereby creating a void into which material can be deposited. Waste material will be placed within these previously excavated areas, compacted, filled to a level consistent with adjacent natural landforms, capped with unsaleable material from quarrying (including topsoil), and contained or rehabilitated by planting with grasses or native vegetation over the contained or closed areas. The resource consent application provides a detailed description of the proposed activity but in general terms it is summarised as follows:

5.2 Resource consents have been previously granted to operate a quarry on the site and the resource consents have been given effect to. Details of the resource consents are provided later in this assessment.

5.3 It is now proposed that the excavated quarry area will be backfilled using waste material, ie a landfill will operate from the site. The quarry is still operating and it is proposed that the landfill will, in effect, follow the quarrying activity as it progresses

across the site. This will have the effect that the excavated hole and hillside will be filled such that the contours of the site will be similarly restored to as they were prior to the operation of the quarry.

5.4 The landfill will be established over a 12 hectare area and the applicant has estimated that up to 100,000m^3 of landfill material will be brought to site each year. The type of material deposited at the landfill will include demolition and construction waste, and potentially hazardous waste. The applicant has stated that the material deposited at the site will comply with the acceptance criterial for a Class 1 Landfill as detailed in Appendix D of the Technical Guideline produced by Waste Management Institute New Zealand (WasteMINZ). A Class 1 Landfill is generally a site that accepts municipal solid waste, construction & demolition waste, some industrial wastes and contaminated soils. In this instance the applicant has stated the landfill will not include putrescible waste (i.e. green waste), or municipal solid waste (i.e. material from town rubbish collections).

5.5 Material will be trucked to the site in enclosed containers and dropped at a transfer area on the site. The applicants' vehicles will then transfer the material to the face of the landfill where it will be deposited into cell areas. There is therefore a controlled separation between the delivery of waste material to the site and the depositing of the material into the landfill. This will facilitate control of the type of material deposited and it is noted that vehicles delivering to the transfer area will be able to collect empty containers for the return trip.

5.6 As part of the proposed activity, buildings will be constructed including a workshop and office, a storage area will be established and existing internal roads will be maintained and enhanced where necessary. The applicant has sought approval for up to a maximum of 40 truck movements per day. The hours of operation for the proposed activity will be the same as the underlying quarry operations and include;

<u>Transport operations –</u>

- Between the hours of 7am and 6pm (Monday to Thursday)
- Between the hours of 7am and 5pm (Friday)
- Between the hours of 7am and 11am (Saturday) (excluding public holidays)

<u>Quarry and landfill operations</u>

- Between the hours of 6am and 8pm (Monday to Friday)
- Between the hours of 7am and 12pm (Saturday) (excluding public holidays)

In addition, in the event that a civil emergency is declared by any of the territorial authorities in the Canterbury Region, planned hours of operation and traffic numbers may be exceeded in order to respond to an event. The exact terms of such an arrangement will need to be appropriately clarified and managed.

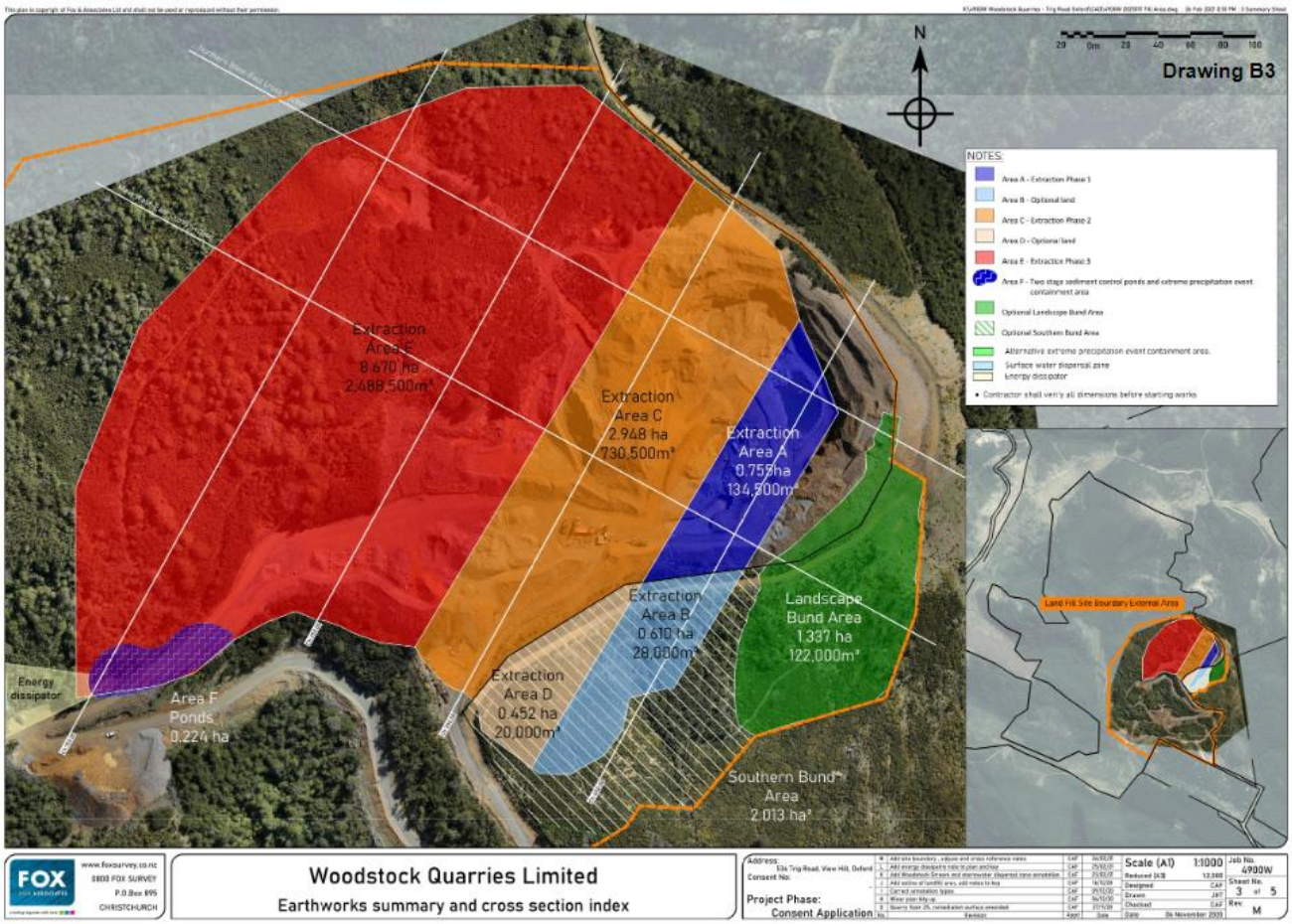


Figure 1: Proposed Landfill Area

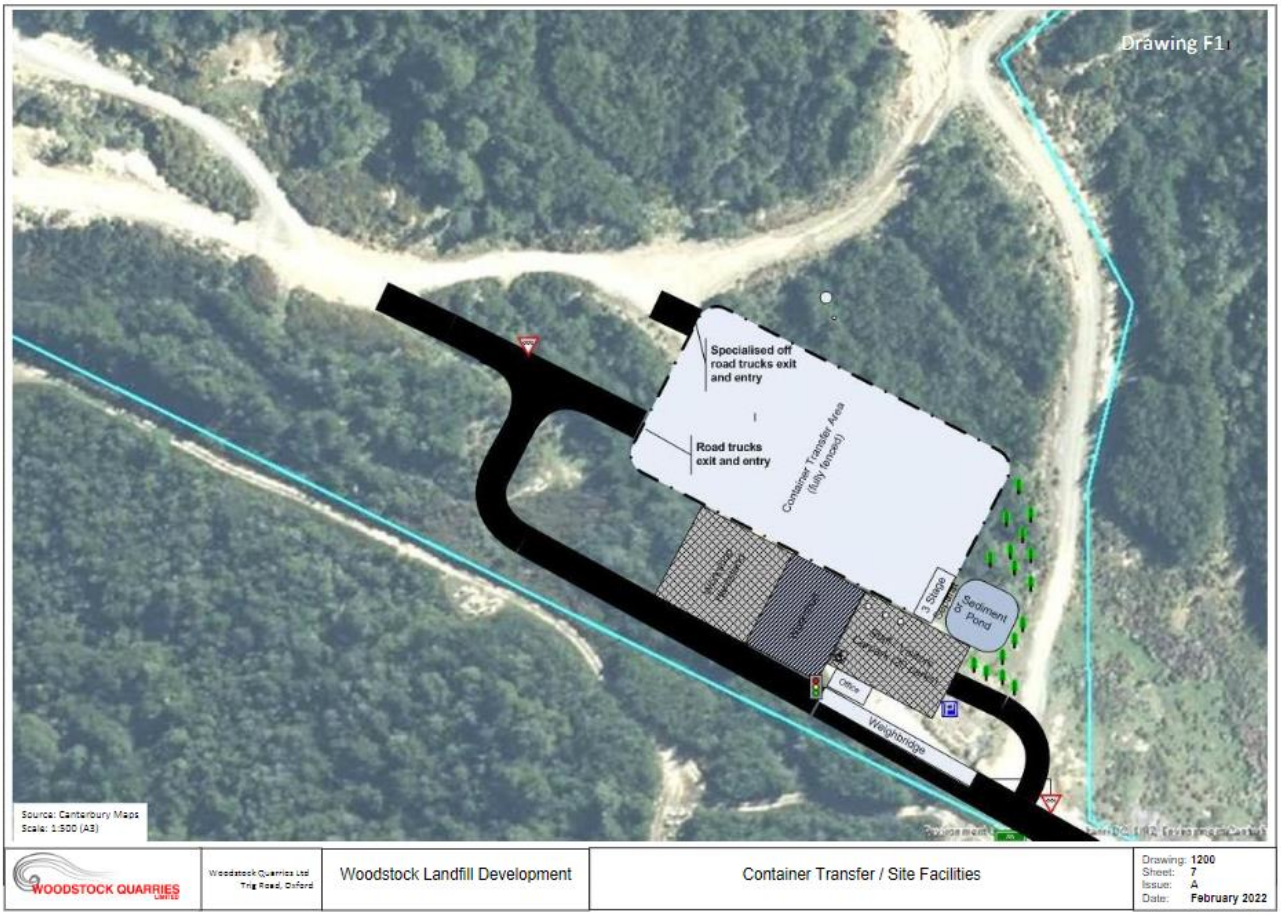


Figure 2: Proposed Container Transfer Area

6. SITE DESCRIPTION AND BACKGROUND

6.1 The application site is located at 513 Trig Road to the west of Oxford township. Access would be via Woodstock Road which connects to Trig Road. Woodstock Road is a sealed rural road utilised for access to rural properties, other quarries, public reserve and the Waimakariri River. The last 1 kilometre of Woodstock Road, before intersecting with Trig Road, is unsealed. Trig Road is also unsealed and services various rural properties, including woodlots, together with the quarry.

6.2 The application site is located within a foothills area and generally rises from the east up to the west. The highest point of the site is on the western side of the landfill area and views are generally afforded out to the south and east.

6.3 The site contains a quarry which has been operating since resource consent was previously granted. It is understood that various types of rock are excavated from the quarry for various purposes such as roading and landscaping. There are three main points of excavation with one including extensive work on a hillside together with a large hole. A second area is a more confined area of excavation for a specialist product being 'black cap' and the third appears to be a previous area of excavation which is currently less active.

6.4 As previously discussed, resource consent has previously been granted for the operation of the quarry from the site. Copies of the resource consent decisions are attached to this assessment and are summarised as follows:

- **RC085169**

  Resource consent was granted on 6 June 2008

  Approval was given to undertake earthworks of up to 10,000m^2 at any one time within each of the areas 'Site A' and 'Site B' for the purposes of quarrying and to excavate an uphill vertical batter of up to 10 metres in the Buffer Outstanding Landscape area at 543 Trig Road, Oxford, being RS 40394 as a Restricted Discretionary activity subject to conditions. Conditions included hours of operation, location of excavations and stockpiles, site rehabilitation, sediment control, traffic movements and the spilling of material. As part of this it is noted that the application limited traffic movements to 50 per day with a maximum of 25 in each direction.

- **RC185244**

  Resource consent was granted on 5 September 2018.

  Approval was given to undertake a quarrying operation within a 198 hectare area including earthworks exceeding 1000m^2 per any one hectare. The quarrying operation included removal of vegetation comprising a mix of indigenous and introduced species. Earthworks would not occur closer than 50 metres from any stream, and the maximum area open at any one time would not exceed 9 hectares, with a maximum working quarry area of 3 hectares at any time. The remainder of the 9 hectare open area was proposed to be used for processing, storage (including stockpiling), and a workshop / staff / weighbridge area. The purpose of the excavation was to extract rock for roading, rail, dairy lane surfacing and landscaping purposes. Quantities to be extracted were unknown. Transport of material from the site would be by truck, with previous approvals relating to maximum movements and hours of

operation being adopted for this application.

The resource consent also proposed occasional exploration of sites outside the operating quarry area to identify new seams of suitable material. These exploration digs would entail 2000 – 3000m^2 workings, which would become part of the 9 hectare open working area if successful, or be backfilled and rehabilitated if not successful. Remediation of the site was proposed and entailed the sowing of seed over excess spoil spread over spent workings.

Conditions included compliance with standards, management of earthworks, stockpiling controls, sediment control, site rehabilitation, hours of operation, maximum vehicle movement numbers, road maintenance and review / inspection requirements. It is noted that the consent granted up to 125 heavy vehicle movements and 6 light vehicle movements Monday to Friday and 34 heavy vehicle movements and 4 light vehicles on Saturday's.

7. DISTRICT PLAN REQUIREMENTS

Operative Waimakariri District Plan

7.1 The relevant Objective in the Operative District Plan that sets the scene for assessing the proposal against relevant rules is Objective 14.1.1 which specifies the following:

Chapter 14: Rural Zones: Objective 14.1.1

"*Maintain and enhance both rural production and the rural character of the Rural Zones, which is characterised by:*

a. the dominant effect of paddocks, trees, natural features, and agricultural, pastoral or horticultural activities;

b. separation between dwellinghouses to maintain privacy and a sense of openness;

c. a dwellinghouse clustered with ancillary buildings and structures on the same site;

d. farm buildings and structures close to lot boundaries including roads;

e. generally quiet – but with some significant intermittent and/or seasonal noise from farming activities;

f. clean air – but with some significant short term and/or seasonal smells associated with farming activities; and

g. limited signage in the Rural Zone.

7.2 The application site is within a Rural zone and has also been identified as being within an Outstanding Natural Landscape Buffer Area. In assessing the proposed activity regard has first been given to the definitions in the District Plan and what definitions the activity would fall within. The following definitions are considered relevant:

Earthworks
Earthworks means the disturbance of land by excavating, placing or replacing soil or other material, and includes driveway and access construction, and land drainage

works, but excludes earthworks involving:

a. cultivation for, or harvesting of agricultural and horticultural crops;

b. domestic gardening;

c. digging of postholes for the construction of fences;

d. works for research and monitoring such as coring, water bores and use of piezometers;

e. maintenance and enhancement of any wetland; or

f. ripping in of water pipes.

Landfill
Landfill means an area used for the disposal of solid waste into or onto the land other than a farm landfill.

Structure
Structure means any building, equipment, device, or other facility made by people and which is fixed to land; and includes any raft" (section 2 Resource Management Act 1991).

7.3 Following an analysis of the above it is considered that the proposed activity falls within the definition of being a landfill. This includes that all facilities ancillary to that activity such as internal roads, buildings and the transfer area are considered to also be part of a 'landfill'. The formation of the landfill, together with the establishment / building of transfer areas etc are also considered to constitute earthworks.

7.4 In addition, consideration has been given to whether the landfill would constitute a 'structure'. On the basis of the definition and that the landfill will be made by people, including careful construction via a series of cells, it is considered that the landfill could potentially also constitute a 'structure' but it is less clear whether a landfill could be considered to be 'fixed to land'. While uncertainty does exist as to whether the landfill would constitute a structure, a conservative approach has been taken and the landfill has been assessed as being a 'structure'. This ensures a comprehensive assessment of all relevant rules and avoids any later risk of it being identified that other rules might be applicable. It is anticipated this issue can be explored further, as part of later assessments, if considered necessary.

7.5 On the basis of the above, the various provisions of the District Plan have been assessed and resource consent is required for the following reasons:

7.6 It is noted that the primary rule which generally encapsulates the activity is Rule 23.4.2 which specifies that landfills are a discretionary activity. No restriction or limitation is placed on those matters which are able to be considered as part of assessing such an activity. Beyond this there are a two other conditions in the plan that the proposal will not comply with, these are listed as follows:

- Condition 23.1.1.8 specifies that earthworks, including the extraction of minerals, in the Rural Zones, other than in the bed of any river, shall not involve the disturbance of more than 1000m^2 of soil and/or rock per any 1ha. The applicant has indicated that approximately 2ha of the proposed circa 12ha landfill area is already excavated. A further circa 10ha of excavation is proposed to complete and shape the landfill along with drains and sediment pond systems. In addition, works will be required in the formation of the site entry area, including weigh bridge, buildings and container transfer

area. Pursuant to Rule 23.3.2 a non-compliance with this condition is provided for as a Restricted Discretionary activity.

- Condition 24.1.1.1 specifies that in the Buffer Outstanding Landscape Area any earthwork cut shall not exceed an uphill batter vertical height of 4m or a downhill vertical spill of 8m of side castings as shown in Figure 24.1. The applicant specified that the batter height within the landfill will be constructed to engineering design based on site specific geological reports. The proposed design consists of a step and batter arrangement being a two metre wide step and a ten metre high batter. Pursuant to Rule 24.3.1 a non-compliance with this condition is provided for as a Restricted Discretionary activity.

7.7 Overall, the proposal is considered to be a **discretionary activity** under the provisions of the Operative Waimakariri District Plan 2005.

Proposed Waimakariri District Plan

7.8 Consideration has been given to the applicability of the Proposed Waimakariri District Plan which was publicly notified in October 2021. The site is identified as being within the General Rural Zone. The site is identified as being within a Foothills Geographic Area and part of the site is within a Fault Awareness Overlay and Non-Urban Flood Assessment Area.

7.9 On the basis that the resource consent application was lodged prior to the notification of the Proposed Plan, and that none of the proposed rules applicable to the proposal have legal effect, it is considered that regard should not be given to the rules and standards of the Plan. That said, it is noted that consideration will need to be given to the Objectives and Policies of the Proposed Plan as part of any determination as to approval of the resource consent application. Relevant objectives and policies that again set the scene for the proposed activity include:

Objectives	
RURZ–O1	**Rural Environment** An environment with a predominant land use character comprising primary production activities and natural environment values, where rural openness dominates over built form, while recognising: 1. the east of the District has a predominant character of small rural sites with a pattern of built form of residential units and structures at more regular intervals at a low density compared to urban environments; and 2. the remainder of the District, while having a range in the size of rural sites, has a predominant character of larger rural sites with a corresponding density of residential units and built form.
RURZ–O2	**Activities in Rural Zones** Rural Zones support primary production activities, activities which directly support primary production, and activities with a functional need to be located within Rural Zones.

Policies	
RURZ–P1	**Amenity values and character**

Recognise the contribution of amenity values to maintaining the character of the zones, and maintain amenity values in Rural Zones by:

1. requiring separation between buildings on adjoining properties to maintain privacy and a sense of openness;

2. retaining generally low levels of signs, noise, traffic, odour, outdoor lighting, and built form from activities while recognising that in association with primary production and rural industry, which are part of the character of each rural zone that:

    . there may be seasonal, short term or intermittent odour, noise, dust, traffic and outdoor lighting effects; and

    a. large buildings may have a functional need.

3. restricting the density of residential units and minor residential units that can be established on a site consistent with the character of each rural zone, unless a development right has been protected through a legacy provision or is associated with a bonus allotment.

RURZ–P2 **Rural land**

Maintain the availability and life supporting capacity of land in recognition of its importance for undertaking primary production, and to maintain or enhance natural environment values in Rural Zones, including by:

1. providing for primary production activities;

2. providing for those activities that directly support primary production, or those activities with a functional need to be located within Rural Zones, where:

    . adverse effects on soil and highly productive land are minimised;

    a. the amenity values and character of Rural Zones are maintained; and

    b. to the extent practicable, adverse effects are internalised within the site where an activity is being undertaken.

3. ensuring subdivision and subsequent development is managed so that it does not foreclose the ability for rural land to be utilised for primary production activities including not diminishing the potential for rural land to meet the reasonably foreseeable needs of future generations.

RURZ–P6 **Industrial activity**

In relation to industrial activity:

1. provide for rural industry where the scale of the activity is compatible with the character and amenity values of the rural zone;

2. limit the establishment of industrial activity (other than rural industry) to circumstances where:

    . there is no reasonable and available site for the activity within any Industrial Zones;

a. amenity values and character of the Rural Zones can be maintained;

b. the scale of the industrial activity is such that it will not affect the availability of highly productive land within the zone to be used for primary production, to the extent that the productive potential of rural land to meet the reasonably foreseeable needs to future generations is undermined; and

c. the nature, scale and degree of permanent changes that will occur on the land and soil resources on the site where the activity is located is minimised.

3. ensure that any rural industry or other industrial activity does not limit or constrain the operation of any existing primary production activity in the zone, and does not have adverse effects on any sensitive activity;

4. provide for existing large-scale industrial activities outside of urban environments where these are well established and have been in continuous industrial use, in order to recognise their existing environmental effects; and

5. to the extent practicable, manage adverse effects of rural industry or other industrial activity so that they are internalised within the site and any adverse effects not internalised are minimised.

RURZ–P8 **Reverse sensitivity**

Minimise the potential for reverse sensitivity effects by:

1. avoiding the establishment of any new sensitive activity near existing intensive indoor primary production activities, intensive outdoor primary production activities, waste management facilities, quarrying activities, mining activities, and rural industry in circumstances where the new sensitive activity may compromise the operation of the existing activities;

2. managing the establishment of new sensitive activities near other primary production activities;

3. ensuring adequate separation distances between existing sensitive activities and new intensive indoor primary production activities, intensive outdoor primary production activities, quarrying activities, mining and rural industry; and

4. avoiding quarry, landfill, cleanfill area, mining activities adjacent to urban environments where the amenity values of urban environments would be diminished.

7.10 In reviewing the above provisions, it is noted that there are similar expectations to the Operative Plan regarding issues like amenity and character but some provisions are also included which address other activities, such as industrial uses, and provide guidance as to the establishment of such activities.

8. NEIGHBOURS CONSENTS/NOTIFICATION

8.1 Public notification

Step 1: Mandatory notification – section 95A(3)	
Has the applicant requested that the application be publicly notified?	**No**
Is public notification required under s95C (following a request for further information or commissioning of report)?	**No**
Is the application made jointly with an application to exchange reserve land?	**No**
Step 2: If not required by Step 1, notification is precluded if any of these apply – section 95A(5)	
Does a rule or NES preclude public notification for all aspects of the application?	**No**
Is the application a controlled activity?	**No**
Is the application a boundary activity (other than a controlled activity)?	**No**
Step 3: Notification required in certain circumstances if not precluded by Step 2 – section 95A(8)	
Does a rule or NES require public notification?	**No**
Will the activity have, or is it likely to have, adverse effects on the environment that are more than minor?	**Yes**
Step 4: Relevant to all applications that do not already require notification – section 95A(9)	
Do special circumstances exist that warrant the application being publicly notified?	**No**

8.1.1 In consideration of the above it is recognised that resource consent is also sought for the activity from Environment Canterbury, and they have recommended that the application should be processed on a publicly notified basis. This has been discussed with the applicant and they have commented that it makes sense for the applications to be processed on a consistent basis. That said, the applicant has not requested the application be processed on a publicly notified basis, and regardless of this issue it has been determined that the effects of the proposal could be more than minor and accordingly it has been determined, in accordance with the provisions of Section 95A, the application should be publicly notified.

8.2 Limited notification

Step 1: Certain affected groups/persons must be notified – section 95B(2) and (3)	
Are there any affected protect customary rights groups or customary marine title groups?	**No**
If the activity will be on, adjacent to, or might affect land subject to a statutory acknowledgement – is there an affected person in this regard?	**No**
Step 2: If not required by Step 1, notification is precluded if any of these apply – section 95A(5)	
Does a rule or NES preclude limited notification for all aspects of the application?	**No**
Is this a land use application for a controlled activity?	**No**
Step 3: Notification of other persons if not precluded by Step 2 – sections 95B(7) and (8)	
Are there any affected persons under s95E (persons on whom the effects are minor or more than minor, and who have not given written approval)?	**Yes**
Step 4: Relevant to all applications – section 95B(10)	
Do special circumstances exist that warrant notification to any other persons not identified?	**No**

8.2.1 It has been assessed that the application should be processed on a publicly notified

basis and as such a determination as to limited notification is not required but it is noted that the assessment in section 9, below determines that persons are deemed to be adversely affected by the proposal that have not provided written approval.

9. ASSESSMENT

9.1 In considering the potential effects of the proposal, I have turned my mind to the following potential or actual adverse environmental effects. In doing so I have also had regard to the applicability of the permitted baseline for the establishment of activities with similar effects and also the receiving environment.

9.2 It is not considered that there is an activity that could be realistically established as a permitted activity with effects similar to the proposed. As such it is not considered that an assessment of the permitted baseline is relevant. With regards to the receiving environment of the site, this is considered to be more relevant in assessing potential effects of the activity. As previously detailed, two resource consents have been previously granted, and given effect to, for the operation of a quarry from the site. Those resource consents permit significant works on the site which will have a broad range of effects including significant changes to the landscape of the site. A number of those consented effects will result in some negation or offsetting of the effects of the proposal, as discussed later in this assessment and it is considered necessary to take this into account in assessing the effects of the activity.

9.3 While taking the receiving environment into account it is still considered some care is required. The reason for care being required is that the quarry has operated at a certain pace, including excavation etc. If the landfill was to bring in more material than was being excavated there is the potential that the landfill may 'overtake' the quarry activity such that the landfill and its' potential effects would no longer be offset by the quarry activity. It is expected that the applicant will need to better address this issue but that it would be possible to do so through the imposition of appropriate conditions.

9.4 On this basis the potential effects of the proposed activity have been assessed as follows:

9.5 Amenity and Character

9.5.1 The proposed activity is located within a rural area that is generally more isolated including through the topography and vegetation of the area. As such it is more difficult to view the application site from a wider range of areas with visibility tending to be more selective. That said, it is recognised that the site is on an elevated hillside, such that it sits above and overlooks a broad area such that views will be available at particular points in the surrounding area, and that the site is within an Outstanding Natural Landscape Buffer Area.

9.5.2 This visibility of the site from larger distances needs to also be taken in context, being that the activity will be established within an active quarry area. Existing active consents provide for up to nine hectares to be exposed and even as areas are rehabilitated this will not immediately reduce the visibility of the site. As such it is considered that the visual effects of the proposed activity need to be assessed against the receiving environment, including the quarry.

9.5.3 The nature of the proposed activity is that it will progressively refill previously excavated areas and over time the original contours of the site will be generally restored, particularly when viewed over greater distances. In addition, it is considered that rehabilitation of the site will be both faster, based on landfill requirements, but also the final contours of the site will be closer to the original landform of the area. The applicant has also provided a landscape assessment which considers the visibility of the site from

various viewpoints and reaches the conclusion that potential effects on the landscape of the area, including amenity and character will be minor. This conclusion is agreed with.

9.5.4 In recognition of the site being within an Outstanding Natural Landscape Buffer Area it is considered that while the existing character of the site reduces potential adverse effects, careful consideration should be given to the long-term appearance of the site and ensuring that the final landform is consistent with the surrounding area. The applicant has confirmed that the site will be progressively restored including placement of top soil and revegetation. This will assist but it is also considered that the final design for the landform and detailed landscaping plans will be required. This can be appropriately controlled by way of condition of consent if it is determined that resource consent can be granted.

9.5.5 It is also recognised that the proposal has the potential to have more localised effects on the amenity and character of the area. This includes those landowners in close proximity to the site and adjoining Trig Road (where there will be a noticeable change in heavy vehicle movements). Landowners nearer the application site will already be aware of the operation of the quarry but this awareness will increase as a consequence of the proposed activity. Specific effects include:

- The site is accessed via rural roads and the number of vehicle movements on Trig Road generated by both the quarry and proposed landfill mean that a significant proportion of all vehicle movements will be from the application site. The scale of movements will be beyond what an adjoining landowner can anticipate in a rural area like this. The number of vehicle movements will affect a persons' amenity and the characteristics that they assimilate with the area together with additional effects from vehicle movements including noise and dust from the vehicles.

- Noise from the site will predominantly consist of vehicle movements including the arrival and departure of delivery trucks and the operation of mule vehicles but also the loading and unloading of vehicles both at the container terminal area but also at the dump face of the landfill. Due to the scale of the site and surrounding area, and its' undulating nature, it is not anticipated that noise will be of such a level as to be a nuisance, but noise is likely to be audible from the surrounding area such that persons will be aware of the operation of the activity. This can lead to impacts on a person's appreciation of the amenity and character of the area.

- As noted earlier, the site is relatively well concealed from the wider area together with existing vegetation on the site but it is considered that at various points the nearby landowners will be able to see the existing quarry and the proposed landfill together with associated facilities such as the proposed office and workshop areas. While the existence of the quarry reduces potential effects and ongoing site rehabilitation is proposed, it is considered that a landfill is not part of the anticipated amenity and character of a rural area such that there will be visual effects from the proposed activity on the amenity and character of the area for local landowners.

9.5.6 The above reflects that the scale of activity on the site is changing and increasing. Amenity related effects are anticipated to extend beyond the boundaries of the site. It is recognised that the applicant proposes measures to control the effects of the activity and conditions can also be imposed but it is still considered the potential effects on the amenity and character of those landowners near the site, or adjoining Trig Road, could be at least of a minor scale.

9.5.7 The scale of the change is more controlled or refined due to the existing quarry and there will also be similar effects but the two activities will be operating together, and this is a necessary element of the proposal. Excavation needs to occur to facilitate areas

being available for the landfill.

9.5.8 It is noted that it is proposed to establish buildings on site, being an office and a workshop. Details regarding the buildings are limited to a site plan for the container transfer area. It is preferable that further information regarding the buildings, such as height and design, are provided but it is recognised that the focus has been on the landfill. It is considered that some basic parameters could be established for any buildings on site and these could be imposed as conditions, such as maximum height and footprint size. Due to the more concealed nature of the site, including the location of the transfer area, it is considered the effects of the buildings are likely to be minor but it would be preferable for this to be confirmed by the applicant.

9.6 Earthworks

9.6.1 The establishment of the landfill will require changes to the landform of the area including extensive earthworks. A significant portion of those earthworks will be undertaken as part of the existing consented quarry, such as removal of topsoil, stockpiling and excavation of quarry material. Earthworks beyond the quarrying activity will include the progressive remediation of the site, landfill control measures – such as bunding / stormwater control and the formation of the entry / container transfer area.

9.6.2 The earthworks associated with the landfill will lead to alterations to the topography of the area and could also give rise to effects while being undertaken, such as sediment runoff. The nature of the landfill activity means that significant controls will be put in place as part of the activity, such as the control of runoff, and will also be required by Environment Canterbury. It is therefore considered that potential earthworks effects, including dust and sediment runoff, will be actively controlled so as to be less than minor in effect and this can be reinforced through the application of appropriate conditions.

9.6.3 As previously discussed, earthworks associated with the activity will alter the landform of the site. This will need to be suitably controlled to ensure a consistency with the surrounding area. The topography of the area is undulating and as previously discussed, the site is relatively concealed, such that the changes to the site as a consequence of the earthworks will be more limited in effect and can be controlled. It is recognised that the previously approved quarry already impacts the topography and appearance of the site and that the quarry is able to continue its operations on the site. While the nature of the quarry is different from the landfill, the quarry does alter the landscape, including extensive earthworks and potentially permanent changes to the topography of the area. On this basis he impacts of the existing, consented quarrying activity, which includes provision for significant earthworks, is considered to be a mitigating factor in assessing the impacts of earthworks for the proposed landfill.

9.6.4 On the basis of the proposed controls associated with earthworks, the existing character of the site (including receiving environment) and the relatively concealed nature of the site, it is considered the effects of the earthworks for the wider area will be minor.

9.6.5 Much like the earlier assessment of amenity and character effects it is considered that the properties in closer proximity to the site have greater potential to be affected. This includes that the boundaries of the site are quite close to both the quarry / landfill area and the transfer area / weighbridge. Adjoining landowners are likely to experience changes to the area near their boundaries both during and after they are undertaken and outlooks will change. That said it is recognised that the nature of the adjoining properties, including land use types such as large rural holdings and forestry activities means that the adjoining properties are potentially less sensitive to the changes in outlook and topography. The closest dwelling is approximately 2km away but it is

recognised that an adjoining or nearby landowner may elect to alter or build on their property. On this basis it is considered that, taking into account the existing character of surrounding properties, potential effects will be no more than minor on local property owners but these effects will need to be managed on the basis that land uses could change in the future.

9.6.6 It is also recognised that earthworks have the potential to result in effects such as dust and silt runoff. The applicant has proposed various measures to control these potential effects and it is also noted that the rehabilitation of areas in a timely manner provides further mitigatory measures. It is considered that it is feasible to establish a range of conditions to manage and control potential effects of the earthworks. Given the scale of the activity the conditions will need to be comprehensive and include active monitoring but generally it is considered such effects are able to be suitably controlled so as to be no more than minor.

9.7 Nuisance

9.7.1 Potential nuisance effects include dust, silt runoff, noise and odour. These aspects have been discussed at various points of this assessment but generally it is considered that potential nuisance effects can be suitably controlled, and are proposed to be done so through the resource consent application. Conditions are able to be imposed but also the nature and location of the activity further assists in reducing potential effects. For example, the type of material accepted at the landfill is less likely to give off odours and procedures are proposed so that material is covered over frequently.

9.7.2 As previously discussed above, the closest dwelling is approximately 2km away but it is recognised that an adjoining or nearby landowner may elect to alter or build on their property. On this basis it is considered that, taking into account the existing character of surrounding properties, potential nuisance effects will be no more than minor on local property owners but these effects will need to be managed on the basis that land uses could change in the future.

9.7.3 Overall, it is considered that potential nuisance effects are able to be suitably controlled so as to be less than minor.

9.8 Transport

9.8.1 Material is proposed to be brought to the site by truck in enclosed containers. The resource consent application has detailed that there will be up to a maximum of twenty trucks delivering material to the site each day, ie up to 40 truck movements per day. Trucks will deliver to the transfer area and from there ‘mules’ will cart the containers to the face of the landfill. The transfer area is at the entrance to the site such that the only vehicles using internal roads will be quarry traffic and vehicles operated by the applicant. The applicant has specified that all internal roads will be formed in accordance with detailed specifications. As noted earlier, resource consent has already been granted for up to 125 heavy vehicle movements per day, on weekdays, for the quarry activity.

9.8.2 It is considered that transport related effects of vehicles within the site are able to be suitably controlled such that any effects will be limited to those properties in close proximity to the site. For example, the noise effects from vehicles on amenity has been discussed earlier in section 9.5 of this assessment. In addition, having a specification for the formation of internal roads ensures that they are formed to appropriate standards for safety and stability purposes.

9.8.3 On this basis it is considered any potential transport related effects from within the site will be minor and limited to those properties in close proximity to the site.

9.8.4 With regards to the impacts on local roads, it is proposed that vehicles will travel to the site via Trig and Woodstock Roads. Woodstock Road is a formed and sealed rural road and roading engineer comment is that the road is suitable for the proposed increase in vehicle movements. It is noted that the last 1 kilometre of Woodstock Road is unsealed. Advice has been that this section of road does not need to be sealed and instead the road will need to be suitably managed and maintained.

9.8.5 Trig Road is a gravel road approximately 2.2 kilometres in length that services a handful of properties, including the application site. The significant majority of vehicles using this road are associated with the quarry.

9.8.6 In order to manage potential impacts on the roads from quarry traffic the applicant has previously entered into a written agreement with Council and a copy of the agreement is appended to this assessment. The applicant has proposed that the agreement would be extended to also be applied to the proposed landfill activity. This has been discussed with the Council Roading Engineers who have generally agreed that such an approach is appropriate but that it would also be preferred that Trig Road has a formed width of 7 metres, to ensure trucks can pass one another and also that the road surface is upgraded, such as argillite, which will both strengthen the road and reduce dust. The applicant is generally comfortable with such an arrangement and the details are currently being resolved. On this basis it is considered that the impacts of the proposed activity on the roading network are able to be suitably controlled so as to be no more than minor.

9.8.7 It is also recognised that an increase in vehicle movements, particularly including heavy vehicles, can have an effect on parties / properties adjoining the road. Given that the majority of Woodstock Road is sealed it is considered that potential effects of the increase in vehicle movements on adjoining landowners is generally limited to those properties adjoining Trig Road but there will also be some effects on those properties adjoining the unsealed section of Woodstock Road. Potential effects include whether the road will be to a poorer standard due to the level of use, whether the road can be safely used by other parties due to the frequency of heavy vehicles, impacts on amenity such as noise and whether dust may impact adjoining properties including crops etc.

9.8.8 A number of these effects have been previously discussed, including to ensure the road is maintained to an appropriate standard, but it is considered that the proposal will result in a noticeable increase in heavy vehicle movements, particularly including Trig Road which is a small rural road of a gravel formation. It is considered that the increase in heavy vehicle movements will have a potentially more than minor effect on those other road users. This includes amenity but also that other road users will need to use the road in the knowledge that there is a high frequency of heavy vehicles. For both locals and visitors to the area, driving the road will need to be undertaken in a different manner, such as an increased caution pulling on to the road and approaching particular corners. Additional road controls, such as signage, may be required to control potential effects but it is considered that the nature of the local roads, primarily being Trig Road, and the impacts of the proposal on them mean that the potential roading related effects of the proposal will be more than minor.

9.9 Contamination

9.9.1 The application site has not been identified as potentially subject to contamination in the Environment Canterbury Listed Landuse Register. As a result, there are no known current conditions, i.e. contamination, on the site that may affect it's proposed development. It is noted that HAIL listed activities include mineral extraction but exclude gravel extraction such that the quarry is not considered to be a HAIL listed activity. The National Environmental Standards for Assessing and Managing Contaminants in Soil to Protect Human Health are only applicable for assessing

existing activities / contamination on a site, as opposed to the establishment of a new activity. The standard is therefore considered to be of limited relevance in assessing the proposed activity.

9.9.2 With regards to the potential effects of the storage of landfill material on site it is considered this is a matter more appropriately addressed by Environment Canterbury through their assessment of the resource consent application. This includes the design of the containment system.

9.10 Fire & Natural Hazards

9.10.1 It is understood that landfills can be more vulnerable to the risk of fire. Active on-site management is required to reduce any potential risk. The applicant has proposed a combination of measures to manage this risk including moveable water pipelines, water tanks and staff training to ensure this risk is addressed. Generally it is considered that the risk of fire can be controlled through the use of conditions and management plans such that potential effects can be reduced. This is considered appropriate but it is also recommended that consultation with Fire and Emergency New Zealand is undertaken and that they should be considered a potentially affected party.

9.10.2 With regards to risk from natural hazards it is considered that the position of the landfill potentially reduces some risks, such as flooding but heightens other risks such as slippage due to a seismic event. This matter, including the design of the landfill, its' containment and structural design are matters that need to be considered in assessing the potential effects of the proposal. Resource consent is required from both the Waimakariri District Council and Environment Canterbury. The assessments undertaken by Environment Canterbury have considered issues like the structural design and integrity of the landfill, including with regards to natural hazards. It is considered that these issues are being given an appropriate level of consideration and that Environment Canterbury is best placed to assess this issue. It is noted that the outcome of their assessment will determine if there are potential effects on the proposal from natural hazards and likewise whether the proposal will exacerbate any natural hazard risks.

9.11 Infrastructure

9.11.1 The site is located in a remote location such that any infrastructure required as part of the proposed activity will need to be managed on site. As it is proposed to establish an office building and workshop this will include potable water and effluent disposal facilities. Little detail regarding services has been provided as part of the resource consent application. While considered less likely to give rise to potential effects it is considered this matter would need to be suitably addressed prior to any resource consent potentially being given effect to.

9.12 Stormwater

9.12.1 Stormwater is already actively controlled on the site, including in association with internal accessways but it is recognised that further controls will need to be established for the landfill and the container transfer area. Details for the landfill area have been provided and these are being assessed by Environment Canterbury to ensure appropriate controls are in place. It is considered that further controls will be required as internal access roads are enhanced and the container transfer area is established. I note that the design of the transfer area includes a stormwater pond.

9.12.2 It is generally considered that adequate information has been provided to establish that

stormwater is able to be suitably controlled on site and potential effects will be minor but this would also need to be reinforced through the imposition of stormwater controls including the mitigation of potential effects on adjoining properties.

9.13 Cultural

9.13.1 The application site has not been identified as being subject to any heritage or cultural overlays. That said it is recognised that the disposal of waste to ground can have cultural implications and as part of this, tributaries which pass through the application site enter into waterways which have been identified as Nga Wai.

9.13.2 On this basis it is considered that care needs to be taken in ensuring any potential cultural effects of the proposal are suitably addressed and this should include consultation with relevant iwi. On this basis it is considered that any potential cultural effect will be at least minor and there will be potentially affected parties, being Te Ngāi Tūāhuriri Rūnanga.

9.14 Land Stability

9.14.1 The proposed landfill will in part fill a hole which has, or will be, excavated as a result of quarry operations. The applicant has specified that the landfill activity will essentially 'follow behind' the quarry activity replacing the area which has been excavated. The landfill will also rise above the quarry hole and will, in effect, replace the hillside which was there prior to the commencement of quarry operations. This has the impact of creating a sloped area constructed by a series of landfill cells, overlaid with earth etc. This introduces potential risks around the issue of stability and the impacts of slope failure, should this occur.

9.14.2 In order to assess this risk an assessment was undertaken by Tonkin and Taylor for Environment Canterbury. With regards to issues of landfill structure that assessment has been summarised by Environment Canterbury as follows:

> *435 In terms of landfill stability assessments provided by the applicant, Tonkin & Taylor note that:*
>
> *a. Slope stability is critical in the overall performance of the landfill as failures and associated movement can have significant impact on the liner system and related containment of waste and/or leachate, along with potentially significant impact on worker safety.*
>
> *b. While the site is in a relatively high seismic risk environment, engineering can largely mitigate this risk other than for circumstances where a direct fault rupture occurs within the actual landfill footprint, or the liner system fails for other reasons. No known active faults are located beneath or immediately adjacent to the proposed landfill site.*
>
> *c. While the seismic loading conditions in the slope stability assessment and the Proposed Conditions are appropriate for quarrying and are suitable for the geological conditions, the proposed slopes are not considered entirely suitable for landfilling operations. Notably, Tonkin & Taylor stated that the slope design should predominately be driven by requirements for the landfill side wall liner construction, which requires consideration of other factors such as water runoff controls, liner installation practicalities, etc. These have not been incorporated into the design at this stage. The currently proposed slope design is not considered to meet the requirements of the Proposed Conditions.*

d. *There is also uncertainty involved in achieving the proposed design slopes during excavation of the quarry and this can affect decisions regarding slope design for landfill construction. The uncertainties in geology and excavation methods can result in local failure across multiple bench faces, which may be hard to remediate and also require a larger buffer zone outside of the currently proposed landfill footprint to allow for modifications of the slope design.*

e. *The landfill stability analysis carried out by the applicant is unlikely to be representative of the proposed landfill, and there is no confidence in the analysis results. The analysis has highlighted that the proposed intermediate slope profiles were likely too steep and thus unstable.*

f. *With the current design, failures of the liner system associated with slope movement can occur at significant depths, especially with a flat based landfill with steep side walls, and of the orientation of the proposed landfill. Failure may require significant repair works, and Tonkin & Taylor disagree in general with interpretation of failure modes and the statements regarding expected repairs outlined in the landfill engineering report.*

9.14.3 It is considered that there could be significant effects if slope failure was to occur, including the exposure of buried material, and the above suggests that currently the risk of slope failure has not been adequately mitigated so as to be at least minor. It is therefore considered that there are potentially more than minor effects associated with the risk of slope failure from the proposed activity.

9.15 Section 95 Conclusion

9.15.1 Overall, it is considered the potential effects of the proposed activity on the wider area will be more than minor. Reasons for this include that while the scale of the area, the more remote location of the site and the existence of the quarry on the site assist in reducing potential effects, the scale and nature of the activity introduces potential land stability risks that, while of low probability, have the potential to result in significant adverse effects.

9.13.2 With regards to more localised effects it is considered that those properties in closer proximity to the site or Trig Road will be potentially affected including their amenity, outlook and traffic related effects. It is considered that the following properties will be potentially affected:

- 287 Trig Road
- 360 Trig Road
- 401 Trig Road
- 402 Trig Road
- 487 Trig Road
- 534 Trig Road
- 990 Trig Road
- 2370 Woodstock Road
- 2040 Woodstock Road

9.13.3 In addition, it is considered that Fire and Emergency New Zealand and Te Ngāi Tūāhuriri Rūnanga will also be potentially affected for those reasons discussed earlier in this assessment.

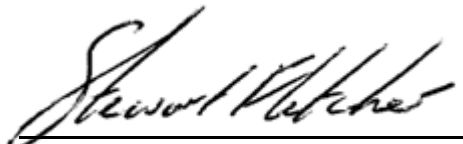
9.13.4 Due to the potential effects of the proposal, and based on the above assessment, I consider that full notification is appropriate but that as part of this, the above parties are also specifically notified as part of the notification process.

9.13.5 As per paragraph 8.1.1, it is noted that the applicant has agreed to the application being publicly notified, as the resource consent application lodged with Environment Canterbury is to be publicly notified and the applicant agrees that it is practical for both applications to follow the same processing path.

10. RECOMMENDATION

10.1 That the application proceed on a publicly notified process, pursuant to Section 95A of the Resource Management Act 1991, and the following parties are personally notified of the application:

- The owners and occupiers of 287 Trig Road (includes Matariki Forests and Corisol NZ Ltd/Oxford Forest)
- The owners and occupiers of 360 Trig Road
- The owners and occupiers of 401 Trig Road and 402 Trig Road (same owner)
- The owners and occupiers of 487 Trig Road
- The owners and occupiers of 534 Trig Road
- The owners and occupiers of 990 Trig Road
- The owners and occupiers of 2370 Woodstock Road and 2040 Woodstock Road (same owner)
- Te Ngāi Tūāhuriri Rūnanga
- Fire and Emergency New Zealand

Recommended by:  03/11/2022

Stewart Fletcher
CONSULTANT PLANNER

Date

Approved by: 7/11/2022

Wendy Harris
DELEGATED OFFICER

Date