

**IN THE MATTER      Of the Resource  
Management Act 1991**

**AND**

**IN THE MATTER      Of an application be  
Transwaste Canterbury  
Limited to vary a  
condition of consent  
RC020069**

## **TRANSPORTATION PLANNING ASSESSMENT**

**Prepared for**

**HURUNUI DISTRICT COUNCIL**

**By**

**NIGEL JOHN WILLIAMS**

**8 June 2006**



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# INTRODUCTION

1. My name is Nigel John Williams. I have an NZCE in Civil Engineering (1969), and I am on the committee of the Christchurch Transportation sub-group of the Institute of Professional Engineers. I am also a member of the Australasian chapter of the International Association for Public Participation. In my current employment as a Traffic Planner with Streets in Sync Ltd, I specialise in transportation planning work for local authorities and private clients and in supporting public participation processes for neighbourhood roading projects.
2. I have been practicing mainly in the field of transportation planning and traffic engineering since my time as County Engineer for Rangiora County Council in 1976. My experience includes the preparation of transportation sections of regional and district planning documents, the day to day administration of the transport sections of district plans, and extensive work as a transportation planner and traffic engineer working for private developers and submitters.
3. I have been asked by Hurunui District Council to assess the transportation planning and traffic engineering implications of the application by Transwaste Canterbury Limited made under s127 of the Act. The application relates to a condition limiting the number of vehicle movements associated with the Canterbury Regional Landfill operation in Kate Valley.
4. I have visited Mt Cass Road and the sections of State Highway 1 involved with the applicant's transport operations on several occasions ranging from 0530 in the morning to 1800 in the afternoon. I have observed traffic and landuse conditions, near the site, on Mt Cass Road, at the intersection with the State Highway and on the State Highway between Waipara and Christchurch.
5. All traffic generation figures presented in this assessment report conform to the definition recommended to the applicant in the request for additional information, viz; A trip is a journey between an origin and a destination. Thus a journey between Christchurch and Kate Valley is counted as a trip, as is a journey between Kate Valley and Christchurch.

## SECTION A – PLANNING CONSIDERATIONS

### OUTLINE OF THE APPLICATION

6. This application by Transwaste Canterbury Limited seeks to cancel or change condition 22 of the land use consent RC020069 in relation to vehicle trips to the Canterbury Regional Landfill site in Kate Valley.
7. Broadly, the applicant has found that the activity is attracting significantly more vehicle traffic than anticipated. The consent allowed up to 1090 vehicle trips per week, including 600 trips by heavy commercial vehicles. The applicant is seeking to (preferably) remove any condition on trip numbers, or to have condition 22 revised to allow significantly higher trip numbers than the existing condition allows.

### THE HURUNUI DISTRICT PLAN

8. The primary reference for the evaluation of the traffic and transportation effects of the application is the Hurunui District Plan. This plan identifies a number of issues that are relevant in this case:-
9. Issue 10 – Environmental amenity - notes:

*The particular issue of the District relating to environmental amenity is that inappropriate development or inadequate protection could reduce the District's high standard of environmental amenity.*

*There are many factors that contribute to environmental health or the level of amenity (those aspects of the environment which enhance it or make it more pleasant) within the District: lack of pollution, the design of buildings, the amount of open space, privacy, sunlight, landscaping and visual quality. Environmental amenity can also be linked to features within our environment such as important public places, parks and reserves. Activities which can adversely affect the quality of the environment or the health and safety of people need to be controlled without unduly constraining the rights of individuals to use their own properties. Other factors which have a significant impact on environmental health and amenity values include ambient (surrounding) noise levels and air quality (dust and odour nuisance).*

10. These issues signal the Council's concern about any activity that may impact on environmental amenity and the health and wellbeing of the people of the district.

11. Issue 12 - Infrastructure and Development - notes:

*Particular issues of the District relating to infrastructure and development are:*

*(a) The District would not be able to function effectively or efficiently without essential facilities and services – yet such services and facilities can create significant adverse environmental effects, some of which may be quite specific to the utility or facility (such as the visual impact of transmission lines).*

*(b) The development or use of land without adequate infrastructure can bring about adverse effects on the environment.*

*(c) There are difficulties identifying the costs and benefits associated with the provisions of infrastructure for new developments, consequently there can be problems allocating costs and benefits between developers and the community so that neither bears a disproportionate burden.*

*(d) The development of infrastructure, particularly transportation, can have potentially significant indirect effects on other resources that need to be taken account in the planning process.*

12. This issue identifies the need to recognise the functional requirement for infrastructure such as transportation facilities, while ensuring that significant adverse effects are addressed and taken account of in the planning process.
13. The issue of identifying and allocating costs and benefits is relevant in this case.
14. Section A5 – Transport defines the activity as a discretionary activity.
15. Section C1.2.4 (d) contains specific items to be addressed in relation to transportation effects of activities. The matters identified under Traffic Generation, Activities in the Road Reserve and Property Access usefully reflect the broad issues raised in the Objectives and Policies section discussed above.
16. Tables C1.1 to C1.4 provide checklists of potential effects arising from activities and methods of addressing such effects. These tables are reproduced as Appendix 2 herein with the items that are not directly relevant to the transportation and traffic matters of this application shaded out. While these specific matters will not be addressed directly herein relevant elements are utilised in the discussion.
17. The District Plan also provides a set of assessment criteria that is to be utilised in assessing applications such as this. [Table C1.5 – Schedule of potential environmental effects – Assessment Considerations.] The final paragraph of this table notes:

*For all but than simple assessments, a summary of the findings should be provided, with the principal conclusions being highlighted. All other relevant considerations should be taken into account and weighed together to provide such conclusions, including whether:*

  - Any adverse effect is irreversible or temporary*
  - Any adverse effect would have a negligible, minor, moderate or severe or extreme impact*
  - The positive effects would outweigh or compensate any adverse effects*
  - The public interest in letting an activity proceed is more important than the adverse effects*
  - The design, operational or mitigation features are adequate to address all or some of the adverse effects, particularly the most significant impacts*

## **THE CANTERBURY REGIONAL POLICY STATEMENT**

18. The Canterbury Regional Policy Statement 1998 [the CRPS] (Section 15 - Transport) contains a number of relevant objectives, policies and methods.
19. The principal environmental results expected from the implementation of these policies and methods are:-
  - A reduction in the adverse effects from the use and provision of transport services and infrastructure including:
    - (a) Reduced use of non-renewable energy sources.
    - (b) Improvements in the efficiency of all energy usage.
    - (c) Reduced air pollution.
    - (d) Increased road safety.
    - (e) Reduced carbon dioxide emissions.
  - A transport system which is able to efficiently and effectively meet community needs.

[CRPS 15-Transport - Clause 15.4]
20. All the above environmental results entail reductions in adverse effects, not just a slowing in the rate of increase or stabilisation of the current adverse effects at today's levels.

21. To achieve this, the region must see an ongoing series of developments that have effects that are significantly better than other pre-existing developments. It is not sufficient to persist with the current rate of accumulation of adverse effects (such as increasing traffic volumes) or with the status quo.
22. Issue 1 in section 15.2 identifies that land uses can cause adverse effects on the ability of the transport infrastructure to provide for the area's transport needs. Examples given include developments resulting in transport needs that exceed the capacity of existing infrastructure, and the reasons and explanations confirm the need to provide for safe, economic and convenient access while meeting the requirements of sustainable management of natural and physical resources.
23. In this present case this issue relates to the safety and capacity of the roads used by traffic associated with the Regional Landfill operation, and the need to facilitate the access function while meeting the requirements of sustainable management of natural and physical resources.
24. Issue 2 considers the adverse effects on the environment that are caused by the provision and use of transport. The following effects identified in that section are pertinent to this application:-
- (1) Air pollution.
  - (2) Noise and vibration.
  - (4) Loss of public amenity
25. This issue is supported by
- Objective 2:**  
Avoid, remedy or mitigate the adverse effects on the environment of transport use and provision.
26. In the Principal Reasons the CRPS notes that "*Achieving the purpose of the RMA requires any adverse effects on the environment to be avoided, remedied or mitigated.*" [Our emphasis] Relevant examples of the effects given in this section include:-
- Air pollution.
  - Community severance.
  - Vibration.
  - Noise.
  - Accident risks.
27. The section also notes that the environment includes people and their social, economic, aesthetic and cultural conditions and human health. This suggests that, for example, submissions reporting social, economic or aesthetic effects arising from the proposal have status, and should be considered as part of the evaluation of effects. Likewise the operation of the activity can have impacts on human health – both directly from traffic-related crashes and conflicts with pedestrians and other road users, and indirectly through pollution, emissions and consequential climate-change effects. We understand that health impacts can also arise from stress brought about by the more overt impacts of the vehicles involved with the activity, such as community severance, amenity and aesthetic considerations.
28. At the same time the fact that transport provides a social and economic benefit to people needs to be considered. The Regional Landfill operation provides a service to the regional community that is likely to be difficult to relocate or eliminate in the short term. Simply

‘closing the gate’ will not necessarily make the residual waste problem go away, but would lead instead to other effects that may be no more desirable. In recognising this, the CRPS is seeking to strike a broad balance between the traffic-related effects of the activity on the environment and the regional benefits of the landfill operation.

29. Thus if the operation of the Regional Landfill at Kate Valley is to continue (and on balance this appears likely) then any changes in the volume of residual waste being directed to the landfill should be accommodated in a way that still achieves the required delivery capacity but which minimises the impact of those deliveries and other ancillary traffic activity on the environment.
30. Policy 2 seeks the promotion of transport modes which have low adverse environmental effects. The explanation notes that rail as a freight mode generally has a low adverse effect on the environment relative to motor cars and trucks. Rail can also reduce the demand for maintenance and expansion of the highway network.
31. Policy 3 promotes changes in travel movement patterns, travel habits and the location of activities which achieve a safe, efficient and cost effective use of the transport infrastructure and reduce the demand for transport. The explanation recommends encouraging increased use of more energy efficient transport modes, and increasing public awareness on environmental issues and transport options.
32. The Principal Reason of this policy is to reduce the adverse effects of transport on the environment. The Methods note that District Councils should, through the exercise of their functions; consider achieving a safe, efficient and cost effective use of transport infrastructure and reduce the demand for transport.
33. Section 15.3 Methods; reinforces the need for integrated management of natural and physical resources in the region and for the avoidance, remedy or mitigation of adverse effects on the environment. Subsection (f) Regional Energy Strategy notes that:-  
“Transport is dependent on fossil fuels and efficiencies in transport use could have a significant effect on energy use.”
34. The duty of the District Council to achieve the requisite environmental outcomes through the exercise of its district planning functions is again emphasised.

### **THE REGIONAL LAND TRANSPORT STRATEGY**

35. The Canterbury Regional Policy Statement 1998 (Section 15 - Transport) identifies the Regional Land Transport Strategy as one of the methods employed to ensure that the environmental outcomes determined in the Region’s Objectives and Policies are achieved. The Regional Transport Strategy [2005 to 2015] was adopted by Environment Canterbury on 31 March 2005. The introduction to this strategy states:

*The Regional Land Transport Strategy (RLTS) is prepared under the requirements of the Land Transport Act 1998. It contributes to the government’s overall vision of achieving an affordable, integrated, safe, responsive, and sustainable land transport system and takes into account other Government transport objectives and strategies. The RLTS identifies the region’s transport needs, and the roles of all land transport modes and identifies how planning, engineering, education, encouragement and enforcement methods are to be utilised to provide for the future land transport system of Canterbury. It balances economic, social and environmental considerations associated with the provision of transport for the sustainable movement of people and freight.*

36. Chapter 4 of the RTLS2005 begins by identifying the creation of a sustainable transport system as a key issue. The last sentence in the 4<sup>th</sup> paragraph in this chapter states:
- "By encouraging appropriate demand management methods and land use, the land transport system can be used efficiently and effectively and contribute both to a high quality of life for Cantabrians and an attractive environment for visitors."
37. Thus the RTLS2005 is confirming that demand management and appropriate land use are both involved in contributing to a high quality of life and an attractive environment in the region. Issues relating to the demand for travel and the nature of the land use on the applicant's site are both relevant in this case.
38. Policy 2.1 **Progressively reduce the number and severity of crashes in Canterbury.** Clause 2.1.2 "Consider road safety impacts in resource consent decisions. [Responsibilities: territorial authorities.]" As will be shown in a following section, generally increases in traffic volumes caused by traffic generated by an activity lead to a worsening of the traffic crash situation. It is anticipated that local authorities will consider these impacts in making (or altering) resource consent conditions.
39. Policy 2.2 **Ensure adverse environmental impacts from transport are monitored and national and regional standards are met.** Clause 2.2.3 "Encourage land-use development that avoids, remedies or mitigates environmental effects of transport." This confirms that there is an expectation that environmental effects of transport will be monitored and land use development will be encouraged to avoid, remedy or mitigate the environmental effects of traffic associated with those land uses. The applicant has, in response to the request for additional information, provided a broad indication of the changes in traffic volumes and fuel use that can be anticipated if this application is granted. The application does not address the general environmental effects of transport associated with the activity nor does it offer any methods to avoid, remedy or mitigate these effects.
40. Under the headings of **Promotion/education methods** clause 2.2.6 "Encourage the development and use of pollution-free and low-polluting technologies, including leadership by example by public bodies. [Responsibilities: all Government agencies.]" and clause 2.2.7 **Operations methods** "Enforce laws and planning consent conditions controlling adverse environmental effects of motor vehicles, including use of vehicles off road. [Responsibilities: Police, territorial authorities, ECan.]" the RTLS2005 places dual expectations on territorial authorities to lead by example in development and use of low-polluting technologies and to enforce laws (rules) and planning consent conditions controlling adverse environmental effects on motor vehicles.
41. In this case the present conditions limiting the number of vehicle movements could work effectively to control the adverse environmental effects of motor vehicles associated with the activity to somewhat lower levels than are currently being experienced today. Regardless of whether present conditions are interpreted as being imposed to limit only the volume and origin of the residual waste being carried to the site, this condition could be persisted with as a means of controlling adverse environmental effects of motor vehicles. The Council's decision, however, does make it clear that the limitation on traffic volumes is imposed to control the traffic-related effects of the activity. Enforcement of this condition is an appropriate way of complying with the RLTL requirements.

42. Likewise under **Physical Methods** clauses 2.3.4 “Provide infrastructure, traffic management and enforcement measures that improve the safety of the region’s strategic road network”, clause 2.3.5 “Mitigate adverse impacts of the strategic road network on local communities through traffic management measures such as bypasses or traffic restrictions. [Responsibilities: territorial authorities, Transit NZ.]” and clause 2.3.8 “Avoid, remedy or mitigate the adverse effects of land-use development on the strategic road network [Responsibilities: territorial authorities, Transit New Zealand.]” all anticipate traffic management measures (including traffic restrictions and recognition of the adverse effects of land-use development) that will improve safety and avoid adverse effects of land-use developments on the region’s strategic road network.
43. Clause 3.1.1 **Promotion/education methods** “Develop travel plans and travel behaviour change programmes with communities, schools and businesses. [Responsibilities: EECA, territorial authorities, Transit NZ, ECan, Ministry of Education, Land Transport NZ.]” confirms the expectation that (especially with major regional facilities such as are involved with this application) consent authorities will seek continuous improvement in travel plans and travel behaviour change programmes with businesses such as the applicant’s to achieve the broad principles of the RTLS and the Regional Plan.
44. Clause 3.1.2 “Encourage more efficient motor vehicle use through improved logistics and programmes that increase vehicle occupancy or reduce the demand for travel.” again anticipates that ongoing improvements will be sought in vehicle occupancy and reductions in the demand for travel. In the case of this application, programmes offered in mitigation of the overt effects of the proposed increases in waste volumes could entail additional concentration or compaction of waste to optimise vehicle loadings (hence reducing the number of truck-loads needed to cart a given volume of waste) and effective efforts by the applicant’s shareholder-Councils to reduce regional residual waste volumes and hence the demand for travel.
45. **Integrating Transport and Land Use** – clauses 4.3.2 “Protect the function of strategic transport infrastructure from other land-use activities through city and district plan provisions. [Responsibilities: territorial authorities, Transit NZ, ECan, rail network providers.]” clause 4.3.3 “Promote strategic transport systems that support sustainable land-use development. [Responsibilities: territorial authorities, Transit NZ, ECan.]” and clause 4.3.4 “Ensure land-use development and land transport systems are integrated through the development of area or structure plans. [Responsibilities: territorial authorities, Transit NZ, ECan.]”. These clauses confirm the expectation that district plan provisions will be developed and used to protect the function of the strategic transport infrastructure. Likewise the promotion of sustainable land uses and sustainable transport systems is expected. The mechanism of area or structure plans is proposed as a means of ensuring the integration of land use and transport systems in relation to activities such as that involved in this application.
46. In Chapter 05 **Making it happen** the introduction notes “Local and cross-boundary environmental and social issues are also given significance in the Strategy. Current issues include effluent spillages from stock trucks and heavy vehicle movements through local communities. These need to be addressed in partnership with key agencies.” and (in the context of traffic congestion).. “...should consider the whole range of methods outlined within this Strategy, including improvements to alternative modes and travel demand management techniques.”
47. In this case Hurunui District Council is directly impacted to some degree by cross boundary environmental and social issues arising from the movement of vehicles

originating throughout the region. In particular the movement of heavy vehicles through local communities is of concern. There is no indication in the application that these matters are being addressed in partnership with the relevant agencies or that the whole range of methods outlined within the strategy have been considered to ascertain the optimum way of addressing these effects.

### **STATUTORY FRAMEWORK**

48. I understand that the application is for a variation or cancellation of conditions under s127. That section directs that such applications should be considered as resource consents under s88 to 121. Section 88 directs the applicant to attend to the provisions of Schedule 4 in relation to the content of any assessment of effects that is seen to be necessary.

49. Section 3 defines the meaning of 'effect' as:

*3. Meaning of "effect"—*

*In this Act, unless the context otherwise requires, the term "effect" . . . includes—*

*(a) Any positive or adverse effect; and*

*(b) Any temporary or permanent effect; and*

*(c) Any past, present, or future effect; and*

*(d) Any cumulative effect which arises over time or in combination with other effects— regardless of the scale, intensity, duration, or frequency of the effect, and also includes—*

*(e) Any potential effect of high probability; and*

*(f) Any potential effect of low probability which has a high potential impact.*

50. Of particular relevance here is clause 2(d) relating to the recognition of cumulative effects “...regardless of the scale... of the effect...”

### **SUMMARY OF CONSIDERATIONS**

51. From a transportation perspective the foregoing review of the provisions of the relevant planning documents pertaining to this application finds a clear and cohesive group of transportation-related policies, objectives and methods or rules all properly reflecting the outcomes sought by the Act. Likewise the lines of responsibility for achieving these outcomes plainly lead to the territorial authority – to Hurunui District Council - as the primary body to give effect to these requirements.

52. In relation to this application, the following points from the **District Plan** issue statements have relevance:

52.1. Maintenance of a high standard of environmental amenity.

52.2. Maintenance of environmental health and amenity values.

52.3. Pollution.

52.4. The quality of the environment.

52.5. The health and safety of people.

52.6. Noise levels.

52.7. Air quality.

52.8. Essential services contribute to the effective and efficient function of the district.

52.9. Services and facilities can create significant adverse environmental effects, some of which can be quite specific to the utility or facility.

52.10. The development or use of land without adequate infrastructure can bring about adverse effects on the environment.

- 52.11. There can be problems allocating costs and benefits between developers and the community so that neither bears a disproportionate burden.
- 52.12. The development of infrastructure, particularly transportation, can have potentially significant indirect effects on other resources that need to be taken account in the planning process.

53. These statements are also reinforced in the schedules of potential environmental effects.

54. The **Canterbury Regional Policy Statement** is quite unambiguous in its expectations that useful environmental outcomes (improvements, not merely the maintenance of the present conditions) should be achieved in the development and use of land. There are:-

- A reduction in the adverse effects from the use and provision of transport services and infrastructure including:
  - (f) Reduced use of non-renewable energy sources.
  - (g) Improvements in the efficiency of all energy usage.
  - (h) Reduced air pollution.
  - (i) Increased road safety.
  - (j) Reduced carbon dioxide emissions.
- A transport system which is able to efficiently and effectively meet community needs.

55. The CRPS identifies a number of potential effects that are to be addressed, including

- Air pollution.
- Community severance.
- Vibration.
- Noise.
- Accident risks.

56. Likewise the following key points from the **Regional Land Transport Strategy 2005** are applicable:

- 56.1. The comprehensive integration of available methods of controlling the demand for traffic activity together with consideration of the nature of the land use is clearly signaled as a key feature in the creation of a sustainable transport system for the region.
- 56.2. Territorial local authorities (in this case Hurunui District Council) are expected to consider safety impacts of activities in resource consent decisions. They are also expected to encourage land use developments to avoid, remedy or mitigate any environmental effects of transport arising from their activities.
- 56.3. Likewise local authorities are expected to enforce rules and planning consent conditions that control adverse environmental effects of motor vehicles.
- 56.4. The council also has a responsibility to recognize and mitigate adverse effects of the strategic road network on local communities (including cross-boundary effects) and also to address the adverse effects of land use development on the strategic road network.
- 56.5. There's also an expectation that the council will develop travel plans and travel behavior change programs with businesses such as the applicant's.
- 56.6. Also the Council should encourage more efficient vehicle use through programs that increase vehicle utilization and will hence reduce the demand for vehicle movements arising from the activity.

## SECTION B – EARLIER HEARINGS

### JOINT COUNCIL DECISION of 15 APRIL 2003 (HDC & ECAN)

57. The decision presents a number of matters that are of some relevance in considering the impact of changes in traffic volumes anticipated by this application. Some of these matters were further considered by the Environment Court, and these are also identified below.

58. The decision (in section 24) covers the consideration of the anticipated traffic effects of the proposal. Paragraphs 24.1.5 and 24.1.6 note:

*From our perspective, the traffic issues generally fall into one of three categories, as follows:*

- *State Highway 1 traffic,*
- *State Highway 1/7 and Mt Cass Road intersection, and*
- *Mt Cass Road.*

*In all three categories, the focus of all presentations was primarily on matters of traffic volumes, amenity and safety.*

*In addition to these three categories, several miscellaneous traffic issues were raised, including issues of transportation efficiency and alternative methods of transportation. (We have dealt with efficiency issues elsewhere in this decision.)*

59. This indicates that the Commissioners were basing their views principally on the ‘mechanical’ effects of highway capacity and efficiency.

60. In relation to efficiency issues, these are covered in section 19.5 of the decision. Paragraph 19.5.7 notes that the Commissioners did have a very real concern regarding the apparent inefficiency of transporting waste significant distances, however they saw that in the case before them ‘...*the transportation of waste is inevitable.*’ This does not preclude the possibility of using more efficient forms of transport, and we understand that the landfill is principally utilising road vehicles complying with stringent efficiency and emission standards.

61. In regard to a range of general transportation-related comments raised by submitters the Commissioners felt obliged to note in paragraph 24.4.3 that “*In the absence of any traffic engineering evidence led by submitters on this matter, it was difficult for us to place significant weight on these suggestions.*”

62. In regard to traffic safety (Section 24.4) the Commissioners were led to agree with the traffic witnesses that “...*there are no significant capacity or safety related effects likely to be caused by landfill related vehicles using the State Highway network.*”

63. On the issue of traffic volumes and capacity paragraph 24.4.12 records: “*we considered the evidence of Mr Huish, that the traffic effects evaluated as part of the proposal could increase, if additional refuse was to be transported above the projected quantities produced by the six currently participating Councils. Whilst we did not see any effects basis for limiting the source of waste to the six participating Local Authority areas, we do*

*see merit in Mr Huish's recommendation that it is appropriate to control the traffic effects of this proposal by placing limits on the number of vehicle trips to the landfill."*

64. This clearly signals that the Commissioners were deliberately imposing this condition to place a ceiling on the range of traffic effects that can arise from the activity.
65. The figures used in framing this condition (Condition 22) were based on the supplementary evidence adduced by Mr James and Mr McKenzie as the 'most likely' scenarios for traffic volumes.

#### **ENVIRONMENT COURT DECISION of 19 MARCH 2004**

66. In relation to the assessment criteria of the District Plan, the Court observed: "*Curiously considering the complexity of this matter, there was little or no discussion of these assessment criteria, notwithstanding that the Court and the Council must have regard to them and that they represent, in terms of a now operative plan, an approach relevant to this particular case...*" and "*Therefore it is most perplexing to us that none of the planners saw fit to address the application of the Plan provisions to this consent...*"

[Decision: Paragraphs 57 and 58]

67. In relation to the source of waste, and the limitation of traffic volumes, the Court in paragraph 127 (2) noted a suggestion by Transwaste that waste could be sourced from outside the region. The Court observed "*Questions immediately arise as to the transport implications of this...*" To resolve that concern the Court promptly added the words "*..generated within the Canterbury region.*" to the consent's conditions.[para 128]. In this, the Court was clearly recognising that additional waste volumes could have transport-related effects.
68. In paragraph 143 the Court recognises that traffic effects were being '*..appropriately addressed through the conditions of consent recommended by the Commissioners and supported by Transwaste before this Court*'. Thus there did not appear to be any disagreement with condition 22 of RC020069 limiting traffic volumes. The fact that the Court had found another method to address the issue of the sourcing of waste from outside the region does not appear to be connected to the limitation of traffic volumes in any sort of way that could suggest to me that this was the only reason for Condition 22.
69. The applicant supported Condition 22 before the Court.

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## SECTION C – THE APPLICATION

### THE APPLICATION and the APPLICANT'S EVIDENCE

70. The applicant is seeking preferably the removal of the limitations of RC020069 Condition 22 in relation to the number of traffic movements. The applicant's **fall-back position** is that condition 22 should be modified to permit a significant increase in traffic activity associated with the site.

71. The evidence recently circulated by witnesses for the applicant generally re-states the positions presented in the application. Broadly, Mr James focuses on demand for waste disposal at the site and the need for the various traffic movements to meet the anticipated waste volumes, Mr Pinkham details the traffic counting system and current waste volumes and vehicle movements. Mr McKenzie re-affirms the road capacity and safety matters presented in the application, and addresses some of the submissions.

### **Trips**

72. The following tables summarise the various positions involved. These are expressed in terms of Trips (as per the 'normal' definition), and the estimated non-landfill traffic volumes have been externalised. Table C1 (over) presents the applicant's detailed assessment of the predicted situation (based on the present-day view of waste volumes) and also the same figures for the original application.

73. The non-landfill trips have been taken outside the main tables (above), because the consent conditions only relate to the traffic generation of the applicant's landfill operation. As far as this application is concerned the Council has no interest in non-landfill traffic volumes. The only issue around this non-landfill traffic appears to arise from the difficulties the applicant reports around identifying non-landfill traffic among the vehicles counted at the traffic counter/classifier. Mr James [His para 13 to 15] lists the types of traffic generated by the landfill activity, and also the types of non-landfill traffic that uses the Transwaste-owned landfill access road.

74. This non-landfill traffic comprises:

- Forestry activity on the adjacent Ngai Tahu Forest Estates
- Tiromoana Station farming activity
- Department of Conservation access to the coastal reserve.
- Petroleum exploration traffic

None of this traffic appears to be associated with the applicant (in terms of this consent), and none of it need appear in any monitoring traffic counts, or be provided for in any consent conditions relating to the landfill operation. The forestry activity, the farming and DoC access activities are all existing activities that do not require resource consent. Any petroleum exploration or mining that generated more than 20 vehicle movements per day would require a separate resource consent.

75. The non-landfill component of the traffic flow will also have a marginal impact on the life of the Mt Cass Road pavement.

Table C1 – Detailed Evaluation of Trip Generation.

<b>Current Application - Predicted Heavy vehicle Trip Assessment for 360,000 Tonnes of Refuse per Year</b>				
<b>Vehicle Type</b>	<b>Average trips per year</b>	<b>Average trips per day</b>	<b>Average trips per 7 day period</b>	<b>Peak trips per 7 day period</b>
<b>Refuse</b>	36,000	98	692	<b>918</b>
<b>Leachate</b>	730	2	14	<b>84</b>
<b>Gravel</b>	2,600	8	50	<b>270</b>
<b>SubTotal HCV</b>	39,330	108	756	<b>1,272</b>
<b>Contractors</b>	2,920	8	48	<b>40</b>
<b>Visitors</b>	100	2	2	<b>8</b>
<b>Total Trips</b>	42,350	226	1,562	<b>1,320</b>
<i>Non-Landfill</i>	3,864	10	74	250

(Refer: Current Application)

<b>Original Application - Heavy Vehicle Trip Assessment for 240,000 Tonnes of Refuse per Year</b>				
<b>Vehicle Type</b>	<b>Average trips per year</b>	<b>Average trips per day</b>	<b>Average trips per 7 day period</b>	<b>Peak trips per 7 day period</b>
<b>Refuse</b>	23,746	64	456	<b>598</b>
<b>Leachate</b>	104	2	2	<b>14</b>
<b>Gravel</b>	0	0	0	<b>0</b>
<b>SubTotal HCV</b>	23,850	66	458	<b>612</b>
<b>Contractors</b>	1,560	4	30	<b>40</b>
<b>Visitors</b>	100	2	2	<b>8</b>
<b>Total</b>	25,510	72	490	<b>660</b>
<i>Non-Landfill</i>	0	0	0	0

(Refer: Current Application)

76. Mr James assigns some 150 trips per week to forestry and farm traffic, and a further 100 trips per week to petroleum exploration – should that eventuate. [his para 49 to 53]. Thus excluding the petroleum exploration, the farm and forestry activities will generate some 22 trips in a peak day, or about six to eight trips on an average day. This means that in order to determine the true generation of the activity on a day by day basis about ten trips per day (70 per week) can be subtracted from the totals counted at the traffic counter to account for non landfill activity.

77. Comparing the volumes shown in the ‘Peak trips per 7 day period’ columns in Table C1 it can be seen that the major increases in volumes arise from an increase in refuse vehicles from 598 to 918 trips per week. (An increase of 320 trips per week). Gravel truck volumes increase from zero to 270 trips per week (in the mean time these are mainly limited to travelling on Mt Cass Road) and leachate volumes increase from 14 to 84 trips per week (an increase of 70 trips per week).

78. Thus in this comparison the State Highway system would experience an increase of 390 trips per week (the majority of which will travel through Amberley), and Mt Cass Road will see an additional 660 trips per week.

79. Mr James, in his evidence details the variability of traffic volumes expected, and gives a clear view of the likely changes required in the allowed traffic volumes to provide for the uninterrupted operation of the activity. In his para 63 he notes that “ *The major part of the application, and the primary cause of the requested changes to 800 heavy vehicle entries to the landfill, relates to the need for gravel to be hauled into the site from the nearby Waipara river.*” However the above figures from the application show that only 270 trips per week (41% of the increase) are attributable to gravel haulage, and this is at the peak haulage rate.

80. The Table C2 shows the consented trips and the applicant’s fall-back trip numbers.

Table C2 – Changes in Volumes Proposed

<b>Consented Trips - Condition 22</b>		
<b>Vehicle Type</b>	<b>Trips/Week</b>	<b>= Trips/Day</b>
<b>HCV</b>	<b>600</b>	<b>86</b>
<b>Other</b>	<b>490</b>	<b>70</b>
<b>Total</b>	<b>1,090</b>	<b>156</b>

(Refer: Huish Supplementary Report January 2003)

<b>Current Application Fall-back Trips</b>		
<b>Vehicle Type</b>	<b>Trips/Week</b>	<b>= Trips/Day</b>
<b>HCV</b>	<b>1,600</b>	<b>230</b>
<b>Other</b>	<b>980</b>	<b>140</b>
<b>Total</b>	<b>2,580</b>	<b>370</b>

(Refer: Current Application)

<b>Increase from Consent Trips to Fall-back Trips</b>			
<b>Vehicle Type</b>	<b>Trips/Week</b>	<b>Trips/Day</b>	<b>% Change</b>
<b>HCV</b>	<b>1,000</b>	<b>144</b>	<b>267%</b>
<b>Other</b>	<b>490</b>	<b>70</b>	<b>200%</b>
<b>Total</b>	<b>1,490</b>	<b>214</b>	<b>237%</b>

81. Thus the applicant’s fall back position is that the trip generation of the activity should be allowed to increase to 237% of the consented volume (for all modes) and to 267% of the consented volume for heavy commercial vehicles. Of the 1000 heavy vehicle trips per week increase sought, probably only 270 trips are for gravel trucks, while the remainder are for leachate and waste haulage on the State Highway. This represents an increase of around 100 heavy vehicle trips per day on the State Highway south of the Mt Cass Road intersection.

82. The applicant’s preferred position is that the condition should be cancelled entirely. Should that eventuate there would not be any limitation on traffic effects arising from the

trip generation of the activity, and it can only be assumed that the figures detailed in the applicant's fall-back position would represent a reasonable estimate of the near-future traffic volumes, however beyond that time the traffic volumes would be unconstrained.

83. As an aside we note that as part of the mitigation measures being provided by the applicant, some recreation and educational areas are being developed as a reserve. Access to this area is via Mt Cass Road, and this will create increasing volumes of traffic on Mt Cass Road, and draw this additional traffic past the access to the landfill and further east along Mt Cass Road to the accesses to the reserve. Traffic associated with this activity is not included in the traffic generation of the land fill.
84. Thus some of the more significant mitigating measures being provided by the applicant to address the adverse effects of the activity have the counter-effect of attracting additional 'foreign' traffic to Mt Cass Road. This traffic is not 'counted'; in terms of Condition 22.

### **Carrying Capacity of Mt Cass Road, SH 1 and the SH Intersection.**

85. The applicant has carried out a detailed analysis of the possible carrying capacity of Mt Cass Road and of the intersection of Mt Cass Road with the State Highway. This analysis is based on the general assumption that the optimum carrying capacity of the roads is arrived at when the roads are operating at Level of Service D.
86. Level of Service D is defines as representing: *traffic conditions close to the limit of stable flow and approaching unstable flow. All drivers are severely restricted in their freedom to select the desired speeds and to manoeuvre within the traffic stream. The general level of comfort and convenience is poor, and small increases in traffic flow will generally cause operational problems.* [AUSTRROADS Part 2 – 1.3.2 Level of Service]
87. There is no report of the present Level of Service at the intersection or on Mt Cass Road, or of that which prevailed before the activity was established. However the very low volumes would suggest that before the activity was established Mt Cass Road operated at Level of Service A (the best level of service) while the intersection would also have operated with a very high level of service (A or B) – again due to the low turning volumes and modest through volumes.
88. To use Level of Service D as the basis of a comparison appears to be applying a standard that would normally only relate to highly congested inner-city roads to what is in this case a very lightly loaded local rural road.
89. However, based on the expectation that the road could tolerably operate at this comparatively poor level of service, the applicant has concluded that there is sufficient capacity both at the intersection of Mt Cass Road with the State Highway and on the steeper sections of Mt Cass Road to accommodate (in capacity terms) the likely traffic generation of the activity for the foreseeable future.
90. The calculation of the possible carrying capacity of the road is not particularly sensitive to the design level of service chosen in the range from LOS B through LOS D, and even if a better level of service was adopted the calculations would still show that both Mt Cass Road and the State Highway will technically have adequate capacity to handle the anticipated traffic volumes.

91. The Review of (traffic) Operating Conditions accompanying the application concludes:  
*The capacity of the route along Mt Cass Road from SH1 to the Landfill access is some 126 total vehicle movements per hour bothways, or 63vph in each direction.*

*Considering the 75% proportion of heavy traffic included in the calculations reported above, the heavy traffic capacity of the route is estimated to be at least 95vph (both ways). This is considerably higher than what the present condition of consent allows.*

92. These calculations have been correctly carried out – as defined in AUSTRROADS Part 2 – Roadway Capacity. There is no dispute that Mt Cass Road, the intersection with the State Highway, and the State Highways being used as haul routes to and from the site will continue to operate within their available traffic capacities for some time.

### **Road Safety**

93. Mr. McKenzie observes that the upgrading of Mt Cass Road was designed and constructed in full accordance with established roading standards, reflecting the specific requirements of the landfill operation. To his knowledge no traffic safety issues have been brought to the attention of either the District Council or Transit.

### **Submissions**

94. Mr McKenzie [his paras 16 to 22] addresses a number of the submissions. He refers to submitters concerns relating to passing opportunities on the state highway, and advises that Transit has implemented passing lanes south of Leithfield, and has preliminary plans for another northbound passing lane north of Leithfield. He notes that ” *any change in the number of waste transport vehicles generated from the landfill would not alter Transit’s view as to the need for passing opportunities along SH 1.*”

95. In his paragraph 19 he notes that the State Highway is subject to ongoing traffic growth, irrespective of whether the landfill is generating additional traffic or not.

96. In his paragraph 20 notes that in much the same way issues surrounding pedestrian safety within Amberley are being considered by the road control and authorities.

97. In relation to submitter’s concerns regarding the inclined section of Mt Cass Road east of the Omihi Stream he notes that his capacity calculations confirm that the number of heavy vehicle movements able to be accommodated on this section of roadway is far in excess of the volumes generated by the landfill. He sees the situation where following traffic is occasionally delayed by a truck climbing the hill as possibly inconveniencing the following drivers, but not one where the capacity of the road is compromised.

### **Transit New Zealand and State Highway [Mr McKenzie, Para 26]**

98. Mr. McKenzie considers that there are no adverse effects on the operation or management of the State Highway system arising from this application that would prevent the consent from being granted

### **THE REQUEST FOR FURTHER INFORMATION**

99. The s92 Request for Further Information was based on an appreciation of the information needed to address the above planning considerations arising from the District Plan, the Regional Policy Statement and from the Regional Land Transport Strategy, generally in terms of Schedule 4. A copy of this request is attached as Appendix 1.

100. The first section of the RFI sought to resolve the apparent confusion surrounding the use of the term “movements”.

101. The second section of the RFI sought information that would allow that actual impact of the changes in traffic activity posed by the applicant on the wider road network to be readily understood and assessed by people in the communities traversed by the traffic. The applicant provided the required information, including maps showing the roads travelled by applicant's trucks, and tables giving weekly numbers of trips on each route for each type of vehicle involved.

102. The final section of the RFI ask for records of fuel use by the heavy vehicle fleet over a one month period. This data was sought to assist with the appreciation of the likely impact of the proposal on air quality, pollution and on the environment generally. This information has been provided. The information has been used to create table C3, below, detailing fuel use from the various main sources of waste:-

Table C3 – Fuel Use

<b>Round Trips and Fuel Use - November 2005</b>								
<b>Operator</b>	<b>Origin</b>	<b>Destination</b>	<b>Loads</b>	<b>RTrip km (1)</b>	<b>Total km</b>	<b>Rate km/l</b>	<b>Fuel Used</b>	<b>Notes</b>
CWS	Chch Tfcs	Kate Valley	1091	144	156,842	1.78	88091	RTripKm Est
WM(NZ)	Southbrook	Kate Valley	117	94	10998	1.7	6469	
EnviroWS	McAlpChch	Kate Valley	67	145	9715	1.7	5715	
Wilson's	Ashburton	Kate Valley	32	292	9344	1.8	5191	
HDC	Amberley	Rangiora	20	70	1400	1.8	778	Trips Est
SDC	Rolleston	Parkhouse	30	36	1080	1.8	600	Trips Est
Total =			1357	Loads	189,379	Km	<b>106,844</b>	Litres
DailyAverage			45	Loads	90	Trips		

Note (1) RTrips means Round Trips

103. The amount of fuel used will be largely in proportion to the volume of waste being delivered to the site. From the traffic count information provided by the applicant, during the month of November the heavy vehicle activity averaged 778 trips per 7-day week. This fuel use can be factored back to the consented maximum trip rate of 600 trips per week, giving a monthly fuel use for the consented heavy vehicle travel of approximately 1,040,000 litres per year.

104. If this is then factored up to reflect the 360,000 tonne per year waste volume level, this gives a predicted fuel use of 1,560,000 litres per year. If instead this is factored to the applicant's fall-back heavy vehicle trip figure of 1600 trips per week minus 290 trips per week for gravel, then this fuel use could increase to approximately 2,270,000 litres per year. The lower figure is perhaps more likely, but the higher figure would be allowed under the fall-back condition.

## Conclusion

105. We reviewed the additional information provided by the applicant and we were satisfied that the amended application (incorporating the requested additional information) provided sufficient information to enable the council and potential submitters to properly understand the traffic-related aspects of the application.

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## **SECTION D – SUBMISSIONS**

### **INTRODUCTION**

106. This section summarises the submissions relating to traffic and transportation matters. Where appropriate some comments are made in relation to the relevance of the submissions.
107. We note here that this summary includes submissions on matters that are beyond the mere numbers of vehicles and the technical ability of the road to accommodate them. While the effects of an activity may be identified by the volume of traffic generated by the activity and the statistics relating to road carrying capacity and crash rates, the effects of ‘traffic’, of emissions arising from the use of non-renewable fuel resources and all environmental effects generally finally fall upon people. If people like the effect, then it is seen as positive, and if people do not like the effect it is seen as adverse.
108. In the same way, district and regional plans are developed. Where people like an effect, then issues, policies and rules may be created to support the activities that create such effects. Where people do not like an effect, then likewise issues, policies and rules may be created to ensure that such effects are avoided, mitigated or remedied.
109. The point here is that it is the way people feel about traffic-related effects, not necessarily the magnitude of the numbers describing the effects, which tell us whether the traffic effects are positive or adverse. We have examined the submissions in this light.

### **SUMMARY OF MATTERS RAISED IN SUBMISSIONS**

110. Broadly transportation-related comments in the submissions fell into the following categories:-
- 110.1. Submissions in support – Important for major shareholders to be supporting the application. Landfill performs essential community service. No other transport activities have limitations on trip numbers. Major part of application is need to cart gravel to the landfill from the Waipara River. The State Highway is the appropriate road to provide for the long-haul freight to the landfill. Condition is superfluous now that Environment Court has conditioned source of waste.
- 110.2. Ambiguity of condition – Submitters did not see any ambiguity in condition or earlier documents.
- 110.3. Predictions of waste volumes – disquiet and uncertainty.
- 110.4. Waste volumes and consequent traffic volumes – Restore waste minimisation targets to reduce waste and traffic volumes. Reinstate prohibition on green waste being received. Limitations to ensure landfill lasts for expected period. Lack of incentive to reduce waste generation. Concern about possible uncontrolled growth in waste volumes and traffic. Company’s objectives unclear.
- 110.5. Rail – Waste should be carried by rail.
- 110.6. Amenity and noise – Noise factors must be addressed. Impacts on amenity values of residents of Mt Cass Road, Waipara and Amberley. Feelings of insecurity.
- 110.7. Life of the landfill – Reduced life of landfill. Possibility of further landfill development and prolonged effects.

- 110.8. Road capacity, Level of Service and Safety Issues – Impacts of applicant’s trucks on Amberley, Woodend, Waikuku and Belfast. Social effects. Road safety, Difficulties for pedestrians (especially the elderly and children) and other road users in towns along the State Highway. On Mt Cass Road; conflicts with trucks, queuing behind trucks climbing the hill, safe overtaking opportunities. Review of cost model for maintaining the road. For State Highway 1; effects on continued growth in traffic volumes, more accidents, congestion, speed reduction to truck’s speed, limited passing opportunities, intersection safety and flow issues.
- 110.9. Environmental Issues – Diesel fuel consumption, emissions, greenhouse gases, CO<sub>2</sub>, increased risk of leachate spill. Will not meet requirements of sustainable management under RMA.

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## SECTION E – APPRECIATION OF EFFECTS

### INTRODUCTION

111. The application is to be examined in terms of the considerations identified above in Section A – Planning Considerations. Broadly, the effects of this activity and the increased traffic volumes sought in this application fall into two categories; Positive Effects – recognising the contribution the activity makes to the function of the district, and Adverse Effects.

### EFFECTS

#### **Benefits of the Applicant’s Operation.**

112. This application is about an increase in the volume of traffic associated with a higher demand for the disposal of residual waste from the applicant’s contributing Councils. The benefits that accrue from the operation of an effective disposal system for this residual waste have been identified in earlier hearings, and there is no need (nor, we understand, any legal opportunity) to revisit them here.

#### **Adverse Effects of the Proposal**

113. The consideration of the adverse effects arising from this application and of relevant matters raised by submitters falls under the following headings.

- **Quality of the Environment - Air Quality and CO<sub>2</sub> emissions**
- **Amenity, Health and Safety**
  - Community effects – severance**
    - Passing traffic volumes
    - Noise and vibration
  - On-road effects on people of the district**
    - Traffic accidents
    - Delays and Congestion
- **The Life of the Landfill and the Life of Mt Cass Road**

#### **114. Quality of the Environment - Air Quality and CO<sub>2</sub> emissions**

114.1. The principal way the proposal impacts on air quality and emissions is by the use of fuel in the transport of the community’s residual waste to the landfill at Kate Valley. The application does not offer any mitigation of the anticipated increase in fuel use arising from the proposal. The effects of fuel emission particulates and gases on the health and wellbeing of communities beside roads are well documented. Likewise the environmental disbenefits of greenhouse gases and CO<sub>2</sub> emissions are identified in all the relevant planning documents.

114.2. The fuel use of the activity is expected to increase from the present level of approximately 1,040,000 litres per year to between 1,560,000 to 2,270,000 litres per year under the expected waste volume and trip allowances sought in the fall-back position. This estimate does not include on-site fuel use, or the fuel consumption for gravel haulage.

114.3. Generally, each litre of fuel burned creates about 2.7kg of CO<sub>2</sub> emissions, thus the proposal will see CO<sub>2</sub> emissions rise from the consented level of about 2800 tonnes per year to between 4,200 and 6,100 tonnes of CO<sub>2</sub> emissions per year, assuming the activity is restricted to the fall-back activity level.

## 115. Amenity, Health and Safety

### Community effects – severance

115.1. Numerous submitters have identified the effects of passing traffic volumes, noise and vibration on their lives. There are two groups of affected people; those associated with Mt Cass Road, and those associated with the wider district, whom generally experience the effects of the activity as part of the main road traffic stream.

115.2. As traffic volumes grow on any road there is an identifiable progression of effects on people who live and work beside the road. This progression may be characterised as follows: are

Table E 1 – Response to Increasing Traffic Volumes.

Road Traffic Volume per Day	Community Response to Increasing Traffic Volumes
50	[Flow represents one vehicle each way every 20 minutes in peak hour] Road is shared with people known to each other. Children play unsupervised on the road. Strong cross-road community linkages. Living areas face and overlook the road. Front yards open to the road.
150	[Flow represents one vehicle each way every 7 minutes in peak hour] Road is shared with friends and with strangers. Anxiety about children playing on the road.
1200	[Flow represents one vehicle each way per minute during peak hours.] Casual cross-road community linkages becoming less frequent. Children escorted across the road.
2400	[Flow represents two vehicles each way per minute during peak hours.] Cross-road community linkages mostly severed. Difficult for elderly and children to cross the road confidently. Road has become a barrier to social connection.
12,500	Properties start to turn away from the road with front yards used increasingly for parking and service activities. Over-sight of the road from properties diminishes.
25,000	Most pedestrian movement across roads between residents has ceased. Movement between communities is mostly by motor vehicles. Dwellings establish tall fences on road boundaries to exclude noise and the visual effects of passing traffic.

115.3. This progression of responses to increasing traffic volumes is reflected in the submissions from people on Mt Cass Road, and in the Waipara area, Amberley and Woodend.

115.4. By the time volumes have reached those experienced on the State Highway it is impractical to try and lay the blame for these effects on any single transport operator – except to recognise – that in most cases more traffic will make an already undesirable situation worse for those who live and work in communities divided by such roads.

115.5. Each new activity or increase in traffic generation of existing activities is accepted as being a natural consequence of (and even indicator of) increases in social and commercial activity in the district. However these are cumulative effects that are to be recognised, and mitigated as much as possible. The application does not acknowledge these effects, nor does it offer any mitigation.

### **Community Effects - Mt Cass Road**

115.6. For those people living or working beside Mt Cass Road this effect is acutely felt because previously the road only carried traffic associated with the farms and dwellings served by this rural-service cul-de-sac road. For some the impact of the existing scale of the activity has been so forceful as to lead them to move out of the district. (Submission 373 – Harris)

115.7. The applicant has presented details of an analysis of the carrying capacity of Mt Cass Road based on Level of Service criteria. This presents an averaged view of the effects of traffic and does not usefully reflect the character of the ‘experience’ for those living beside a lightly trafficked road.

115.8. For roads carrying higher volumes the effects of cumulative changes in traffic volumes are similar to the effects of noise from a continuous source – such as an industrial fan. On low-volume roads, however, the effect is more characteristic of the effect from an occasional noise source, such as a gun club.

115.9. The change in traffic activity is therefore experienced as an increase in a number of discrete events rather than a marginal change in an already ‘noisy’ environment. Thus the impact of the experience for residents of Mt Cass Road of the increased traffic volumes will be significantly more marked than for those on the State Highway.

115.10. In addition – as part of the mitigation being developed by the applicant – the new reserve and educational areas being created will lead to further traffic intrusion by non-local people into the original road-community.

### **Community Effects - The State Highway**

115.11. Many submitters have referred to the effects they are experiencing or anticipate from the increasing traffic volumes on the State Highway. The application could see an increase of approximately 190 trips per day on the State Highway south of the Mt Cass Road intersection.

115.12. Submitters refer to increasing concern at crossing the road (especially the elderly and school children), difficulties accessing properties and businesses, difficulties at intersections and increasing uneasiness regarding the general traffic situation.

115.13. For people living by the state highway, where traffic volumes are currently between 7000 to 12,000 vehicles per day (north of the Northern Motorway), the cause of these community-related effects and their initial responses to them have occurred many years ago. Along the route crossroad social and community linkages are probably increasingly fragile or nonexistent. Further increases in traffic volumes will simply reinforce the role of the road as a barrier to social and community function.

115.14. This is a cumulative effect of the activity, adding to the additional traffic volumes on the State Highway caused by the consented scale of the activity, and its current somewhat higher volumes.

115.15. Mr McKenzie, in his evidence, notes that “*The State Highway is subject to ongoing traffic growth, irrespective of whether the landfill is generating additional traffic or not.*” – implying that the growth in traffic volumes is not dependant on traffic from the Kate Valley landfill operation. .

- 115.16. While on face value this is true, it is not correct to suggest that the additional traffic arising from this proposed change in consents will not materially add to volumes on the State Highway. The effects arising from traffic generated by the activity is a cumulative effect upon users of and residents and businesses beside both Mt Cass Road and the State Highway. The traffic growth 'irrespective' of the landfill's traffic is the result of other activities likewise adding to this cumulative effect.
- 115.17. However if an activity is prevented from making a contribution to the traffic flow, then at least the upward trend in traffic volumes is diminished by that amount, and the adverse effects of the highway upon those who live and work beside it are reduced accordingly.
- 115.18. Under its present consent (600 HCV trips and a total of 1090 trips) and allowing 270 trips per week for gravel carting, this activity is able to add approximately 105 trips per day to the State Highway volume south of Mt Cass Road – assuming 90% of the traffic relates to the southern leg of the intersection.
- 115.19. Assuming some limit is placed on the trip generation along the lines of the fall-back limits suggested by the applicant, this application has the potential to increase traffic volumes on the State Highway by up to about 190 trips per day, including an additional 126 heavy vehicle trips. With the cancellation of the condition there would be no control on the impact of the activity on the State Highway or on Mt Cass Road.
- 115.20. Traffic volumes on the State Highway prior to the application being established ranged from approximately 7000 at Waipara to 12000 through Woodend. Thus the existing consent has allowed an increase in these traffic volumes of 1.5% at Waipara and 1% in Woodend, while this current application would see these volumes adding a further 2.7% to traffic volumes at Waipara and 1.6% in Woodend.

### **On-road Effects on Drivers using Roads in the District**

- 115.21. These effects arise from traffic crashes, and delays and congestion.

#### **On-road Effects - Traffic accidents**

- 115.22. Crashes are one of the measurable effects of traffic. To obtain a view of the crash situation on SH. 1 between Belfast and Waipara the accident record has been searched. In order to obtain a logical comparison between the period of traffic activity on the state highway before the Kate Valley operation commenced and after, the crash record was searched for the period between the first of July each year and the first of April on the succeeding year. This period was selected to match the period that the landfill was operating between the 2005 and 2006, finishing in April 2006 to reflect the last date the accident data was available.
- 115.23. Table E2 identifies the number of crashes, severity of the crashes and the number and percentage of crashes when a truck was involved as the first or second vehicle.

Table E2 – Crashes on SH1.

**Number of crashes on SH 1 between Belfast and Waipara**

Query: SH1 between (including) Intersection of Johns Road and Intersection of Mt Cass Road, All vehicles. Dates between 1st July and and 1st April each following year.						
Year	Number of Crashes	Fatal	Serious	Minor	Truck Crashes	%Trucks
2000-2001	38	1	3	15	10	26%
2001-2002	30	1	5	10	3	10%
2002-2003	30	0	1	11	2	7%
2003-2004	41	3	11	20	7	17%
2004-2005	48	1	3	21	5	10%
2005-2006	30	0	2	8	2	7%
Totals	217	6	25	85	29	13%
Trucks (Axle class 3 and above) in traffic stream at Waipara.						12%

115.24. The classified vehicle count station at Waipara finds that approximately 12% of the total traffic stream is made up of trucks. Thus it can be seen from the table that trucks appear in the accident record on average in a proportion which is similar to that of the trucks in the traffic stream. Overall the table shows that variability that is typical of small data sets, the number of crashes ranging from 30 to 48 over the six years examined and truck crashes comprising between 7% and 26% of the crashes in any one time period. The first nine months of operation of the landfill site experience similar crash levels to those found in 2001 to 2003, these having the lowest crash rates identified in the years surveyed.

115.25. This table does not enable any useful comment to be made about overall trends in crash rates however it does serve to demonstrate that trucks are involved in crashes on the state highway between Belfast and the site in similar proportions to all types of vehicles on the road. On average over the six years the section of the state highway sees one fatal accident, four serious injuries, 14 minor injuries and about five crashes involving trucks.

115.26. Transfund’s Project Evaluation manual provides equations for calculating predicted crash rates on New Zealand’s roads. The typical accident rate (reported injury accidents per year) is calculated by simply multiplying the exposure (the number of vehicle kilometres per year) by a coefficient given in tables in the manual. This means that if the traffic volume doubles, then the typical number of accidents doubles as well.

115.27. In the range of traffic flows experienced on State Highway 1 the number of traffic crashes is expected to grow linearly with the traffic volume on the road. As identified above the traffic growth allowed by the applicant’s fall back position could see traffic volumes increasing by 2.7% at Waipara and 1.6% in Woodend. The number of traffic crashes is expected to increase in the same proportions.

**On-road Effects - Delays and Congestion**

115.28. These effects arise on Mt Cass Road and on the State Highway.

**On-road Effects - Mt Cass Road**

115.28.1. Submitters have identified a number of on-road concerns, including the capacity and safety of the road and intersection with the State Highway, concern about the safety of the school bus operation, hours of truck operations, queuing

of trucks to enter the site prior to the site's opening times and passing opportunities for eastbound traffic east of the bridge.

115.28.2. The applicant has conducted an analysis of the traffic carrying capacity of Mt Cass Road. The conclusion from this analysis is that at a defined level of service Mt Cass Road will continue to have adequate traffic carrying capacity – even with the higher traffic volumes anticipated.

115.28.3. This is not a surprising result because with daily traffic volumes of 200 to 400 vehicles per day then on average there will not usually be more than one vehicle moving in the same direction on Mt Cass Road at the same time. However at low volumes Level of Service as calculated by the American Highway Capacity Manual method is virtually meaningless. Instead - to consider Level of Service from the view point of individual drivers – the term “Quality of Service” is more relevant. The Quality of Service [QoS] for each driver on the road is dictated by what each driver finds on the road ahead of him or her.

115.28.4. For example for a motorist travelling at a speed she is happy at, with the nearest vehicle in front of her five to ten seconds away (or with a clear road ahead) is in a good position – she does not wish for better traffic conditions. This can be described as an excellent Quality of Service. However if that same driver finds that they desire to travel faster than they are and they are held up by the vehicle in front of them and that they cannot overtake then the Quality of Service is very poor. Drivers operating in moderately congested road networks experience this change in quality of the experience as a progressive increase or decrease in the continuum between very good and very bad as traffic conditions change. But for drivers on Mt Cass Road – because of the low traffic volumes – the experience is that of feast or famine, especially for those eastbound on the hill sections.

115.28.5. Drivers either have a clear road with no traffic in front of them – enjoying the best possible quality of service, or they find that they are following a large slow moving vehicle that they cannot pass and the quality of service is very poor. For operators of the slow moving trucks a vehicle following them makes virtually no difference to their quality of service so for then the quality of service is still very good.

115.28.6. Thus the impact of the ‘new’ traffic on the quality of service experienced on the road falls disproportionately heavily on the ‘original’ road users. It is perhaps ironic that the upgrading of Mt Cass Road carried out by the applicants has probably increased the normal free running operating speed on the road for all drivers – thus making the difference in quality of service experience by the new versus the original drivers even more pronounced.

115.28.7. In summary then, level of service or capacity calculations do not give a useful measure of the impact of the activity's traffic on the quality of service for other motorists on Mt Cass Road. Further, the present and anticipated levels of traffic associated with the Kate Valley landfill have a disproportionately higher impact on the ‘original’ drivers than on drivers associated with the Kate Valley operation.

115.28.8. In purely technical terms, however, it is acknowledged that the road does have sufficient carrying capacity for the anticipated traffic volumes. Eastbound traffic following trucks up the hill reduce their travelling speeds to 30kph at the steepest portions, the trucks then accelerate to about 50kph by the time they reach the entrance to the site. The total distance on the hill section is approximately 4km, and our observations found a maximum travel time following a truck to be around 4 to 5 minutes. The delay to following traffic due to having to follow a truck up the full length of the hill would be between 1 and 2 minutes.

115.28.9. The 8km of Mt Cass Road east of the access to the site has a fairly tight alignment with a typical comfortable travelling speed of between 40kph and 60kph. Thus the effect of following a truck up the hill to Kate Valley is similar to that of driving on the remaining section of the road, in terms of travelling speed.

115.28.10. The alignment of the hill section of Mt Cass Road does not present any safe passing opportunities, and the best location for a passing lane would be difficult to ascertain – given the wide variety of locations where following drivers may catch up with a slower moving vehicle.

115.28.11. In regard to the risk on the westbound downhill carriageway of trucks losing control, a free-wheel run down the hill in a conventional motor car found that the speed only reached 90kph crossing the bridge. This speed is not dissimilar to that anticipated under power, and thus the run-away effect is unlikely to create a significant hazard to other road users. The truck arrestor bed is well located in a position where the free-wheeling vehicle's speed is reduced by a small rise in the road, thus ensuring that the vehicle would stop readily in the shingle trap.

115.28.12. We observed the school bus using the road on several occasions and each time one or more waste trucks were using the road at the same time. No conflicts or other safety-related issues were observed.

115.28.13. Thus, while submitter's experience of the traffic associated with the activity may not be pleasing for them, from a technical perspective the road and the intersection with the State Highway appears to be functioning satisfactorily. This view, of course, does not recognise the effects detected by residents who are having to cope with quite major changes in traffic conditions on 'their' road.

#### **On-road Effects - State Highway**

115.28.14. Submitters have identified a full range of on-road traffic effects occurring on the State Highway. These include lack of passing opportunities, unhelpful driving behaviours, truck speeds both too low (due to the lower speed limit for trucks) and too high, and difficulties using side-road intersections with the State Highway,

115.28.15. As has been observed above, the impact on traffic conditions due to traffic growth caused by the applicant's activities on the State Highway is part of an overall trend in incremental cumulative effects resulting from numerous activities. For drivers the experience is real, however it is difficult to expressly place the role of the traffic generated by the Kate Valley landfill as the prime

cause of any particular effect. Rather is just one of many elements contributing cumulatively to traffic volumes on the State Highway.

115.28.16. Transit New Zealand has not found cause to submit on this application, and we note Mr McKenzie's observation [his evidence para 26] that the applicant has consulted thoroughly with Transit over the establishment of the activity.

115.28.17. In regard to the practical issues of pedestrian crossings, access and manoeuvre issues relating to the State Highway as it passes through the townships of Amberley, Waikuku and Woodend, we understand generally that the relevant Council's and Transit are continuing discussions on identifying significant safety issues, and addressing them as required, in terms of normal project evaluation procedures and funding. The same approach is followed for the identification of the need for passing lanes and other network improvements.

115.28.18. A side-effect of this approach is that this section of State Highway is evaluated in terms of national funding priorities. Thus the quality of traffic travel on this axis is bound to track downwards with the national situation, and so the maintenance of the road in a condition that accords with the previous expectations of those who live and work by the road is increasingly less likely.

115.28.19. However the District Plan, the Act, the Regional Policy Statement and the Land Transport Strategy all signal cumulative effects as issues, and the Regional Policy Statement in particular seeks actions that will lead to reductions in the critical measures of crashes, emissions and community effects. These can only be achieved by recognising and effectively mitigating these cumulative traffic effects, one activity and one application at a time.

## **116. Life of Landfill and the Life of Mt Cass Road**

116.1. The Council currently has a maintenance agreement with the applicant in relation to Mt Cass Road. This has seen the road upgraded from a relatively low standard farm service road to a well-designed two-lane sealed road standard over the length of the road from the intersection with state highway to the access to the landfill site. This agreement is due to expire in 2008.

116.2. In a report by Eliot Sinclair for Transwaste Limited – Access Road Construction - dated February 2002 notes:

### **2.7 Pavement Design**

The design is based on 4-axle trucks and 4-axe trailers with a gross laden weight of 44T. This is the maximum under current New Zealand road transport regulations.

Other vehicles using Mt Cass Road, including landfill support vehicles, will have low loadings and have minimal effect on the design of the pavement

The pavement life used for the design is 25 years. This is the standard design life adopted by Transit New Zealand.

The landfill tonnages per year are expected to fall due to the waste minimisation policies and recycling activities. For this reason no allowance for an annual increase in traffic volumes or loadings has been included. On this basis, and using the traffic volumes from the Traffic Design Group Ltd. report, the design pavement loading is  $1.1 \times 10^6$  EDA (Equivalent Design Axles).

116.3. From this, normal design practice is that the strength of the underlying soils are determined by investigation, and this strength is then used in a standard calculation to give the required metal depth needed to give the expected design life for the road. A benefit of this design process is that it specifically recognises the actual soil conditions under the carriageway, and thus ensures that the required strength is reached, while not being more conservative than is necessary. By conservative we mean that it does not require more excavation or hardfill than required, thus optimising the expenditure required to achieve the required design life. We presume that this approach was used in this case.

116.4. In relation to Mt Cass Road, Condition 17 of RC020067 states:

*The Consent Holder shall design and construct a granular overlay and seal as determined by Condition 16. The road pavement, and associated features, required under this condition shall be designed for the greater of:*

- *The remaining life of the landfill, based on 35 years from the opening of the landfill, and based on the “Likely” traffic volumes specified in the report contained in Appendix W of the AEE.*
- *20 years based on the “Likely” traffic volumes specified in the report contained in Appendix W of the AEE.*

116.5. This condition anticipates that there is a reasonable match between the life of the landfill and the design life of Mt Cass Road. The life expectancy of the road pavement is generally proportional to the number of heavy goods vehicle axles it carries.

116.6. The applicant anticipates an increase in overall waste volumes from 240,000 tonnes per year to 360,000 tonnes per year. In addition an average of 270 trips per week would be involved in hauling gravel from the river to the landfill along Mt Cass Road. Based on the applicant’s suggested fall back position, heavy vehicle numbers on Mt Cass Road could increase from the consented level of 600 per week to 1600 per week. This includes the gravel haul vehicles.

116.7. This intensity of heavy traffic would see the design life of the road reduced to about 38% of that envisaged when the original design was made in terms of Condition 17. If the original design life was matched to the expected 35 year life of the landfill, then the road could be expected to reach the end of its design life in just over 13 years.

116.8. Thus an effect of the proposal will be to see the landfill site filling faster, higher traffic volumes, and the road reaching the end of its design life significantly sooner than expected. Notably, the additional travel by gravel trucks on Mt Cass Road will lead to the road reaching the end of its design life significantly before the landfill is filled.

116.9. A consideration arising from this traffic activity is that the community has a finite ability to pay for roading infrastructure to support a particular activity. Broadly, any demand on these resources is balanced across the range of the community’s assets to ensure a balance is achieved in the provision of services to the community. Where a particular activity places a disproportionate demand on community resources, then this can lead to inefficiencies, and poorer service elsewhere within the district, with adverse community and ‘resource management’ outcomes.

116.10. I imagine that this particular activity benefits the community mainly in terms of the proportion of waste accepted from Hurunui District versus the total volume of waste received from all the contributing local authorities. The following table E3 gives the respective shareholding by the Councils in Transwaste Canterbury Limited. The Councils' shares represent exactly 50% of the total shares in the company, the remainder being owned by other companies and individuals. To a degree these share values may reflect the relative benefits expected to accrue to each shareholder.

Table E 3 – Shares Held in Transwaste Canterbury Limited.

Council's Shares		Proportion All Shares	Proportion Councils
Christchurch	7,570,000.00	37.9%	75.7%
Waimakariri	780,000.00	3.9%	7.8%
Selwyn	600,000.00	3.0%	6.0%
Ashburton	600,000.00	3.0%	6.0%
<b>Hurunui</b>	<b>240,000.00</b>	<b>1.2%</b>	<b>2.4%</b>
Banks P	210,000.00	1.1%	2.1%
Total Shares	20,000,000.00	50.0%	100.0%

116.11. Thus using the proportion of shares held in Transwaste Canterbury Limited, it appears that Hurunui District is utilizing about 2.4% of the capacity of the landfill facility. This current application envisages a significantly shorter life to the landfill due to the increased waste volumes and this will further shorten the life of the road.

116.12. After the design life of the road is reached the road will continue to deteriorate until it reaches a condition where it needs to be reconstructed to a standard that will be appropriate to the level of traffic it is expected to carry.

116.13. I understand that the applicant has an agreement with the Council to maintain the road until June 2008, while paying an annual contribution of \$1950.00 for the eventual upgrading of the road. After June 2008 the applicant's roading contribution increases to \$5850.00 per year, based on the cost of resealing the road once during the life of the landfill. If the heavy traffic volumes increase to the levels implied in the application, then this contribution would need to increase to about \$15,600 per year to provide the same level of funding over the design life of the existing road. The higher traffic volumes may also exacerbate the degradation of the road sub-base – increasing the need for more major reconstruction efforts.

## **SUMMARY OF EFFECTS**

117. The following effects have been identified:

117.1. Fuel related air pollutants (including particulates, CO<sub>2</sub> and greenhouse gasses generally) will rise in proportion to the fuel used by transport associated with the activity. In particular CO<sub>2</sub> emissions will increase from the consented level of about 2800 tonnes per year to between 4,200 and 6,100 tonnes of CO<sub>2</sub> emissions per year, assuming the activity is restricted to the fall-back activity level.

117.2. The effects on communities beside the roads travelled by vehicles associated with the activity are genuinely experienced by residents and businesses, and it is expected that their response to these effects will be to increasingly see the road as a barrier to community interaction and local activities.

- 117.3. For residents on Mt Cass Road these impacts are singular events leading to cumulative distress and feelings of disconnection from their community.
- 117.4. For people who live and work beside the State Highway these effects are experienced as part of a continuum of increasing traffic volumes. These are cumulative effects, and they do add up to creating genuine issues that are difficult for Councils and road controlling authorities to address. In towns like Amberley this will increasingly lead to demands for and the need for development in depth away from the State Highway (in favour of the present ribbon development format), and the need to make choices regarding the side of the road to favour commercial development upon. Some submitters suggest a bypass around Amberley as an option.
- 117.5. The State Highway has an accident record that confirms that trucks are involved in traffic crashes in proportion to their numbers on the road. The estimated increases in traffic volumes will lead directly to a proportional increase in traffic crashes along the route. This will amount to an increase in crashes of between 2.7% at Waipara to 1.6% through Woodend.
- 117.6. The effects of delays on Mt Cass Road are experienced more by the light vehicles driven by local people travelling the road than by the heavy commercial vehicles.
- 117.7. The effects of delays and congestion experienced by drivers on the State Highway are part of the general incremental cumulative change in traffic flows. The application will result in a further upwards increment to these flows, further lowering the level of traffic service.
- 117.8. In the absence of any extension to maintenance agreements between the applicant and the Council, the cost of maintaining and eventually reconstructing Mt Cass Road is likely to fall on the Council. The increased waste volumes could lead to a reduction in the life of Mt Cass Road to about 13 years, and at that time the road will probably have to be reconstructed to a significantly higher standard to provide a design life of a further 25 years under the higher traffic volumes expected. Due to the gravel haulage on Mt Cass Road the road will reach the end of its design life before the landfill is filled.
- 117.9. The cost of this work could divert community resources from other essential efforts, while the community only utilises approximately 2.4% of the total capacity of the landfill.

## **DISCUSSION**

118. The issues of emissions, community and on-road effects are all arising from the anticipated increases in on-road vehicle travel implied in the application. These matters are all referred to in the relevant planning documents. In some cases the planning documents seek recognition and mitigation of these effects, while in other cases positive improvements in these effects are anticipated.
119. While achieving these outcomes may appear daunting, there is no obvious path through these documents that can allow the Council to avoid facing and addressing these issues on a case-by-case basis. The application raises issues that have both tangible and intangible costs – in terms of community and environmental effects, and direct costs of the maintenance of the required roading infrastructure to service the activity and other road users.

120. One of the primary benefits that can be obtained is through moves to reduce trip generation and reduce fuel use by the activity. This can be done by moves to improve the efficiency of the applicant's existing transport systems, or through the development of alternative transport and/or waste handling systems.
121. A likely benefit of achieving a reduction in vehicle travel through a reduction in residual waste volumes is that – unlike many land uses – the landfill operation represents the final repository for commodities that may have travelled for substantial distances around the nation or around the world before arriving at Kate Valley.
122. For example, if – by encouraging waste reduction at source – a 20-tonne truck load of cardboard waste is eliminated from the waste stream, then that may represent a saving in the felling of approximately 240 trees in an Indonesian forest; the transport of that wood chip to a paper plant in China for manufacture into cartons, and the subsequent freighting by various modes to New Zealand and then to Canterbury to the end-user of the product contained in the carton. The carton is then transported to Kate Valley as residual waste. The on-road travel involved in this total journey may be many times greater than the 70km trip from Christchurch to Kate Valley. Thus the 'multiplier' effect of careful waste minimisation programmes can be far more beneficial than implied by a focus on the final stage of the journey to the landfill alone.

### **Improving the efficiency of the applicant's existing transport systems**

123. The application does not indicate that any improvements are proposed to ease the effects of the increase in traffic volumes sought.

#### **On-vehicle efficiencies**

- 123.1. We understand that the applicant imposes strict requirements on the emission and efficiency performance of all the vehicles directly accessing the site. This is most commendable, having the advantage for the community and the environment that this standard will be sustained. This is a much more effective approach to emission control and efficiency than simply buying a fleet of new vehicles, and allowing their performance to degrade as the engines wear.
- 123.2. It is unlikely that any further significant improvements will be achieved along this line, and it is expected that the applicant will continue to operate to these standards for the life of the consent.

#### **Compaction of loads**

- 123.3. The present method of operation entails compaction of loads at the transfer stations as the containers are filled. The applicant is clearly endeavouring to achieve the highest possible density – to reduce the number of truck trips required to haul a given volume of waste. If (as we understand it) the company is remunerated on a tonnage basis, then there is an economic imperative to reduce transport costs.
- 123.4. Further compaction may be difficult to achieve technically, or without double-handling of the waste at the transfer stations. Thus it is unlikely that significant improvements can be expected in this area.

### **Reduction in residual waste volumes**

124. A matter that has been raised by many submitters is the concept of reducing the waste volumes at source, by the implementation of waste minimisation programmes by the tributary Councils and their homes and businesses.

125. The applicant has fairly pointed out that it is not able to directly control the volume of waste it is asked to receive from its client (and shareholder) Councils. However once it became apparent to the applicant that the waste volumes and vehicle trip numbers were substantially higher than those provided for in the consent, then it would have been an opportune time to approach the contributing Councils to make them aware of the situation and to ask that they urgently reduce waste volumes (and hence traffic volumes) to consenting levels. This would have sent a useful 'signal' back up the waste stream, which could have seen at least an easing of the rate of growth of the waste volumes.

126. As far as we are aware there has not been any such a dialogue. Since the contributing Councils and the applicant company are in a commercial relationship, the channels for such a discussion must be open – both in the Council chambers and in the board room.

127. It is in this area of reduction of residual waste volumes that very useful changes to the traffic effects arising from the operation of the Kate Valley landfill can be achieved.

### **New waste systems**

128. There are possibilities that a change to the way the applicant goes about the business of transporting or disposing of waste could usefully reduce the transport-related effects.

### **Rail**

128.1. A number of submitters noted that the South Island main trunk railway line runs past the site. Ashburton District Council also confirmed that it is actively considering the use of rail as a freight mode.

128.2. The Ashburton, Rolleston (Selwyn District), Parkhouse Drive, Styx Mill, Rangiora and Amberley transfer stations all lie close to this railway line. The approximate road travel distances to the nearest railway line are given in table E3, below.

Table E3 – Road Travel Distances to Rail

<b>Transfer Station</b>	<b>Road Distance to Rail</b>
Ashburton	Less than 2km
Rolleston	Less than 3km
Parkhouse Drive	Less than 1km
Styx Mill	Less than 1km
Southbrook	Less than 1km
Amberley	Less than 1km
Cheviot	Less than 2km

128.3. This suggests that the rail mode could be utilised as a useful replacement for road haulage of a major proportion of the residual waste stream.

128.4. We imagine that the applicant will have considered this mode as an option in the early stages of the planning for the project, however the suitability of this mode may be usefully influenced by resource consent conditions, or by other cost signals.

128.5. Any transfer of the residual waste volume from road to rail can be expected to lead to a useful reduction in the adverse effects arising from road haulage.

### **New Technology**

128.6. Submitters have raised the possibility that new technologies could usefully alter waste volumes, and hence traffic volumes.

128.7. We note from Transwaste's corporate statement of intent that there is an intention to look at alternative means of waste disposal. If such systems were able to be located closer to the source of the residual waste stream, then such systems could usefully reduce vehicle volumes to Kate Valley.

128.8. Some submitters suggest that the contracts and corporate structure of Transwaste Limited find the applicant is locked into Kate Valley as a disposal site until some break-even point is reached. It would be unfortunate for the region if this was the case, should some useful alternative technology become economically viable that led to reduced dependence on landfill as a destination for residual waste.

### **Community and On-road Effects**

129. These effects are all contingent upon the growth of on-road traffic volumes arising from the activity. If the growth in traffic volumes can be halted or reversed, then these effects will no longer be able to be attributed to the applicant's activities. On the other hand if no effective effort is made to stifle growth in traffic volumes, then the outcomes sought by the District Plan, the Canterbury Regional Planning Statement, the Regional Land Transport Strategy and the Act are unable to be achieved.

130. A criteria frequently used to soften the apparent impact of cumulative growth in traffic activity is that the additional traffic "... represents a change in the traffic effects that is within the typical daily or annual variation already experienced on the road." Mr MCKenzie has taken a similar approach in his evidence. The unfortunate outcome of this approach is that it tends to disguise what should be genuinely considered as an adverse cumulative effect – both in social and community terms and in terms of the overall health and well being of the people of the district.

131. At the same time, efforts to reduce the effects of trip-making by the activity need not necessarily mean that the scale of the activity itself must be diminished. The above discussion on the possibility of improving the efficiency of the present system, and relating to new waste transport and processing systems suggests that there are some possible approaches that the applicant could take to address issues relating to trip making and emissions. Such measures need not impact adversely on the viability of the applicant's business, however it should be recognised that consenting to either the applicant's preferred outcome of cancelling condition 22 entirely or of adopting the fallback position will impose direct and indirect costs on the community.

132. Without the benefit of an assessment by an economist, it would appear that if the condition is amended or cancelled and these costs are left to fall where they may, then there is no feed-back mechanism to the applicant that would encourage a progressive movement towards a better – more sustainable position – in terms traffic effects. On the other hand if the applicant was to bear some of the direct costs of improvements to the system that led to reduced community and environmental costs, then the applicant would be encouraged to make changes to the system, and the community would benefit. That the applicant would have to pass these costs on to the community to recover the cost of the changes would appear to be a legitimate trade, as the environmental and community

benefits of achieving the outcomes sought by the planning documents will – we imagine – balance the direct costs of the changes to the system, and the distribution of the costs through the shareholding Councils may be more equitable.

#### **Costs to the Community of Maintaining Mt Cass Road.**

133. The contract between the applicant and Hurunui District Council for the maintenance of Mt Cass Road runs out in 2008. The increased traffic volumes are likely to see Mt Cass Road reach the end of its design life after about 13 of operation under the predicted traffic volumes. This will lead to an ongoing maintenance effort that is significantly higher than anticipated in the present consents, and at some time after that it is possible that the road may need to be reconstructed to a higher standard to ensure an adequate design life.

134. The community of the district is utilising only a small proportion of the site's capacity, with the majority of the site's capacity being utilised by communities outside the district – mainly benefiting other Councils and the other commercial and private shareholders of the applicant's company.

135. With the compressed timeframe it would appear to be prudent for the Council to maintain a cost-sharing agreement with the applicant for the maintenance of the required standard of roading on the route between the State Highway and the site. This agreement could cover both routine maintenance and reconstruction matters. This would see the costs of the effort required to maintain the roading infrastructure required to service the activity more equitably spread over all the parties benefiting from the activity.

#### **Leachate and Gravel Cartage.**

136. A number of submissions raised concerns about the way gravel haulage and leachate tanker trips are addressed in the present consent conditions.

137. It is recognised that both these elements of the site's operation are essential for the safe development and maintenance of the site. Both the placing of liner material and the removal of leachate are key elements in maintaining the environmental integrity of the landfill. The question is – should these vehicles be included in any limitations on trip generation of the activity?

138. We consider that – if possible - the activity as a whole should be subject to some formal encouragement to minimise road transport and the consequential environmental and community effects. The number of vehicles involved in these leachate and gravel vehicle movements is small – less than 15% of the total vehicle volumes at the busiest times. Removing any limitation on the number of these vehicle movements may send unhelpful signals to the landfill operator – leading to efforts to maximise 'allowed' vehicle movements to minimise controlled movements.

139. We think that – if a condition is to be imposed - it would be more helpful to maintain a level playing field in this regard, allowing the operator to have the freedom to manipulate vehicle numbers without any bias favouring one trip purpose over another.

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## SECTION F – RECOMMENDATIONS

### INTRODUCTION

140. The evaluation of the transport-related effects arising from this application and of the matters to be addressed in any consent are reduced to considering firstly if any limitations on traffic volumes are justified, and secondly what such conditions should be.

### SHOULD TRAFFIC-RELATED CONDITIONS BE IMPOSED?

141. In the Council decisions on the original resource consents the commissioners clearly indicated that “...it is appropriate to control the traffic effects of this proposal by placing limits on the number of vehicle trips to the landfill.” [Council’s Joint Decision – paragraph 24.4.12]

142. The imperative for recognising the effects described above are clearly and firmly promoted in all the relevant planning documents.

143. The District Plan raises the full range of environmental and community effects (both positive and adverse) arising from the transport related elements of the application and requires that they are recognised and addressed. The Plan does not appear to soften this stance under any particular conditions – other than to recognise that the provision of some facilities can benefit the community. A balance is expected to be arrived at, recognising all identified factors.

144. The Canterbury Regional Policy Statement and the Regional Land Transport Strategy both express clear expectations in regard to identifying, mitigating and reducing the adverse effects associated with transport, while protecting the viability of the regional strategic transport system. These documents make it clear that the territorial local authorities have a strong role to play in achieving these outcomes, and numerous methods including integrated planning and the development of travel plans and travel behaviour change programs with businesses such as the applicant’s are defined in these documents to achieve the expected outcomes.

145. While the District Plan does not adopt these recommended methods in detail, the issues and policies of the district plan are not incompatible with these regional planning documents.

146. The application clearly highlights the uncertainty in the predictions of waste volumes, and it is quite conceivable that further increases in waste volumes could occur that lead in turn to increased vehicle travel associated with the activity – beyond those levels currently consented to and those sought as the applicant’s fallback position.

147. The applicant provides very little information about the ability or otherwise of the contributing Councils to effect reductions in waste volumes in response to limitations on the consent, and there is no clear evidence (other than by way of notification of this application) that the Councils have been made fully aware of this issue by the applicant.

148. No alteration is proposed by the applicant to the present road-transport-based residual waste hauling system to mitigate any of the adverse transport-related effects.

149. The applicant has not identified any adverse effects arising from the proposal – neither in terms of the environmental, community and safety effects that inevitably arise from any increase in traffic volumes, nor in relation to the direct costs of maintaining the required

transport infrastructure after the present maintenance agreement between the applicant and the Council expires.

150. An ongoing agreement for the maintenance of Mt Cass Road could ensure that the applicant is able to distribute the costs of the maintenance and replacement of Mt Cass Road among all the beneficiaries of the landfill operation.

151. So the reasons for considering imposing conditions on this application include:-:

- Condition 22 was imposed by the Council to control the traffic effects of the proposal.
- The District Plan anticipates that the balance of the identified transport-related effects will be considered and any adverse effects should be addressed.
- The relevant planning documents of the Canterbury Regional Council both seek recognition, mitigation and in some instances reductions in transport related effects.
- The regional planning documents also provide a range of methods to be applied by territorial local authorities to move towards achieving the required environmental and community outcomes.
- The need for this application highlights the uncertainty surrounding future residual waste volumes.
- The ability of the contributing Councils to effect reductions in residual waste volumes in response to any limitations on traffic volumes is not demonstrated in the application.
- The applicant is not proposing to alter the present road-transport-based waste transport system, and thus – in the absence of any limiting conditions – these effects will continue to increase as cumulative effects in response to increasing residual waste volumes, without any limitation.
- There is no proposal in the application to revisit the maintenance and replacement contract relating to Mt Cass Road between the intersection of the State Highway and the access to the site.
- The Hurunui District Council appears to be a minor beneficiary of the activity, yet – in the absence of any on-going agreement with the applicant the Council will bear the full cost of the maintenance and premature replacement of Mt Cass Road.

152. For these reasons it would appear prudent to impose some condition or conditions on any consent that would lead to a limitation and preferably a reduction in the transport-related adverse effects of the activity, and to revisit the maintenance contributions.

153. The applicant has expressed a preference that there should not be any limitation on the number of vehicle trips associated with the activity. As a fallback position the applicant has offered a limit on traffic volumes that is significantly higher than that consented to.

154. This report has identified the community and environmental effects of increasing traffic volumes in terms of the expectations of the relevant planning documents. These lead me to conclude that neither the cancellation of Condition 22, nor the fallback condition suggested by the applicant adequately address the traffic-related effects that will arise from activity.

## **RECOMMENDED CONDITIONS**

155. Accordingly we would recommend that the applicant's preferred option to cancel Condition 22 should be declined, and that Condition 22 should be replaced with conditions that present a realistic means of achieving the environmental and community outcomes anticipated in the relevant planning documents.
156. We then recommend that, to address the issues identified above, two broad objectives are considered. The first is a progressive move to a system that reduces the transport-related effects of the activity on the environment and on the community. The second objective is the establishment of a regime that will ensure that the direct costs of maintaining and replacing Mt Cass Road are fairly distributed among the potential beneficiaries of the activity's operation.

### **Suggested Conditions on Transport Effects**

157. The Kate Valley landfill is already receiving significantly more residual waste that was anticipated in the course of the original application. The applicant is not in a position to immediately control, reduce or divert this waste stream, and I understand that there are strong public health and economic motives for the continued use of the Kate Valley site for this purpose.
158. Thus any condition suggested should recognise the applicant's position and the regional significance of the activity. At the same time some progress must be made towards a genuine reduction in transport-related adverse effect arising from the activity over a realistic timeframe, to achieve the expected District and Regional planning outcomes.
159. Accordingly it is recommended that Condition 22 of RC020069 be deleted and replaced by the following conditions.

#### **Suggested Condition 1:**

That for not more than five years from the date of this consent the total number of vehicle trips generated by the activity shall not exceed 2000 trips per week, of which no more than 1600 shall be heavy vehicles.

160. These figures represent traffic volumes that are approximately twice those found to be arriving at the site during November 2005, and are intended to provide the applicant with some operational flexibility over the short term.

AND

#### **Suggested Condition 2:**

At any time after five years from the date of this consent the total number of vehicle trips generated by the activity shall not exceed 1090 trips per week of which no more than 600 shall be heavy vehicles.

161. These figures being the same as those imposed by the existing Condition 22.

### **Suggested Condition on Maintenance and Replacement of Mt Cass Road.**

162. Since the overall duration of the applicant's activities on the site is now quite indeterminate, it is important that a condition is in place for a cost-sharing agreement between the applicant and the Council for the ongoing maintenance and (if required) the reconstruction of all or part of Mt Cass Road. This agreement is to span for two years after the cessation of all land fill operations to provide a maintenance period after any final works are carried out on closure of the landfill.
163. It is anticipated that there will continue to be some traffic activity associated with the landfill (such as leachate removal) for many years after the landfill is closed, however these traffic volumes will be within the normal capacity of the road structure. A condition along the following lines is suggested to address this issue:-

#### **Suggested Condition 3:**

Prior to the expiry of the current agreement with the Council for the maintenance and upgrading of Mt Cass Road, the applicant shall enter into a binding agreement for the ongoing maintenance and upgrading of Mt Cass Road for a period of not less than two years after the cessation of all land filling operations on the site.

### **CONCLUSION**

164. These suggested conditions are intended to address the wide range of transport-related environmental and community effects that the District Plan, Canterbury Regional Plan and the Regional Land Transport Strategy seek to avoid. I believe that with these conditions in place the applicant will have a reasonable period of time to develop alternative systems that will reduce the transport-related effects of the activity to the currently-consented levels.
165. Failure to address these issues by way of some appropriate conditions will lead to ongoing cumulative degradation of environmental quality, community linkages and the of the health and safety of the people of the district due to transport-related effects of the traffic associated with the activity.

Report prepared by

Nigel Williams  
**Consultant Traffic Planner**

## **APPENDIX 1: s92 Request For Further Information.**

19 January 2006

Transwaste Canterbury Limited  
PO Box 13-770 Armagh Street  
Christchurch

Dear Gareth,

RESOURCE CONSENT APPLICATION NO 050268

Regarding your application to cancel/change condition 22 of the land use consent RC 020069, in relation to traffic movements to and from the Caterbury Regional Landfill in Kate Valley at 666 Mt Cass Rd, Waipara we require the following additional information to be supplied in order to better determine the effects of the proposed activity. The Council has engaged a traffic engineer Nigel Williams from Streets in Sync to review the application. He has advised the Council that he requires the following additional information. I am happy for you to contact him directly if you wish to clarify the information required.

### **1. Difficulties with the Meaning of the term “Movements”**

In regard to identifying the volume of traffic associated with the activity there seems to be some confusion apparent surrounding the use of the terms “Movements”, “Return Movements”, “Vehicle Movements” and the like.

We note for example that there is possible ambiguity involving this definition issue between the information from the access road traffic counters provided monthly to the Council and the present-day volumes quoted in the application. For example para 2.2 of the application notes: “... The total current heavy vehicle numbers using the access road is on average 389 return vehicle movements in a seven day period.” The traffic count sheets provided show 7-day heavy vehicle volumes in the same range. It appears (although it is not indicated on the reports) that the raw classified traffic counter volumes have been halved in these monthly reports – to equate to return movements. This is technically unusual, as by convention traffic counts are always reported as one-way trips. There is no suggestion that the application is intending to obscure the actual traffic generation, but this is a relevant example of how a traffic count sheet provided in terms of movements could be readily misconstrued by staff used to reading any other traffic count sheets.

Before submitting a new consent application it would be most desirable if a clear consensus is reached among the parties on the terminology to be used – without prejudice to any arguments relating the meaning of the terms in the existing consents.

The Hurunui District Plan provides a definition:

“Vehicle movement” means the movement of motor vehicles onto or off a site over a 24 hour day, averaged over any one week (seven days).

While this is reasonably unambiguous in regard the nature of movements being counted – the use of “or” making it clear that movement (in this definition) is not the movement “to” AND the movement “from”, it is one OR the other. The ‘24 hour day, averaged over one week’ element is not useful in a broader situation, however, and the adoption of this definition here may only confuse matters further.

In evidence given by the applicant’s technical traffic advisors, and by the Council’s consulting traffic engineer a distinction was frequently drawn between return and one-way movements. For example Mr. McKenzie has clearly given us the key in his phrases like “..taking an average of the “most likely” start year annual heavy vehicle trips given in Table 2

above (11,415 return trips or 22,830 movements) and the final year heavy vehicle trips (10,335 return trips or 20,670 movements) gives 21,750 heavy vehicle movements per year" [Paragraph 22 in his evidence to the Environment Court in August 2003].

Following this line of logic, it is apparent that Mr McKenzie was telling us that a 'movement' is a one-way journey, not a 'return trip'.

However the current application relies to a degree on the existence of some doubt as to whether Mr McKenzie's 'movements' (which he clearly indicates are not return trips) are in fact return trips.

Thus we recognise that for some parties the term "movement" has become difficult to interpret reliably in this case.

We suggest instead that the most primitive definition of a journey should be utilised in the case of this application. General traffic engineering practice recognises a trip as a journey between an origin and a destination.

We suggest that this is an unambiguous and practical definition. We consider that this definition should be used in the application instead of any reference to "movements".

We acknowledge that the applicant is putting forwards an argument built upon some apparent confusion regarding the term "movements". We do not expect the terminology in that argument to change.

However:

In terms of all information in the application relating to previous estimates of traffic generation where, (as in Mr McKenzies work) there is no overall ambiguity and further, relating to operational and on-road traffic volumes over recent months and to projected traffic volumes, we would ask that all such figures be expressed as "trips", in terms of the above definition.

## **2. Additional Trip Information**

In order to assess the impact of the proposal on the wider road network we require maps showing the routes taken by refuse vehicles on their travels between all existing and proposed transfer stations contributing to the landfill, and also of the routes of the liner material trucks and leachate vehicles. These maps to be in sufficient detail to allow us to determine the speed limit and length on various sections of road, major arterial intersections and built up areas.

Supporting this information we require a table expressed in total trips per week of the number of trips originally predicted, those consented to and those requested in this application between the site and each transfer station gravel source and leachate discharge point. The table should distinguish between single-unit and multi-unit vehicles.

If round journeys from and back to the landfill involve multiple trips (for example to drop off a trailer unit at one transfer station and then fill and pick up a trailer at another transfer station before returning to the landfill) then the table should reflect this.

A similar table giving a broad indication of the origin and destination of light vehicle trips associated with the activity is also required to facilitate a general distribution of these trips onto the road network. It is appreciated that the remote origins and destinations of these light vehicle trips are likely to be indicative only, and subject to variations as staff and contractors vary.

### **3. Fuel Use and Emissions Information**

In order to confirm our assessment of fuel use and emissions we require a report on fuel use by the heavy vehicle fleet over the month of November 2005. This to include only those heavy vehicles included in the additional trip information table (RFI-T2) above.

Pursuant to section 92 of the Resource Management Act 1991, any further processing of this application will be suspended. Please be advised that pursuant to section 92A of the Act, within 15 working days of the date of this request, you must either:

- (a) provide the information; or
- (b) advise the Council in a written notice that you agree to provide the information; or
- (c) advise the Council in a written notice that you refuse to provide the information.

Should the Council receive a written notice advising that you agree to provide the information, the Council will set a time by which you must provide the information and advise you of this. Should the Council not receive the information within 15 working days or should you refuse to provide the information, the Council staff may make a recommendation to decline the application.

Yours faithfully

Judith Batchelor  
Senior Planner

## Table C1.1 – Schedule of potential environmental effects

### Natural environment – Physical resources and processes; elements of the environment exposed to potential effects

#### Water:

- Surface area and quantity of water bodies (lakes, wetlands, rivers, sea), and groundwater systems (including aquifers)
- Quality (including chemical composition) and temperature of water bodies or groundwater
- Catchment boundaries and characteristics (e.g. runoff and flow rates, flooding patterns, recharge of aquifers)
- Coastal processes (e.g. tidal movement, littoral systems, currents)
- Snow and ice
- Deposition and sedimentation rates and characteristics (including particulate suspension)

#### Earth:

- Slope stability and susceptibility to erosion
- Outstanding landscapes or significant natural features
- Soil resources (quantity, versatility, characteristics)
- Erosion rates
- Compaction and settling
- Seismic characteristics (e.g. ground shaking, liquefaction, fault rupture features)
- Landforms
- Unique physical features

#### Atmosphere:

- Background radiation
- Air quality (gaseous and particulate composition)
- Climate (macro-and microclimate)
- Temperatures
- Air moisture
- Wind patterns

#### Measures to avoid, remedy or mitigate adverse effects:

- Riparian margin protection, protective vegetation in riparian margins, banish stock
- Fencing, covenants, and other protection measures
- Restoration of natural vegetation cover, prohibit certain noxious activities
- Erosion and sediment control measures, planting, ban vehicle access
- Stormwater control and drainage; stock management and fencing; rehabilitation of disrupted areas
- Prohibiting building on certain parts of a site
- Compaction of fill or soil, or other engineering works
- Modification of location, height, bulk, and design of proposed buildings, accessways, roads, etc.
- Restorative works to return soil conditions to a similar condition as prior to works
- Creation of lakes and wetlands using former quarry/excavation sites
- Air quality control mechanisms (e.g. filters, air scourers)
- Shelter planting

**Note:** This table is intended to provide a guide or checklist as to the types of environmental effects that may occur as a result of a proposed activity. It is not exhaustive, and should therefore be used for indicative purposes only. For any particular proposed activity, only some of the listed effects may be relevant, and an assessment of environmental effects should focus on the potentially significant effects. The mitigation measures listed above may not be at all appropriate for all circumstances.

Some measures may be used to mitigate a number of different effects (for example, planting could be used for screening, site restoration, noise buffer and amenity purposes).

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## Table C1.2 – Schedule of potential environmental effects

### Natural environment – Ecological resources and systems; elements of the environment exposed to potential effects

#### Flora:

- Native Trees and shrubs
- Other native flora (e.g. ferns, tussock)
- Wild exotic trees, shrubs, grasses and other flora
- Cultivated flora (e.g., plantation forests, orchards, crops, grasses)
- Microflora (e.g., lichen)
- Aquatic plants, including marine plants

#### Fauna:

- Birds
- Land animals
- Fish and shellfish
- Benthic organisms (i.e. organisms found at the bottom of an ocean or lake)
- Insects
- Microfauna (e.g., protozoa)

#### Ecological relationships:

- Barriers between habitats (e.g. isolation of unsustainable pockets of native forest or birdlife)
- Wildlife corridors
- Salination of water or soils
- Eutrophication
- Disease - insect vectors
- Areas of wetlands
- Areas of wilderness
- Scrub or weed infestation or encroachment
- Noxious animal encroachment
- Biodiversity
- Intrinsic values of natural environment

#### Measures to avoid, remedy or mitigate adverse effects:

- Riparian margin protection, protective vegetation in riparian margins
- Restoration of natural vegetation cover; new or additional planting to compensate for removal of vegetation, restorative works to return vegetation conditions
- Removal of noxious plants or animals
- Planting to connect habitats or groups of bush
- Prohibition of stock or vehicle access, fencing, erection of barriers
- Modification of location, height, bulk, and design of proposed buildings, accessways, roads, etc.
- Landscape treatment
- Creation of lakes and wetlands using former quarry/excavation sites
- Covenants or registration of interest on titles

**Note:** This table is intended to provide a guide or checklist as to the types of environmental effects that may occur as a result of a proposed activity. It is not exhaustive, and should therefore be used for indicative purposes only. For any particular proposed activity, only some of the listed effects may be relevant, and an assessment of environmental effects should focus on the potentially significant effects. The mitigation measures listed above may not be at all appropriate for all circumstances.

Some measures may be used to mitigate a number of different effects (for example, planting could be used for screening, site restoration, noise buffer and amenity purposes).

**388 Management code – Section C 8/4/06**

## Table C1.3 – Schedule of potential environmental effects

### Human environment – Community health, safety and functioning; elements of the environment exposed to potential effects

Community health and safety:

- Quiet environment
- Fresh air free from odour
- Traffic and pedestrian safety
- Public safety
- Accessibility to public services

Community patterns:

- Active recreation (e.g. hunting, fishing, boating and aquatic sports, tramping, organised sports)
- Passive recreation (e.g. picnicking)
- Property values and land tenure
- Settlement patterns and community cohesiveness

Infrastructure:

- Traffic flow efficiency and functions, parking needs
- Public transportation needs
- Water supply
- Waste and sewage disposal and treatment
- Stormwater disposal
- Energy supply (electricity, gas, other)

– Communications

- Development potential and restraints
- Capacity and amount of use of services and systems

Measures to avoid, remedy or mitigate adverse effects:

- Protection of important areas from any development, buffer areas
- Use of noise control measures on vehicles, sprinkling systems for yards
- Separation distances; noise control measures; limitation of hours of operation, number of people, numbers and types of vehicles; arrangement of activities on site; imposition of noise, vibration and blasting limits
- Building design measures (e.g. location of windows/doors, building materials)
- Prohibition of certain practices (e.g. fires)
- Management plan or risk management plan; safety measures; isolation/separation of some activities
- Limitation of intensity (number of people, scale of activity, number of vehicles, types of vehicles); control location, number and design of vehicle crossings; provision of on-site carparking spaces; screening and landscaping of parking area; limiting delivery times; provision of appropriate signs specifying access and egress from sites; provision of cycle lanes and car-free areas; speed control areas (humps visual cues)
- Treatment of contaminated water before entering the stormwater system
- Installation of energy efficient features into new buildings, equipment and devices
- Retrofitting of existing buildings

**Note:** This table is intended to provide a guide or checklist as to the types of environmental effects that may occur as a result of a proposed activity. It is not exhaustive, and should therefore be used for indicative purposes only. For any particular proposed activity, only some of the listed effects may be relevant, and an assessment of environmental effects should focus on the potentially significant effects. The mitigation measures listed above may not be at all appropriate for all circumstances.

Some measures may be used to mitigate a number of different effects (for example, planting could be used for screening, site restoration, noise buffer and amenity purposes).

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# Table C1.4 – Schedule of potential environmental effects

## Human environment – Community amenity and activities; elements of the environment exposed to potential effects

### Cultural values:

- Maori values relating to the natural environment, including taonga, and spiritual sites and features
- Other cultural values concerning the natural environment
- Historical and archaeological buildings, sites and features, monuments, notable trees
- Significant forests, and other natural areas
- Lifestyle requirements, social accessibility and interactions

### Amenity values:

- Amenity values, including privacy, open space, access to sunlight, natural elements, design, colour and proximity of buildings and activities, and dominant or special character elements
- Intrinsic rural values
- Population density and distribution
- Visual coherence of an area or streetscape
- Important public vista or viewshafts of features or landscapes
- Unique, unusual or special physical features
- Amenity of pedestrians, including wind, shade, sunlight, planting, shelter
- Litter and unsightly views

### Land use patterns and requirements:

- Agricultural requirements
- Horticultural and vineyard requirements
- Forestry requirements
- Industrial requirements
- Commercial and retail requirements
- Service and distribution requirements
- Recreation requirements
- Amenity, scenic, open spaces, and wilderness requirements
- Settlement density and patterns

### Measures to avoid, remedy or mitigate adverse effects:

- Location, bulk, height, design and orientation of buildings; choice of building materials; controls on lighting; control of signs; fencing, screening and landscaping
- Protection/enhancement of heritage features
- Planting and revegetation, use of design criteria to create relationships between visual elements (architectural, colour, materials, orientation, signs), provisions of public art
- Provision of protection from the elements (covered walkways)
- Covenants, contractual agreements, registration of interest on land titles
- Fencing and other physical protection measures
- Walkways, access strips, esplanade strips and reserves

**Note:** This table is intended to provide a guide or checklist as to the types of environmental effects that may occur as a result of a proposed activity. It is not exhaustive, and should therefore be used for indicative purposes only. For any particular proposed activity, only some of the listed effects may be relevant, and an assessment of environmental effects should focus on the potentially significant effects. The mitigation measures listed above may not be at all appropriate for all circumstances.

Some measures may be used to mitigate a number of different effects (for example, planting could be used for screening, site restoration, noise buffer and amenity purposes).

# Table C1.5 – Schedule of potential environmental effects

## Assessment considerations

In assessing the extent and nature of an effect, account should be taken of whether:

- The effects are actual or potential
- The effects are temporary, permanent or irregular
- The effects are one-off, on-going or cumulative
- The effects have a high or low probability of occurring
- The effects have a high or low impact
- The effects are positive or adverse
  - The effects are past, present or future
- 

Account should be taken of the likelihood of the effects of a proposed activity, occurring, combined with the expected degree of impact. The Act requires any assessment to have regard to any potential effect of high probability, and any potential effect of low probability which has a high potential impact.

Effects of a temporary or irregular nature should also be assessed. The impact of such effects may warrant special concern and attention. The cumulative effects of activities can add to an existing problem or trend. For example, a new noise source may raise the ambient noise levels of an area. Consideration of such effects are essential, and can be guided by relating potential effects with the objectives and policies of this Plan.

Difficulties in undertaking a thorough assessment should not prevent it from being carried out. Applicants should indicate any difficulties experienced due to technical deficiencies or a lack of adequate information. Any forecasting, risk assessment or other technical methods used to predict or evaluate the effects of a proposed activity should be described, with mathematical calculation or other supporting evidence provided. Where an assessment is inadequate or extremely complex or based in qualitative/subjective criteria, the Council may commission a report to either audit the assessment, provide an alternative perspective, or address possible inconsistencies and inadequacies.

It is not necessary to address every potential effect in detail. Assessments should address those effects which are likely to be significant, including those effects about which the community or affected persons may be particularly concerned. A scoping exercise may be undertaken to identify the likely significant effects and to avoid unnecessary information being provided.

For all but than simple assessments, a summary of the findings should be provided, with the principal conclusions being highlighted. All other relevant considerations should be taken into account and weighed together to provide such conclusions, including whether:

- Any adverse effect is irreversible or temporary
- Any adverse effect would have a negligible, minor, moderate or severe or extreme impact
- The positive effects would outweigh or compensate any adverse effects
- The public interest in letting an activity proceed is more important than the adverse effects
- The design, operational or mitigation features are adequate to address all or some of the adverse effects, particularly the most significant impacts

### **APPENDIX 3: Outline of Transport-related Submissions**

#### **Submissions in Support of the Application**

- A3 - 1. Submissions in support of the application were received from Christchurch City Council, Ashburton District Council and from private submitters. These submissions generally identified the logic and benefits of the operation of the Regional Landfill at Kate Valley.
- A3 - 2. The submission from Christchurch City Council noted that "...it is important for the City Council as the major territorial authority shareholder and part owner of Kate Valley Landfill to indicate its support for the application." [Executive Summary; para 5]. Since all the territorial local authorities in the region make up exactly 50% of the shareholding of Transwaste Canterbury Limited (the remaining shareholding being by commercial investors, other businesses and individuals), we will leave the matter of the status of any submission-in-support by part-owners of the applicant company for the commissioner to determine.
- A3 - 3. Paragraph 11 of the Christchurch City Council's submission observes that "The major part of the application, and the primary cause of the requested change to 800 heavy vehicle entries into the landfill, relates to the need for gravel to be hauled into the site from the nearby Waipara River." The submission then goes on to observe that this gravel is all carried on Mt Cass Road, and these truck do not travel on the State Highway.
- A3 - 4. The figure sought by the applicant of 800 vehicle arrivals per seven day period is seen as providing a comfortable safety margin to allow for future waste growth patterns.
- A3 - 5. The submission from Ashburton District Council identified the ongoing increases in residual waste being produced in the district, and the increasing proportion of material the Council is diverting from the residual waste stream – increasing from 24% to 40% diverted over two years. The submission also identified the possible disbenefits in terms of public health issues that would follow if there were excessive limitations imposed on the safe disposal of residual waste from that community. The efforts made by that Council in areas of waste minimisation were outlined and the opportunities for the use of the site as a valuable educational experience are noted.
- A3 - 6. The State Highway system is identified as being the inter-regional arterial route that is intended to be used for long-haul freight operations. Of interest (in terms of cumulative effects), the council notes that "We do not consider the variations refereed to in this application to have any measurable detrimental effect on the local communities." [para 5]
- A3 - 7. The submission also noted that no limits on heavy vehicle movements are placed on other much larger transport operations such as dairy companies or inter-island freight operations. The Council is also actively considering alternatives to the use of roads where there are viable alternatives, including better utilisation of rail for traffic between Picton and Christchurch.
- A3 - 8. The supply of the required volumes of gravel to the site is seen as being critical to the proper operation of the activity, as is the removal of leachate.
- A3 - 9. Other submitters in support of the application note that condition 22 was placed on the consent to limit the waste volumes to the landfill and in particular to ensure that no waste for the landfill came from outside the Canterbury Region. A subsequent condition

placed on the consent by the Environment Court limits waste to the Canterbury region, thus (it is suggested) making condition 22 redundant.

## **Submissions Opposing the Application**

### **Ambiguity**

A3 - 10. Submitters gave various examples from earlier evidence presented by the applicant and its technical witnesses, and suggested that there is little ambiguity to be found in the meaning of the traffic generation figures given in evidence at the hearings leading up to the imposition of Condition 22. In particular, clauses from the evidence of Mr McKenzie presented at earlier hearings were given as examples of clear expressions of the applicant's understanding of the meaning of the terms used at that time.

A3 - 11. We have some sympathy with this view, having made a similar observation in the Request for Additional Information.

### **Predictions of Waste Volumes**

A3 - 12. Some submitters have expressed disquiet at the apparent failure of the applicant to appreciate the likely waste volumes, and hence the likely traffic volumes.

A3 - 13. While this situation may be disconcerting for some, as far as the traffic effects are concerned we are dealing with the application as it is presented – largely regardless of the factors that have led the applicant to make the application.

### **Waste Volumes And Hence Traffic Volumes**

- TCL is not responsible for ... the amount of waste to landfill.
- The most probable response to a limitation on traffic volumes would be a second landfill – probably within Hurunui District.
  
- Waste minimisation.
- Should comply with Christchurch City Council's zero waste targets outlined in memorandum of understanding November 1999 section 9.2 Waste Minimisation. (b)
- Refuse to accept waste volumes from Christchurch greater than CCC's zero waste reduction targets.
- Zero waste cannot be achieved without discipline and broadening dump facilities does not promote zero waste.
- Reinstate condition prohibiting green waste from being received after 1 January 2008
  
- There must be some limitations ... to ensure that the landfill lasts for at least 35 years.
  
- Lack of incentive to reduce waste volumes due to need to return a profit.
  
- Traffic conveying waste and leachate will be vastly greater than stated earlier.
  
- Condition on traffic volume is less effective than condition on the activity.
- Removal or variation would lead to the uncontrolled growth in waste volumes now experienced.
  
- If contributing authorities take action waste composting and packaging controls, landfill life could be extended.
- If commissioner's rule that TWL must operation within their existing consents this will send a very clear signal to each waste contributing council that they need to increase their efforts to minimise waste.

- People are not recycling as they should.
- Gareth James reported to be seeing Timaru and Kaikoura's waste coming to Kate Valley.
- Transwaste Canterbury Limited's statement of corporate intent year ending 30 June 2007 page 6.4.1 (c):-  
The company will undertake the following activities:  
(c) Offer waste management facilities and solutions at all levels in the Canterbury Region, and beyond, including investment in alternatives to landfilling should those alternatives be more environmentally sustainable and cost effective methods of disposal (in due course).

A3 - 14. As observed above in relation to the applicants past predictions of waste and traffic volumes, in this case we are obliged to consider the traffic implications of the application at face value. Thus insofar as assessing the effects of the proposal, the possibility of reducing residual waste volumes is outside the scope of this report. Likewise Transwaste's statement of corporate intent does not preclude ongoing operation of the landfill in a way that fully complies with the companies resource consents.

### **Rail**

- Extra waste generated should be carried by rail.
- If volume increase allowed, then consider option of use of rail.
- Cost of rail link passed on to those who generate the waste
- Build a rail spur line from Waipara with rope haulage over the final section. Self-unloading wagons could be used.

### **Amenity and noise.**

- Noise factor must be addressed.
- Continual truck noise in environment.
- In Amberley it is quite distracting while having a coffee or a meal to have these trucks going past the restaurant. Would be unbearable to have increased numbers of trucks on the main road.
- In Amberley two workshops now sharing the restricted parking area at the Shell shop. Inconvenience and noise of that traffic will be an even greater distraction and nuisance.
- Forced us from our dream lifestyle.
- Will jeopardise tourism.
- To see rubbish trucks is not good for the area.
- Tripling of vehicle movements will impact on amenity values of residents of Mt Cass Road, as it is already affecting those that use the road currently.
- Why not work at night to not disturb local traffic so much?

## **Life of the Landfill**

A3 - 15. Concern was expressed at the potential shortening of the life of the landfill due to the increased waste volumes. This is seen as leading to increased traffic volumes, and raises the possibility of the development of another valley either in the vicinity or elsewhere in the district for landfill activities. Thus higher traffic volumes could persist beyond the life of the present landfill.

## **Road Capacity, Level of Service and Safety Issues**

A3 - 16. Points raised by submitters included:-

### **General comments**

- Largest area of public concern being traffic movements and anticipated effects
- The Councils will allow private contractors to use Kate Valley and Transwaste will have no control.
- Implications for safety.
- Reduced pedestrian and cyclist safety, especially in towns.
- Too many waste trucks on the road especially SH1 in Amberley, Woodend and SH1/Mt Cass intersection at Mt Cass Road.
- Heavy goods vehicle traffic on SH1 through Woodend, Waikuku and Amberley allowed by RC020069 is already excessive.
- There are already more than enough waste trucks on the main highway between Waipara and Chch that already create a transport hazard. More would be unthinkable.
- Adverse traffic and environmental effects/Increase in traffic due to increased waste trucks.
- Social Effects - Road Safety
- Transwaste's truck volumes are an integral and growing component of all these concerns.

### **Amberley/Waipara Area**

- Car access onto SH1 off Georges Road is becoming very difficult even dangerous because of much higher traffic flows in both directions.
- Shopping in Amberley is becoming hazardous
- Difficult parking for service at Shell workshop due to Transwaste's drivers refuelling stop.
- Main highway through Amberley is dangerous for pedestrians crossing against the present stream of traffic without the extra number the new submission would add.
- For senior citizens, children, local drivers and walkers crossing the main road through Amberley has become a hazardous exercise - a misery - a dangerous occupation.
- Speed of trucks thru Amberley.
- Pedestrian crossing in peak hours. Amberley.
- Amberley – pedestrian safety and security.
- Mototists safety when executing parking turning and intersection manoeuvres. Improved road safety identified as one of the dominant community outcomes.
- Safety on road, particularly through Amberley.
- Property access difficulties.
- Crossing main road in Amberley hazardous for elderly, children, everybody.
- Any extra trucks should bypass Amberly using Broad Road and Georges Road.
- Present traffic volumes lead to additional trip-making by locals to deal safely with traffic effects.
- Traffic volumes through Amberley.
- Aging population in Amberley - safety crossing road.

### **Woodend and Belfast**

- Health concerns in Main Street, Woodend.
- Pedestrian and intersection issues in Woodend and Belfast.
- More difficult for movement in Woodend
- Already dangerous and health concerns on Main Street Woodend.

### **Mt Cass Road**

- Safety of our children on the school bus, which travels the same road.
- With the opening of Mt Cass Walkway and Tiromoana Reserve more light traffic is expected on Mt Cass Road, which raises safety concerns above the Omihi stream bridge where trucks climb steeply and hold up traffic. A passing lane on this section of road would not seem an unreasonable request.
- A commitment to health and safety. (Residents of Mt Cass Road) Concern about aspects of safety and movement of traffic. Not only truck numbers but the operating hours of truck movements.
- Safe overtaking opportunities on Mt Cass Road for uphill traffic. Minimum is passing lane on uphill section immediately after the bridge.
- A full review is required of the cost model agreed with the Council and the applicant regarding maintenance of Mt Cass Road.

### **State Highways**

- Ongoing increases in traffic volumes.
- More traffic congestion.
- More vehicles on the road which will lead to more accidents.
  
- Following distances (driver behaviour)
- Increased congestion and limited passing opportunities.
  
- Speed of trucks (Too high and too low).
- Reduction in the speed of all vehicles to the road to legal speed for trucks.
- Slow traffic already a problem travelling towards Christchurch.
- Highway becoming increasingly busy and slow.
  
- Passing opportunities limited
- No new passing lanes proposed in foreseeable future.
  
- Roads are not designed or capable of handling extra heavy traffic.
- Increased incidence of road rage and risk of accidents due to congestion.
  
- Ask the applicant to help the community lobby for a change to the intersection of SH1 and SH7 and Mt Cass Road to improve safety and traffic flow.

## **Environmental Issues**

A3 - 17. The submitters raised a number of issues relating to the environmental outcomes of the proposal. These included:-

- Traffic and the environment, particularly Mt Cass Road and at the State Highway intersection.
- Further increase in movements of vehicles.
- Diesel pollution traffic emissions, increased fuel consumption and CO2.
- Increased creation of greenhouse gasses and use of fossil fuels.
- Without Condition 22 the activity will put more vehicles on the road and generate more leachate.
- Risk of toxic spill from leachate transporters.
- Too much leachate already from trucks onto road from returning trucks.
- Will not meet the requirements of sustainable management under RMA

**~ End~**