

**ASSESSMENT OF ECONOMIC EFFECTS OF THE PROPOSED AUCKLAND REGIONAL
LANDFILL**

Prepared for Waste Management NZ Limited

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For a comprehensive understanding
of this report, please also refer to
the relevant s92 responses

INTRODUCTION

Background

1. Municipal landfills are identified in the Auckland Unitary Plan as being key components of the region's infrastructure. Auckland currently has two such facilities – one in Whitford, part-owned by Waste Management NZ Limited (Waste Management) in a joint venture with Auckland Council and one in Dairy Flat owned by Waste Management. The Whitford Landfill and Energy Park opened in July 1994 on the former Whitford tip site and is consented to receive waste until 2041. The Class 1 landfill¹ in Dairy Flat, known as the Redvale Landfill and Energy Park (Redvale) opened in 1993 and is consented to receive waste until 2028, after which a new landfill will be required to meet Auckland's waste disposal requirements.
2. Waste Management is proposing a new landfill and energy park to replace Redvale. It is proposed to be located about 70 kilometres north of Auckland's central business district, 13 kilometres north of Warkworth and 6 kilometres south of Wellsford, with access directly off the current² SH1. It is to be known as the Auckland Regional Landfill.
3. The proposed site is made up of two blocks of land with one (the eastern block) currently being operating as a commercial pine forest and the other (the western and southern blocks being part of the former Springhill Estate) currently used for pasture farmland and plantation forest but also containing pockets of regenerating native bush especially in the southern block. It is proposed that one of the valleys on the eastern block would be used for the landfill³ and parts of the western block be used for related activities including an access road, soil stockpiles and off-set forestry.
4. Waste Management is seeking consents from the Auckland Council for the establishment and operation of the proposed new landfill.
5. Currently Auckland is serviced by Redvale, Whitford and Hampton Downs landfills. Both Whitford and Hampton Downs are south of Auckland and Redvale is best

¹A Class 1 landfill requires the highest level of containment and engineering protection, management of landfill gas, and monitoring, reporting and operational controls as defined in "Technical Guidelines for Disposal to Land", Waste Management Institute of New Zealand (WasteMINZ); August, 2018.

² The NZ Transport Agency is investigating the possible extension of the Puhoi to Warkworth motorway from Warkworth to beyond Wellsford and this would involve the realignment of the current SH1, bypassing the proposed site for the new landfill as well as Warkworth and Wellsford.

³ A second valley on the eastern block could potentially be used as a future landfill but that does not form part of this consent application. If it is required a separate consent application would be prepared when required.

positioned to serve north and west Auckland. Whitford landfill, in south east Auckland, has vehicle limitations which influence the amount of waste it can receive.

6. Without the proposed new Auckland Regional Landfill, municipal waste will still need to be disposed of in a Class 1 landfill. Therefore the counterfactual scenario assumed in this report is that an alternative site will need to be found and that this site would likely be more distant from Auckland City's residential and commercial areas. This would result in increased transport costs associated with Auckland's municipal waste disposal as compared to the consenting of the proposed new Auckland Regional Landfill.
7. If no replacement for Redvale is developed north of Auckland (within a reasonable distance), and once Whitford reaches its vehicle limitation, all residual waste from the north and west of Auckland will need to be hauled across Auckland to the Waikato, adding time, transport costs, traffic and emissions.

Report Purpose

8. The purpose of this report is to assess the economic effects of the proposed Auckland Regional Landfill. The report together with other technical reports assessing other effects of the landfill will form part of the Assessment of Environmental Effects (AEE) accompanying the application for consents.

Report Format

9. In addition to this introductory section, this report is in five parts covering the following:
 - a. A consideration of the relevance of economic effects under the Resource Management Act (RMA);
 - b. Population and employment data for Auckland City and the Rodney Local Board Area;
 - c. The economic benefits of the proposed new landfill;
 - d. Potential economic costs of the proposed new landfill; and
 - e. The report's conclusions.

ECONOMICS AND THE RMA

Community Economic Wellbeing

10. Economic considerations are intertwined with the concept of the sustainable management of natural and physical resources, which is embodied in the RMA. In particular, Part II section 5(2) refers to enabling “*people and communities to provide for their ... economic ... well-being*” as a part of the meaning of “*sustainable management*”, the promotion of which is the purpose of the RMA.
11. As well as indicating the relevance of economic effects in considerations under the RMA, this section also refers to “*people and communities*”, which highlights that in assessing the impacts of a proposal it is the impacts on the community and not just the applicant or particular individuals or organisations, that must be taken into account. This is underpinned by the definition of “*environment*” which also extends to include people and communities.
12. Waste Management’s proposed new Auckland Regional Landfill will limit increases in the costs associated with waste disposal for the businesses and residents of Auckland City as well as providing other economic and social benefits. These are discussed later in this report.

Economic Efficiency

13. Part II section 7(b) of the RMA notes that in achieving the purpose of the Act, all persons “*shall have particular regard to ... the efficient use and development of natural and physical resources*” which includes the economic concept of efficiency⁴. Economic efficiency can be defined as:

“the effectiveness of resource allocation in the economy as a whole such that outputs of goods and services fully reflect consumer preferences for these goods and services as well as individual goods and services being produced at minimum cost through appropriate mixes of factor inputs”⁵.

14. More generally economic efficiency can be considered in terms of:

⁴ See, for example, in *Marlborough Ridge Ltd v Marlborough District Council* [1998] NZRMA 73, the Court noted that all aspects of efficiency are “*economic*” by definition because economics is about the use of resources generally.

⁵ Pass, Christopher and Lowes, Bryan, 1993, *Collins Dictionary of Economics* (2nd edition), Harper Collins, page 148.

- a. Maximising the value of outputs divided by the cost of inputs;
 - b. Maximising the value of outputs for a given cost of inputs;
 - c. Minimising the cost of inputs for a given value of outputs;
 - d. Improving the utilisation of existing assets; and
 - e. Minimising waste.
15. The proposed Auckland Regional Landfill will limit increases in the costs of waste disposal for Auckland City and has a number of other efficiency-related benefits as compared to alternative sites for a new landfill. These efficiency benefits are discussed later in this report.

Viewpoint

16. An essential first step in carrying out an evaluation of the positive and negative economic effects of a development proposal is to define the appropriate viewpoint that is to be adopted. This helps to define which economic effects are relevant to the analysis. Typically a city (district) or wider regional viewpoint is adopted and sometimes even a nationwide viewpoint might be considered appropriate.
17. For the proposed Auckland Regional Landfill the primary beneficiaries will be the businesses, residents and ratepayers of Auckland Region. There will also be specific economic and social benefits for residents and businesses in the Warkworth and Wellsford areas. Therefore the Auckland Council, the Rodney Local Board Area and Warkworth-Wellsford area viewpoints are appropriate.
18. There are private or financial costs and benefits associated with the proposed new Auckland Regional Landfill. If consents are granted allowing the landfill to be developed, and Waste Management give effect to these consents, then it can be assumed that the private or financial costs and benefits have been responsibly and properly analysed and that from the viewpoint of Waste Management which has money at risk, the expected financial benefits exceed the expected costs. Accountability for the accuracy of the financial analysis clearly rests with Waste Management and ultimately the net financial benefits it might receive from the proposal are not directly relevant to the assessment of effects under the RMA.

19. Therefore the focus of this report is generally on the wider economic effects on parties other than Waste Management. Economists refer to such effects as “externalities”.⁶ However, as is explained later in this report, increases in the costs for Waste Management in transporting waste will flow through into higher prices for businesses and residents of Auckland. This will detrimentally impact on not just Waste Management but also local businesses and residents and indirectly as ratepayers. Also measures to limit increases in the costs of transporting of waste are relevant with respect to the “*efficient use and development of natural and physical resources*”.

Non-Economic Effects

20. This report addresses the economic effects⁷ of granting consents enabling the development and operation of the new Auckland Regional Landfill. Non-economic effects (e.g. air quality, landscape, traffic, ecology, water quality, cultural recognition and noise effects) are covered in the reports of other technical experts. However sometimes non-economic effects may have an economic dimension as well – for example, landscape and noise effects may have an impact on property values and this is addressed later in this report.

21. In economics, ‘intangible’ costs and benefits are defined as those which cannot be quantified in monetary terms. Sometimes attempts can be made to estimate monetary values for ‘intangible’ non-economic costs and benefits using techniques such as willingness to pay surveys or inferring values on the basis of differences in property values. Once quantified in monetary terms, these effects can supposedly be considered as part of the assessment of economic wellbeing and efficiency effects.

22. However, such techniques are frequently subject to uncertainty and criticism. It is generally better to not attempt to estimate monetary values for these effects but to leave them to be assessed by appropriately qualified experts and for their assessments to form part of the application of the relevant legal test. This also avoids the danger of ‘double-counting’ – i.e. including them within a quantified measure of economic wellbeing or efficiency and treating them as a separate consideration.

⁶Defined as the side effects of the production or use of a good or service, which affects third parties, other than just the buyer and seller.

⁷Sometimes economic effects can have a social dimension – e.g. employment and income effects.

POPULATION AND EMPLOYMENT DATA FOR AUCKLAND REGION AND THE RODNEY LOCAL BOARD AREA

Population

23. Statistics New Zealand data indicate that the resident population in the former Auckland region cities and districts, now referred to as 'Auckland' region in the Unitary Plan (Auckland City) increased from 1,476,500 in 2012 to 1,695,900 in 2018 – i.e. an increase of 14.9%. Over the same time period New Zealand's population has increased by 10.8%. In 2018 Auckland City had 34.7% of New Zealand's total population, compared with 33.5% in 2012.⁸ Statistics New Zealand's medium projection is for the City's population to grow to 2,326,200 by 2043, implying an average annual rate of growth of 1.3% per annum over the period 2018 to 2043. This compares with a medium projection average growth rate for New Zealand's total population of only 0.8% per annum over the same period.⁹
24. For the Rodney Local Board Area (Rodney), which covers the northern most part of Auckland City and includes the Warkworth and Wellsford area units (i.e. the urban areas of these towns and their surrounding hinterland) as well as Dairy Flat, the location of the existing Redvale Landfill, the population has increased from 56,700 in 2012 to 66,700 in 2018 – i.e. an increase of 17.6%.¹⁰ In 2018, Rodney had 1.4% of New Zealand's population, compared with 1.3% in 2012. In 2043 Statistics New Zealand's medium forecast is for Rodney's population to grow to 108,000, implying an average annual growth rate of 2.0% over the period 2018 to 2043.¹¹
25. Warkworth's population in 2018 was 4,890, up from 3,900 in 2012 – i.e. an increase of 25.3% over the 6 year period. Wellsford's population in 2017 was 2,100 up from 1,770 in 2012 (an increase of 18.6%). Statistics New Zealand's medium forecasts are for Warkworth's population to increase by 60.3% to 7,840 (an average annual increase of 1.9%) and for Wellsford's population to increase by 19.5% to 2,510 (an average annual growth rate of 0.7%). However, Auckland Council has identified Warkworth in particular as an area for significant additional population (and

⁸Source: Statistics New Zealand www.stats.govt.nz; NZ.Stat; Sub-national Population Estimates, (data extracted 27 November, 2018).

⁹Source: Statistics New Zealand www.stats.govt.nz; NZ.Stat; Area Unit Population Projections by Territorial Local Authority; (data extracted 27 November, 2018).

¹⁰Source: Statistics New Zealand www.stats.govt.nz; NZ.Stat; Sub-national Population Estimates, (data extracted 27 November, 2018).

¹¹Source: Statistics New Zealand www.stats.govt.nz; NZ.Stat; Area Unit Population Projections by Territorial Local Authority; (data extracted 27 November, 2018).

employment) growth over the next 30 years. The Auckland Plan¹² lists Warkworth as a ‘Satellite Town’ with anticipated population growth of up to 20,000 over the next 30 years. This population growth is expected to occur in the north-east of Warkworth. Given the proximity of Wellsford to Warkworth some of the anticipated population growth in Warkworth may spill over into Wellsford.

Employment

26. Employment data highlights the importance of Auckland City to the New Zealand economy. In 2018 it provided a total of 782,900 jobs, or 35.0% of total employment in New Zealand. The manufacturing sector accounts for 78,900 jobs (10.1% of the City’s total jobs), with the main sub-sectors being food manufacturing (16,500 jobs), machinery and equipment manufacturing (12,200 jobs) and fabricated metal products manufacturing (9,700 jobs). Other important sectors in terms of employment are professional, scientific and technical services (86,200 jobs or 1.0% of total jobs), retail trade (73,700 jobs or 9.4% of total jobs), health care and social assistance (72,600 jobs or 9.3% of total jobs), education and training (64,800 jobs or 8.3% of total jobs), wholesale trade (58,800 jobs or 7.5% of total jobs), accommodation and food services (57,800 jobs or 7.4% of total jobs) and construction (55,900 jobs or 7.1% of total jobs).¹³
27. Statistics New Zealand estimates total employment in Rodney in February 2018 at 15,900, which represents 0.7% of the total persons employed in New Zealand and 2.0% of the total persons employed in Auckland. This compares with Rodney’s 1.4% share of New Zealand’s total population and 3.9% of Auckland’s population, highlighting that the area is currently more of a “dormitory suburb” for employment centres elsewhere within Auckland City. The agriculture, forestry and fishing industry group employed 1,450 persons (9.1% of total jobs) of which most (1,230 persons) were engaged in agriculture. Other significant sectors are manufacturing employing 1,750 persons or 11.0% of total jobs (of which the most significant subsectors are food manufacturing (350 jobs) and beverage manufacturing (wine production) (350 jobs)), construction (2,650 jobs or 16.7% of total jobs), retail trade (1,650 jobs or 10.4% of total jobs), accommodation and food services (1,450 jobs or 9.1% of total jobs), education and training (1,400 jobs or 8.8% of total jobs) and health care and social assistance (1,100 jobs or 6.9% of total jobs).

¹² The Auckland Plan lists Warkworth as one of two satellite towns (together with Pukekohe) outside Auckland’s core urban area and which will support significant business and residential growth.

¹³ Source: Statistics New Zealand www.stats.govt.nz; NZ.Stat; Business Demography Tables. Geographic units by industry and area unit 2000 -18; (data extracted 27 November, 2018).

28. Warkworth accounts for 2,850 jobs (17.9% of Rodney's jobs) and Wellsford 970 jobs (5.3% of Rodney's jobs). The most significant employment sectors in Warkworth are retail trade, manufacturing, construction, education and training, healthcare and social assistance, and accommodation and food services. For Wellsford the most significant sectors are transport, postal and warehousing, education and training, retail trade, manufacturing, healthcare and social assistance and accommodation and food services.

THE ECONOMIC BENEFITS OF THE PROPOSED NEW LANDFILL

Additional Employment, Incomes and Expenditure in the Local Rodney Economy

29. Upon the granting of resource consents, a four to five-year programme of start-up construction work would commence. Costs estimated by Waste Management across those years is in the order of \$20 million to \$24 million for 'site and cell development', most of which would be for goods and services obtained from the north Auckland and southern Northland areas, and across those years in the order of \$14 million to \$17 million for fixed assets, most of which would be for imported heavy machinery, and in the order of \$2 million to \$4 million for buildings and utilities installations. Then, during the operating life of the landfill, average annual capital expenditure would be in the order of \$6 million to \$8 million per year (separate from operating expenditure). During the operating life of the landfill, direct operating expenditure would be in the order of \$9 million to \$12 million plus labour costs of \$3 million to \$5 million. Values are in 2018 NZ\$ excluding GST.

30. Once operational, the proposed new Auckland Regional Landfill is expected to create 45 to 70 new full-time equivalent (FTE) jobs (30 to 40 permanent full time Waste Management staff and 15 to 30 contractor full-time equivalent staff) in the Warkworth-Wellsford area. From both an Auckland City and Rodney as a whole perspective, these jobs are simple transfers of employment as an equivalent number of jobs will be lost with the closure of the Redvale Landfill¹⁴, apart from a core crew of 10 to 15 who would remain at Redvale for several years for aftercare, maintenance and leachate and gas management. However from a Warkworth-Wellsford perspective these are additional jobs and if the Auckland Regional Landfill or an alternative to it is not developed within Rodney, an equivalent number of jobs will be lost from Rodney.

¹⁴ Redvale is close to the southern extremity of Rodney, whereas the proposed Auckland Regional Landfill is close to the northern extremity.

31. The wages and salaries for these staff are estimated to total \$3 million to \$5 million per annum. In addition, Waste Management estimate expenditure by the landfill with local Rodney businesses for goods and services to average \$2 million to \$4 million per annum during the operating life once construction is completed. The types of local Rodney businesses likely to benefit from this expenditure are civil engineering and earthmoving contractors, building companies, plumbing and electrical trades, mechanical/electrical manufacturers, landscapers, scientific monitoring service providers, and to a lesser extent hospitality, accommodation, and food and beverage service providers.
32. The retention of these jobs, incomes and expenditure within Rodney are the direct economic impacts of the project on the local Rodney economy. However, in addition there are 'indirect' (or 'multiplier') impacts as a result of:
- a. The effects on suppliers of goods and services provided to the Landfill from within the local Rodney economy (i.e. the "forward and backward linkage" effects); and
 - b. The supply of goods and services from within the local Rodney economy to employees at the Landfill and to those engaged in supplying goods and services to it (i.e. the "induced" effects). For example, there will be the retention of jobs and incomes for employees of supermarkets, restaurants, bars, and short term accommodation providers as a consequence of the retained expenditure by employees directly employed at the Landfill.
33. Multipliers can be estimated to gauge the size of these indirect effects. The size of the multipliers is a function of the extent to which an area's economy is self-sufficient in the provision of a full range of goods and services and the area's proximity to alternative sources of supply. Multipliers typically fall in the range of 1.5 to 2.0 and taking the lower end of this range (i.e. 1.5) for the local Rodney economy implies total impacts (i.e. direct plus indirect impacts) of:
- a. 68 to 105 FTE retained jobs for local Rodney residents;
 - b. \$4.5 million to \$7.5 million per annum in retained wages and salaries; and
 - c. \$3.0 million to \$6.0 million per annum in retained expenditure with local businesses.

34. Prior to the opening of the Landfill, expected to be sometime within the period 2026-2028, there will also be additional employment, income and expenditure impacts for the local Rodney economy as a consequence of the landfill's development phase, which is expected to take 4-5 years.
35. As indicators of levels of economic activity, economic impacts in terms of increased or retained expenditure, incomes and employment within the local economy are not in themselves measures of improvements in economic welfare or economic wellbeing. However, there are economic welfare enhancing benefits associated with increasing or retaining levels of economic activity. These relate to one or more of:
- 1.1 Increased economies of scale: Businesses and public sector agencies are able to provide increased amounts of outputs with lower unit costs, hence increasing profitability or lowering prices;
 - 1.2 Increased competition: Increases in the demand for goods and services allow a greater number of providers of goods and services in markets and there are efficiency benefits from increased levels of competition;
 - 1.3 Reduced unemployment and underemployment¹⁵ of resources: To the extent resources (including labour) would be otherwise unemployed or underemployed, higher levels of economic activity can bring efficiency benefits when there is a reduction in unemployment and underemployment; and
 - 1.4 Increased quality of central government provided services: Sometimes the quality of services provided by central government such as education and health care are a function of population levels and the breadth and quality of such services in a community is higher with higher levels of economic activity, particularly to the extent they lead to or maintain higher levels of population.
36. The proposed new Auckland Regional Landfill will give the Warkworth-Wellsford area greater critical mass and as a consequence the local residents and businesses can expect increased benefit from economies of scale, greater competition, increased resource utilisation and better central government provided services. In addition, the

¹⁵Underemployment differs from unemployment in that resources are employed but not at their maximum worth; e.g. in the case of labour, it can be employed at a higher skill and/or productivity level, reflected in higher wage rates.

Landfill by retaining employment opportunities in Rodney will enable fewer work commuting trips out of the local area to elsewhere within Auckland City and a reduction in the costs associated with this travel. It will provide a more balanced mix of residential, industrial and other business development in the north of Auckland City consistent with the “live, work, play” concept and help prevent the Local Rodney Board Area becoming simply a “dormitory suburb” of Auckland City.

Transport Cost Savings

37. The average waste generated per capita for Auckland City is around 1.02 tonne per person per annum.¹⁶ Waste Management advise that they expect this rate for Auckland will fall over time but not as low as the rates seen at other New Zealand cities - e.g. 0.55 tonne per person per annum in Christchurch. The projected rate takes into account expected future upwards trends in sectors of the economy that are major contributors to municipal waste (e.g. the building and construction sector) associated with strong local population growth, and downwards influences associated with general population and central and local government attitudes, policies and legislation relating to environmental sustainability and waste minimisation.
38. Auckland’s population in 2028 according to Statistics New Zealand medium forecast is expected to be 1,929,722 and by 2038 it is forecast to be 2,195,781. Waste Management forecasts around half of Auckland City’s waste will be disposed of in the new Auckland Regional Landfill north of Warkworth, with the remainder going to Whitford, Hampton Downs, and possibly Puwera. Waste Management exclude cleanfill / managed fill sites from their forecasts for the new landfill, because their forecasts relate to municipal waste that must find a Class 1 landfill. Also the market and options for disposal of cleanfill and soils may shift markedly when Redvale closes since cleanfill and soils won’t necessarily have to go to the next Class 1 landfill, which could be tens of kilometres further away.
39. Waste is a low value, high volume product and its disposal costs are particularly sensitive to its transport costs. Assuming a weighted average transport cost for waste disposal across all waste types and for full load and empty backload transportation of

¹⁶Source: Auckland Waste Management and Minimisation Plan (WMMP) 2018, page 33, Figure 8 (chart), and WMMP page 31, section 6.2 (1.646 million tonnes of waste to landfill in 2016), and Stats NZ (1,617,300 population in 2016) derived from : <https://www.stats.govt.nz/news/population-growth-fastest-in-northland-auckland-and-waikato>

\$0.25 per tonne kilometre,¹⁷ the additional transport costs that would be incurred if instead of the proposed 13 kilometre north of Warkworth site the hypothetical alternative landfill location was 30 kilometres further north of Auckland's central business district, would be \$14.5 million per annum in 2028 rising to \$16.5 million per annum in 2038. An alternative counterfactual is that without any landfill in north Auckland, all of the solid waste for disposal from that area would have to travel to a combination of other landfills, mostly to those at Whitford and Hampton Downs, with consequently greater costs and impact on other road users associated with traffic congestion across the central city. Whilst in the first instance these additional costs would be incurred by waste disposal companies, they would eventually be passed on in higher prices to Auckland residents, businesses and ratepayers.

40. The transport costs associated with the movement of waste incorporate both the running costs of operating vehicles (such as fuel, oil, tyres, and distance-related vehicle depreciation) as well as the standing (or time) costs associated with owning and operating a vehicle (time-related vehicle depreciation, insurance, driver's wages and required return on capital). Included in vehicle running costs are road user charges, which are a proxy for the cost of maintaining the road, as well as including a contribution towards new capital works for enhanced road capacity and safety. Road user costs are distance related, and since they are a function of the number of heavy vehicles using a section of road, so are road maintenance costs.
41. There are also three important external effects (or "externalities") associated with road transport, and which need to be taken into account. Firstly, there are the environmental benefits associated with reduced road transport including reduced emissions of CO₂ and other pollutants. Secondly, there are reduced road accident costs, which are not internalised in freight rates. These include reduced costs to other traffic and public health and policing agencies. Thirdly, there are reduced congestion effects of road transport for other road users. Congestion cost reductions in this context relate to lower vehicle running and standing costs and travel time costs for users of the road other than the trucks carting waste.
42. Finally, with respect to transport cost savings, as explained in the previous section of this report, the proposed new landfill by retaining employment opportunities within the northern part of Auckland City will reduce the transport costs associated with commuting to and from other parts of Auckland City for employment.

¹⁷ Source: Waste Management.

Other Economic Benefits

43. Waste Management in selecting the site for the proposed new Auckland Regional Landfill to replace the Redvale Landfill, took into account a number of factors. These included proximity to the State Highway, distance from Auckland for transport efficiency, distance to neighbours, landfill visibility and the avoidance as far as possible of known areas of cultural significance, sensitive environmental and ecological areas and areas of native bush.¹⁸ Waste Management has assessed the proposed site to have net benefits in relation to these factors as compared to the alternative sites it considered.
44. Also, once the Redvale Landfill is closed and the Whitford Landfill reaches its truck limit, there will be reduced competition for waste disposal in Auckland, without Waste Management's proposed new Auckland Regional Landfill being developed. Hampton Downs (in the Waikato) would be the only alternative apart from Puwera Landfill in Whangarei. The proposed Auckland Regional Landfill ensures ongoing competition and limits future price increases for waste disposal.

Summary of Economic Benefits

45. In summary the economic benefits from the proposed new Auckland Regional Landfill are:
- a. Increased employment, incomes and expenditure within the Warkworth-Wellsford area and retained employment, incomes and expenditure within Rodney, avoiding the counterfactual of lost investment, employment and expenditure in Rodney should Redvale not be replaced;
 - b. Reduced waste disposal transport costs for Auckland City residents and businesses estimated to be \$14.5 million per annum in 2028, rising to \$16.5 million per annum in 2038. This is on the basis of a hypothetical alternative landfill site being 30 kilometres further north from Auckland's central business district;
 - c. Reduced road transport externality costs – i.e. reduced congestion, emissions and road accident costs;
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- d. Transport cost savings from local employment reducing the need for local residents to commute to and from other parts of Auckland for employment; and
- e. Retained competition in Auckland's waste disposal market by developing a replacement landfill once Redvale is closed.

POTENTIAL ECONOMIC COSTS OF PROPOSED NEW LANDFILL

Alternative Land Uses

46. The current active uses of the site are pastoral farming and plantation forestry while parts of the site are passively undergoing natural regeneration of native bush. The Landfill will essentially only encroach on the first two of these land uses¹⁹ and will involve only limited parts of the site being required at any one time and the land being rehabilitated progressively. However, the temporary loss of land for alternative uses is not an external cost of the proposed Auckland Regional Landfill. Waste Management, in purchasing the land, has paid a price reflective of future net returns from its proposed alternative uses for the land. Such costs are not costs to be borne by the wider community.
47. Also because Waste Management paid the market price for the land, the use of the land for a landfill and its subsequent rehabilitation is the best use of the site in economic terms, as judged by the market.

Public Infrastructure Costs

48. Externality costs can arise when utilities provided by central or local government (e.g. roads, water supply, storm water and flood control systems and wastewater disposal) are not appropriately priced. In the case of the proposed new Auckland Regional Landfill no such externality costs will arise. The Landfill will be completely self-sufficient with respect to water supply, wastewater disposal and stormwater control. In addition to road user charges, and roading costs payable as part of the annual rates, Waste Management will meet its part of the costs of the proposed upgrading of the existing SH1 through Dome Valley within the vicinity of the landfill entrance to ensure adequate capacity in the local network and maintain road safety.

¹⁹ Lost plantation forest, will be offset by new plantings on pastoral land so in fact the net effect will only be the loss of some pastoral farming.

Road Congestion Costs

49. An analysis of the traffic effects of the proposed Auckland Regional Landfill has concluded that the proposed access and egress arrangements will accommodate the volumes of vehicles envisaged.²⁰

Property Value Effects

50. Potential adverse effects for nearby residents are assessed in the other technical reports appended to the AEE. Property value effects are a reflection of, not in addition to, adverse effects (if any) from the landfill for nearby residents. Any change in property value effect does not materialize unless and until an owner sells the property. At this point there is a wealth loss to the seller, but no ongoing adverse effects to be borne by the seller. The purchaser of the property gains by having to pay a lesser price for the property but experiences any costs of any ongoing adverse effects. The Environment Court has accepted that to include both adverse effects for local residents and property value effects would involve double counting.²¹

Summary of Potential Economic Costs

51. This report concludes that the proposed new Auckland Regional Landfill will not lead to economic costs in the form of reduced alternative land use, public infrastructure costs or local road congestion costs. The proposal has the potential to negatively affect some nearby local property values but such effects (if any) are a reflection of, not in addition to, any adverse effects for local residents identified in the reports of other technical experts.

CONCLUSIONS

52. Community economic wellbeing and the efficient use and development of resources are relevant concepts under the RMA.

53. Auckland City's population is projected to grow at a much faster rate than the rest of New Zealand. The Rodney area in the north of Auckland is expected to have rapid population growth especially in the Warkworth area. However employment

²⁰See Transport Effects Assessment

²¹See for example, paragraphs 249 - 256 of: Environment Court in *Foot v Wellington City Council* ENE Wellington W73/98, 2 September 1998 which dealt with the impact of height restrictions on properties in Oriental Parade.

opportunities in Rodney are limited with much of the population having to commute out of the area to other parts of Auckland City for employment.

54. Locating the proposed Auckland Regional Landfill near Warkworth will provide additional employment, incomes and expenditure for the Warkworth-Wellsford area and retain employment, incomes and expenditure within the Rodney economy, reduce commuting costs for local residents and help provide a more balanced mix of “live, work, play” opportunities.
55. Waste is a low value, high volume product and its disposal costs are particularly sensitive to its transport costs. Should consents for the proposed Auckland Regional Landfill site 13 kilometres north of Warkworth not be granted and an alternative site further from the centre of Auckland is required, considerable additional costs are likely to be incurred for transport to a more distant existing landfill or a hypothetical new landfill. For example, if the hypothetical alternative site for the Landfill is 30 kilometres further from the centre of Auckland, waste disposal costs are estimated to be an additional \$14.5 million per annum in 2028, growing to \$16.5 million per annum in 2038.
56. The proposed landfill will provide a range of other economic efficiency benefits.
57. The new landfill will not result in economic externality costs.
58. The proposed Auckland Regional Landfill is consistent with community economic wellbeing and the efficient use and development of resources.