

**BEFORE A BOARD OF INQUIRY
MACKAYS TO PEKA PEKA EXPRESSWAY PROPOSAL**

UNDER the Resource
Management Act 1991

IN THE MATTER OF applications for
resource consents and
a notice of requirement
in relation to the
MacKays to Peka Peka
Expressway Proposal

BY New Zealand Transport
Agency

**STATEMENT OF EVIDENCE OF MARY-JANE RIVERS
ON BEHALF OF THE KAPITI COAST DISTRICT COUNCIL**

Social effects

DATE: 5 October 2012

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1. INTRODUCTION

- 1.1** My full name is Mary-Jane Rivers.
- 1.2** I am a Principal in Delta Networks, a consultancy in social and community development.
- 1.3** My qualifications include a Bachelor of Arts (Honours) in Geography and Education from Victoria University. I have also undertaken training in negotiation and mediation.
- 1.4** I am a Board Member of the International Association of Community Development and a member of the New Zealand Association of Impact Assessment.
- 1.5** I gained considerable experience in social impact assessment in establishing and managing the Social Policy Unit in the former Ministry of Works and Development, where I was responsible for a number of social impact assessments. I was involved in the formation of the Social Impact Working Group which later became the NZ Association of Impact Assessment. Over a period of 25 years I have undertaken social impact assessments of medium and large scale energy projects, roading and physical infrastructure, and sectoral policy changes within New Zealand and internationally.
- 1.6** Roothing projects I have worked on include:
- (a) Social Impact Assessment of options for Transmission Gully, as part of Rivers Buchan Associates;
 - (b) Social Impact Assessment: Ewen Floodway Project as part of Rivers Buchan Associates; and
 - (c) Social Impact Assessment and consultation for the Western Corridor Project, Hutt Valley.
- 1.7** My international experience includes social assessments of health projects and policies for the World Bank in Kazakhstan, Bosnia-Herzegovina and Turkey. I have worked with the Samoan Government's environment agency to introduce social impact assessment. I have presented training on social impact

assessment in Washington for the World Bank and in South Africa for the Government and Development Bank.

1.8 Related recent experience is in community and neighbourhood strengthening through the establishment of 'Inspiring Communities' – a network of local community-led development initiatives.

1.9 I am authorised by the Kāpiti Coast District Council (**Council**) to present this evidence on its behalf.

1.10 I have read and am familiar with the Code of Conduct for Expert Witnesses in the Environment Court Practice Note 2011. I agree to comply with that Code. Other than where I state that I am relying on the advice of another person, this evidence is within my area of expertise. I have not omitted to consider material facts known to me that might alter or detract from the opinions that I express.

1.9 I undertook a site visit of the project area on 13 September 2012.

2. SCOPE OF EVIDENCE

2.1 My evidence will cover:

- (a) supported aspects;
- (b) overall comment;
- (c) areas requiring greater analysis and corresponding mitigation obligations, namely:
 - Makarini Street and environs;
 - Social impacts of construction;
 - The Kapiti Road and Te Moana Road interchanges;
 - Health and safety impacts; and
 - Effects on the Paraparaumu Medical Centre on Kapiti Road.

3. EXECUTIVE SUMMARY

3.1 NZTA's broad description of the social environment for the proposed MacKays to Peka Peka Expressway (**Expressway**) is valuable, as far as it goes. However, overall there is insufficient information to make a thorough

assessment of social impacts. This analysis needs to be undertaken with appropriate mitigation action to follow the results of the assessment.

3.2 Specific areas requiring further assessment include:

- (a) more detailed assessment of specific localities and activities as outlined below; and
- (b) more detailed assessment of the social impacts of the construction phase.

3.3 Makarini Street and environs¹ is one of the areas most affected by the Expressway because of its proximity to the Expressway route designation. It is one of the highest deprivation areas in the Kapiti Coast and the Wellington region. The construction of the Expressway metres away from several residents' small back yards will bring immediate social impacts. It warrants specific attention and analysis.

3.4 NZTA's assessment of social impacts of the construction phase requires a more fine-grained analysis, including construction vehicle and traffic movements in relation to activity nodes such as schools. The impact of a 500-strong workforce also requires greater analysis, including the opportunities for employment of local people presented by the construction workforce and for workers moving into the area, and the housing implications of construction workforce accommodation.

3.5 Enabling the Kapiti Road and Te Moana Road interchanges to provide safer access to the Paraparaumu Town Centre for all transport modes is important. Signalising will be particularly important for vulnerable groups enabling safer road crossing by individuals with limited mobility such as small children and the elderly. For the purposes of this evidence I have used the International Association of Impact Assessment (**IAIA**) best practice definition of "vulnerable groups"². I support Don Wignall's recommendation to signalise the Arawhata and Kapiti Roads intersection as part of this project.

¹ The area bounded by the Expressway, Arawhata/Mazengarb Roads and Kapiti Road

² Groups can be vulnerable due to their physical status (eg children, older people, disabled people,) or due to their social positions (eg people with low socioeconomic status, ethnic minorities, women) Quigley, R, L den Broeder, P. Furu, A. Bond, B. Cave and R. Bos 2006 Health Impact Assessment

- 3.6** The Council's submission requested an audit of wider Health, Wellbeing and Safety Impacts. To be precise, in my opinion Health Impact Assessment (commonly referred to as a health and wellbeing assessment) of safety and health impacts is more suitable than an audit. An Assessment starts during the planning of a project and operates throughout the project. An Audit is generally undertaken after a project is completed.
- 3.7** I also note that the impacts on social infrastructure need to be assessed. Of particular concern is the impact on the Paraparaumu Medical Centre (**Medical Centre**) on Kapiti Road, which provides an essential service to a community that has limited central government health services. In my opinion it is essential that this facility is able to operate satisfactorily. This may require the facility to be moved.
- 3.8** Given the greater analysis required my preference would be to have a full social impact assessment completed now which identifies specific, project-related social well-being indicators to help manage project-induced social change. However, if that cannot be done, it is acceptable in my view for the designation conditions to establish a process for a social monitoring and adaptive management package (**Package**) to identify and build agreed indicators as the project progresses. The additional analysis around Makarini Street and environs, the social impacts of the construction phase, the interchanges, community, health and wellbeing, and safety impacts on social infrastructure including the Paraparaumu Medical Centre can be components of the overall Package.

4. SUPPORTED ASPECTS

- 4.1** I acknowledge the following aspects of the Project:
- (a) That an assessment of the social effects has been undertaken – referred to from here as the Social Impact Assessment (**SIA**).
 - (b) That the IAIA best practice definition for SIA is referred to.
 - (c) That each of the local communities is broadly described in turn in the SIA.

- (d) That reference is made to the Community Outcomes for the Kapiti Coast District and the local outcomes relevant to each community.
- (e) That the adverse social effects will be predominantly felt by the local communities on the Kapiti Coast.

4.2 The author of the SIA, Ms Julie Meade Rose, provides a useful description, but not an assessment, of the existing social environment and the impacts of the project in two main ways – with reference to the broader Wellington region and with reference to four local areas: Raumati, Paraparaumu, Waikanae and Peka Peka. This methodology was fine as far as it went but was not sufficient to address overall or specific social impacts. I support the aspects of the proposal mentioned below subject to my more detailed comments/reservations in my evidence.

4.3 Ms Meade Rose mentions that she uses the existing social environments of the four areas as a baseline for assessing effects. Her main focus in the SIA is on the local area because that is where she considers ‘the social effects of the Project will predominantly occur’ (Executive Summary). I agree that the local communities will be the most affected, and that the existing environment provides a useful baseline and I consider that these social effects require greater analysis.

4.4 Ms Meade Rose provides a brief contextual introduction and describes the four areas in terms of area Characteristics and Features such as basic demographics, and services, facilities, recreational areas and public and private transport connections out of the areas. The descriptions in themselves are useful but not sufficient to gain an understanding of the social effects and therefore what would constitute appropriate management and mitigation of these effects. In my opinion, under the Resource Management Act 1991 (**RMA**), there must be a genuine attempt to address effects and it is not acceptable to trade off between benefits and effects in a manner where they are not appropriately and specifically addressed.

4.5 Ms Meade Rose considers that the properties adjacent to construction activities will be most adversely affected. I agree with this statement. I do, however, have reservations about Ms Meade Rose’s statement that the operational effects in the local areas are largely beneficial and the Expressway will enhance the cohesiveness of communities and community wellbeing (paragraph 20).

5. OVERALL COMMENT

5.1 In my view, which stems from experience and is supported by the literature on projects of this size and location relative to neighbourhoods, homes and households,³ there is potential for a project of this type to have significant effects on social well-being such as the following:

- (a) construction workforce with associated pressure on local housing stock (rental pressure on beneficiaries and those on low incomes), impacts on school rolls, health and medical services, other social service providers and leisure activities, especially bars and clubs;
- (b) construction workforce skills, the likely source of the construction workforce and the potential for local employment, apprenticeships and training;
- (c) construction activity impacts, especially on specific community activity nodes and facilities such as schools and recreation areas with high numbers of people coming and going;
- (d) construction and operational impacts on specific neighbourhoods and residential areas that are most immediately affected (such as the Conifer Court area in South Raumati, Puriri Road - El Rancho in Waikanae, Milne Drive/Observation Place in Paraparaumu);
- (e) construction and operational impacts on specific, high deprivation neighbourhoods (for example Makarini Street);
- (f) local economic activity that generates full and part time jobs. Part-time jobs are important in particular to augment benefits and low household waged income;
- (g) the ability of children, older people and those with disabilities to move safely and confidently (in particular where there are new interchanges such as at Te Moana and Kapiti Roads);

³ Taylor Baines (2007 and 2011), Stevenson, M (1995); Burdge, R (2004); Esteves, A; Franks, D and Vanclay, F (2012)., IAIA, Social Impact Assessment, Special Publication Series, No 2 (2003).

- (h) noise and air quality effects, and consequent impacts, on the health of elderly folk with potentially already compromised respiratory conditions living in close proximity to the proposed expressway (in particular those living in the Metlifecare Kapiti facility);
- (i) the cumulative impacts associated with the construction and operation through disruption to neighbourhoods and businesses; and
- (j) the impact of physical and psychological severance from the Expressway as it is operating.

5.2 To help understand issues around these points, I consider it necessary for an assessment of environmental effects for such a project to include:

- (a) a rigorous application of the frameworks for analysis, in this case the IAIA Social Assessment Framework⁴;
- (b) a clear referencing back to the place of social impact assessment within the RMA⁵;
- (c) an assessment of key areas, communities, neighbourhoods, groups, activity nodes and individuals likely to be affected;
- (d) an indication of current attitudes, behaviours, situations and aspirations at the neighbourhood and community level and how the project construction and operation either enhance or negatively impact these;
- (e) an analysis of the current patterns of demand for, and operation of, support services such as social, health and welfare, and facilities, and

⁴ IAIA framework is accompanied by a set of guidelines that suggest, among other things, 'awareness of the differential distribution of impacts among different groups in society'; and the importance of 'assisting communities and other stakeholders to identify development goals and ensuring that positive outcomes are maximised'

⁵ Social Impact Assessment and the Resource Management Act: The role of social impact assessment (SIA) in RMA proceedings is influenced by the express purpose of the Act itself and its related definitions, and by the principles of SIA practice. Section 5 of the RMA expresses the purpose of the Act, with explicit mention of the concept of "social wellbeing" and explicit reference to "people and communities", "effects" and "environment". (see Appendix 1 for more detail)

the likely changes as a result of the construction, construction traffic and operation;

- (f) a fine-grained analysis of the neighbourhoods and areas most likely to be affected by both construction and operation;
- (g) a description and analysis of the construction workforce requirements and the opportunities and challenges associated with recruitment training and services, including housing; and
- (h) the implications for local people of changed traffic flows, based on detailed modelling of the traffic flow changes on the network, and interviews/pedestrian surveys.

5.3 I can find no systematic analysis and assessment of social impacts in NZTA's SIA that is adequate to address the above matters.

5.4 Because there is an absence of information in the evidence and reports, or the effects have been superficially studied, I have been unable to ascertain the true extent of the adverse impacts of the Expressway project and therefore of mitigation requirements, or the positive impacts that should be acknowledged (or indeed celebrated). In my opinion there is insufficient information to develop specific conditions setting out control or mitigation measures with the confidence needed.

5.5 Ideally this information would be gathered and provided now. However, if that is not done, my recommendation is that a Package is included in the conditions. Such a Package would need to enable a set of project-related, key indicators of social wellbeing to be established and monitored, and require action to be taken when pre-agreed thresholds of effect are reached. This approach would enable the specific and cumulative social effects of both the construction and operational phases of the Expressway project to be addressed with appropriate mitigation.

5.6 My preference would be to have a full social impact assessment completed now and identify specific, project-related social well-being indicators which will help manage project-induced social change throughout construction. However, if that cannot be done, it is acceptable in my view for the designation conditions to

establish a process for a Package to identify and build agreed indicators as the project progresses. It would be 'jumping the gun' to identify them now in the absence of the necessary information. Nevertheless a few likely examples of indicators could be (and these should be included in the package described above):

- (a) increases in waiting list lengths for local health services;
- (b) increasing demand for short to medium term rental accommodation;
- (c) increased dust, noise and vibration effects from vehicle traffic and associated impacts on neighbourhoods from construction vehicle routes and operation.

5.7 As well as the overall Package there are some specific geographical areas and issues that warrant greater analysis. In my view this can and should be commenced now, and I outline the details of this below.

6. AREAS REQUIRING GREATER ANALYSIS

6.1 With regard to more specific areas requiring greater analysis there are four main areas where, in my opinion, this is required:

- (a) Makarini Street and environs.
- (b) The ability of vulnerable groups to use the Kapiti Road and Te Moana Road interchanges safely and confidently.
- (c) The social impacts of the construction, as opposed to operation, of the Expressway; and
- (d) The health and safety impacts of the Expressway.

Makarini Street and Environs

6.2 Makarini Street and environs⁶ is one of the areas most affected because of its proximity to the Expressway route designation. It will be sandwiched between the Kapiti Road interchange and Mazengarb Road bridge structures as well as being adjacent to the Expressway.

6.3 As Ms Meade Rose mentions, it is one of the highest deprivation areas in the Kapiti Coast District and the Wellington Region.⁷ In Makarini Street and

⁶ The area bounded by the Expressway, Arawhata/Mazengarb Roads and Kapiti Road.

environs one would expect to find in households (compared with the Kapiti Coast District and the Region):

- (a) more young people and children;
- (b) more one-parent families;
- (c) lower incomes;
- (d) more rental accommodation
- (e) lower car ownership; and
- (f) a lower ability to access the internet.

6.4 There is considerable international evidence⁸ to show that those households, neighbourhoods and communities that are under stress from low employment, low income and high need are also:

- (a) the least well resourced to deal with the social and health impacts from new developments;
- (b) the least well resourced to participate in processes for influencing broader decisions (eg preparing submissions on motorway developments);
- (c) the least resilient in dealing with change beyond their control; and
- (d) less likely to be able to move away.

6.5 The construction of the Expressway metres away from several residents' small back yards will bring immediate impacts through severance, connectivity, noise, vibration, dust, visual amenity and disruption. The operation of the Expressway will decrease the comfort and noticeably change the attractiveness of Makarini Street and environs.

6.6 It is Ms Meade Rose's opinion that people in Makarini Street will not experience severance from facilities, services and social networks they may wish to use in the community. This is an example of where, from my reading of the Assessment of Environmental Effects and documents it references, there is insufficient evidence to make such a statement with certainty. I consider that the

⁷ Makarini Street, 9 on deprivation index and those meshblocks east of the proposed Expressway on Kapiti Road (Technical Report 20, Appendix 20.A, page 144).

⁸ For example: Noya, A OECD (2009); Powel, R (2008); Diers, J (2004).

impacts of the Expressway construction and operation on the residents of Makarini Street and environs warrant specific attention and analysis through the Package. This component of the Package will need to be done in a manner that actively involves local residents and has certification by the Council. Its focus should be to:

- (a) assess in more detail the likely impacts of the expressway construction and operation, for example revisiting the use and value of the current informal walkway from Makarini Street to Te Roto Drive;
- (b) develop agreed monitoring and mitigation and compensation;
- (c) build on and support current local leadership and positive developments in the neighbourhood in order to optimise outcomes for social well-being;
- (d) work closely with local services and the Council around support mechanisms; and
- (e) identify and finance specific enhancements for the local community required as mitigation for the adverse effects of the Expressway.

6.7 Core to the success of this component would be the way in which it is set up and managed. In my opinion this should be facilitated by someone with experience in community development, social assessment and negotiating and brokering 'win-win' solutions among a range of parties. This person would need to be agreed on by the Council and NZTA and with the Council having a role in the development and certification of the plan.

The Kapiti Road and Te Moana Road interchanges

6.8 I support Don Wignall's recommendation to signalise the Arawhata and Kapiti Roads intersection as part of the Expressway project. This will enable safer access to the Paraparaumu Town Centre for all transport modes and active transport in particular. Signalising will be particularly important for vulnerable groups. For the purposes of this evidence the IAIA best practice definition of

“vulnerable groups”⁹; is used. This is broader than the definition of "transport disadvantaged" used by Ms Meade Rose.

- 6.9** I support Don Wignall's recommendation to construct traffic lights instead of roundabouts at the Te Moana Road interchange. This will enable pedestrians and cyclists to more safely negotiate these intersections.

Greater Analysis of the Social Impacts of the Construction of the Expressway

- 6.10** Ms Meade Rose acknowledges that the four to five years of construction is a lengthy period of time (Technical Report 20, paragraph 20.6.7). The SIA report identifies general information about:

- (a) The construction timetable;
- (b) Construction workforce numbers;
- (c) Effects on daily patterns of life;
- (d) Effects on economic activity; and
- (e) Effects on community cohesion, character, structure and stability.

- 6.12** In my opinion more detailed attention and analysis is required, within the Package, in relation to:

- (a) Construction vehicle and traffic movements in relation to activity nodes, such as:
 - Schools;
 - Saturday sports venues;
 - Paraparaumu Town Centre (Coastlands, Community Centre, Aquatic Centre, Library, Civic Buildings);
 - Waikanae Town Centre; and
 - in relation to streets that will carry additional and/or different traffic movements during the construction period. For example, heavy vehicle movements from the quarry to construction sites. These effects are likely to include safety effects from numbers and frequency and health effects from vibration and noise.

⁹ Groups can be vulnerable due to their physical status (eg children, older people, disabled people,) or due to their social positions (eg people with low socioeconomic status, ethnic minorities, women) Quigley, R, L den Broeder, P. Furu, A. Bond, B. Cave and R. Bos 2006 Health Impact Assessment International Best Practice Principles Special Publication, Series No 5, Fargo, USA: International Association of Impact Assessment.

- (b) The accommodation requirements of the construction workforce and likely positive and negative impact on local families and households, especially those on low or fixed incomes in rented accommodation.
- (c) The impact of 500 additional workforce members in the area on services such as local health services.
- (d) The ability for local people to obtain employment as part of the construction workforce. This provides an opportunity to offset adverse effects by providing a positive effect of the Expressway project.
- (e) Disturbance of activities, access to services and facilities, and interactions in the neighbourhoods and specific communities most affected.
- (f) The social and health impacts of construction on residents – particularly those living in close proximity to the two major interchanges at Kapiti Road and Te Moana Road.

6.13 In order to develop a specific component of the Package for the social effects of the construction phase of the project, it is my opinion that there needs to be a formal process to facilitate early and ongoing interaction between:

- (a) the Council, Capital and Coast District Health Board, Compass Primary Health and NZTA around health service demands and management;
- (b) the Council, social services organisations and NZTA about service demands and management;
- (c) the Council and NZTA about accommodation planning;
- (d) the Council, local secondary and tertiary education institutions, and training providers and NZTA about local workforce opportunities; and
- (e) the Council and NZTA about construction vehicle movement, routes and frequency.

6.14 These discussions would identify more specific levels of effect and develop clear procedures and outcomes. They should be part of a social monitoring and adaptive management plan developed to address the broad concerns identified above, and with a certification role for the Council. In light of the amount of work that this process would involve on the part of the agencies listed above, and in light of my views that this work could have been avoided if NZTA's initial SIA had been adequate, I consider that it would be appropriate for NZTA to assist those agencies with resourcing required for their involvement.

Assessment of Health and Safety Impacts

6.15 The flow on or cascade effects of noise and vibration, particularly during construction, warrant greater consideration. Potential effects on human health from construction activities include vibration effects associated with construction on peaty soil and psychological effects of vibration, particularly at night.

6.16 I note that the Council's submission requested an audit of wider Health, Wellbeing and Safety Impacts. In my opinion, an assessment with a more integrated approach to health and safety impacts needs to be incorporated as part of the wider Package undertaken. This would be a logical and necessary contribution to overall Package. The wellbeing aspects raised by the Council in its submission should be incorporated into other components of the overall Package.

6.17 There is an established Health Impact Assessment (**HIA**) practice in New Zealand, with a clear model and strong recent history, which should be used for more detailed assessment of health and safety impacts. This is preferable to an audit. An assessment starts during the planning of a project and operates throughout the project. An audit is generally undertaken after a project is completed.

6.18 In my opinion the HIA approach used in New Zealand is well suited to the assessment of multi-faceted effects from a project such as the Expressway project on social systems. It uses a broad understanding of what determines health (rather than just biophysical factors), and considers how changes to where people live, learn, work and play might affect their physical and mental health - either positively or negatively. Such an approach helps identify the range of impacts on an urban environment that has a mix of people and activities - older people, younger people, wealthy people, vulnerable people,

businesses, services and ethnic groups. Accordingly I believe it is a method well suited to helping fully understand and, where possible, quantify the health and safety impacts of the proposed Expressway and the responses that need to be undertaken as a result.

6.19 A contrasting method called Health Risk Assessment (**HRA**) is used in situations where there already exists a very good understanding of the potential health and safety hazards. It works well in controlled situations, such as manufacturing processes. It is a science-driven process that includes hazard identification, hazard characterisation, exposure assessment and risk characterisation. It is particularly useful for hazards that are well understood, such as dust, vibration, chemicals, radiation and other biophysical hazards. These are important determinants of health, but are a narrow grouping. They miss the most important determinants of health for developed countries like New Zealand, such as income, housing and education. It typically only focuses on negative effects (being hazard based), and produces assessments for average populations rather than being tailored to the particular target population.

6.20 I recommend that the conditions require an HIA to be undertaken for the Expressway project based on the model¹⁰ already being used in New Zealand, and that the Council certifies the final approach of the HIA.

Ability of the Paraparaumu Medical Centre to continue to operate

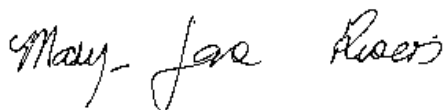
6.21 The Council's submission also expressed concerns about the range of impacts on the Medical Centre on Kapiti Road during construction and operation of the Expressway. The Medical Centre provides an essential service to a community that has limited central government health services. The Medical Centre also expressed concerns in their submission about access to the Medical Centre and the ability of the Centre to operate during construction and operation.

6.22 I agree with these concerns. In my opinion it is essential that this facility is able to operate satisfactorily. This may require the facility to be moved. In my opinion NZTA needs to explore suitable mitigation options to address both construction and long-term effects on the Medical Centre.

¹⁰ This would screen the issues most requiring attention, scope the impact assessment study methods required to understand the potential positive and negative effects (previously identified in the screening stage), collect the necessary data, undertake the analysis and identify suitable responses including management of those responses and monitoring of effects

7. CONCLUSION

- 7.1 NZTA's broad description of the social environment for the Expressway project is valuable, as far as it goes. However, overall there is insufficient information to make a thorough assessment of social impacts. This analysis needs to be undertaken with appropriate mitigation action to follow the results of the assessment.
- 7.2 Given the greater analysis required my preference would be to have a full social impact assessment completed now which identifies specific, project-related social well-being indicators to help manage project-induced social change.
- 7.3 However, if that cannot be done, it is acceptable in my view for the designation conditions to establish a process for an overall Package. As part of the overall Package there are some specific areas requiring greater analysis and corresponding mitigation obligation namely:
- (a) Makarini Street and environs;
 - (b) The social impacts of construction;
 - (c) The Kapiti Road and Te Moana Road interchanges;
 - (d) Health and safety impacts, and
 - (e) Effects on the Paraparaumu Medical Centre on Kapiti Road.



Mary-Jane Rivers
Principal
Delta Networks
5 October 2012

Appendix: The role of Social Impact Assessment

The role of social impact assessment (SIA) in RMA proceedings is influenced both by the express purpose of the Act itself and its related definitions, and by the principles of SIA practice.

The purpose of the Act and related definitions

Section 5 of the RMA expresses the purpose of the Act, with explicit mention of the concept of “social wellbeing” and explicit reference to “people and communities”, “effects” and “environment” -

“(2) In this Act, “sustainable management” means managing the use, development, and protection of natural and physical resources in a way, or at a rate, which enables people and communities to provide for their social, economic, and cultural wellbeing and for their health and safety while –

(a) sustaining the potential of natural and physical resources (excluding minerals) to meet the reasonably foreseeable needs of future generations; and
(b) safeguarding the life-supporting capacity of air, water, soil, and ecosystems; and
(c) avoiding, remedying, or mitigating any adverse effects of activities on the environment.”

Section 2 of the Act defines “environment” to include –

“(a) ecosystems and their constituent parts, including people and communities; and
(b) all natural and physical resources; and
(c) amenity values; and
(d) the social, economic, aesthetic, and cultural conditions which affect the matters stated in paragraphs (a) to (c) of this definition or which are affected by those matters.” 35

Section 3 of the Act defines the meaning of “effect”, unless the context otherwise requires, to include –

“(a) any positive or adverse effect; and

(b) any temporary or permanent effects; 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.”