NELSON CITY COUNCIL

Nelson Resource Management Plan

Proposed Plan Change 23

Daylight and Solar Panels

Planning Officer's Report - addressing submissions on the Proposed Plan Change prior to Hearing

Date of hearing
13 July 2011

Nelson City Council
te kaunihera ō whakatū

Table of Contents

PART A – INTRODUCTION

1. Reporting Officer

1.1 My name is Debra Bradley. I am employed by Nelson City Council in the role of Planning Adviser. I have been with the Council for 16 years, eight years as a Planning Assistant, and the remainder in my current role.

1.2 I have a Bachelor of Arts (Hons) from the University of Waikato and a Diploma of Environmental Studies from the Open Polytechnic of New Zealand.

1.3 I have been involved in this Plan Change from the beginning and have led the process through the notification period.

1.4 The Council's Eco Design Adviser Richard Popenhagen assisted with the development of this Plan Change, including the proposed exemptions for solar panels.

2. Overview of Proposed Plan Change

2.1 Improvements to Appendix 15 are being made to clarify the daylight provisions.

2.2 A potential barrier to the installation of solar hot water systems is the requirement for resource consent for solar panels which do not comply with the daylight and maximum height provisions of the Nelson Resource Management Plan (NRMP). An exemption for solar panels from the daylight and maximum height provisions is included in this Plan Change, to overcome a potential barrier to their installation.

2.3 Allowing for non-compliance with the daylight provisions is proposed for up to seven square metres of solar panels on the northern boundary. This is the practical placement for solar panels, and its north facing aspect will ensure that the non-compliance does not create significant shading on neighbouring properties. A 0.5 metre encroachment into the maximum height provisions is also proposed.

3. Purpose of this Officer's Report

3.1 This officer report has been prepared under Section 42A of the Resource Management Act:

- to assist the Independent Commissioner in making decisions on the submissions to Proposed Plan Change 23 – 'Daylight and Solar Panels' to the Nelson Resource Management Plan (the Plan);
- to assist submitters and further submitters who requested to be heard, by providing, prior to the hearing, a staff evaluation of decisions requested in submissions.

3.2 The evaluations and recommendations presented in the report are based on the information available prior to the hearing, including that contained in the submissions. In evaluating the submissions, the matters considered include whether a decision requested:

- falls within the functions of Nelson City Council under the Resource Management Act 1991 (RMA);
- will enhance the ability of the Plan to achieve the purpose of the RMA;
- will improve a policy, rule or other method so that it is more efficient and effective for achieving the relevant objectives;
- will improve the Plan in relation to such matters as its lawfulness, clarity, accuracy, effectiveness and coherence.

4. Consultation

4.1 Proposed Plan Change 23 was developed following advice from the Council's resource consent planners on the problems they have had with interpretation of the text and diagrams in Appendix 15 (daylight admission – residential) of the NRMP, and their suggestions to improve it.

4.2 The Council's Eco Design Adviser provided revised daylight around and daylight over diagrams, to assist with interpretation of the rules in Appendix 15. He also made recommendations on how best to provide for exemptions for solar panels from the daylight and maximum height provisions without impacting on neighbouring properties.

5. Notification, submissions and further submissions

5.1 The Proposed Plan Change was publicly notified on 25 September 2010, with submissions closing on 3 December 2010. Two submissions were received.

5.2 A summary of the decisions requested was notified on 30 January 2011 and closed on 12 February 2011. No further submissions were received.

5.3 The table below lists the submissions received:

Submission Number	Submission Name	Submission summary
1	David and Robin Hall	The daylight provisions should also relate to tree height.
2	Irving Smith Jack Architects Ltd	Solar panels should be permitted to intrude into the daylight over plane from any boundary.

6. Statutory Assessment

6.1 Council must consider the relevant provisions of the RMA in its assessment of the Plan Change. This includes an assessment of the purpose and principles of the Act (part 2), consideration of Council's functions (s31), an assessment of the alternatives and their costs and benefits (s32), and shall consider the Regional Policy Statement, regional plans, and management plans prepared under other acts (s74 and 75). The relevant provisions of the RMA are assessed below.

6.2 Part 2

The exemptions for solar panels will achieve the purpose of the RMA because it enables the Council to have particular regard to the benefits to be derived from the use and development of renewable energy in a way that will maintain amenity values.

6.3 Section 32

Before adopting for public notification any objective, policy, rule or other method promoted through this proposed Plan Change, section 32 of the RMA imposes upon the Council a duty to consider:

- the extent to which each objective is the most appropriate way to achieve the purpose of this Act; and
- whether, having regard to their efficiency and effectiveness, the policies, rules, or other methods are the most appropriate for achieving the objectives.

6.4 A Section 32 assessment was prepared and made available as part of the public notification process (see Attachment 1 of this report, document 953028). This evaluation focused on the solar panel exemption rather than the clarification of the provisions. Three key options were assessed in the section 32 report:

- the status quo (do not clarify the provisions, or exempt solar panels from the daylight and maximum height rules)
- the Proposed Plan Change to exempt solar panels up to a total of $7m^2$ in size from the daylight and maximum height rules.
- an alternative plan change to exempt all solar panels from daylight and maximum height rules.

6.5 This evaluation identified that proceeding with the Proposed Plan Change has the following potential benefits:

- promotion of renewable energy by removing some regulatory barriers to their installation.
- protection of amenity and access to daylight for neighbouring properties by restricting the size of solar panels as a permitted activity.
- reduced number of resource consents being required where solar panels intrude to a minor level on daylight angles or maximum height restrictions.

6.6 The main costs of this Proposed Plan Change is that resource consents are still required where solar panels:

- are not on the north facing side of a house
- are greater than 7 square metres in size
- extend more than 0.5m above the height limit.

6.7 The proposed change is an efficient approach because it reduces the requirements for resource consents for solar panels while limiting the adverse effects of the activity. It is an effective approach because it balances promotion of renewable energy and protection of residential amenity.

6.8 **Regional Policy Statement**

The Proposed Plan Change is consistent with the Nelson Regional Policy Statement (RPS), particularly the following provision:

- Objective EN1.2.1 - Sustainable use of energy through an orderly transition from non-renewable resources to renewable resources.

6.9 **NRMP**

No new objectives are being proposed as part of this Proposed Plan Change. Instead the Proposed Plan Change relies on existing operative objectives within Chapter 7 – Residential Zone of the NRMP, specifically:

- Objective RE2.3 - Buildings and structures should be designed and sited so that adjoining sites are not unduly shaded, and there is reasonable access to daylight.
- Objective RE2.5 - The size and scale of buildings, structures, and activities should be compatible with the character and amenity of the residential area.

6.10 The amendments to Appendix 15 (daylight admission – residential) of the NRMP will help to achieve the purpose of the RPS objective EN1.2.1 and the NRMP objectives RE2.3 and RE2.5 because clarification of the requirements should improve the ease of implementation of the daylight provisions for both Council staff and for people who need to comply with the provisions when constructing or developing buildings.

6.11 Including an exemption for solar panels up to a maximum size of seven square metres also contributes to objectives EN1.2.1, RE2.3 and RE2.5. It balances the value of renewable energy with the potential effects on amenity for neighbouring properties.

6.12 The solar panel exemption is intended to enable people and communities to provide for their social and economic wellbeing while avoiding or mitigating the adverse effects of using non-renewable sources of energy. The proposed intrusions into the daylight planes are similar to existing allowances for chimneys.

7. Any other relevant planning documents

7.1 The Proposed Plan Change was notified in September 2010. Since that time, a National Policy Statement for Renewable Electricity Generation was gazetted, in April 2011. The Preamble to the NPS recognises that electricity generation can complete with other values, including amenity. The objective of the NPS is to recognise the national significance of renewable generation activities by providing for the development, operation, maintenance and upgrading of new and existing renewable electricity generation activities.

7.2 Policy E1 states: "Regional policy statements and regional and district plans shall include objectives, policies and methods (including rules within plans) to provide for the development, operation, maintenance, and upgrading of new and existing renewable electricity generation activities using solar, biomass, tidal, wave and ocean current energy resources to the extent applicable to the region or district."

8. Conclusions

7.1 This report provides a statutory and effects based assessment of proposed Plan Change 23. I have described the general approach and the background and consultation leading to the development of this Plan Change. I have also assessed it against the statutory requirements under the RMA and have concluded that it meets all the relevant matters.

7.2 I acknowledged the various concerns, and suggestions for improvement, outlined in the submissions, and have commented on those and made specific recommendations in Part B of this Report.

7.3 No amendments to the Plan Change are recommended, as shown in Part C.

7.4 I am of the opinion that the package of measures embodied in Plan Change 23 will provide a workable and realistic planning response to this resource management issue in Nelson.

Author: Debra Bradley **Date:**

17/6/11

Peer Reviewed: Matt Heale **Date:**

17/6/11

PART B – RECOMMENDATIONS AND REASONS

Recommendation for Plan Change 23
AP15.8.iii a) Exceptions to the daylight over provisions

Recommendation:

Reject submission 2/1.

Reasons for Recommendation:

Submitter 2 has requested that solar panels be permitted to intrude into the daylight over plane from any boundary. This submission is in response to proposed Provision AP15.8.iii a).

AP15.8.iii a) Solar panels up to a total of $7m^2$ in size may intrude into the daylight plane on the northern site boundary (defined for the purpose of this rule as being in a quadrant of 45 degrees east and west of north).

The intent of the notified proposed exemption is to allow some flexibility in the mounting of a solar panel. The proposed exemption provides for intrusion into the daylight plane on the northern site boundary (defined as being within 45 degrees east and west of north) while protecting the southern daylight recession planes from intrusions.

NRMP Objective RE2.3 is particularly relevant to this submission. It states: "Buildings and structures should be designed and sited so that adjoining sites are not unduly shaded, and there is reasonable access to light." Any change to the provisions in Appendix 15 that have the potential to increase shading, or affect access to daylight, of neighbouring properties are not aligned with this objective.

However, any changes to the NRMP also need to give effect to the provisions of the National Policy Statement for Electricity Generation 2011, which was gazetted in April 2011. The Preamble to the NPS recognises that electricity generation can complete with other values, including amenity. The objective of the NPS is to recognise the national significance of renewable generation activities by providing for the development, operation, maintenance and upgrading of new and existing renewable electricity generation activities.

Policy E1 of the National Policy Statement for Electricity Generation states: "Regional policy statements and regional and district plans shall include objectives, policies and methods (including rules within plans) to provide for the development, operation, maintenance, and upgrading of new and existing renewable electricity generation activities using solar, biomass, tidal, wave and ocean current energy resources to the extent applicable to the region or district."

Weighing up the competing values of providing for renewable energy and protecting amenity of neighbouring properties, the officer recommendation is not to make any amendments to the Proposed Plan Change. The Proposed Plan Change allows for an exemption on the northern boundary for solar panels in the optimum area of a building's roof without impacting on shade effects on neighbouring properties.

Any exemption to the daylight over provisions on other site boundaries has potential to shade neighbouring properties, impacting on their access to daylight and to passive solar energy.

In addition, allowing for solar panels on all boundaries has potential for significant effects on neighbouring properties, and the community has not had the opportunity to submit on a proposal which may have significant effects on them.

The option of allowing all solar panels to be exempt from the daylight and maximum height rules was assessed (as Option 3) in the section 32 report, which is shown in Attachment 1 to this report. Option 3 has an economic benefit for individuals installing solar panels as a permitted activity in all cases, but this benefit is outweighed by the potential impacts on the residential amenity of neighbours. This could

particularly be the case in future, if technological advances result in people wishing to install very large solar panels on their houses.

It is not possible to write a permitted rule for solar panels on the southern boundary (or within 45 degrees east and west of the southern boundary) that would adequately protect risk of shading to neighbouring properties. A standard solar panel design placed on a south sloping roof would require a substantial framework to place it at the opposite angle to the roof, so that the panel itself faces north. This would usually mean a rectangular structure resulting in a significant shadow across a neighbouring property.

There could be cases where mounting a solar panel on the southern boundary would be required, but as the requirement is expected to be rare, acceptable designs and situations can be dealt with under resource consent.

Recommendation for Plan Change 23
AP15 Daylight appendix

Recommendation:

Reject submission 1/1

Reasons for Recommendation:

Submitter 1 has requested that the effects of shading from trees also be managed by the daylight provisions in the NRMP. This submission, about controlling the height of trees, is outside of the scope of the plan change because management of tree heights does not fall within the functions of Nelson City Council under the Resource Management Act 1991.

It is accepted that trees on neighbouring properties can have shading impacts, and impact on amenity. However Residential Zone Objective RE2.3, and the rules and other methods supporting the objective, only relates to buildings and structures.

RE2.3 states: "Buildings and structures should be designed and sited so that adjoining sites are not unduly shaded, and there is reasonable access to light."

Similarly, Appendix 15 defines angles within which a complying building must fit in order to allow adequate daylight on adjoining sites.

This means no change can be made to Appendix 15 to control tree heights and tree shading of neighbouring properties. However, tree issues can be addressed as a civil matter through the District Court as outlined below.

Trees – A guide to your rights & responsibilities, published by the Nelson Bays Community Law Service, includes the following:

"If you want your neighbour's trees trimmed or removed, because they are blocking your view/sunshine or impeding your enjoyment of your land, you may take the matter to Court. You have to establish the neighbour's tree/s are having an injurious effect on your land.

The Court will take into consideration matters such as –
- Safety issues
- Damage to property
- Undue obstruction of a view or interference with the reasonable enjoyment of the applicant's land
- The value of the tree as a public amenity or any historical/cultural significance."

PART C – RECOMMENDED PLAN AMENDMENTS

Note: these amendments are provided for information only. No changes are recommended in response to the two submissions.

Format of the Plan Change provisions

Within this Plan Change:

'Normal' text applies to current operative provisions to remain unchanged.

'Underline' text applies to proposed new provisions.

'~~Strikethrough~~' text applies to operative provisions proposed to be deleted or amended as described.

'*Italic*' text applies to instructions.

AP15.3 – where to take measurements from

Amend AP15.3.1c) as follows:

> AP15.3.1 c) Where a boundary has a common boundary with a private access or right of way which serves ~~more than one, but~~ no more than four actual or potential residential units, ~~and whether or not that property has rights over the access or right-of-way,~~ the measurement may be taken from the centre line of that ~~formation~~private access or right of way. If the measurement is taken from the centre line the daylight-over method must be used. This approach can be taken regardless of whether or not the property has rights over the access or right of way.

AP15.5 – additions to buildings

Delete AP15.5 b) in its entirety and add to the 'Note' in AP15.9.ii as follows:

> ~~Ap15.5 b) "Where the original building does not conform with the daylight controls in this Plan, any addition must not deprive neighbouring properties of daylight to a greater degree. Otherwise a resource consent is required."~~
>
> Ap15.9.ii 'Ground level', 'height' and 'height measurement' are determined by their definitions in Chapter 2 (Meaning of Words).
>
> Notes: Any portion of a building or accessory building not contained within the arms of the angle must comply with Ap15.9.iii.
>
> If daylight around is the method by which compliance with the permitted standard is shown for a site boundary, then the daylight over method cannot be used for that site boundary in any future developments to establish compliance with the permitted standards. If any future development on site cannot be located within the established daylight around angle, or is not an exemption listed under Ap15.9.iii, resource consent will be required."

AP15.6 – types of controls

Amend AP15.6.iv as follows:

AP15.6.iv You may choose the control that is most advantageous to you depending on the type of development you are planning. You may apply either method to a site boundary. Both methods may be used on a site, but only one may be applied to any boundary. All parts of a building must comply with the particular permitted standards of the daylight method used on each boundary.

If any future development on site cannot comply with the daylight angles of the daylight control method used previously on that boundary, or is not an exemption listed under Ap15.9.iii, resource consent will be required."

AP15.7 – how to use daylight over

Add to AP15.7.i as follows:

AP15.7.i Make sure the central control arrow is pointing due North as shown in Figure 2. The angle where the indicator touches the boundary is the angle to be applied 2.5 m above ground level at the boundary. This is illustrated in Figure 3 and Figure 6.

Add a note to Figure 1 on page A15-4 as follows:

Note: The daylight over provisions may have an additional benefit of protecting to some degree the privacy of neighbouring properties, as well as to avoid shading.

AP15.8 – calculating allowable height

Add a new clause Ap15.8.iii a) and renumber and re-order the existing three provisions, as follows:

AP15.8.iii a) Solar panels up to a total of $7m^2$ in size may intrude into the daylight plane on the northern site boundary (defined for the purpose of this rule as being in a quadrant of 45 degrees east and west of north).

AP15.8.iii b) Aerials except dish antennas greater than 1m in diameter (refer to aerials rules in each zone).

AP15.8.iii ~~a)~~c) Dormer windows provided they are not more than 1.5m higher than the height permitted by the elevation indicator, and make up not more than 25% of the length of the building (measured parallel to the boundary) or a maximum length of 2.5m, whichever is the lesser.

(*Retain diagram*)

AP15.8.iii ~~b)~~d) Gable and other roof ends where the roof ridge is generally at right angles to the site boundary. The end of the ridge may be up to 1.5m above the indicator height, and the end area when viewed in elevation is allowed to be up to $2.5m^2$ in area and up to 2.5m in width. Up to one intrusion is permitted per boundary. The rule provides for gable roof ends, and other alternative roof forms as shown on the diagrams attached (see Chapter 2, Meaning of Words for definition of 'gable').

(*Retain diagrams*)

Chapter 2, definition of height

Add a note in the Height definition in Chapter 2 (Meaning of Words) as follows:

iv) in determining the height of any building, no account shall be taken of solar panels up to a total of $7m^2$ in size and not exceeding 0.5m above the maximum permitted height for the zone.

Ap15.9 – how to use daylight around

Under AP15.9, Figure 4, delete point 'p' and below the figure add the following:

Note: for use of this angle, refer to Ap15.9.

Amend AP15.9.iii b) as follows:

Buildings ~~and structures~~complying with the special height limiting line~~s~~ outside the angle.

Parts of the building or detached outbuildings may be outside the angle but only up to a certain height. To find out how high a building outside the arms may be, use the following steps:

i) Apply the daylight around angle (Figure 5) as outlined in Ap15.9.i. ~~t~~To find out how high intrusions may be.~~–~~ ~~S~~start at 2m above ground level immediately adjacent to the point of consideration of the building. The maximum height then increases 0.5m for each 2m distance from the boundary. This is a recession plane of 14^0 inclined into the site, measured from a point 2m above ground level at all points along the relevant boundary.

~~ii) The right hand side of the indicator is at 1:200 scale, and 1:100 on the left hand side. Apply the one that is appropriate to your site plan.~~

Figure 5

Replace Figure 5 (on page A15-8) with two separate diagrams for daylight around (figure 5) and daylight over (figure 6) as shown on the following two pages.

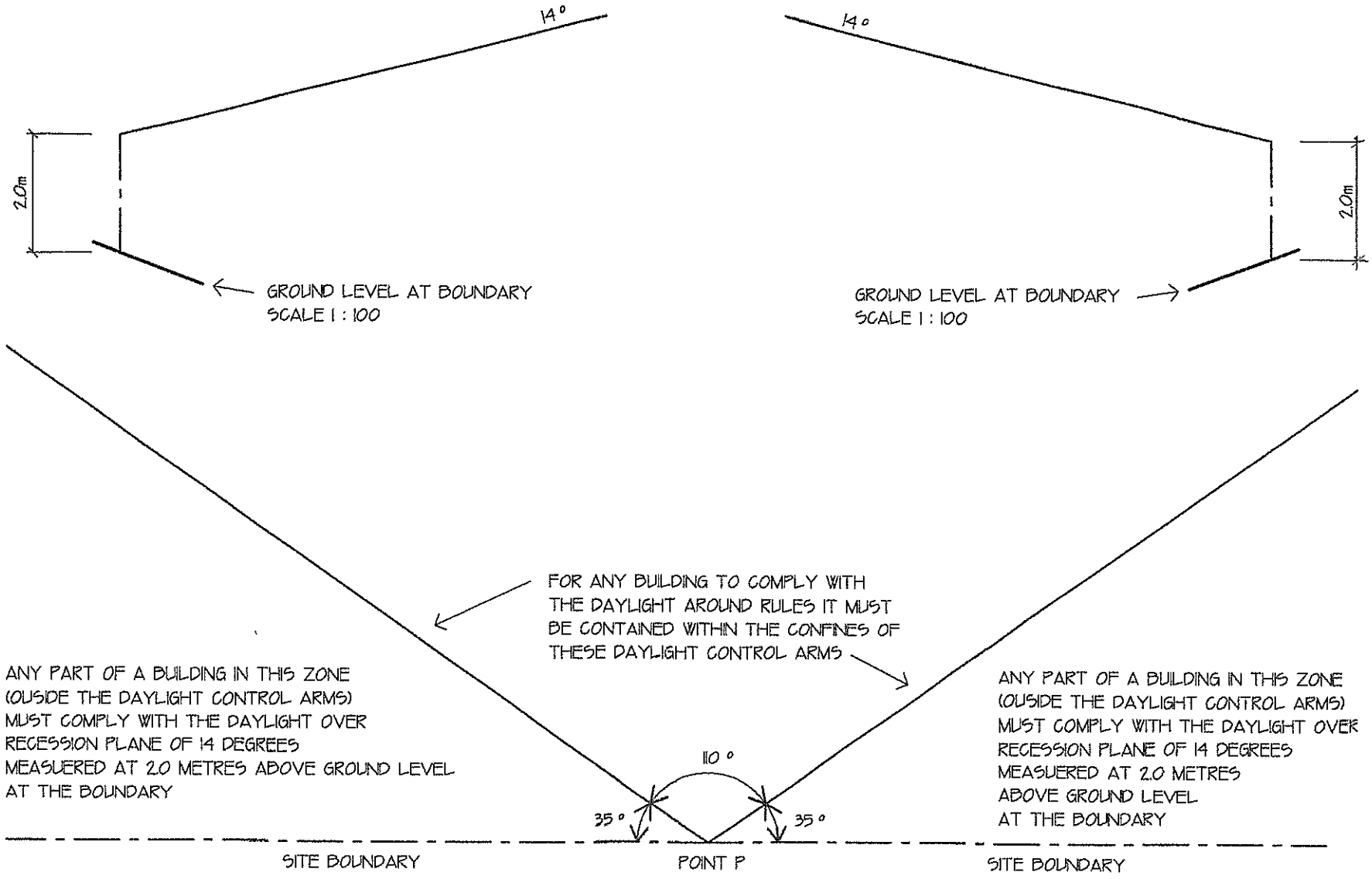

FIGURE 5 DAYLIGHT AROUND DIAGRAM

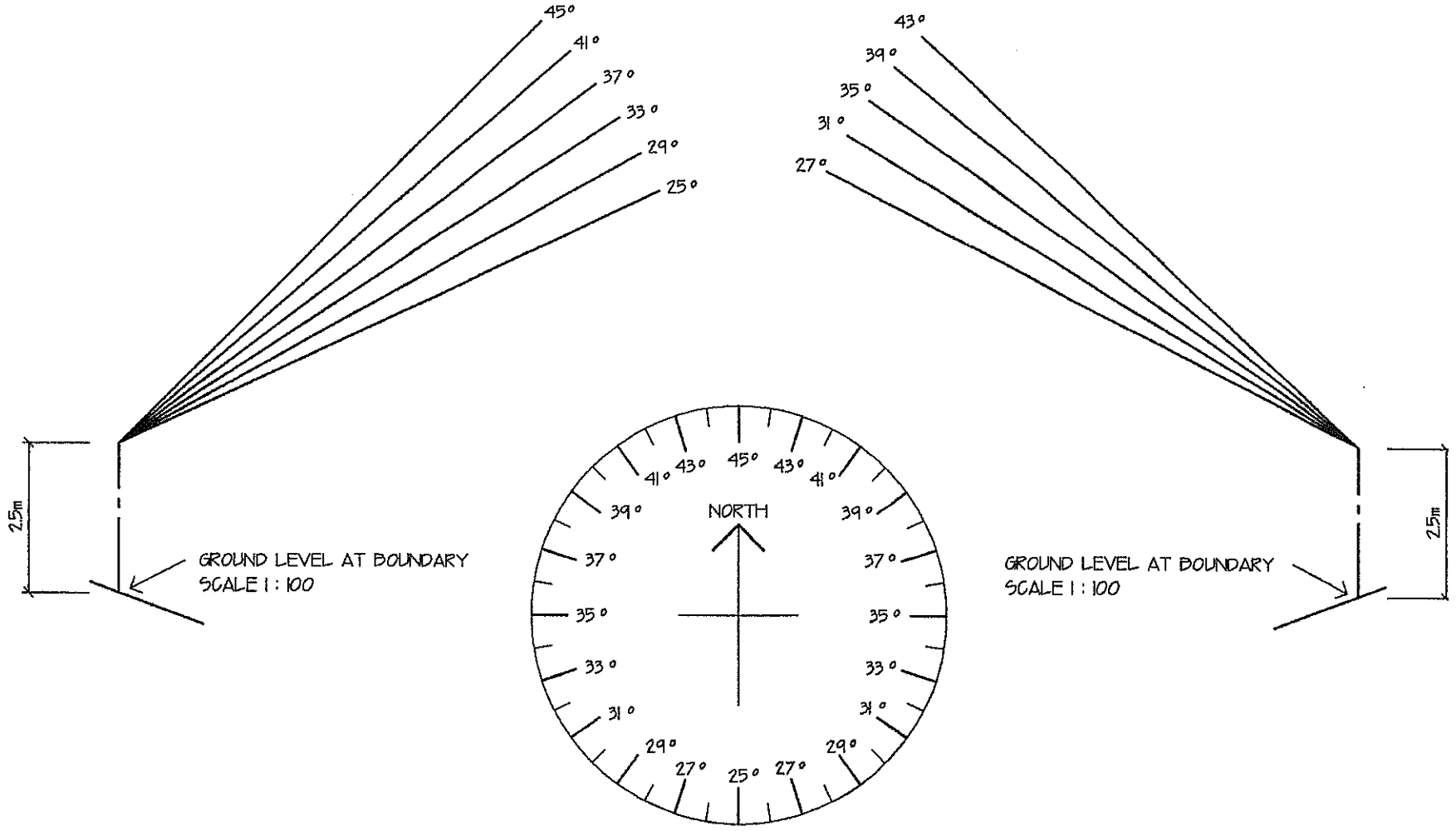

FIGURE 6 DAYLIGHT OVER DIAGRAM

Plan Change 23
AP15.8.iii a) Exceptions to the daylight over provisions

Submitter 2: Irving Smith Jack Architects	Statement 1

Details	The relaxation of daylight over controls from a north boundary make little sense because the angle is not onerous on design. The south boundary generates problems for designers because of the low angle.
Reasons	There should be no assumption that panels will always be mounted on a north facing roof.
Remedy	Solar panels should be permitted to intrude into the daylight over plane from any boundary.

AP15 Daylight appendix

Submitter 1: David and Robin Hall	Statement 1

Details	Nelson City Council has no policy on tree height. The plan changes enabling homes to take advantage of sunlight for solar hot water and home heating look good but should trees be allowed to grow tall and block the daylight angles?
Reasons	Homes in Tainui Street, Stoke, are affected by tall trees on a large neighbouring property. Some homes do not get winter sun until about 2.30pm. We are concerned about the lack of policy on tree height, looking to the future. You are invited to visit 11a Tainui Street to gain a better understanding of the problem.
Remedy	Daylight provisions should also relate to tree height.

Attachment One

NELSON CITY COUNCIL

Nelson Resource Management Plan

Proposed Plan Change 23
Daylight and Solar Panels

Section 32 Report

25 September 2010

Nelson City Council
te kaunihera ō whakatū

953028

1.0 Introduction

1.1 Purpose of report

Section 32 of the Resource Management Act 1991 (RMA) requires Council to consider alternatives and assess the benefits and costs of adopting any objective, policy, rule or method in a Plan or Policy Statement prepared under the RMA. Before publicly notifying a proposed Plan or Plan Change, the Council is required to prepare a Section 32 report summarising these considerations.

The purpose of this report is to fulfil these Section 32 requirements for proposed Plan Change 23 (Daylight and solar panels).

1.2 Steps followed in undertaking the Section 32 evaluations

The 7 broad steps which this section 32 evaluation follow are:

1. identifying the resource management issue;
2. evaluating the extent to which any objective is the most appropriate way to achieve the purpose of the RMA;
3. identifying alternative policies and methods of achieving the objective;
4. assessing the effectiveness of alternative policies and methods;
5. assessing the benefits and costs of the proposed and alternative policies, rules, or other methods;
6. examining the risk of acting or not acting if there is uncertain or insufficient information about the subject matter of the policies, rules, or other methods; and
7. deciding which method or methods are the most appropriate given their likely effectiveness and their likely cost, relative to the benefit that would likely deliver.

1.3 Description of proposed Plan Change

Some elements of Appendix 15 (daylight admission – residential) are confusing. Text and diagram changes are proposed to clarify the daylight provisions. These technical changes do not result in any material change to policy or methods in the NRMP, and are not discussed further in this report.

The Council has undertaken several initiatives to reduce barriers to the uptake of solar hot water system, including the Solar Saver Scheme to reduce upfront costs, and simplifying the building consent process. Another potential barrier is the requirement for resource consent for solar panels which do not comply with the daylight and maximum height provisions of the Nelson Resource Management Plan (NRMP). An exemption for solar panels from the daylight and maximum height provisions is included in this Plan Change, to overcome a potential barrier to their installation.

Allowing for non-compliance with the daylight provisions is proposed for up to seven square metres of solar panels on the northern boundary. This is the practical placement for solar panels, and its north facing aspect will ensure that the non-compliance does not create shade on neighbouring properties. A 0.5 metre encroachment into the maximum height provisions is proposed.

1.4 Consultation

Plan Change 23 involved advice from NCC Resource Consents planners on the problems they have had with interpretation of the text and diagrams in Appendix 15 and suggestions to improve it.

The Council's Eco Design Advisor provided practical input, based on his experience working with solar installations.

This consultation informed the content of the Plan Change.

2.0 Resource Management issue

2.1 Resource Management issue being addressed

An issue is an existing or potential problem that must be resolved to promote the purpose of the RMA. The RMA does not require the identification or analysis of issues within Section 32 evaluations. Notwithstanding this issues are being included in this report because it will be helpful to users to understand the basis and origin of the issue as this provides a context for the evaluations of the objectives and policies that follow.

The Plan Change relies on an existing operative issue within clause RI14 (Amenity Values) of Chapter 4 (Resource Management Issues) of the Plan:

> *RI14.1.ii Compromise of the use and enjoyment of individual properties as a consequence of the adverse effects of on site and neighbouring development.*

The other relevant issue is RI10 (Energy Efficiency) of Chapter 4 (Resource Management Issues) of the Plan, which includes the following issue:

> *RI10.1.iii Adverse environmental effects of the production and use of alternative energy sources.*

The specific issue to be resolved in this Plan Change is how to promote more use of renewable solar energy without impacting on access to daylight by surrounding properties.

3.0 Appropriateness in achieving the purpose of the RMA

3.1 Evaluation of the objective(s) – the environmental outcome to be achieved

Section 32 requires an evaluation of the extent to which the objective is the most appropriate to achieve the purpose of the Act. Appropriateness is not defined in the Act. In undertaking the evaluation it has generally been helpful to consider alternative forms of the objective and test them in terms of how well they met the environmental, social/cultural, and economic outcomes in Section 5, plus achieving other Part 2 matters. Often these assessments require value judgements because they are not readily quantified. Usually the objective is also tested against how well it addresses the elements of the issue.

In the case of Plan Change 23 no new objectives are being proposed. Instead the Plan Change relies on existing operative objectives within the Energy chapter of the Nelson Regional Policy Statement (page 120) and Chapter 7 – Residential Zone of the Nelson Resource Management Plan, specifically:

Nelson Regional Policy Statement objective:

EN1.2.1

Sustainable use of energy through an orderly transition from non-renewable resources to renewable resources.

Nelson Resource Management Plan objectives:

RE2.3 daylight and sunlight

Buildings and structures should be designed and sited so that adjoining sites are not unduly shaded, and there is reasonable access to daylight.

RE2.5 scale

The size and scale of buildings, structures, and activities should be compatible with the character and amenity of the residential area.

Given the operative status of these objectives, including an exemption for solar panels up to a maximum size of seven square metres is considered the most appropriate way to achieve the purpose of the RMA. It balances the value of renewable energy with the potential effects on amenity for neighbouring properties.

These exemptions for solar panels is intended to enable people and communities to provide for their social and economic wellbeing while avoiding or mitigating the adverse effects of using non-renewable sources of energy. The proposed intrusions into the daylight planes are similar to existing allowances for chimneys, dormer windows, gables and other roof ends.

3.2 Whether the policies, rules, or other methods are the most appropriate for achieving the objectives in terms of their efficiency and effectiveness, benefits and costs, and in regards to the risk of acting or not acting

3.2.1 Introduction

The evaluation of appropriateness assesses the alternative policy options under the headings of efficiency, effectiveness, benefits, costs, and the risk of acting and of not acting.

A range of criteria/matters have been used to assist in undertaking the evaluations:

efficiency the ratio of inputs to outputs. Efficiency is high where a small effort/cost is likely to produce a proportionately larger return. Includes the ease of administration/administrative costs e.g. if the cost of processing a grant or collecting a fee exceeds the value of the grant or fee, that is not very efficient;

effectiveness how well it achieves the objective or implements the policy relative to other alternatives. The likelihood of uptake of a method;

benefits social, economic, environmental - as both monetary and non monetary cost/benefits;

costs social, economic, environmental - as both monetary and non monetary cost/benefits; and

risk	the risk of taking action and not taking action in say the next 10 years because of imperfect information e.g. the cause/effect relationships are not fully understood.

The report concludes with a summary of the analysis undertaken and outlines which option best meets the requirements of Section 32 of the RMA.

3.2.2 Format of the evaluation

The following table provides an evaluation of the costs and benefits of the proposed policies, and considers whether these policies are the most appropriate for achieving the objectives, having regard to their efficiency and effectiveness. The terms efficiency and effectiveness are not defined in the RMA and, therefore, the criteria set out in Part 3.2.1 of this report have been used to help focus the analysis.

Costs and benefits have largely been assessed subjectively and or comparatively because of the great difficulty in assessing/quantifying intangible costs e.g. environmental costs. In some cases quantitative assessments of costs have been given.

The concept of risk has two dimensions, the probability of something adverse occurring and the consequence of it occurring. For example, if there is low risk associated with acting but high risk associated with not acting, then taking action is clearly the sensible thing to do. Risk is usually expressed as 'probability times consequence' and associated with a cost – usually a severe economic, social or environmental cost. Assessing the risk of acting or not acting means assessing the probability of a cost occurring and the size of that potential cost.

The policy alternatives assessed in this section will achieve the objective to different degrees and combinations of policy approaches will be used to form the final preferred option.

The following four broad options are evaluated in Table 1 (Part 3.2.3 of this report):

- Option 1 — Status quo (do nothing) - do not exempt solar panels from daylight and maximum height rules.
- Option 2 — Proceed with the Plan Change - exempt solar panels up to a total of $7m^2$ in size from the daylight and maximum height rules.
- Option 3 — Proceed with an alternative Plan Change - exempt all solar panels from daylight and maximum height rules.

As mentioned in section 1.3 of this report, the technical changes to Appendix 15 (daylight admission – residential) are technical, and do not result in any material change to policy or methods in the NRMP. Therefore no alternative approaches have been considered or evaluated.

3.2.3 Table 1: Assessment of Alternative Options

	Option 1: Status quo (do nothing)	Option 2: Proceed with Plan change	Option 3: Proceed with an alternative Plan Change
Benefits	Social Benefit (Community): Retains the existing protection of amenity and access to daylight for neighbouring properties. Economic Benefit (Council): Small financial saving from not having this Plan Change, and subsequent reporting and hearing costs.	Environmental Benefit (Community and Homeowner): Promotion of renewable energy by removing some regulatory barriers to their installation. Social Benefit (Community): The size restrictions for solar panels (as a permitted activity) provide protection of amenity and access to daylight for neighbouring properties. Social Benefit (Council): The Council is seen to be proactively overcoming barriers to uptake of solar energy. Economic (Community): Reduced number of resource consents required where solar panels intrude to a minor level on daylight angles or maximum height restrictions.	Environmental Benefit (Community and Homeowner): Promotion of renewable energy by removing regulatory limits on the scale of solar energy able to be generated on residential roofs, particularly as Photovoltaic energy becomes more financially viable. Economic (Community): No resource consents required where solar panels intrude on daylight angles or maximum height restrictions.

	Option 1: Status quo (do nothing)	Option 2: Proceed with Plan change	Option 3: Proceed with an alternative Plan Change
Costs	Environmental Cost (Community): No exemptions for solar panels, and potential requirements for resource consent, may discourage some residents from installing solar energy. Social Cost (Council): Perception that Council is being contradictory by promoting solar energy through the Solar Saver programme and other initiatives, and discouraging it through its Resource Management Plan. Economic Cost (Community): Cost of resource consent process for residents installing solar panels which intrude on daylight angles or maximum height restrictions.	Environmental Cost (Community): Limited exemptions for solar panels, and requirement for resource consent in some cases, may discourage some residents from installing solar energy. Any intrusion into daylight planes is an environmental cost for neighbours, but this is mitigated by the location of panels on the north facing side of the house, and the limit on the size of the panels to be exempted. Economic Cost (Council): Small financial cost of undertaking this Plan Change, and subsequent reporting and hearing costs. Economic Cost (Community): Resource consent will still be required where solar panels are intrude on daylight angles or maximum height restrictions, and are greater than 7 square metres in size, or more than 0.5m above the height limit.	Environmental Cost (Community): The potential for impacts on residential amenity of neighbours is much higher for this option than for option 2, particularly if very large solar panels are installed in future. Economic Cost (Council): Small financial cost of undertaking this Plan Change, and subsequent reporting and hearing costs.

	Option 1: Status quo (do nothing)	Option 2: Proceed with Plan change	Option 3: Proceed with an alternative Plan Change
Benefit and Costs Summary	The costs far outweigh the benefits of the status quo option.	There are environmental, social and economic benefits from pursuing this Plan Change. There are no social costs, and the minor environmental and economic costs are outweighed by the benefits.	This option potentially has the greatest environmental and economic benefits for the community as a whole, but also higher environmental costs for neighbours.
Effectiveness and Efficiency	The status quo option is an inefficient and ineffective way to meet the objectives of the Plan. In particular, triggering resource consent for minor incursions by solar panels into northern daylight angles and maximum height is inefficient.	The Plan Change is an efficient and effective way to address the operative issues and achieve the objectives. <u>Efficiency</u> Permitting minor incursions by solar panels into northern daylight angles and maximum height avoids regulation of minor effects. <u>Effectiveness</u> Triggering resource consent for significant incursions by solar panels into northern daylight angles and maximum height is an acceptable balance between promotion of renewable energy and protection of residential amenity.	This option is less efficient and effective than option 2 because it does not discriminate between minor and more significant shading/daylight impacts on neighbouring properties.

	Option 1: Status quo (do nothing)	Option 2: Proceed with Plan change	Option 3: Proceed with an alternative Plan Change
Risk of Acting or Not Acting if there is uncertainty or insufficient information	Council has sufficient information on Option 1 to make a decision on its effects. Therefore there is no risk of acting of not acting.	Council has sufficient information on Option 2 to make a decision on its effects. Therefore there is no risk of acting of not acting.	Council has sufficient information on Option 2 to make a decision on its effects. Therefore there is no risk of acting of not acting.

4.0 Conclusion

An evaluation of three alternative options of status quo (do nothing), proceed with the Plan Change and proceed with an alternative Plan Changes has been undertaken in Part 3.2.3 of this report. The report has evaluated these alternative options against the benefits, costs, effectiveness, efficiency, the risk of acting and the risk of not acting.

This evaluation has clarified that Option 2 (proceed with this Plan Change) balances environmental, social and economic benefits, and is the best option in regards to its efficiency and effectiveness with minimal risks of acting and potential higher risks of not acting.

The alterations to the Plan as a result of the proposed Plan Change will be:

- an amendment to the height definition in Chapter 2 (Meaning of Words) provides an exemption for solar panels up to a total of $7m^2$ in size and not exceeding 0.5m above the maximum permitted height for the zone.
- A change to Appendix 15 to allow solar panels up to a total of $7m^2$ in size to intrude into the daylight plane on the northern site boundary (defined for the purpose of this rule as being in a quadrant of 45 degrees east and west of north).

The Plan Change relies on existing operative issues (amenity values and energy efficiency) and an existing operative objective in the Nelson Regional Policy Statement (sustainable use of energy).

These issues and the objective are not being considered in this report because of their operative status.