

**CHRISTCHURCH CITY PLAN**

**PROPOSED PLAN CHANGE**

**CHRISTCHURCH INTERNATIONAL AIRPORT**

**RUNWAY END PROTECTION AREAS**

**– RUNWAY 11/29 ('CROSS-WIND RUNWAY')**

**Assessment pursuant to Section 32 of the Act**

**Statutory Context**

Section 74 of the Resource Management Act 1991 (the Act) requires that when changing its City Plan, the Council must have regard to, amongst other things, the provisions of Part II of the Act, its function under Section 31 and its duties under Section 32.

This assessment has been prepared to fulfill the requirements of Section 32 of the Resource Management Act. It should be read in conjunction with a copy of the proposed plan change, and the explanation contained within that document.

Section 32 of the Act requires Councils to consider alternatives and evaluate the likely costs and benefits before adopting any amendments to their District Plans. Section 32, as recently amended, also requires an examination of the proposed amendments in the context of the stated objectives of the City Plan. The following provides an evaluation of these matters in relation to this proposed change to the Christchurch City Plan.

## Redefining the Runway End Protection Areas ('REPA's) for Runway 11/29

Recent advice by airline operators is that future aircraft fleet additions (principally B777 and B787) are more sensitive to strong cross-winds indicating a requirement to more fully utilise the cross-wind runway 11/29 at Christchurch International Airport. This has implications for land use planning for approach 'strip' surfaces and REPA provision.

New Zealand Civil Aviation Authority (NZCAA) Advisory Circular AC139-06A (Part 139) prescribes the regulator's methods to show compliance with design requirements for the certification, operation, and use of aerodromes. Chapter 4 of this document deals with *Obstacle Restriction and Removal*. The chapter begins by stating "*The obstacle limitation surfaces of an aerodrome are defined surfaces in the airspace above and adjacent to the aerodrome. These obstacle limitation surfaces are necessary to enable aircraft to maintain a satisfactory level of safety while manoeuvring at low altitude in the vicinity of the aerodrome.*"

One of the key surfaces defined by Part 139 is the "strip" which is an area of land kept clear of all obstacles surrounding the sealed runway surface. The existing strip for Runway 11/29 (cross-wind runway) is 150 metres wide (extending 75m either side of the runway centerline). According to Part 139, this strip width dimension is applicable to non-precision approach runways that cater for international and domestic aircraft operations with, *inter alia*, a non-visual aid providing only lateral (horizontal) guidance adequate for a straight-in approach, without vertical (glideslope) instrument guidance. However, the dimension is inadequate for precision approach runways that cater for international and larger domestic aircraft operations served by an instrument landing system. For future operational flexibility it is considered that planning allow for Code C and above aircraft, which requires a runway to taxiway centerline clearance for instrument (precision) operation conditions of 300m in width.

Modifying the ‘strip’ width to 300m for Runway 29/11 (cross-wind runway), that is extending 150m either side of the runway centerline, has no impact on surrounding landowners, but its absence will have significant implications for airport operations in future.

REPA relate to land adjacent to the ends of the airport runway strips that are required to be kept free of obstructions or activities that could interfere with aeronautical navigation. If the existing REPAs for the above runway are widened and lengthened to meet future precision approach operations with the larger and faster aircraft including the B777-200, existing City Plan Rule 9-6.3.7 should be amended. This would require application of amended REPA dimensions to apply to additional areas of land currently zoned Rural 5 land at the eastern end of the cross-wind runway 11/29 together with additional land zoned Rural 5 and 6 at the western end of the cross-runway. Any additional dwelling, mass assembly of people, or other limitations as stated through the present rule, would be prohibited activities within the amended REPAs. Under the operative City Plan provisions, subdivision of any of the affected allotments is already a non-complying activity, with the exception of land owned by Harewood Golf Club, as all existing allotments within the amended REPA have insufficient area to be further subdivided to form compliant allotments. The establishment of any additional dwellings on these allotments would also be a non complying activity under the existing City Plan provisions.

The regulatory effect of the proposed ‘Deferred REPA’ on the Rural 5 zoned land to the east (City end) of the cross-wind runway 11/29, and the Rural 5 & 6 zoned land to the west of the cross-runway would be the application of a further provision limiting the establishment of long-term structures and/or intensive land use activity within those further land areas identified. Under the present City Plan provisions, subdivision of any allotments in these areas (except the Golf Course site) would be non-complying. The establishment of any additional buildings, structures or activities resulting in effects such as: the mass assembly of people; release of substances impairing visibility including dust, smoke or glare; the production of direct light beams which

could interfere with the vision of a pilot; the production of radio or electrical interference which could affect aircraft communication or navigational equipment; and the attraction of birds would be restricted discretionary activities under the proposed Deferred REPA provisions.

Existing City Plan provisions currently limit residential and other noise sensitive activities within the composite 65 dBA Ldn / 95 SEL dBA Air Noise Boundary, and within the 55dBA Ldn noise boundary. New dwellings within the composite 65 dBA Ldn / 95 SEL dBA Air Noise Boundary are prohibited and no resource consent can be granted, except for specified lots where a compliant allotment, without a dwelling, existed as at 24 June 1995, (none within the REPAs). Within the 55dBA Ldn noise boundary, new residential units or buildings such as offices or retail activity are required to be insulated from aircraft noise. The majority of the area affected by the proposed eastern extent of the expanded REPA is contained within these noise boundaries, and also within the current 'Special Purpose (Airport) Zone'.

Properties within the western extent of both the expanded and Deferred REPA areas are contained within the 65 dBA Ldn / 95 SEL dBA Air Noise Boundary and the land is zoned Rural 5 and Rural 6. As such, any new residential unit, educational activity, accommodation, healthcare facility or new elderly person housing unit or complex is prohibited.

There is therefore little additional effect from the Proposed Change on the rules relating to the additional land affected by these proposals. Additional effects would be to prohibit expansion of existing buildings, together with limiting new buildings or structures, including new recreational buildings on the Harewood Golf Course.

### **Effect on the Surrounding Community**

As a regulatory method, a Plan Change affords the Council, the wider community and properties affected by the proposal an opportunity to consider the effects of expanding the existing REPA and 'strip' width provisions in the

City Plan. It is considered that the amendments proposed by the requested Plan Change improve the current situation, in that they will provide for more efficient utilisation and development of the land resources and Airport operations, in particular the potential for increased use of the cross-wind runway 11/29. Increasing the efficient use of the existing runway facilities will also delay the need to provide for a second runway parallel to, and to the west of the main runway, in order to accommodate continued growth in air traffic movements. The proposed Change also provides greater long term certainty for surrounding residents and the City Council as to the future requirements for Airport operations at both ends of the Runway 11/29 (cross-wind runway).

For those properties affected by the north western extent of Runway 11/29 (cross-wind runway), the expanded REPA and Deferred REPA provisions result in similar levels of land use restriction to those currently imposed by the operative City Plan within the 65 dBA Ldn / 95 SEL dBA Air Noise Boundary.

To the east, or City end of Runway 11/29 (cross-wind runway), the intensity of rural land use activity within the area to be affected by the expanded REPA is already controlled through City Plan standards in relation to subdivision, and in some cases additional dwellings, due to the 65 dBA Ldn / 95 SEL dBA Air Noise Boundary. The amended provisions may also create some additional limitations for these properties in terms of the ability to intensify types of rural activity (largely depending upon the potential atmospheric effects of such activities).

No alteration of the existing Air Noise Contours is necessitated as a result of the proposed REPA modifications, or the attendant SIMOPS operations, within the life of the current City Plan.

### **Consultation**

The applicant has consulted with City Council officers.

### **Objectives and Policies of the City Plan**

Relevant objectives of the City Plan are contained within Volume 2 of the Plan, and are attached to this assessment as **Appendix 1**. These objectives are discussed below with reference to their relevant policies.

Section 74(2) requires regard to be had to any Proposed Regional Policy Statement, Plan, or Management Plan prepared under any other Acts. With regard to this plan change only the Regional Policy Statement is considered relevant, and the pertinent objectives and policies of that document are attached as **Appendix 2**.

### **Urban Growth**

**Objective 6.3** seeks to accommodate peripheral urban growth, where such growth is consistent with a primary emphasis on urban consolidation, and which makes the most efficient use of infrastructure. **Policy 6.3.7** relates to discouraging noise sensitive activities around the Christchurch International Airport, and recognises within the respective explanation and reasons for this policy that it *“must therefore be accepted that the continued operation and future growth of the airport will have some adverse impact on residents in the surrounding area”*.

In this sense, the proposed plan change is consistent with this urban growth objective of recognising that urban growth should be managed to ensure the efficient use of infrastructure.

### **Transport**

**Objective 7.1** seeks the provision of a safe, efficient and sustainable transport system. **Policy 7.1.4** relates to making efficient use of the transport system, particularly its infrastructure. Whilst the associated explanation and reasons for this policy relate primarily to public transport, modal options and land use, it is considered that this policy is equally as relevant in terms of the efficient operational use of the infrastructure represented by the airport runways.

**Objective 7.7** aims to maintain and improve transport safety throughout the City. **Policy 7.7.5** relates to the protection of air corridors for aircraft using

Christchurch International Airport through height and use restrictions on adjacent land areas.

**Objective 7.8**, and corresponding **Policies 7.8.1, 7.8.2, and 7.8.3** seek to provide recognition of the Christchurch International Airport, and the provision for its effective and efficient operation and development, as well as the avoidance or mitigation (including limitation) of the noise effects of such operations on surrounding areas. The relevant explanation and reasons for these policies recognise that it is essential to protect the operation of facilities such as the Airport from other land uses in order to allow it to function effectively and safely. It is also necessary to have regard to the noise effects of the Airport's operations, particularly upon residential and other noise sensitive activities. Means of achieving this include both constraints on the location and / or insulation of various types of land uses, as well as the definition of noise contours reflecting the noise effects dependent on the utilization of runway capacity.

The proposed Plan Change is considered consistent with the Policy 7.8.1 by ensuring that the current runway system will be efficiently utilised and that continued operational safety and development of Christchurch International Airport is provided for. In particular, this policy recognises that land use controls are as necessary to safeguard the continued operation and development of facilities at the International Airport as they are essential to the development and economic well being of the City. The proposed Plan Change is also considered to be consistent with Policies 7.8.2 and 7.8.3 in that the proposed Plan Change will not increase noise nuisance effects on the surrounding rural area beyond those currently reflected by existing air noise contours to the northwest or southeast of the Airport.

There will be no increase in take-offs to the northeast. Approaches to runway 11/29 over the City will remain proportionately consistent with runway current use levels reflecting the incidence of north-west wind events.

## **Rural**

**Objectives 13.1 and 13.3** respectively address the enablement of the continued use or extension of rurally based resources while recognising their operational needs and the potential environmental effects of such activities. These objectives also address those infrastructures located in rural zones which represent substantial public investment (including the International Airport) as justifying protection from development which could otherwise compromise their operations. The explanation and reasons attendant to these objectives promote the ability of such facilities to continue to provide services to the City and require that they be managed in a manner which maintains the open space character and low density of built form of the rural area, as well as ensuring the efficiency, safety and costs of such infrastructure operations are sustained and not unduly impaired. It is noted that SIMOPS will not necessitate the western extension of Runway 11/29 (across Pound Road) within the life of the current City Plan. Should such an extension be required in the longer term its facilitation will be reliant on appropriate planning mechanisms and processes.

## **Overall Assessment of Objectives**

The proposed Plan Change will facilitate increased use of Runway 11/29 (cross-wind runway) and assist in the effective, safe and efficient operation and future development of the land resources within Christchurch International Airport. Expansion of the REPAs is considered necessary to safeguard both current and future aircraft operations and the continued development of the Airport, as the need to safely accommodate air passenger growth is essential to the development and economic well being of the City as a whole.

## **Analysis of Benefits, Costs and Effectiveness of Alternatives**

There are four alternative planning methods to deal with the issues identified above. These are:

- OPTION 1 – Do nothing (i.e. do not amend the City Plan);
- OPTION 2 – Expand the REPA and its strip width within the City Plan to relate to the existing Runway 11/29 alignment only;
- OPTION 3 – Expand the REPA and its strip width within the City Plan to relate to both the existing Runway 11/29 alignment, and its likely future re-located alignment (Deferred REPA), provided for in the Airport Master Plan.
- OPTION 4 – Designation: provide for an increase in the land area designated for ‘Airport Purposes’ to encapsulate all of the lands affected by both the extension of the REPA and its strip width for the existing Runway 11/29 alignment and for the future re-positioned REPA/proposed southern realignment of Runway 11/29.

In the above context the term ‘strip width’ refers to areas of land kept clear of all obstacles surrounding the sealed runway surface.

Evaluation of these alternatives has therefore assessed:

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

It has further taken into account:

- The benefits and costs of policies, rules, or other methods; and
- The risk of acting or not acting if there is uncertain or insufficient information about the subject matter of the policies.

‘Effectiveness’ in this context means how successful a particular alternative option might be in addressing the issues, and in terms of achieving the desired environmental outcomes reflected in the objectives and policies of relevant Plans.

'Efficiency' means comparing the benefits of what is proposed to the costs. The most efficient method is that which will achieve the desired environmental outcome at the least overall cost. It involves establishing both the costs and benefits (including social and economic costs and benefits to the community and the Council) in terms of how the method contributes to, or runs contrary to, achieving the objectives and policies concerned.

### **Benefits and Costs of the Plan Change**

The relevant assessment in this instance is whether expanding the REPA and 'strip' width provisions in the City Plan in the way proposed, is the most appropriate method to provide for the growth of Airport operations; to provide for the health and safety of people and communities, and to assist in the avoidance of any potential effect from Airport operations of a low probability which would have a high potential impact, for example aircraft overshooting or undershooting the runway. In this context it should be noted that the use of the cross-runway is partially dependent on the occurrence and extent of unusual and unpredictable weather phenomena such as wind shear effects resulting from northwest conditions. Such conditions can mean that the use of the main runway presents increased safety risks for certain aircraft types, consequently most aircraft prefer to use the cross-runway in these conditions.

Benefits and costs of each of the methods identified attach to different sections of the community as summarized in **Appendix 3**.

### **Effectiveness**

The effectiveness of not expanding the REPA (**Option 1**), is considered to be less consistent with the achievement of those objectives in both the Regional Policy Statement and the City Plan referring to the safe and efficient use of physical infrastructure, and the maintenance and enhancement of transport safety throughout the City. As noted earlier, enabling an increase in the efficient use of the existing runway facilities will also delay the need to provide for a second runway parallel and to the west of the main runway, in order to accommodate continued growth in air traffic movements.

**(Option 2)**, the provision of an expanded REPA as per the FAA requirements is consistent with those objectives relating to the efficient use of transport infrastructure, as well as the provision of a safe and sustainable transport system. This option only partially recognises the requirement for the effective and efficient operation and development of the International Airport in the short term, but not in the longer term, which envisages the phasing in of SIMOPS, but not to an extent that would affect the performance and appropriateness of the existing noise contours within the City Plan. In this context it should also be noted that with the provision of the US Antarctic Program services and direct international flights to the USA, it is desirable in insurance terms that FAA standards are reflected in the safety provisions of the Airport's operations.

**(Option 3)**, this option incorporates both FAA standards for the expanded REPA and the opportunity of some regulatory protection for the land affected by the Deferred REPA which would align with the reconstruction of Runway 11/29 at a new location some 182.5m to the south of the present runway, and utilising the existing runway as a taxiway. In the interim, the existing Runway 11/29 would be utilised to a greater extent and by a wider range of aircraft than currently. This option is consistent with objectives that relate to the efficient operation and development of the International Airport and is also effective at providing for the future growth of airport operations.

**(Option 4)**, raises the potential for use of 'designation' powers available under the RMA to Christchurch International Airport Limited. This method would also enable both the land affected by the expanded REPA and the Deferred REPA to be fully protected for any existing and future 'Airport Purposes'. Such a mechanism would therefore be effective in meeting the relevant objectives within the City Plan. It would result in a high degree of control of any future land use activities on the land concerned. The consent of CIAL as the 'requiring authority' would be necessary for any land use activity by any other party, even where CIAL had no other interest in the land concerned. A period of ten years has been considered by the Environment Court to be an

appropriate period within which to give effect to any designation. That period also coincides with the life of the City Plan, prior to the statutory requirement for it to be reviewed. As the area of land affected by the ‘Deferred REPA’ proposal is unlikely to be required for that purpose within such a timeframe, the designation method is considered to be less appropriate than amendments to the existing City Plan provisions. An alternative, of enabling some potential forms of development to be considered subject to ‘restricted discretion’ within the Deferred REPA is considered to provide a more equitable approach to the management of the land resources concerned.

### ***Conclusions***

The use of cross-wind runway 11/29 is subject to unusual and unpredictable weather phenomenon as a result of northwest wind conditions from time to time, including ‘wind-shear’ effects. These require particular attention to operational safety requirements, including the potential for aircraft to overshoot or undershoot when landing. There are obvious consequences with regard to the necessity to impose the FAA designated Runway Protection Zone standards to Runway 11/29 by extending the existing REPA and strip widths, and through the provision for deferred REPA within the Plan to accommodate a realigned Runway 29/11 in future.

It is considered that Plan provisions enabling both expanding the existing REPA and ‘strip’ width, as well as protecting the land affected by the Deferred REPA (Option 3), or alternatively designating these amended REPA areas (Option 4) would both represent effective methods of meeting the relevant Objectives as set out in the City Plan.

Option 3 also provides a more efficient long term planning method to provide for expansion of the existing REPA and ‘strip’ width, and the protection of the land involved in the Deferred (re-located) REPA provision. This is due mainly to the high level of economic benefit to the region, when compared to the costs of immediate designation and land purchase of land areas whose activities are already highly restricted by the City Plan by being situated within, or in close proximity to the Christchurch International Airport. This

option is considered to be a more efficient and appropriate approach than designation, given the longer term timescale likely to apply to the implementation of the Deferred REPA provisions. In this way, consideration can be given to the purpose and effects upon the efficient and sustainable development of the Airport of any proposed land uses in the Deferred REPA. This offers an element of protection for the longer term utilization of land likely to be required by both the deferred REPA and the runway alignments, both of which are considered to be necessary to enable the growth and functional operational benefits to airport activity as outlined in the Airport Master Plan 2006.

It is extremely difficult for airports to retrospectively create REPA zones. In this regard, CIAL seeks to provide for the forward looking regulatory management of the land required for the Deferred REPA, and ensure such areas are not intensively developed in the interim period before they are needed for this purpose. CIAL regards the FAA REPA standards as being the most appropriate runway end protection for Christchurch International Airport.

Based on the above assessment, it is concluded that the proposed Plan Change (Option 3) better achieves the objectives and policies of the City Plan than the existing provisions. Similarly, the benefits of the proposed changes, especially the long term provision for the, operational safety and efficiency and growth of the Airport, are considered to outweigh environmental and other 'costs' in this instance.

## APPENDIX 1 – CITY PLAN POLICY FRAMEWORK

### **Objective: Peripheral Urban Growth**

**6.3 Peripheral urban development of a scale and character consistent with a primary emphasis on urban consolidation; which avoids, remedies or mitigates adverse impacts on water, versatile soils, significant amenity values and other natural resources; and which makes efficient use of physical infrastructure.**

#### **6.3.7 Policy : Airport operations**

**To discourage noise-sensitive activities within the 50 dBA Ldn noise contour around Christchurch International Airport.**

##### **Explanation and reasons**

*... “Christchurch International Airport is a facility of major importance to the regional economy. Domestic and international movements, freight and Antarctic operations utilise the airport 24 hours a day, 365 days a year, and a non-curfewed operation is a pre-requisite for the sustainable management for airport purposes and in the long term of the relevant natural and physical resources. It is not possible for noise associated with aircraft operations to be contained within the boundaries of the airport. It must therefore be accepted that the continued operation and future growth of the airport will have some adverse impact on residents in the surrounding area.”..*

##### **Environmental results anticipated**

The following environment results are expected from the objective and policies relating to peripheral urban expansion:

- Avoidance of costly extensions to or duplication of services and infrastructure and any attendant adverse environmental effects.

- Improved utilisation of existing urban facilities including shops, schools, medical facilities and the like.
- Retention of the greater majority of the City's stock of versatile soils.
- Maintenance or enhancement of landscape and ecological features, and the margins of waterways and the coast.
- Avoidance of development in locations at high risk of loss or damage from natural and other hazards.
- Continued unrestricted operation and growth of operations at Christchurch International Airport and protection of future residents from noise impacts.

## **Objective : A sustainable transport system**

### **7.1 A safe, efficient and sustainable transport system.**

#### **Policies: Minimising adverse effects**

##### **7.1.4 To make efficient use of the transport system, particularly its infrastructure.**

### **7.7 Objective : Transport safety**

**The maintenance and improvement of transport safety throughout the City.**

#### **7.7.5 – 7.7.6 Policies : Air and rail safety**

##### **7.7.5 To provide protection of air corridors for aircraft using Christchurch International Airport and Wigram Airfield through height and use restrictions.**

#### **Explanation and reasons**

*“Certain air spaces have been defined around the City for flight paths for planes approaching and leaving Christchurch International Airport and Wigram Airfield. Height restrictions and land use controls are required to ensure these flight paths remain clear from such obstructions as trees, aerials or concentrations of birds as may be associated with landfill sites, free range pig farming, or bodies of open water. Aircraft using the City's airports may be carrying large numbers of passengers or approach the airport over a populated area. It is therefore critical in terms of safety to provide for protection of the air corridors used to approach and leave the airports.”*

## **7.8 Objective: Access to the City**

**Recognition of the need for regional, national and international links with the City and provision for those links.**

### **7.8.1 - 7.8.3 Policies : Airport services**

**7.8.1 To provide for the effective and efficient operation and development of Christchurch International Airport.**

**7.8.2 To avoid, remedy or mitigate nuisance to nearby residents through provisions to mitigate the adverse noise effects from the operations of the Christchurch International Airport and Wigram Airfield.**

**7.8.3 To limit the noise generated by aircraft movements at Christchurch International Airport.**

#### **Explanation and reasons**

*“It is essential to protect the operation of transport facilities from other land uses to allow them to function effectively and safely. It is also necessary to protect outside uses from the noise and related activity associated with transport facilities. The two principal ways of minimising impacts of the land uses on each other is by separating the transport facility from other activities through a buffer of land, or by requiring the various land uses to meet stringent conditions to minimise impacts. In addition, the amount of aircraft noise that can be generated by aircraft movements associated with the airport will also be limited.*

*Controls have been in place for many years to limit the extension of residential development towards the International Airport because of*

*the potential conflict between airport activities and residential activity. There is unavoidable nuisance associated with the International Airport, particularly noise, and the nature of its operation does not fit well with noise sensitive activities, such as residential occupation.*

*Controls are necessary to safeguard the continued operation and development of facilities at the International Airport as they are essential to the development and economic well being of the City. Similarly, surrounding land uses also need protection from the adverse effects of these facilities which, are required to operate on a continual basis. The potential effects of airport operations are influenced by the density of surrounding development, particularly residential development and the degree to which buildings are insulated against the impacts of noise. Rules will be primarily aimed at new residential activity and other noise sensitive uses, but will also apply to the extension of existing residences and buildings.*

*In the future, while aircraft are likely to become less noisy, more aircraft movements are expected to occur. It is anticipated that these factors may cancel each other out in terms of noise impacts on surrounding activities, resulting in a long term continuance of current noise levels.*

*If further residential development takes place in the vicinity of the International Airport, it is likely this could lead to requests to restrict and curfew airport operations. This could in turn have adverse effects on the economy of the City and beyond. Residential development closer to this airport potentially subjects residents to adverse noise impacts and a buffer surrounding this airport is considered the most effective means of protecting its operation.*

*In the urban area, an area of land in the north-west of the City is affected by noise contours projected from cross runway 11/29. Within the existing urban area affected by the 55 dBA Ldn noise contour, new buildings will be required to be subject to some insulation as a measure for mitigating the effects of aircraft noise.*

*In addition to limiting the density of residential and other noise sensitive activities, requirements for the insulation of buildings have been developed for activities in the vicinity of the Christchurch International Airport. These requirements relate to the position of the building in relation to projected noise contours which take into account the noise produced by aircraft and aircraft operations over a 24 hour period. Within the 55 dBA Ldn noise contour and shown on the planning maps, insulation measures are required for buildings, depending on the sensitivity of the internal building space for specified uses. These measures apply between the 55 dBA Ldn line and the 65 dBA Ldn/95 SEL dBA line, the latter composite line being defined as the "air noise boundary" and will entail higher levels of noise insulation as the levels of noise exposure increase toward the Air Noise Boundary.*

*Within the Air Noise Boundary, where noise levels are expected to be most intrusive, and potentially damaging to health, no new residential buildings or other noise sensitive activities are permitted. A limited exemption applies to a small number of existing larger vacant allotments within the Air Noise Boundary which were existing as at 24 June 1995 subject to compliance with insulation requirements.*

*The rules are more flexible for alterations to existing buildings within the Air Noise Boundary, where the "affected building" already exists or for some vacant lots existing at 24 June 1995.*

*At the 65 dBA Ldn noise contour, Christchurch International Airport will be required to limit aircraft noise to 65 dBA Ldn. The limit equates with the utilisation of the existing runways at full capacity.*

*Residential or other noise sensitive development will not be allowed to occur within the 65 dBA Ldn noise contour, and between the 55 and 65 dBA Ldn contours any new or replacement residential development and all additions to living or bedroom areas on properties will be required to be insulated against noise. Appendix 11 (to Volume 3, Part 8, General City Rules) contains standards to ensure noise sensitive activities are required to be insulated against noise.*

*In this explanation, "noise sensitive activities" means:*

- *Residential activities other than those in conjunction with rural activities and which comply with the rules in the Plan;*
- *Education activities including pre-school places or premises, but not including flight training, trade training or other industry related training facilities within the Special Purpose (Airport) Zone;*
- *Travellers accommodation except that which is designed, constructed and operated to a standard to mitigate the effects of aircraft noise on occupants;*
- *Hospitals, healthcare facilities and any elderly persons housing or complex"*

### **13.1 Objective: The rural land and soil resource**

#### **(a) That the rural land and soil resource be managed to:**

- **enable rural resources to continue to be used for a variety of rural activities while recognising their operational needs and the potential environmental effects of such activities;**
- **provide scope for the appropriate establishment or extension of urban activities; and**

- retain the stability and character of rural soils, and the life supporting capacity of the soil resource, including the potential for primary production, and to safeguard natural values.

**(b) That the open space character and low density of built form which distinguish the rural area be maintained and enhanced.**

### **Reasons**

*Within the rural area there is existing infrastructure, including the International Airport and the roading network, which represents substantial public investment and which justifies protection from development which could compromise their operations. Similarly the effect of development on the operation of existing rural activities (such as orchards or intensive livestock management) will be taken into account.*

#### **13.1.4 Policy: Non-rural activities**

**To ensure that activities not associated with rural resources or the Christchurch International Airport or urban expansion only occur on a scale or extent consistent with avoiding or mitigating adverse effects on rural resources and the character of the rural area.**

### **Explanation and reasons**

*“...In addition, there are many existing infrastructural, institutional and other facilities in the rural area, of which the Christchurch International Airport is the major example...”*

#### **13.1.7 Policy: Rural dwelling densities**

**To control rural dwelling densities in recognition of the particular resource limitations, including any need to protect ground water quality, International Airport operations, landscape features, flood hazard and retention areas, soil versatility and control potential demand for services.**

## **Explanation and reasons**

*“...The Plan does however, contain provision aimed at limiting the density of dwellings in association with a range of potential uses in rural areas. ... Dwelling house density will vary for particular parts of the rural area and has also been set having regard to soil versatility... and the sensitivity of residents to certain operations that can only locate in the rural area, such as Christchurch International Airport. Accordingly, the density limitations on rural dwellings reflect a range of potential effects and acceptable outcomes depending on the location...”*

### **13.3 Objective: Rural infrastructure**

**That infrastructure in the rural area be:**

- maintained to provide for the safe and efficient operation of activities in rural areas; and**
- established or improved which enables soil, water and air qualities to be maintained and enhanced, and impacts on amenity values to be minimised.**

## **Reasons**

*“..Public investment in infrastructure in the rural area includes road, air and rail facilities as well as institutions such as hospitals and prisons. A number of these facilities because of their nature, need to locate in a rural area or have been located there for a considerable period of time. The roading network, as well as servicing rural users, is particularly important in terms of its capacity to act efficiently as a link between the urban area of the City and surrounding districts and regions. A similar function is provided by rail services in linking the City with other areas of the country, for passengers and freight. The International Airport occupies a large land area and services steadily expanding tourist, travel, and transport functions essential to the economy of the region, and the country as a whole. The ability of these facilities to continue to*

*provide services to the City requires that they be sustainably managed in a manner which ensures their efficiency, safety and costs of operation are not unduly impaired..."*

### **13.3.1 Policy : International Airport operations**

**To ensure development takes into account the impacts of the operations of the International Airport, particularly noise effects.**

#### **Explanation and reasons**

*Christchurch International Airport has a core area containing runways, terminal buildings and associated commercial activities and facilities. However, the airport also has a significant impact on a wider surrounding support area. These impacts relate to approach fans beyond the ends of the main runways and cross runways, which mainly affect the height of buildings and structures, but on a wider scale the major impacts relate to the noise environment around the airport. Matters influencing the potential noise impacts from the operation of the airport, now and in the future, include the frequency of aircraft movements and night operations, as well as aircraft mix and military use.*

*A substantial area of land adjacent to the airport is affected by relatively high levels of noise intrusion which become progressively greater with proximity to airport approach and take-off paths for the main runway and cross runways. Accordingly, the Plan provides progressively greater degrees of control over development in these areas, as the levels of noise impacts identified in the Plan become greater. These include an area close to the airport in which buildings occupied by noise sensitive activities are strongly restricted. Further away, the density of rural dwellings will be kept to a level consistent with ensuring that the number of people living within the noise affected environment is kept to a reasonable minimum, and noise attenuation*

*measures through insulation of buildings will be required to be undertaken.*

*These provisions are necessary in reflection of the high public and private investment in airport infrastructure and the importance of the facility. It is also important to protect potential occupiers of land within airport noise environments from levels of noise that may be incompatible with normal standards of residential or rural amenity. An area to the west of the cross runway (Pound Road) is, in addition to ordinary airport traffic noise, subject to noise from ground testing of aircraft engines.*

*Specific forms of control relating to both noise and the heights of buildings and structures, are imposed adjacent to the ends of the main runways to ensure that the safety of aircraft operating from the airport is protected. These are supplemented by other provisions relating to the control of activities and their height in respect to approach planes near the airport.*

## **APPENDIX 2 – SECTION 74 REQUIREMENTS**

### **Section 74(2)**

In preparing a change to a district plan a territorial authority is required to have regard to a number of matters pursuant to Section 74(2) of the Act.

In this particular instance the Council is required to have regard to:

#### **The Regional Policy Statement**

Provisions in the Settlement and the Built Environment and Transport chapters of the RPS have been considered in preparing this variation. Relevant objectives and policies in these chapters in general terms promote:

- Patterns and growth of urban development being discouraged where they would adversely affect the operation, efficient use and development of the Christchurch International Airport.
- The enablement of a safe, efficient and cost effective transport system to meet present and future inter-regional and national needs.
- The protection of transport infrastructure and transport corridors necessary for future strategic transport requirements.
- The avoidance, remediation or mitigation of the adverse effects on the environment from transport use and provision.

The proposed plan change is considered to be consistent with the provisions of the RPS.

No other Regional Plan, Management Plan or Strategy prepared under any other Acts is considered to be relevant with regard to this proposed plan change.

## Appendix 3

### Evaluation of alternative options

#### Efficiency

The methodology as set out below is to establish the costs and benefits, in terms of how the alternative methods either contribute to, or run contrary to, achieving the relevant objectives and policies.

#### Option 1 – Status Quo

##### *Efficiency - Environmental Benefits and Costs*

<p><i>The rules maintaining the present REPA / Strip width provide environmental benefits through:</i></p>	
Community	Certainty for CIAL, the wider community and landowners by the recognition of highly sensitive areas for reasons of air traffic safety.
CIAL	Ongoing provision for the operation of some limited codes of aircraft utilising the Airport.
Landowners	Does not require any additional limitations on land use.
<p><i>Rules maintaining the present REPA / Strip width reflect environmental costs through:</i></p>	
CIAL	Not being able to utilise runway 11/29 in the future as a precision approach runway in limited visibility conditions, thereby limiting future air traffic management / growth options.

<p><i>The existing REPA / Strip width provides social and economic benefits:</i></p>
To the Council Relevant rules are already operative. Reduced administration costs without the need to amend the City Plan.

<p>To the community</p> <ul style="list-style-type: none"> <li>• Local community has certainty as to the location and limitations applied by the present provisions.</li> <li>• Wellbeing and safety taken into account with regard to present level of Christchurch International Airport operations.</li> </ul>
<p>To CIAL</p> <ul style="list-style-type: none"> <li>• Maintained flight operations to suit present conditions.</li> <li>• Compliance with existing FAA requirements for VFR (visual flight rules) - non-precision approaches <u>only</u>.</li> </ul>
<p>To the landowners</p> <p>N/A – Land use activities are already regulated.</p>
<p><i>The existing REPA / Strip width provides <b>social and economic costs</b>:</i></p>
<p>To the community:</p> <ul style="list-style-type: none"> <li>• The potential wider economic costs of not facilitating operational growth at CIAL for the Region will have a substantial negative economic impact (lost opportunity cost).</li> <li>• Social costs include a potential restriction in tourist based activity and related spend.</li> </ul>
<p>To CIAL</p> <ul style="list-style-type: none"> <li>• The potential of not facilitating operational growth at CIAL will have a significant economic impact.</li> <li>• Proportional loss of air services to other NZ international airports.</li> </ul>
<p>To the landowners</p> <p>N/A – Land use activities are already regulated.</p>

**Option 2 –Expand the REPA / Strip width to relate to the existing Runway 11/29 alignment only.**

*Expanding the REPA / Strip width provides **environmental benefit** through*

**CIAL**

- For runway 11/29, provides for B777 landing requirements, as well as achieving some take off capability in the short / medium haul sectors.
- Smallest reduction to usable freight area within the Special Purpose Airport zone in terms of the provision an expanded REPA (of the options examined).

**Landowners**

Of the options examined in the preparation of the Airport Master Plan, the provision of an expanded REPA, produces the smallest affected area external to the land subject to designation for Airport purposes.

*Expanding the REPA / Strip width provides **environmental costs** through:*

**Landowners**

Reduction in the range of potential activities that could be developed on REPA affected areas, acknowledging limited flexibility in the present City Plan zoning / regulatory framework.

**CIAL**

Opportunity cost of the provision of freight related activities for a small area within the Cargo Freight Facilities Area.

**Community**

Increased use of the runway 11/29 for landings will increase the frequency of flights and resultant noise effects in the rural area to the west of the Airport (given increased landings from that direction). Overall, the resultant air-noise effects will be within those levels contemplated by the current City Plan air-noise contours.

*Expanding the REPA / Strip width provides **social and economic benefits:***

To the national and South Island communities

- Ability for the Airport to maintain its role (*relative to other NZ International airports*) in terms of the provision of national and international links to Christchurch.
- Safety and wellbeing for both persons utilizing Runway 11/29 and individuals and the community in the surrounding area.
- Continued efficient use of resources and growth of operations at the Airport.
- Multimillion dollar economic benefits to the Canterbury Region through increased flexibility in the provision of aircraft services.

To the landowners concerned

Certainty as to the operational requirements of the Airport in the short to medium terms.

To Airport operations

- Assists in the provision of an efficient runway configuration at minimum practical cost.
- Provides for precision approach with visibility less than 1200m.
- Value of revenue from increased passenger travel.
- Of the options considered by the Airport Master Plan, least expensive for runway infrastructure costs.
- Provides limited future proofing for the long term development and increased operational capacity of the Christchurch International Airport.

*Expanding the REPA / Strip width provides **social and economic costs:***

To the Council

Limited administration costs with amending the City Plan.

To the community

Increased overhead flight movements and noise effects in the rural area to the west of the Airport.

To the landowners

- Reduced utilisation of existing land holdings at both ends of the runway, recognizing existing limitations.
- Limited loss of developable land within the 'Airport Purposes' designation.

**Option 3 – Expand the REPA on the existing Runway 11/29 alignment, and provide for protection of the land needed for the Deferred REPA to ‘future proof’ the area necessary for the future southern relocation of Runway 11/29.**

*Expanding both the existing REPA / Strip width and protecting the area needed for the Deferred REPA provides **environmental benefit** through:*

CIAL

- Future-proofing the ability to adjust Runway 11/29 to the south, deferring the need to make provision for a future third runway parallel to the main runway.
- Gains as stated through Option 2 in relation to expanded REPA / Strip width.

*Expanding both the existing REPA / Strip width and protecting the area needed for the Deferred REPA provides **environmental costs** through:*

Landowners

Reduction in the range of potential activities that could be developed on REPA and deferred REPA affected areas, acknowledging limited flexibility in the present City Plan zoning / regulatory framework.

CIAL

- Larger opportunity cost in relation to the provision of freight related activities within the Cargo Freight Facilities Area. In the longer term, this will be offset with freight area gains from freeing up land within the current REPA area.
- Long term protection without constructing the new runway has some implications for land development in the Cargo Freight Facilities Reserve (within the designation), as the gains are associated with the ability to develop infrastructure and increased operational flexibility associated with the adjusted runway layout.

Community

Increased flight movement and noise effects on rural areas to the west of the Airport.

*Expanding both the existing REPA / Strip width and protecting the area needed for the Deferred REPA provides **social and economic benefits**:*

To the Council

Ability for the Airport to maintain its role in terms of the provision of national and international links to the City.

To the Community

- Safety and wellbeing for both persons utilizing Runway 11/29 and individuals and the community in the surrounding area.
- Continued efficient use of resources and growth of operations at the Airport.
- Multimillion dollar economic benefits to the Canterbury Region through increased flexibility in the provision of aircraft services.

To the landowners

None

To CIAL

*Dependent on time lag between imposition of regulation and implementation of amended runway layout.*

- Assists in the provision of an efficient runway configuration at minimum practical cost.
- Provides for precision approach with visibility less than 1200m.
- Future proofs the long term development and increased operational capacity of the Christchurch International Airport.

*Expanding both the existing REPA / Strip width and protecting the area needed for the Deferred REPA provides **social and economic costs**:*

To the Council

Limited administration costs with amending the Plan

To the community

None

To the landowners

- Reduced utilisation of existing land holdings at both ends of the runway and in the Deferred REPA (recognizing existing limitations).

To the landowners and CIAL

- Inefficient use of land should there be a substantial delay between the imposition of controls and the redevelopment of the runways.
- Loss of developable land within the 'Airport Purposes' designation, which is not immediately offset by developable land gains in the area adjacent to the existing terminal.

**Option 4 – Increasing the Designation of land for ‘Airport Purposes’ to expand the existing REPA, and protect the land needed for provision of the Deferred REPA to future proof the area necessary for the southern relocation of Cross wind Runway 11/29.**

*Designating the REPA provides **environmental benefit** through:*

CIAL

- Future proofing ability to adjust Runway 11/29 to the south, offsetting the need to make provision for a future runway parallel to the main runway. (Although the time period for implementation would be beyond the statutory context of designation normally provided for in an Operative District Plan).
- Gains as stated through Option 2 and 3 in relation to amended and Deferred REPA.
- Direct control of land use in the REPA areas through s176(1) RMA

*Designating the REPA provides **environmental costs** through:*

CIAL

N/A

Landowners

Reduction in the range of potential activities that could be developed on REPA and Deferred REPA affected areas, acknowledging limited flexibility in the present City Plan zoning / regulatory framework.

Community

Increased frequency of flights and resultant noise effects in the rural area to the west of the Airport.

*Designating the REPA provides **social and economic benefits**:*

To the Council

Ability for the Airport to maintain its role in terms of the provision of national and international links to the Christchurch.

To the Community

- Safety and wellbeing for both persons utilizing Runway 11/29 and individuals and the community in the surrounding area.
- Continued efficient use of resources and growth of operations at the Airport.
- Multimillion dollar economic benefits to the Canterbury Region through increased flexibility in the provision of aircraft services.

To the landowners

- Ability to apply to Environment Court (s.185 RMA) for an order for CIAL to acquire or lease the land.

To CIAL

*Dependent on time lag between imposition of regulation and amended runway layout.*

- Assists in the provision of an efficient runway configuration at minimum practical cost.
- Provides for precision approach with visibility less than 1200m.
- Increased value of revenue from increased passenger travel.
- Future proofs the long term development and increased operational capacity of the Christchurch International Airport.

*Designating the REPA provides **social and economic costs**:*

To the Council

None

To the community

None

To the landowners (CIAL)

- Inefficient use of land should there be a substantial delay between the imposition of controls and the redevelopment of the runways.
- Loss of developable land within the 'Airport Purposes' designation, which is not immediately offset by developable land gains in the area adjacent to the existing terminal.
- Potential for external land acquisition costs should s.185 RMA be applied.

To the landowners

- Potential effects on property value due to designation or requirement.