

Before an Independent Hearings Panel
appointed by Christchurch City Council

under: the Resource Management Act 1991

in the matter of: the hearing of submissions on Plan Change 14 (Housing
and Business Choice) to the Christchurch District Plan

and: **Christchurch International Airport Limited**
Submitter 852

Statement of Evidence of Natalie Hampson (economics)

Dated: 20 September 2023

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STATEMENT OF EVIDENCE OF NATALIE HAMPSON

- 1 My full name is Natalie Dianne Hampson.
- 2 I am a Director at Market Economics Limited (*M.E*). I have held this position since mid-2019. I hold a Master of Science degree in Geography from the University of Auckland (first class honours).
- 3 I have worked in the field of economics for over 20 years for commercial and public sector clients. I joined M.E in 2001, and I have specialised in studies relating to land use analysis, assessment of demand and markets, the form and function of urban economies and growth, policy analysis, and evaluation of economic outcomes and effects, including costs and benefits.
- 4 I have applied these specialties in studies throughout New Zealand, and across most sectors of the economy, notably assessments of new developments, plan and policy changes, urban and rural planning (including under National Policy Statements) and understanding specific sectors such as the retail, commercial, industrial, residential, tourism, education, recreational marine, aquaculture, liquor licencing and major event industries. I am currently an associate member of the NZ Planning Institute and a member and regional committee treasurer of the Resource Management Law Association.
- 5 I am familiar with the urban economy of Ōtautahi Christchurch. Examples of recent work include evidence in relation to Plan Change 4 and Plan Change 5. I have acted for consent applicants associated with industrial zones, North Belfast Village, North Halswell KAC, Wilson Parking and various proposed office developments. I have carried out detailed analysis on the recovery of the Central Business District (*CBD*) and the city's commercial office market. I have also been involved in a range of consents, submissions and appeals in the Greater Christchurch area of both Selwyn District and Waimakariri District.
- 6 I have recently completed a detailed assessment of the operations and economic role of the Christchurch International Airport (*Airport*) and Special Purpose Airport Zone (*SPAZ*) and have a sound understanding of the significant economic contribution that the Airport makes to the local, regional and national economy. I attached a copy of that report to my evidence at **Appendix 1**. I have recently supported the Airport's submission on the Waimakariri Proposed District Plan.

CODE OF CONDUCT

- 5 Although this is not an Environment Court hearing, I note that in preparing my evidence I have reviewed the Code of Conduct for

Expert Witnesses contained in the Environment Court Practice Note 2023. I have complied with it in preparing my evidence on technical matters. I confirm that the technical matters on which I give evidence are within my area of expertise, except where relying on the opinion or evidence of other witnesses. I have not omitted to consider material facts known to me that might alter or detract from my opinions expressed.

SCOPE OF EVIDENCE

- 6 I have been asked to comment on the relief sought by Christchurch International Airport Limited (*CIAL*) in relation to the proposed Plan Change 14 (Housing and Business Choice) to the Christchurch District Plan (*PC14*).
- 7 My evidence will address:
 - 7.1 The relief sought by *CIAL*; and
 - 7.2 The Council's S42A Reports and evidence.
- 8 The *CIAL* submission contains a range of consequential relief that helps give effect to the Airport Noise Influence Area Qualifying Matter (*Airport QM*), or better supports the integration of qualifying matters (*QM*) in the objectives and policies of the District Plan. For the most part, my evidence does not focus on those consequential changes (unless specified).
- 9 In preparing my evidence, I have reviewed and considered the following:
 - 9.1 The recent report prepared by my company on the economic contribution of the Christchurch International Airport, attached at **Appendix 1**.
 - 9.2 S42A Report – Sarah Oliver, dated 11 August 2023.
 - 9.3 S42A Report – Ike Kleynbos, dated 11 August 2023.
 - 9.4 The Statement of Primary Evidence of Timothy Heath on behalf of Christchurch City Council (*CCC*) for *PC14*, dated 11 August 2023.
 - 9.5 The Statement of Primary Evidence of Philip Osborne on behalf of *CCC* for *PC14*, dated 11 August 2023.
 - 9.6 The Statement of Primary Evidence of Ruth Allen on behalf of *CCC* for *PC14*, dated 11 August 2023.

- 9.7 The statement of Primary Evidence of Ian Mitchell on behalf of CCC for PC14, dated 11 August 2023.
- 9.8 The statement of Primary Evidence of John Scallan on behalf of CCC for PC14, dated 11 August 2023.
- 9.9 **Mr Gary Sellars** evidence for CIAL, dated 20 September 2023.

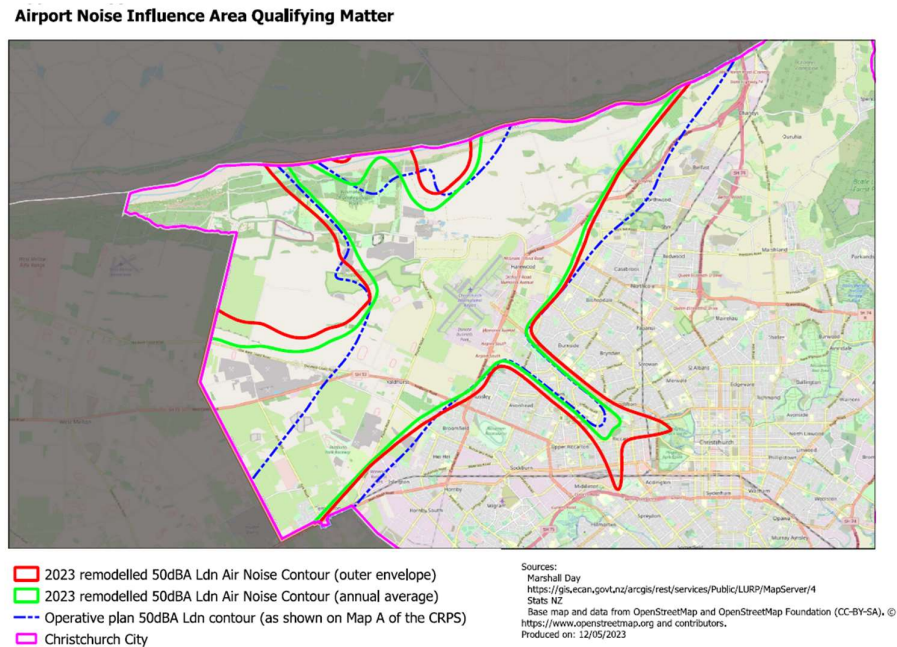
SUMMARY AND CONCLUSIONS

- 10 The ability of the Airport to continue to operate 24 hours a day and 365 days a year, as well as to develop and adapt to changing demand and projected growth in demand for air transport services has a significant positive effect on the social and economic wellbeing of the Christchurch, Canterbury and national community.
- 11 Even minor impacts on the efficient operation and investment certainty of CIAL could have significant economic consequences over the long-term.
- 12 Applying the Airport Qualifying Matter as proposed by CIAL does not come close to constraining demand for additional housing over the long term at the district level. The feasible capacity enabled by PC14 is substantial.
- 13 At an aggregate level, the economic benefits of applying an Airport Area of Influence Qualifying Matter that restricts further intensification of noise sensitive activities outweighs the economic costs of reduced development capacity in parts of the Christchurch urban area.
- 14 Providing HRZ within the Remodelled 50dBA Ldn contour (as recommended by Council) does not ensure that the efficient operation of the Christchurch International Airport is safeguarded over the long-term. There is insufficient economic evidence supporting the need for this exception to the proposed Airport Qualifying Matter.
- 15 There is considerable uncertainty around the potential impact of the proposed Airport Qualifying matter in the Riccarton centre catchment (residential and commercial zones). The information provided across Council evidence does not yet come together in a useful structure. More information is needed from Council's models to understand the feasible and reasonably expected to be realised dwelling capacity of the catchment (and relative to projected demand) under Operative zoning, notified zoning, and recommended zoning so that actual costs and benefits in this location can be determined.

CIAL RELIEF

- 16 In essence, the CIAL submission supports the notified PC14 approach to retain an existing QM based on the 50dBA Ldn or greater contour and restrict further growth of noise sensitive activities within the QM area to the capacity enabled by Operative District Plan zones. This is on the basis that avoiding the increase of activities sensitive to noise within that area helps to:
- 16.1 reduce the number of current and future households exposed to the noise associated with airport operations that is equal to or greater than 50dBA Ldn; and
 - 16.2 safeguard the effective and efficient operation of the Airport (by minimising potential for reverse sensitivity effects).
- 17 Both outcomes are already provided for in the Operative District Plan and Canterbury Regional Policy Statement (*CRPS*) in recognition of the significant contribution that the Airport has on the economic and social wellbeing of the local, regional (and national) community.
- 18 That said, new information shows that the area affected by aircraft noise that is 50dBA Ldn or greater (now and in the future) differs from the contour relied on in PC14 as the basis of the defining the Airport QM.
- 19 CIAL seeks that the spatial extent of the Airport QM be updated to reflect the 2023 remodelled 50dBA Ldn outer envelope air noise contour (*Remodelled Contour*).
- 20 The CIAL proposed Airport QM area is shown by the red line in *Figure 1*. The majority of the net increase in area – in terms of effects on urban zoning – is on the 'swallows tail' area that extends from the cross-wind runway at the Airport down towards Riccarton. The proposed Airport QM here is both wider and longer and therefore picks up additional land notified for intensification in PC14.

Figure 1 – CIAL Relief – Proposed Airport Area of Influence Qualifying Matter Extent (copied from CIAL submission)



- 21 The economic costs and benefits of avoiding further intensification and growth of noise sensitive activities within the 50dBA Ldn contour (over and above existing plan enabled capacity) in order to safeguard the efficient and effective operation of the Christchurch International Airport (and minimise adverse amenity effects on residents) are well understood and form part of the baseline for assessing PC14.
- 22 If the 'science' changes where the 50dBA Ldn contour sits on the map, then this does not change the nature of those economic costs and benefits (and risks), although the scale of those costs, benefits and risks increases proportionally.
- 23 For example, if the spatial extent of the Airport QM is updated (as proposed by CIAL):
- 23.1 Relatively more current landowners (than under the notified Airport QM) face opportunity costs on what level of development can be realised on their land (which in turn reduces their land value compared to land outside the QM). This should not be confused with an absence of development potential as there is still substantial scope for further development on many sites under Operative zoning rules. This existing potential is already captured in current land values, so impacted landowners would miss out on further value uplift under PC14.

- 23.2 Relatively less dwelling and commercial capacity (than under the notified Airport QM) can be achieved at the aggregate (district) level. This is an opportunity cost for plan enabled and feasible capacity unless mitigated by further zone/provision changes. I note Mr Sellar's evidence for CIAL identifies some greenfield land 'freed up' by the remodelled contour (where this sits inside the older Operative contour)¹.
- 23.3 Relatively less dwelling and commercial capacity can be achieved in specific locations affected by the proposed Airport QM, unless able to be mitigated in the same/similar locality outside of the proposed Airport QM.²
- 23.4 Relatively fewer future households/people will be exposed to 50dBA Ldn aircraft noise effects where those households/people would have located in areas known to be highly affected by aircraft noise (based on new data) but that were outside the notified Airport QM and therefore unprotected by noise mitigation rules.
- 23.5 Relatively less risk of reverse sensitivity effects on the efficient and effective operation of the Christchurch International Airport by aligning the Airport QM with the Remodelled Contour. I note that the significant economic benefits delivered by the Airport are unchanged between the notified and proposed Airport QM scenario, but it is the risk to that economic contribution that is reduced under CIAL's relief.
- 24 The emphasis here is the relative, or marginal change in the scale of those costs and benefits (and risks) over and above the notified Airport QM extent, which was based on a draft (2021) version of the remodelled 50dBA Ldn annual average air noise contour at the time.
- 25 Importantly, the reduction in dwelling and commercial capacity at the district level is considered a minor opportunity cost on account of PC14 (with QMs applied) providing at least sufficient capacity to meet long-term demand (and beyond).³ The net additional loss of capacity based on the proposed Airport QM extent does not materially change that result at a district level.
- 26 According to Mr Scallan's evidence, the proposed Airport QM would have an opportunity cost of 11,879 feasible medium-density dwellings across Christchurch in terms of the gross area of the QM, and an opportunity cost of 848 apartments in notified HRZ areas

¹ Evidence of **Mr Sellars**, paragraph 30.

² I distinguish these two costs of reduced capacity because they have different levels of significance.

³ This is confirmed in Ms Olivers S42A Appendix A, Diagram 2.1 based on the notified QMs.

(i.e., buildings up to 6 storeys), but excluding impacts on commercial centre zones.⁴ This is contrasted with feasible capacity outside all QM areas of at least 85,580 medium density dwellings and nearly 9,900 apartments in buildings up to 6 storeys. Even without including greenfield capacity and capacity in commercial zones, this exceeds long term demand by a substantial degree.

- 27 According to Council,⁵ the opportunity cost on capacity at the local level is primarily focussed on the land surrounding Canterbury University and a portion of the Riccarton Town Centre and its walkable (Mass Rapid Transit (*MRT*)) catchment. I agree that these are the two areas that warrant consideration and discuss this opportunity cost further below.
- 28 However, in order for those localised long-term capacity impacts and net additional (one-off) opportunity costs to landowners in the updated area to make the proposed Airport QM area economically inefficient (in s32 terms), they would need to outweigh the benefit of reduced risk to efficient airport operations over the long-term and the benefit of reducing the exposure of future households/residents to high levels of aircraft noise.
- 29 The risk of reverse sensitivity effects leading to adverse effects on the efficient operation of the Airport over the long-term is difficult to quantify and requires an understanding of the threshold at which cumulative complaints trigger a change in operation. Risk is however measured in terms of probability and consequence, and the economic consequences of constraining Airport operations are significant in dollar terms (as set out in **Appendix 1**). So much so, that the CRPS takes the position that those risks should simply be avoided.⁶

RESPONSE TO SECTION 42A AND COUNCIL EVIDENCE

S42A Report – Sarah Oliver

- 30 Key statements in Ms Oliver’s S42A report that I agree with/support include:
- 30.1 Strategic infrastructure can be protected while also achieving greater intensification.⁷
- 30.2 Christchurch International Airport is recognised as nationally significant and strategic infrastructure that is "*essential to the function and prosperity*" of the local, regional and national

⁴ Evidence of Mr Scallan, Table 4 and 5, based on August 2023 capacity modelling.

⁵ Evidence of Mr Osborne, paragraph 111.

⁶ CRPS, Policy 6.3.5.

⁷ Sarah Oliver – S42A – paragraph 12.5.

economy and *“that should not be compromised by urban growth and intensification”*.⁸

- 30.3 The purpose of the Airport QM (and associated policy direction) is to *“ensure the safe and efficient operation of that infrastructure”* (emphasis added).⁹
- 30.4 Recognition that some spatially defined management areas will change over time as environmental conditions change, and best practice methodologies improve. Importantly, regulation should be based on the best information available and if that changes, spatial boundaries may change and this need not affect the policy direction applied to those areas.
- 30.5 The S42A officer accepts that the remodelled noise contours of the Airport have been updated using a robust process.
- 30.6 *“An urban form ... that does not exacerbate or give rise to greater reverse sensitivity effects for strategic infrastructure such as the Airport is more appropriate”*, particularly when those same regulatory controls *“reduce negative effects on the health and well-being of its residents”*.
- 30.7 Even when all QMs are taken into account, Ms Oliver confirms that PC14 is *“enabling significantly greater housing and business capacity than currently provided for under the Operative District Plan”* at a city level and that this is *“well beyond many decades of projected and required supply”*.
- 30.8 Application of the QMs, including an Airport QM based on the Remodelled Contour, will not compromise the ability of the Council to meet their NPS-UD requirements and achieve a competitive housing and business land market.¹⁰
- 30.9 Ms Oliver is supportive of applying the Airport QM to the Remodelled Contour in most locations.
- 31 There are some aspects of the S42A report related to the Ms Oliver’s recommended amendments to PC14 as notified that require further discussion and clarification.
- 32 Central to these is that Ms Oliver does not recommend applying an updated Airport QM to some HRZ land notified on the northern side of Riccarton Town Centre that falls within the Remodelled Contour.

⁸ Sarah Oliver – S42A – paragraph 12.2.

⁹ Sarah Oliver – S42A – paragraph 11.13(i).

¹⁰ Sarah Oliver – S42A – paragraph 11.1.

This exception to the proposed Airport QM contradicts the policy direction of the CRPS and District Plan.

- 33 Ms Oliver describes her recommendation to retain some HRZ intensification in the Remodelled Contour as a “*trade-off or rather acceptance*” that some level of reduced amenity is “*needed to ensure Otautahi Christchurch is well-positioned to facilitate greater population along the Riccarton Road Corridor*”.¹¹
- 34 However, the likely and potential costs of allowing HRZ development inside the Remodelled Contour are not limited to exposing additional future residents to high levels of aircraft noise over the long-term, but also increasing the potential for reverse sensitivity effects on Christchurch Airport (i.e., complaints), and therefore increased risks to the efficient and effective operation of the Airport and its ability to develop to its planned capacity.
- 35 While the initial rationale for the HRZ exception is to ensure that the critical mass required to sustain MRT in the Riccarton locality of the MRT spine is retained, the plan enabled yield calculations reported in Ms Oliver’s report appear to far exceed that required yield.
- 36 In paragraph 12.57, Ms Oliver states that according to Mr Morahan, a gross yield of 3,300 households is required in the long-term within the Riccarton MRT part of the corridor that falls within the Remodelled Contour (up from 1,300 households in 2021) to achieve the desired patronage. Ms Oliver’s recommended zoning in this location, which retains some HRZ intensification but otherwise applies the Airport QM to the Remodelled Contour, has a gross yield of 7,785 households.¹² The exceedance above desired MRT household counts is nearly 4,500 households¹³ or 236% of the 3,300 household target.
- 37 While Ms Oliver states that the yield figures are sourced from the Council’s plan enabled and feasible capacity model, it is not clear if the stated yield figures are plan enabled or feasible capacity. This is important, as only a portion of plan enabled capacity will be feasible to develop over the long term¹⁴, and a large exceedance would be needed to realise a target of 3,300 future households (gross).¹⁵

¹¹ Sarah Oliver – S42A – paragraph 12.60.

¹² Sarah Oliver – S42A – paragraph 12.59.

¹³ Ms Oliver states the exceedance is 3180 households, but this is incorrect as she compares the required gross yield with the net yield of the amended PC14 scenario, rather than the gross yield.

¹⁴ As set out in **Mr Sellars** evidence for CIAL, TPG have claimed that 100% of feasible capacity for medium density housing in Riccarton Central is commercially feasible to develop. This is very unlikely in my experience and suggests potential limitations in the methodology applied.

¹⁵ It is noted that a target of 3,300 future households in that particular area of the Riccarton MRT catchment is not the same as demand for dwelling units in that

However, if the figures were based on feasible capacity (and assuming this is treated as reasonably expected to be realised capacity over the long-term in the Council's model), then this is a more realistic indicator of the potential scale of the capacity surplus relative to the target household count.

- 38 I suspect Ms Oliver *is* referring to plan enabled capacity as I have read the evidence of Ms Allen for council on the feasibility of high density housing, which included a case study in Riccarton. She could not reach a feasible high-rise residential development even at 14 storeys in Riccarton under current market conditions (with increased height generally reducing financial loss).¹⁶ This means that even at the 6 storeys notified, the HRZ north and south of Riccarton may not be realised, at least in the medium term. This is consistent with the low demand for attached housing in the general Riccarton catchment assessed by Mr Mitchell over the long-term.
- 39 Ms Oliver does not present any yield calculations for the same catchment if the Airport QM was applied to the full extent of the Remodelled Contour in this location (i.e., without her recommended retention of some HRZ). I consider that this is needed to test whether the MRT yield of 3,300 gross households (2,000 net additional households) in the long-term could be achieved under Operative zoning. This would also allow the impact of the recommended HRZ to be better understood. **Mr Sellars** provides a partial estimate in paragraph 93 of his evidence, whereby capacity for an additional 1,914 medium density houses could be feasible in the Riccarton Central catchment outside of the proposed Airport QM, although this excludes capacity in part of the Town Centre Zone and the potential for HRZ south of Riccarton Road in lieu of MRZ.
- 40 Ms Oliver also recommends some compensatory intensification within the Riccarton MRT catchment (and near Canterbury University¹⁷) outside the Remodelled Contour to help offset the reduction in capacity under the proposed Airport QM. Ms Oliver does indicate (paragraph 12.60) that "*the level of compensation provided in the compensatory areas ... will likely be sufficient*", but further justifies the inclusion of the HRZ north of the Town Centre on the view that "*enabling a mix of medium and high density outcomes north of Riccarton Road across from the Riccarton Centres, is on-balance, more appropriate*".

location, which may be more or less than 3,300 in the long-term. Dwelling demand modelled for the Inner-West catchment by Mr Mitchell for Council shows long-term demand (2021-2051) of 1,350 households, with 800 of that demand for standalone dwellings and 500 for attached (multi-unit) dwellings (Table 21, page 24).

¹⁶ Evidence of Ms Allen, paragraph 37.

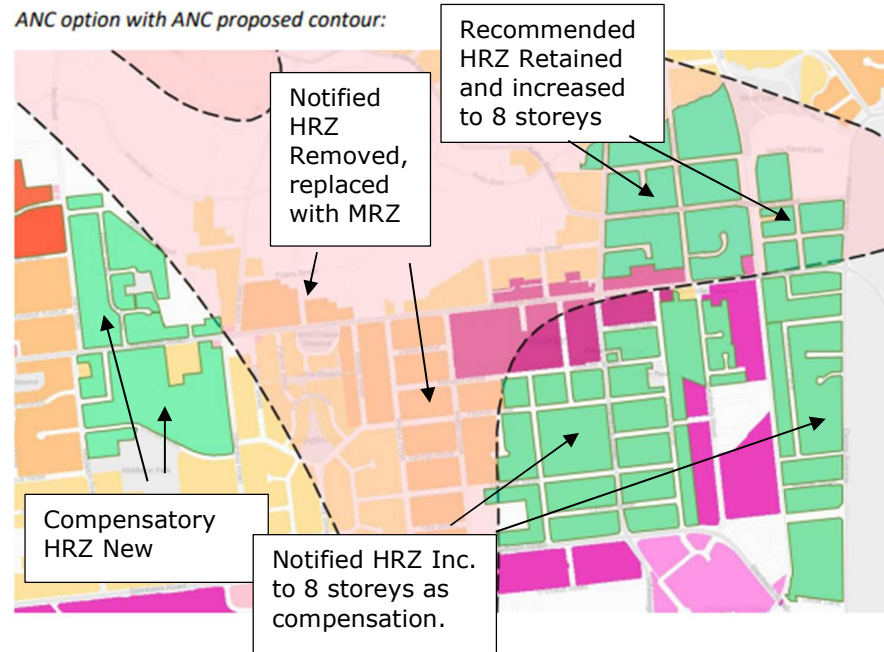
¹⁷ These areas of interest are also referred to as forming part of the Church Corner centre catchment.

- 41 I note that while the NPS-UD requires that capacity is provided in key locations of demand to meet demand for a range of dwelling types, Riccarton's walkable catchment will be served by high density housing even if the proposed Airport QM is applied.
- 42 There is evidence (from Mr Kleynbos) that the northern areas of HRZ are likely to be more feasible than the HRZ south of Riccarton Road and he therefore supports their retention (and exclusion from the Airport QM). However, this seems to contradict the evidence of Ms Allen which states that the feasibility of high density housing above 3 storeys is very low beyond the central city (paragraph 5).
- 43 **Mr Sellars'** evidence (paragraphs 108-109) also states that intensification south of the Riccarton Town Centre has already been realised to a greater extent than in the area north of the centre (where land owners are prepared to pay high costs to have standalone properties in a desirable area), and that the retained HRZ south of the centre is therefore most likely to realise further intensification, including because the land values are lower.
- 44 In all likelihood, the amount of HRZ capacity both notified and recommended will exceed demand for apartment dwellings in Riccarton. Focussing any Riccarton demand within a smaller area of HRZ south of Riccarton Road means that the intended high density urban form would be more likely to be realised, and the feasibility of that development on the southern side of the Town Centre will correspondingly increase. A disbenefit of providing too much HRZ capacity (aside from potentially reducing capacity for dwelling types that may have relatively higher demand) is that high density apartment buildings could be dispersed. This is because the total long-term demand for apartments could be met in relatively few 6 storey (or even 8 storey) buildings.
- 45 Mr Kleynbos provides further analysis in his S42A report on the matter of the impact of the proposed Airport QM and provision of compensatory capacity. In paragraph 6.1.84, he quantifies the area of land notified HRZ in Riccarton (89ha) and the amount that would be left if the proposed Airport QM was applied to the Remodelled Contour (37ha left, all south of Riccarton Road). This is a 59% loss of HRZ gross zone area notified.
- 46 Mr Kleynbos translates that into potential net households impacted by the proposed Airport QM. This is a reduction of 8,950 (-61%) attributable to the CIAL proposal, leaving capacity for 5,820 households in the HRZ south of Riccarton Road. I understand that this does not include the potential apartment capacity in the Town Centre Zone. It is also based on achieving a net density of 200 hh/ha which I note is higher than the density of the HRZ used in Ms Oliver's scenario from the Council's capacity model (which was 150 hh/ha).

- 47 Mr Kleynbos therefore considers that if the 8,850 reduced HRZ households needs to be compensated elsewhere, that around 9,000 additional plan enabled apartments should be provided (paragraph 6.1.85). I do not support this approach, as the true test of whether any compensation capacity is required is whether there is sufficient feasible (and reasonably expected to be realised) capacity for HRZ dwelling typologies in the Riccarton location relative to demand for that dwelling type in Riccarton over the long-term (plus a competitiveness margin). This 'sufficiency' test (central to the NPS-UD) has not been established.
- 48 Mr Kleynbos estimates that if the recommended HRZ retained within the Remodelled Contour by Ms Oliver, plus the unimpacted notified HRZ south and east of the Riccarton Town Centre is increased from 6 storeys to 8 storeys, this would add 4,500 net additional plan enabled households (based on a net average yield of 225 hh/ha).¹⁸ He recommends this approach. It is not clear what the retention of the HRZ north of Riccarton Road (as recommended by Ms Oliver and supported by Mr Kleynbos) also adds (i.e., at the notified 6 story capacity) as it does not sound like this forms part of Mr Kleynbos' calculation of 4,500 net additional dwellings on the 7th and 8th floors. Again, this needs to be clarified.
- 49 Mr Kleynbos also recommends some compensatory plan enabled HRZ capacity adjacent to the Church Corner catchment (west of Riccarton and still within the MRT corridor. These indicatively add a further 2,300 plan enabled dwelling units. A summary of the recommended zoning that I understand is adopted by Ms Oliver is shown in *Figure 2*.

¹⁸ Ike Kleynbos – S42A – paragraph 6.1.92.

Figure 2 – Estimated map of Council Officer Recommended Zoning in Relation to an Airport QM based on the Remodelled Contour



50 While Mr Kleynbos' report sheds light on Ms Oliver's recommended amendments, there are still important gaps in the evidence base. I consider that further information is required to get a clear and comprehensive understanding of the impacts of the proposed Airport QM (based on the Remodelled Contour) on Riccarton as a whole, including a proper balance sheet of what is already plan enabled and feasible under Operative zones, and what feasible capacity is reduced and what is gained with and without providing HRZ intensification within the Remodelled Contour.

51 Importantly, this needs to be set against the context of demand for different dwelling typologies in this location as this is critical to understanding sufficiency over the long-term. Without a clearer picture of the impact of the CIAL proposal, the benefits and costs of the recommended approach to the Airport QM by Ms Oliver are uncertain. I believe the information required to fully understand this issue is currently held by Council, but needs to be brought together in a clear structure.

Economic Evidence of Philip Osborne for Council

52 I have reviewed the economic evidence of Mr Osborne for Council. Mr Osborne has also recently examined the economic contribution of the Christchurch Airport. We have a shared understanding of the significance of the Airport in economic terms, and the potentially significant costs associated with any constraints on its efficient operation and growth potential.

- 53 Mr Osborne has responded to submitters opposed to restricting intensification within the Airport QM, with many stating that building consent and acoustic requirements (noise standards) would be sufficient to mitigate noise effects. I do not go into those submissions in this evidence,¹⁹ but support Mr Osborne's finding that minimising the cumulative risk that mitigation methods may fail is the benefit of applying an Airport QM. The Airport QM allows this risk to be managed more efficiently compared with the alternative of assessing compliance of individual consents over the long-term future.
- 54 Mr Osborne confirms that while the impact of the proposed Airport QM on both residential and commercial capacity is small at a district level, and does not compromise long-term sufficiency to meet projected demand, economic costs at the local level are still relevant. He highlights both the area adjoining Canterbury University and the walkable catchment of Riccarton Town Centre. Mr Osborne does not suggest that "*there will be a shortfall of potential supply to support the development of the University or Riccarton*" (paragraph 112) but also notes that demand/supply scenarios at the localised level have not been assessed. I consider that addressing this gap in the evidence base to be essential.²⁰
- 55 It is important to consider the marginal change in capacity associated with applying the QM to the Remodelled Contour (and allowing for any compensatory response recommended), which may or may not have a marginal impact on eventual supply over the long-term in and around Riccarton. Mr Osborne identifies the key economic cost to land and property owners can be expressed as opportunity costs to realise higher land values and development returns from a more intensive zoning outcome (relative to Operative zoning outcomes). Those households bear the costs of safeguarding the ongoing operation of the Airport, while the benefits that flow from the efficient operation of the Airport – while also returning to those impacted households, are felt district, region and nation-wide.
- 56 While not quantified, Mr Osborne concludes that those aggregate economic opportunity costs are acceptable in the context of the potential risk posed by allowing further intensification in the Airport QM area and the significant economic benefits that the Airport generates. I support that conclusion.
- 57 Mr Osborne states that the impact of applying the Airport QM into the Riccarton MRT Corridor (including parts of the Town Centre Zone) is relatively more significant than the potential impact of the

¹⁹ #834 (Kainga Ora), #805 (Waka Kotahi), #676 (Jack Gibbons).

²⁰ It is my understanding that the council has the relevant data at hand, it just needs to be collated appropriately. The NPS-UD requires councils to assess demand for housing by location and by dwelling type.

proposed Airport QM elsewhere because of the significant economic benefits that can be achieved from enabling MRT. Mr Osborne notes the council's recommended approach with respect to Riccarton, but does not offer any economic evidence specifically on the matter.

- 58 Overall, he emphasises the material risk to the operations of the Airport from noise complaints "*that could have substantial and sustained impacts on the wider City and South Island economies*". Mr Osborne's view is that the Airport QM is warranted.²¹

Economic Evidence of Tim Heath for Council

- 59 I have reviewed the economic evidence of Mr Heath for Council, which is focused on the economic costs and benefits of various matters relating to the commercial centre network in Christchurch. With regard to the economic costs and benefits of increasing heights in the larger centres, including the Larger Town Centre Zone which applies to Riccarton, Mr Heath describes a broad range of general economic benefits and relatively few economic costs (most of which can be mitigated).
- 60 I agree with his evidence on generalised costs and benefits, noting that in any one large centre, there may be some specific costs and benefits applicable to that locality. Part of the Riccarton Town Centre, for example, falls within the Remodelled Contour, so increasing the height of the zone (assuming this involves noise sensitive activities) has potential to expose a greater number of residents to aircraft noise effects, and there are corresponding risks of increased reverse sensitivity effects on the Airport, if those noise sensitive activities are not avoided. These costs at Riccarton are not identified in Mr Heath's evidence, which is more high-level.
- 61 Mr Heath has also considered the impact of different notified QMs on plan enabled floorspace capacity in commercial zones (based on notified heights).²² The assessment considers the potential building envelope (measured in sqm GFA and less existing GFA) and assumes the maximum take up of that GFA by commercial activities (this would be reduced if residential activities in the commercial zones occupied some floorspace).
- 62 The notified Airport QM is estimated to reduce theoretical PC14 retail and commercial floorspace by 499,897sqm GFA. This accounts for around 16% of the net total QM impact. However, with all QMs having only a 12% impact (reduction) on potential commercial zone

²¹ Mr Osborne, paragraph 115-116.

²² At paragraph 192, Mr Heath notes that the analysis was carried out just prior to the notification of PC14, and some changes to heights occurred between the draft and notified version.

capacity, the notified Airport QM accounts for just 2% of that total potential capacity under PC14.²³

- 63 Mr Heath concludes that all notified QMs do not materially impact the significant surplus of commercial (retail and office) capacity across the district's commercial zones relative to long-term floorspace demand. Based on my understanding of Mr Heath's figures, long-term demand growth accounts for just 8% of the notified PC14 potential commercial capacity (once QMs are removed).²⁴
- 64 Based on the net benefits (at a general level) of further increasing the heights in large commercial centres, Mr Heath recommends (among other changes to the notified zone heights), that Riccarton centre building height be further increased from 22m (notified) to 32m. I note that the Operative height is 20m. Mr Heath's recommended height increases in some commercial centres makes his pre-notification assessment of demand versus capacity conservative.
- 65 Mr Heath's evidence does not consider the CIAL submission that would extend the Airport QM over parts of the Riccarton Large Town Centre Zone. Ms Oliver's S42A report does not appear to cover this (focussing instead on residential zones in the Airport QM), so it is uncertain if the Town Centre Zone is treated as an exception to the Airport QM (like her recommended HRZ) or not.
- 66 Mr Lightbody's S42A report accepts Mr Heath's recommendation for 32m in the Riccarton Town Centre (and other large Town Centres) instead of the notified 22m. In Paragraph 8.3.4 he considers that this *"would achieve both intensification commensurate to the centres while not undermining the primacy of the City Centre Zone"*. Among the benefits stated is that *"increased development within centres will lead to positive agglomeration effects, enabling a wider and more vibrant range of businesses to be able to establish"* (page 61).
- 67 *Figure 2* above shows that the Remodelled Contour divides the Riccarton Town Centre Zone. There are two key economic issues arising from the proposed Airport QM in this location:
- 67.1 First, if the proposed Airport QM based on the Remodelled Contour is accepted, is it appropriate for approximately half of the town centre to be constrained to Operative building

²³ Mr Heath, Table 5 and paragraphs 194-197.

²⁴ Mr Heath in turn recommends some increases in notified building heights in some zones, that would further increase potential capacity under PC14 if adopted (Table 3).

heights (i.e., 20m), and the other half outside the Airport QM to be enabled to intensify to 22m, or 32m as recommended?

- 67.2 Second, if the proposed Airport QM based on the Remodelled Contour is accepted, along with CIAL's relief to amend rule 15.4.1.1 P21 and 15,4.1.5 NC2 to specify both the 50db Ldn Noise Contour or the Airport Noise Influence Area, is it appropriate for residential activities to be excluded from half of the centre, but enabled in the other half of the centre outside the Remodelled Contour?
- 68 On the first issue, there is not much difference in the Operative building height and the notified building height for the Riccarton Town Centre. As such, applying the proposed Airport QM in part of the centre (where this limits further intensification beyond Operative provisions), is unlikely to create significant inequities for landowners in each part of the centre (i.e., those inside the proposed QM and those outside) and the resulting urban form would be relatively uniform.
- 69 Mr Heath has indicated that there is still significant redevelopment potential in Riccarton Town Centre, with few buildings getting close to the Operative 20m height limit. As such, there is still significant scope for the Riccarton centre to intensify (at least in terms of height and building envelopes) in future with the proposed Airport QM in place.
- 70 On balance though, I consider that adopting the notified height of 22m across the whole centre is likely to be the most efficient outcome (with this reducing complexity in the Plan). The marginal increase of 2m in height in part of the town centre within the Airport QM is likely to have limited impact on the Airport over the long-term, in and of itself. Rather than building height, the key concern for the Airport is noise sensitive activities, as I discuss further below.
- 71 However, if the recommended height of 32m was accepted, and this could only apply to the part of the Town Centre Zone outside the proposed Airport QM, then this is likely to have perverse economic and social outcomes for the future development of the Riccarton centre. The potential split in heights could mean that redevelopment is focused in the area with the more enabling building height (refer benefits discussed by Mr Heath). The reduced competitiveness and relatively lower feasibility of the land within the Airport QM could lead to declines in the amenity and vibrancy of that part of town if it lags in investment and redevelopment.
- 72 I consider that given the relatively small size of the Riccarton Town Centre Zone, it is important that the same building height is applied throughout the Zone to ensure good economic and social outcomes.

I would support this at the operative height (20m), or alternatively at the 22m notified height. I could also support a 32m height throughout the Town Centre Zone, if CIAL's relief for Rule 15.4.1.1 P21 was accepted.

- 73 It is my understanding that application of this proposed rule would mean that you could have intensification within the Airport QM part of the Town Centre Zone without increasing noise sensitive activities (i.e., residential households)²⁵. The implication would be that all buildings across the Town Centre Zone could be developed to the same height (i.e., 22m or 32m), but the mix of activities within those buildings would differ from one part of the centre to the other.
- 74 Those buildings in the proposed Airport QM could comprise retail and commercial activities (albeit that tenanting a 32m building outside of the central city with this mix will be more difficult than for 22m buildings), while those buildings in rest of the Town Centre could comprise a mix of retail, commercial and residential activity. The physical urban form of the centre though, would be relatively uniform.
- 75 This potential distribution of activities (namely the concentration of residential apartments in the part of the centre outside the proposed Airport QM) still creates a number of opportunity costs for landowners, just as it does in the residential zones where the Airport QM applies. It may also create some differences in the amenity of the centre, with one half having the greater concentration of workers and the other having a mix of workers and residents. Overall, however, both workers and residents contribute to the vibrancy and vitality of a centre. Applying the Airport QM ensures that there are no adverse health effects arising from aircraft noise on those residents that choose to live in the Town Centre Zone, while also safeguarding the effective and efficient operation of the Airport.
- 76 I conclude that the proposed Airport QM based on the Remodelled Contour can be applied without significantly compromising the intensification and economic performance of the Riccarton Town Centre Zone over the long-term. While it creates opportunity costs around the distribution of residential activities across the zone, and an overall reduction in the capacity of residential apartments (although not necessarily a reduction in future supply²⁶), it does not preclude all residential activities from the centre. Enabling a uniform increase in height across the Riccarton Town Centre Zone (likely to be more appropriate at 22m when accounting for the proposed Airport QM) could go some way to help offset those costs given the

²⁵ Unless approved as a non-complying activity.

²⁶ As demand is likely to well below the level of plan enabled capacity.


economic benefits that even marginal height increases may facilitate.

- 77 As noted previously, there is still some uncertainty around Council's position on the proposed Airport QM and associated provisions (with respect to CIAL's relief), as well as uncertainty around the quantum of long-term demand for high density housing across the Riccarton catchment and the impact of the proposed Airport QM on feasible capacity for high density housing in the residential zones and the Town Centre Zone. I would re-evaluate my conclusions for Riccarton if such information was supplied as it would allow for a more robust assessment of the costs and benefits of different regulatory responses.

Natalie Hampson

20 September 2023

Appendix 1 – The Economic Contribution of the Christchurch International Airport, M.E, August 2023.



The Economic Contribution of the Christchurch International Airport

31 August 2023 – Final

m.e
consulting



The Economic Contribution of the Christchurch International Airport

Prepared for

Christchurch International Airport Limited

Document reference: CIAL005.23/Report/EIA of Christchurch Airport FINAL 310823

Date of this version: 31 August 2023

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Director approval: Natalie Hampson (31 August 2023)

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Executive Summary

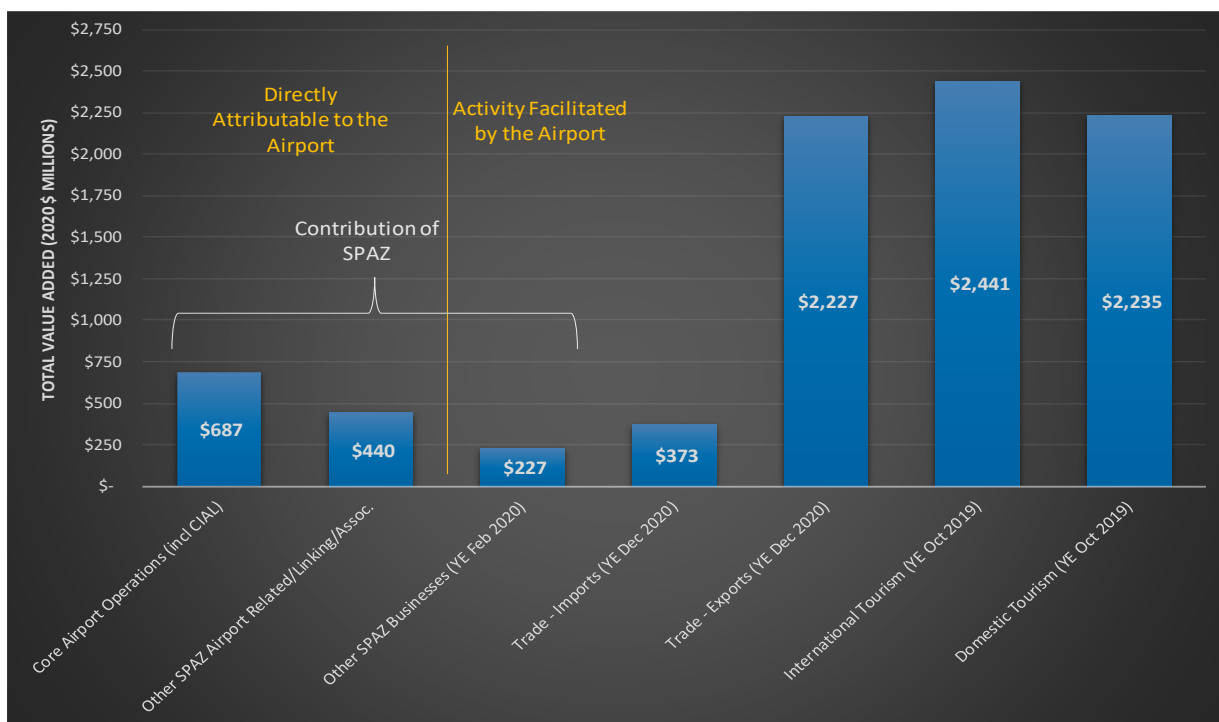
This report by Market Economics contains an assessment of the economic contribution of the Christchurch International Airport (Christchurch Airport / the Airport). The modelling relies on a range of data sources, including data supplied by Christchurch International Airport Limited (CIAL). This data is analysed and incorporated within an Input-Output based economic model using best practice methodologies and clearly stated assumptions.

The economic contribution of Christchurch Airport is an annual snapshot. To avoid under-representing the economic effect of the Airport, a 12 month period(s) prior to the start of New Zealand’s Covid-19 response has been modelled. This shows the contribution of Airport, and its environs, at its most recent peak.

The economic contribution of Christchurch Airport is measured according to (direct, indirect and induced) value added (akin to GDP) and employment. It can be broken down by 109 industry sectors and six economic regions. Importantly, the economic contribution is distinguished according to business activity directly attributable to (dependent on) the Airport (inclusive of CIAL as a business entity) and located within the Special Purpose Airport Zone (SPAZ), and business activity that is facilitated by the Airport and air transport services, both inside the SPAZ and beyond.

The contribution that Christchurch Airport makes to the national economy is summarised in the graph below. The national value added contribution to the economy from business activity directly attributable to the Airport is \$₂₀₂₀1.13 billion (sustaining approximately 8,900 additional jobs to those already in the SPAZ). The national value added contribution to the economy from business activity facilitated by the Airport is significantly greater at \$₂₀₂₀7.50 billion (approximately 79,580 jobs sustained).

Christchurch Airport’s Peak Economic Contribution - Total National Value Added (\$ Millions)





1 Introduction

Market Economics (M.E) has been asked to assess the economic contribution, or significance, of Christchurch Airport and the wider Special Purpose Airport Zone (SPAZ) located in Christchurch City on behalf of Christchurch International Airport Limited (CIAL).

Airports are essential infrastructure that generate wide ranging social and economic benefits to regions. The speed, connectivity and convenience of air travel is a major factor promoting leisure and business travel and domestic and international freight activity, all of which are facilitated by airports.

This in turn sustains a range of additional business activity that directly supports or is related to the operation of airports, supports the needs of passengers using airports, or is aviation focussed. As a result, airports become significant hubs for business and employment activity in their immediate environs. However, the economic linkages of core airport and related activities are far reaching, and can be felt nationwide, especially for major metropolitan airports like Christchurch.

It is important for policy makers to understand the implications of proposed policy changes in economic terms. In this case, to understand the economic role Christchurch Airport plays in the local and wider economy. Only then can appropriately informed decisions be made on objectives, policies and rules that may have consequential effects on the safe and efficient operation of this nationally significant infrastructure. The objective of this report is to help build that understanding.

1.1 Scope

With reference to the economic contribution of Christchurch Airport, the following components are included in our assessment:

- The contribution of the Airport as a business unit.
- The contribution of core airport operations (not limited to CIAL).
- The contribution of businesses in the Airport environs – being the SPAZ in this instance.
- The contribution facilitated by the Airport (see below).

Not all business activity directly attributable to the presence of the Airport is captured in this Economic Impact Assessment (EIA). This includes businesses related to or supporting Airport operations that are located outside the SPAZ – some nearby in Christchurch City and some spread throughout New Zealand. A number of assumptions are needed to identify these businesses (with only limited data available to help verify those assumptions). As such, M.E has decided to exclude that component of economic contribution in the modelling – taking a conservative approach.



1.1.1 Facilitated Effects

An important characteristic of airports is that they can influence economic activities which are substantially greater than the economic activity of the airport itself. Airport infrastructure unlocks and supports a range of other activities. These activities, often called ‘facilitated effects’, form an important component of the overall contribution of airports.

Some economists hold the view that it is incorrect to include the facilitated effects of airports.¹ Our understanding of economies and economic activity is that airports and ports exist for a reason, and it is not appropriate to ignore their significance to other sectors within the economy. For many sectors, the availability of transport infrastructure – airport or seaport – is critical to some or all of their business activity, enabling trade with other regions or other countries. Without this transport infrastructure, some trade and economic activity would not have taken place, and the overall economic effects would be significantly understated.

Our approach to include facilitated effects is consistent with studies undertaken for the International Air Transport Association (IATA) and the Airports Council International (ACI) as well as a range of EIA’s on airports carried out in New Zealand in recent years. The facilitated effects are identified separately and include:

- The spending associated with businesses benefiting from being located in the SPAZ, and occupying CIAL owned land, but that are not directly related to core aviation operations. Their presence in the SPAZ is facilitated by CIAL and they are an important source of revenue to CIAL, helping fund core airport operations.
- The economic effects associated with international importing and exporting of goods and the value chains of firms relying on air transportation to access markets. The scale of trade (and the value chain effects) facilitated by airports can be very large.
- A portion of spending associated with tourism (both domestic and international). Airport infrastructure provides an entry and exit point for many travellers. These travellers (i.e., passengers on flights) spend money within the local and regional economy, generating economic activity in the tourism sector with flow-on effects to the rest of the economy.

There are two important considerations when estimating the facilitated effects associated with the above:

1. What share of total value can be attributed to airports and air transportation?
2. What share of the value can be attributed to different regions throughout New Zealand?

Where possible, our estimates allow for these two considerations using available information. However, in some instances it is not practical to estimate the distribution of impacts across New Zealand’s regions. In these cases, we have relied on a number of assumptions. These are discussed further throughout the report.

¹ See for example, Economic Impact of POAL, Covec, 2008.



1.2 Information Sources

Multiple secondary data sources were relied on for this EIA study, including detailed expenditure and revenue data for recent years supplied (in confidence) by CIAL. Where necessary, we sought further detail on this data with CIAL staff to develop a sound picture of Airport and SPAZ operations. CIAL's website was also helpful in this regard. The expenses by year were mapped to economic sectors and location of supplier, enabling the expenditure data to be used in our chosen modelling framework (discussed further below).

Other Airport data provided included:

- Flight movements by type and month.
- Passenger movements by type and month.

A range of other data sources were also considered and/or incorporated in the analysis, including:

- Christchurch District Plan zoning.
- Statistics New Zealand datasets:
 - Statistical boundaries;
 - Business Demography Survey (BD);
 - Imports and Exports Tables (national and by port);
 - Tourism satellite accounts; and
 - National Input-Output Table.
- Monthly Regional Tourism Estimates (MRTE) 2016-2020 from the Ministry of Business, Innovation and Employment.
- Aerial photographs, Google Street View, general web-based information.

1.3 Report Structure

This report begins with a brief discussion on the EIA approach applied and some of the nuances of the modelling and its interpretation (Section 2). Section 3 sets out the economic contribution results of activities directly attributable to Christchurch Airport. This includes a detailed analysis of the economic contribution of CIAL as a business unit, followed by a more high-level (desk-top) analysis of different groups of activities (businesses) related to the Airport and located in the SPAZ. Section 4 sets out the economic contribution results of economic activities facilitated by Christchurch Airport. Aspects of our approach in this section are discussed in more detail in appendices. Section 5 provides a summary of all EIA results and brief conclusions on the economic significance of Christchurch Airport.



2 Approach & Assessment Framework

This section describes the EIA approach and the specific methodology applied to estimate the economic contribution of Christchurch Airport. It explains how the economic contribution is measured, and the framework that guides the analysis and reporting of results. The recent performance of Christchurch Airport (and the wider SPAZ) is also discussed as the year selected for modelling makes a material difference to the economic contribution results. Due to Covid-19, M.E has not just selected the most recent year of economic activity as this would under-represent the economic role of the Airport.

2.1 EIA Methodology (Input-Output Modelling)

EIA is a particular economic analysis methodology designed to either understand the economic impacts of proposed investments and development in an economy or the economic contribution of existing activities. The analysis and interpretation undertaken for this report reflects a snapshot of the wider airport sector and its linkages at one point in time and is therefore a measure of the Christchurch Airport's contribution to the economy. This differs from economic 'impact'.

Economic impacts can be assessed in different ways and range from a 'with or without' scenario to a scenario where the effects of a 'next best alternative' is assessed and compared against the reference case. This is not the approach used here because the regional economy and Christchurch Airport have developed and grown together. It is not possible to revisit business investment and location decisions taken in the knowledge that the Canterbury Region does not have an international airport. Instead, the focus is on all activity that depends on, or is facilitated by, Christchurch Airport, irrespective of whether that activity would still operate in the Region (or even New Zealand) if the Airport infrastructure was not there.

The EIA model is based on Input-Output analysis which captures existing economic relationships. These relationships are expressed in a set of linear equations reflecting all market transactions for consumption in a given time period. As with all modelling approaches, Input-Output analysis relies on assumptions for its operation. Among the most important is the assumption that input structures of all industries (i.e., technical relationships) are fixed. In the real world, however, technical relationships will change over time. These changes are driven by new technologies, relative price shifts, product substitutions and the emergence of new industries. For this reason, Input-Output analysis is generally regarded as suitable for short-run analysis, where economic systems are unlikely to change greatly from the initial snapshot of data used to generate the base Input-Output tables. Input-Output analysis is, therefore, considered appropriate for the purpose of this study.

A bespoke Multi-Regional Input-Output (MRIO) table was developed for the EIA model by M.E. This MRIO table covers 109 industry sectors and six economic 'regions' and reflects the sectoral interactions (purchases, sales and other transfers) between sectors (as well as final demand sectors such as households)



and between those regions.² The MRIO table has a base year of 2020³, and therefore all final inputs and outputs of the model are expressed in \$2020.⁴

The methods used in this EIA are tested and proven and are employed globally by organisations looking to understand the economic contributions of airports to regional and national economies. They have been tested through significant peer review both academically and through industry review, and the approaches and findings have undergone scrutiny in the Environment Court.

2.2 Metrics Used to Explain Economic Contribution

The EIA model measures the economic contribution of Christchurch Airport using **value added** (synonymous with contribution to regional Gross Domestic Product), and **employment**. These two metrics tend to be used because they best represent the ‘true’ value of the contribution (or impact) to the local economy.

Value added is the principal measure of economic activity, and is estimated as operating surplus, wages and salaries paid to staff and working proprietors, depreciation, taxes and subsidies. The employment impacts are measured in terms of the count of employees (as well as estimated working proprietors) sustained.⁵

As well as estimating the direct valued added or employment effect of spending in the economy linked to Christchurch Airport,⁶ the model also calculates the indirect effect. Indirect effects result from an industry stimulating the creation of further demand through the purchases that it makes in other sectors of the economy. For example, CIAL directly spends money on property maintenance services from the property maintenance services sector causing their output to increase to sustain the demands of CIAL. In turn, the property maintenance services sector purchases more inputs from other sectors to cope with their increased output. Each of these transactions in addition to the initial injection of demand, generates a degree of value added and employment in the economy, and requires additional worker time up the supply-chain.

In addition to the direct and indirect effects of demand, the model also estimates induced effects. Induced effects arise from the increased demand for goods and services made by households who have received increased income as a result of the direct and indirect effects. CIAL pays wages and salaries to staff, as do its suppliers. These workers then spend money in the economy generating a further round of value added and employment.

² The economic regions in the model are Christchurch City, Selwyn District, Waimakariri District, rest of Canterbury Region, rest of South Island and rest of New Zealand (i.e., North Island). Results by region can be aggregated to give total Canterbury Region or total New Zealand for example.

³ Year ending June.

⁴ Depending on the year that is being modelled, this may require deflation or inflation on input expenditure data. M.E uses the Producers Price Index for these adjustments.

⁵ This measure of employment is called the Modified Employment Count (MEC) by Market Economics.

⁶ The economic contribution of CIAL as a business entity is based on detailed expenditure data supplied to M.E, while the economic contribution of all core airport operations (including but not limited to CIAL) and all facilitated business activity relies on average ratios of gross output/MEC derived from the MRIO.



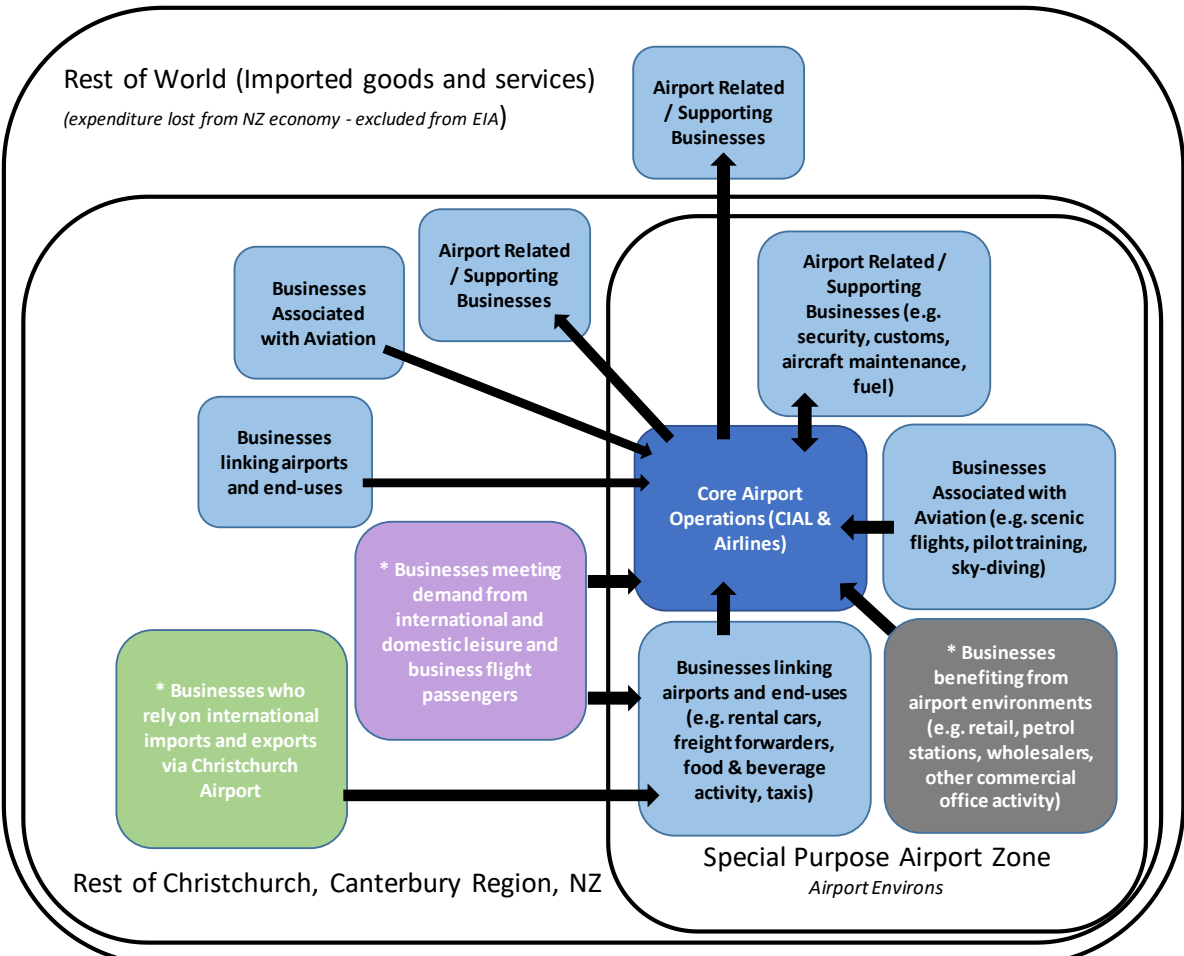
The total economic contribution of Christchurch Airport is the sum of the direct, indirect and induced value added and employment it sustains within the economy (directly or by facilitating further spending).

2.3 Components of Economic Contribution – Classification & Spatial Structure


As mentioned, airports directly sustain or facilitate a range of different business activities. Many of these businesses will be located in the immediate environs of an airport – in this case the SPAZ – and others will be located elsewhere in Christchurch, the Canterbury Region or New Zealand. A small number of businesses that support Christchurch Airport (i.e., sell goods and services) are located offshore. This is expenditure lost from the New Zealand economy and is therefore excluded from the EIA.

Figure 2-1 provides a summary of how different component parts of the economic contribution of Christchurch Airport have been assessed. These classifications are discussed in more detail in Section 3.

Figure 2-1 - Key Business to Business Relationship Able to be Captured in the Economic Contribution of Christchurch Airport



* = activity facilitated by the airport. All other activities are partly or wholly dependent on the presence of the airport
Direction of arrow indicates the direction of direct purchasing of goods/services.



Businesses (and specifically the employment in those businesses) in the SPAZ have been grouped to the five categories shown in Figure 2-1 by M.E at a detailed 6-digit ANZSIC level, and then aggregated to 109 economic sectors. Consideration has been given to the way in which businesses have been grouped in other airport EIAs completed around the country (by M.E), knowledge of many of the specific businesses in the SPAZ likely to be classified to each ANZSIC code (using detailed debtor data from CIAL), and web-based information on those businesses (where available). There is a degree of subjectivity in the grouping, and the results at the grouped level (but not the combined level) will be sensitive to the assumptions made.

The EIA model is limited to the economic contribution made by businesses (employment) inside the SPAZ as well as facilitated economic contributions outside the SPAZ and (where possible) ensuring no double counting between business groups/spending. As noted previously, businesses directly related to or supporting airport operations, or that are aviation focussed or linking the airport with end-users that are located outside the SPAZ, are excluded from scope but are still recognised in Figure 2-1 as they are a legitimate part of the Airport's overall economic contribution. Some examples of this excluded activity are:

- A portion of taxi activity, whereby they take passengers to/from the Airport.⁷
- Air-freight forwarding companies based in other commercial zones in Christchurch or neighbouring districts who utilise air-freight services but are not based in the SPAZ.
- Security, IT, food wholesale supply and other service providers supporting core Airport operations that are not based in the SPAZ. This may also include specialist aircraft mechanical service providers, training services, or specialist software providers/operators.
- Duty Free stores that are based in the Christchurch CBD and not the Airport terminal.

2.4 Selecting the Year to Represent the Airport's Economic Contribution

The EIA estimates the contribution that Christchurch Airport and wider SPAZ makes to the economy (in each economic region) over the course of one year. It is therefore an annual snapshot of its economic contribution, and this contribution will change over time. It is sensitive to changes in passenger and freight flows, with Covid-19 having a significant impact on air-travel since early 2020. It is also sensitive to the timing of capital expenditure (development) within the SPAZ by CIAL, and macro-economic conditions which impact business activity and employment generally.

2.4.1 Employment in the SPAZ

Employment in the SPAZ⁸ (inclusive of CIAL) peaked in February 2020 at just under 8,790 jobs (Figure 2-2).

⁷ This expenditure can also be captured as part of the facilitated expenditure of tourists.

⁸ The SPAZ occupies the significant majority of a single SA1. The SA1 does however include a small are of rural/rural lifestyle land. M.E has excluded any primary production (including mining) activity employment on the assumption that this is not located inside the SPAZ.



Figure 2-2 – Time Series of total SPAZ Employment (MECs) YE February (SA1 Defined)

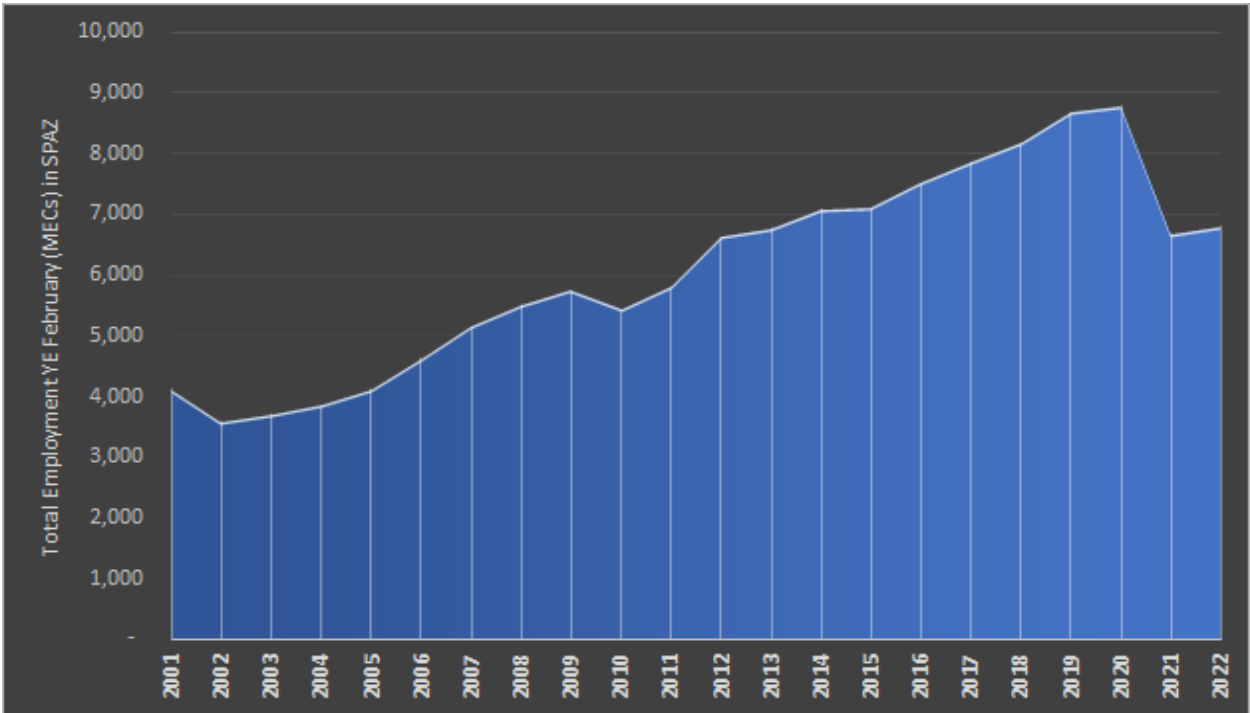
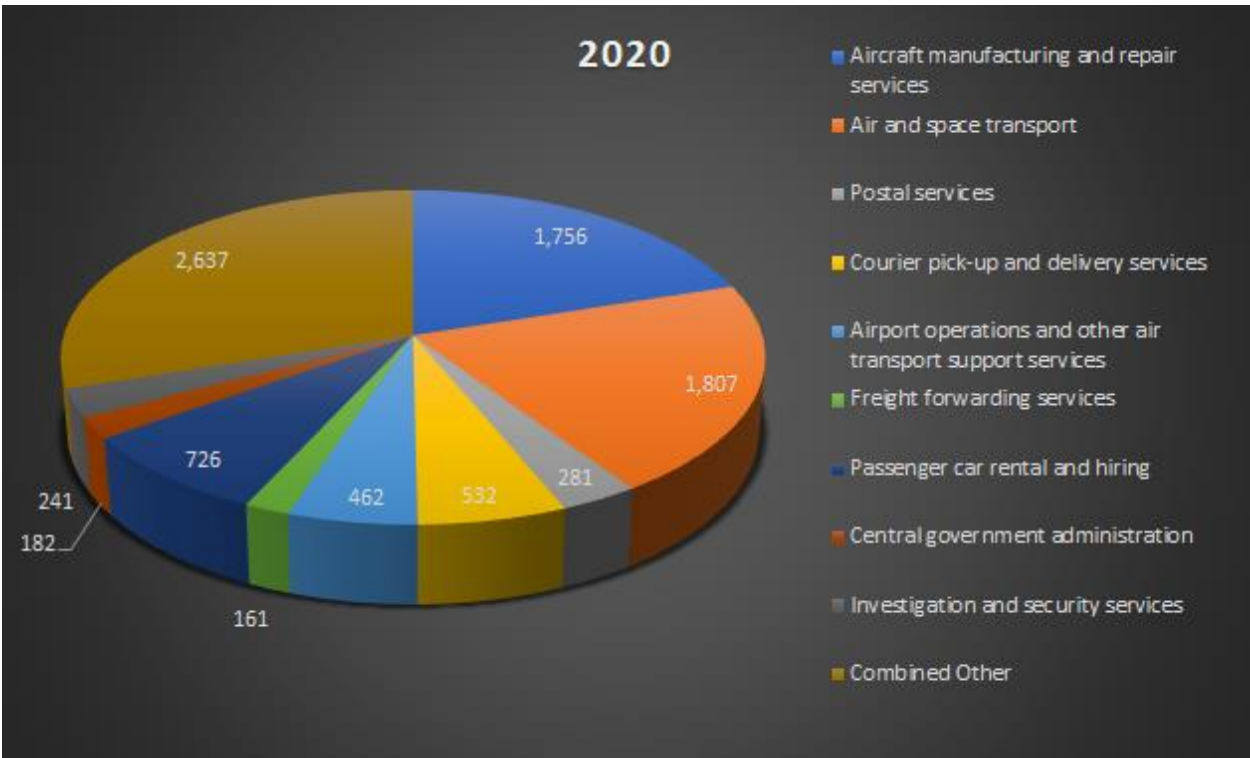


Figure 2-3 – Top 9 Industries in the SPAZ by Employment (MECs) in 2020 (6-digit ANZSIC)





This accounted for 4% of Christchurch City employment and 3% of Canterbury Region employment that year. 70% of the jobs in the SPAZ are concentrated in nine industries (Figures 2-3).⁹ Total employment in the SPAZ dropped substantially in February 2021 due to the impacts of Covid-19, but increased slightly in February 2022 to just over 6,800. 2023 figures from StatisticsNZ are not yet available, but the data shows that several industries operating in the SPAZ are still suffering the global effects of Covid-19 (and are trying to recover to their previous peak).

Figure 2-4 shows the relative location of workers across the SPAZ.¹⁰ This data is a sample of workers and is only available for 2021 (calendar year) – but the spatial distribution is expected to be similar under peak employment numbers (and when grossed up to the total)¹¹ – the larger the blue/white clusters, the more workers visited that location across the course of the year.

Figure 2-4 - Relative Distribution of Workers Within the SPAZ 2021 (Sample Mobile Phone Data)



⁹ Source: StatisticsNZ Business Demography.
¹⁰ More specifically, it shows the locations visited (for a sustained period) within the SPAZ by workers based in the SA1 encompassing the SPAZ. As such, it includes movements of workers, not limited to their workplace.
¹¹ The data is sourced from cell phone data which records movements of a sample of phone owners using GPS. Those movements have been cleaned to show destinations constituting a visit (i.e., to remove movement between destinations). The workplace SA1 of phone owners has been identified and provided as part of the data.

While only a sample of workers, Figure 2-4 shows that strong concentrations of employment in the SPAZ are based in and around the terminal, Sudima Hotel, Spitfire Square (shopping centre), Mustang Park (rental car depots) in the north and localised concentrations in Dakota Park (freight and logistics) to the south. The Hertz and VINZ locality is also showing a high concentration of SPAZ employment activity. Figure 2-5 helps make sense of the business precincts that define the SPAZ (as marketed by CIAL).

Figure 2-5 – Business Precincts within the SPAZ (source CIAL)



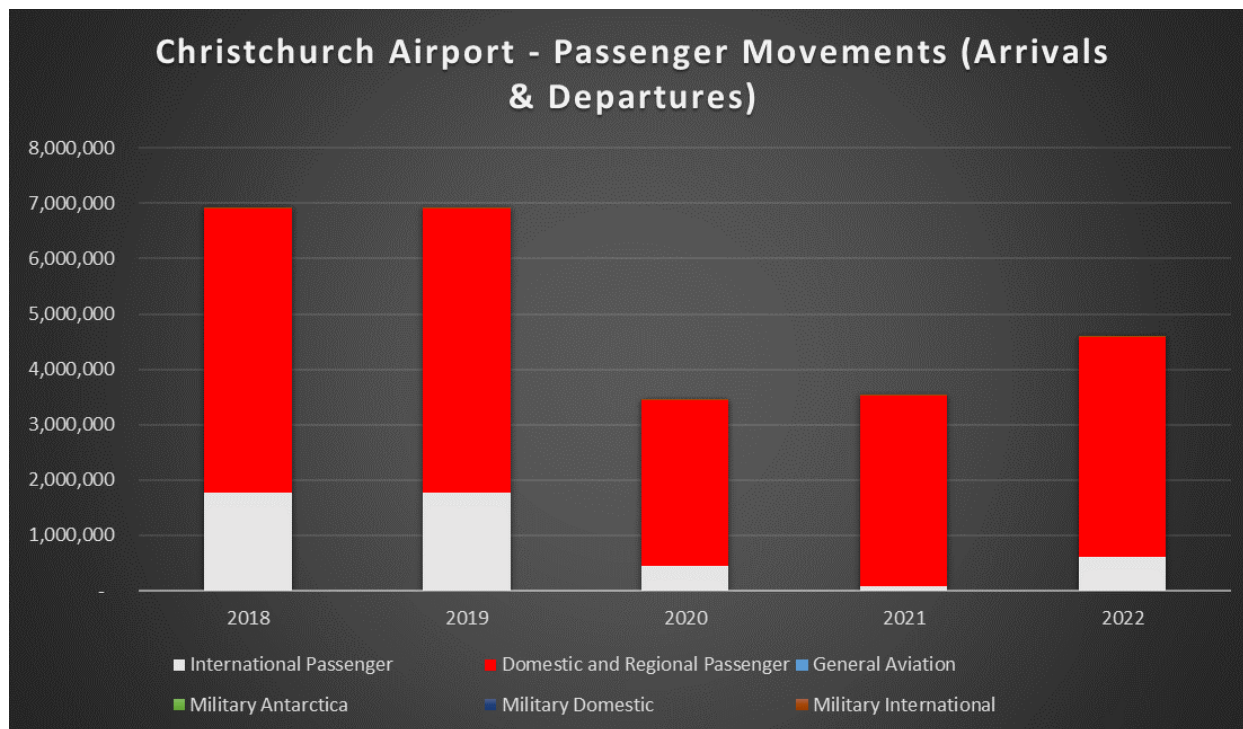
2.4.2 Passenger Movements

A total of 4.59 million passengers passed through the Christchurch Airport in the latest (2022) calendar year (arrivals and departures), with 87% on domestic flights and 13% on international flights. However, this total passenger count is just 66% of the total passengers that passed through the Airport in the 2019 calendar year - which reached 6.90 million. This again highlights that the recovery from Covid-19 is still ongoing. Even (main route) domestic flight passengers are only at 77% of pre-Covid-19 levels, which reflects the influence of the reduced number of international visitors taking domestic flights but also other economic factors (Figure 2.6).

In the 2019 peak year, passengers on international flights made up 26% of the total passenger count (compared to 13% in 2022). Indications from the first four months of 2023 are that the mix of domestic and international flight passengers is starting to return to 'normal'.



Figure 2-6 – Passenger Movement Trends by Year at Christchurch Airport (2018-2022 Calendar Years)



2.4.3 Flight Movements

Christchurch Airport not only caters for international and domestic flights (including key domestic routes and regional flights), but caters for a range of other scheduled and unscheduled flights. The trends for these other flight types over time are similar to those discussed above for passenger movements.

A total of nearly 84,500 flight movements were registered at Christchurch Airport in the 2022 calendar year (landings and take-offs), with 64% associated with domestic and regional passenger flights, and 5% associated with international passenger flights. This gives a combined total for scheduled passenger flight movements of nearly 57,300.

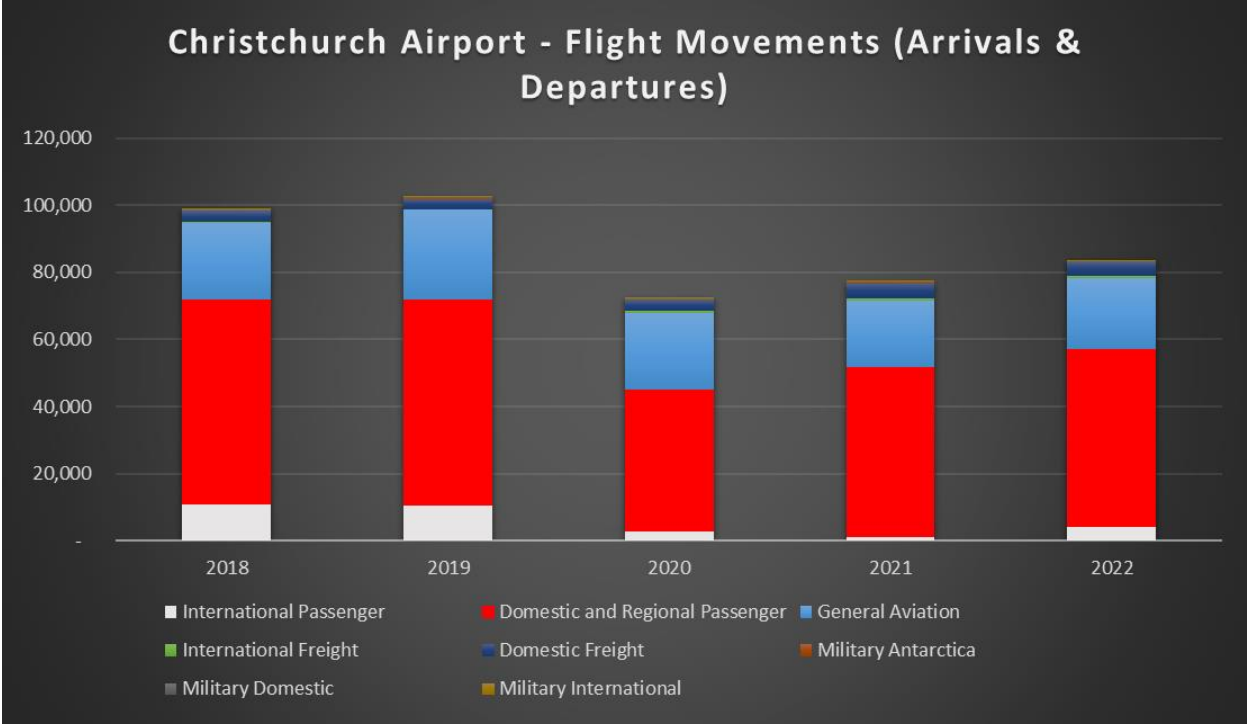
The balance of 2022 flight movements comprised 25% general aviation flights, 1% international freight flights, 5% domestic freight flights and 1% military flights. On average in the last five years (2018-2022), Christchurch Airport has handled 167 military flights to/from Antarctica, 527 domestic military flight movements and 50 international military flight movements per annum.

However, due to the ongoing recovery from Covid-19, these total 2022 flight movements are just 81% of the total flight movements that Christchurch Airport had in the 2019 calendar year - which reached nearly 102,300 flights (Figure 2-7). Domestic and regional passenger flights are at 87% of pre-Covid-19 levels and international passenger flight movements are at just 38%. On the contrary, Christchurch Airport has experienced steady growth in the number of freight flights since 2019. Freight played an increasingly important role thanks to the Government's International Air Freight Capacity scheme, which provided



funding post Covid-19 for dedicated freight flights (as opposed to sending goods on passenger flights), however, freight specific services have now started to decrease.¹²

Figure 2-7 - Flight Movement Trends by Year at Christchurch Airport (2018-2022 Calendar Years)



2.4.4 CIAL Expenditure

The effect of Covid-19 on flight and passenger movements has implications for a component of CIAL’s revenue in any one year given that airlines are charged landing and/or passenger fees by CIAL. However, total annual operating expenditure by CIAL has been relatively stable between 2017 and 2022 due to having many fixed rather than variable costs.

Despite that, the nature of expenditure has changed across recent years with rent relief (for tenants in the SPAZ) and incentives (price subsidies) for airlines and promotion being relatively greater expenses in the years ending June 2020 and 2021 to try and manage the effects of Covid-19.

It is not possible for all annual operating expenditure provided to us by CIAL to be used in the EIA model. We have focussed on expenses associated with the purchase of tangible goods and services as well as wage and salary (and related) payments. This component of operating expenditure has been increasing gradually between 2018 and 2022. At the same time, capital expenditure (on infrastructure and new/upgraded buildings for example) has dropped significantly in 2021 and 2022.

¹² Source: CIAL submission on Waimakariri Proposed District Plan (paragraphs 11-12), dated 26 November 2021.



2.4.5 Modelling Implications

This all makes a material difference on what year is selected to examine the economic contribution of CIAL as a business entity, just as the variation in employment in the SPAZ by industry sector makes a material difference on what year is selected to examine the economic contribution of all SPAZ activities (i.e., total core airport operations, activities related to or supporting airport operations, businesses linking the airport with end-users and aviation focussed activity). This is because modelling the economic contribution of all Airport related SPAZ business activity is based on a more high-level employment-driven approach and not the detailed financial data approach used specifically for CIAL's economic contribution.

To avoid under-representing the economic contribution of Christchurch Airport due simply to the temporary effects of Covid-19:

- The results in Section 3 for CIAL as a business entity are based on the year ending June 2019. This financial year represents combined operating and capital expenditure by CIAL at its highest in recent years¹³ – a level which CIAL would reasonably be expected to return to in the near future.
- The results in Section 3 for all business activity directly related to the Christchurch Airport are based on the year ending February 2020. As noted above, this employment snapshot in the StatisticsNZ Business Demography data represents peak employment in recent years. Again, this is a level of total employment that the SPAZ is expected to return to in the near future (and most likely exceed).
- The results in Section 4 for the economic contribution facilitated by Christchurch Airport are based on the year ending February 2020 for other business activity in the SPAZ, the year ending December 2020 for import and export activity, and the year ending October 2019 for domestic and international tourism activity. These variations in 12 month periods depend on how and when data is captured and published. Again, they are a level that is expected to be returned to in the near future.

¹³ Noting that operating expenditure able to be included in the EIA model is in fact slightly higher in the year ending June 2022. Hence, the results are slightly conservative with respect to operating expenditure impacts.

3 Results – Directly Attributable

This section of the report steps through the results of the EIA modelling, starting with results on the economic contribution specifically of CIAL, followed by a broader breakdown of economic contributions for business activity within the SPAZ, grouped according to their relationship to core Airport operations (and as summarised in Figure 2-1 above).

3.1 Economic Contribution of CIAL Only

CIAL owns 792 hectares of rateable land in the SPAZ, with a current land value of just under \$448 million, a total value of improvements of approximately \$935 million and a combined capital value of \$1.38 billion. It is a significant property owner and landlord, with the majority of businesses established in the SPAZ leasing land and buildings off CIAL.

CIAL has provided detailed expenditure (and revenue) data for recent years, including the share of that expenditure that is spent in each region of the economic model. M.E has coded that expenditure to match the model’s industry sectors. As noted above, we have not entered all expenditure into the model, and have focused on purchases of goods and services, as well as payments of wages and salaries. Local government rates are a significant cost for CIAL (ranging from \$6-\$7 million per annum in recent years). This cost is not factored into the economic contribution and, for this and other reasons, the results are considered conservative.

Table 3-1 shows that CIAL as a business entity contributed \$₂₀₂₀142 million in total direct, indirect and induced value added to the Canterbury Region economy in the YE June 2019 and \$₂₀₂₀191 million in total value added to the New Zealand economy that year. It sustained total employment of 1,272 MECs in the Canterbury Region, and 1,552 MECs in New Zealand overall. This employment contribution is in addition to CIAL’s own staff. The majority of the economic contribution is driven by capital expenditure, followed by operational expenditure and then wages and salaries.

Table 3-1 - Economic Contribution of CIAL as a Business Entity YE June 2019

Year Ending June 2019	Valued Added (₂₀₂₀ \$ million)				Employment (₂₀₂₀ MECs) *			
	Operating Expenditure	Capital Expenditure	Wages & Salaries	Total Contribution	Operating Expenditure	Capital Expenditure	Wages & Salaries	Total Contribution
Total Economic Contribution								
Waimakariri District	\$ 0	\$ 2	\$ 1	\$ 3	2	12	4	18
Christchurch City	\$ 16	\$ 93	\$ 10	\$ 120	198	820	93	1,111
Selwyn District	\$ 0	\$ 2	\$ 1	\$ 3	2	13	4	19
Rest of Canterbury	\$ 2	\$ 12	\$ 3	\$ 16	13	92	20	124
Total Canterbury Region	\$ 19	\$ 108	\$ 15	\$ 142	215	936	121	1,272
Rest of South Island (incl. Chathams)	\$ 1	\$ 5	\$ 1	\$ 8	10	47	12	69
North Island	\$ 13	\$ 23	\$ 6	\$ 42	66	118	29	213
Total New Zealand	\$ 33	\$ 136	\$ 22	\$ 191	291	1,102	162	1,554

Source: CIAL, Market Economics Ltd. Christchurch Airport EIA Model 2023.

Contribution captures expenditure on intermediate inputs and wages and salaries only. Excludes operating surplus, taxes (including rates), interest and imports.

* Based on Modified Employment Count or MEC: Employee Count including working proprietors.

3.2 Economic Contribution of Core Airport Operations

For the purposes of this EIA, core Airport operations in the SPAZ include CIAL itself and other critical Airport operations and includes the airlines that operate from the SPAZ. Businesses operating a terminal for private jets within the SPAZ are included here. As Christchurch Airport plays an important role for New Zealand Defence Force activities, we have included this activity as part of the core Airport operations alongside other airlines. Christchurch Airport is also the base of Antarctic research operations in New Zealand which make a number of flights to Antarctica each year. This business activity is treated as part of the core operations of the Airport (akin to an airline) for the purpose of this EIA.

Table 3-2 shows that businesses that are part of core Airport operations in the SPAZ contributed \$₂₀₂₀440 million in total direct, indirect and induced value added to the Canterbury Region economy in the YE February 2020 and \$₂₀₂₀687 million in total value added to the New Zealand economy that year. They sustained total employment of 4,013 MECs in the Canterbury Region, and 5,377 MECs in New Zealand overall. This employment contribution is in addition to those employed in core Airport operations in the SPAZ in 2020.

Table 3-2 - Economic Contribution of Core Airport Operations in the SPAZ YE February 2020

Year Ending February 2020	Valued Added (₂₀₂₀ \$ million)				Employment (₂₀₂₀ MECs) *			
	Direct	Indirect	Induced	Total	Direct	Indirect	Induced	Total
Core Airport Operations (Including CIAL)								
Waimakariri District	\$ 1	\$ 2	\$ 3	\$ 5	7	9	16	32
Christchurch City	\$ 208	\$ 79	\$ 82	\$ 369	1,968	741	743	3,452
Selwyn District	\$ 2	\$ 2	\$ 3	\$ 8	12	13	17	41
Rest of Canterbury	\$ 21	\$ 16	\$ 22	\$ 58	222	109	156	487
Total Canterbury Region	\$ 231	\$ 99	\$ 111	\$ 440	2,208	873	932	4,013
Rest of South Island (incl. Chathams)	\$ 13	\$ 12	\$ 16	\$ 41	117	101	141	359
North Island	\$ 56	\$ 63	\$ 86	\$ 205	224	334	448	1,006
Total New Zealand	\$ 301	\$ 174	\$ 213	\$ 687	2,548	1,308	1,521	5,377

Source: CIAL, Market Economics Ltd. Christchurch Airport EIA Model 2023.

Contribution captures expenditure on intermediate inputs and wages and salaries only. Excludes operating surplus, taxes (including rates), interest and imports.

* Based on Modified Employment Count or MEC: Employee Count including working proprietors.

3.3 Economic Contribution of SPAZ Businesses Related/ Supporting Airport Operations

For the purposes of this EIA, activities related to, or supporting, Airport operations or aviation in general includes customs, security, emergency services, police and airline catering activity as well as wholesaling of petroleum products. It also includes aircraft maintenance. Christchurch Airport wouldn't be able to operate in the absence of these services. While most of these businesses and organisations are based within the SPAZ, a small number are not co-located. The economic contribution of those Airport related and supporting businesses located outside the SPAZ have not been included in the scope of the EIA.

Table 3-3 shows that businesses that are related to or supporting Airport operations (and located in the SPAZ) contributed \$₂₀₂₀145 million in total direct, indirect and induced value added to the Canterbury Region economy in the YE February 2020 and \$₂₀₂₀198 million in total value added to the New Zealand

economy that year. They sustained total employment of 1,387 MECs in the Canterbury Region, and 1,700 MECs in New Zealand overall. This employment contribution is in addition to those employed in those particular SPAZ businesses in 2020.

Table 3-3 - Economic Contribution of Businesses in the SPAZ Related to/Supporting Airport Operations YE February 2020

Year Ending February 2020	Valued Added (₂₀₂₀ \$ million)				Employment (₂₀₂₀ MECs) *			
	Direct	Indirect	Induced	Total	Direct	Indirect	Induced	Total
Airport Related/Supporting Businesses in Special Purpose Airport Zone								
Waimakariri District	\$ 0	\$ 1	\$ 1	\$ 2	3	4	6	13
Christchurch City	\$ 62	\$ 28	\$ 29	\$ 118	647	267	258	1,173
Selwyn District	\$ 1	\$ 1	\$ 1	\$ 3	5	5	6	16
Rest of Canterbury	\$ 9	\$ 6	\$ 8	\$ 22	91	41	54	186
Total Canterbury Region	\$ 71	\$ 35	\$ 38	\$ 145	747	317	323	1,387
Rest of South Island (incl. Chathams)	\$ 2	\$ 4	\$ 5	\$ 10	15	29	41	85
North Island	\$ 6	\$ 15	\$ 23	\$ 44	32	78	119	228
Total New Zealand	\$ 79	\$ 54	\$ 66	\$ 198	794	423	483	1,700

Source: CIAL, Market Economics Ltd. Christchurch Airport EIA Model 2023.

Contribution captures expenditure on intermediate inputs and wages and salaries only. Excludes operating surplus, taxes (including rates), interest and imports.

* Based on Modified Employment Count or MEC: Employee Count including working proprietors.

3.4 Economic Contribution of Businesses in the SPAZ Linking the Airport with End-users

For the purposes of this EIA, activities linking Christchurch Airport and aviation activities with end-users include:

- a) Businesses directly associated with the Airport¹⁴ that are there to service the needs of passengers rather than the operations of the Airport *per se*. This includes food and beverage businesses serving passengers while in the SPAZ,¹⁵ accommodation located in the SPAZ, duty-free stores provided within the terminal, parking services, any travel booking services based in the SPAZ, and car rental companies based in the SPAZ.¹⁶ Retail activities inside and outside the terminal are factored into the modelling elsewhere as explained in Section 4 of this report. While most of these businesses linking passengers with the Airport are based in the SPAZ, some are not (for example taxi companies and some duty-free businesses). Those outside the SPAZ are not captured in the EIA model.
- b) Couriers, postal services and freight forwarders are also key businesses linking households and businesses with the Airport (i.e., to airlines transporting air freight). Again, the EIA captures those businesses located in the SPAZ,¹⁷ but there are some businesses that still

¹⁴ I.e., have a transactional relationship with CIAL. This may include paying a fee to conduct business in the SPAZ (such as gate charges), or leasing space/buildings from CIAL within the SPAZ.

¹⁵ Located in the terminal, or elsewhere in the SPAZ. These businesses also benefit the SPAZ workforce.

¹⁶ While all rental companies in the SPAZ are based in the Mustang Park precinct, some also have a presence within the terminal.

¹⁷ These businesses are concentrated in the Dakota Park precinct.

access the Airport for freight reasons that are based outside the SPAZ. To be conservative, those less proximate businesses are not captured.

Table 3-4 shows that businesses that are helping to link the Airport with end-users (and located in the SPAZ) contributed \$₂₀₂₀128 million in total direct, indirect and induced value added to the Canterbury Region economy in the YE February 2020 and \$₂₀₂₀236 million in total value added to the New Zealand economy that year. They sustained total employment of 128 MECs in the Canterbury Region, and 236 MECs in New Zealand overall. This employment contribution is in addition to those employed in those particular SPAZ businesses in 2020.

Table 3-4 - Economic Contribution of Businesses in the SPAZ Linking the Airport with End Users YE February 2020

Year Ending February 2020	Valued Added (₂₀₂₀ \$ million)				Employment (₂₀₂₀ MECs) *			
	Direct	Indirect	Induced	Total	Direct	Indirect	Induced	Total
Businesses Linking Airport and End-Users Located in the Special Purpose Airport Zone								
Waimakariri District	\$ 0	\$ 1	\$ 1	\$ 2	2	4	5	12
Christchurch City	\$ 52	\$ 27	\$ 24	\$ 103	475	258	215	948
Selwyn District	\$ 1	\$ 1	\$ 1	\$ 3	5	6	5	16
Rest of Canterbury	\$ 8	\$ 6	\$ 6	\$ 20	63	41	45	149
Total Canterbury Region	\$ 61	\$ 35	\$ 32	\$ 128	546	309	270	1,125
Rest of South Island (incl. Chathams)	\$ 3	\$ 5	\$ 5	\$ 12	21	39	47	107
North Island	\$ 26	\$ 32	\$ 37	\$ 95	174	182	193	550
Total New Zealand	\$ 90	\$ 71	\$ 74	\$ 236	741	531	510	1,782

Source: CIAL, Market Economics Ltd. Christchurch Airport EIA Model 2023.

Contribution captures expenditure on intermediate inputs and wages and salaries only. Excludes operating surplus, taxes (including rates), interest and imports.

* Based on Modified Employment Count or MEC: Employee Count including working proprietors.

3.5 Economic Contribution of Businesses in the SPAZ Associated with Aviation

For the purposes of this EIA, activities with aviation as a key focus or input into their business processes include scenic flight operators, sky diving operators, flight training providers and aero clubs. We have considered only those associated businesses located within the SPAZ. The SPAZ is also home to the International Antarctic Centre. While this tourist and educational attraction is not dependent on being near Christchurch Airport, it is linked to Antarctic research organisations that are dependent on the Airport to operate. They are therefore associated with aviation activity and included here. Overall, this is a relatively small group of businesses.

Table 3-5 shows that businesses that are associated with aviation (and located in the SPAZ) contributed \$₂₀₂₀4 million in total direct, indirect and induced value added to the Canterbury Region economy in the YE February 2020 and \$₂₀₂₀5 million in total value added to the New Zealand economy that year. They sustained total employment of 35 MECs in the Canterbury Region, and 47 MECs in New Zealand overall. This employment contribution is in addition to those employed in those particular SPAZ businesses in 2020.

Table 3-5 - Economic Contribution of Businesses in the SPAZ Associated with Aviation YE February 2020

Year Ending February 2020	Valued Added (2020\$ million)				Employment (2020MECs) *			
	Direct	Indirect	Induced	Total	Direct	Indirect	Induced	Total
Businesses in the SPAZ Associated with Aviation								
Waimakariri District	\$ 0	\$ 0	\$ 0	\$ 0	0	0	0	0
Christchurch City	\$ 1	\$ 1	\$ 1	\$ 3	16	7	6	30
Selwyn District	\$ 0	\$ 0	\$ 0	\$ 0	0	0	0	0
Rest of Canterbury	\$ 0	\$ 0	\$ 0	\$ 1	2	1	1	4
Total Canterbury Region	\$ 2	\$ 1	\$ 1	\$ 4	19	8	8	35
Rest of South Island (incl. Chathams)	\$ 0	\$ 0	\$ 0	\$ 0	2	1	1	4
North Island	\$ 0	\$ 0	\$ 1	\$ 2	2	3	4	9
Total New Zealand	\$ 2	\$ 2	\$ 2	\$ 5	23	12	13	47

Source: CIAL, Market Economics Ltd. Christchurch Airport EIA Model 2023.

Contribution captures expenditure on intermediate inputs and wages and salaries only. Excludes operating surplus, taxes (including rates), interest and imports.

* Based on Modified Employment Count or MEC: Employee Count including working proprietors.

3.6 Summary of Economic Contribution Directly Attributable to the Airport

Table 3-6 and Figures 3-1 and 3-2 provide a summary of the total direct, indirect and induced economic contribution of business activity that is directly attributable to the Airport. In total, the value added contribution to the Canterbury Region economy is \$₂₀₂₀717 million (approximately 6,560 additional MECs to those already in the SPAZ). When supply chains beyond the Canterbury Region are included, the total valued added contribution to the national economy is \$₂₀₂₀1.13 billion (approximately 8,900 additional MECs to those already in the SPAZ).

Table 3-6 - Economic Contribution of Businesses in the SPAZ Directly Attributable to the Airport YE February 2020

Year Ending February 2020	Valued Added (2020\$ million)				Employment (2020MECs) *			
	Direct	Indirect	Induced	Total	Direct	Indirect	Induced	Total
Canterbury Region								
Core Airport Operations	\$ 231	\$ 99	\$ 111	\$ 440	2,208	873	932	4,013
Airport Related/Supporting	\$ 71	\$ 35	\$ 38	\$ 145	747	317	323	1,387
Businesses Linking End-Users	\$ 61	\$ 35	\$ 32	\$ 128	546	309	270	1,125
Businesses Associated w. Aviation	\$ 2	\$ 1	\$ 1	\$ 4	19	8	8	35
Total Core & Airport Related	\$ 365	\$ 170	\$ 182	\$ 717	3,519	1,508	1,533	6,560
New Zealand								
Core Airport Operations	\$ 301	\$ 174	\$ 213	\$ 687	2,548	1,308	1,521	5,377
Airport Related/Supporting	\$ 79	\$ 54	\$ 66	\$ 198	794	423	483	1,700
Businesses Linking End-Users	\$ 90	\$ 71	\$ 74	\$ 236	741	531	510	1,782
Businesses Associated w. Aviation	\$ 2	\$ 2	\$ 2	\$ 5	23	12	13	47
Total Core & Airport Related	\$ 472	\$ 301	\$ 355	\$ 1,127	4,106	2,274	2,527	8,906

Source: CIAL, Market Economics Ltd. Christchurch Airport EIA Model 2023.

* Based on Modified Employment Count or MEC: Employee Count including working proprietors.

While for a slightly different 12 month period, the total value added contribution of CIAL as a business entity accounts for approximately 28% of the national contribution from total core Airport operations in the SPAZ. In turn, total core Airport operations make up 61% of the overall economic contribution (\$₂₀₂₀687



million), followed by businesses linking the Airport with end-users (21% of the total, \$₂₀₂₀236 million)), and Airport related and supporting businesses (18% of the total, \$₂₀₂₀198 million). Business activity associated with aviation and based in the SPAZ makes up less than 1% of the total national value added contribution of Christchurch Airport.

Figure 3-1 - Economic Contribution of Businesses in the SPAZ Directly Attributable to the Airport by Group YE February 2020

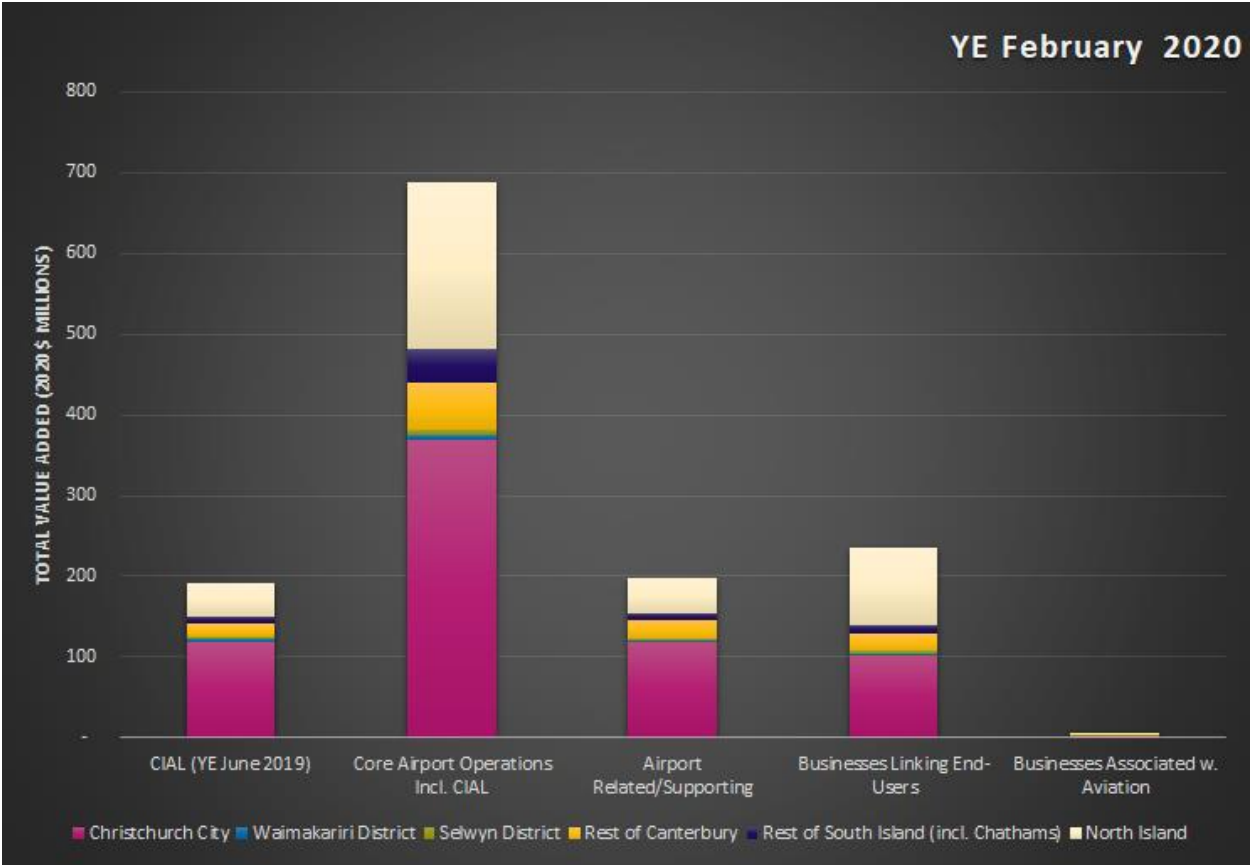
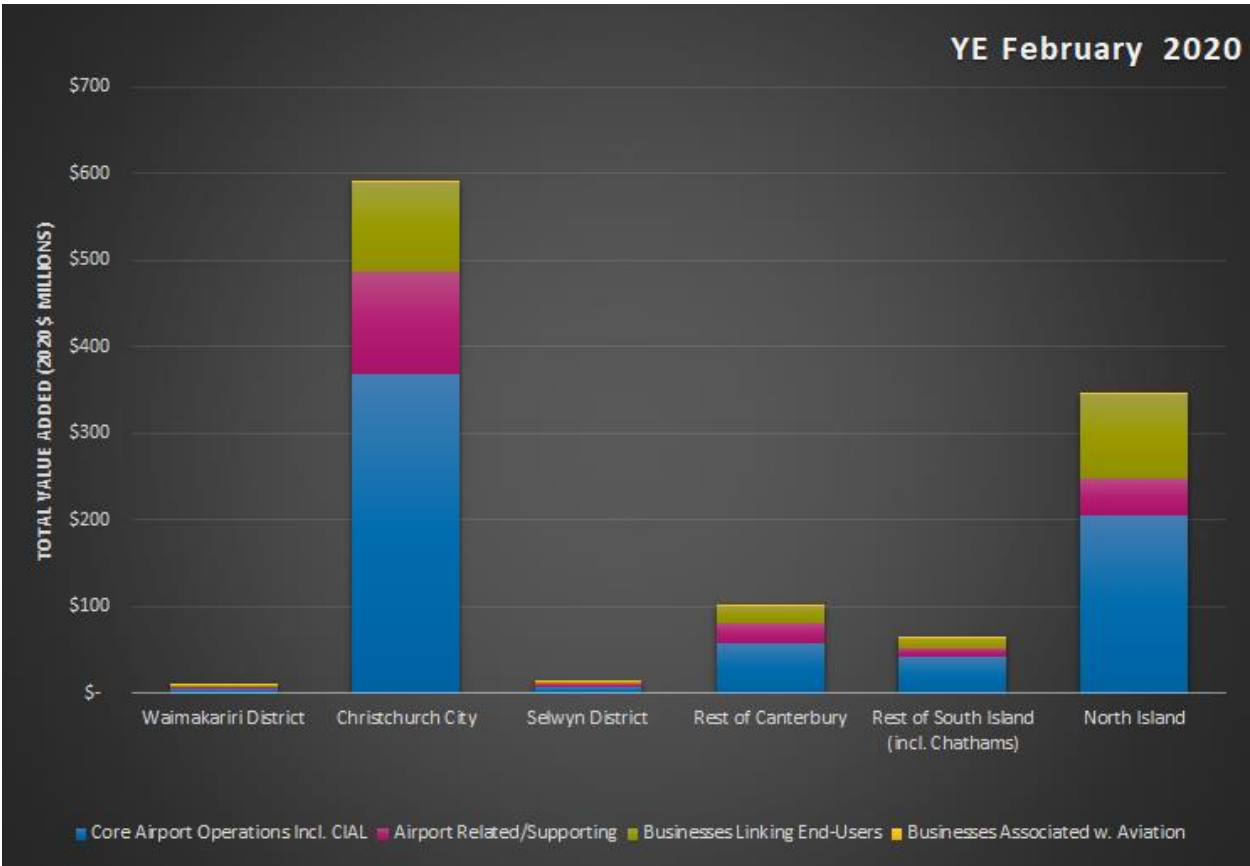


Figure 3-2 highlights the localised economic benefit of having an international airport. When value added across all supply chains of business activity attributable to the Airport is 'put on the ground', 53% of that economic contribution is felt within Christchurch City. Districts north and south of Christchurch (Waimakariri and Selwyn) make up 1% each of the total national value added. The rest of Canterbury receives 9% of the economic contribution, bringing the Canterbury Region share of the total to 64%. A further 6% of total value added is felt within the Rest of the South Island, and 31% is felt in the North Island.¹⁸

¹⁸ This is expected to be driven largely by firms being head quartered in the North Island (likely Auckland).



Figure 3-2 - Economic Contribution of Businesses in the SPAZ Directly Attributable to the Airport by Location
YE February 2020





4 Results – Facilitated Contribution

An important characteristic of airports is that they can influence economic activities which are substantially greater than the economic activity of the airport itself. These ‘facilitated effects’, form an important component of the overall contribution of airports.

4.1 Economic Contribution of Other Businesses Benefiting from Airport Environs

As shown in Figure 2-5, CIAL has created a number of precincts within the SPAZ that it markets to businesses considering an airport location.¹⁹ This includes the Harvard Park precinct marketed as a ‘trade and service precinct’ which currently contains the Bunnings Warehouse. There is the Agri-Export precinct and the shopping centre (Spitfire Square).²⁰ Dakota Park is the ‘freight and logistics’ precinct and has attracted a range of wholesaling businesses (in addition to freight/postal companies), but other sorts of businesses as well (such as storage companies).

All up, there are a range of businesses that benefit from being close to airport related services and being close to a large, concentrated workforce or passenger base.

Figure 4-1 shows the relative distribution of visits within the SPAZ by people that do not live in the Canterbury Region. Again, it is a sample of cell phone owners from 2021 (so is largely New Zealand residents). While not all visits are necessarily linked to travel via Christchurch Airport, the results highlight the importance of some of these other businesses to visitors to the Region, especially those businesses located along the northern side of Memorial Avenue and in the north of the SPAZ.²¹

¹⁹ <https://www.christchurchairport.co.nz/commercial/>

²⁰ Food and beverage services in this precinct are classified as directly airport related (services linking passengers with airports).

²¹ A range of other businesses benefiting from being located in the SPAZ are not visitor facing businesses and so will not show up in Figure 4.1. They will however be captured in Figure 2-4 which shows workers in the SPAZ.



Figure 4-1 - Relative Distribution of Non-Canterbury Resident Visits Within the SPAZ 2021 (Sample Mobile Phone Data)



Some of the visitation patterns in Figure 4-1 are for businesses that are directly related to the Airport and discussed in Section 3 above. This includes businesses linking the Airport with end-users (i.e., food and beverage outlets, including McDonalds and other outlets in Spitfire Square, as well as rental car businesses and the Sudima Hotel). The International Antarctic Centre also shows a key concentration of visitors to the Region (and is treated as an aviation associated activity already discussed above).

These other businesses benefiting from the Airport environs and servicing visitors are therefore an important component of the SPAZ and their presence is facilitated by CIAL through the lease of sites/buildings. They are also an important revenue earner for CIAL that helps fund core Airport operations. They are included in the EIA, but their economic contribution is considered differently from other classified activities (i.e., as facilitated business activity).

Table 4-1 shows that businesses that benefit from being in the SPAZ contributed \$₂₀₂₀153 million in total direct, indirect and induced value added to the Canterbury Region economy in the YE February 2020 and \$₂₀₂₀227 million in total value added to the New Zealand economy that year. They sustained total employment of 1,349 MECs in Canterbury Region, and 1,773 MECs in New Zealand overall. This employment contribution is in addition to the significant employment in those particular SPAZ businesses in 2020.

Table 4-1 - Economic Contribution of Businesses Benefiting from Being in the SPAZ YE February 2020

Year Ending February 2020	Valued Added (₂₀₂₀ \$ million)				Employment (₂₀₂₀ MECs) *			
	Direct	Indirect	Induced	Total	Direct	Indirect	Induced	Total
Businesses in the Special Purpose Airport Zone Benefiting from Airport Environs								
Waimakariri District	\$ 1	\$ 1	\$ 1	\$ 3	8	7	7	22
Christchurch City	\$ 57	\$ 35	\$ 29	\$ 120	525	318	262	1,106
Selwyn District	\$ 1	\$ 1	\$ 1	\$ 4	11	8	6	26
Rest of Canterbury	\$ 11	\$ 7	\$ 8	\$ 26	89	53	55	197
Total Canterbury Region	\$ 70	\$ 44	\$ 39	\$ 153	633	386	331	1,349
Rest of South Island (incl. Chathams)	\$ 3	\$ 5	\$ 5	\$ 14	25	41	48	114
North Island	\$ 11	\$ 21	\$ 28	\$ 60	55	109	146	310
Total New Zealand	\$ 84	\$ 70	\$ 73	\$ 227	713	536	524	1,773

Source: CIAL, Market Economics Ltd. Christchurch Airport EIA Model 2023.

Contribution captures expenditure on intermediate inputs and wages and salaries only. Excludes operating surplus, taxes (including rates), interest and imports.

* Based on Modified Employment Count or MEC: Employee Count including working proprietors.

4.2 Economic Contribution of International Imports and Exports

The international movement of freight provides a key connection between New Zealand firms and international markets. Most of New Zealand's imports and exports are moved with ocean going vessels but around 14% of goods, by value, are exported via air and nearly a quarter of imports, by value, (23%) are transported via air (2022). These goods tend to be of high value, with the weight of air freighted imports and exports (understandably) only representing small proportions of New Zealand's total freight by weight, at 0.41% of all imports and 0.25% of all exports. While Auckland Airport dominates air freight activity, Christchurch Airport still handles a large share of New Zealand's international freight by value with 1.0% of total imports and 2.6% of total exports (2022).

Overall, the value of goods exported through Christchurch Airport totalled \$2.0 billion in the 2020 calendar year, representing the majority of the Airport's total freight (73%). The remaining 27% of freight was imported goods totalling \$733 million in value for that year.²²

The value of commodities classed within 'nuclear reactors, boilers, machinery and mechanical appliances'²³ ranks the highest across commodities imported (61%) and exported (73%) by value through Christchurch Airport. This class covers a range of machinery and parts which are used across a wide range of industries such as manufacturing and construction. Table 4-2 indicates that the Airport plays a key role in transporting other types of machinery and equipment too. These are items which are critical to the operation of a wide range of economic activity.

²² Source: NZ.Stat (Statistics NZ).

²³ The Harmonised System of classifying commodities is an international approach, hence inclusion of 'Nuclear Reactors'.

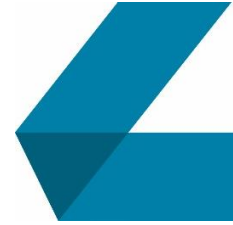
Table 4-2 - Key Commodities Freightied Via Christchurch Airport (YE December 2020)

Exports			
Rank	Commodity (HS2)	Exports 2020 (FOB NZ\$M)	Proportion of Total
1	Nuclear reactors, boilers, machinery and mechanical appliances; parts thereof	\$ 1,481	73%
2	Fish and crustaceans, molluscs and other aquatic invertebrates	\$ 81	4%
3	Electrical machinery and equipment and parts thereof; sound recorders and reproducers; television image and sound recorders and reproducers, parts and accessories of such articles	\$ 65	3%
4	Aircraft, spacecraft and parts thereof	\$ 48	2%
5	Natural, cultured pearls; precious, semi-precious stones; precious metals, metals clad with precious metal, and articles thereof; imitation jewellery; coin	\$ 40	2%
6	Meat and edible meat offal	\$ 35	2%
7	Fruit and nuts, edible; peel of citrus fruit or melons	\$ 35	2%
8	Preparations of cereals, flour, starch or milk; pastrycooks' products	\$ 31	2%
9	Albuminoidal substances; modified starches; glues; enzymes	\$ 27	1%
10	Pharmaceutical products	\$ 26	1%
	<i>Other Exports</i>	\$ 147	7%
	Total Exports	\$ 2,016	100%
Imports			
Rank	Commodity (HS2)	Imports 2020 (CIF NZ\$M)	Proportion of Total
1	Nuclear reactors, boilers, machinery and mechanical appliances; parts thereof	\$ 449	61%
2	Electrical machinery and equipment and parts thereof; sound recorders and reproducers; television image and sound recorders and reproducers, parts and accessories of such articles	\$ 65	9%
3	Aircraft, spacecraft and parts thereof	\$ 45	6%
4	Optical, photographic, cinematographic, measuring, checking, medical or surgical instruments and apparatus; parts and accessories	\$ 33	4%
5	Apparel and clothing accessories; not knitted or crocheted	\$ 14	2%
6	Apparel and clothing accessories; knitted or crocheted	\$ 10	1%
7	Vehicles; other than railway or tramway rolling stock, and parts and accessories thereof	\$ 10	1%
8	Pharmaceutical products	\$ 9	1%
9	Textiles, made up articles; sets; worn clothing and worn textile articles; rags	\$ 9	1%
10	Rubber and articles thereof	\$ 7	1%
	<i>Other Imports</i>	\$ 84	12%
	Total Imports	\$ 733	100%

Source: NZ.Stat (Calendar Year 2020)

Of the commodities imported at lower levels, 'clothing', 'specialised instruments' and 'pharmaceutical products' are within the top ten ranked commodities by value. 'Consumer electronics' within the 'electrical machinery classification', is another high value consumer good passing through the Airport.

Domestic food products are being exported through the Airport at reasonably significant levels. Seafood, meat, fruit and other processed food items all leave the country through the Airport, highlighting the role



the Airport plays within the supply chains of domestic food producers and manufactures (especially for high-value, perishable items).

The commodities which are imported and exported through Christchurch Airport have an important role within New Zealand's economy. With reference to exports, the goods need to be produced before being exported. This means that local value chains are influenced by the ability to sell goods offshore and that removing the link provided by Christchurch Airport would reduce the level of activity that could be sustainably undertaken.²⁴ Therefore it is possible to estimate the total value associated with producing the exported goods and view that value as a facilitated effect.

A similar position can be taken for imports. A portion of imported goods are used as intermediate inputs – supporting local production.²⁵ Removing the ability to source specific inputs via Christchurch Airport would influence local production processes.²⁶

While we know the nature (and value) of goods transported via Christchurch Airport (Table 4.2), estimating the spatial distribution of the trade effects facilitated by Christchurch Airport is difficult because there is very limited information on where goods are shipped to/from. The EIA takes the approach of attributing international air-freighted goods passing through the Airport to businesses located across Canterbury (pro rata the distribution of known imports/exports by sector across MRIO regions within Canterbury). We note that the supply chains of those businesses are not limited to the Canterbury Region, and this is reflected in the results. Further detail on our modelling assumptions and approach is covered in Appendix A.

The estimated economic contribution facilitated by the freight role of Christchurch Airport is shown in Table 4-3 for imports and exports in the year ending December 2020. We consider only international freight and as such, the Airport's domestic air freight role is not represented and would be net additional to this facilitated economic contribution.

Table 4-3 shows that the value of goods imported through Christchurch Airport facilitated around \$₂₀₂₀300 million in total direct, indirect and induced value added to the Canterbury Region economy in 2020 and \$₂₀₂₀373 million in total value added to the New Zealand economy that year. This sustained total employment of approximately 2,890 MECs in Canterbury Region, and 3,320 MECs in New Zealand overall.

For goods exported through Christchurch Airport, this facilitated around \$₂₀₂₀1.77 billion in total value added in the Canterbury Region economy, rising to \$₂₀₂₀2.23 billion when the total value added contribution to the national economy is considered. This level of activity sustained around 18,198 MECs within Canterbury and 20,978 MECs across all of New Zealand in 2020.

Combined, the facilitated economic contribution of the Airport associated with international trade is significant. The total value added contribution to Canterbury Region facilitated by imported and exported goods passing through the Airport is estimated at \$₂₀₂₀2.07 billion (nearly 21,090 MECs) and the total value added contribution to New Zealand is estimated at \$₂₀₂₀2.60 billion (nearly 24,300 MECs).

²⁴ The level of influence is determined by the availability of suitable and cost effective substitute products.

²⁵ The remainder is imported by final demand sectors (i.e., households buying products from overseas).

²⁶ We note that some of the inputs and exports may be used/produced within the airport environs. In the Canterbury context, 3% of the region's employment is in the SPAZ meaning that only a small portion of the total trade effect can be attributed to the environs (and therefore double counted).

Table 4-3 – Facilitated Economic Contribution of International Trade YE December 2020

Year Ending December 2020	Valued Added (₂₀₂₀ \$ million)				Employment (₂₀₂₀ MECs) *			
	Direct	Indirect	Induced	Total	Direct	Indirect	Induced	Total
International Imports								
Waimakariri District	\$ 6	\$ 2	\$ 3	\$ 12	70	17	17	104
Christchurch City	\$ 109	\$ 57	\$ 59	\$ 224	1,138	562	530	2,230
Selwyn District	\$ 9	\$ 2	\$ 4	\$ 15	96	19	16	131
Rest of Canterbury	\$ 20	\$ 13	\$ 16	\$ 48	217	97	112	426
Total Canterbury Region	\$ 145	\$ 74	\$ 81	\$ 300	1,521	695	675	2,891
Rest of South Island (incl. Chathams)	\$ -	\$ 6	\$ 8	\$ 14	-	50	73	123
North Island	\$ -	\$ 21	\$ 38	\$ 59	-	111	195	306
Total New Zealand	\$ 145	\$ 101	\$ 127	\$ 373	1,521	856	943	3,320
International Exports								
Waimakariri District	\$ 128	\$ 15	\$ 35	\$ 178	1,678	128	175	1,981
Christchurch City	\$ 354	\$ 336	\$ 292	\$ 982	4,149	3,400	2,637	10,187
Selwyn District	\$ 177	\$ 24	\$ 36	\$ 238	2,008	195	155	2,358
Rest of Canterbury	\$ 202	\$ 86	\$ 81	\$ 369	2,501	606	566	3,673
Total Canterbury Region	\$ 862	\$ 462	\$ 443	\$ 1,767	10,336	4,329	3,533	18,198
Rest of South Island (incl. Chathams)	\$ -	\$ 51	\$ 47	\$ 98	-	446	416	862
North Island	\$ -	\$ 150	\$ 213	\$ 363	-	820	1,097	1,917
Total New Zealand	\$ 862	\$ 663	\$ 703	\$ 2,227	10,336	5,596	5,046	20,978
Total Facilitated Trade Contribution								
Waimakariri District	\$ 134	\$ 17	\$ 38	\$ 189	1,748	145	193	2,085
Christchurch City	\$ 463	\$ 393	\$ 351	\$ 1,206	5,287	3,962	3,167	12,417
Selwyn District	\$ 187	\$ 27	\$ 40	\$ 253	2,104	214	171	2,489
Rest of Canterbury	\$ 222	\$ 99	\$ 97	\$ 418	2,718	703	678	4,098
Total Canterbury Region	\$ 1,006	\$ 536	\$ 525	\$ 2,067	11,856	5,024	4,209	21,089
Rest of South Island (incl. Chathams)	\$ -	\$ 57	\$ 55	\$ 112	-	497	488	985
North Island	\$ -	\$ 171	\$ 250	\$ 422	-	931	1,292	2,223
Total New Zealand	\$ 1,006	\$ 764	\$ 830	\$ 2,600	11,856	6,452	5,989	24,297

Source: CIAL, Market Economics Ltd, StatisticsNZ, Christchurch Airport EIA Model 2023.

Contribution captures expenditure on intermediate inputs and wages and salaries only. Excludes operating surplus, taxes (including rates), interest and imports.

* Based on Modified Employment Count or MEC: Employee Count including working proprietors.

Assumptions around the distribution across industries and regions is included in the Appendix A.

4.3 Economic Contribution of Domestic and International Passengers

Travellers incur costs and spend money during their travels. Some expenditure occurs before the traveller leaves their origin, but the largest proportion is spent at the destination(s). This expenditure drives the economic effects of tourism. The airport network connects origins and destinations making it possible for travellers to access tourism products.

While Christchurch Airport does not generate this expenditure directly, it facilitates the movement of tourists and other visitors, and therefore the creation of economic activity in the national and regional economy. The facilitated economic activity calculated in the EIA model includes international visitor spend and New Zealand resident spend on travel (both domestic departures by mainly Canterbury Region residents and domestic arrivals from non-Canterbury Region residents).

Unfortunately, much of the tourism related data commonly used for economic modelling of tourism is no longer available. This includes data from the International Visitor Survey and Domestic Tourism Survey.²⁷

²⁷ The Commercial Accommodation Monitor is another time series data set that ceased.



While we know the number of international visitors who are non-NZ residents arriving in New Zealand at Christchurch Airport (which in 2019 was 14% of all international arrivals in New Zealand), we do not know the share of domestic flight passengers arriving or departing at Christchurch Airport that are international visitors taking internal flights, versus New Zealand residents. This means that the total number of international visitors arriving in Christchurch by air is greater than the number that come directly into Christchurch from overseas. Similarly, data on the number of domestic visitors (overnight and day visitors) by district is no-longer published.

While many of these legacy tourism datasets ceased, the government did shift to more accurate data collection on international and domestic tourism spend by origin and destination and broad categories of spending.²⁸ This data also ceased in October 2020 due to Covid-19 and was replaced with an interim estimate of electronic transaction data spend.²⁹ However, the year ending October 2019 data has been relied on extensively for this analysis (representing a full 12 month period when tourism (including passengers numbers through Christchurch Airport) was at its peak and not yet impacted by Covid-19).

The limitation of the MRTE data is that it is not possible to derive how many domestic and international visitors account for the spending in any one location. Had this been possible, M.E could more easily link passenger counts with tourists and therefore tourism spending, although the travel flows of domestic and international tourists are also unknown, which creates further issues.³⁰

Ultimately, M.E have relied on the MRTE data, with spending destinations aggregated to our six MRIO economic regions, and origin data grouped according to total international, Canterbury Region residents and non-Canterbury Region residents. M.E has then developed assumptions on what portion of that spending in each economic region (by origin) is likely to be associated with tourists travelling via Christchurch Airport. While sensitive to these assumptions, they have been sense checked against known parameters including Christchurch Airport's share of international visitor arrivals at the border (assuming that all international visitors have a similar spending profile in New Zealand), the location of alternative airports for domestic travel, and the scale and centrality of Christchurch within the South Island as a hub for road-based trips. Further detail on M.E's assumptions are contained in Appendix B. Overall, M.E estimates that foreign travellers entering at Christchurch Airport account for 14% of total international visitor spend in New Zealand (YE October 2019) and residents passing through Christchurch Airport account for 9% of all domestic visitor spend in New Zealand.

Once this portion of spending in each economic region (and industry sector) was estimated (as being linked to passenger travelling into or out of Christchurch Airport), this spending was run through the EIA model to estimate the contribution to total value added and employment. Care is needed not to double count the expenditure with airlines, rental car businesses, food and beverage outlets, other retail and service providers, accommodation and other business activity (including the International Antarctic Centre) located in the SPAZ and already captured in the economic contributions discussed above. The economic contribution of this SPAZ activity has been subtracted from the facilitated tourism results to get the net facilitated tourism contribution, summarised in Table 4-4 below.

²⁸ MBIE, Monthly Regional Tourism Estimates (MRTE).

²⁹ Unlike its predecessor, this data is not the grossed-up tourism spend.

³⁰ The Tourism Flows Model (2007) is now too old to be relied on.

Table 4-4 – Facilitated Economic Contribution of International and Domestic Tourism YE October 2019

Year Ending October 2019	Valued Added (₂₀₂₀ \$ million)				Employment (₂₀₂₀ MECs) *			
	Direct	Indirect	Induced	Total	Direct	Indirect	Induced	Total
Domestic Tourists								
Waimakariri District	\$ 17	\$ 5	\$ 11	\$ 34	338	38	59	435
Christchurch City	\$ 388	\$ 184	\$ 215	\$ 788	6,857	1,843	1,953	10,653
Selwyn District	\$ 17	\$ 7	\$ 11	\$ 35	361	45	54	460
Rest of Canterbury	\$ 93	\$ 41	\$ 58	\$ 193	1,762	312	414	2,488
Total Canterbury Region	\$ 516	\$ 238	\$ 296	\$ 1,050	9,318	2,238	2,480	14,036
Rest of South Island (incl. Chathams)	\$ 169	\$ 78	\$ 93	\$ 340	3,096	724	777	4,597
North Island	\$ 222	\$ 252	\$ 371	\$ 845	2,480	1,451	1,944	5,875
Total New Zealand	\$ 907	\$ 568	\$ 760	\$ 2,235	14,893	4,414	5,201	24,508
International Tourists								
Waimakariri District	\$ 9	\$ 6	\$ 11	\$ 27	186	43	62	291
Christchurch City	\$ 474	\$ 233	\$ 271	\$ 978	8,987	2,339	2,459	13,784
Selwyn District	\$ 16	\$ 9	\$ 13	\$ 39	345	63	64	472
Rest of Canterbury	\$ 142	\$ 57	\$ 74	\$ 273	2,650	421	523	3,593
Total Canterbury Region	\$ 641	\$ 306	\$ 370	\$ 1,317	12,167	2,866	3,108	18,141
Rest of South Island (incl. Chathams)	\$ 252	\$ 110	\$ 122	\$ 484	4,738	1,023	998	6,759
North Island	\$ 87	\$ 213	\$ 339	\$ 640	1,114	1,215	1,775	4,104
Total New Zealand	\$ 980	\$ 629	\$ 831	\$ 2,441	18,019	5,104	5,881	29,004
Total Facilitated Tourism Contribution								
Waimakariri District	\$ 27	\$ 11	\$ 23	\$ 60	523	81	121	726
Christchurch City	\$ 863	\$ 417	\$ 487	\$ 1,766	15,844	4,182	4,412	24,438
Selwyn District	\$ 33	\$ 16	\$ 25	\$ 75	706	109	118	932
Rest of Canterbury	\$ 234	\$ 99	\$ 132	\$ 465	4,412	733	936	6,081
Total Canterbury Region	\$ 1,157	\$ 543	\$ 666	\$ 2,366	21,485	5,105	5,587	32,176
Rest of South Island (incl. Chathams)	\$ 421	\$ 188	\$ 215	\$ 825	7,834	1,747	1,775	11,356
North Island	\$ 310	\$ 466	\$ 710	\$ 1,485	3,594	2,667	3,719	9,979
Total New Zealand	\$ 1,888	\$ 1,197	\$ 1,591	\$ 4,676	32,912	9,518	11,081	53,511

Source: CIAL, StatisticsNZ, MBIE MRTes, Market Economics Ltd. Christchurch Airport EIA Model 2023.

* Based on Modified Employment Count or MEC: Employee Count including working proprietors.

Further detail provided in Appendix B.

Table 4-4 shows that in the year ending October 2019, Christchurch Airport is estimated to have facilitated a total value added contribution of \$₂₀₂₀1.32 billion in the Canterbury Region economy associated with international tourism spending outside of the SPAZ, increasing to \$₂₀₂₀2.44 billion in total value added in the New Zealand economy that year. This facilitated international tourism activity sustained total estimated employment of approximately 18,140 MECs in Canterbury Region (outside the SPAZ), and 29,000 MECs in New Zealand overall. Canterbury Region accounts for the majority of the total facilitated value added of international tourists using Christchurch Airport (54% of the contribution), followed by the North Island (26%).³¹

Table 4-34 also shows that in the year ending October 2019, Christchurch Airport is estimated to have facilitated a total value added contribution of \$₂₀₂₀1.05 billion in the Canterbury Region economy associated with domestic tourism spending outside the SPAZ, increasing to \$₂₀₂₀2.24 million in total value added to the New Zealand economy that year. This facilitated domestic tourism activity sustained total estimated employment of approximately 14,040 MECs in Canterbury Region (outside the SPAZ), and 24,510 MECs in New Zealand overall. Canterbury Region accounts for the majority of the total facilitated value added of domestic tourists using Christchurch Airport (47%), followed by the North Island (38%).

³¹ Noting that this spatial distribution is a combination of where the tourist spend directly occurs AND the supply chain of the businesses serving these tourists, so is not necessarily representative of where the tourist spending is estimated to occur.

Combined, the facilitated economic contribution of the Airport associated with international and domestic tourism is significant. The total value added contribution to Canterbury Region facilitated by international and domestic passengers passing through the Airport is estimated at \$₂₀₂₀2.37 billion (nearly 32,180 MECs) and the total value added contribution to New Zealand is estimated at \$₂₀₂₀4.68 billion (just over 53,500 MECs).

4.4 Summary of Economic Contribution Facilitated by the Airport

Table 4-5 and Figures 4-2 and 4-3 provide a summary of the total direct, indirect and induced economic contribution of business activity that is estimated to be facilitated by the Christchurch Airport. While each component of the facilitated effect relates to a slightly different 12-month period, when aggregated the total value added contribution to the Canterbury Region economy is \$₂₀₂₀4.59 billion (approximately 54,600 MECs). When supply chains and tourism spending beyond the Canterbury Region are included, the total valued added contribution to the national economy is \$₂₀₂₀7.50 billion (approximately 79,580 MECs sustained).

Facilitated international tourism spend makes up 33% of the overall facilitated value added economic contribution to New Zealand, followed by business activity associated with the value of internationally exported goods (30% of the total), and facilitated domestic tourism spend (30% of the total). Trade associated with the value of imported goods makes up just 5% of the total facilitated effect, and other business activity located in the SPAZ that is not Airport dependent makes up just 3% (although is still substantial at \$₂₀₂₀227 million).

Table 4-5 - Economic Contribution of Businesses Activity Facilitated by Christchurch Airport 2019/2020

Year Ending as Stated	Valued Added (₂₀₂₀ \$ million)				Employment (₂₀₂₀ MECs) *			
	Direct	Indirect	Induced	Total	Direct	Indirect	Induced	Total
Canterbury Region								
Other SPAZ Businesses (YE Feb 2020)	\$ 70	\$ 44	\$ 39	\$ 153	633	386	331	1,349
Trade - Imports (YE Dec 2020)	\$ 145	\$ 74	\$ 81	\$ 300	1,521	695	675	2,891
Trade - Exports (YE Dec 2020)	\$ 862	\$ 462	\$ 443	\$ 1,767	10,336	4,329	3,533	18,198
International Tourism (YE Oct 2019)	\$ 641	\$ 306	\$ 370	\$ 1,317	12,167	2,866	3,108	18,141
Domestic Tourism (YE Oct 2019)	\$ 516	\$ 238	\$ 296	\$ 1,050	9,318	2,238	2,480	14,036
Total Facilitated	\$ 2,233	\$ 1,123	\$ 1,231	\$ 4,586	\$ 33,974	\$ 10,515	\$ 10,126	\$ 54,615
New Zealand								
Other SPAZ Businesses (YE Feb 2020)	\$ 84	\$ 70	\$ 73	\$ 227	713	536	524	1,773
Trade - Imports (YE Dec 2020)	\$ 145	\$ 101	\$ 127	\$ 373	1,521	856	943	3,320
Trade - Exports (YE Dec 2020)	\$ 862	\$ 663	\$ 703	\$ 2,227	10,336	5,596	5,046	20,978
International Tourism (YE Oct 2019)	\$ 980	\$ 629	\$ 831	\$ 2,441	18,019	5,104	5,881	29,004
Domestic Tourism (YE Oct 2019)	\$ 907	\$ 568	\$ 760	\$ 2,235	14,893	4,414	5,201	24,508
Total Facilitated	\$ 2,978	\$ 2,031	\$ 2,494	\$ 7,503	\$ 45,481	\$ 16,506	\$ 17,595	\$ 79,582

Source: CIAL, StatisticsNZ, MBIE MRTes, Market Economics Ltd. Christchurch Airport EIA Model 2023.

* Based on Modified Employment Count or MEC: Employee Count including working proprietors.



Figure 4-2 - Economic Contribution of Airport Facilitated Business Activity by Type 2019/2020

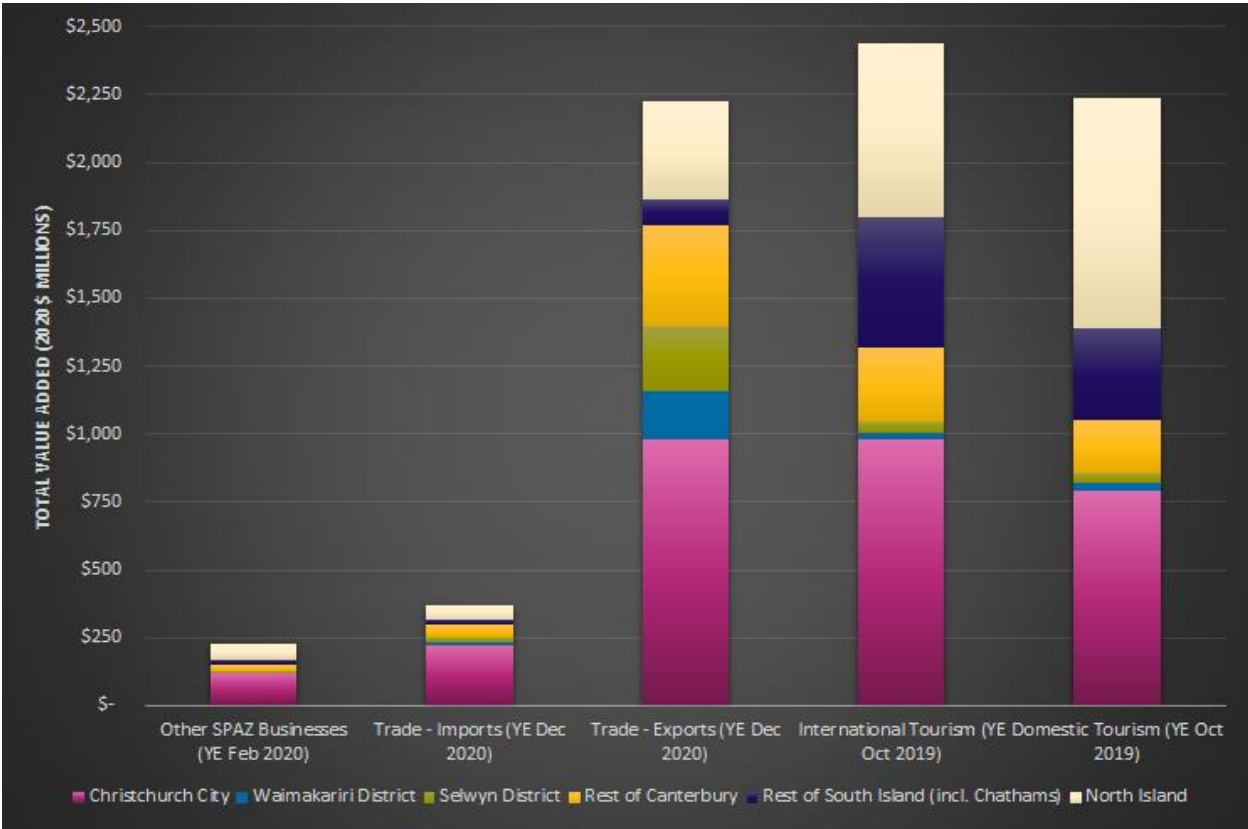


Figure 4-3 - Economic Contribution of Airport Facilitated Businesses Activity by Location 2019/2020

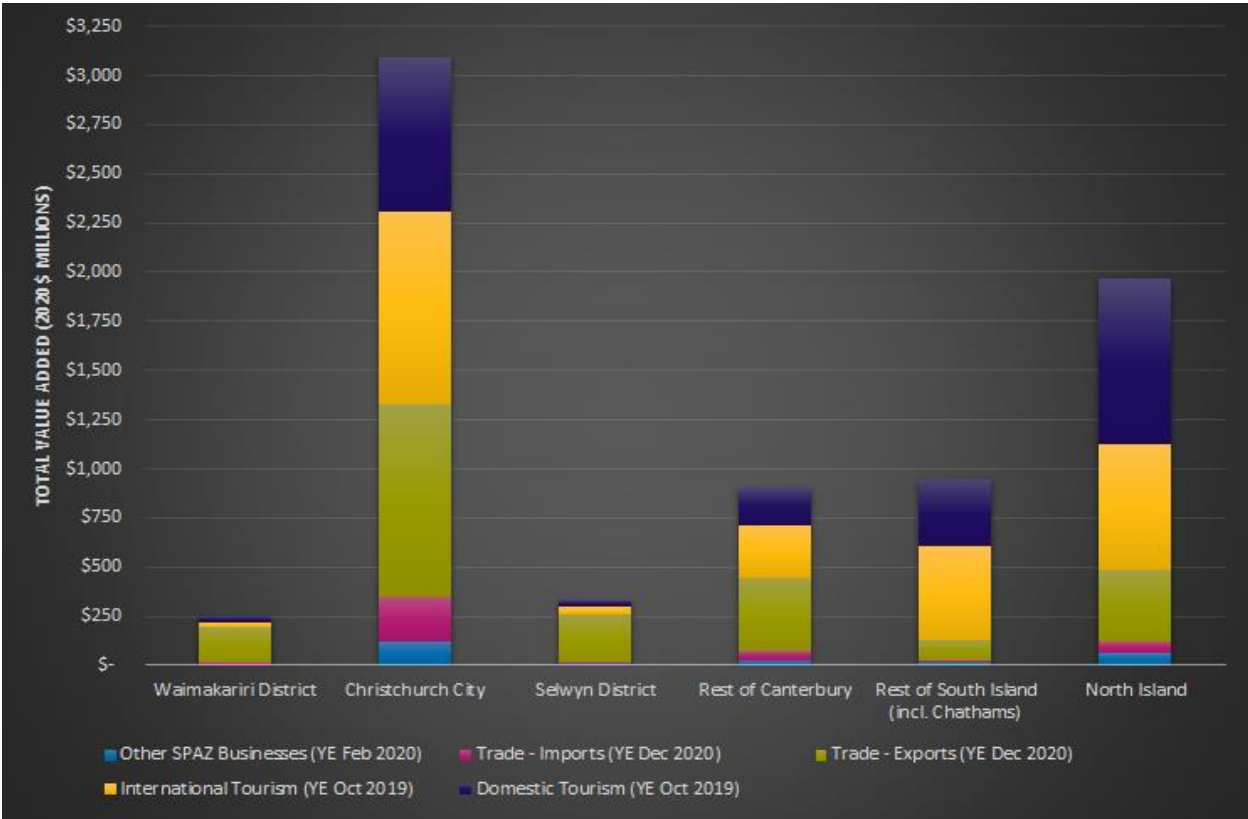




Figure 4-3 highlights the localised economic benefit of having an international airport. When value added across all supply chains of business activity facilitated by the Airport is 'put on the ground', 41% of that economic contribution is felt within Christchurch City. Districts north and south of Christchurch (Waimakariri and Selwyn) make up 3% and 4% respectively of the total national value added (mainly associated with exports). The Rest of Canterbury receives 12% of the economic contribution, bringing the Canterbury Region share of the total to 61%. A further 13% of total facilitated value added is felt within the Rest of the South Island, and 26% is felt in the North Island.

5 Summary & Conclusions

This section combines the EIA results from Section 3 (economic contribution directly attributable to the Airport) and Section 4 (economic contribution facilitated by the Airport). It briefly discusses the impact that Covid-19 has had on the Airport's economic contribution (for those components of activity in the SPAZ able to be modelled across time using employment data). Brief closing comments on the economic significance of the Christchurch Airport are included.

5.1 Overall Summary of Economic Contribution

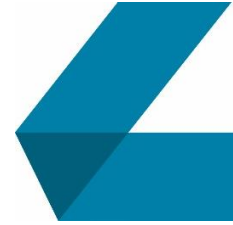
The total economic contribution to the Canterbury Region from all business activity in the SPAZ (inclusive of CIAL) that is directly related in some way to the operation or presence of the Christchurch Airport is \$₂₀₂₀717 million of value added and 6,560 jobs (in addition to those employed directly by those businesses) (YE February 2020). Those same businesses contribute \$₂₀₂₀1.13 billion of value added and just over 8,900 additional jobs to the New Zealand economy. In total, this business activity makes up only a small share (11-14%) of the total economic contribution once facilitated effects are accounted for (Table 5-1).

Table 5-1 - Summary of EIA Results – Canterbury Region and Total New Zealand

Year End as Stated	Valued Added (₂₀₂₀ \$ million)	Employment (₂₀₂₀ MECs) *	Valued Added (₂₀₂₀ \$ million)	Employment (₂₀₂₀ MECs) *
	Total	Total	%	%
Canterbury Region				
Core Airport Operations	\$ 440	4,013	8%	7%
Other SPAZ Airport Related/Linking/Assoc.	\$ 277	2,547	5%	4%
Total Direct Contribution (YE Feb 2020)	\$ 717	6,560	14%	11%
Other SPAZ Businesses (YE Feb 2020)	\$ 153	1,349	3%	2%
Trade - Imports (YE Dec 2020)	\$ 300	2,891	6%	5%
Trade - Exports (YE Dec 2020)	\$ 1,767	18,198	33%	30%
International Tourism (YE Oct 2019)	\$ 1,317	18,141	25%	30%
Domestic Tourism (YE Oct 2019)	\$ 1,050	14,036	20%	23%
Total Facilitated Contribution	\$ 4,586	54,615	86%	89%
Total Direct & Facilitated	\$ 5,303	61,174	100%	100%
New Zealand				
Core Airport Operations	\$ 687	5,377	8%	6%
Other SPAZ Airport Related/Linking/Assoc.	\$ 440	3,529	5%	4%
Total Direct Contribution (YE Feb 2020)	\$ 1,127	8,906	13%	10%
Other SPAZ Businesses (YE Feb 2020)	\$ 227	1,773	3%	2%
Trade - Imports (YE Dec 2020)	\$ 373	3,320	4%	4%
Trade - Exports (YE Dec 2020)	\$ 2,227	20,978	26%	24%
International Tourism (YE Oct 2019)	\$ 2,441	29,004	28%	33%
Domestic Tourism (YE Oct 2019)	\$ 2,235	24,508	26%	28%
Total Facilitated Contribution	\$ 7,503	79,582	87%	90%
Total Direct & Facilitated	\$ 8,630	88,488	100%	100%

Source: CIAL, StatisticsNZ, MBIE MRTes, Market Economics Ltd. Christchurch Airport EIA Model 2023.

* Based on Modified Employment Count or MEC: Employee Count including working proprietors.



Once the facilitated economic effect of other SPAZ businesses benefiting from the Airport environs is added, as well as international trade effects and tourism effects associated with travellers passing through Christchurch Airport, the total valued added contribution to the regional economy rises to a significant \$₂₀₂₀5.30 billion and employment sustained grows to approximately 61,170 jobs (in addition to those employed directly in the SPAZ). This equates to 20% of all jobs in Canterbury Region in 2020 sustained in some way by Christchurch Airport.

Nationally, the directly attributable and facilitated contribution of the Christchurch Airport rises to \$₂₀₂₀8.63 billion, and employment rises to approximately 88,490 jobs (YE February 2020) (Table 5-1). The facilitated effect accounts for 87% of the total national value added, and 90% of the total employment effect. Facilitating tourism and export activity are, by far, the Airport's greatest contribution to the economy.

The vacant land remaining in the SPAZ signals that with every new activity that is established in the zone in the future, the greater the economic contribution of the SPAZ will be, and depending on the type of business established, the greater the direct or facilitated economic contribution of the Christchurch Airport will be. That is, M.E expects the economic contribution of the Airport (and wider SPAZ) will be greater in the future than assessed in this current study.

5.1.1 Covid-19 Impacts on Economic Contribution

The EIA modelling clearly demonstrates the economic significance of Christchurch Airport – based on a recent 'peak year' of employment and performance.³² What the modelling has also helped demonstrate is how employment and value added sustained by the Airport can drop when air travel (passengers and freight) is constrained.

Covid-19 has had an unprecedented effect on the Airport (and related) sector, and those effects are still being felt. Figure 5-1 shows the total value added results for Canterbury Region for all Airport related and facilitated business activity located in the SPAZ for the period 2019-2022 (i.e., it excludes the facilitated contribution of international trade and tourism beyond the SPAZ).

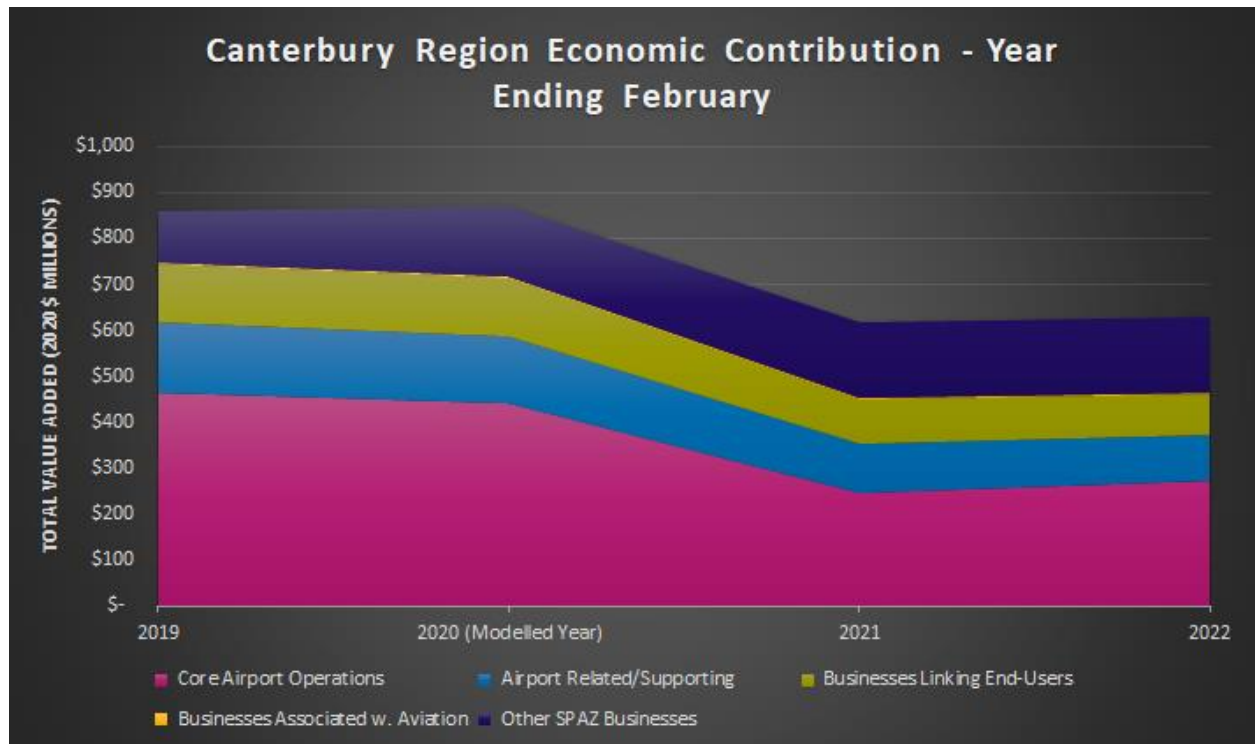
The results discussed above in Sections 3 and 4.1 were for the year 2020 (YE February). Those results were very similar to the preceding 2019 year. However, core airport operations (particularly airlines) were significantly reduced because of Covid-19. This analysis shows that when flights (and freight and passengers on those flights) are reduced, then this has a flow-on effect for Airport related/supporting businesses in the SPAZ, as well as businesses linking the Airport with end-users in the SPAZ, and activities associated with aviation based in the SPAZ. In other words, the whole upstream and downstream supply chain is impacted.

As all of those business sectors contracted (with substantial reductions in employment), so too did their spending across their supply chains – leading to a significant drop in economic activity right across Canterbury Region in the year ending February 2021 (-29%). The Airport's economic contribution to Canterbury Region in the year ending February 2022 was only marginally better, and still 72% of the contribution in 2020. In fact, the only activity in the SPAZ that helped grow valued added in Canterbury Region during the Covid-19 period was the other businesses benefiting from the Airport environs.

³² Noting that the international air freight (trade) facilitated contribution was not based on a peak year and was conservative.

Data for February 2023 is expected to show some further recovery in Airport related and facilitated value added and employment in Canterbury (and total New Zealand), but that data is not yet available. The results of the EIA are anticipated to remain relevant until such time as Airport performance and SPAZ employment exceeds past peak levels.

Figure 5-1 - Value Added Contribution to the Canterbury Region 2019-2022 of Total SPAZ Business Activity by Relationship to the Airport



5.2 Conclusions

Airports and the activities directly related to and facilitated by them, have extensive value chains meaning that any change, positive or negative, in the system is bound to have a sizable impact on contributions to value added and employment. This latest EIA modelling demonstrates that Christchurch Airport makes a significant contribution to the Canterbury and national economy. It is a nationally significant infrastructure asset.

By delivering high quality and efficient air-services and a functional and attractive business environment within the SPAZ, Christchurch Airport can enhance the growth potential of the Region’s economy (and beyond). This means that ensuring that the Airport is appropriately recognised in strategic planning decisions will be critically important going forward. In particular, managing incompatible land uses in the operational area of the Airport will be critical because:

- The Airport’s economic contribution is significant and far larger than simply the contribution of CIAL which owns and runs it;



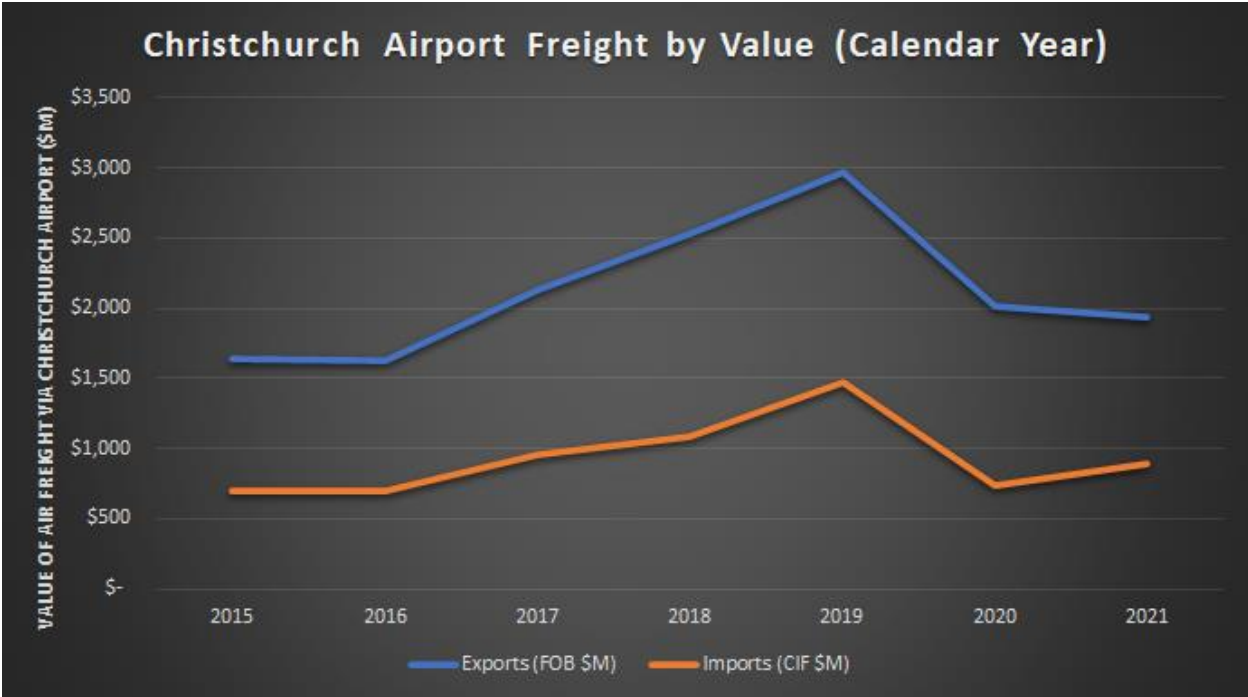
- The presence of the Airport plays a key role in attracting inward investment in Canterbury across a range of sectors;
- The Airport provides a critical service linking Canterbury Region with business opportunities in other regions;
- Efficient airport services enhance economic competitiveness by reducing transaction costs for companies involved in international trade; and
- The Christchurch Airport plays a critical role in facilitating tourism activity. It acts as a gateway to the wider Canterbury Region.

Appendix A – Approach & Assumptions for Imports/Exports

This appendix provides further detail on M.E’s approach to estimating the facilitated effect of Christchurch Airport for international trade. It should be read in conjunction with section 4.2.

Data Sources

The data for imports and exports for Christchurch Airport was taken from Stats NZ data of value of imports³³ and exports³⁴ for cargo by port which are reported by commodity using the Harmonised System classification at the two-digit level (HS2). The year of the data used was 2020 calendar year data for both imports and exports. While we know that this was a Covid-19 impacted year (as shown in the graph below), and therefore under-represents the maximum facilitated trade effect of the Airport in recent years, 2020 was chosen due to the MRIO model having a base year of 2020 – avoiding the need for further inflation/deflation in the model for this component of economic contribution. This approach also ensures our results are conservative.



The MRIO model covers the New Zealand economy across six regions and 109 industries. To allow the import and export data to be used within this framework, M.E created an approximate concordance between the 99 HS2 commodities to the 109 industry sectors, as well as assumptions that linked those imported and exported goods with businesses on the ground. These steps are discussed further below.

³³ Stats NZ: Imports for Overseas Cargo (cif NZ\$): New Zealand Port by Country of Origin, Commodity (HS2) and Period

³⁴ Stats NZ: Exports for Overseas Cargo (fob NZ\$): New Zealand Port by Country of Destination, Commodity (HS2) and Period



Industrial Allocation

The 109 industry sectors in the MRIO table are a grouping of industries using the ANZSIC system. For exports, an existing concordance of Harmonised System commodities to ANZSIC was used, which then allowed us to aggregate commodities (via ANZSICs) to the 109 industry sectors. However, this concordance was only available at the more detailed ten-digit level for the Harmonised System classification. Furthermore, freight data for exports at the ten-digit level (HS10) is only available at the national level, covering all of New Zealand's export commodities and ports. Further assumptions were needed to link this existing concordance with our HS2 level export data associated with Christchurch Airport.

A key issue is that when HS10 commodities are aggregated up to HS2 level commodities, they span multiple 109 industry sectors. That is, there is not a one-to-one relationship. A matrix was derived from the concorded national freight data which shows the proportion of value of each HS2 commodity which is distributed across each 109 industry sector. These proportions are then applied to the value of Christchurch Airport's exports in each HS2 commodity to instead give the indicative value by 109 industry sector. The underlying assumption of this approach is that the commodities exported at Christchurch Airport are similar to the national profile when aggregated to HS2 level. This may or may not be the case, but in the absence of HS10 level data specifically for Christchurch Airport, this approach is considered sufficient for the purposes of the report.


For imports, a different method of industrial allocation was used. The HS to ANZSIC method can be applied to classify the outputs of industries and the subsequent flows of end products. This method would not consider allocating commodities to industries which use them in production as imports are inputs to an industries production. Furthermore, a significant proportion of imports are items which are used for final consumption by the end consumer and are not used as an intermediate input to production by New Zealand businesses. It is the latter that generates value added in the economy and that is of interest for this EIA.

Within the National Accounts input-output tables published by Stats NZ³⁵ is the table which quantifies the value and therefore proportion of imported goods going into industries (as intermediate inputs to production across the 109 sectors) and going to categories of final demand such as households and central government. The imported goods in the national accounts are classified according to different types of goods and services. However, as that classification of imported goods did not match the HS2 commodities imported via Christchurch Airport, an approximate concordance was created by M.E between HS2 commodities and the National Accounts goods and services classification. This allowed us to derive a national distribution of imports going into industry sectors and final demand sectors but with an HS2 base.

From here the proportion of each HS2 commodity per 109 sector was applied to give the industry sector distribution of Christchurch Airport's imports. Estimated imports freighted via Christchurch Airport going to final demand sectors were discarded from the model.

We note that within the HS2 airport commodities data is a classification of 'confidential commodities' which comprises non-disclosed imported or exported items. Rather than exclude the value of these goods from the concordances/matrices discussed above, these were allocated across the 109 industries pro-rata the

³⁵ Stats NZ: National accounts input-output tables: Year ended March 2020. Our MRIO tables for this EIA concord with these tables at the national level.



average distribution of known commodities. As the nature of these is unknown it was assumed that the average proportions for all commodities would be the best fit, but this assumption is acknowledged as a limitation of the approach.

Regional Allocation

A key point when using the freight data is that it only shows the point of entry for imported goods and the point of exit for exported goods (i.e., via Christchurch Airport). The economic region in which the goods originate or are used in production or consumed cannot be determined from this data. To make up for the gap in information in the freight data, the value of imports and exports by 109 industry sectors is regionally allocated. This was done using data contained within the base input-output table of the MRIO model where the value of imports and exports are shown for each industry and economic region.

An assumption was made to allocate all imports and exports transported via Christchurch Airport to the Canterbury Region only. This may under-represent the actual import/export catchment of the Airport within the South Island as some imports and exports may be associated with businesses located beyond Canterbury (i.e., in the Rest of South Island). We know for example that Queenstown Airport does not have a material freight role, but the freight role of Dunedin and Invercargill airports is unknown. Similarly, we do not know whether businesses in the top of the South Island choose to transport goods to/from Wellington Airport or south to Christchurch Airport.

Within the Canterbury Region, the allocation was across the four economic regions of Christchurch City, Waimakariri District, Selwyn District, and the rest of Canterbury Region. As the freight data had already been allocated by industry (discussed above), this was used to determine the proportion of each region's share of the imports/exports from each industry. This also assumes that the regional profile of Christchurch Airport's freight matches imports and exports of the Canterbury region as a whole. This spatial allocation within Canterbury Region was done separately for imports and exports using the relevant distributions by industry in the MRIO table.

While there are potential limitations in this spatial allocation assumption and approach, the total value of goods allocated to industries is fixed. Even if more of that value had been apportioned to industries located in the Rest of the South Island, the main difference is in the geography of the up-stream supply chains and therefore where value added and employment contributions are felt on the ground. The current approach is likely to give greater weight to economic contributions within Canterbury Region. It is estimated that any changes to this assumption would have only a minor impact on final results.

Inputs and Outputs of the Final Model

Once the value of goods imported and exported were allocated by industry and region, this was run through the MRIO model to quantify the economic contribution in terms of the value added and employment which imports and exports sustain across the economy. Importantly, we do not estimate the economic contribution of whole industry sectors that engage in international trade, only the share of that industry sectors' gross inputs or outputs that equate to the value of goods imported or exported via the Airport.

The results themselves should be viewed with care as they rely on several assumptions. They represent the economic activity which the imports and exports facilitate in the economy which is not generated by the transport of freight itself. Furthermore, the contributions described in this section relate only to the value



of exports and imports that are generated by their leaving or entering New Zealand and does not consider inter-regional (domestic) freight within New Zealand.

Appendix B – Approach & Assumptions for Tourism Contribution

This appendix provides further detail on M.E’s approach to estimating the facilitated effect of Christchurch Airport for international and domestic tourism activity. It should be read in conjunction with section 4.3.

Tourism spending data was taken from the MRTE published by MBIE. MRTE are an estimate of total regional tourism spend including cash and online spending and excluding Goods and Services Tax (GST). The MRTE give an estimate of tourist spending patterns within New Zealand. The year chosen from the data used was for the year ending in October 2019. The MRTE data was split between international tourist spending (total from all countries) and domestic tourist spending. Domestic tourists are classified as travelling more than 40km outside their usual place of residence, as such domestic tourist spending was derived for non-Canterbury residents and Canterbury residents who use the Airport to visit other areas of New Zealand, primarily the North Island. The spending data of the three tourist classifications provided by the MRTEs was then aggregated to the six regions of the EIA model.

The next step in the modelling was to determine how much of tourist spending was attributable to Christchurch Airport. However, a significant information gap had to be bridged as the MRTE data is not linked to the transportation of tourists and their flows of movement. For this, assumptions were made regarding how tourists used the airport within their movements. This was informed by domestic and international passenger counts from Christchurch Airport and ports as a whole. For example, 14% of international tourists enter or exit the country via Christchurch Airport, yet their movement across the regions before/after their arrival/departure through the airport is not accurately known, nor if they use the airport for a domestic flight. As such, the figure of 14% was used as a guide whereby, the airport should be attributed with around this level of national tourist spending. The regional distribution of tourist spending within each of the EIA model’s regions that was attributed to Christchurch Airport was allocated based on the proportions shown in the table below.

Regional Allocation of MRTE Tourist Spending Attributed to Christchurch Airport (M.E)

Region	Proportion of 2019 Spend attributed to CIAL		
	International Visitors	Canterbury Residents (will include day visits more than 40km within Canterbury)	Non-Canterbury Residents
Christchurch City	85%	0%	65%
Selwyn District	85%	0%	65%
Waimakariri District	85%	0%	65%
Rest of Canterbury Region	50%	0%	50%
Rest of South Island	14%	25%	5%
North Island	2%	50%	0%

For Canterbury residents, any tourism related spend within the Region was assumed to be car-based travel. We have assumed a modest share of spend by Canterbury residents in the rest of the South Island is associated with outgoing domestic flights (i.e., to Queenstown, Dunedin, Invercargill, and regional airports like Wanaka, Chatham Islands, Blenheim, Nelson, etc). Given the added distance to travel to the North



Island (the alternative being the Picton Ferry crossing by car), we have assumed 50% of Canterbury Resident spend in the North Island is associated with outbound domestic flights.

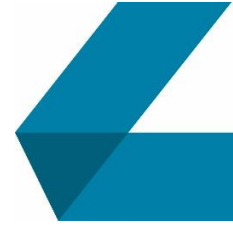
Conversely, for non-Canterbury Residents (which will be dominated by the North Island Population), we have assumed that approximately 65% of spend occurring in central Canterbury is associated within inbound domestic flights. A higher share was not adopted in light of Rest of South Island (although excluded Chatham Islands) residents may have a high propensity for car-based travel to these destinations. The assumptions reflect the weighted average of these two groups. The assumption decreases for spend occurring in the rest of Canterbury Region on the basis that it is incrementally closer to other domestic airports. Similarly, only a very minor share of non-Canterbury resident spend in the Rest of the South Island is estimated as this will relate to relatively short trips (by road) for residents within that area, or, for North Island residents, they may be likely to catch direct flights to the airports in that region (rather than come via Christchurch Airport). Some allowance for road trips from Christchurch Airport has been made in the 5% assumption.

For international tourist spend, the assumptions follow a similar process of consideration. The aggregate results of spend were cross checked to equate to approximately 14% of international visitor spend nationally (aligning with 14% share of international passenger arrivals by foreigners) – and assuming that all international visitors have a similar spending profile, irrespective of where they enter the country.

From the MRTE spending data, spending is grouped by activity. The analysis used categories across:

- Accommodation services,
- Cultural, recreation, and gambling services,
- Food and beverage serving services,
- Other passenger transport,
- Other tourism products,
- Retail sales - alcohol, food, and beverages,
- Retail sales - fuel and other automotive products, and
- Retail sales – other.

Each of the MRTE's spending categories can be identified with sub-sectors of the ANZSIC industry classification at the six-digit level. The ANZSIC 2006 industry classifications are used to ascertain the proportion of tourist activity within each of 109 industries of the model. While it is not accurately known how much of the spending of each of the MTRE categories is attributed to a sector of the ANZSIC 06, we assume that the proportion of tourist spending for each of the sectors is attributed to its size. This was done using BD employment data at the national, where the proportion of employment within an industry of the 109 which was within the MTRE categories. This created a matrix for the allocation of each category's spending into each of the relevant 109 industries for the EIA model. As the matrix aggregates data at the



national level, it assumes that proportions of the spending to the 109 industries for each spending category is the same for each economic region within the model.

Once the regional and industrial allocation was made for tourist spending linked to Christchurch Airport, a portion of the tourist spending was removed which was closely linked to the Airport and located in the SPAZ, and previously counted within the assessment of the Airport and supporting activity. This deduction was done for spending specifically within Christchurch City. The proportion linked with the SPAZ was derived using the proportion of employment of the ANZSIC 06 industries within the SPAZ relative to wider Christchurch. For example, the accommodation sector in the SPAZ contained around 4% of Christchurch's employment in the sector. This meant that 4% of the MRTE spending in Christchurch on accommodation was removed to avoid double counting across the report.

This approach assumes that the location of tourist spending is spread evenly across the relevant industries in Christchurch, however, the concentration of these industries within the SPAZ influences the degree to which airport linked spending is removed. The assumption was used as MRTE data cannot be identified below Christchurch as a whole and the earlier analysis of the Airport and SPAZ is conducted for the 109 industries which is above the finer sub-sectors (ANZSIC 06) which are identified from the MRTE.

Several limitations in this approach exist as it relies on a wide range of assumptions from the MRTE data itself, through to the methods used to attribute the tourist spending to the Airport and how it is allocated to the regions and industries used in the model. However, given the limited range of tourism datasets now available at the sub-national level, the approach adopted by M.E is considered sufficiently appropriate for the purposes of estimating facilitated tourism effects.