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Economic impact of Christchurch City Council 2006 - 2016 development contributions policy

Report to Development Contributions Working Party

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1 Summary

Setting Development Contributions ('DCs') signals to developers the costs of providing infrastructure to new developments in Christchurch City. This is important economically, because it will ensure that developers take into account the costs they create in requiring improvements to infrastructure when they make decisions about whether and where to build in Christchurch City.

Prior to the introduction of Christchurch City's Development Contributions Policy ('DC Policy'), developers did not have to face most of these costs. They were subsidised to the extent of the contributions less the amounts they paid in financial contributions. The costs not met by developers were met by all ratepayers through rates or by all users of the assets through reductions in service quality due to congestion.

The efficiency benefits of DCs cannot be delivered by general rates because they are not explicitly connected with the value of infrastructure required as a result of the development.

1.1 We have assessed the cost allocation methodology and the Policy

We have been commissioned by Christchurch City Council ('the Council') to assess its development contributions cost allocation methodology ('the Methodology').[1] We have also been engaged to provide advice about the likely economic impacts of the 2006 – 2016 Development Contributions Policy ('the Policy'). This report summarises our findings.

The criteria we use for the assessment of the Methodology are the economic principles commonly accepted in cost allocations problems. They have been set out in our previous work.[2] These principles are discussed in section 4.2.1 of this report.

[1] SPM CONSULTANTS LIMITED (2006) Methodology For Determining Development Contributions Charges, Christchurch City Council.

[2] LECG (DAVID MOORE AND SALLY BARNES) (2006) Economic Principles - Christchurch City Council's Development Contributions Policy.; LECG (KIERAN MURRAY AND TIMOTHY IRWIN AND DANIEL KNOX) (2001) Development contributions: Economic Analysis - Report to the North Shore City Council.; LECG (KIERAN MURRAY AND HAYDEN GLASS AND RYNO VERSTER) (2004) Assessment of proposed cost allocation methodology and financial model for development contributions - Report to the North Shore City Council.

1.2 The Methodology is well-designed, but the challenge will be to implement the Methodology correctly and consistently over time

Our review concludes that the Methodology in its current form conforms to economic efficiency criteria and is well designed. Therefore, the challenge facing the Council is not in the Methodology per se. The challenge will be to implement the Methodology correctly and consistently over time, by making defensible decisions about the rationale and purpose of new infrastructure projects, clearly showing that the costs being funded are indeed costs of development.

Funding from DCs as proposed by the Council is superior in terms of economic efficiency to rates funding for the assets covered by the Policy. The scheme should help to ensure that new development is only undertaken where it is worthwhile in the light of the costs of required new infrastructure. To a lesser extent, the Policy encourages developers to inform their decisions about where to locate their development in the light of the infrastructure services they believe they need (this decision, however, is also strongly influenced by exogenous market forces such as the extent of available land and consumer preferences).

By publishing and describing the costs of providing services to different locations, and discussing these with developers and the community, the scheme will also provide useful feedback to the Council on the value of the various services it provides.

1.3 Changes to the Policy could improve economic efficiency

We have a number of suggestions for enhancement that could be made to the Policy over time to improve efficiency. In summary we recommend that the Council could:

- Clearly demonstrate that the DC charge for Reserves represents a cost of growth. Even if the true cost of growth in relation to Reserves totals to well over 7.5%, the Council risks challenge by judicial review if it does not clearly demonstrate a causal nexus between reserves projects and development.
- In particular, we have concerns that the 7.5% charge for reserves to non-residential development is not based on a demonstrable causal connection.
- Continuing to discount the charge, whilst it may be justified on other policy grounds, provides an incorrect economic signal about the true costs of development.
- Allow for better measures of connection between Council infrastructure costs for wastewater and water-supply infrastructure for non-residential development to be introduced over time.

- Ensure there is an independent review of the level of costs allocated to growth for major projects in the future as a standard procedure, and take other steps to ensure that the cost allocations for different projects are robust and consistent.
- Establish a process to consider reductions or increases in contributions for large developments where actual costs caused by the development are likely to be significantly lower than the contributions required, but ensure this process results in a consistent and predictable outcome. The criteria for allowing a reduction in DCs should be transparent and measurable. Recognise that Council standards ought to remain the primary mechanism for reducing long-term infrastructure costs, rather than incentives provided by DC charges.
- Reconsider the 80/20 rule that determines that only major projects will be on the list. We recommend including smaller projects. One option might be to create a residual project class 'Small City Projects" and estimate an allocated cost for that residual class.
- Provide more information on how contributions are affected as growth, project costs and project priorities change over time.
- When adding new major projects to the Long Term Community Council Plan ("LTCCP"), signal the impact of the project on the DC charge. Signal whether the charge is going to fall or rise significantly in a catchment area as a result of the project. Actively seek feedback from the development community about the purpose of the project, the funding sources, and consider alternative means of delivering the same outcome (such as public-private partnership agreements).
- Allow a period of at least two years before amending the policy again once it has been introduced. This provides regulatory certainty for developers' planning.
- Recognise situations in which developers contribute to lower overall infrastructure / project costs or fund projects above minimum standards in response to a growth need. This need not be through remissions, but could be achieved through purchase contracts between developer and the Council.
- Monitor and demonstrate the linkage between growth in actual households, actual population and the number of development consents issued in a period. Compare these actuals to previous forecast Household Unit Equivalents ("HUE"), population levels and number of development consents, and form a conclusion on whether the HUE estimates applied in previous Policies have been appropriate.
- Explain better what will happen if contributions are not as high as expected: will the project still go ahead? Who will bear the cost?
- Continue to be open to alternative approaches to catering for future infrastructure needs, for example, public-private partnerships with developers
- Recognise that any system that makes it more difficult for developers to estimate the level of DC charge that will attach to a development project will add to the cost of the project and will be recovered through a higher cost of capital or lower

willingness to pay for land. Well-defined processes, and clear guidelines for the staff involved in engaging with developers on these issues may help to minimise administrative costs, reduce uncertainty and improve incentives on developers

- Investigate the ten percent loading on stand-alone projects more closely

These suggestions would enhance the efficiency implications of the DC Policy over time.

1.4 Changes to the Policy could contribute to other policy objectives

We have a number of suggestions for enhancement that could be made to the Policy over time to contribute to other policy objectives. In summary, the Council could:

- Consider policies that minimise the impact on inner city commercial and residential development.
- Consider monitoring the level of its DC charges against those required by other councils, particularly those within the Canterbury region.

1.5 Other possible changes

There are a number of things that could clarify the Policy. These include:

- Be clearer about its goals in charging DCs. It is not merely a way to ensure that 'those responsible for development that places additional demands on the Council's provision of infrastructure, reserves and community facilities a fair and reasonable contribution towards the expansion of those services.' It is also an alternative means of generating income for the City in addition to rates and other funding options to cover the capital costs of growth. Further, it is a means to generate information for the Council on what infrastructure investments need to be made to cater for growth. This helps the Council and the community to differentiate between investments in growth infrastructure and investments made for other purposes.
- Define 'development' in the Policy. What activities might mean that that an individual is required to pay a DC charge?
- Be clearer about the assumptions made in calculating the DC charge. For example, does the Methodology require as an input a 'conservative' population growth figure or a 'moderate' population growth figure? Are the assumptions about the capital investment required for infrastructure assets 'conservative'?

1.6 Summary of economic impacts

A detailed discussion of economic impacts on each type of development is contained in Section 6. Our conclusions are described in brief below.

General

- In general, DCs will lead to improved decision-making about developer investments by sending clear price signals on infrastructure costs for specific areas.
- The impact on decision-making, however, depends on the ability of the developer to control an infrastructure cost or avoid a charge. There is no ability to control costs if a development project is already in place or if the charge does not relate to development activity.
- The ability of the DC charge to impact upon developers' decision-making critically depends on other influencing factors in the property market: costs of land and construction, and factors influencing demand such as GDP growth and consumer preferences.
- The share of the burden of DCs between developers and purchasers is related to the elasticity of demand and supply for each type of development and demand and supply in each geographic area.
- In the short-term, the impact of charge will be carried by developers where development projects are already in place (it may take markets 2-3 years to adjust to the effects of DC introduction).
- The year-long transitional discount provided in the 2006-2007 period has meant that many developers have been able to incorporate anticipated DC charges into viability assessments for future projects. As such, the market may already have undergone some adjustment for the introduction of the charge.

Residential

- At the macroeconomic level the market for residential property is reasonably inelastic so a larger portion of the burden of a DC levy will be passed on to consumers through higher property prices than to developers through reduced profits or through lower prices paid for undeveloped land.
- DC charges could result in a 2-3% increase for vacant residential section prices. Research prepared for the Property Council regarding supply-side responses in the New Zealand property market estimates that a 1% vacant land price increase will reduce house supply by approximately 0.4%.
- Constraints on supply might affect Christchurch's house prices in a more pronounced way than other New Zealand cities, but this conclusion is untested and is formed on the basis that supply of residentially-zoned land in Christchurch is relatively restricted.
- Recent rapid increases in house prices, unsupported by proportionate income growth or population growth, may leave the market more sensitive to DC charges in Christchurch than in other centres.

- The effect of DC charges may be entirely outweighed by other intervening market factors (including employment and population effects).
- The Policy is most likely to have negative effect on residential apartment or multi-unit developments in the inner city zone.
- There may be an incentive for owners of central city property to elect to put in shops and offices instead of residential developments.
- The Policy may exacerbate trend of development spreading to surrounding districts.
- The Policy may result in relative increase in popularity of in-fill development.

Non-residential

- Development projects may be delayed in the short-term, placing upward pressure on rents paid for industrial and commercial properties. This may have flow-through effects on businesses' location choices.
- City Planning conditions, and the ability to gain resource and building consents for particular projects are far more likely to influence the choice of project than DC charges. The strongest influencers on use are likely to be the different rents developers / owners can generate from different use types. As such, the Policy is unlikely to have an overly strong influence on use.
- The most likely short term impact of the DC charge for commercial development in the centre city will be to delay development projects. Some down-ward pressure might be felt on commercial property prices in the inner city in the longer-term unless exogenous market forces cause rents to rise.
- We do not expect an immediate impact on the price of vacant industrial or commercially-zoned land.

2 Introduction

2.1 Scope of this report

This report has five main sections:

- Section 3 (page 10) outlines necessary background. It covers the methodology, the rationale behind it, and the process that is used to establish the level of DC charge.
- Section 4 outlines the relevant objectives and economic principles that we use as our assessment criteria.
- Section 5 (page 17) explains our assessment of the Policy and the Methodology, and some broader issues that the Council may wish to consider in the course of its work on the 2007 - 2017 Policy.
- Section 6 (page 29) explains our assessment of the economic impacts of the Policy.
- Section 7 (page 56) summarises our conclusions and suggestions for enhancements to the Policy that could be made.

Appendix One summarises our assessment against the objectives and principles in Section 4. Appendix Two provides some background information about development in Christchurch. Appendix Three lists the main documents we have reviewed in creating this report.

2.2 What this report does not cover

We have not reviewed the Council's assessments of what proportion of the costs of each project is attributable to growth. We understand that Council staff have altered some of these assessments following submissions from the development community. There is also an independent review being undertaken of a sample of these assessments as a further check on their reasonableness.

In addition, we have not assessed any calculation model associated with the calculation of the DC charge. We express no view on the cost estimates for, or the necessity, timing and feasibility of any of the projects, the population growth model, or the manner in which HUE allocations are made to different projects.

Our scope does not extend to providing a view on the flow-on impacts of the DC charge on the construction industry and employment in Christchurch.

We have not been asked to provide a comparison of DC charges in Christchurch with DC charges in other cities or districts.

We have not been asked to comment on or compare rates or user charges in Christchurch to rates in other cities or districts.

We have not made comment on any equity considerations associated with the Policy.

Our assessment is of the Development Contributions Methodology prepared by SPM Consultants (March 2006)[3] and the published version of the 2006-2016 Development Contributions Policy.[4] We have not assessed any past versions of those documents or any suggested amendments to the Policy or Methodology.

2.3 Research method

In forming our conclusions, we conducted targeted interviews with developers and advisors to the development community (lawyers, real estate agents and engineering consultants). In total, we conducted 15 targeted interviews (an interviewee list is provided in Appendix Three).

Supporting data was collected from the Council, Statistics New Zealand and the Property Council of New Zealand.

2.4 Relevant definitions

2.4.1 Definition of economic impacts

For the purposes of this report, the economic impacts we consider include micro- and macro-economic effects.

The first part of the report deals with influences the Policy has on behaviour of developers and the Council. These are the micro-economic effects.

The report then turns to the macro-economic effects on development in Christchurch. We consider impacts on sales prices and rental values. Further, we consider impacts on the decision to undertake or delay development projects, and the impact on prices for undeveloped land. Substitution effects between different locations and between types of development are also considered. We do not, however, look at the effects of the DC charge on output and employment in the construction industry in Christchurch.

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[3] SPM CONSULTANTS LIMITED (2006) Methodology For Determining Development Contributions Charges, Christchurch City Council.

[4] CHRISTCHURCH CITY COUNCIL (2006c) Our Community Plan 2006 - 2016 Volume 2: Development Contributions Policy. Christchurch City Council.

2.4.2 Definition of centre city

Throughout the report we comment on economic impacts in the centre city. The "centre city" is defined as the city area bounded by the "four avenues" (Fitzgerald, Bealey, Moorhouse and Rolleston). This area is similar to the area defined by three Statistical Areas as used by the Statistics New Zealand Census: Avon Loop, Cathedral Square and Hagley Park.[5]

2.4.3 Definition of development and 'growth'

The DC Working Party is working on definitions for these two words, neither of which are explicitly defined in the LGA or the Policy. Ultimately the test of whether someone is considered to be a developer depends on the impact of the development project at hand. The Council officer must assess whether the project creates or is likely to create an additional demand on services. Therefore, there may be instances in which a project involving a conversion from a residential use to a non-residential use will not attract a DC charge.

For the purposes of this report, we have conceptualised a developer as being any individual or firm that conducts one of the following activities:

- Subdivides a section in any residential, commercial or industrial zone
- Erects a building
- Adds floor area to an existing non-residential building
- Changes use of a non-residential building into a residential one
- Changes use of a residential building into a non-residential one

The Policy states that a development contribution will be assessed for any application for resource consent, building consent or authorisation for service connection.[6] This gives a clue about who might be required to pay a charge, but isn't particularly clear for a lay reader to follow.

[5] The "four avenues" area is identical to the census areas described above less a small portion of the Hagley Park Statistical Area which sits outside the four avenues.

[6] CHRISTCHURCH CITY COUNCIL (2006c) Our Community Plan 2006 - 2016 Volume 2: Development Contributions Policy. Christchurch City Council. pages 21-22.

3 Background

3.1 Development contributions are one of a number of funding options

The Council has various means available to meet the costs it incurs in providing infrastructure and services. These include contributions from developers, rates, payments from Central government, increases in debt, asset sales and user charges.

There are two sorts of levies on developers:

- Financial Contributions ("FCs") can be required under Section 108 (or 407 and 409) of the RMA (Resource Management Act) to meet the costs of mitigating adverse environmental effects calculated to arise from a particular development.
- DCs can be required under Section 198 and 199 LGA for reserves, network infrastructure and community infrastructure. DCs enable councils to secure from developers a contribution towards the capital costs of providing infrastructure that is required as a result of development.

In addition, conditions can be imposed on a resource consent to require developers to alter their plans at their cost in order to reduce negative environmental impacts from the design proposed. For larger developments, developers also normally transfer to Council, ownership (and responsibility for operations and maintenance) of infrastructure created as part of the development. This includes, for example, pipes for water and wastewater supply that connect to the Council's wider networks.

3.2 DC charges are governed by a statutory framework

In setting DC charges, the Council is bound to comply with the provisions of the Local Government Act.

The Council must manage its revenues, expenses, assets, liabilities, and general financial dealings in a manner that promotes the current and future interests of the community. (LGA, section 101(1)). It must make adequate provision in the LTCCP to meet the expenditure needs of the local authority identified in that Plan (section 101 (2)). DCs are one funding mechanism of many available to councils.

DCs may be required if as a consequence of development the council incurs capital expenditure to provide for reserves, network infrastructure, or community infrastructure (section 199(1) and (2)). In considering the "effect" of a development on capital expenditure, the Council may consider the cumulative effects of the development in combination with another development (section 199 (3)).

Hence the DC regime under the LGA is concerned with the cumulative effect of development on the capital expenditure needs of the territorial authority. By way of contrast, the financial contributions regime under the Resource Management Act 1991 is concerned with mitigating the impact of the particular development under consideration. In charging DCs, the Council can only recover the capital costs of development.

To determine whether it is appropriate to require DCs, the Council must consider in relation to the activity to be funded (section 101(3) and section 10(b)):

1. The community outcomes from the activity.
2. The distribution of benefits between the community and identifiable individuals or groups.
3. The period over which the benefits are expected to occur.
4. The extent to which the actions or inactions of particular individuals or groups contribute to the need for the activity.
5. The costs and benefits of funding the activity differently from other activities.
6. The overall impact on current and future social, economic, environmental, and cultural well-being of the community.

3.2.1 Council is required to demonstrate a causal nexus

A failure to establish a link between a new or upgraded capital asset and the cumulative effects of development may mean that the Council is subject to judicial review. The criteria in section 199(1) and (2) show that in order to charge DCs, the Council is obliged to demonstrate a causal link between the capital expenditure it incurs and the cumulative effects of development.

Developers can only be charged "if the effect of the developments is to require new or additional assets of increased capacity" section 199(1). When read in conjunction with section 101(3)(iv), the Council also has to consider the extent to which actions of developers contribute to the need for the activity.

3.2.2 Reserves charge is subject to a maximum

A DC for reserves is taken by Council to provide public parks. Contributions to reserves are capped under s203(1) of the Local Government Act 2002 ("LGA") to the greater of 7.5% of the value of additional lots created or 20sqm of additional land for each additional HUE created.

3.3 DC charges are also governed by the need to fulfil other policy objectives

The statutory framework in the LGA (discussed above), provides guidance about how much the Council *can* charge in DCs. However, other Policy decisions also come into play.

Allocating the common costs of development to developers will impact upon the behaviour of the development community, and, as the discussion in section 6.1 shows, can be expected to reduce the level of development in the city (ceteris paribus). The Council does not wish to discourage development in the city.[7]

Therefore, the challenge is to set DC charges at a level that will not cause undesirable adverse affects on the overall level of development in the city.

Affordability considerations also come into play. If higher house prices are a concern to Council, then policy attention could potentially be turned to reducing the costs of development via the DC charge.[8] As section 6.4.1 discusses, DC charges are likely to increase house prices, particularly in areas of the city where supply of appropriately zoned land is limited.

3.4 The Council has replaced financial contributions and will meet costs previously met through general rates with development contributions

3.4.1 Development contributions Policy

The Council has decided to use DCs to collect costs that it incurs in providing services to new developments that were previously collected through financial contributions and other levies. This includes the costs of parks and reserves and wastewater treatment.

DCs are also now being used to cover a number of costs that are driven by growth but were not covered by previous financial contributions. These include costs incurred in providing services to a particular development, like water supply, wastewater collection, and stormwater services. It also includes some catchment or city-wide effects that are

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[7] This is reflected in the policy objective on page 6 of the Policy, which states "To ensure that the level of contribution does not generally act to discourage development, recognising that the contribution will be influenced by the complexity of site works and that this may work to discourage development of a particular area" Ibid.

[8] Housing costs is the largest component of a household's expenditure. The cost of housing plays a major part in the ability of households and families to own their own home, as well as affecting the level of residual income to spend on other essential household costs such as food and power. House sale prices is one of three components that influence housing affordability, the other two being income and mortgage interest rates.

attributable to development in general but not specific to any particular development, including the costs of growth on the road transport network and on the need for new community infrastructure.

3.5 Methodology for allocating common costs

In brief, the method used to estimate the amounts to be recovered from DCs in Christchurch is as set out below. The actual system is complex. For example, the single step of dividing spending amongst the drivers of costs (step four in the list below) has numerous individual steps. The method for estimating amounts to be recovered involves the following steps:

- Identify the project(s) – The Council has isolated seven service categories for services that it provides at a community level: reserves; water supply and conservation; wastewater collection; wastewater treatment and disposal; surface water management; transport; leisure facilities. Projects within each of those service categories are planned and documented within the LTCCP. Projects that are not council projects and are instead developer projects (e.g. roads or pipes in individual developments) cannot be included in the LTCCP.
- Calculate spending on the project(s) – The amount of growth-related capital spending required for each service is estimated based on forecasts of growth and estimates of the capital works required to meet that growth. The project costs include all capitalised expenditure related to the project; pre-design, design, consent, construction, supervision, administration, interest during construction etc. The project costs will not include pre-feasibility, catchment planning, or strategic planning that gave rise to the project. No operational expenditure will be included. Project funding from other sources (e.g. Land Transport New Zealand or Lotteries) is deducted.
- Define the level of service drivers for the project(s) - The Levels of Service (LoS) define the need for and extent of the project. The LoS are defined in a manner that relates to the capacity of the infrastructure to deliver the service; they are the measures used to define the extent of the project. Council officers record measures that describe the existing capacity, existing demand and total capacity provided by the project.
- Divide spending for each project amongst funding needs – The cost allocation methodology provides a system to split the costs of each spending project between four funding needs: renewal (to renew, replace or rehabilitate existing assets), backlog (to increase the capability of existing assets to meet current demand), growth (to meet the additional demand created by development), and unallocated. The cost of growth for an individual project is capped by the amount to fund a theoretical 'stand-alone new works project'.

- Divide spending on growth into catchments – The Council has identified catchments for each of the seven services that it provides. The size of the catchments varies by service, for example, there is just one citywide catchment for wastewater treatment, one for transport, and six for surface water management.
- Divide spending on growth in each catchment by predicted units in demand – For households, units of demand are estimated in HUEs, a standardised measure of household demand for services. For businesses, the unit of demand is business floor area. Floor areas are adjusted by "equivalences" which relate the business demands back to the common unit of demand expected from a typical residential unit (HUE). These equivalences are derived from known measures of demand for each service type. Dividing the amount of spending on growth in each catchment by expected growth in HUEs gives an amount of spending by HUE in each catchment.
- Charge this amount as the contribution in that catchment for each HUE created – The development contribution per HUE for a particular development is the total sum of growth spending per HUE summed across the catchments within which the development sits. Businesses do not contribute to reserves or leisure facilities.

4 We assess the Policy and Methodology against the Council's objectives

4.1 Objectives for development contributions

The Policy contains reference to two objectives for the DC charge:

- To obtain from those responsible for development that places additional demands on the Council's provision of infrastructure, reserves and community facilities a fair and reasonable contribution towards the expansion of those services;
- To ensure that the level of such contribution does not generally act to discourage development, recognising that the contribution will be influenced by the complexity of site works and that this may work to discourage development of a particular area.

As such, the objectives contain four elements: fiscal objectives, efficiency objectives, effectiveness objectives and equity objectives.

An additional element is the need for the Council to comply with its obligations under statute, principally, the Local Government Act 2002. This statutory context is described in section 3.2, above.

Economists have limited means for assessing whether equity objectives have been fulfilled. As such, assessing equity objectives is beyond the scope of this work. For

example, assessing what is a "fair and reasonable" contribution. Another example of an equity consideration is determining whether low-income residents should be shielded from the impact of the charge in some way.

We have considered the remaining objectives in our assessment of the Policy and the Methodology.

Fiscal objectives

- Recover the costs of development to the community – Funding that is sourced from development contributions can be used to reduce the funds that might otherwise have been required from other sources, including rates.[9]

Efficiency objectives

- Directing the course of development – Development contributions could enable councils to influence the nature of development and its location (although the ability to use DCs for policy purposes is subject to statutory criteria). Alterations to the level of contributions could be made to transparently encourage certain sorts of development in certain places in the city.
- Incentivising least-cost development - If contributions are appropriately calculated for the actual cost of providing services, developers will face a choice about whether to pay the Council to provide those services, or to provide the services themselves to some degree (and thereby reduce their development contributions). Development contributions can thereby encourage efficient design of new developments, and discourage inefficient designs.
- Signal location – Development contributions can be used to indicate to developers the costs of council-provided services to different locations in the country, the region, or the city. In theory, the contributions should make the Council indifferent in a financial sense about where in the city new development occurs.

Effectiveness objectives

- Help make Council decision-making more effective – Development contributions can help engender efficient decisions by councils and developers on whether, how and to what scale to provide services.

[9] LOCAL GOVERNMENT KNOWHOW CONTRIBUTIONS STEERING GROUP (2003) Best practice Guide to Development Contributions.

4.2 Efficiency concerns the way DC charges affect behaviour

The efficiency of the Policy depends primarily on the way the DC charges affect behaviour (the 'incentives' that they create). We use these incentives as criteria to assess the economic efficiency of the Methodology and the Policy.

The key behaviours of interest are as follows:

- The extent to which the Policy encourages developers to consider and minimise the costs they impose on Council infrastructure when deciding whether or where to create a new development. These incentives apply across the country (by comparison between Christchurch City and other places in New Zealand), across the region (by comparison between Christchurch City and other places in the Canterbury region), and across Christchurch City itself.
- The way in which the Council administers development rights (and potential) under the scheme.
- The extent to which the scheme encourages developers to take action to reduce costs that the Council will incur but that can be influenced by the actions of developers.
- The decisions that the Council makes about investments in infrastructure services that are part-funded by DC charges and the provision of those services.

Economic efficiency is also affected by the incentives on households and businesses to make best use of the assets once they are constructed. The regime of user charging is a primary influence on these incentives, but a review of user charging is beyond the scope of this work.

4.2.1 Principles for enhancing efficiency

The principles we discuss in this section are commonly accepted economic principles in cost allocations problems. They have been set out in our previous work,[10] and in a number of public policy arenas (e.g for the allocation of costs of network assets such as electricity, water, roading).[11]

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[10] LECG (DAVID MOORE AND SALLY BARNES) (2006) Economic Principles - Christchurch City Council's Development Contributions Policy.; LECG (KIERAN MURRAY AND HAYDEN GLASS AND RYNO VERSTER) (2004) Assessment of proposed cost allocation methodology and financial model for development contributions - Report to the North Shore City Council.; LECG (KIERAN MURRAY AND TIMOTHY IRWIN AND DANIEL KNOX) (2001) Development contributions: Economic Analysis - Report to the North Shore City Council.; LOCAL GOVERNMENT KNOWHOW CONTRIBUTIONS STEERING GROUP (2003) Best practice Guide to Development Contributions..

[11] The incremental- and stand-alone cost principles and their efficiency properties are described in detail in many references. See, for example, William J. Baumol and J. Gregory Sidak, Toward Competition in Local Telephony, (Cambridge, Massachusetts: MIT Press) 1994. In "Cost-Allocation Principles for Pipeline Capacity and Usage", Energy Studies Review, Vol. 8, No. 2, 1996, D. J. Salant

In our previous work, we outlined four commonly accepted principles of cost recovery that, if appropriately applied, are likely to lead to an efficient cost recovery solution. We use these principles as an additional check on the scheme proposed:

- All customers or groups of customers should be charged at least the incremental cost of the services they receive (the "incremental-cost principle"). Incremental costs are those costs that would not be incurred in the absence of the development.
- No customer or group of customers should be charged more than the full stand-alone cost of the services they receive (the "stand-alone-cost principle"). The stand-alone cost of a service is the cost that would be incurred in providing the full equivalent services to a user if that user were the only user.
- Common costs should be allocated in such a way as to minimise the impact of the charges on behaviour (the "common-cost principle"). Common costs are costs that would be incurred even in the absence of the development, e.g., the costs of a water-collection dam used to supply water to the development where the appropriate size of the dam is the same with and without the development.
- The Council should recover all capital costs it incurs as a consequence of development: no more, no less. Therefore, the sum of all charges (DCs, FCs and user pays) should equal the combined capital cost of development.

5 Assessment of the Policy and the Methodology

We assess the Policy as a whole and the Methodology against the principles for economic efficiency set out in Section 4.2.1. There is a summary of our assessment of the policy and methodology against the principles in Appendix One.

5.1 Appropriate incentives for location around the country, region and city

5.1.1 Charging DCs will encourage more efficient decision-making by developers

Setting DC charges provides a way of signalling to developers the costs of providing infrastructure to new developments in Christchurch City. The charges provide a signal about the costs of new infrastructure in advance. This means that developers are able to reduce or avoid the cost if they choose to locate elsewhere.

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and G. C. Watkins argue that the incremental- and stand-alone cost principles can also be considered "minimal" conditions for fairness.

Economically, this is important because it helps developers take into account the costs that they collectively create in terms of requirements for improvements to infrastructure when they make decisions about whether and where to build in Christchurch City. Even if the developer is unaware of the asset needs that make up the charge (as would likely be the case with one-off developers), the level of the charge signals the cost of growth in a geographic area.

5.1.2 The strength of signal on incentives for location around the city depends on a number of exogenous factors

A range of exogenous factors affects the signal sent by the Council by the DC charge about where in the City to develop. These exogenous factors may mean that the DC charge has no impact on development behaviour. For a start, if purchasers desire a particular development style or location, the developer may elect to continue to undertake development projects in that location because the expected profits from that location are higher than from others, despite the higher level of charge.

Further, the strength of the signal depends on how easy it is to switch between different location options in Christchurch. Therefore, the availability of zoned land in a particular area or comparative land prices in that area will probably impact on a developer's decision to develop in that area far more strongly than the DC charge is able to. Clearly, however, if the DC charge for a development in one part of the city is vastly different to the DC charge in another part of the city for a development that will have sections in a similar purchase price bracket, and a developer can freely choose between the two, then a developer will elect to go for the area with the cheaper charge.

5.1.3 The DC Policy applies a blunt instrument in some cases

Needless to say, the more 'blunt' the assessment of costs in each geographic area in the City, the less strong a signal the charge can send. For example, having one catchment area for transport in Christchurch does little to provide an incentive to locate developments closer to the city or near to existing transport infrastructure. As a result, developers will not be incentivised to differentiate developments in the centre city (where people might walk to work and shops instead of driving) from developments on the outskirts of Christchurch (where people might drive to go to work or visit shops).

The Council has an opportunity to send a clearer signal about the costs of particular types of commercial development to the City through the HUE conversion rates (or other observed measure). For example, it sends a clear signal in differentiating between shopping centres and warehouses with HUE conversions for transport. It also provides a signal by differentiating between HUE coversions for commercial development in different business zones and by allowing a demonstration of actual impact in surface

water management, water supply and conservation and wastewater treatment, collection and disposal.[12]

Unless a developer can demonstrate the difference in impact on water and waste-water use, however, the Policy does not allow for a different conversion rate to be applied for offices as opposed to warehouses. As such, it may not adequately reflect the different impacts on Council infrastructure costs these different uses may each create.

5.1.4 There is no demonstrated causal nexus between reserves of 7.5% and development activity

A policy to charge 7.5% reserves contributions in all cases sends no signal about the true cost of community reserves to council to developers. It is not linked to any measure of growth or development activity.

This is particularly the case with non-residential greenfields development: a 7.5% reserves charge is charged to developers in industrial zones but there is no demonstration of the link between industrial uses of land and the need for additional spending on reserves.

It may be that additional residential development creates a far higher impact on the cost of community reserves to Council than the charge of 7.5% of property value or the value of 20sqm of unit. If it does, to improve economic efficiency, the entire cost of growth should be able to be passed to developers. However, Section 203(1) LGA places a cap on the charge and the Council is bound to impose a less efficient charge.

It is foreseeable, therefore, that a reduction in the net contribution for reserves from non-residential developers may not be able to be off-set by an increase in the net contribution from residential developers.

5.1.5 Discounted charges create distortions

At present developers do not have to face large portions of the true costs of development, and they therefore tend not to take them into account in decisions about where to develop. Developers are currently paying a discounted charge (see Schedule of Transitional Remission Discounts, Appendix 6 to the Policy). The balance of the cost of development is therefore being met by all ratepayers through rates or by all users of the assets through reductions in service quality due to congestion. Continuing to discount the charge will mean that the incentives to developers are distorted. This is only appropriate if it is justified on other policy grounds (e.g. a desire not to discourage development).

The same can be said for not including all development-related projects in the list. At present, the projects that have been included in the assessment of development

[12] The Council can rely on impact assessments for special cases (e.g. transport for shopping malls) but does not differentiate between hotels and shops in Business 1, for example, for wastewater treatment.

contributions are the projects accounting for 80 percent of the forecast capital expenditure. [Council: Please check this statement]. See section 5.3.8 for more detail.

5.1.6 Rates cannot provide this incentive

These impacts on developer decision-making cannot be delivered by rates. Rates are based on property values and the total level of funding required to meet the Council's commitments. This means that rates are unlikely to be connected with the value of infrastructure required as a result of the development. Rates are also required after the infrastructure costs have already been incurred, which limits their ability to encourage efficient decisions on location.

Assuming that the DC charges are set at the appropriate level, DCs will be unambiguously superior to rates in an efficiency sense because of this impact on developers' decision-making.

5.1.7 Incentives to develop elsewhere in the country are also dependant on a number of exogenous factors

The imposition of DCs in Christchurch may impact on the location of development elsewhere in the Canterbury region and beyond. Developers may prefer to site their developments in regions where costs are lower (and, although rates will be slightly higher for the eventual owners, this is unlikely to affect developers' returns as much).

DC charges can be used to signal to developers the relative costs of infrastructure needs as a result of development in other parts of the country. However, if cities set DC charges at a level that reflects policy objectives, rather than at levels reflecting the true cost of growth, then the signal is not accurate.

Other factors are also relevant: the relative profits expected in those regions, the ease of doing business in that area, the compliance costs.

An element of path dependency is also present in the sense that developers tend to develop in regions they are familiar with. For example, many of the developers we interviewed noted that they only develop in Christchurch and surrounding districts in Canterbury. Other than that, developers tended to consider options in areas such as Queenstown, which are relatively accessible from Christchurch. Only one developer was undertaking or contemplating developments in the North Island. Therefore, the level of DC charge relative to surrounding districts is likely to be more relevant to the question of incentives on developers to develop outside of Christchurch than the relative level of charge in Auckland.

As long as land prices in surrounding districts such as Rolleston or Kaiapoi remain low - and as long as people continue to demand property in these areas - the relatively high

level of DC charge in Christchurch will provide an additional incentive to developers to seek development opportunities in these areas.

The Council should monitor the level of contributions in other parts of the Canterbury district

For this reason, we recommend that the Council monitor the level of its DC charges against that required by other councils, especially within the Canterbury region. This is not intended to lead to competition between councils to reduce development contributions, but it will be useful to check the level at which contributions are set, taking into account the level of services provided by different councils.

This type of monitoring may also provide the basis for discussions with surrounding councils about the effect that development in their districts on the cost of growth in Christchurch.

5.2 Incentives for developers to reduce costs they can control

5.2.1 A mechanism to reduce or increase contributions in appropriate cases could be introduced

Developers may be able to design their developments in such a way as to reduce their impact on council infrastructure. The interviews with developers suggest that this is far more likely for some types of assets (e.g., water supply, stormwater) than for others (e.g., community services).

A mechanism to increase or reduce contributions in appropriate cases might improve efficiency. Encouraging efficient designs and discouraging inefficient designs is good for both the developers and the Councils. Developers benefit through lower development contributions, and the Council benefits through lower infrastructure costs.

The current Policy does not allow for remissions. It allows for private developer agreements and a review of the charge in limited circumstances, but these circumstances are not clearly outlined in the Policy, which allows for review "where it is in the best interests of all parties, being the developer, the Council and the Christchurch Community generally". The reasons for the decision will be recorded in the decision documents.

Unless a private developer agreement is entered into, a developer cannot reduce the DC charge despite an efficient design that reduces costs to the Council, because there are no grounds for individual reductions on DC charges and there is only theoretical recognition of stand-alone projects (discounts or variations are not available if the developer designs infrastructure in a way that substantially reduces costs to the Council).

We recommend considering the introduction of a review system to take into account substantial design improvements that impose lower costs on Council. For simplicity, this could just apply to large Greenfield projects, since these are the developments that are

most likely to have the scale required to change their design in ways that will reduce Council costs. A clear nexus between the development project and a reduction in costs would need to be demonstrated by the developer.

A review system should only be considered in conjunction with other policies, however. For example, it is likely to be more appropriate to incentivise certain desirable behaviour (like on-site storm-water management) through published standards than it is through discounted DC charges.

Equally, there may be developments that impose costs on Council infrastructure that are higher than the averages proposed to be levied through development contributions. Consideration could be given to penalising undesirable behaviour – provided the Council can demonstrate this link between the development and higher costs. Again, however, the better mechanism to prevent undesirable behaviour is likely to be a change in minimum design standards.

Well-defined processes, and clear guidelines for the staff involved in engaging with developers on these issues may help to minimise administrative costs, reduce uncertainty and improve incentives on developers.[13]

We can understand the concern of developers that they might end up having to pay the full development contribution regardless of their individual contributions to minimising costs if the power to demand the full charge exists, even though the Council might assure developers that reductions on the charge will be available in appropriate cases.

An individual assessments scheme is not without costs. In particular it will encourage developers to attempt to convince the Council to reduce the level of their contributions, even in cases where the actual impact of their development on the Council's costs is high.

A further cost to consider is the cost of uncertainty to developers. Any review system that makes it more difficult for developers to estimate the level of DC charge that will attach to their development project will add risk to the project and will be recovered through a higher cost of capital or lower willingness to pay for land. Therefore, clear guidelines as to what will, and will not, qualify for a review of DC charge will be needed.

5.2.2 Less ability to control costs where the infrastructure is already in place

Developers have no ability to control the cost of infrastructure where the infrastructure is already in place. Therefore, charging for past infrastructure projects provides less of an incentive to developers to take account of the costs of growth in their decisions than

[13] At present, only circumstances that cause higher than average costs qualify for extraordinary circumstances (page 24 of the Policy) and the written material released to developers makes it sound as if a private development agreement is likely to be rare.

charging for future projects. The DC charge will therefore have a greater impact on developers' decisions in Greenfield developments over in-fill development and centre city development.

5.2.3 Differentiation between different types of building use for non-residential building use for waste-water and water-supply

There may also be reason to differentiate more carefully between different sorts of non-residential developments when the DC charge is assessed at the time of building consent. At present, the Policy allows for a different HUE conversion rate according to the business zone. This will provide a reasonable assessment of impact for the purposes of assessing the charge at the time of resource consent, but it does not reflect the end use very well: the impact on Council waste-water infrastructure of a small bookshop is unlikely to be the same as a café, yet the same HUE conversion rate would be used if both were in the same business zone.[14]

The Council has already recognised this with its work looking at the costs of traffic generated by different sorts of firms.

The system might also be able to be improved by introducing a process to relate the contribution for any of the seven services back to a variable that actually drives the level of costs the Council incurs. At present the gross floor area of the development determines the level of development contributions for water-supply and waste-water for non-residential developments. This link means that there is not much scope for developers to change their designs to reduce costs: the only thing that matters is size. In practice other factors will be relevant, for example, the costs of waste-water treatment will be influenced by the number of people present on a site. An example of a clear connection between the charge and development behaviour is the conversion for surface water management, which is calculated on the extent of impermeable surfaces.

If these kind of links can be established, they might be able to be used to guide the level of any reduction or increase in contributions appropriate for particular developments.

[14] Difficulties rise with change of building use over time: would the Council charge a DC every time a use is changed? Does a change of use amount to 'development'?

5.3 Incentives for Council to invest in infrastructure services optimally and provide them efficiently

5.3.1 Consider internal processes to improve consistency in the cost allocation

The Methodology provides a consistent and transparent (if complex) means to explain the attribution of project costs to the various drivers. The method used ensures that no one driver contributes more than the stand-alone costs of servicing its own demand, and that common costs are proportionately allocated across the different drivers.

However, the results of the methodology can still appear quite arbitrary and inconsistent, especially to those not involved in the process. Applying the Methodology involves a high level of discretion from council officers. For example, in estimating the costs of a stand-alone project, estimating capacity periods and forecasting the expected capital cost of the project. This becomes more and more difficult the further out in the planning horizon the project is.

In addition, there is a risk of appearing to fund projects that the Council wants rather than those that are actually required to meet the demands from growth. Attaching asset purchasing needs to published levels of service is a useful technique in the Methodology, because it means council officers apply a standards-based rule.

Detailed guidelines and specialist support for those engaged in using the Methodology would also be helpful. Access to previous project assessments and a means to allow those involved in the assessments to calibrate with other similar assessments would be a useful aid to consistency.

The allocation of costs between drivers for large projects could also be audited as a matter of course by some independent third-party to ensure that the allocation is reasonable. This will provide greater assurance to both the Council and to developers that the rules are being appropriately applied.

We also recommend that work continue to develop a stronger evidence base for the definition of catchments. While this is a relatively straightforward process for some services (e.g., there is a close link between water supply catchments and geography), for others the basis of calculation is more complex. There will be an ongoing need for data to continue to refine and develop catchment definitions.

5.3.2 Ensure linkages in the model between population growth and additional asset needs

As the growth model is adjusted every year, the methodology allows for a dynamic response to a change in the level of population growth expected in each geographic area.

Therefore, the model should ensure that a change in the number of developments in a geographic area in the model is linked to an adjustment in the population/HUE forecasts for that area, *and* a linked to an adjustment to the project capacity period reflecting the adjusted forecast. As an example, if the number of developments falls, the number of HUEs in future periods should fall, and as a result the need for future infrastructure in that area in those periods should be less. Perhaps projects that were on the list for that period may be delayed, or may fall off the list. Only then will the model be responsive to changes in the level of development.

As we have not been asked to assess the growth model, we have not assessed whether there is a demonstrated connection between these variables in the model.

5.3.3 Differentiated contributions could give useful feedback to the Council

A system that enables alteration of contributions based on the characteristics of individual developments will be useful for both developers and the Council. For developers contributions will be lower or higher depending on known factors within their control. For the Council the level of development contributions collected and collectable could provide useful information in the process of deciding what infrastructure services to invest in, where they should be built, and who should pay for them.

The feedback from actual contributions collected into planning is important. For example, if development shifts to a different area in the region, this may be a signal that the development contributions are too high in Christchurch City, and that residents and businesses are not prepared to fund the level of services that the Council plans to provide. Equally, a flood of new development could be a signal that residents and businesses highly value the services of the Council.

This information would complement the systems already in place to ensure that the Council is encouraged to make appropriate infrastructure investment decisions:

- The process for approving the LTCCP and its regular review help to ensure that the Council's infrastructure investments are optimal. Continuing to encourage developers to provide input into this process is good idea.
- The ability of developers to seek judicial review of the development contributions policy and the LTCCP itself is a useful discipline to ensure that the Council's infrastructure investment decisions are reasonable.

5.3.4 Explain what will happen if contributions are not as high as expected

It needs to be made clearer in the Policy what will happen if growth does not eventuate as expected and the level of development contributions predicted is not collected. It is not

obvious to us that the planned assets would just not be built. This is because many of the projects have economies of scale and therefore costs that are shared between the different drivers of costs.

These common costs mean that it is not possible to build just the half of a road that is for renewal or the half of a swimming pool that is for backlog, and not to build the growth portion of the project that development contributions were expected to fund.

Even if a project is funded entirely by DCs, if it is scaled back, economies of scale mean that overall costs will not fall by as much as contributions fall.

Some addition to the scheme is required to surmount this difficult problem. Options include:

- Agreeing that ratepayers carry the risk if expected development does not occur and assets are constructed anyway,
- Establishing a mechanism to review projects and contributions over time in light of the actual development contributions that have been collected or changes in forecasts, or
- Charging only incremental costs to the growth driver. The amount to be allocated to growth would be the difference between the total project cost and the costs of a theoretical stand-alone project to meet the demand for renewal and backlog. No common costs would be allocated to the growth driver.

5.3.5 More investigation of the ten percent loading

The Methodology compares the costs associated with growth of a particular project with the stand-alone cost of a theoretical project only to meet the growth demands.

This is a sensible step to ensure that it would not be more efficient to build a separate facility to serve just the growth demands than to build a facility that will also serve both existing and growth demand.

But the methodology also adds ten percent to this figure, which weights the model in favour of building fewer larger facilities in cases where there is a close balance between the efficiency of sharing facilities between existing and growth demand and building separate facilities. The ten percent figure has been used by other TLAs.

This is unlikely to be a major issue – stand-alone costs are not normally a binding constraint in the case of infrastructure assets because economies of scale make it far cheaper per customer to serve larger groups of customers with a single facility.

We understand that this loading is to enable the Council to ensure that economies of scale can be accessed in cases where the balance of costs to developers (in upfront costs) might lead to the development of several smaller facilities but the balance of costs to the Council

(in operations and maintenance costs over time) might lead it to prefer a single larger facility.

While this rationale makes sense, it is unclear that the best place to make these decisions is deep in the detail of a complex cost allocation model. Some investigation of alternative approaches could be appropriate, and also some greater level of evidence as to why ten percent is the appropriate figure.

5.3.6 Consideration of alternative stand-alone projects

It is not clear what might happen if a developer came to the Council with an alternative means of delivering some of the infrastructure needs that are envisaged by the capital projects in the LTCCP and DC Policy as stand-alone projects. The stand-alone project costs at this stage are merely theoretical. However, it might pay for the Council to keep an open mind to different means of delivering the same infrastructure outcomes through private agreements with developers.

5.3.7 Updating the calculation to reflect a dynamic environment

The Methodology and Policy are of course both static, based on a current 10-year project window and 35-year growth window. From this perspective it will fully recover the cost of infrastructure development projects from developers, with no excess recovery.

In a dynamic environment, this is more problematic. We understand that the Council intends to update the financial model annually. At these update points, the assessment window will in effect be shifted out by one year. New capital projects will be incorporated (as drawn from the LTCCP), project estimates will be updated to reflect inflation, and growth patterns will be revised. A new DC amount per HUE will then be calculated, ensuring that a zero balance is achieved over the calculation period (35 years). The opening balance will be the closing balance of the previous year, reflecting the outstanding debt incurred for earlier projects (or positive balance if DCs at that stage were higher than expenses).

Updating the model in this fashion will ensure that sufficient DCs are recovered and will allow for inflation as well. It will also ensure that, on average, the contribution per HUE fairly reflects the additional infrastructure cost a development brings about. However, there will be individual instances where actual DCs collected do not match the infrastructure burden exactly. In addition, during the initial implementation of the cost-recovery method, the burden will be somewhat unevenly spread, as described below.

The model implicitly assumes that the initial ten-year project-planning window is sufficient to cater for the service needs of the population over the calculation window (35 years). This is reflected in the manner that the costs of the projects are covered, through contributions by all new HUEs over the next 35 years (or the actual funding period for

each project). However, further development projects would most likely be needed during the 35-year period to cater for growth at a later stage.

As these future projects will be incorporated in future updates of the cost recovery calculations, this implies that HUEs established later during the 35-year period will contribute towards the initial development projects (currently defined) as well as these later projects (yet to be defined), and a bigger cost recovery burden will therefore be placed on these later developments.

Over time, when the Methodology has been in place for a period and a rolling window has been established, the problem will disappear, and it should become unimportant at which stage of a planning window a HUE is created. The initial problem is mainly due to the fact that it will be a first-time implementation of a rolling cost-recovery window, with no carry-over from past projects.

In addition, there is a significant initial project load anticipated to catch up with a backlog in projects to cater for developments. In future, when this backlog has been worked through and assuming that similar backlogs in future will be avoided by better spreading infrastructure projects over time, a more even flow of DCs is anticipated.[15]

Due to the relatively high load of initial projects envisaged, the project load during the later phase of the initial 35-year cycle should be lower. This, combined with the impact of inflation, should somewhat reduce the impact of the problem on future developers (future contributions for past projects will be less in real terms than the earlier contributions for the same projects).

We therefore do not recommend any changes to the proposed updating mechanism for the cost-recovery model.

5.3.8 Reconsider the 80/20 rule

At present, only projects that make up 80 percent of the Council's future growth infrastructure needs are included in the list of assets charged for under the Policy. [Check]. The economic effect of this is to distort the signal the Council sends about the true cost of growth to the City. As such, we recommend that a better approach is to include all projects in the list. One option might be to create a residual project class 'Small City Projects" and estimate an allocated cost for the entire combined class.

It would be wise to only include in the list of projects that can distinctly be classed as 'growth' projects in the list of "20 percent projects" so that the portion of cost allocated as a growth cost cannot be challenged on the grounds that it is a class allocation.

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[15] This does not refer to the infrastructure backlog for existing developments, which will be recovered through rates. It rather refers to the unusually high requirement for new projects to cope with anticipated development.

5.4 Appropriate incentives for the Council to efficiently administer the development contributions scheme

Many of the ideas already given will encourage the Council to administer the Policy and Methodology efficiently. Introducing a means to review the assessment of contributions for major developments, to introduce alternative stand-alone projects, the ability of developers to seek judicial review, and a third party assessment process for the cost categorisation of major projects all strengthen incentives on the Council to run the scheme in an efficient manner.

It would be helpful to provide more detail on what will happen to the contributions that have already been collected as the plans for expenditure change, and what will happen if project costs change over time.

6 Assessment of Economic impacts

6.1 Predictions of economic theory

6.1.1 Demand and supply

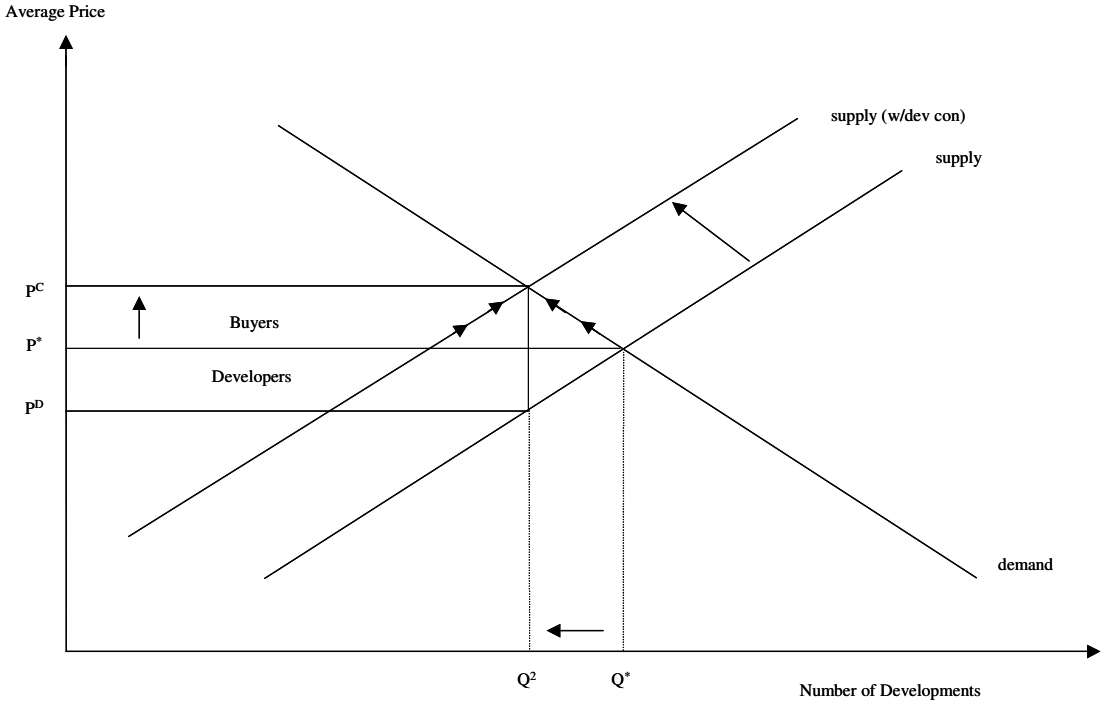
What does economic theory predict will happen to the equilibrium price and quantity of new developments?

The supply curve is a function of development costs, including land and construction costs as development costs. In a perfectly competitive market for development (i.e., there are a number of developers in the same market, with equal access to land and resources), the supply curve will reflect the marginal costs of development. The marginal cost is the cost of creating an additional section, for a given price. A increase in marginal cost for every addition section, therefore, will be reflected in an upwards movement in the supply curve. In other words, DC charges have essentially the same effect as a per unit tax (although they are not a tax *per se*). That is to say, they are a lump sum levy on every unit of development in any given market.[16]

The effects of a per unit levy on market equilibrium are depicted in Figure 1, which shows a hypothetical market for development.

[16] The development market will be defined by location and type of development (e.g. Residential, commercial, industrial or other).

Figure 1: Impact of per unit levy on price and quantity



Prior to the introduction of development contributions, the market is in equilibrium, with Q^* developments sold at an average price P^*. Following the introduction of DCs, the supply curve shifts vertically upward. For any given price, there is less supply of development. This restriction in supply gradually pushes prices up. As prices increase, the gap between demand and supply diminishes until equilibrium is restored at the higher price of P^C and lower quantity Q^2.

Thus, economic theory predicts that the imposition of development contributions will increase prices of developments and reduce the quantity sold. Economic theory also predicts that in the short term, there may be an under-supply of development.

6.1.2 Theory of incedence

What would economic theory predict about who bears the greatest incidence of the levy? That is, who will pay the largest burden of the DC charge? This will always depend on elasticities of demand and supply, but putting elasticities aside for a moment, one can get a feel for this in an abstract sense. Look at the change in prices in Figure 1. After the introduction of DCs, the property buyer's price increases from P^* to P^C , but the return the developer receives for supply at the new equilibrium level falls from P^* to P^D. The difference between the two prices (*i.e.* $P^C - P^D$) is the per unit levy. The incidence of contributions is therefore shared as follow:

- property buyers 'pay' the rectangular area labelled as "Buyers" in Figure 1; and

- developers 'pay' the rectangular area labelled as "Developers" in Figure 1. Developers pay this through a loss of profit and/or pass it on through a lower willingness to pay for undeveloped land.
- The remaining triangular area is an efficiency loss.

In this example the burden of DC charges is fairly evenly shared. That is to say, the amount passed on to property buyers is roughly equal to the amount absorbed by developers.

In practice, however, several other outcomes are possible. At one end of the spectrum, developers may absorb all the additional costs, while at the other end the entire cost may be passed on to property buyers. The actual outcome depends on the relative elasticises of demand and supply.

6.1.3 Price elasticity of demand and supply

Price elasticity measures the extent to which demand and supply react to changes in price. More formally, the price elasticity of demand equals the percentage change in quantity demanded resulting from a 1% change in price. Similarly, price elasticity of supply equals the percentage change in quantity supplied resulting from a 1% change in price.

$$\text{Price elasticity} = \frac{\%\text{ change in quantity}}{\%\text{ change in price}}$$

Elasticity of demand

If the elasticity of demand is higher than that of supply at the current equilibrium, developers will bear a greater incidence of the levy than purchasers, and vice versa. At the extremes, when either demand or supply is perfectly elastic or inelastic, the entire burden is borne by only one party.

Elasticity of demand will vary between development types, suburbs and buyers. The examples depicted in Figure 2 and Figure 3, below, are illustrative only. The true situation is somewhere in the middle, with developers sharing the cost with the market. More discussion on residential housing demand elasticities is discussed in section 6.4.

In Figure 2, demand for new developments is perfectly elastic. This means that even a small increase in price will be met by a 100% fall in demand. Accordingly, following imposition of development contributions, the market price paid by property buyers remains at P*. The entire burden therefore falls on developers, with the price they receive falling by an amount equal to the levy. In this example, the imposition of the levy also results in a significant fall in the equilibrium quantity (Q* to Q2).

Figure 3 provides the opposite extreme, where demand is perfectly inelastic. This means that the same quantity is demanded irrespective of price; in other words, quantity demanded is completely price-insensitive. When DC charges are applied, developers are

able to increase the price paid by property buyers to completely offset the levy. The price received by developers therefore does not change and the entire burden of the contribution is borne by property buyers. Unlike the outcome in Figure 2, the quantity demanded (sold) remains constant and only prices change as a result of DCs.

Figure 2: Impact of levy on price and quantity (perfectly elastic demand)

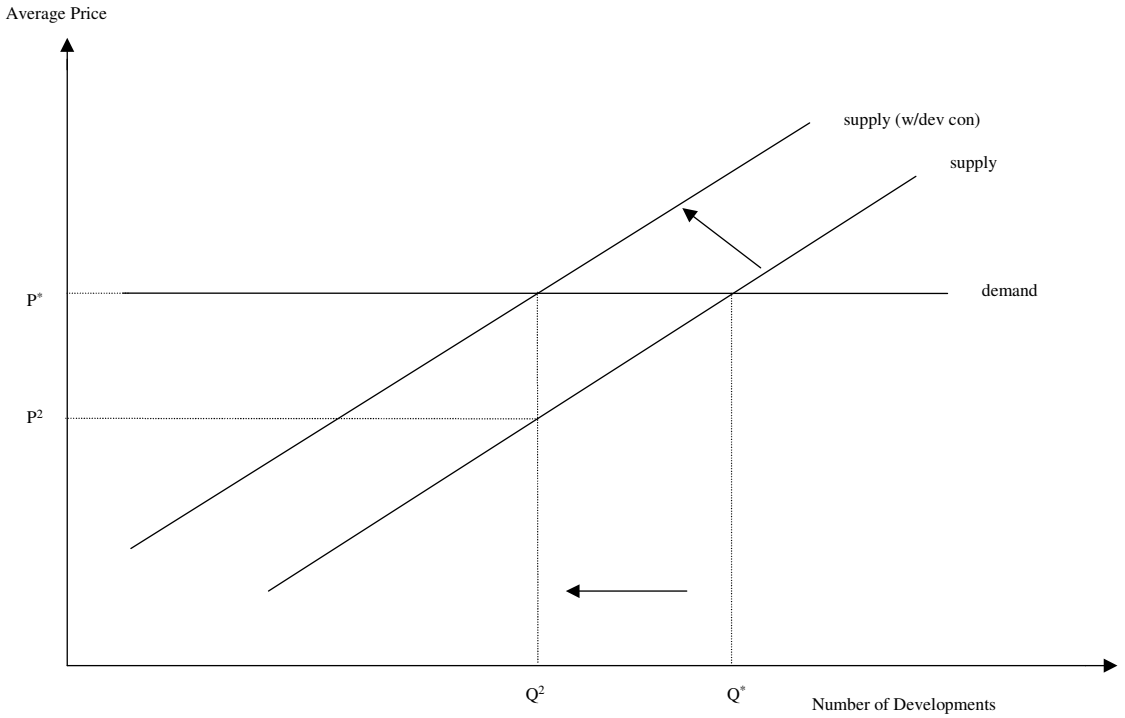
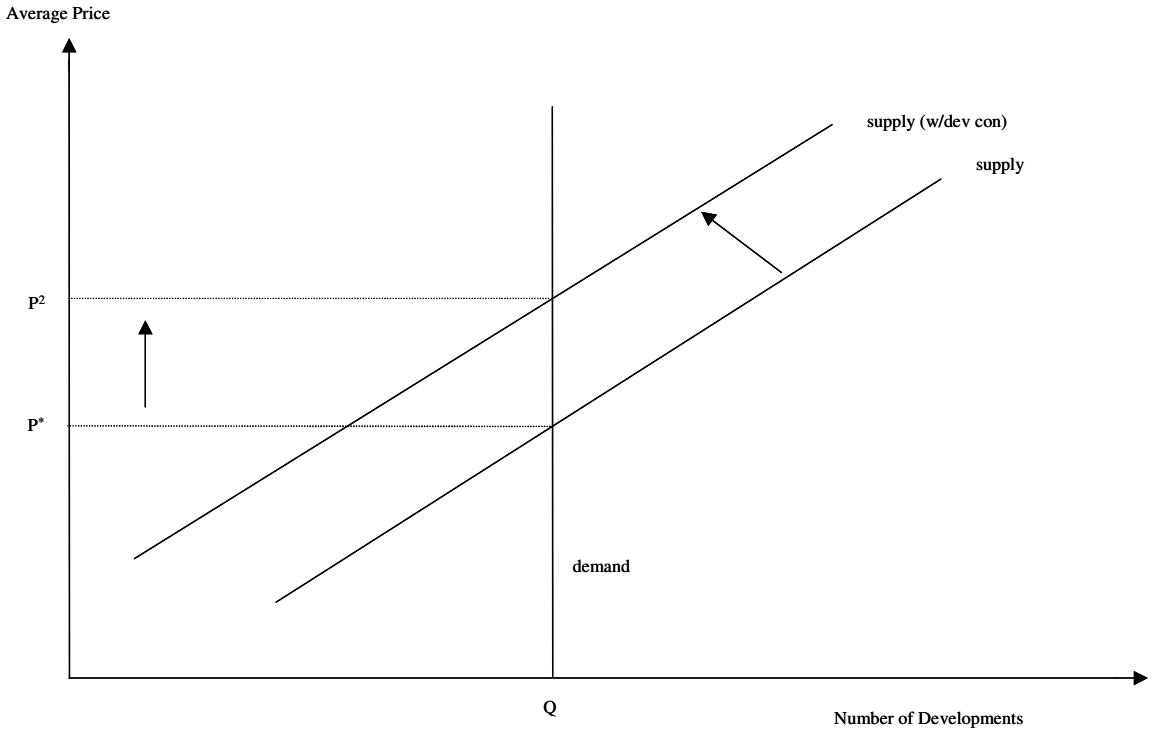


Figure 3: Impact of levy on price and quantity (perfectly inelastic demand)



At a macro level, the market for property is reasonably inelastic.[17] People will always need spaces to live and work. Thus, even though real property prices have continued to increase throughout New Zealand over the past decade, demand for new properties (building consents) has remained fairly consistent, if not risen. Therefore, one would expect that the demand curve for property, at a macro level, would be more inelastic than elastic. As such, one would expect that a larger proportion of the burden of a unit charge like a DC levy would be passed on to consumers through higher property prices rather than developers.

Elasticity of supply

The same considerations apply for supply side elasticity: supply elasticities affect the burden of the DC charge. Research by Motu Economic and Public Policy Research suggests that on average across 74 TLAs in New Zealand, housing supply elasticity ranges between 0.7%-1.1%. [18] In other words, an increase in the price of houses (not cost) of 1%, will increase development by 0.7% - 1.1%.[19] The shape of the supply curves illustrative above, therefore, can be taken as fairly representative of the supply of development as a whole in New Zealand.

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[17] This conclusion is through observation and has not been tested empirically by the authors.
[18] AITKEN, A. & GRIMES, A. (2006) Housing Supply and Price Adjustment. *Motu Public Policy Seminar*. Motu Economic and Policy Research,.
[19] The research contained data from 1991 – 2004 from 74 TLAs.

6.1.4 Developers' decisions

Like with any other business, developers' decisions to undertake a project are determined by an expectation of profit, relative to risk. Profits for developers are a function of the following inputs:

- Vacant land price (input)
- Construction costs (input)
- Compliance costs (input)
- Profit and risk margin (input)
- Sales price

The total cost of development, therefore, is a function of four things: vacant land price, construction costs, compliance costs and profit and risk margin. According to Motu, vacant land prices tend to form about 30% of the direct cost of development (excluding the cost of capital/risk).[20]

Profit and risk margin

Somewhat different to other businesses, developers' decisions to undertake a project involve forming a view of profit from sales some time down the track: anywhere from six months to 15 years. The extended time horizon for developers adds an additional element of risk to a development project, and high holding costs. Reflecting this, developers tend to have relatively high profit expectations. It appears to be standard practise not to undertake development projects unless a profit and risk margin in the vicinity of 20 - 25% on total costs will be achieved.[21]

Relationship between total cost of development and supply

Vacant land prices have an important impact on new development activity: factors that push up land prices stifle new house-building activity, for example.[22] Limiting factors may include geographical or regulatory constraints on developing land for new residential development, or restrictions on subdivision for in-fill purposes.

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[20] AITKEN, A. & GRIMES, A. (2006) Housing Supply and Price Adjustment. *Motu Public Policy Seminar*. Motu Economic and Policy Research,.

[21] This profit expectation was consistent among developers we interviewed. We are also aware of this practise in other areas of New Zealand.

[22] GRIMES, A. & AITKEN, A. (2005) Regional Housing Markets in New Zealand: House Price, Sales and Supply Responses. Motu Economic and Public Policy Research.

The Motu research found that a 1% vacant land price increase reduces house supply by approximately 0.4%.[23]

Increased compliance costs or council charges can potentially have a similar effect. These other costs of development were not included in the Motu supply elasticity research, so information about the effects is limited. But some assumptions can be made about these relationships based on information about developers' behaviour. Our focussed interviews with developers suggest that the long-term development decision is informed by an expectation of the total development cost. Developers maintain that they are unlikely to reduce their expectation of a 20 – 25% profit margin. This being the case, for development to continue at the same level, an increase in the cost of construction or the costs of compliance will be reflected in an almost proportional reduction in the cost of vacant, undeveloped land. So instead, the cost of land might be 25% of the cost, while the cost of development might be 75%.

Because of this trade-off between input costs, it would be reasonable to expect that an overall increase in the cost of development by 1% might cause a 0.4% reduction in house supply, consistent with the Motu research. It would also be reasonable to expect a balancing effect on vacant land prices.

Research on the elasticity of supply for commercial and industrial properties is unavailable for New Zealand.

6.1.5 Developers horizons

According to interviewees, the standard length of time between land purchase and sale-able product ('the development period') for residential developers in Christchurch tends to be around 2 - 5 years, unless the developer intends to 'bank' the land (until it is re-zoned).

The development period for commercial and industrial developments outside the centre city is around 5 years for larger developments. A smaller development would take 2 – 4 years. In the centre city, the development period appears to be about 2 years, although some developers are purchasing properties with a time horizon of 15 years.

It is worth noting the difference in developers' horizons to the Council's planning horizons. While developers might be dealing with a horizon of 2 – 5 years, the Council is in some instances planning for 50 year growth patterns. In the LTCCP, it is required to signal growth plans for the next 10 years.

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[23] AITKEN, A. & GRIMES, A. (2006) Housing Supply and Price Adjustment. *Motu Public Policy Seminar*. Motu Economic and Policy Research,.

6.1.6 Short term impacts

Because land is purchased in advance with an expectation of total development cost in mind, unexpected or sudden changes to construction and compliance costs within the development period will therefore be immediately felt on a developer's bottom line unless the developer can pass on the cost in the form of higher sales prices.

6.1.7 Long term impacts

Construction or compliance costs that can be anticipated beyond the development period will be factored into a developer's decision in one of three ways: the project will not go ahead, the developer will pass on the charge in the form of a higher sales price, or the developers' valuation of the land will fall.

The definition of "long term" in this case depends on the development horizon. Interviews suggest that the usual horizon is 2 years (see discussion at section 6.1.5, above). In other words, the market will have fully adjusted to a 'shock' from the introduction of DC charges within this time.

As described in section 6.1.3 above, the ability for the market to bear a higher price in the long term depends on the elasticity of demand in that market. The elasticities of demand for individual markets in Christchurch are discussed according to the development type in the sections below.

6.1.8 Comment on certainty

Certainty of future costs to developers is desirable, just as it is for other business owners. Variations in DC charges can be dealt with, provided they are signalled in advance or can be avoided or controlled by the developer in some way.

In general, the costs and risks are higher the greater the level of discretion available to Council staff to vary or change the level or calculation of the charge. Therefore, any system that encourages certainty of outcome will be preferable to a system that promotes uncertainty.

Comment on reviews, remissions and special developer agreements

Because of the strong preference for certainty, the arguments for and around remissions, reviewed charges for activities that result in below-average costs to the Council and private developer agreements is fraught with tensions. On the one-hand, remissions and special developer agreements allow for a less 'blunt' way of recouping the costs of development from individual developers. Yet, on the other hand, a system that encourages individual treatment of projects according to the discretion of a Council officer is likely to add significant uncertainty to a developers' decisions overall and a high level of transactions costs. Documenting detailed standards for granting these 'discounts' to

the charge and publishing the reasons why the 'discount' was granted would help mitigate this uncertainty. As commented in section 5.2.1, a review system should only be considered in conjunction with other policies like the City Plan. For example, it is likely to be more appropriate to incentivise certain desirable behaviour (like on-site storm-water management) through published standards than it is through discounted DC charges.

6.2 Economic impact analysis is broken down into sectors

For ease of analysis and explanation, the remainder of this section is broken down into the following different types of development activity in Christchurch city:

- Retail, commercial and industrial (non-residential) development, including:
    - Non-residential development in the centre city
    - Non-residential development outside centre city
    - Greenfields commercial and industrial development
- Residential development, including
    - In-fill residential development
    - Greenfields residential development
    - Residential development in surrounding districts
    - Residential development in the centre city
- Other development and special cases

6.3 Impact on retail, commercial and industrial (non-residential) development

Commercial development consists of a number of sub-markets reflecting the different possible uses of non-residential-zoned buildings. In the Policy, DC charges are applied for known land uses for the following types of non-residential development:

- Accommodation
- Commercial premises / offices
- Shopping centres greater than 10,000 sqm
- Shopping centres less than 10,000 sqm
- Supermarkets
- Service stations with retail facilities
- Markets
- Bulk goods/home improvement stores

- Drive in / Fast Food restaurants
- Restaurants
- Manufacturing industries
- Warehouses / storage
- Hospitals
- Medical services premises and health care centres
- Gymnasiums.

It is not feasible within this report to determine the economic impacts on each of these use-types one-by-one, but it is useful to consider how the DC charge might impact upon developers' decisions about location and project -type. The discussion in the sections below describes how the DC charge may influence developers' choices.

But first it is useful to consider the context of non-residential development activity in Christchurch.

6.3.1 History of non-residential development activity in Christchurch

Since July 1991 there have been consents issued for 2.4 million square metres of new commercial and industrial floorspace in Christchurch. Two thirds of this was for the suburban industrial areas, with the rest being shared relatively evenly across suburban commercial areas, central city industrial areas and central city commercial areas.

In the year to June 2005, a total of 189,283 square metres of new floorspace were added to the City. This was slightly higher than the average annual new floorspace since 1991, which is around 170,000 square metres.

The centre city (within the four Avenues) is the principal location for commercial activity in Christchurch although this position has been gradually waning as retail growth in the Malls and suburbs continues. The proportion of the workforce located in the central city is declining however in numerical terms it is increasing.[24]

Figure 4 illustrates the amount of new commercial and industrial floorspace in Christchurch's city centre since July 1991. As depicted in Figure 4, new floorspace area in the city centre varies significantly between years. This variation is observable for both commercial and industrial development. One large development, such as the (commercial) Farmers building in 1998, can have a significant impact on new floorspace.

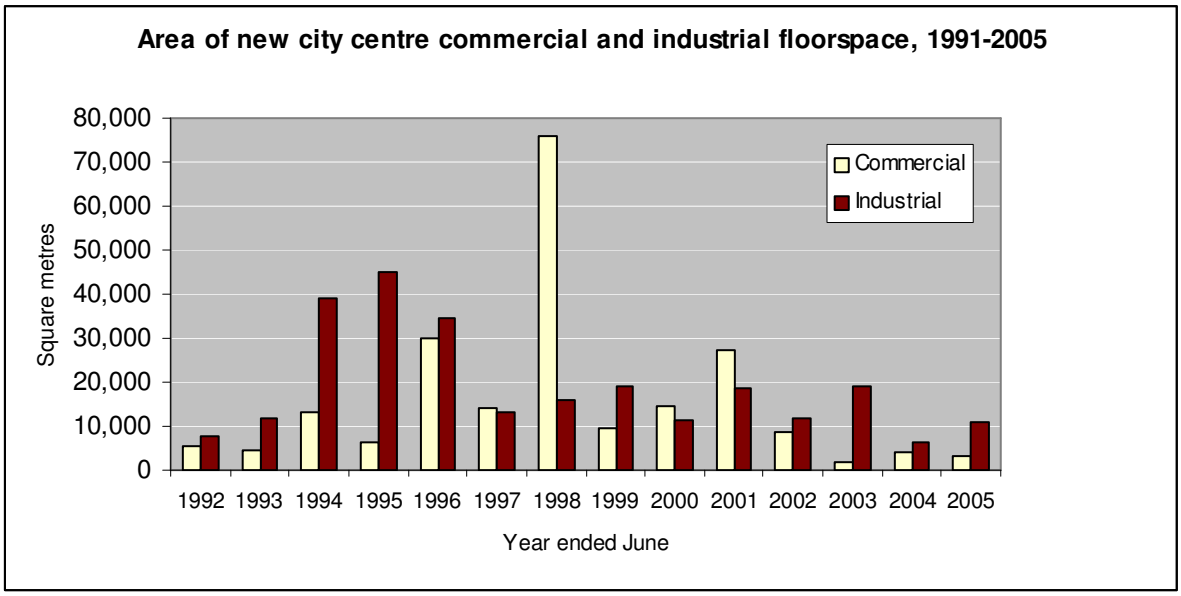
Figure 5 illustrates the amount of new commercial and industrial floorspace in suburban Christchurch over recent years. New industrial floorspace area in Christchurch's suburbs

[24] Christchurch City Council

has increased over the majority of the past 15 years. New suburban commercial floorspace area has varied far more, perhaps indicating greater sensitivity of commercial developments to economic shocks.

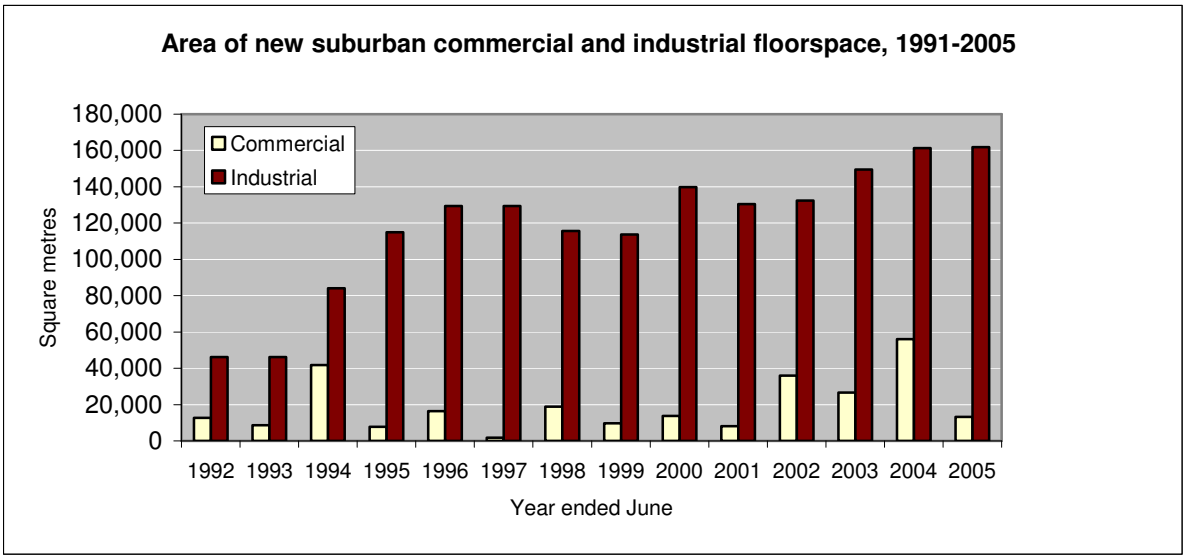
Much of the observable increase in commercial floorspace for 2002, 2003 and 2004 relates to growth in the suburban shopping centres such as Riccarton, The Palms and Northlands.

Figure 4: Area of new city centre non-residential floorspace authorised, Christchurch City



Source data: Christchurch City Council (2006)

Figure 5: Area of new suburban non-residential floorspace authorised, Christchurch City, 1991 - 2005



Source data: Christchurch City Council (2006)

6.3.2 Impact on choice of project

City planning conditions, and the ability to gain resource and building consents for particular projects are far more likely to influence the choice of project over DC charges. As such, a developer is generally unable to trade-off a hospital project against a restaurant project, for example.

Permissions aside, the choice between particular types of non-residential development (should we build shops, offices, or storage units?) is primarily driven by need in a particular community, which in turn drives rental expectations and values.

Possible charges for a theoretical 2000sqm development site in Riccarton with 1000sqm of impervious surfaces from the Policy are shown in the table below. We note that the Council has subsequently found that many of the HUE conversion rates contained in the 2006 – 2016 Policy have subsequently were incorrect. They will be amended for the 2007 DC policy. As a result of those errors, the charges for network infrastructure are likely to be significantly lower than those shown in the table below.

Table 1 Theoretical DC charges for non-residential development (developed land)

	DC charge for network infrastructure based on 2000 sqm size, with 1000sqm impervious surfaces in Riccarton West*.	DC charge for reserves (assumes 7.5% value of 2000 sqm section, commercial vacant)**	Total DC Charge (excludes discounts for existing use;)
Warehouse / Storage	23,063	35,111	58,174
Restaurant	31,256	35,111	66,367
Commercial Premises / Offices	24,599	35,111	59,710
Shopping premises > 10,000 sqm	29,976	35,111	65,087
Shopping premises < 10,000 sqm	36,633	35,111	71,744

* source 2006 - 2016 DC Policy. Assumes that no special circumstances have been demonstrated and no actual impacts have been applied.

** source Christchurch City Council land value statistics

***source Christchurch City Council Sales Price Statistics

In this theoretical example, the charges are significantly smaller for a large-scale shopping centre to a small-scale shopping centre. The difference is primarily in the transport charge. This may impact on the choice between large and small shopping centres – this could be an intended result for Council, who may wish to encourage larger centres where people stay for longer (and do not drive from place to place).

Likewise, the DC charge for a warehouse space is far less than that for shopping premises. Again, this reflects the different transport effects. As commented in section 5.1.3, the difference in charge does not reflect the presumably vastly different impacts that the development would have on use of water. This is an area for improvement in the Policy.

To repeat, however, the policy is unlikely to have an overly strong influence on use. The strongest influencers on use are likely to be the different rents developers / owners can generate from different use types.

[RENTAL ANALYSIS MAY BE ADDED]

6.3.3 Impact on commercial development in the centre city

There are many influences on non-residential development in the city. These include rental expectations, parking, traffic flow, the number of people working and living in the city, and other more macro trends (like consumer preferences for malls over strip-shopping).

According to developers, rents for shops and offices in the centre city are low relative to property prices. This reflects the fact that it is difficult to attract shops and offices to the centre city: there are cheaper options in other parts of the city. This has meant that profitable development opportunities are few in the city centre. An analysis of building consents for inner city commercial reflects this trend.

[RENTAL ANALYSIS MAY BE ADDED]

Because rents in the city are low and highly sensitive to price rises, the most likely short term impact of the DC charge for commercial development in the centre city will be to delay development projects. Some down-ward pressure might be felt on commercial property prices in the inner city in the longer-term.

There may be an incentive for owners of central city property to elect to put in shops and offices instead of residential developments. This is because the charge for a residential apartment (1 HUE) is likely to be proportionately more per square meter than the charge for a commercial use (generally less than 1 HUE, with no community infrastructure charge).

6.3.4 Impact on non-residential development outside the centre city

An interview with a large-scale commercial and industrial developer suggests that the impacts on non-residential greenfields development would be similar to that of residential greenfields in the short term. There would be an upwards impact on selling prices for properties that are already in the process of being developed (if there is an expectation of purchasers that they will be able to recover this price increase from rental increases). Otherwise, the DC charge will come directly off the developer's bottom line.

By way of example, subdividing a 700sqm non-residential section in a B4 zone in Riccarton West would be charged $6,144 in DCs. In the short term, this cost could be reflected in a sales price increase / rental increase or would be swallowed by developers.

In the longer term, the effects would be different. It would take 2 – 3 years for the market to fully adjust to the 'shock' from DC charges. The most likely impact will be that projects will be delayed until rents increase. According to developers, developers already own most of the land that is zoned for industrial or commercial use. In industrial zoned areas, particularly, most of the big blocks were bought several years ago. They intend to do something with the land, it is just a matter of when. Therefore, we would expect that there won't be as much of an impact on the price of vacant, undeveloped industrially-zoned land as their might be on residentially zoned land. Existing owners are more likely to continue to hold the land (there could possibly be an impact on valuations in company balance sheets, however).

Instead, the effect of the DC charge would be felt in one main way: development projects may be delayed until such time as other market forces (such as population growth) cause rents to rise enough to offset the effect of the DC charge.

This reduction in supply may force rents in existing commercial areas to rise – in some cases, this will mean that tenants may elect not to establish shops in Christchurch. Developers report that tenants for national chains (Glassons, Hallensteins and so on) are highly selective about where they locate shops. A minor rise in rent could mean that Christchurch becomes an uneconomic location option.

6.4 Impact on Residential development

A recent report by Motu Economic and Public Policy Research for Housing Research New Zealand explains the determinants of long-run developments in house prices and determinants of house supply responsiveness.[25]

The Motu report concludes that the responsiveness of housing supply (ie, the ability of developers to create new housing stock) to demand changes will determine the extent of regional house price rises. The ability to adjust supply quickly following a demand increase will result in the extra demand being met by matching extra housing supply with little effect on prices. On the other hand, slow supply adjustment results in the demand increase being reflected principally in house price rises.

We are unable to comment determinatively on the supply of residentially zoned land in Christchurch. According to developers, supply of new residentially zoned land might be relatively restricted. The consequence of restricted supply is that rises in house price in response to DC charges could be more pronounced because supply is not able to adjust as quickly to a given change in demand. Further constraints on supply (in addition to available, zoned land), therefore, such as an increase in the cost of development, could

[25] GRIMES, A. & AITKEN, A. (2005) Regional Housing Markets in New Zealand: House Price, Sales and Supply Responses. Motu Economic and Public Policy Research.

affect Christchurch's house prices in more pronounced ways than other cities in New Zealand.

Vacant residential section prices have increased dramatically over time. Between 1981 and 2004, the real (CPI-adjusted) price of vacant residential sections rose by 286% on average across New Zealand.[26] Christchurch's vacant residential section price rose by 262% in real terms over that period. The increase in Auckland City was almost 700%; in Manukau, North Shore and Rodney increases were around 460%.[27] Increases in other tourist locations were also substantial: over 400% in each of Queenstown-Lakes and Thames-Coromandel. These increases compare with real house price increases of 105% across New Zealand as a whole over the same period (house prices are discussed in more detail below).

It would be speculation to determinatively point to one or two factors that have caused these increases in real land prices. At the highest level, the real price increases must be due to an increase in underlying demand which has been un-matched by supply of new residential housing. Therefore, we look on comments by developers that supply of vacant residential sections as being severely restricted with an element of scepticism – real price increase statistics for the period 1981 - 2004 suggest that Christchurch has been fairly 'average' in terms of supply and demand. We do not have the ability to comment on supply changes since 2004, however. It may be the case that since 2004, relatively little new land has become available.

6.4.1 Possible impact on house prices

The price of a house ultimately reflects the price of the factors that comprise that house: the cost of the structure and the price of the land (which in turn reflects the costs of development, including compliance and regulatory costs).[28] Grimes and Aitken find that on average across the country, a 1% increase in real residential land prices translates into a 0.27% increase in real house prices. They note that it is likely that their measure of land prices is "noisy" (i.e. includes some inaccuracies); the result being that the estimated coefficient may understate the true effect).

If the research by Grimes and Aitken is applied:

- the DC charge will increase the cost of development, which will reduce supply (a 1% cost increase will lead to a reduction in supply of 0.4%);
- which will increase the price of developed residential sections;

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[26] Ibid.
[27] Ibid.
[28] Across regions, there is a strong relationship between the full period increase in real land prices and real house prices. Ibid.

- which will flow through to higher real house prices (a 1% increase in real vacant residential land prices will create a 0.27% increase in real house prices);
- there will be balancing effects on the price of unsubdivided, vacant land.

If passed on in full, therefore, the effect of a DC charge on real house prices might be as follows:

Table 2 Possible impact of DC charges on residential house prices

Area of the city	Total DC charge (assuming 800sqm vacant section)	Vacant residential section prices (average, year to June 2006)***	Proportionate increase in vacant residential section price	Possible impact on house prices (assume a 1% rise in section prices causes a 0.27% increase in residential house prices)***
Halswell East	17,552	227,435	7.72%	2.08%
Parklands	19,837	200,654	9.89%	2.67%
Cashmere East	20,636	247,717	8.33%	2.25%

* 2006 - 2016 DC Policy (from DC Charge Look-Up Tool.xls, supplied by Christchurch City Council)

** Christchurch City Council land value statistics

*** Christchurch City Council Sales Price Statistics

*** (Aitken and Grimes, 2006)

Comparison with other sources of price impacts

It is useful to contrast these effects with other influences on house prices. Contrasting these effects to the effect of a rise in the price of vacant residential land shows that the land cost has a comparatively minor effect. A 1% increase in per capita GDP raises real house prices by between 0.2% and 0.3%; a 1% increase in real commodity prices raises house prices between 0.26% and 0.42%. If employment participation rises by 1%, the effect is to raise real house prices by 0.5% to 0.6%. Demand caused by population growth also raises house prices. A 1% rise in population (holding the housing stock constant) raises

real house prices by around 0.8% via the dwelling density term and by a further 0.4% to 0.5% through the amenity effect (i.e. through the population variable).

To further consider the impact on house prices in Christchurch we must first consider the underlying trends in residential housing in the City. Between October 2002 and June 2006, the six monthly running average median house sale price in Christchurch rose rapidly, increasing from $154,574 to $288,708 during this period - an increase of 86.7 per cent. In comparison, between January 1997 and October 2002, median house sale prices remained relatively static, fluctuating between $140,938 and $154,574. At June 2006, the median house sale price ($288,708) was at it's highest ever.[29]

In real terms, house prices in Canterbury have doubled in the period between 1981 and 2004. (Grimes and Aitken, 2005) In comparison with other regions across the country, Canterbury is similar to Otago and Marlborough in real house price rises – comparatively low. Wellington and Auckland regional prices have grown by well more than double. Strong house price growth is not just a major urban phenomenon: Tasman prices have risen almost as strongly as those of Auckland, Nelson has kept pace with Wellington.

Comparison with test cases

A report by Covec in 2004 provides some interesting test cases. It concludes that the DC charge in Waitakere - which represented no more than 5% of an average house price in the area - would have little or no impact on residential house prices in the long term.[30] The reasoning was that the development contributions were not highly significant compared to recent price rises caused purely by other market forces.

The report also describes the case of Papakura. At the time of writing, the Papakura City Council had been operating a DC policy for a full year. There had been no demand-side response, according to Papakura Council monitoring. In fact, over the 8-month period from 1 July 2003 to 29 February 2004, price rises occurred at around the same rate but the number of houses sold increased rapidly (by 38%). Covec's conclusion is that these figures suggest very little (or no) market response to development contributions at that time.

Conclusions about residential prices

Read in conjunction, the following economic effects on residential house prices are relevant:

- Low supply responsiveness in Christchurch may mean the DC charge might affect Christchurch prices disproportionately to those in other centres – but we remain

[29] CHRISTCHURCH CITY COUNCIL (2006b) Facts, Stats and Figures, Housing and Dwellings. Christchurch.

[30] COVEC (2004) The Socio-Economic Impact of Development Contributions For Waitakere City Council.

sceptical about how restricted supply really is in Christchurch when compared to other cities because real house price increases have historically been fairly average (places like Papakura have experienced far higher levels of real price growth than Christchurch, presumably due to higher levels of underlying demand there).

- The DC charge has a comparatively small influence on house prices (as opposed to employment or population effects). It is entirely possible that no effect will be experienced, if market forces work to outweigh the effect of the charge (such as the case in Papakura and Waitakere[31]).
- The DC Policy will nevertheless be introduced in a context of a history of rapidly increasing house prices, where incomes, GDP and levels of immigration have not moved proportionately. Therefore, in the short term, the effects might represent a 'price tipping point' and may mean the market slows considerably.
- At current Policy levels, if the DC charge is passed on in full to vacant residential section prices, it could represent a increase in prices of 2 –3%, based on nationwide house price elasticity assumptions prepared by Motu.

6.4.2 Impact on living areas

The DC charge, which varies according to the area of the City in which the development occurs, may influence developers' location decisions. However, as discussed in section 5.1.2, the level of influence the DC charge has on location could be minimal, because developers are restricted in their ability to freely choose between development opportunities in different parts of the city. Instead, developers tend to evaluate the individual project at hand.

Building consent statistics can show areas in which development occurs (although provide a 'noisy' measure because they include alterations and extensions).

The consent statistics in Figure 6 show that rural zones had a consistent upward trend in consents issued between 1996 and 2004, but these declined in 2005 and 2006. Consents in the suburban living zone dropped dramatically from the 2003 peak in 2005 and 2006. The living hills zone has shown a consistent increase since 2001.

As Figure 6 shows, the majority of building consents for residential development in the past 10 years have been in the L1 suburban living zone. The number of consents for inner living zones has declined markedly since 1999.

Based on interviews with developers, we believe that the DC charge is unlikely to have much of an impact on these trends, with the exception of residential apartment or multi-unit developments in the inner city zone. This is discussed further in section 6.4.5.

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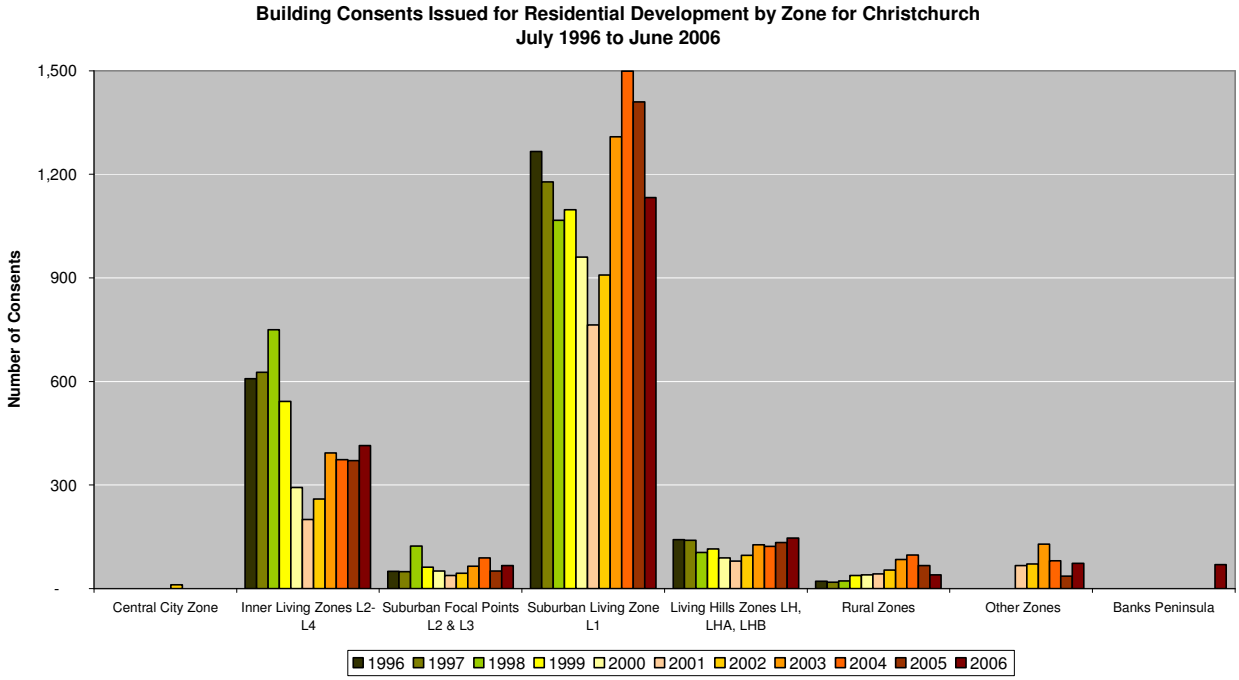
[31] Ibid.

Figure 6: Number of building consents issued for residential development (1996-2006)



Data Source: CCC (NB: In March 2006, Banks Peninsula District Council amalgamated with Christchurch City Council)[32]

In the short-term, if DC charges are passed on to prices of newly developed sections, there may be a substitution effect between new housing in Greenfield areas and houses that have already been built, closer into the city. Over time, house prices for existing house stock will equalise with prices for section + house in Greenfield areas, because the two are close substitutes for each other.

6.4.3 Residential in-fill development in Christchurch

According to developers we interviewed, the supply of in-fill subdivision opportunities in Christchurch is limited, and forms only a small part of the new residential housing market. In-fill subdivisions (such as dividing one section into three) are primarily done as one-off projects by people with little or no prior experience of the costs of development. Often, the true costs of development come as a surprise to this group. The developer either decides to go ahead with the subdivision or not, based on an expectation of revenue and costs. The developer seldom invests in infrastructure within the development and tends to connect to existing services.

The following economic effects are relevant:

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[32] CHRISTCHURCH CITY COUNCIL (2006d) Residential Building Consents, Christchurch City Year to June 2006. Technical Report. Christchurch.

- The developer is unlikely to go ahead with the development if the DC charge makes the development unprofitable – this is a positive outcome for the Council if the DC charge equals the marginal cost to Council of that development.
- Because the projects tend to be one-off, there is little or no substitution between supply of in-fill housing and other types of housing, or between areas of the city. Therefore an impact on other markets will not affect the supply of in-fill housing.
- As profits from in-fill subdivisions are still comparatively high for individual developers, the DC charge is unlikely to slow supply of in-fill housing.
- The charge per HUE is likely to be lower on average in in-fill developments when compared to Greenfield developments (because existing use credits are more likely to attach to in-fills). All else being equal, the price of in-fill sections will be affected less than the price of Greenfield sections.
- A result of this could be substitution of demand for Greenfield sections to in-fill sections. However, this substitution affect will be small, and is likely to be largely off-set by supply constraints for in-fill sections and other price factors.

6.4.4 Residential green-fields development

In recent years, Christchurch City has seen a boom in residential Greenfield subdivisions in areas like Halswell East, Yaldhurst and Burwood / Parklands.

Residential Greenfield subdivisions have also been popular in surrounding districts where land prices were cheaper, and residentially zoned land was available, like Kaiapoi, Lincoln and Rolleston.

Residential development in surrounding districts

Interviews with developers suggest that the DC charge may have an impact on influencing development into surrounding districts which do not impose charges. However, this trend was already well established before the introduction of the Policy. According to developers, development in surrounding districts is likely to continue to be primarily driven other factors, such as land availability, land prices and consumer demand. Nevertheless, we have recommended that the Council continues to monitor its DC charge against those in surrounding districts. See comments at section 5.1.7.

6.4.5 Residential living development in the centre city

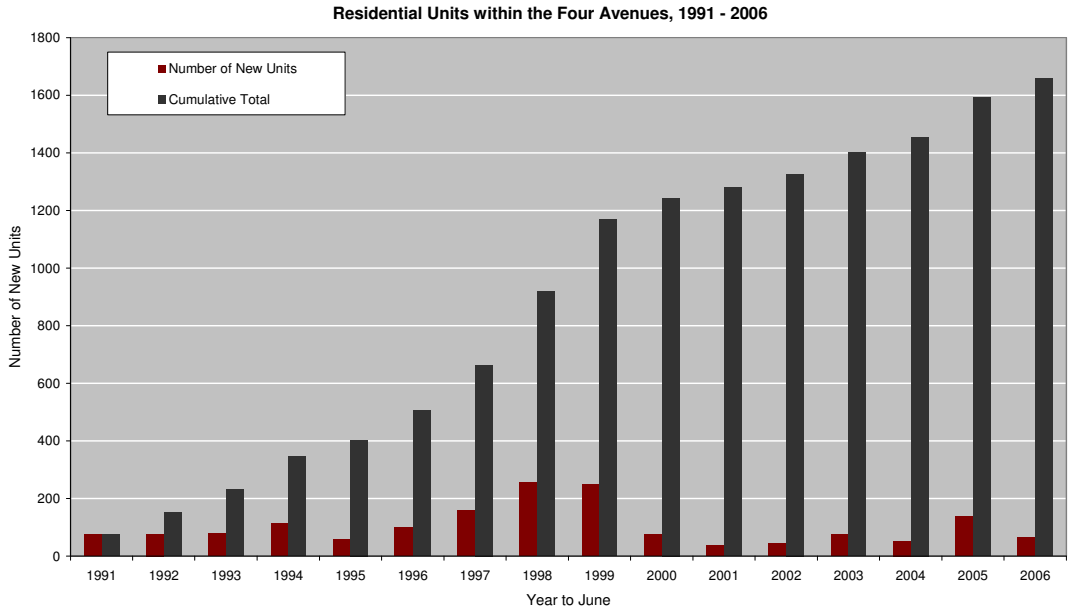
The impact on centre city residential is of particular interest to the Council in light of its Centre City Revitalisation program.

History of residential developments in the centre city

Figure 7 below shows that since 1999, the number of residential units being added in the centre city area has fallen off dramatically. In the year ended June 2006, 66 new units were added to the centre city area but the vast majority were in the living zone areas, rather than the CBD. In the year to June 2006, only one development occurred in the CBD: a17-unit development in Armagh Street.

In the mid to late 1990's there was a large pool of centre city terrace housing developed and marketed at modest prices that competed with the centre city high rise market. This type of development is less popular now. Figure 13 (in Appendix 1) illustrates how the relative popularity of units versus dwellings in Christchurch City has effectively reversed from the situation in the mid to late 1990s, with building consents for dwellings now a third more prevalent than units.

Figure 7 Residential Units in the Centre City, Christchurch, 1991 - 2006[33]



Source: Christchurch City Council, Residential Units Statistics

Amount of DC charge

Under the 2006 – 2016 Policy, the DC charge for an apartment or centre city residential dwelling (with any number of bedrooms) is the equivalent of one household equivalent unit. The resulting total DC charge per apartment is laid out in the table below.

[33] The statistics below may not include serviced apartments or upgrades of existing residential accommodation into apartments.

Table 3 Amount of DC charge on residential dwelling in centre city

	Community and Network Infrastructure	Reserves (Improved land value of 20sqm)	Total DC charge per apartment
Avon Loop	$10,500	$7,000	$17,500 (less historic credits and credits for retail use on ground floor)
Cathedral Square	$10,500	$15,000	$25,500 (less historic credits and credits for retail use on ground floor)
Hagley Park	$11,500	$19,500	$31,000 (less historic credits and credits for retail use on ground floor)

Source: 2006 – 2016 DC Policy, Christchurch City Council. Land Value areas for Improved Residential Units per Census Block, data provided by Christchurch City Council.

Proportional increase in price

In 2006, the average selling price of a finished residential unit in Avon Loop was $286,000, Cathedral Square $457,000 and Hagley Park $431,000.[34]

If the entire charge was passed on to the purchaser by the developer, the charge would represent an average increase in sales price of 6.1% in Avon Loop, 5.6% in Cathedral Square and 7.2% in Hagley Park.

By way of comparison, average sale prices for improved residential units increased by 8% in the 2006 June year for Avon Loop, and increased by 11% in the 2006 June year in Cathedral Square and Hagley Park.[35]

Comparison with other cities

A formal assessment of comparative charges in other cities was not in our brief. However, anecdotal evidence suggests that apartment developments in Auckland and

[34] CHRISTCHURCH CITY COUNCIL (2006a) District Valuation Roll. Christchurch.
[35] Ibid.

Wellington are charged significantly less (could be up to 70 percent less) in levies than similar developments in Christchurch.[36]

All else being equal (ceteris paribus) this would suggest that DC charges create a significant disincentive to building apartments in Christchurch, if other cities are a direct substitute. Interviews with developers suggest that although many Christchurch developers are locally-based, they at least consider comparative costs of development in other cities before making an investment in a Christchurch development. Some are active in Queenstown, Wellington, Auckland and Australia.

Drivers of central city living

A 2004 report commissioned by the Property Council, the Christchurch City Council and the Property Investors Association of Canterbury,[37] described the apartment market in Christchurch as being "more volatile than other housing types in Christchurch". The report concludes that the competitive advantage of centre city living and apartments in Christchurch is low when compared with Auckland or Wellington. A number of factors were cited to support the conclusion that apartments and centre city living in Christchurch was comparatively less desirable than centre city living in other centres:

- Smaller CBD workforce: The pool of potential purchasers who work in the CBD is smaller.
- Less traffic congestion: Proximity to CBD employment, shopping, and entertainment is therefore less of an advantage.
- Less amenity value: Both Auckland and Wellington have the advantage of a harbour amenity and the central city areas contain a number of entertainment options.
- Smaller rental market: Auckland and Wellington both have the advantage of a student population in the inner city and also demand at the top end of the rental market generated by corporate headquarters being located in Wellington and Auckland.
- Less affluent population: Income levels are significantly higher in both Auckland and Wellington which helps support the generally higher real estate prices and rental premiums paid for centre city living in both cities compared with Christchurch.
- Strong competition from 'cheap' suburban competitors: There has also been additional competition from the large amounts of infill housing that has taken

[36] Email to Christchurch City Council, [Sender Confidential], Auckland city charges are around $8,000 per unit (includes 1% reserves), Wellington City charges are around $5,000 per unit. "We can invest in Auckland and Wellington for 68% less than Christchurch full levies cost."

[37] NAHKIES, P. (2004) The Central City Apartment Market in Christchurch. Property Studies Group Commerce Division Lincoln University,.

place in Christchurch over recent years. In Christchurch much of the central city living has occurred on the periphery of the commercial area in comparatively small scale, low rise developments similar to products found elsewhere in the suburbs. The only thing to differentiate this development is its comparatively close proximity to the central city. These developments also retain a focus on vehicles, and compact outdoor garden areas.

Because of these factors, the report concluded that although centre city living will remain a desirable option for a growing segment of the population the comparatively weak competitive advantage enjoyed by this housing type will mean that the degree to which apartments are able to capture market share from other segments of the housing market will depend largely on price competitiveness. Affordability and "value for money" will remain important considerations due to the degree to which consumers in Christchurch are able to substitute both suburban and also other central city housing options for the apartment lifestyle alternative.

Impact on centre city residential

Therefore, an impact on residential inner city prices or on the supply of centre city residential options that is not mirrored in prices elsewhere is likely to mean that centre city living will be quickly substituted for other forms of housing.

A further aggravating factor is the comparatively small size of the centre city living market. This will tend to make prices and land values more susceptible to over and undersupply situations (such as the situation in which developers choose to 'hold off' on residential living conversions and/or developments until such time as rents rise or development costs fall).[38] This has resulted in a 'lumpy' supply pattern in the Christchurch market and a higher level of perceived risk by developers operating in this market.

Further, the centre city area can be an expensive option compliance-wise. Interviews with developers suggests that strengthening and refurbishing heritage buildings is a costly and uncertain exercise – the suggestion was that so many heritage buildings remain undeveloped (or demolished) because they are too expensive to develop profitably.

The upshot of this is that centre city living developments are likely to be more sensitive to increases in the cost of development. DC charges are more likely to significantly slow the rate of development in this market than in others.

Policy consideration could be given to a discounted DC charge, or perhaps a different 'catchment' definition for the centre city area.

[38] Ibid.

Who is living in the centre city

Developers are often responding to the needs of the investors as well as the tenants who will live in the apartments. Investors seek to buy apartments which are capable of generating good returns both in terms of income and future capital gains. Because of this, the centre city residential market comprises separate sub-markets depending on whether the intended occupier is owner or a renter.

According to the 2004 report commissioned by the Property Council and the Christchurch City Council, the owner-occupier market is dominated by:[39]

- empty nesters
- young professionals
- single person households
- childless couples.

In terms of owner-occupiers the demand tends to be for better quality and more spacious accommodation. Prices for inner city 'owner-occupier' dwellings tend to track fairly closely the prices for houses in other parts of the city.[40]

In contrast, the apartment rental market in Christchurch is dominated by:

- foreign students
- domestic students
- non-family households
- corporate workers
- young central city workers

Renters tend to demand cheaper fit-outs and proximity to amenities. Their ability to pay high rents is constrained, and as such, will consider other housing options if rents in the inner city rise too quickly.

At the moment, renters are paying around $100 per bedroom in the centre city for a cheaper-style apartment. Interviews with developers suggests that rental expectations for cheaper, student-style accommodation options in the centre city would need to increase to off-set the additional cost of DC charges before more rental accommodation projects are undertaken. Unless rents rise, this type of development is not financially attractive at present.

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[39] NAHKIES, P. (2004) The Central City Apartment Market in Christchurch. Property Studies Group Commerce Division Lincoln University,.

[40] Ibid.

Change of housing type in the centre city

The current charging structure under the Policy is by household unit (HUE). Thus it does not recognise whether the developer is putting in a large number of bedrooms (hosting, presumably, more people) or putting in smaller units. Because a higher DC charge – proportionately - will attach to cheaper units and units with small floor areas, the current Policy creates a stronger incentive to create high-end or luxury apartments in the centre city (ceteris paribus). Larger apartments designed for owner-occupiers may be preferred over cheaper, more compact options for the rental market.

This may impact on the types of people who live and rent in the inner city area: discouraging students and younger people, and encouraging a greater number of 'empty-nesters' and owner-occupiers.

Substitution to other uses

There is a competitive substitution effect between residential projects in the centre city and commercial projects (hotels, shops, offices, carparking). Therefore, a relative decrease in the expected profits from an inner city residential project as compared to commercial project caused by a DC charge will negatively affect the desirability of residential projects in the inner city.

6.5 Other development and special cases

The Policy allows for a Private Development Agreements between the Council and developer to be entered into in special cases, where "it is in the best interests of all parties, being the developer, the Council and the Christchurch community generally". This allows for discretion on the Council to trade-off funding from DCs against funding from rates and other sources, where it is in the best interests of all parties to do so. Ultimately, therefore, the trade-off decision is a policy decision which will incorporate equity as well as efficiency considerations. As the decisions are one-by-one, we cannot comment on the economic impacts of this provision, except to say that the Policy adequately provides for regulatory certainty by requiring that the reasons for each decision must be included in the decision.

7 Conclusions

Overall conclusions are:

- Funding from DCs is superior in terms of economic efficiency to rates funding for the assets covered by the Policy.
- The Methodology in its current form conforms to economic efficiency criteria and is well designed.
- Therefore, the challenge facing the Council is not in the Methodology per se. The challenge will be to implement the Methodology correctly and consistently over time, by making defensible decisions about the rationale and purpose of new infrastructure projects, clearly showing that the costs being funded are indeed costs of development.
- By publishing and describing the costs of providing services to different locations, and discussing these with developers and the community, the scheme will also provide useful feedback to the Council on the value of the various services it provides.
- The most pronounced economic impacts are likely to be felt in the centre city. We are concerned that residential and commercial growth in the central city area could be restricted by development contributions at their current levels. In light of the Council's policies to encourage inner city growth, this is a key area for consideration of a discounted charge.
- Specific conclusions and suggested enhancements to the Policy are outlined in the Summary, Section 1.

Appendix One - Summary of micro-economic assessment of 2006 – 2016 Policy

Table 4: Summary of assessment of 2006 – 2016 Policy against incentives

Criteria	Assessment
Appropriate incentives for location around the country, region and city	Since many other Councils are implementing a similar approach, the proposed scheme will provide useful signals to developers about the cost of locating in Christchurch City as opposed to other parts of the country and region, and within different areas of Christchurch City itself. The accuracy of these signals is dependent on ensuring that the proportion of project costs allocated to growth is appropriate. We are concerned that growth in the central city area will be severely constrained by development contributions at their current levels. In light of the Council's policies to encourage inner city growth, this is a key area for consideration of a discounted charge. Signalling the likely DC charge in advance of a change assists developers planning. Ideally, the signal would be 2 – 3 years in advance. Transparency in the LTCCP process helps signal infrastructure investments, and therefore, DC charges.
Incentives for developers to reduce costs they can control	Stronger incentives for efficient development design are desirable, if they can be achieved without significant additional complexity. More individualised assessment in some cases, and fewer costs directly linked to the gross floor area, and more differentiation between business types could be useful improvements. Unless a private developer agreement is entered into, a developer cannot reduce the DC charge despite an efficient design that reduces costs to the Council, because there are no grounds for individual reductions on DC charges and there is only theoretical recognition of stand-

	alone projects (discounts or variations are not available if the developer designs infrastructure in a way that substantially reduces costs to the Council). As such the scheme will deliver few incentives to developers to reduce costs they can control. That said, better and clearer incentives are generally given through changes in minimum standards rather than changes in charges. There is, however, a substantial risk in recognising individual projects as reducing costs to the council because it becomes a case-by-case, marginal argument. As less is charged to DCs, the more will need to be charged to rates or to other sources of funding. Gradually, the council risks losing the ability to fully recover costs of growth. The averaging used in the council's policy appears to represent an appropriate trade-off between accurately representing incremental costs and the costs inherent in modelling the real world precisely. There is averaging across units of demand and averaging within catchments, so a system for developers agreements to ensure that that the average contributions are appropriate in individual cases is helpful. This is especially the case for major developments (where onsite provision of some services that reduce demands on Council assets might be feasible).
Incentives for councils to invest in infrastructure services optimally and provide them efficiently	The LTCCP review process helps to ensure that the Council make appropriate infrastructure investment decisions. The ability of developers to seek judicial review of development contributions will help ensure the scheme is appropriate, and a system to allow more individualised assessments will improve Council incentives. The Council may wish to analyse the level of contributions required in Christchurch City as compared with other similar parts of the country and region to determine whether the level of contributions is in line with what is required in other places. It would be worthwhile to introduce a third-party expert review of the cost allocation of major projects, as well as other means to ensure cost allocation is robust and

	consistent across projects. It is unclear what would happen if growth did not eventuate as expected and contributions were not collected.
Appropriate incentives for council to efficiently administer the development rights	The ability of developers to seek judicial review of the development contributions scheme limits Council discretion. It is unclear from the published documents what happens to the contributions collected for projects that have not yet begun, or what happens if project costs change over time. It will be important to revise the LTCCP to take into account actual development contributions collected. It is unclear from published documents what will happen if contributions are not at the level expected, or if they are higher than expected.

Table 5: Summary of assessment of scheme against cost recovery principles

Efficient cost recovery principles	
All customers or groups of customers should be charged at least the incremental cost of the services they receive	The categorisation into backlog, renewal or growth recognises incremental costs. It is unclear whether all growth-related costs are for work that would not be done in the absence of the growth planned for the next 10 years. We have not been asked to review the allocations for individual projects. Recognising historic and actual credits is an additional means for accounting for incremental costs.
No customer or group of customers should be charged more than the full stand-alone cost of the services they receive	The methodology seems to ensure that this condition is met (unless there are significant diseconomies of scale – an unlikely event in the case of infrastructure assets). Adding ten percent 'system efficiency premium' to the figure to cater for council's economies of scale in cost of assets adds a fairly arbitrary judgement to estimating stand-alone cost. It is a common addition in DC methodologies.
Common costs should be allocated in such a way as to minimise the impact of the charges on behaviour	The use of additive stand-alone costs is a smart means to ensure that common costs are appropriately allocated where they fall within a single catchment.
The sum of all charges should equal the cost of providing all the services.	Continuing to discount sends an incorrect message to developers about the true costs of growth. The 80/20 rule should be reconsidered as again, it sends an incorrect signal about the true cost of growth.

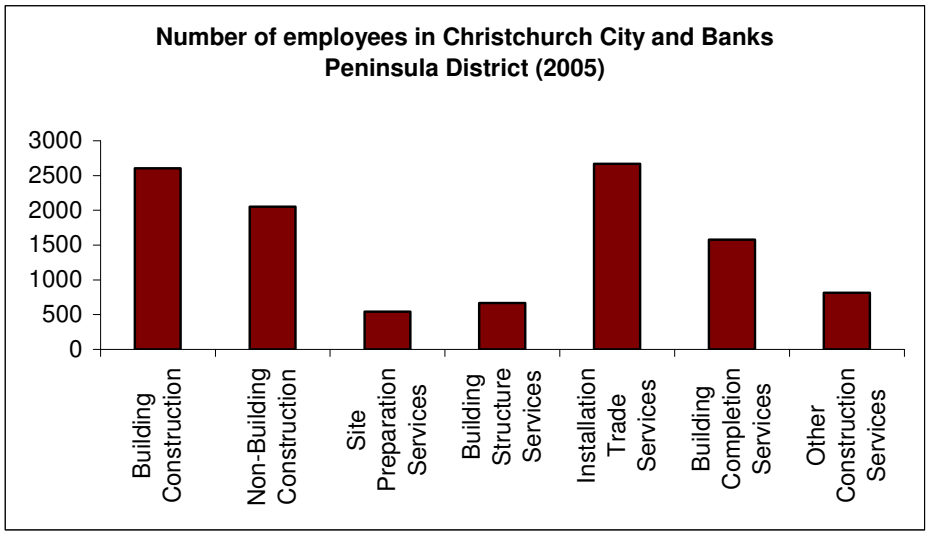
Appendix Two - Background information about the development industry in Christchurch

Construction entities and employment

One can usefully provide a snapshot of an industry by the number of entities present (geographic units) and amount of people that they employ (full time equivalents).[41] Published national statistics show that the construction industry in Christchurch does not differ significantly from New Zealand as a whole, but has a greater proportion of employees in construction than Auckland or Wellington. There is a smaller number of firms in Christchurch than in Auckland or Wellington, employing a larger number of people each. The Canterbury region also has proportionately more construction employees, but proportionately fewer business units than the Wellington and Auckland regions.

In 2005 there were 3,297 entities working in the construction industry in the Christchurch City Council (CCC) and Banks Peninsula District (BPD) areas. In total they employed 10,920 people. Employment groups are set out in Figure 8.

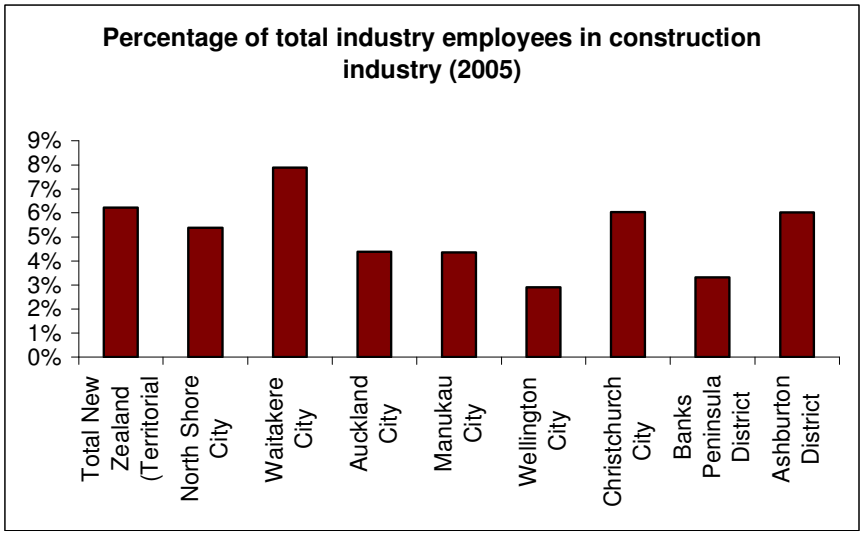
Figure 8: Number of construction industry employees, by employment group, in Christchurch City and Banks Peninsula District



Source data: Statistics New Zealand (2005)

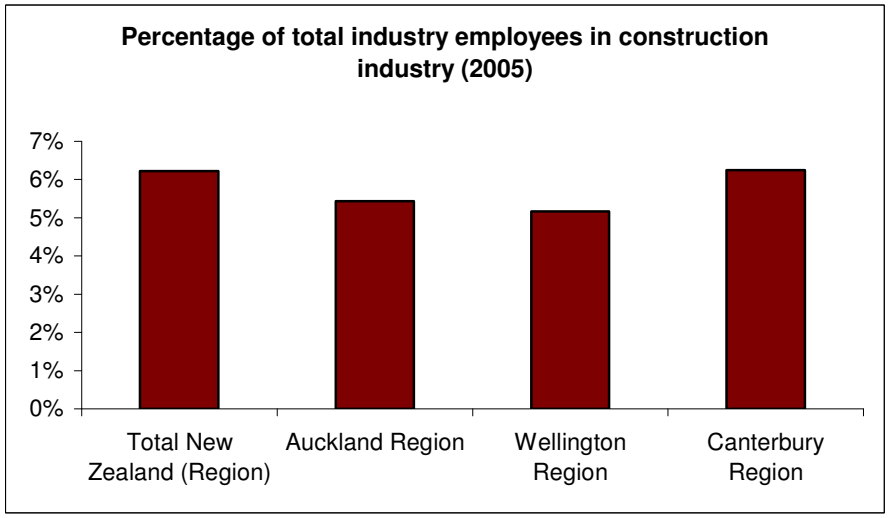
[41] Terminology definitions can be found on www.stats.govt.nz.

Figure 9: Percentage of total industry employees in construction industry (Territorial)



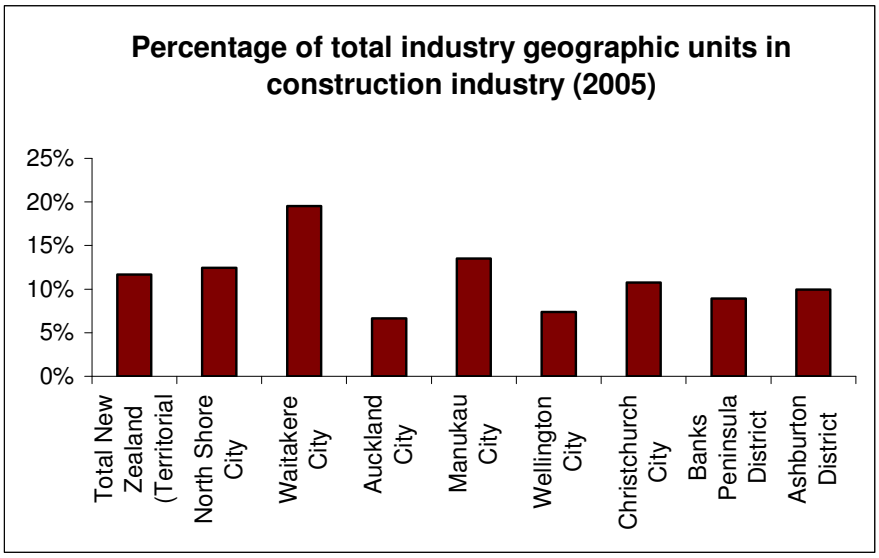
Source data: Statistics New Zealand (2005)

Figure 10: Percentage of total industry employees in construction industry (Regional)



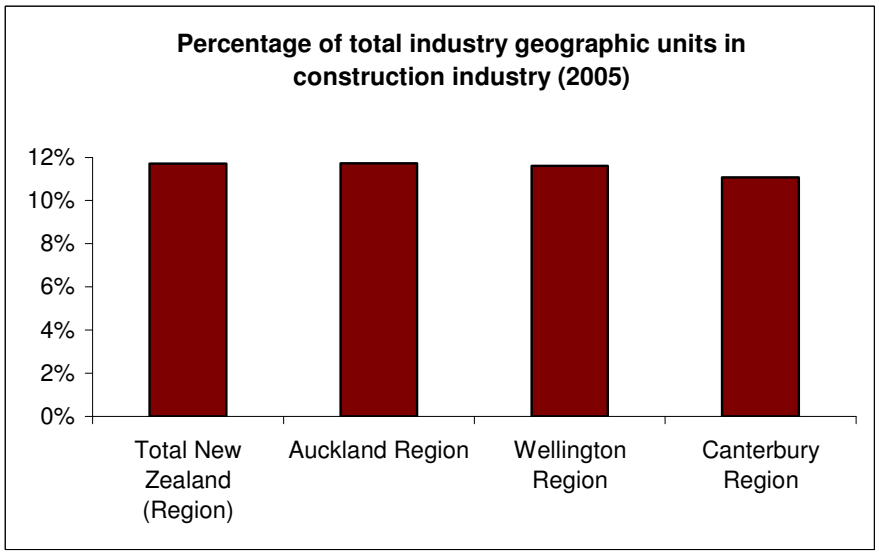
Source data: Statistics New Zealand (2005)

Figure 11: Percentage of total industry geographic units in construction industry (Territorial)



Source data: Statistics New Zealand (2005)

Figure 12: Percentage of total industry geographic units in construction industry (Regional)



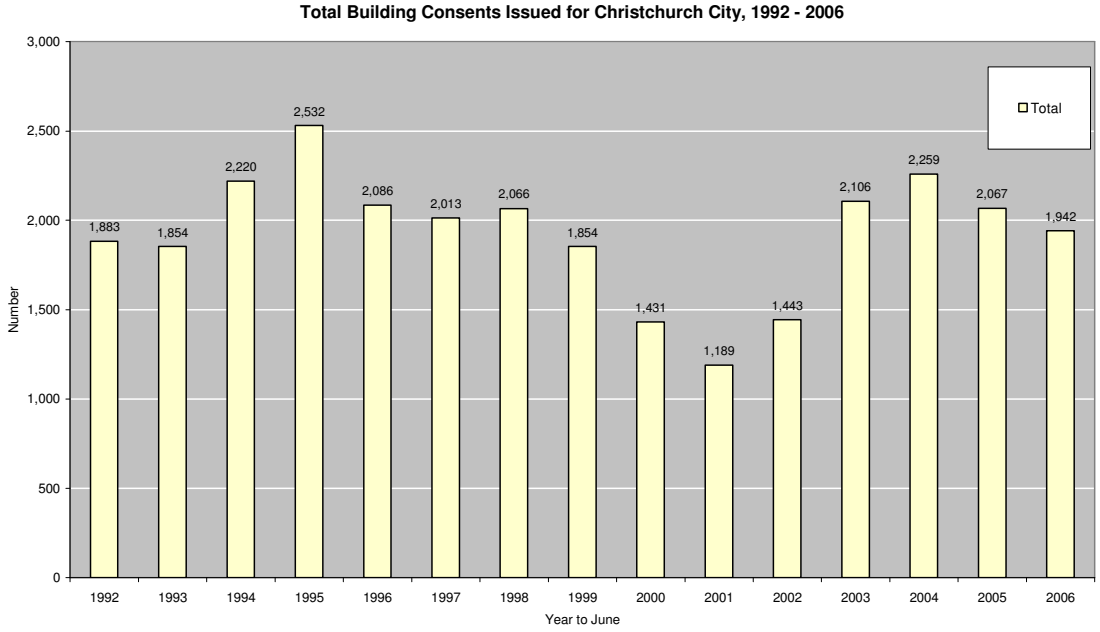
Building consents

Building consents are a key indicator of the health of the construction industry in an area. In Christchurch, the number of building consents has decreased since 2004. The drop in the total number of consents since 2004 has been reflected in other cities nationally. Therefore, the drop could be attributed to national-level impacts such as higher building

input prices, changed statutory requirements under the Building Act and a slowed rate of immigration, amongst other things.

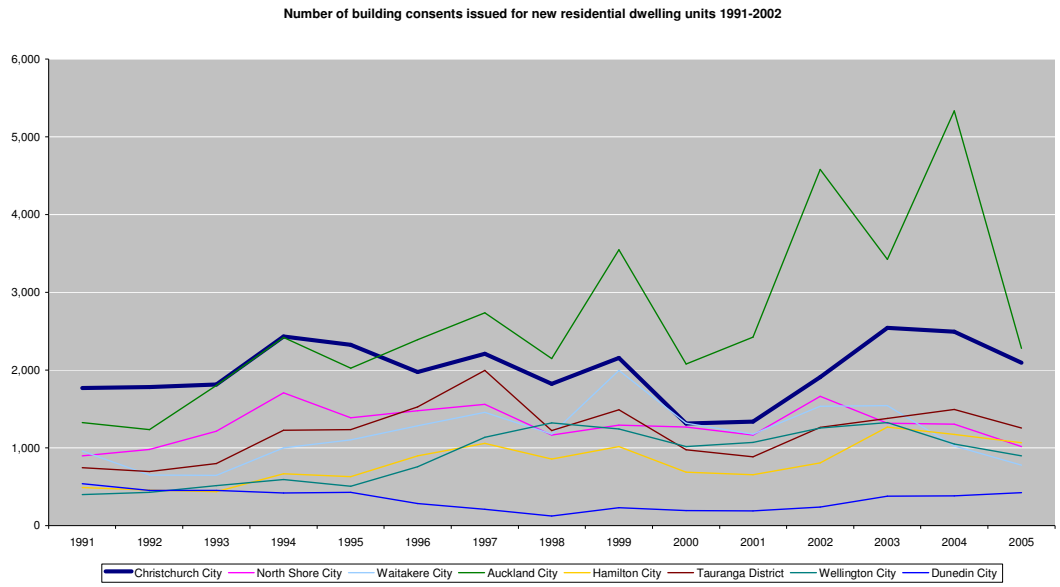
There was a period of expansion after a marked drop in activity in 1998 – 2001. Again, this was reflected nationally, however, Christchurch's rate of growth was slower. The number of building consents issued has now returned to levels similar to the late 1990s.

Figure 13: Overall number of new dwellings authorised, Christchurch City



Source Data: CCC (includes Banks Peninsula from 2006, but the effect of this inclusion on overall trends is negligible).

Figure 14 Number of Residential Building Consents Issued By City, 1991 – 2006*



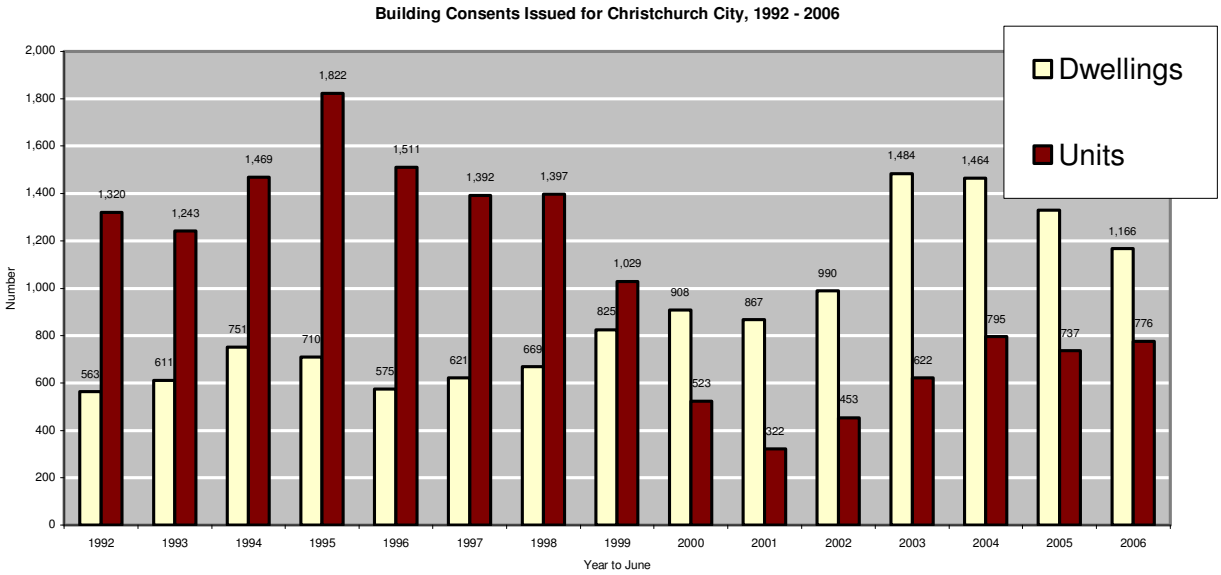
Source: Statistics New Zealand. * Data for Tauranga in 2003 was unavailable; an average has been used.

In the last three years, consents have dropped off. This pattern reflects the pattern in other cities, with a slight lag for Christchurch.

Christchurch has not experienced the high up-side fluctuations in building consent numbers that other cities have. Similarly, however, it has not had the significant downturns that other cities have. On the whole, Christchurch has had a downward trend in building consents for residential units, whereas the trend in other cities (aside from Dunedin) has been upward overall.

In the past 15 years the number of building consents for dwellings in Christchurch has increased while the number of building consents for units has decreased proportionately. Dwellings and units appear to have been substitutes for each other in Christchurch. This pattern perhaps reflects strong financial returns from stand-alone housing development in the city when compared to residential or commercial units.

Figure 15 Consents for Dwellings and Units, Christchurch and Banks Peninsula, 1992 - 2006



Source: Christchurch City Council, Building Consents data.

The patterns of growth in particular types of development (commercial, industrial, residential and other) are addressed in sections 6.3 and 6.4.

Appendix Three – Main documents reviewed in creating this report

Documents

AITKEN, A. & GRIMES, A. (2006) Housing Supply and Price Adjustment. *Motu Public Policy Seminar*. Motu Economic and Policy Research,.

CHRISTCHURCH CITY COUNCIL (2006a) District Valuation Roll. Christchurch.

CHRISTCHURCH CITY COUNCIL (2006b) Facts, Stats and Figures, Housing and Dwellings. Christchurch.

CHRISTCHURCH CITY COUNCIL (2006c) Our Community Plan 2006 - 2016 Volume 2: Development Contributions Policy. Christchurch City Council.

CHRISTCHURCH CITY COUNCIL (2006d) Residential Building Consents, Christchurch City Year to June 2006. Technical Report. Christchurch.

COVEC (2004) The Socio-Economic Impact of Development Contributions For Waitakere City Council.

GRIMES, A. & AITKEN, A. (2005) Regional Housing Markets in New Zealand: House Price, Sales and Supply Responses. Motu Economic and Public Policy Research.

LECG (DAVID MOORE AND SALLY BARNES) (2006) Economic Principles - Christchurch City Council's Development Contributions Policy.

LECG (KIERAN MURRAY AND HAYDEN GLASS AND RYNO VERSTER) (2004) Assessment of proposed cost allocation methodology and financial model for development contributions - Report to the North Shore City Council.

LECG (KIERAN MURRAY AND TIMOTHY IRWIN AND DANIEL KNOX) (2001) Development contributions: Economic Analysis - Report to the North Shore City Council.

LOCAL GOVERNMENT KNOWHOW CONTRIBUTIONS STEERING GROUP (2003) Best practice Guide to Development Contributions.

NAHKIES, P. (2004) The Central City Apartment Market in Christchurch. Property Studies Group Commerce Division Lincoln University,.

SPM CONSULTANTS LIMITED (2006) Methodology For Determining Development Contributions Charges, Christchurch City Council.

Relevant submissions to the Council

Summary and Prologue by Christchurch City Council

Submissions by:

AE Architects

Calder Stewart

Christchurch International Airport

Eliot Sinclair and Partners

Gilman Wheelans

Goodman Steven Tavendale and Reid

Murray Homes

Nigel Maddison (by email)

Ngai Tahu Property

Property Council of New Zealand

Reefville Property Holdings

Suburban Estates

Interviewees

Mr Hamish Wheelans, Gilman Wheeler Limited

Mr Andrew Evans, AE Architects Limited

Mr Simon Mortlock, Mortlock McCormack Limited

Mr Murray James, Murray Homes Limited

Mr Mark Weaver, Calder Stewart Limited

Mr Tim Carter, Carter Group

Mr Tony Sewell, Ngai Tahu Property Limited

Mr Kim Sanders, Suburban Estates Limited

Mr Warren Haynes, Eliot Sinclair Limited

Mr Daniel Newman, Property Council of New Zealand Limited

Mr Dave Henderson, Property Ventures Limited

Ms Judith Callanan, Christchurch International Airport Limited

Mr Sean Stockman, Harveys Real Estate

Mr Paul Bradley, BBS Limited