



Waitakere City Council
Te Taiao o Waitakere

Growth information

This document supports the draft development contributions and financial contributions policy
Document A02
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Summary

Waitakere City Council uses development contributions and financial contributions to fund some of the costs it incurs because of growth. This document is part of the supporting information behind the development contributions and financial contributions policy.

This document describes the growth information that supports the council's 2009 asset planning, and through that, the 2009 draft Development Contributions and Financial Contributions Policy.

The council has carried out significant work on understanding growth in its district. This work provides a background to this report and includes:

- Projections prepared by Statistics New Zealand;
- The council's input to the Regional Growth Strategy;
- The council's own growth strategy, most recently updated in 2008;
- The council's growth models, which provide projections of population, and households at the census area unit level and population, household and employment capacity estimates at the "growth node" level.

Further information has been developed from this base, to support the particular needs of the growth modelling for the development contributions policy. In particular this includes projections of non-residential units of demand (expressed in Household Equivalent Units) for each activity.

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1.0 Introduction

1.1 Background

Waitakere City Council uses development contributions and financial contributions to fund some of the costs it incurs because of growth. This document is part of the supporting information behind the development contributions and financial contributions policy. This policy allows recovery of an appropriate proportion of the costs associated with increasing infrastructure capacity as a result of demand from growth, from those whose developments cause the council to incur those costs.

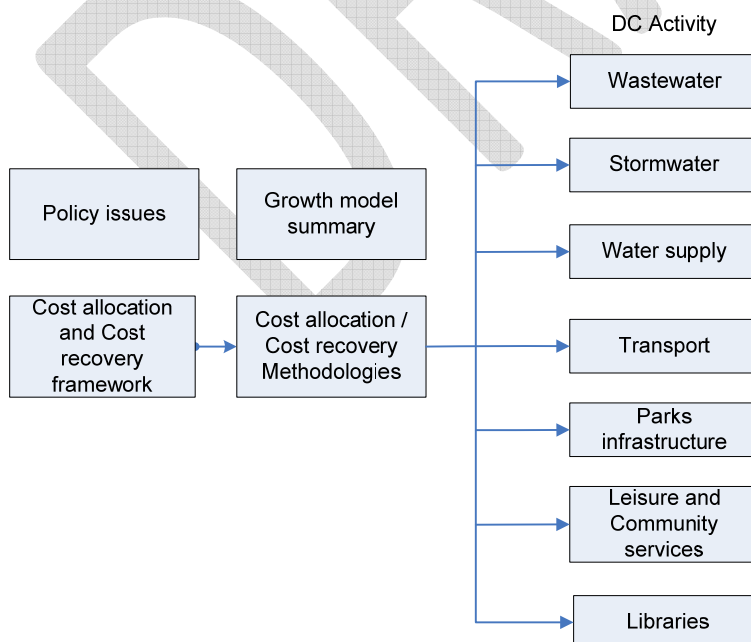
1.2 Purpose of this document

The purpose of this document is to describe the basis for the growth modelling that supports the asset planning, as relevant to the council's 2009 draft Development Contributions and Financial Contributions Policy. This document also provides information on activity specific unit of demand projections.

1.3 Supporting information set

The purpose of the supporting information set is to present and explain the methodology that lies behind the development contributions policy. An outline of this document set and how it links together is shown below in Figure 1. These links help to promote consistency across all of the elements that feed into development contributions.

Figure 1: Outline of supporting document set



1.4 Terminology

ARC	Auckland Regional Council
CAU	Census Area Unit
Cost of growth	That part of the council's capital spend that relates to providing capacity for growth
GFA	Gross Floor Area
GMS	Growth Management Strategy
ISA	Impermeable Surface Area
LGA 2002	Local Government Act 2002
LGAAA	Local Government (Auckland) Amendment Act 2004
NaWSA	Northern and Western Sectors Agreement – agreement between North Shore City Council, Rodney District Council and Waitakere City Council with the Auckland Regional Council regarding growth allocations and efforts to give effect to the Regional Growth Strategy signed in 2001.
NorSGA	Northern Strategic Growth Area; used to refer to the larger area containing PC 13, PC14 and PC15, as well as Future Urban Areas Trig Rd, Redhills, Scotts Point and Whenuapai Industrial.
PC 13, PC14, PC15	District Plan changes 13 (Hobsonville Peninsula), 14 (Hobsonville Village) and 15 (Massey North); also used to refer to these areas as catchments.
RGS	Auckland Regional Growth Strategy 1999
RPS	Auckland Regional Policy Statement (including PC 6 and 7)

2.0 Baseline growth modelling

2.1 Growth of the city

Waitakere City has grown significantly in the past and this growth is expected to continue into the future. This growth will be accompanied by significant increases in employment and business growth due to new business land being made available, mainly in NorSGA.

Population projections from Statistics New Zealand (medium series projection, 2006 base) estimate that the population of Waitakere City will grow from 195,300 in 2006 to 271,900 in 2031 (at an average rate of 1.3% per annum).

Employment opportunities in Waitakere City are also expected to continue increasing in the foreseeable future (BERL, 2006). The Council aims to increase the proportion of people employed within the city (“employment internalisation rate”) from 45% in 2006 to 60% in 2021.

2.2 Growth modelling to support planning for growth

Key inputs into modelling growth (and therefore supporting the process of managing and planning for that growth) are the projections prepared by Statistics New Zealand (which are updated regularly, in particular, after each five-yearly census), and the Regional

Growth Strategy (RGS) published by the Auckland Regional Council (ARC). The council's own growth strategy ("Growth Management Strategy for Waitakere City", 2006), the Northern Sector Growth Agreement (NorSGA), the Local Government (Auckland) Amendment Act 2004 (LGAAA) and Urban Concept Plans associated with Plan Changes are also major components of the council's approach to growth.

Growth projections for population, household and employment for the Growth Management Strategy (GMS), for identified growth nodes and corridors were completed in 2006 and updated in 2008. This is the basis for the growth model used for development contributions and was peer reviewed by Market Economics. These growth area (or node) focussed estimates, then informed Census Area Unit (CAU) based projections to provide a "whole of city" growth model.

The 2001 CAU population projections (medium scenario) were updated with the 2006 city wide population projections (released by Statistics New Zealand December 3rd 2007), providing CAU projections to 2031. For the purpose of development contributions, these were then extrapolated to the 2057 horizon year using a linear method. At the city wide level, this resulted in a similar level of population growth when compared with the projections of the Auckland Regional Council and Statistics New Zealand. However, due to the greater focus on identified "growth areas", some variation at the CAU level is evident.

The modelling work described above is documented in more detail in the GMS report, "Growth Management Strategy" (January 2008) prepared by the Waitakere City Council Strategy Unit. Where possible this modelling takes account of the most recent growth expectations for individual growth nodes and corridors (including Future Urban Areas), based on the detailed and relatively prescriptive provisions contained in the District Plan for those areas. The outputs of that work have formed the basis of the growth information used for the current round of activity plans (i.e. those covering 2009-19).

The main outputs from that model are:

- Population and household projections by CAU to 2031;
- City wide employment estimates to 2057;
- Population, households and employment capacity estimates by growth node, projected to 2057.

3.0 Growth modelling extensions for development contributions

3.1 Growth of the city

It is anticipated that the City will continue to grow in line with the medium series population projections provided by Statistics New Zealand (and other corresponding non-residential growth projections). It is also assumed that this growth will occur at a rate, pattern, location and type which is in line with the Council's growth model, which distributes these baseline city wide projections. It is however acknowledged that these

can be influenced by a range of unpredictable factors such as changes in demographic, social and economic conditions which are exposed to and driven by local, national and international forces often beyond the control of the Council.

3.2 Catchments

The growth modelling was carried out at geographic level that included the CAUs and identified growth nodes. This level of modelling was sufficient to prepare Household Equivalent Unit (HEU) projections for each of the activities, some of which treat the NorSGA plan change areas as separate catchments.

For the Wastewater and Water Supply activities, minor amendments were also carried out to account for the small fraction of sites that do not have a connection to those reticulated networks, and which are not anticipated to be provided with such a connection in the 2009-2019 Long Term Council Community Plan (LTCCP) period.

3.3 Residential projections

Projections of households are required to support development contributions. This has been based on an average household size that converts the anticipated population growth to households. Statistics New Zealand 2001-base household and population projections and 2006 city wide population projections were used to derive an occupancy figure. This approach was taken as 2006 Census based household projections will not be released by Statistics New Zealand until mid 2009.

The derived household size work shows the average household size in Waitakere City declining from 2.96 (2006) to 2.60 (2031). A linear decline over this period has been assumed. These household size assumptions were applied to all CAU population projections. A declining household size has been projected for the country; recent work by Statistics New Zealand suggests a national average of 2.4 people per household by 2031 (released by Statistics New Zealand, December 8th 2008).

Household size was taken as remaining constant at 2.60 from 2031 to 2057. This is because it is difficult to predict household size so far into the future as it is an outcome of a wide set of complex demographic, social and economic variables. Given that Waitakere City has a higher household size than the national average future household sizes, and that a simple linear extrapolation to 2057 produces an average household size between 2.39 (high) and 2.29 (low), it was decided to keep the 2031 occupancy constant out to 2057. A household size of 2.60 is also similar to that used for household calculations in the 2006 policy.

As the plan change areas of NorSGA are treated as individual catchments, specific household projections were needed for these areas. To achieve this, it was necessary to split the respective CAUs into nodes and non-nodes. This reflects that the growth areas (nodes) did not occupy the whole of each CAU. It was assumed that at certain points in time a proportion of growth (usually the greater proportion) would enter the node and the remainder would enter the non-node. The amount of nodal growth was guided by the capacity based population work based on the District Plan provisions for the areas. The city wide household size assumptions were then applied to derive expected residential households.

Different approaches to the average household size in these growth nodes may be developed for future versions of this methodology.

This work has delivered household projections for all CAUs (using the 2001 geography) plus specific projections for the four plan change areas. These form the residential growth component for development contributions.

3.4 Non residential projections – Gross floor area

The methodology employed to produce the employment projections for the growth nodes and corridors required assumptions to be made about the building typologies to house that employment. Gross Floor Area (GFA) is a variable used in the employment projections work. A key benefit of using GFA, as opposed to land area or employment growth, is that it captures intensification of the built environment and redevelopment of existing developed land which is a key land use policy being pursued by council.

The GFA projections initially developed for the growth nodes and corridors were then translated into 2001 CAU geography, with the addition of other “non-growth node” business areas, such as industrial areas and small local shops. This ensures consistency and comparability of the “catchment” geography with those used for residential growth.

These GFA projections formed the basis for projections of HEUs, for the Transport, Wastewater and Water Supply activities (that are charged on non-residential developments), as set out below.

3.5 Non residential projections – Impermeable surface area

The stormwater component of the Development Contributions growth model is derived using Impermeable Surface Area (ISA). This approach is used because, unlike the other activities, stormwater demand is driven by changes in impervious surface. These changes may not necessarily relate to either residential and non-residential growth (as measured by HHUs, GFA or employment), or land use change, particularly in existing urban areas, such as town centres.

In summary the approach taken to develop projections of ISA was:

- Taking a “starting imperviousness” at a stormwater super-catchment level, based on 2000 and 2008 satellite data estimates. For typical urban catchments this results in an impervious level in the range of 35-45%;
- Assuming that non-plan change areas increase their imperviousness at a uniform rate from 2000/2008 to arrive at their maximum permitted imperviousness (according to current district plan rules) by a given date (being 2057);
- Assuming that plan changes areas (PC 13, 14, 15, 17) increase their imperviousness from the 2000-2008 levels following the expected development pattern (i.e., that ISA increases in time with the overall pattern of development, but one year earlier) to the level anticipated and permitted by the Integrated Catchment Management Plan (ICMP - network discharge permit) granted by the Auckland Regional Council;

- For catchments that did not suit this method (typically heavily vegetated areas, where it is unlikely that the maximum permitted ISA will ever be achieved), household based projections have been used (assuming the standard figure of 270m² of impervious surface per new HHU).

It is noted that this approach does not attempt to reflect graduations in the hydrological performance of variety of surfaces, or use of low impact design, except where implicit in the modelling used to develop the ICMP parameters and conditions. In areas covered by ICMPs, stormwater network planning is also based on the ICMP discharge limitations and modelling assumptions.

4.0 Units of demand

4.1 Unit of Demand – Residential and non-residential

A unit of demand is needed for each activity, for two key purposes: projecting growth and demand and establishing the per-unit charges, and for assessing an individual development. Both residential and non-residential developments may need to be treated on a common basis.

For residential developments, the unit of demand is the Household Unit (HHU), for all activities. This represents a typical or average dwelling. This unit of demand is a reasonable proxy for growth, is easy for people to understand, and aligns with the charging of development contributions at the time of development, in connection with the granting of consents.

For activities that are also charged on non-residential developments, the HEU is used. This represents an equivalent unit of demand to that from a HHU, for that activity (based on the approaches discussed below). This therefore provides a consistent method of assessing (and recovering) the cost of growth across the city.

4.2 Unit of Demand – Stormwater

The stormwater HEU projections are derived using ISA, using a representative figure of 270m² of impervious surface area representing one HEU.

4.3 Unit of Demand – Transport

The Transport HEU projections use information from section 5 of the Parking and Driveway guidelines:

- One HEU for each household unit;
- The expected household trip rate of 9 trips per day;
- The GFA projections, for “office” and “industrial” land uses;
- The expected trip rate for “office” developments of 21 trips / 100m² GFA;
- The expected trip rate for “industrial” developments of 7 trips / 100m² GFA.

The GFA projections (at a catchment level, and being conservative in cases of doubt over land use) are then used together with 0.78 HEUs / 100m² GFA of industrial and 2.3 HEUs / 100m² GFA of office development.

4.4 Unit of Demand – Wastewater

Non-residential wastewater generation will closely follow non-residential water supply, except for particular uses such as agriculture and where water is included in the “product”. As those uses are relatively minor within the serviced areas, the water supply projections are also used for wastewater.

4.5 Unit of Demand – Water supply

The water supply HEU projections are based on:

- One HEU for each household unit;
- The expected household demand of 600 litres/day/household (ref: p 6.2, Code of Practice);
- The FTE projections in the GMS report;
- The expected water usage of 120 litres/day/FTE (ref: p 70, draft Water Supply Activity Plan, as used for demand projections).

From the above, each FTE represents 0.2 HEUs. In order to establish the distribution of these HEUs across the city:

- The projected citywide FTE increase of 18,545 over ten years (2009: 49,273 to 2019: 67,818 see Growth estimates report) corresponds to 3,710 HEUs;
- These non-residential HEUs are then distributed across the city according to the projected increase in gross floor area (GFA) for each catchment, using a (rounded) conversion factor of 0.35 HEUs per 100m² GFA.

5.0 References

BERL: “NAWS Business Land Use Demand Study: Scenarios and Projections”, 2006.

Waitakere City Council “Code of Practice City Infrastructure and Land Development”, October 2006.

Waitakere City Council Strategy Unit, “Growth Management Strategy: Waitakere City Council Strategy Unit, Growth Estimates, January 2008”, (commonly referred to as the “March 2008 Growth Management Strategy Update”).

Waitakere City Council Parking and Driveway guidelines, October 1997.