

Independent Pricing and Regulatory Tribunal

Modelling local development contributions

Selection of a discount rate for councils that use an NPV methodology

Local Government — Draft Technical Paper May 2012



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ISBN 978-1-921929-85-4 DTP01

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Invitation for submissions

IPART invites written comment on this document and encourages all interested parties to provide submissions addressing the matters discussed.

Submissions are due by Friday, 15 June 2012.

We would prefer to receive them electronically via our online submission form.

You can also send comments by fax to (02) 9290 2061, or by mail to:

Modelling local development contributions Independent Pricing and Regulatory Tribunal PO Box Q290 QVB Post Office NSW 1230

Our normal practice is to make submissions publicly available on our website <www.ipart.nsw.gov.au>. If you wish to view copies of submissions but do not have access to the website, you can make alternative arrangements by telephoning one of the staff members listed on the previous page.

We may choose not to publish a submission – for example, if it contains confidential or commercially sensitive information. If your submission contains information that you do not wish to be publicly disclosed, please indicate this clearly at the time of making the submission. IPART will then make every effort to protect that information, but it could be disclosed under the *Government Information (Public Access) Act 2009* (NSW) or the *Independent Pricing and Regulatory Tribunal Act 1992* (NSW), or where otherwise required by law.

If you would like further information on making a submission, IPART's submission policy is available on our website.

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1 Introduction

In October 2011, IPART reviewed 3 contributions plans for areas in western Sydney.¹ Two of the plans submitted use a net present value (NPV) methodology for calculating the contributions rate.²

Our assessment of these plans indicated that clearer guidance should be provided to councils regarding the use of an NPV methodology, particularly the selection of a discount rate.

In January and February 2012, we consulted with selected stakeholders including council finance professionals, state government agencies and representatives of the development industry about the appropriate discount rate. Since completing our consultation, we have conducted further research and considered our position.

IPART is now seeking comments from interested parties on our recommended approach to selecting a discount rate for councils to apply when using an NPV methodology to calculate a contributions rate.

After considering any stakeholder feedback, we will forward our recommendations to the Minister for Planning and Infrastructure.³

1.1 Our recommended approach

We initially identified 2 alternative approaches for selecting the real discount rate:

- application of a risk-free rate of return
- application of a risk-adjusted rate of return.

Most stakeholders we consulted accepted that councils face risks in the implementation of contributions plans but acknowledged that addressing risks through the discount rate is complex.

Our recommended approach is therefore for councils to use a risk-free discount rate and account for risk in other ways.

¹ IPART assessed The Hills Shire Council's Contributions Plan No 12 - Balmoral Road Release Area, The Hills Shire Council's Contributions Plan No 13 - North Kellyville Precinct and Blacktown City Council's Section 94 Contributions Plan No 20 - Riverstone and Alex Avenue. These assessment reports are available on IPART's website: http://www.ipart.nsw.gov.au/Home/Industries/Local_Govt/Contributions_Plans

² The 2 plans submitted by The Hills Shire Council use an NPV methodology.

³ IPART's role is to ensure that the process for setting contributions rates is transparent and the costs are reasonable. We do not have any powers to determine contribution rates or to direct councils to amend their contributions plans. We only review plans and make findings and recommendations in respect of these plans to the Minster for Planning and Infrastructure and councils.

We recommend that the discount rate should be based on the NSW Treasury Corporation 10-year bond rate, adjusted for inflation. This real discount rate will be published on IPART's website at the end of each quarter.

We also recommended that councils should:

- adjust project cash flows using contingency allowances to account for the risk of increases in the real cost of infrastructure items in a contributions plan
- revise plans at least every 5 years, unless a significant change in circumstances prompts an earlier review, to account for the risk of changes to the planned timing of revenue receipts and expenditure outlays.

Our recommendations for the use of reasonable cost contingencies and revision of plans also apply to councils that do not use an NPV methodology. Some councils already follow these recommendations.

1.2 Local development contributions plans

A council may require a financial contribution towards new infrastructure when approving new development. A condition of any approval which requires such a contribution may be imposed under section 94 of the *Environmental Planning and Assessment Act* 1979 (therefore known as section 94 contributions).

Before doing so, a council must have a contributions plan outlining the infrastructure that is to be provided and the basis for calculating the contribution rate.

Since 2010, IPART has been required to review certain council contributions plans.

1.3 NPV methodology

In determining the contributions rate, councils have the option of using an NPV methodology.

An NPV methodology requires the use of a discounted cash flow model. In a discounted cash flow model for local development contributions, the contributions rate is calculated so that the present value of anticipated expenditure is equal to the present value of anticipated revenue.⁴ This helps to ensure that a council collects sufficient revenue to cover its anticipated expenditure.

⁴ 'Present value' refers to the value of a future sum of money expressed in the dollars of the current day.

It is worthwhile noting that, unlike other discounted cash flow models, a section 94 contributions model does not consider any cash flows from operational revenue or operational expenditure. Instead, the apportioned cost of the infrastructure must be fully funded through section 94 contributions. Additionally, the residual asset values of the infrastructure items are assumed to be zero. This is because the assets cannot be bought or sold.

At present, very few councils use an NPV methodology to calculate development contributions. Instead, most councils estimate the total cost of land acquisition and construction, apportion an amount to the development area and divide this amount by the relevant demand units (eg, net developable area (hectares), or estimated residential population).

IPART is not suggesting that all councils should use an NPV methodology. Rather, this paper outlines our preferred approach if a council chooses to adopt an NPV methodology.

1.4 The discount rate

An important assumption in the application of an NPV methodology is the choice of discount rate. Existing guidelines for the preparation of contributions plans are not prescriptive regarding the choice of discount rate.⁵

Central to the decision about an appropriate discount rate are considerations around a council's method of financing contributions plans and the risks incurred by council in implementing contributions plans. These are discussed further in section 2 and section 3 of this paper.

2 Method of financing contributions plan expenditures

Councils have a number of options for funding the expenditure that is included in a contributions plan.

Using revenue already collected under the relevant plans is the most administratively simple approach. However, in greenfield areas this is usually not possible because essential infrastructure, such as roads and stormwater facilities, must be completed prior to housing construction. As the receipt of development contributions is typically tied to the commencement of housing construction, there would be insufficient contributions revenue to carry out essential works.

⁵ Department of Infrastructure, Planning and Natural Resources, *Development contributions Practice notes – July 2005*, July 2005. Department of Planning, *Local Development Contributions Practice Note for assessment of contributions plans by IPART*, November 2010.

Thus, one of the following alternatives must be used:

1. Using funds accumulated in other s94 plans (pooling of funds)

The pooling of funds allows a council to borrow internally between development contributions accounts to allocate sufficient funds to provide facilities. This allows greater flexibility in the way facilities can be provided and reduces the reliance on external borrowings.

2. Using funds from general reserves generated from various sources

In some instances, councils use general revenue to fund shortfalls in contributions revenue.

3. Borrowing externally

Councils are permitted to borrow externally to finance infrastructure costs. However, councils in NSW generally have a low reliance on debt. Therefore, the interest rates payable by councils are a poor indicator of the cost of capital for development contributions plans.

If councils use funds accumulated from other s94 plans or use their general reserves a reasonable discount rate would reflect the opportunity cost of capital to council (ie, the return that could be achieved if the council invested the funds rather than spending them).

There are a number of legislative requirements that govern how a council may invest surplus funds. These include the *Local Government Act* 1993, the *Local Government* (*General*) *Regulation* 2005, and the Ministerial Investment Order.⁶

An extract from the current Ministerial Investment Order is provided in Box 2.1 below. Of significance, this Order includes revisions made in response to the possible exposure of some councils to high risk investments which resulted in significant losses during the global financial crisis.

Councils' borrowing activities are also subject to NSW Government regulation.

⁶ Department of Premier and Cabinet, Division of Local Government Investment Policy Guidelines, May 2010.

Box 2.1 Ministerial Investment Order

A council may only invest money (on the basis that all investments must be denominated in Australian Dollars) in the following forms of investment:

- 1. any public funds or securities issued by or guaranteed by the Commonwealth, any State of the Commonwealth or a Territory
- 2. any debentures or securities issued by a council (within the meaning of the *Local Government Act 1993* (NSW))
- 3. interest bearing deposits with or any debentures or bonds issued by, an authorised deposittaking institution (as defined in the *Banking Act 1959* (Cwth)), but excluding subordinated debt obligations
- 4. any bill of exchange which has a maturity date of not more than 200 days and if purchased for value confers on the holder in due course a right of recourse against a bank which has been designated as an authorised deposit-taking institution by the Australian Prudential Regulation Authority
- 5. a deposit with the New South Wales Treasury Corporation or investments in an Hour-Glass investment facility of the New South Wales Treasury Corporation

All investment instruments (excluding short term discount instruments) referred to above include both principal and investment income.

Source: Local Government Act 1993 - Investment Order (Relating to investments by councils), 12 January 2011.

3 Risks

Councils face risks to the planned implementation of contributions plans. These arise from:

- possible increases in the real cost of infrastructure items in a contributions plan (ie, increases not due to inflation)
- changes to the planned timing of revenue receipts and expenditure outlays associated with a contributions plan.

3.1 Real cost of infrastructure items

The costs included in a contributions plan are only preliminary estimates. When particular facilities are constructed there may be unforseen costs such as project variations, disputes arising from contract documentation, unforeseen site conditions, and changes in industry or supply markets. It is standard practice for these risks to be addressed by including a contingency allowance in the cash flows.

3.2 Planned timing of revenue receipts and expenditure outlays

Over the life of a contributions plan, councils may not receive sufficient contributions revenue due to:

- ▼ general weakening of housing market conditions, leading to delays in construction
- delays in other parties providing prerequisite infrastructure (such as Sydney Water providing their infrastructure), leading to delays in construction
- population or housing densities not reaching estimated levels, leading to insufficient contributions.

On the expenditure side, costs can be brought forward because of uncontrollable circumstances such as compulsory land acquisitions. This can lead to higher holding costs for councils (eg, interest).

If a risk-adjusted rate of return is selected for the discount rate, councils are, in part, compensated for such risks. However, quantifying these risks can be difficult.

It is also difficult to calculate a single risk adjustment margin for all councils because the individual circumstances of councils and the nature of new development varies. For example, if developers make contributions prior to council incurring expenditure then the risk to council is lower than if they pay afterwards.

We note that in a policy environment where contributions can only be levied towards essential infrastructure, developers would only pay up-front when the new development is incremental and within an existing urban area. Elsewhere, contributions are usually not received until a council has incurred significant expenditure (because the infrastructure enables the development to occur). This is the case in greenfield areas or major urban renewal projects in an existing urban area.

4 Recommended approach

4.1 Overview

In January and February 2012, we consulted with selected stakeholders including council finance professionals, state government agencies and representatives of the development industry about the appropriate discount rate.

There was no consensus or a majority view amongst stakeholders about the most appropriate discount rate to use. Most accepted that councils face risks in the implementation of contributions plans but acknowledged that addressing risks through the discount rate is complex. Due to the complexity in calculating a risk adjusted rate, we consider that councils should use a risk-free rate of return as the basis of the discount rate and account for risk in other ways.

We recommend that the discount rate should be based on the NSW Treasury Corporation 10-year bond rate, adjusted for inflation (Section 4.2 provides more information on this calculation). The real discount rate will be published on IPART's website at the end of each quarter.

We suggest that the financial risk councils face in implementing a contributions should be addressed by:

- the use of reasonable cash flow contingencies (to address unanticipated increases in the real cost of infrastructure items in a contributions plan)
- regular updates of the plan (to address changes to the planned timing of revenue receipts and expenditure outlays associated with a contributions plan).

Our recommendations for the use of reasonable cost contingencies and revision of plans also apply to councils that do not use an NPV methodology. Some council already follow these recommendations.

The Practice Notes for section 94 contributions plans recommend reviewing plans.⁷ The extent to which this is done in practice varies between councils. Regular review of contributions plans is good practice.

Consistent with our October 2011 round of contribution plan assessments, we recommend that councils should review their contributions plans at least every 5 years, unless a significant change in circumstances prompts an earlier review.

4.1.1 Benefits of the recommended approach

The recommended approach offers the following benefits:

- Councils would be required to use the same method for determining a discount rate. The rate itself varies (slightly) according to the time at which the plan was prepared, reflecting the cost of funds to the council.
- Councils would have the opportunity to adjust for risks specific to their individual circumstances through project contingencies and revision of their plan/s as required.
- The discount rate and inflation rate are based on readily observable benchmarks.
- The discount rate is reasonable regardless of whether the contributions plan is for incremental development, greenfield development or major urban renewal.

⁷ Department of Infrastructure, Planning and Natural Resources, Development contributions Practice note, July 2005.

These benefits are important to the stakeholders that we consulted in January and February 2012.

4.2 The risk-free rate

4.2.1 Nominal discount rate

We recommend the use of the NSW Treasury Corporation 10-year Bond yield. A 20-day average of the historical daily yield taken at the end of the most recent quarter should be used. Using a 20-day average is consistent with our approach for pricing reviews. The bond yields can be sourced from the Reserve Bank of Australia's website, at no charge. The 20-day average of the NSW Treasury Corporation 10-year Bond yield at the end of the March quarter 2012 was 4.98%.

The 10-year maturity period is reasonable given the long term nature of the infrastructure projects that are included in contributions plans.

The NSW Treasury Corporation Bond yield is more suitable than the Commonwealth Government Bond yield because of the close relationship between state and local tiers of government.

4.2.2 Adjusting for inflation

In our October 2011 round of contribution plan assessments, we recommended that cost estimates used in councils' discounted cash flow models should be presented in real terms.

As described in Box 4.1, the NSW Treasury Corporation Bond yield is a nominal value. To convert it to a real value requires an estimate of anticipated inflation.

There are various options for the inflation rate that is used in this equation:

- ▼ the midpoint of the Reserve Bank of Australia's target range for inflation (ie, 2.5%)
- economists' forecast of inflation plus the midpoint of the Reserve Bank of Australia's target range for inflation
- ▼ the inflation rate implied by the difference between yields on nominal and indexed bonds
- ▼ inflation indexed swaps.

In its pricing role, IPART uses market data of inflation indexed swaps. We recommend the same approach is used to adjust the discount rate used in an NPV methodology for development contributions.

An inflation-indexed swap is a financial instrument between 2 parties to transfer inflation risk from one party to another through an exchange of cash flows. With an inflation-indexed swap, one party pays a fixed rate on a notional principal amount, while the other party pays a floating rate linked to an inflation index, such as the Consumer Price Index (CPI). Because they are the market's attempt to forecast inflation they can be used as a proxy for future inflation.

The market for inflation-indexed swaps developed in Australia in the mid-1990s and there are indications that the swap market is becoming more actively used in large transactions, especially for infrastructure financing. This means that the data is reliable and suitable for the purpose we propose.

For the purpose of adjusting the NSW Treasury Corporation Bond yield, we suggest that swaps with a 10-year term to maturity should be used.

Some councils may not have access to Bloomberg data. Therefore, IPART could make available on its website the adjusted discount rate at the end of each quarter.

Box 4.1 Use of real or nominal values

A discounted cash flow model may be prepared using either nominal values or real values.

In a nominal model, the monetary values (ie, costs and revenues) take into account the effects of inflation. That is, the council adjusts the forecast costs and revenues by the expected level of inflation. In a real model, forecast costs and revenues are not adjusted for inflation.

Nominal models require councils to select indices with estimates of cost inflation. These inflators must be applied over long periods of time, which can lead to forecasting errors. Using real values reduces the potential for forecasting errors.

In a nominal model, councils must use a nominal discount rate. In a model with real monetary values, councils must use a real discount rate.

The NSW Treasury Corporation Bond yield is a nominal discount rate. It can be converted to a real discount rate by adjusting for expected inflation. This conversion uses the Fisher equation.

The Fisher equation is as follows:

$$r = \frac{1+i}{1+\pi} - 1$$

Where

r = real discount rate

i = nominal discount rate

 π = expected rate of inflation

4.3 Submissions invited

IPART is now seeking comments from interested parties on our recommended approach, as set out in this paper.

Specifically, we would like to receive feedback on:

- 1 The use of the NSW Treasury Corporation 10-year bond rate for the nominal discount rate.
- 2 The use of a 20-day average of the historical daily yield.
- 3 The adjustment of the nominal discount rate to a real discount rate by using inflation swap data.
- 4 The publication of the calculated discount rate for each quarter on IPART 's website.