

# **WATER INDUSTRY FORUM**

## **REPORT ON DEVELOPER CHARGES FOR WATER, SEWERAGE & DRAINAGE SERVICES**

**1997 Report**

**INDEPENDENT PRICING AND REGULATORY TRIBUNAL  
OF NEW SOUTH WALES**

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# **WATER INDUSTRY FORUM**

## **Report to the Independent Pricing and Regulatory Tribunal**

### **Foreword**

This second report presented by the Water Industry Forum to the Independent Pricing and Regulatory Tribunal (the Tribunal or IPART) details the events and issues canvassed by the Forum in the period following the release of its first report in November 1995.

The Water Industry Forum was created in June 1995 to advise the Tribunal on the adoption of a net present value approach to calculating developer charges. Subsequently the Forum was asked to provide advice on issues arising out of the practical implementation of the approach. A list of members of the Forum may be found in Attachment 1 of this report. The views in this report are those of the Forum and not necessarily those of the Tribunal or the Tribunal's Secretariat.

Developer charges are up-front charges designed to recover the cost of providing water, sewerage and drainage services to new developments. They serve the dual purpose of providing funding for infrastructure while signalling the cost of the infrastructure.

After considering the recommendations of the Forum, the Tribunal has issued determinations for the major metropolitan water suppliers in NSW. These determinations endorse the common use of a net present value approach to calculating developer charges. In addition, specific variables to be used by each water agency have been determined reflecting the individual circumstances of that agency and its area of operations.

Following the release of the determinations, the Forum discussed several issues that had arisen during implementation. In response to some of these, the Tribunal commissioned an actuarial firm to review the mathematics involved in the application of the NPV methodology. As a result, in July 1997 the Tribunal released a supplementary note clarifying the application of the operating surplus component of the calculations.

Appreciative of the Forum's input, the Tribunal has asked the Forum Chairman to extend its thanks to all Forum members for their contributions, which have significantly enhanced the implementation process.

Colin Reid  
Forum Chairman  
November 1997

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## INTRODUCTION

This report is the second report presented by the Water Industry Forum to the Independent Pricing and Regulatory Tribunal (the Tribunal or IPART). It has been prepared to help the Tribunal address issues arising from the implementation of a NPV based developer charges methodology following the publication of determinations for Sydney Water Corporation (in December 1995), and Gosford City Council, Hunter Water Corporation and Wyong Shire Council (in June 1996).

## 1 BACKGROUND

Two significant proposals on developer charges are presented in the report into water and related services<sup>1</sup> released by the Tribunal in 1993:

*Proposal 13.1:...the Tribunal proposes that developer charges should:*

- *involve full net cost recovery*
- *reflect variations in the costs of servicing different development areas*
- *result in new developments meeting the costs, but no more, of the services provided through developer charges and/or annual charges*
- *cover infrastructure expenditures which can be clearly linked to the development in question and are able to be forecast reliably*
- *be applied to existing and fringe areas alike*
- *be calculated transparently so that developers can understand and assess the calculated charges.*

*Proposal 13.2: The Tribunal endorses, in principle, the net present value approach for calculation of developer charges. A working party comprising representatives of the Tribunal secretariat, the Public Works Department and suppliers in the Sydney, Central Coast and Hunter regions has been directed to examine the application of this approach on a uniform basis.*

These proposals formed the basis of the determinations released in 1995 and 1996.

### 1.1 Water Forum Report, November 1995

In its first report<sup>2</sup>, released in November 1995, the Forum recommends to the Tribunal that:

- a. the definition of an existing development be determined by whether a charge exists under a relevant certificate
- b. all assets constructed prior to 1970 be excluded from the calculations<sup>3</sup>
- c. the real discount rate for future works should lie within the range of 7 percent - 10 percent but not below the cost of debt
- d. the real discount rate for existing works should lie within the range of 0 percent - 4 percent
- e. specific risks and environmental risks may mean that the discount rate needs to be as high as 12 percent (developer representatives are of the view that these risks should be borne through annual charges)

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<sup>1</sup> Government Pricing Tribunal, *Inquiry into Water and Related Services*, 1993.

<sup>2</sup> Water Industry Forum, *Report on Developer Charges for Water, Sewerage and Drainage Services*, November 1995.

<sup>3</sup> Note: the Department of Land and Water Conservation (DLWC), Hunter Water Corporation (HWC), and Gosford and Wyong Councils suggest that all assets should be included. However, for assets older than 20 years, the capital charge be calculated on the basis of 20 years.

- f. projections of the demand for water per household or discharge of waste water should have regard to corporate goals and objectives. They should also take future costs and revenues into account
- g. the numbers used for demographic assumptions be area specific (ie local government level) for local works and systems or catchment wide (eg greater Sydney) for headworks such as dams
- h. any demographic projections used be based on the latest projections by the NSW Department of Urban Affairs and Planning
- i. a key component in the transparency process be the preparation and public exhibition of a Development Servicing Plan (DSP) by the water agencies
- j. a model DSP be included as an attachment to the guidelines
- k. the water agencies provide developers with access to the models used in calculating the charge
- l. a mediation role be adopted for dispute resolution
- m. the Tribunal develop a protocol for the dispute resolution model.

After considering these recommendations, the Tribunal released determinations for Gosford City Council, Hunter Water Corporation, Sydney Water Corporation and Wyong Shire Council.

## 1.2 Summary of determinations

### 1.2.1 Net Present Value methodology

A net present value (NPV) methodology has been adopted for the calculation of developer charges. Charges should recover the efficient costs of supplying water and sewerage infrastructure. They should be based on the development's share of the service capacity of existing and future assets.

The NPV calculation involves: the cost of the total service capacity in an area or catchment, less the expected net operating profits (or losses) from providing services to that area or catchment. The net cost is expressed on a per hectare or equivalent tenement (ET) basis.

The developer charge (DC) is calculated as:

$$DC = K - NPV_r (R_i - C_i) \text{ for } i = \text{years } 1, \dots, n; n \leq 30 \text{ where:}$$

K = a capital charge for the net present value of existing and future assets serving the area

$R_i$  = revenue expected to be received by servicing customers in the area in each year (i)

$C_i$  = operating, maintenance and administration costs expected to be spent in servicing customers in the area in each year (i)

r = the cost of capital or the discount rate for deriving the net present value of future revenues and costs

n = the forecast horizon for the assessment of future revenues and costs

### 1.2.2 Discount rate

The discount rate should reflect the opportunity cost to the agency of funding infrastructure works. The discount rate will include a component to reflect the risks involved in providing infrastructure. These risks include the rate of connection, the cost of construction, and possible changes in interest rates.

The Forum advised the Tribunal that a discount rate of 7 to 10 percent would be appropriate for the normal activities of water agencies. However, water agencies and environmental groups claimed that a higher discount rate of up to 12 percent would better reflect these risks.

The Tribunal determined that discount rates for past expenditures should be lower than discount rates for future expenditures because past investments are “sunk”.

### 1.2.3 Agency parameters

Individual parameters were set for each agency.

#### *Sydney Water Corporation*

- 3% real discount rate on existing assets
- 9% real discount rate on future assets
- 30 year horizon for net operating revenue
- 40% efficiency factor on existing assets

#### *Hunter Water Corporation*

- 3% real discount rate on existing assets
- 9% real discount rate on future assets
- 30 year horizon for net operating revenue
- 4 year phase in period for new charges

#### *Gosford City Council*

- 0% real discount rate on existing assets
- 9% real discount rate on future assets
- 30 year horizon for net operating revenue

#### *Wyang Shire Council*

- 0% real discount rate on existing assets
- 9% real discount rate on future assets
- 30 year horizon for net operating revenue
- final charge to be capped at 85% of the charge calculated under the methodology as a transitional arrangement

### 1.2.4 Assets

In calculating developer charges the utilities must take into account the following guidelines concerning assets:

- assets must be included in calculations only when the assets serve that development
- they may be in the ground before the methodology is implemented, may be constructed following the implementation of the methodology but prior to the commencement of the development, or may be constructed after the development
- as well as the physical costs of assets, “holding” costs are incorporated via the discount rate mechanism in NPV calculations which makes allowances for the finance costs incurred or interest foregone. These costs are of considerable concern to supply authorities because of the long lag times between the provision of assets and the utilisation of the capacity provided.

- assets should be valued on the basis of cost of replacement with the same, or a modern equivalent
- assets should be excluded from calculations if they:
  - were created before 1970
  - are unlikely to be fully utilised over the asset's planning horizon
  - were already paid for through land charges.

### 1.2.5 Operating revenues and costs

The operating, maintenance and administration costs (excluding depreciation and interest costs) of providing services to an area are to be included in calculations, but should be based on the most efficient means of providing the services. It should be assumed that current service standards will continue.

Operating revenues should be based on the efficient operation of assets under current service standards. These will normally be uniform across a region.

Future operating costs and revenues should be projected over 30 years.

### 1.2.6 Demographic assumptions

Assumptions of population growth and density (eg occupancy rates) should have regard to the latest projections published by the NSW Department of Urban Affairs and Planning for the same or a comparable local government area. They should be locality specific (eg at local government level) for local works and system wide (eg for all Sydney) for headworks.

### 1.2.7 Dispute resolution

It is hoped that the transparent and consultative process adopted will minimise the possibility of disputes. However, developers may still be dissatisfied with the charges levied on them by water agencies. The recommended approach is for the developer to:

- initially complain to the agency - the chief executive officer will have the complaint investigated
- if still dissatisfied, consult a professional mediator who will try to negotiate a mutually acceptable solution
- if still dissatisfied, proceed to a professional arbitrator who will resolve the dispute under section 31 of the IPART Act. The arbitrator's decision is binding.

## 2 ISSUES DISCUSSED BY THE FORUM

The NPV methodology adopted in determinations is a widely used commercial technique. However, the area of developer charges is a complex area with many variables that can impact on the level of the final charge.

Water agencies began implementing the new methodology after their individual determinations by IPART. (However, the timing of release of DSPs by Sydney Water has fallen considerably behind schedule). Members of the Forum and other interested parties have been able to view how the methodology has been applied in practice. This has resulted in many issues being presented to the Forum for discussion.

Not all the issues have been resolved to the satisfaction of all Forum members. As well as being discussed at Forum meetings, the issues have been reviewed in direct discussions between water agencies and their customers. The Forum has provided on-going advice to the Tribunal as issues have emerged. Some issues are complex. This prompted the Tribunal to employ an independent actuarial firm<sup>4</sup> to undertake mathematical analysis of some of the problems. The consultant has produced two reports for the Tribunal. These have been distributed to Forum members. In July 1997 the Tribunal published a Clarification Note, addressing some of the most pressing concerns of the Forum.

## 2.1 Developer charges calculations

### 2.1.1 Forum discussions

- ***Interpretations of NPV equation***

Some issues related to differences in the mathematical application of the methodology by individual water agencies. Although increases in developer charges had been expected under the new methodology, developer groups were concerned about the level of some of the new charges. They believed that part of the reason was the way the basic NPV equation had been interpreted.

Some of the mathematical problems were rectified as part of the consultation process employed by water agencies before finalising their DSPs. Others were addressed by the consultant employed by the Tribunal.

- ***Amortisation***

A perceived problem during development of the methodology was the possibility of “sterilisation” of development. A pure NPV procedure will produce *increasing* real charges over time. It was thought that lot release in the latter stages of a development might be constrained under a pure NPV method because of this effect. Therefore it was decided that charges should remain *constant* or “*flat*” in real terms over the period of calculation. However, the disadvantage of levying flat charges is that late payers may gain a financial advantage over payers at the beginning of development.

The normal method of calculating a flat charge is amortisation. In spite of the disadvantages, the Forum decided that the “sterilisation” issue needed to be addressed. Nevertheless there were concerns about the way some water agencies interpreted the mathematical techniques used for this purpose.

- ***The effect of lot release schedules on calculations***

Developer charges should be set at a level that provides income which recovers precisely the efficient costs of providing infrastructure – no more and no less. As the NPV process is based on the flows of cash into and out of a water agency, the inflow of cash from the actual payment of developer charges themselves will effect the calculation of the charges.

The size of this cash flow can vary from year to year. It is determined by the number of charges collected, which in turn is determined by the number of lots released in that year. Therefore, for developer charges to be set at the correct level, the timing of lot release must be factored into the calculations. Not all water agencies had factored this into their calculations.

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<sup>4</sup> William M Mercer Pty Limited

The Forum accepted that this area needed clarifying and advised the Tribunal accordingly. Relying on the reports provided by its consultant, the Tribunal published the Clarifying Note in July 1997.

### 2.1.2 Comments by the consultant

The first report highlights variations in the treatment of the two components of the basic formula by different water agencies. The report showed that it is necessary to amortise both the net present value of capital expenditure and the net present value of the future operating surplus.

The report comments that a more transparent method of calculating charges is to consider the anticipated profit that each lot will produce for the water authority. The report details a mathematical method based on an annuity calculation that achieves the correct result. A common annuity period is calculated (equal to the weighted average term of the annuity functions, where each annuity function is weighted by the discounted lot release in that year). The common annuity period then becomes the period to use for the annuity calculation to achieve correct amortisation (see Appendix 3 for the mathematical interpretation).

### 2.1.3 Tribunal Clarification Note

The Tribunal has published a supplementary note clarifying the guidelines to the determinations, particularly in regard to the second component of the developer charges formula (ie  $NPV_r (R_i - C_i)$ )

The clarification note bases its findings on sections of the consultant's report reviewed above. The clarification note explains that the operating surplus component should be calculated by the weighted annuity technique ie expressed by the report as the division of the net present value of the cumulative operating profits (losses) by the total number of *discounted lots*. This is to be achieved by following the procedure detailed below:

1. Set out the lot release schedule for a particular development.
2. Discount the lot numbers to the start of the development project and add the discounted figures to obtain a total (present value of lots).
3. Calculate the operating profits (or losses) on the lots for 30 years from the start of the project ie the cumulative number of lots x profit (or loss) per lot for the year.
4. Discount to the start of the development period the total profit (or loss) on the cumulative number of lots developed in each of the 30 years. The sum of these amounts is the net present value of operating profit for a particular development over 30 years.
5. Divide the total amount obtained in Step 4 by the present value of the number of lots as calculated in Step 2.
6. The offset to apply against the capital component (K) is the figure obtained in Step 5.

## 2.2 Apportionment of assets

### 2.2.1 Forum discussion

The method of apportioning existing assets between current and future customers was also raised as an issue. Subject to the availability of system data, various methods can be employed. Some agencies calculate their charges at the date of commissioning the existing asset. They then use these charges for future users as a way of apportioning the asset cost.

This issue is addressed in the second report provided by the consultant.

### **2.2.2 Consultant's comments**

One of the problems in relation to existing assets is how to apportion the asset at calculation date between present users and future users. Two methods were examined by the consultant.

- For developer charge calculation purposes, the proportional asset value could be based on the remaining unutilised capacity compared to the total capacity of the asset.
- The proportional asset value could be based on annuity calculations ie the annuity for the future period compared to the annuity for the total period to full asset capacity.

Although it examines both methods, the report does not conclude which method is appropriate to use. If the discount rate for existing assets is set at zero, results are the same. However, any other discount rate will produce differing results.

Consequently, no adjustment was made to the methodology.

## **2.3 Amortisation period for assets**

Another issue raised by developer representatives at the Forum was the length of the amortisation period for assets with long periods to full capacity. Whereas operating surplus calculations are limited to 30 years by the determinations, there is no fixed period for asset calculations. One alternative put forward was for a 30 year amortisation period with residual values for assets at that time.

The Forum has not reached a consensus on this matter. The amortisation period for assets remains open-ended.

## **2.4 Affordability**

The Housing Industry Association has expressed concerns about the impact that the emphasis on cost reflectivity in the methodology may have on land development. The Association is concerned that this emphasis may discourage the development of lower priced land. The Housing Industry Association considers that if low profit margins will result from some developments, developers may concentrate on areas with higher market values.

The Forum has conceded that the new methodology will produce higher charges in some areas. However, water agencies were not recovering their costs under their old methodologies. They indicated that they required increases in charges to redress those losses, regardless of the methodology adopted. The Forum will continue to monitor the effects of the new charges.

## **2.5 Differential operating costs**

When projecting revenue, determinations require an assumption that residential charges are uniform across the region of operation (under a postage stamp pricing regime). However, when projecting operating costs, a system specific average cost should be used if the costs of providing services vary significantly from the system wide average costs. The issue raised

at the Forum was the boundaries to observe that would be reasonable for applying differential costing (eg minimum number of lots affected).

Water agencies currently make these decisions based on the sophistication of their costing systems and a balancing of administrative cost with more accurate price signalling.

## 2.6 System wide averaging versus incremental approach

For charging purposes, the determinations require that there be a nexus between the development and the assets which are to serve that development. These assets may be:

- already in the ground before the methodology is implemented
- constructed after the implementation of the methodology, but prior to the commencement of the development
- either constructed or to be constructed after the development.

There are two approaches to spreading infrastructure costs across developments, whether they be existing works under construction or future assets. In economic terms, they are the *marginal cost approach* and the *average cost approach*.

Infrastructure assets provide services to existing and future development areas. However, it may take many years until capacity is fully utilised. Very often assets are built in stages. The costs of stage 1 generally include some works (eg additional civil works and building structure) to allow for future augmentation and amplification to cater for additional developments.

The decision about catering for future works is generally affected by the economy of scale of a larger system. The objective is to achieve an optimum cost outcome to meet an increasing (and possibly uncertain) demand. Under such circumstances, the averaging approach (ie averaging the total costs of all stages of works) is considered to be more equitable as it avoids placing an additional cost burden on developments in the first stage.

Those who support the marginal cost approach argue that developers should be charged only the incremental costs incurred as a result of developments. Whilst this view is sound in theory, it has inherent practical difficulties, given the long life of such assets. Under this approach, there would be a wide range of marginal capacity costs subject to the availability of service capacity. If a system was close to full capacity, developer charges calculated on this basis could be very high. Conversely, developer charges would be low immediately after the construction/amplification of system assets.

The long run average incremental cost approach has been adopted to avoid the perceived difficulties associated with equity considerations and the practical application of a marginal cost approach. The average cost approach appears to represent commercial realities better.

## 2.7 Population density

Areas that experience seasonal increases in population density (eg tourist areas) may need a larger capacity infrastructure to cater for the peak of the seasonal increase. The issue to be resolved is how the costs for this irregular situation should be apportioned.

This problem is still under discussion.

## 2.8 Over-engineering of infrastructure

The issue of over-engineering of infrastructure arises from the need, as stated in determinations, for services to be provided at least cost and by the most efficient means. If infrastructure is constructed with greater capacity than required, the additional cost should not be recovered from developer charges. However, sometimes forecasts of growth prove erroneous and the assets constructed on this basis may eventually prove to have greater than needed capacity. In this situation only the cost of capacity utilised should be passed through to developer charges.

This problem was recognised by the Forum. The Tribunal addressed this issue by setting some of the variables that water agencies must use in calculating their charges. Some residual problems may remain.

## 3 ACTIONS UNDERTAKEN BY THE TRIBUNAL

Because many of the issues above are complex, the Tribunal employed an independent actuarial firm<sup>5</sup> to provide mathematical analysis of some of the problems. Subsequent Forum discussions led to the publication of the Clarification Note. The consultant's two reports for the Tribunal and the Supplementary Clarification Note are summarised below.

### 3.1 Consultant's report No 1 (January 1997)

The initial report from the consulting firm examines the calculation of the operating surplus reduction amount in the NPV equation, and Sydney Water Corporation's method of calculation.

#### 3.1.1 Future operating profits

The report highlights variations in the treatment of the two components of the basic formula by different water agencies. It is necessary to amortise not only the net present value of capital expenditure, but also the net present value of the future operating surplus.

This section of the report formed the basis of the Tribunal's Supplementary Clarification Note published in July 1997 (see 2.1 Developer Charges Calculations).

#### 3.1.2 Sydney Water Corporation methodology

The consultant's report examines and explains, with the assistance of SWC personnel, the methodology employed by SWC to achieve the amortisation process. The SWC method discounts the capacity of the asset each year. This calculation replicates the "capacity times annuity process" (explained above under 3.1.1 and in the section on *Future Operating Profits* of the report) in one step rather than two. The method also results in an annuity value which is weighted by lot development. The consultant concluded that the correct result was achieved using this method.

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<sup>5</sup> William M Mercer Pty Limited

### 3.1.3 Conclusion

In conclusion the report recommends substituting an annuity function (as discussed in 3.1.1 *Future operating profits*) in the second component of the basic NPV equation. This will achieve correct amortisation of the operating surplus.

The SWC's "discounting of capacity" methodology was also deemed to achieve the correct result.

## 3.2 Consultant's report No 2 (May 1997)

The second report from the consulting firm also addresses a number of issues identified by Forum members.

### 3.2.1 Methodologies

Three possible variations of net present value methodologies are compared:

- *Basic net present value*

All future cash outflows are discounted to the calculation date, totalled, expressed on a per lot basis, and then this initial charge is indexed by the nominal interest rate on a yearly basis to give the current year's charge.

Although this method is robust, it results in increasing real charges over time. This has implications for the "sterilisation" of land (ie the resulting high charges for lots in the latter part of development may discourage development of these lots).

- *Amortisation assuming equal annual lot release*

All future cash outflows are discounted to the calculation date, totalled, amortised, and divided by the averaged annual lot release.

This method produces a flat charge over time (in real terms) but fails to take account of the varying cash inflows if lot release is not equal on an annual basis.

The weakness of this method is that cost recovery will be incorrect if the annual lot release schedule is not the same each year.

- *Weighted annuity*

The weighted annuity method takes into account varying cash inflows to the water agency, and factors them into the calculations.

This method produces a flat charge and is robust unless actual lot release numbers vary from those forecast.

### 3.2.2 Existing assets

One of the variables in relation to existing assets is the choice of method for apportioning the asset between present users and future users at calculation date. The analysis in this section was prompted by discussions in the Forum (see 2.2 Apportionment of assets).

### 3.2.3 The term to capacity

The report examines the difference between a flat charge produced under the amortisation method and a charge that increases over time, in real terms, under the “basic net present value” method reviewed above. Obviously the difference will vary over time because while one charge is flat the other constantly increases. Therefore the report focuses on the difference between the charges at calculation date.

The consultant’s findings are that the size of the difference is influenced by the length of the term to capacity of the asset and the size of the discount rate. This means that the trade-off for a flat charge which minimises sterilisation in later periods is a financial advantage for payers of developer charges in the later stages of development. In an attempt to produce an “equitable” solution, the consultant analysed the effects of reducing the amortisation term. Unfortunately, this proved fruitless. Given a uniform lot production schedule, reduction of the amortisation period with an accompanying reduction of the asset value (by the residual value of the asset at the end of the term) results in similar developer charges.

### 3.2.4 Externalities

Externalities occur when benefits from an asset accrue to parties other than those who directly utilise the asset. Although the report foresees problems in valuing this external benefit, it suggests that the benefit may be funded by way of government subsidy.

### 3.2.5 Reviewing the charge

Projects in water infrastructure can take long periods to reach full capacity. If actual events do not reflect events forecast, under an amortisation type method full cost recovery may not occur. The alternatives are to recalculate the developer charge or factor this risk into the calculation of the initial charge.

## 3.3 Forum’s response to the consultant’s reports

The consultant’s reports were received by the Tribunal and distributed to Forum members. The Forum discussed the reports with the consultant at a Forum meeting. Most of the issues analysed in the reports had been discussed at Forum meetings while the NPV methodology was being implemented and developed. However it was agreed that the calculation of the operating surplus component had become a pressing issue. This matter was relayed to the Tribunal for its consideration. Alerting the Tribunal to issues of significant impact is part of the on-going role of the Forum.

## 3.4 Supplementary Clarification Note

Having noted the advice of the Forum, the Tribunal published a supplementary note for the purpose of clarifying the guidelines to the determinations (see 2.1 Developer charges calculations).

## 4 MEDIATION

Mediation is a process whereby disputing parties come together voluntarily under the guidance of a trained, impartial mediator to attempt to arrive at a mutually acceptable resolution to their dispute. The Forum supports the provision of mediation as an option for customers. Arbitration can be expensive as well as time consuming. Initial recourse to

mediation does not restrict subsequent access to arbitration under section 31 of the IPART Act.

In mid 1996 the Forum realised that there was a need for prompt discussion and consideration of the role of mediation because of the imminent release of various DSPs. A mediation sub-committee was formed. It proposed to the Forum that:

- members of the Forum nominate potential mediators to be considered for a Water Industry Forum mediator panel from which disputants could draw
- mediation training be organised for those Forum members wishing to participate
- a formalised mediation protocol be developed by the Forum for use by Forum mediators.

Forum members decided to delay consideration of these matters until members had undertaken mediation training. In October 1996 sixteen members of the Forum attended a three day mediation course. The course covered various topics including communication skills, effective mediation processes, reaching agreement, mediator skills and ethics, testing solutions and managing large groups.

At the Forum meeting following the training course, there was general consensus that the draft mediation protocol document should not be formalised because of potential problems in relation to professional indemnity and other legal matters. As well, it was decided that a disclaimer should preface the mediation protocol. Although not formalised, the mediation protocol document and the agreement (in draft form) are available for reference. A mediator panel has not been established because this was seen as limiting the possible choice of mediators. However Forum members have agreed to be available to provide information on conflict resolution if a conflict arises.

## **5 RELEASE OF DEVELOPMENT SERVICING PLANS**

Following their individual determinations, water agencies began releasing draft DSPs. Gosford and Wyong councils released their first DSPs in July and September of 1996 respectively. Hunter Water will release technical reports for individual developments as they are authorised. Sydney Water released its first DSP for public comment in June 1997.

The new methodology has required a great deal of work by agencies to train staff and overcome problems in adjusting to the new regime. Meanwhile there were complaints from developers and members of the Forum about the delay and resulting uncertainty created by the time taken to release DSPs, particularly in the Sydney Water area. Sydney Water reported that its workload involved the development of 120 DSPs.

## **6 DEVELOPER CHARGES SEMINAR**

The Forum and the Tribunal felt that participants in the industry, especially those not represented on the Forum, should be given an opportunity to see how the NPV methodology worked and to put forward questions.

The Tribunal therefore organised a seminar in February 1997 for that purpose. Speakers at the seminar were drawn from the Forum and the Tribunal's Secretariat.

Attendees included representatives of local councils, developer firms and interstate water authorities.

The first session of the seminar provided a background to the development of the NPV methodology. Subsequent sessions presented the views of the various groups affected by the determinations. Of interest as well was a presentation which outlined the methodology for the calculation of developer charges for local councils being developed by the Department of Land and Water Conservation. However it was recognised that there is a need to ensure consistency between the various approaches being suggested in order to avoid distortions in developer charges, particularly between contiguous localities.

An "Open Forum" session followed which allowed time for comments and questions. The balance of the day was devoted to workshops at which the technical aspects of the methodology were explained.

The Water Industry Forum believes that the seminar helped promote a better understanding of the NPV method. It also provided an opportunity to express many of the varying views within the industry.

## **7 DEVELOPER CHARGES INFORMATION BROCHURE**

Although the seminar was considered very successful, Forum members thought that there was still a need to disseminate information about developer charges to those who were outside the mainstream of participants. The Forum therefore requested that the Tribunal prepare and publish an information brochure explaining objectives, problems and solutions in the developer charges area. The brochure will be released concurrently with this annual report and will be made available to the general public.

## **8 ONGOING ROLE OF THE FORUM**

The first determination (for Sydney Water) was published in December 1995. Since then, many implementation issues have been raised. The need for the services of the Forum may now diminish as the initial DSPs are released and implementation difficulties will hopefully reduce. If this does happen, regular meetings of the Forum may be fewer. If a pressing problem arises, a special meeting will be convened.

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## **APPENDIX 2: ACKNOWLEDGMENTS AND MEETING DATES**

### **Resignations**

- The Department of Urban Affairs and Planning
- Australian Conservation Foundation
- Mr Chris Taylor, Rolyat Services Pty Limited

### **Water Industry Forum Meeting Dates**

- 4 July 1996
- 3 September 1996
- 26 November 1996
- 10 February 1997
- 15 May 1997
- 25 September 1997

### APPENDIX 3: CALCULATION OF WEIGHTED AVERAGE ANNUITY AND COMMON ANNUITY PERIOD

This proof was taken from the first report prepared for the Tribunal by external consultants<sup>6</sup>.

The determinations require that a flat charge per lot over time be calculated. However, the value of annuities varies with time eg the table below shows the change in value of the annuity over five years using a 9 percent discount rate and calculating from 30 years in the future.

Time	Annuity Period	Value of annuity Function	Lot release
0	30	10.2737	100
1	29	10.1983	100
2	28	10.1161	100
3	27	10.0266	100
4	26	9.9290	100
5	25	9.8226	100

The annuity to use for all periods is equal to the weighted average term of the annuity functions, where each annuity function is weighted by the discounted lot release for that year.

Time	Annuity function	Discounted lot release	Weighted annuity Function
0	10.2737	100	1027.37
1	10.1983	91.74	935.59
2	10.1161	84.17	851.47
3	10.0266	77.22	774.25
4	9.9290	70.84	703.37
5	9.8226	64.99	638.37
Total		488.96	4,930.42

The weighted average annuity is  $4,930.42/488.96 = 10.0834$ , which gives a term of 27.63 years.

<sup>6</sup> William M Mercer Pty Limited, *Review of Developer Charges Methodology*, January 1997.