Government of **Western Australia**
Department of **Water**

Economic Regulation Authority inquiry into water resources management and planning charges

Costing of water activities

Looking after all our water needs

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Contents

Summary

This submission provides information on the level of effort and costs involved in undertaking a range of water resource management and planning activities, as requested by the Economic Regulation Authority (ERA) related to its Inquiry in Water Resource Management and Planning Charges. The scope of the report is those activities which the ERA identified as potentially suitable for cost recovery in its draft report of December 2009.

This submission should be read in conjunction with our previous submission to the Inquiry – 'Economic Regulation Authority inquiry into water resource management and planning charges – Response to the issues paper, June 2009' - as we have not repeated the contextual information about the scope of, and rationale for, the activities we undertake.

Section 3 provides overall costing information at an activity level for three full financial years, 2006/07, 2007/08 and 2008/09, and for 8 months (July to February) of the current financial year. We have then used the 2008/09 financial year as the baseline to further analyse our activities on a cost per service basis.

The Department of Water's total costs in 2008/09 were $107,974,000. This submission only addresses $55,543,684 (51 per cent) of these costs. This is the cost of activities which wholly or partly contribute to services which may be suitable for cost recovery.

The remaining costs, which are not addressed in this submission, are for those activities generally not suitable for cost recovery, either because they are for broader public benefit (such as waterways protection) or relate to issues such as legislation, strategic policy, or government processes.

Of the costs covered in this submission ($55,543,684), we identify that $39,755,591 (72 per cent) could be recovered from private parties. This amount reflects the proportion of these activities that contribute to the services we provide and the private benefit component for private parties who can be identified. For some activities, while we believe there is a private benefit component, we are unable to identify the private parties who derive this benefit; therefore we cannot recover the costs.

The following summary table shows the costs which could be recovered from private parties for each activity area. In providing these costings, we have used the best data available in the department. For some areas, we recognised the need to continue to collect costing data to further refine the costs of our services over time.

Service	Costs which could be recovered
Processing and assessing applications for water licences and permits	$ 9,563,214
Licensing of the Water Corporation for the IWSS	$ 324,211
Providing water allocations and managing the ongoing use of water	$20,004,568
Protecting public drinking water sources	$ 4,945,431
Providing advice on statutory referrals	$ 2,405,147
Guiding urban drainage and water management	$ 1,508,143
Providing floodplain management advice	$ 728,300
Providing water information	$ 276,577
Total	$39,755,591

Section 4 of this submission discusses each of these service areas in detail, describes the rationale for the level of cost recovery, and provides costs on a per unit basis.

The average per-unit costs for our services are shown in the following table. These are for the services which we provide to multiple customers. In the report, we also present the costs in a variety of other ways so that the ERA has the information to assist in determine the appropriate charging model.

Service	No of "units" in 2008/09	Average cost per unit
Processing and assessing applications for water licences and permits	3346 licences and permits processed	$2,858 per application
Providing water allocations and managing the ongoing use of water by licensees	13796 water use licences in force	$1,236 per licence
Maintaining and reading government owned water meters	1266 meters on the Gnangara Mound	$ 976 per meter

Preparing protection plans to protect drinking water supplies	102 plans in place	$21,139 per plan
Providing advice on statutory referrals	2189 statutory referrals received	$1,099 per referral
Providing floodplain management advice	895 requests received	$814 per request
Providing water information	1804 requests received	$153 per request

1 Purpose and content of this submission

1.1 Background

In December 2009, the Economic Regulation Authority (ERA) released a draft report on its 'Inquiry into Water Resource Management and Planning Charges'. The draft report contains twenty three draft recommendations covering issues such as the principles for cost recovery, the allocation of costs between private and public users, and the recovery of costs for various water resource management and planning functions.

The draft report did not propose any indicative fees or charges, with the ERA saying that it required further information from the Department of Water before fees and charges can be determined. Specifically, the ERA made the following draft recommendations:

17. *The Department is not able, at this stage, to provide the information need for the Authority to determine the efficiency or cost reflectivity of the costs to be allocated to licence holders.*
18. *The Department of Water is therefore asked to provide detailed information to the Authority about how its costs are incurred and allocated to various functions by the end of May 2010.*

Through discussions with the department, it was agreed that the department would implement processes and systems to enable it to gather information on the levels of effort and costs involved in undertaking the water resource management and planning activities identified by the ERA for cost recovery.

The ERA also requested the department to provide advice on the allocation of the costs for each activity between private and public users, based on who is causing the costs to be incurred.

The scope of water resource management and planning activities covered in the draft report and in this submission is shown in Table 1.

The information requested by the ERA forms the content of this submission.

Table 1 – Scope of water resource management and planning activities suitable for cost recovery identified by the ERA[1]

Water source protection	Allocation planning
Urban water management	Environmental water planning
Water metering	Water measurement and information
Licensing, compliance and enforcement	Groundwater and surface water assessment, investigation and review

1.2 Content and structure of this submission

This submission provides the additional information on costs, and allocation of those costs to private and public users, as requested by the ERA.

This submission is structured in the following order:

Section 2 – outlines the scope of activities, and the principles, approach and methodologies used for costing the activities. It discusses the data held or gathered by the department for use in this analysis, and the assumptions that have been made.

Section 3 – provides the costing for each of the individual water resource management and planning activities.

Section 4 – takes a customer based approach to present information on how our activities are linked and attributed to provide our services. For each of the services we provide, we identify the contributing activities, the proposed cost share to be recovered from users for each activity, the total cost of the service, and the cost per unit output.

2 Principles and approach

2.1 Principles for cost recovery

Recommendation 1 of the ERA draft report outlines the principles which should apply to the recovery of water resource management and planning costs. Other recommendations (2, 5) also deal with the approach to cost recovery. These have been taken into account by the department in preparing the information in this submission.

However, the department has also taken account of the National Water Initiative (NWI) 'Principles for recovering the costs of water planning and management activities', as Western Australia will be required to demonstrate compliance with these principles through its participation in the NWI. The NWI principles are not inconsistent with the ERA principles.

Relevant excerpts of the ERA and NWI principles are shown in Table 2.

Table 2 – Excerpt of relevant cost recovery principles

ERA principles	NWI principles
The costs of activities to address impacts, or potential impacts, arising from the use of water resources, be recovered from those parties who cause the costs to be incurred, if the parties can be identified.	Costs are to be allocated between water users and governments using an impactor pays approach. (An impactor is any individual, group of individuals, or organisation whose activities generate costs, or a justifiable need to incur costs.)
If the parties who cause casts to be incurred cannot be identified, costs be recovered from public funds.	
The costs of activities that produce outputs in the nature of public goods be borne by the public.	
If costs are incurred on behalf of private parties for activities that also produce outputs in the nature of public goods, the costs be shared between the private parties and the public.	
Water licensing and the recovery of costs from licence holder be implemented in a way such that benefits exceed costs.	
Any charges to licence holders be: practical to implement; clear and transparent; and equitable, with licence holders in similar situations facing similar charges.	
	Water planning and management charges levied on to water users should exclude the costs of activities undertaken for government such as (strategic) policy development and Ministerial or parliamentary services.
Where practicable, charges to licence holders would vary by region to reflect the costs of water resource management in each region.	Water planning and management costs are to be identified and differentiated (and recovered) by catchment or valley or region and by water source where practicable.

2.2 Approach

In preparing the information in this submission, the department has taken the general approach discussed below. This approach has been required because of the variety of activities that the department undertakes, and the functional dependencies of many of these activities.

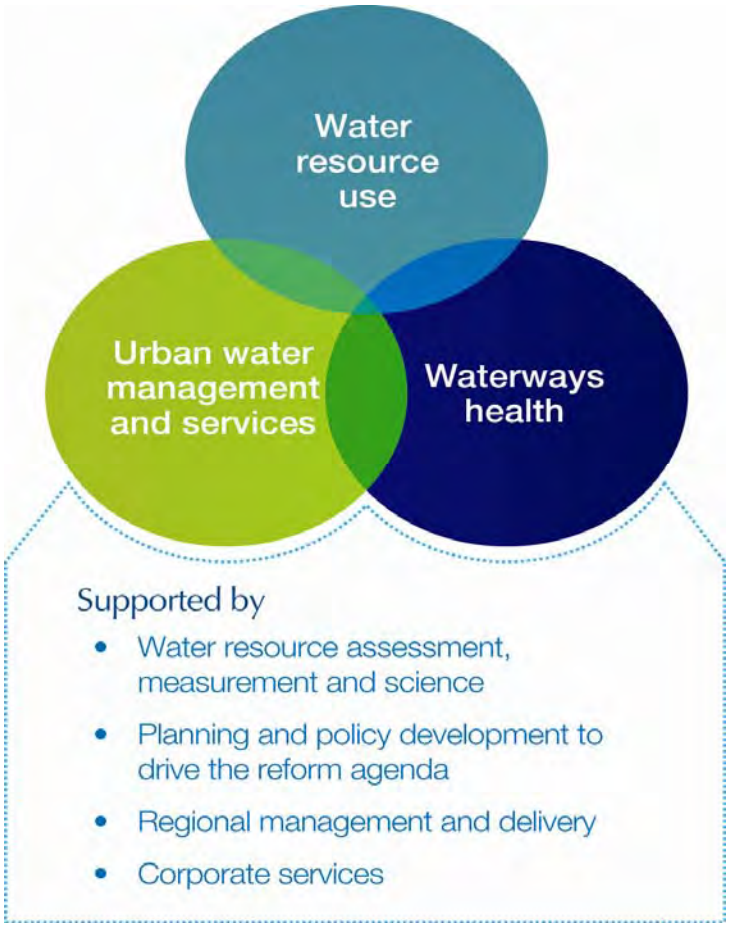
1. Each of the department's activities relevant to cost recovery has been divided down to the level required to reflect and differentiate the services provided, the functional dependencies between activities, and/or the private parties from who costs can be recovered. In some cases, this is to a finer level than discussed in the ERA draft report. The activities are further discussed in Section 2.3, and shown in Table 3.
2. Each of the activities has then been costed, using the methodology discussed in Section 2.4. The costing information for each activity is provided in Section 3.
3. Each activity has been then been apportioned to the various department services that it supports. Some activities support more than one service, and judgements have been made on the proportion of support provided to each service area. Where available, these judgements are based on data. The apportioning of activities to our services is discussed in Section 4.
4. Each activity within each of the service areas has also been apportioned to public or private benefit based on the cost-sharing principles given in section 2.1. The private benefit element is then the cost that should be recovered. This approach is further discussion in Section 2.7, and the results are given in Section 4.
5. The cost to be recovered for each service has been totalled from the private benefit component of various activities, or parts of activities, that it comprises.
6. The cost per unit output for each service has then been calculated, based on subsidiary information collected by the department.

2.3 Functions and activities for cost recovery

The Department of Water business model is shown in Figure A. This business model is delivered via a matrix approach through an organisational structure of divisions, branches and regions. The planning and resourcing of our activities occurs through our business model, but the delivery of our services occurs via our people employed within our organisational structure.

The Department of Water considers that almost all of its activities have elements of water resource management and planning. However, only those areas which have been identified as suitable for cost recovery in the ERA draft report are costed in this submission. (The exception is three additional activities which the department has identified as suitable activities for cost recovery). Broadly, this excludes functions associated with the waterways health service, and the strategic planning and policy support service.

Figure A – Department of Water Business Model



For this submission, the department has further subdivided the activities to be costed, beyond those discussed in the ERA draft report. This further subdivision has been necessary to better differentiate the services, to reflect the internal functional dependencies between activities, or to distinguish the different impactors and/or

beneficiaries of our services. The level of activities which have been costed in this submission, and their relationship to our business model and the functions discussed in the ERA draft report, are shown in Table 3.

Table 3 – Activities costed and their relationship to the department's business model, and the ERA draft report.

Business Services	**Program**	**Section**	**Activity to be costed** (costed using the methodology in section 2.4)	**Sub-activity / sub-output to be costed** (costed using subsidiary information collected)
Urban water management and industry services	Urban water management	Urban drainage planning	Drainage and water management planning	
		Urban water assessment	Arterial drainage studies	
		Water and land use coordination	Statutory referrals	Subdivision and development applications
				Local planning proposals
				District planning proposals
				Regional planning proposals
				Clearance of sub-divisions
	Water resource assessment	Floodplain management	Floodplain management advice	
	Water source protection	Water source protection	Water source protection planning	
			Implementation of water source protection plans	
			Preparation of guidance notes	
Water use allocation and optimisation	Water allocation planning	Water allocation planning	Water allocation planning	Various plans
			Environmental water planning	
	Water licensing	Water licensing policy	Water licensing policy	

		Water licensing and compliance	Water licensing and compliance	Various licences and permits
		Water licensing support	Water licensing support	
		IWSS licensing	IWSS licensing	
		Enforcement	Enforcement	
	Water recycling and efficiency	Metering	Metering	Costs of installation, maintenance and reading
Water resource assessment, measurement and science	Water resource assessment	Groundwater resource assessment	Groundwater assessment, investigation and review	
			Regional hydrogeological advice	
		Surface water assessment	Surface water assessment	
	Water measurement and information	Water information collection	Water information collection	Groundwater information collection
				Surface water information collection
		Water information management	Water information management	Groundwater information management
				Surface water information management
		Water information provision	Water information provision	
Regional management	Regional coordination	Land management	Acquisition of P1 land	
			Land asset management	Management of P1 land

2.4 Methodology for identifying costs

The department's financial system is the primary source of information on the department's costs. The cost centres in our financial system have been structured to report against the department's outcome based management (OBM) approach, as required by government.

The finance system is not directly structured to provide activity based costs. Therefore, we have used a variety of systems and processes to complement the information from our finance system, so that we can provide the best information to the ERA.

Sources of costing information

The department has used three sources of information to provide the data in order to cost its activities. These data sources are described below, along with the assumptions that have been made and the limitations that apply to the data.

The department's finance system

The primary data source for the cost information in this submission is the department's finance system. The system is structured around projects aligned to the OBM model, rather than services we provide, but provides an auditable basis for costing projects. All department expenditure is allocated to a project code and therefore the finance system data provides the direct cost associated with each project code in terms of relevant labour costs, supplies and services.

The limitation of the finance system in costing activities is that the relationship between projects and activities is not consistent across the department. For some areas, the project level is not sufficiently detailed to attribute costs for individual services or support functions. In these cases, the department has used other sources of data discussed below.

For this submission, data from the finance system has been analysed for three full financial years (06-07, 07-08, 08-09), and for eight months of the existing financial year (1 July 2009 – 28 February 2010). This essentially captures costs of projects since the commencement of the Department of Water. Analysing costs over almost four financial years is essential as the duration of some of the department's complex resource assessment and planning activities (eg allocation planning) is up to four years.

The department's project management system

The department uses a project management system to maintain additional data on projects. Until the department rolled into the Office of Shared Services on 1 October 2009, the project management system was linked to the department's finance system. This data includes the number and level of full time equivalent staff employed on each project.

Data on the project management system from 1 July 2006 has been used to provide FTE information so that on-costs for the corporate support activities could be attributed back to projects on an FTE basis. The approach to on-costs is discussed in more detail in Section 2.5.

The limitation of the project management system for this purpose is that the FTE data is planned FTE as of the commencement of the financial year, which does not correspond to actual FTE employed due to position vacancies. Overall, our vacancy rate averages around 10 per cent at any one time.

However, our project management system is the only readily available source of information on FTEs at a project level over the four year period, and as such has been used for distributing our on-costs. In using the planned FTE, we assume that the vacancy rate is evenly distributed over the department.

Subsidiary information - time sheets, service logs, branch and staff work plans

For two functions – water licensing and the provision of advice on statutory referrals – the department put in place a time-sheet process to capture staff time on an activity basis. The short duration of these two processes enabled the department to capture this data during early 2010 in order to provide a more robust basis for costing individual service activities or outputs in this submission.

Customer service logs were already maintained for a number of activities, generally to provide key performance indicator data. These include data on statutory referrals processed, the provision of water information to external customers, and the provision of floodplain management advice. Where available, this data was used to cost activities at a per output level.

The department's branch and staff work plans provide information about the allocation of staff time to sub-projects or activities. This provided another mechanism to further analyse project information from the finance system in order to provide sub-activity costings. Branch and staff work plans are planning tools used by branches to allocate work among staff, and they do not provide information on actual time spent. However, they did provide some further subsidiary information where there was insufficient data from other sources.

Costing approach

The following methodology was used to cost activities in this submission:

1. For each of the activities listed in Table 3, the relevant project cost codes which contribute to that activity were identified from the finance system, for each of the four financial years.
2. The expenditure attributed to each project code was extracted from the finance system.
3. For each project code, the annual FTE was extracted from the project management system, and the FTEs were then apportioned to geographical locations based on advice from the project managers.

4. On-costs for each project were calculated, based on FTE by location, using the methodology described in section 2.5.
5. On-costs were then added to the expenditure information extracted from the financial system for each project.
6. The projects were then totalled for each activity to give the overall activity costs.
7. The costs of sub-activities which could not be directly costed from the financial system was then determined using one or more of the source of subsidiary information available.

External funds

In some instances, the department has included in the cost estimates, projects which received funds from external sources, primarily as commonwealth grants. We have only included those external funds which relate to necessary water management and planning activities and which have contributed directly to the delivery of services, or which have contributed to the efficiency of other activities. The costs of these projects (which are typically one off or short term arrangements) need to be included to provide a complete picture of the full cost of the department's water resource management and planning activities. Where external funds have been included, we have shown the income and described its source.

2.5 Calculation of on-costs

There are three categories of on-costs that have been calculated for each project code, based on the number and location of FTE assigned to that project code. These are:

- corporate on-costs (including finance and administration, human resources, information technology and the corporate executive);
- regional administration on-costs (the costs of accommodation and operation of each regional office, being Kimberley, Kwinana Peel, Mid West Gascoyne, Perth, Pilbara, South Coast, South West and Swan Avon); and
- divisional executive costs (the costs of the executive for the Water Resource Use, Water Resource Management and Regional Management and Water Information divisions).

A similar methodology was adopted to calculate an FTE rate for each on-cost category, as outlined below:

1. The relevant project codes within each of the on-cost categories were identified from the finance system for each of the four financial years.

2. Within each on-cost category, the expenditure information for each relevant project code was summed to determine the total cost of each corporate division, regional office and divisional executive listed above.
3. The total number of FTEs within each division and within each regional location were extracted from the project management system.
4. An on-cost FTE rate was calculated for each on-cost category.
    - the corporate on-cost FTE rates are based on all department FTEs;
    - the regional administration on-cost FTE rates are based on the FTEs within each region;
    - the divisional executive on-cost FTE rates are based on the FTE within each division.
5. These rates are then applied to the FTE figures and locations for each project code to calculate the appropriate on costs.

Those parts of the organisation that have been included in the on-cost model include the finance, human resources, information services branches and corporate executive (although some large one off corporate costs have been excluded such as the shared services implementation). Furthermore the costs associated with operating and administering the regional offices have also been included where appropriate. The department also identified internal branch support costs that underpin its core activities (for example, the licensing sub-program management supports the licensing branch activities). The costs of these support functions (including on-costs) have been reallocated across the branch activities on an FTE basis to determine the full cost of each core activity.

The costs associated with the Office of Director General (ODG) have been excluded from the on-cost model on the basis that:

- the NWI cost recovery principles excludes costs associated with Ministerial and Parliamentary services, which are provided by the ODG;
- the ODG includes functions associated with integrity and standards, and corporate reporting, which the department also considers should be exempt; and
- while the ODG includes a communication group, this is focussed on strategic communication. All costs related to specific activity communications are captured within the project codes.

No projects which were externally funded have been included in the on cost categories.

2.6 Variation in unit costs between this submission and the department's annual reports

This report presents cost per unit output for a number of activities undertaken by the department. Costs for some of these activities are also given in the department's annual reports as part of the key performance indicators presented to government.

For a number of outputs, the costs in this report vary considerably from those in the annual report because different methodologies have been used. The differences generally relate to:

- the extent to which activity costs of have been subdivided;
- the extent to which indirect but contributing activities have been included in the costs; and/or
- differences in dealing with output, such as plans, which take greater than one year to produce (for example, some KPIs are reported as rolling averages).

2.7 Identifying the impactors, beneficiaries, and private/public benefit proportion of each activity

Impactors and beneficiaries

In order to manage the impacts of land and water use on water resources, the department undertakes a range of water resource management and planning activities. The reason for undertaking these activities, and the costs which are incurred as a result, is the potential impact caused by the land and water users – that is, the impactors. However, there are also beneficiaries of the water resource management and planning activity that the department undertakes.

In order to apply the cost-recovery principles discussed in Section 2.1, the department has identified the impactors for its activities.

> ***Impactors*** *- individuals, groups or organisations who cause the service or activity to be undertaken, and therefore the costs to be incurred.*

However, there are also beneficiaries of the water resource management and planning activity that the department undertakes. In some cases, the department believes it is appropriate to recover costs from the beneficiaries.

> ***Beneficiaries*** *- individuals, groups or organisation who derive a benefit from the service or activity (but who do not cause it to be undertaken).*

In the case of both impactors and beneficiaries, recovering costs requires that they can be specifically identified. However, for some of the department's activities, particularly those of a more strategic nature, the impactors or beneficiaries cannot be identified. In these cases the public bears the cost of the activity.

The department has analysed the impactors and beneficiaries for each of its activities, and the outcome of this assessment is provided in Section 4.

Private/public benefit proportion

Many of the activities undertaken by the department have both a private (either to impactors or beneficiaries) and public good element. In such cases, the cost is shared between the private parties and the public. This requires the department to identify the relative proportion of private/public benefit for each of its activities.

There is no direct way to measure the proportion of private/public benefit. It has required the department to make judgements based on the nature of the activity, the nature of the benefits, and the significance of the benefits.

Section 4 discusses the recommended proportions and rationale for each activity.

3 The cost of our activities

This section provides a detailed analysis of the costs of each of the department's water resource management and planning activities listed in Table 3. Costs incurred are reported for three full financial years, 2006/07, 2007/08, 2008/09, and 8 months (July – Feb) of the current financial year, 2009/2010. The direct costs are determined from the Department's financial system, and on-costs have been derived using the methodology discussed in sections 2.4 and 2.5.

3.1 Urban water management and industry services

Within this business area, we are responsible for developing strategies, management plans and land use planning initiatives to deliver sound and sustainable water, waterways and drainage management outcomes.

Drainage and water management planning

Activity Description

This activity involves undertaking technical assessments and developing drainage and water management plans for proposed future urban development areas. The plans provide guidance to planning organisations and developers on water management issues and how they should be considered in the planning and development process. This activity is primarily driven by the rapid urban expansion of Perth into high water table areas, such as Byford, Jandakot and Murray. The Western Australian Planning Commission (WAPC) requires guidance on water management issues prior to developing major structure plans in these areas.

Total cost of function ($000s)

Year	Direct cost	On-cost	Total cost	Revenue
06-07	$783,368	$119,538	$902,906	$0
07-08	$1,309,876	$142,184	$1,452,060	$0
08-09	$1,541,744	$126,521	$1,668,265	$0
09-10*	$935,523	$208,395	$1,143,918	$0

* 8 months data only, 1 July 09 to 28 February 10.

Factors that have influenced the activity cost

In 2006, the department received new resource proposal (NRP) funding from government for five years across three activity areas in the department: drainage and urban water management planning; arterial drainage studies; and statutory referrals. The NRP reflects the rapid urban expansion pressure for Perth and regional

cities, and the need to address the impact of existing urban drainage on the Swan River and other waterways. The NRP was designed to increase in 2007/08, and this is reflected in the expenditure figures above. Subsequent changes in expenditure reflect small variations in the NRP, and some realignment in activity areas to reflect program focus and changing priorities.

Arterial drainage studies

Activity description

This activity involves implementing the better urban water management framework in existing drainage areas. Activities include development of best urban water management practices, progressing drainage governance issues, planning drainage research and development, and undertaking studies and assessments to address management issues (such as nutrient discharge) and explore opportunities for retrofitting of drains to improve water management outcomes. The studies also address the need to upgrade or maintain existing drainage infrastructure to improve performance.

Total cost of function ($000s)

Year	Direct cost	On-cost	Total cost	Revenue
06-07	$650,563	$164,963	$815,526	$0
07-08	$1,177,671	$246,453	$1,424,123	$0
08-09	$1,237,649	$270,494	$1,508,143	$0
09-10*	$622,074	$156,705	$778,779	$0

* 8 months data only, 1 July 09 to 28 February 10.

Factors that have influenced the activity cost

In 2006, the department received NRP funding from government for five years across three activity areas in the department: drainage and urban water management planning; arterial drainage studies; and statutory referrals. The NRP reflects the rapid urban expansion pressure for Perth and regional cities, and the need to address the impact of existing urban drainage on the Swan River and other waterways. The NRP was designed to increase in 2007/08, and this is reflected in the expenditure figures above.

In 2009/10, there was a reduction in budget for this activity to fund other drainage priorities in the department (wheatbelt drainage).

There are other small changes in expenditure reflect some realignment in activity areas to reflect program focus and changing priorities.

Statutory referrals

Activity description

This function involves the provision of advice to the Western Australian Planning Commission and local governments on specific planning and development proposals which have water management implications. The proposals range from local sub-division and development applications, to strategic regional scale schemes or planning proposals. Generally the department is moving to invest more effort at the strategic level, as this effort will minimise the need to be involved in local scale proposals in the future. The department responds to around 2000 statutory referrals each year.

Total cost of function ($000s)

Year	Direct cost	On-cost	Total cost	Revenue
06-07	$326,064	$145,462	$471,527	$0
07-08	$822,545	$325,614	$1,148,159	$0
08-09	$985,021	$439,180	$1,424,201	$0
09-10*	$894,033	$408,991	$1,303,024	$0

* 8 months data only, 1 July 09 to 28 February 10.

Factors that have influenced the activity cost

In 2006, the department received new resource proposal (NRP) funding from government for five years across three activity areas in the department: drainage and urban water management planning; arterial drainage studies; and statutory referrals. The NRP reflects the rapid urban expansion pressure for Perth and regional cities, and the need to address the impact of existing urban drainage on the Swan River and other waterways. The NRP was designed to increase in 2007/08, and this is reflected in the expenditure figures above.

For 2009/10, the department has dedicated increased resources to this function, away from our waterways management area, in recognition that much waterways protection advice is being provided via statutory referrals.

Floodplain management advice

Activity description

This activity involves providing advice to decision-making agencies (primarily local government) on floodplain areas and flood levels, generally related to specific planning and development proposals. The objective is to protect life and property by ensuring that development does not occur in areas with an unacceptable risk of flood. The department responds to approximately 900 floodplain enquiries each year.

Total cost of function ($000s)

Year	Direct cost	On-cost	Total cost	Revenue
06-07	$720,814	$160,176	$880,991	($105,500)
07-08	$871,263	$203,602	$1,074,866	($70,808)
08-09	$580,409	$147,891	$728,300	($172,500)
09-10*	$399,112	$121,670	$520,782	($12,937)

* 8 months data only, 1 July 09 to 28 February 10.

Factors that have influenced the activity cost

Expenditure for this activity has been relatively stable, although the higher costs in 07/08 reflect additional activity in response to the recommendations of a floodplain taskforce which had been previously convened by government.

The external revenue was from an industry grant to progress floodplain development strategies for DPI, Local Government and the community. These strategies enable the department to provide improved floodplain management advice.

Water source protection planning

Activity description

There are 149 drinking water sources in Western Australia. The department is responsible for protecting the quality of these sources so that the public has access to a reliable, safe, good quality drinking water and public health is not compromised. To achieve this we prepare drinking water source protection plans for new and existing water sources, which provide guidance on appropriate land use activities, and identify actions necessary to protect the quality of the resource.

Total cost of function ($000s)

Year	Direct cost	On-cost	Total cost	Revenue
06-07	$1,014,103	$282,345	$1,296,448	$0
07-08	$900,768	$341,282	$1,242,051	$0
08-09	$849,024	$257,412	$1,106,436	$0
09-10*	$540,368	$183,386	$723,754	$0

* 8 months data only, 1 July 09 to 28 February 10.

Factors that have influenced the activity cost

Water Source Protection received additional funding through an NRP from 06/07, following the Office of Auditor General's 2003 report on the management of water resources. This provided funding to finalise 24 plans over 4 years.

Implementation of water source protection plans

Activity description

This activity involves the implementation of water source protection plans through the department's regional offices, by providing advice on land use planning and development proposals in drinking water supply catchments, and implementing other activities such as signage.

Total cost of function ($000s)

Year	Direct cost	On-cost	Total cost	Revenue
06-07	$281,547	$169,764	$451,311	($75,348)
07-08	$461,318	$200,434	$661,752	($75,541)
08-09	$447,096	$246,914	$694,010	$0
09-10*	$313,084	$182,761	$495,844	$0

* 8 months data only, 1 July 09 to 28 February 10.

Factors that have influenced the activity cost

From 2007/08 there has been an additional emphasis placed on plan implementation within the department through the reprioritisation from other work areas.

The external revenue was from the former national action plan for salinity and water quality, to implement on-ground aspects of water source protection plans in the south coast region.

Preparation of guidance notes

Activity description

In addition to preparing and implementing source protection plans, the department also prepares policy, guidelines and best practice advice to guide industries, agriculture and other land uses which are undertaken in drinking water supply catchments. The aim is to minimise impacts from these activities where they already

occur in catchments, and to ensure that new activities are undertaken in a way that minimises public health risks. The guidance notes, while principally developed for water supply protection purposes, are used widely in other catchments to minimise broader water resource and environmental impacts of land use development.

Total cost of function ($000s)

Year	Direct cost	On-cost	Total cost	Revenue
06-07	$624,217	$228,048	$852,265	$0
07-08	$510,079	$178,832	$688,911	$0
08-09	$657,067	$194,409	$851,476	$0
09-10*	$395,733	$134,920	$530,653	$0

* 8 months data only, 1 July 09 to 28 February 10.

Factors that have influenced the activity cost

This activity area has been relatively stable.

3.2 Water use allocation and optimisation

Water allocation planning

Activity description

Allocations plans are developed by the department to determine the amount of water that can be taken by all water users in groundwater and surface water management areas around the State. The plans identify water resource management objectives, set allocation limits, specify licensing policies and rules, and identify management triggers and responses. They take into account environmental water requirements and the potential impacts of water use on the environment and other water users.

Total cost of function ($000s)

Year	Direct cost	On-cost	Total cost	Revenue
06-07	$1,464,176	$515,762	$1,979,938	$0
07-08	$2,333,147	$608,125	$2,941,273	($964,728)
08-09	$2,795,917	$749,919	$3,545,836	($941,611)
09-10*	$1,682,507	$488,174	$2,170,681	($202,311)

* 8 months data only, 1 July 09 to 28 February 10.

Factors that have influenced the activity cost

The activity costs of both water allocation planning and environmental water planning have been influenced by two major sources of additional funding:

- External revenue from the National Water Commission (NWC) Watersmart Australia funding scheme, for the three year period 2007/08 to 2009/10; and
- Funding through two new resource proposals (NRPs), for the two year period 2008/09 to 2009/2010.

The Watersmart Australia funding is enabling the preparation of allocation plans consistent with the requirements of the National Water Initiative. Both funding sources have enabled the department to increase the number of allocation plans prepared during this period. The Watersmart Australia funding, along with one of the NRPs, ends in 2009/10. The second NRP funding ends in 2011/12.

Environmental water planning

Activity description

Environmental water planning is a component of the allocation planning process in which the water required by the environment to maintain values is identified. Although an integral part of the water planning process, it has been separately identified here to align with the ERA's information requirements.

Total cost of function ($000s)

Year	Direct cost	On-cost	Total cost	Revenue
06-07	$1,838,904	$466,293	$2,305,196	($247,101)
07-08	$2,548,774	$503,289	$3,052,063	($670,813)
08-09	$2,524,990	$597,325	$3,122,315	($266,582)
09-10*	$1,437,205	$383,876	$1,821,080	($24,782)

* 8 months data only, 1 July 09 to 28 February 10.

Factors that have influenced the activity cost

As discussed for water allocation planning, the activity costs of environmental water planning have been influence by two major sources of additional funding:

- External revenue from the NWC Watersmart Australia funding scheme, for the three year period 2007/08 to 2009/10; and
- Funding through two new resource proposals, for the two year period 2008/09 to 2009/2010.

The Watersmart Australia funding is enabling the preparation of allocation plans consistent with the requirements of the NWI. Both funding sources have enabled the department to increase the number of allocation plans prepared during this period. The Watersmart Australia funding, along with one of the NRPs, ends in 2009/10. The second NRP funding ends in 2011/12.

Water licensing policy

Activity description

This activity involves the development of operational level water licensing policy, which ensures the equitable sharing of water resources and underpins the water licensing approach and rules for water use. The department has to consider a range of factors in issuing licences and managing licensed water use, including public interest, ecological and environmental factors, future water needs, impacts on other water users, and relevant by-laws. This requires clear policy direction. The activity area also includes a specific focus on water efficiency, and includes funds received for implementation of water reform activities related to licensing.

Total cost of function ($000s)

Year	Direct cost	On-cost	Total cost	Revenue
06-07	$681,181	$144,729	$825,910	$0
07-08	$4,045,459	$194,007	$4,239,466	$0
08-09	$1,695,837	$191,558	$1,887,395	$0
09-10*	$610,976	$197,999	$808,975	$0

* 8 months data only, 1 July 09 to 28 February 10.

Factors that have influenced the activity cost

Water licensing policy costs increase significantly in 2007/08 as a result of activity to implement a previous licence fee regime, policy development for commitments under the NWI and to support development of the proposed water resource management bill, and work to progress implementation of water reform commitments such as a register of water entitlements.

Water licensing and compliance

Activity description

The water licensing activity issues licences and permits associated with the taking of water for commercial use and public water supply. (Stock and domestic users in Exmouth and Albany groundwater areas also require a licence). The licensing activity includes assessment of applications for licences to take water, permits to interfere with bed and banks, and licences to construct or alter wells. There are over 13000 water use licences in force covering 759 groundwater resources and 181 surface water resources throughout the State. The activity also undertakes compliance work in the form of water use surveys, compliance checks, assessing monitoring reports, and responding to complaints.

Total cost of function ($000s)

Year	Direct cost	On-cost	Total cost	Revenue
06-07	$3,946,521	$2,084,803	$6,031,324	$0
07-08	$4,431,706	$2,683,415	$7,115,121	($941)
08-09	$5,047,313	$2,784,235	$7,831,548	($57,159)
09-10*	$3,166,698	$1,715,202	$4,881,901	($26,278)

* 8 months data only, 1 July 09 to 28 February 10.

Factors that have influenced the activity cost

The cost of this activity area has remained relatively stable. The revenue received is from charges which apply for surface water licences and for water licence transfers and trades. These are the only current fees that apply for water licensing.

Water licensing support

Activity description

This activity provides support to the licensing process. Most licensing is undertaken by regional staff located in regional offices. The water licensing support team provides support to ensure the smooth and efficient operation of the licensing function through activities such as maintaining licensing systems, providing training, and providing guidance on complex licensing issues. The support function also manages appeals against licensing decisions, through liaison with the State Administrative Tribunal.

Total cost of function ($000s)

Year	Direct cost	On-cost	Total cost	Revenue
06-07	$417,018	$140,343	$557,361	$0
07-08	$499,326	$186,545	$685,871	$0
08-09	$878,658	$334,784	$1,213,442	$0
09-10*	$409,830	$176,785	$586,615	($4,490)

* 8 months data only, 1 July 09 to 28 February 10.

Factors that have influenced the activity cost

The additional cost of this activity area for 2008/09 was due to some additional effort from the allocation planning branch to support water licensing decision-making.

The revenue received is from charges which apply for surface water licences and for water licence transfers and trades. Some of the fees are used to support the water licensing support function.

IWSS licensing

Activity description

The Water Corporation is the public drinking water supply service provider which operates the integrated water supply scheme (IWSS). The IWSS provides water to metropolitan Perth, the Goldfields and some wheat belt towns. Licensing of the complex range of water sources which support the IWSS is undertaken in Perth and can be identified as a separate activity which supports a large individual user.

Total cost of function ($000s)

Year	Direct cost	On-cost	Total cost	Revenue
06-07	$268,501	$87,714	$356,216	$0
07-08	$246,043	$106,597	$352,641	$0
08-09	$237,139	$87,072	$324,211	$0
09-10*	$124,741	$40,408	$165,149	$0

* 8 months data only, 1 July 09 to 28 February 10.

Factors that have influenced the activity cost

The cost of this activity area has remained relatively stable.

Enforcement

Activity description

The department currently has a small enforcement activity area, which is responsible for conducting investigations into breaches of statutes and gathering evidence to support the required enforcement actions.

Total cost of function ($000s)

Year	Direct cost	On-cost	Total cost	Revenue
06-07	$77,940	$14,619	$92,559	$0
07-08	$293,726	$53,299	$347,024	$0
08-09	$482,004	$139,315	$621,319	$0
09-10*	$43,883	$20,204	$64,087	$0

* 8 months data only, 1 July 09 to 28 February 10.

Factors that have influenced the activity cost

The major influence on expenditure for this activity was the receipt of NRP funding for three years from 2007/08 to build our enforcement role. This NRP is due to expire in June 2010. We currently have a $5 million bid before the Commonwealth government to continue our investigation and enforcement role.

Metering

Activity description

The metering activity undertakes the installation, maintenance and reading of state-owned water meters. The metering program installs, maintains and monitors flow meters on bores within high use and high risk groundwater sub-areas on the Gnangara Mound, and for the Carnarvon Groundwater Area which water use information is critical for management. Over the past few years, the program has fitted 1266 meters across 18 groundwater sub-areas on the Gnangara Mound.

Total cost of function ($000s)

Year	Direct cost	On-cost	Total cost	Revenue
06-07	$1,902,017	$182,916	$2,084,933	$0
07-08	$2,244,163	$435,125	$2,679,289	($40,000)
08-09	$2,573,092	$381,877	$2,954,969	$0
09-10*	$1,677,881	$229,683	$1,907,564	$0

* 8 months data only, 1 July 09 to 28 February 10.

Factors that have influenced the activity cost

With regard to metering, the majority of funding from 2006/07 to 2008/09 was capital funds to install water meters on the Gnangara Mound and to replace some meters in Carnarvon. The increasing expenditure over the years reflects the increase in number of meters installed each year. The metering installation program funding finished at the end of January 2010, and expenditure for the current financial year will be considerably less.

External revenue for 2007/08 was from the NWC for development of software to provide a tool for onsite entry of water metering data.

We have applied for funding from the Commonwealth Government to continue meter installation in 2010/11. If we are not successful in our application, our budget for this area will contract and our activity will be restricted to meter assessment and replacement only.

3.3 Water resource assessment, measurement and science

Groundwater assessment, investigation and review

Activity description

This activity generates essential knowledge about the State's complex and varied groundwater systems for use by water managers and water users. It involves three components:

- the investigation of groundwater systems through a groundwater drilling and measurement program;

- undertaking technical groundwater assessment (modelling) to provide advice on the availability, distribution and quality of the State's groundwater resources; and
- undertaking groundwater resource reviews to ensure regular review of the response of groundwater systems to groundwater use and land use change.

Total cost of function ($000s)

Year	Direct cost	On-cost	Total cost	Revenue
06-07	$3,175,546	$572,835	$3,748,381	($50,000)
07-08	$5,622,194	$615,961	$6,238,155	($2,216,125)
08-09	$9,021,978	$681,828	$9,703,805	($3,564,920)
09-10*	$3,921,504	$50,398	$4,431,902	($379,900)

* 8 months data only, 1 July 09 to 28 February 10.

Factors that have influenced the activity cost

Funding for this activity was enhanced for 2007/08 and 2008/09 as a result of external funding through the NWC Watersmart Australia funding, and an associated NRM of $2 million. There is a large capital expenditure component in the costs of approximately $2 million per annum, although capital costs in 2009/10 are only $1million.

The Watersmart Australia revenue was to undertake additional groundwater assessment activities to provide the information required to prepare allocation plans consistent with the requirements of the NWI. The Watersmart Australia funding finishes in 2009/10.

Regional hydrogeological advice

Activity description

This activity involves the provision of advice from regionally specialised hydrogeologists to support groundwater licence application assessments. Hydrogeological assessments are undertaken for complex groundwater licence applications which have significant potential to impact other users, the water resource or the environment.

Total cost of function ($000s)

Year	Direct cost	On-cost	Total cost	Revenue
06-07	$177,503	$59,727	$237,230	$0
07-08	$0	$0	$0 [1]	$0
08-09	$0	$0	$0 [1]	$0
09-10*	$235,288	$58,819	$294,107	$0

* 8 months data only, 1 July 09 to 28 February 10.

[1] Costs were not separately identified for regional hydrogeologists in these years.

Factors that have influenced the activity cost

There are no significant trends in the cost of this activity. Nil expenditure is shown in 2007/08 and 200/8/09 because the activity was not separately costed in our financial management system.

Surface water assessment

Activity description

This activity undertakes analysis and hydrological studies to support water allocation planning, water licensing, and urban water planning functions in the department. It also assesses the impacts of climate change on surface water sources, and provides advice on surface water licence applications in areas without a water allocation plan in place.

Total cost of function ($000s)

Year	Direct cost	On-cost	Total cost	Revenue
06-07	$609,614	$138,458	$748,071	$0
07-08	$885,253	$148,191	$1,033,445	$0
08-09	$621,357	$149,286	$770,643	$0
09-10*	$375,703	$115,876	$491,579	$0

* 8 months data only, 1 July 09 to 28 February 10.

Factors that have influenced the activity cost

Expenditure for this activity has been relatively stable, although there were additional costs in 07/08 in recognition of the some additional surface water resource assessment work that was required to support allocation planning activities.

Water information collection

Activity description

The department operates and maintains a comprehensive network of surface water gauging stations and groundwater monitoring bores to provide information on the state's surface water and groundwater resources. The information is collected from over 300 gauging stations and about 3000 monitoring bores from the Kimberley to the South Coast. The network utilises some sophisticated instrumentation and telemetry to collect and download data. This state reference network has a replacement value of around $150 million.

The relative costs of surface water and groundwater monitoring cannot be determined directly, as the department's budgeting and finance systems do not deal with these areas separately. However, section 4 discusses how subsidiary information has been used to determine relative effort and costs for these areas.

Total cost of function ($000s)

Year	Direct cost	On-cost	Total cost	Revenue
06-07	$5,429,015	$1,869,973	$7,298,988	($18,182)
07-08	$6,504,883	$2,649,690	$9,154,574	($741,591)
08-09	$7,760,884	$2,533,315	$10,294,199	($501,634)
09-10*	$5,858,344	$1,387,712	$7,246,056	($123,690)

* 8 months data only, 1 July 09 to 28 February 10.

Factors that have influenced the activity cost

In response to the Office of Auditor General's 2003 report on the management of water resources, the department received additional funds in 2006/07 for a training and recruitment program for hydrographers, and a capital works maintenance budget for our gauging station assets.

Since 2007/08 the department has received significant external funding from the Bureau of Meteorology (BoM) for measurement program improvement initiatives. This funding is related to the BoM's role in water accounting, and the need to upgrade some of the department's activities to meet the information requirements of the BoM. While there may be some ongoing funding from BoM, it is not expected to continue in the long term, although the department will be required to provide

ongoing information to BoM under the requirements of the Commonwealth Water Act.

Water information management

Activity description

This activity involves the management of all water information collected by the department in a central repository of major datasets relating to water quality and quantity, spanning the last 100 years. Data from the department's large surface water gauging and groundwater monitoring network is quality assured and stored in relevant data bases, so that it can be available for all our water planning and management activities including assessing available water yields and the quality of water resources.

The activity also includes our water accounting function, where we collate and report data in the form on water accounts to the BoM under the requirements of the Commonwealth Water Act.

Total cost of function ($000s)

Year	Direct cost	On-cost	Total cost	Revenue
06-07	$774,109	$353,432	$1,127,542	$0
07-08	$978,764	$367,307	$1,346,071	($10,000)
08-09	$1,175,926	$504,567	$1,680,493	($80,000)
09-10*	$756,125	$242,519	$998,644	($58,800)

* 8 months data only, 1 July 09 to 28 February 10.

Factors that have influenced the activity cost

The cost of this activity have been relatively stable over the period except there were additional costs in 08/09 due to additional positions associated with growth in water accounting activities as required through implementation of the NWI.

External revenue was received from the NWC and BoM associated with three different initiatives: development of a biological data module for the WIN database, for water accounting data management activities, and for implementation of the BoM national water information program. The department will be required to continue to support these activities although external funding will not necessarily continue beyond the current financial year.

Water information provision

Activity description

This activity involves the extraction and provision of water information for users, and the development of tools, maps and models for accessing and displaying information (including on-line web tools). The department receives around 2800 requests for data each year from external parties.

Total cost of function ($000s)

Year	Direct cost	On-cost	Total cost	Revenue
06-07	$393,757	$157,782	$551,540	$0
07-08	$431,810	$175,527	$607,337	$0
08-09	$393,022	$160,132	$553,154	$0
09-10*	$263,812	$100,353	$364,165	$0

* 8 months data only, 1 July 09 to 28 February 10.

Factors that have influenced the activity cost

The costs of this activity have been relatively stable of the period.

Acquisition of P1 land

Activity description

The water source protection plans prepared by the department sometimes identify land that should be purchased to ensure the protection of public drinking water supplies. The department negotiates with land holders and purchases priority 1 land which presents a high risk of contamination of drinking water supplies.

Total cost of function ($000s)

Year	Direct cost	On-cost	Total cost	Revenue
06-07	$0	$0	$0	$0
07-08	$27,257	$0	$27,257	$0
08-09	$2,721,700	$0	$2,721,700	$0
09-10*	$2,625,524	$62,720	$2,688,245	$0

* 8 months data only, 1 July 09 to 28 February 10.

Factors that have influenced the activity cost

The significant annual cost variation for this activity is due to the ability to successfully conclude purchases on a "willing buyer – willing seller" basis. Also, the cost of land may exceed the annual budget, with the result that funds are accrued for purchase over two or more years.

Land asset management

Activity description

The department owns or controls a significant land estate totalling 714,000 hectares over 1235 individual land parcels. This include P1 land purchased to protect drinking water supplies, land historically purchased for other purposes, and reserves which have vested in the department.

Total cost of function ($000s)

Year	Direct cost	On-cost	Total cost	Revenue
06-07	$361,287	$0	$361,287	$0
07-08	$192,560	$79,718	$272,277	$0
08-09	$277,397	$60,427	$337,824	$0
09-10*	$104,212	$45,995	$150,207	$0

* 8 months data only, 1 July 09 to 28 February 10.

Factors that have influenced the activity cost

The costs of this activity have remained relatively stable.

4 The cost of our services

As discussed in section 2.2, most of the department's services are dependent on a range of activities within the department, and some activities support more than one service area. Therefore, the relative contribution of each activity needs to be determined to enable full costing of the services. The department has also been asked to advise ERA on the proportion of each activity that is for private benefit. These two factors both influence the extent to which the costs of our activities should be recovered.

This section takes a service based approach to present information on how our activities are linked and apportioned to manage the impacts of land and water use on water resources, and the extent to which they provide private benefit. For each of the services, we identify:

- the supporting activities and relative proportion of them which contribute to provide that service
- the proposed cost share to be recovered from users for each activity, or activity part, based on the cost sharing principles given in Section 2;
- the total cost to be recovered for the service. Unless otherwise stated, costs are based on the department's costs for the 08/09 financial year (as presented in section 3); and
- where relevant and available, the cost per unit output.

For each service, we also discuss the likely future trends in costs, and highlight any feasibility issues for cost recover...

4.1 Processing and assessment of applications for water licences and permits

Service description

Each year, the department deals with over 3000 applications for licence or permits required under the Rights in Water and Irrigation Act. This service area covers the activities involved in assessing those applications and issuing the licence or permit. It includes the maintenance of licensing processes and support systems.

Private parties associated with this service

The private parties associated with this service are applicants for licences to take water, permits for interference with bed and banks, and licences to construct or alter a well. It should be noted that applicants do not necessarily receive a licence or permit, as some applications may be refused. The ERA recommended that costs associated with this service should be recovered from licence or permit applicants via an application fee.

Attribution of activities to this service, private benefit proportion, and total cost to be recovered

The various activity areas which contribute to the processing of water licence and permit applications and the proposed cost recovery are shown below.

Processing and assessment of applications for water licences and permits

Contributing activities	Percentage contribution to function [1]	Percentage private benefit [2]	Percentage cost to be recovered [3]	Cost to be recovered [4]
Water licensing and compliance	100	100	100	$7,831,548
Water licensing support	100	100	100	$1,213,442
Regional hydrogeological advice	100	100	100	$ 441,160 [5]
Surface water assessment	10	100	10	$ 77,064
TOTAL				$9,563,214

[1] Based on assessment of the extent to which this activity supports the service function

[2] Based on assessment of the level of private benefit associated with this activity

[3] Determined by % contribution to the function x % private benefit

[4] Determined by % cost to be recovered x total cost of activity for 2008/09 as described in section 3.

[5] Based on estimated figures for 2009/10, as costs were not separately identified in 2008/09.

For the processing and assessment of applications for water licenses and permits, we believe all four contributing activities are undertaken for the sole purpose of this service, and that there are no public benefits derived from these activities.

Cost of each service output

Within this service area, there are a number of different applications for licences and permits (we refer to these collectively as instruments) which are assessed and determined:

- Licences to take water (5C licences), including new applications, renewals, amendments, transfers, trades and agreements;
- Permits to interfere with bed and banks of surface water systems; and
- Licences to construct or alter wells (26D licences).

In 2008/09, we issued a total of 3,346 instruments, comprising 2568 licences to take water, 726 licences to construct or alter a well, and 52 permits to interfere with bed or banks.

For each type of instrument, a number of individual process steps and activities are undertaken, from administration activities on receipt of the application, to assessment activities and issuing of the licence/permit.

In order to understand the effort involved in each type of instrument, and in the individual process steps, the department established a three month time keeping process for its licensing staff. Staff were asked to record the effort involved in each of 10 identified process steps, as well as recording various details about the type and complexity of the application. This time keeping exercise has enabled us to determine the costs of various types of applications, and the costs drivers for the effort involved.

The following tables present the data collected in a number of ways – by instrument type, by process step, by risk category, and by water type (groundwater or surface water). Data was collected at two office locations – Swan region and Busselton office. From the results, we do not believe that geographic location is a significant cost driver, except with respect to regional on-costs which apply to the northern parts of the state.

Average cost per instrument by instrument type

Instrument type	No issued 2008/09	Proportion of effort [1]	Cost	Average cost per instrument
New licence to take water	934	35%	$3,327,852	$3,563
Renewal of licence to take water	940	26%	$2,500,881	$2,661
Amendment of a licence to take water	534	16%	$1,564,983	$2,931
Trade or transfer of a licence to take water	160	6%	$577,708	$3,611
Licence to construct or alter a well	726	16%	$1,484,727	$2,045
Permit to interfere with bed or banks	52	1%	$107,063	$2,059
Total	3,346	100%	$9,563,215	

[1] Based on time sheets kept by licensing officers over 13 weeks.

The department further analysed the time taken to complete specific activities associated with processing and assessing applications for water licences. The following table shows the resulting cost involved in undertaking:

- activities that are common across all application types (e.g. administration activities, initial risk assessment, consideration of aerial survey information, review and sign off of application decision, and fielding of application related inquiries); and
- activities that may only apply to certain application types or for which the level of effort is likely to vary across the application types (hydrogeological assessment, operating strategy and site visit).

Average cost of individual licensing activities by instrument type

Instrument type	Common admin activities	Water resource impact assessment	Hydro assessment	Operating strategy	Site survey
New 5C	$1,159	$700	$490	$383	$831
Renewal 5C	$1,028	$339	$325	$250	$719
Amendments	$1,231	$469	$364	$216	$651
Trade / Transfer	$1,243	$502	$344	$423	$1,099
26D	$1,076	$445	$207	$317	$0
Permits	$994	$307	$211	$53	$493

This data indicates that relative effort does not vary greatly for most activities across the various instruments, although costs associated with 26D licences and permits are generally lower as they do not generally require hydrological assessment, and 26D licences to not require a field visit.

The department notes there are some inherent assumptions and limitations to the data and approach taken, which have largely arisen due to the short timeframe available for data collection and analysis. Accordingly, it is likely the results of the analysis would change if the study was performed over a longer period of time. These limitations and assumptions include:

- for some instruments and activities there are a limited number of data points available for analysis;
- for some instruments and activities there are apparent outliers, however as we have limited number of data points, we have not been able to determine whether these should be eliminated from the analysis;
- the existence of some low outliers suggests that the data may include time recorded on unfinished activities and therefore may be understated; and
- we have assumed the average labour cost per hour for each type of instrument is the same.

Due to the above assumptions and limitations, more detailed analysis of the cost of different types of application processes and assessments (for example, the differences in costs between applications deemed high, medium and low risk) has been difficult. However we have been able to differentiate the costs associated with:

- High, medium and low risk applications for new 5C licences and renewals of 5C licences;
- Surface water and groundwater applications for new 5C licences; and

- High, medium and low risk applications for new 5C groundwater licence applications.

While this analysis has been possible with the quantity of data collected, we note the same limitations and assumptions apply to the results.

Average cost per instrument by risk category for new and renewed 5c licences

Instrument type	Average total hours	No. instruments	Total hours	Proportion of effort	Total cost to be recovered	Cost per instrument
New 5C						
Low	11.94	422	5,042	33%	$1,091,559	$2,586
Medium	21.95	198	4,346	28%	$941,053	$4,753
High	19.06	314	5,982	39%	$1,295,241	$4,127
Total		934	15,370	100%	$3,327,852	$3,563
Renewals						
Low	12.19	754	9,190	77%	$1,915,843	$2,541
Medium	15.51	88	1,372	11%	$285,944	$3,234
High	14.68	98	1,435	12%	$299,094	$3,061
Total		940	11,996	100%	$2,500,881	$2,661

The risk categories take into account factors such as the resource allocation level (C1 – C4), the potential for unacceptable impacts on other users or the environment, and the volume of water requested.

The figures show a greater effort to assess medium risk versus high risk licences. We believe this is reflective of the real effort involved. Generally applicants for high risk licences submit greater levels of documentation, may have had a consultant involved, and have undertaken and submitted their own hydrogeological assessment. As a result, the information collation and assessment effort for the department is reduced.

Average cost per instrument by water type for new 5C licences

Instrument type	Avg total hours	No. instruments	Total hours	Proportion of effort	Total cost to be recovered	Cost per instrument
New 5C						
Groundwater	18.31	798	14,610	89%	$2,972,739	$3,725
Surface water	12.83	136	1,745	11%	$355,114	$2,611
Total		934	16,356	100%	$3,327,852	$3,563

The figures show that the effort for assessment of a new groundwater licences is greater than that for a surface water licence. We believe this is reflective of the real effort involved as assessment of groundwater applications is inherently more complex than surface water licences.

Average cost per instrument by risk category for new 5C groundwater licences

Instrument type	Avg total hours	No. instruments[1]	Total hours	Proportion of effort	Total cost to be recovered	Cost per instrument
New 5C Groundwater						
Low	13.43	361	4,844	35%	$1,039,527	$2,882
Medium	21.46	169	3,630	26%	$779,004	$4,605
High	20.06	268	5,379	39%	$1,154,208	$4,305
Total		798	13,853	100%	$2,972,739	$3,725

[1] Assuming the same split of high, medium and low risk instruments as for new 5C licence applications as a whole.

Likely future trends for this service output

The Department expects the number of applications received to continue to grow, especially new licences to take water, and licences to construct or alter a well. It is anticipated that over the next three years, the number of applications received will grow to around 3700.

The expected growth relates to a number of factors:

- the proclamation of new surface water areas in the south west and completion of allocation plans (Whicher area), with the a requirement that water users now hold a licence to take water;
- a return to growth in the number of new water users associated with expected growth in the economy;
- as areas become more fully allocated, a growth in applications for trades and transfers of licences.

The average effort involved in processing licences is expected to grow as management areas become more fully allocated and we deal with a great number of more complex licences. However, when areas reach full allocation, we expect to transfer our effort to evaluation and compliance activities.

The department does not currently licence garden bores, of which there are about 176,000 in the Perth area. Any move to introduce a licensing regime for garden bores would impose additional costs on the department. In its report "Options for cost recovery in water licensing" ACIL Tasman likened a garden bore licensing fee to a recreational fishing licence, the minimum cost of which is $24. Assuming this charge, the cost to administer a system for 176,000 bores would be $4.22 million. However, we believe that the costs would be significantly higher, as the activities involved are greater than those required to issue a fishing licence.

4.2 Licensing of the Water Corporation for the IWSS

Service description

This is the activity area in the department dedicated to licensing of the Water Corporation to abstract water for the Perth integrated water supply scheme (IWSS).

This activity has been separated from other licensing activity, in line with recommendation 16 of the ERA's draft report, which recommends that where the costs associated with licensing of particular large licence holders can be accurately identified, such costs should be charged to that licence holder.

Note that licensing of the Water Corporation for other areas of the state, not included in the IWSS, are incorporated into the costs of licensing discussed in section 4.1.

Private parties associated with this service

The Water Corporation is the only private party associated with this service.

Attribution of activities to this service, private benefit proportion, and total cost to be recovered

There is only one activity area in the department which contributes to the cost of this service, as shown below.

Licensing of Water Corporation for the Perth IWSS

Contributing activities	Percentage contribution to function	Percentage private benefit	Percentage cost to be recovered	Cost to be recovered
IWSS licensing	100	100	100	$ 324,211
TOTAL				$ 324,211

The department considers that the IWSS licensing function contributes fully to this service area, and that there are no public benefits. Therefore the costs should be fully recovered from the Water Corporation.

Cost of each service output

This service is provided in an integrated way and there are no individual outputs.

Likely future trends for this service output

There is unlikely to be any change in effort in this service output over the next three years.

4.3 Providing water allocations and managing the ongoing use of water

Service description

There are many activities undertaken by the department which enable it to determine the amount of water that can be taken by all water users within water resource, and to manage the ongoing use of that water. These activities and their relationship is shown in figure B. The ERA recommended that the cost of these activities be recovered through an annual charge, spread across existing licence holders and an estimate of new applicants.

As of 30 June 2009, there were a total of 13796 water use licences in force in WA.

Private parties associated with this service

The private parties associated with this service are those who use water in proclaimed water management areas. Most of these parties can be identified as they are those who hold a license to take water. However there are also some unlicensed water users in catchments (riparian users, stock and domestic bore users) who cannot be identified.

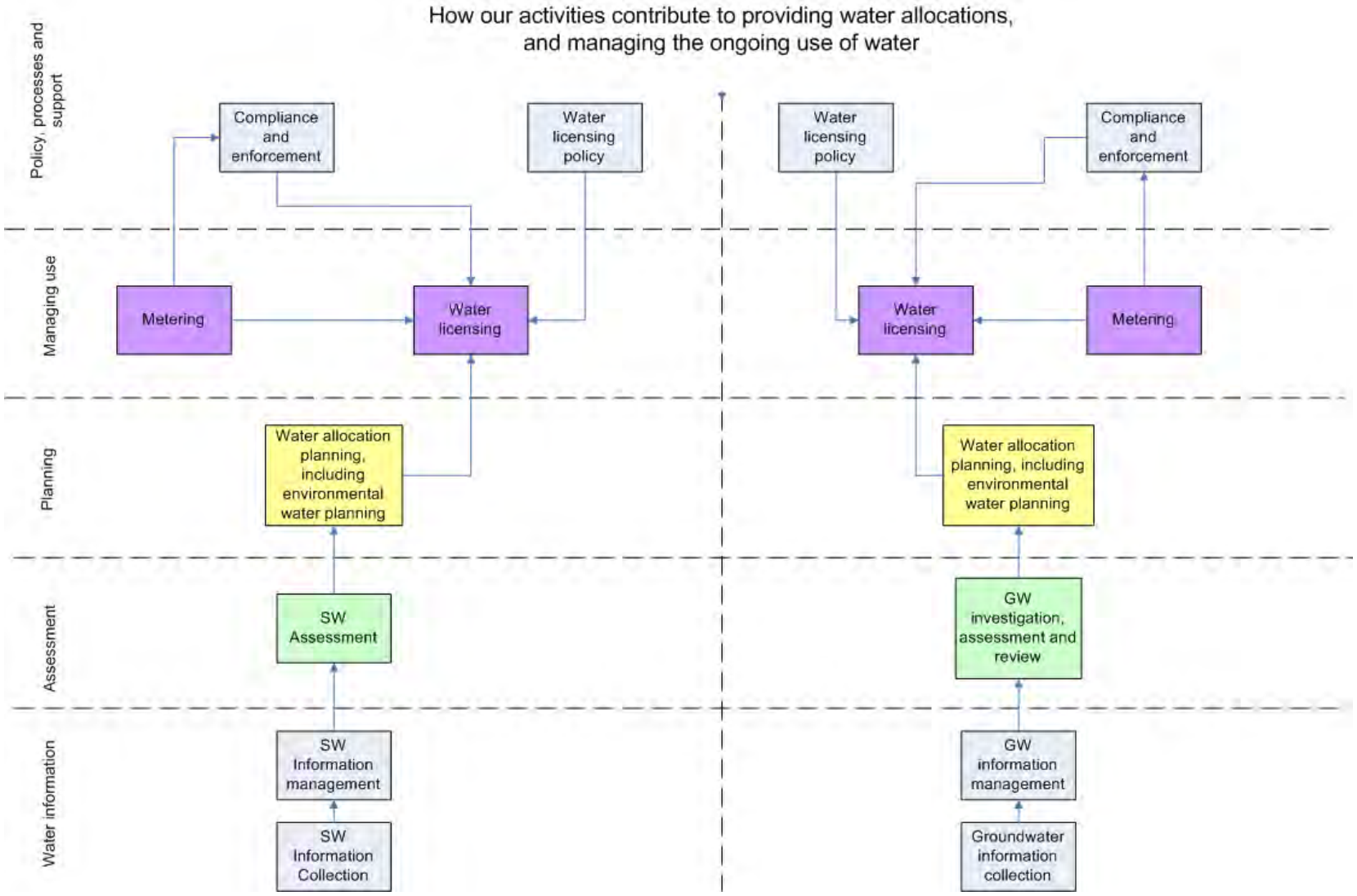


Figure B - How our activities contribute to providing water allocations and managing the ongoing use of water

Attribution of activities to this service, private benefit proportion, and total cost to be recovered

The various activity areas which contribute to this service and the costs which should be recovered from water licence holders are shown in the table below.

Managing the allocation and use of water

Contributing activities	Percentage contribution to function	Percentage private benefit	Percentage cost to be recovered [1]	Cost to be recovered
Water licensing policy	100	100	100	$1,887,395
Enforcement	100	100	100	$ 621,319
Metering	100	100	100	$2,954,969
Water allocation planning	100	80 [2]	80	$2,836,669
Environmental water planning	100	80 [2]	80	$2,497,852
Surface water assessment	80 [3]	80 [4]	65	$ 500,918
Groundwater assessment, investigation and review	90 [5]	80 [4]	70	$6,792,664
Surface water information collection [9]	15 [6]	80 [4]	10	$ 926,478
Groundwater information collection [9]	70 [7]	80 [4]	55	$ 566,181
Water information management	30 [8]	80 [4]	25	$ 420,123
TOTAL				$20,004,568

[1] Rounded to nearest 5 percent

[2] Recognises a public benefit component from allocation planning including maintenance of ecosystem process and environmental services. Also recognises that some private parties cannot be identifies (other non-licensed water user). This has been estimated as 20%. Environmental water planning is considered to be an integral component of allocation planning, and the public benefit has been considered for the two activities combined.

[3] Surface water assessment effort also contributes to other activities such as assessing long-term impacts of climate change, and for managing non-licensed water use.

[4] As these activities contribute directly to allocation planning, the same private benefit proportion is proposed.

[5] Groundwater assessment effort also contributes to public water source protection, and urban water management.

[6] Based on the primary and secondary purpose of surface water monitoring stations within proclaimed surface water source areas. Reflects the relatively small dependence on surface water in WA.

[7] From 'Improved groundwater resource management through better groundwater monitoring – a review of groundwater monitoring" which identified 67% of the groundwater monitoring network as contributing to groundwater assessment.

[8] Estimate of effort involved in managing 15% of surface water information, and 70% of groundwater information.

[9] Cost share of GW and SW measurement activity reflects cost estimates in groundwater monitoring review, with SW monitoring effort being 90% of total costs, and GW monitoring efforts being 10% of total costs.

Cost of each service output

Not all of the activities associated with this service apply equally to all licence holders. For example, metering costs only apply to those licensees who have a state-owned water meter. For this reasons, we have broken down this service area into three separate components:

- Water policy and enforcement, costs for which apply equally to all licence holders
- Water allocation planning and support activities, costs for which vary across licence holders
- Metering, costs for which only apply to those who have a state owned water meter.

Water policy and enforcement

Water policy and enforcement activities apply to all water users, regardless of the water resource management area from which they are taking water, the resource management category, or the nature of the licence. The table below shows the costs of these activities on a per licence basis. We believe that it is appropriate to charge for these costs equally across all users.

Cost per licence of activities which apply to all water use licence holders

Activity	Total cost 2008/09	Number of licences in force	Cost per licence
Water licensing policy	$1,887,395	13796	$137
Enforcement	$ 621,319	13796	$ 45
Total	$2,508,714	13796	$182

Water allocation planning and support activities

As shown in figure B, allocation planning is the activity that directly underpins the management of water use through licensing. Some other activities, in turn, support allocation planning.

We present the cost of these activities in several ways to enable the ERA to consider the most appropriate charging model:

- The costs of the various activities by the total number of water licences in force;
- The total cost by resource management category based on an assessment of relative effort, and by the number of licences in each resource management category; and
- The total cost of each water allocation plan prepared, with analysis by number of users, volume of water, and approximate duration of plans.

Cost of water allocation planning and support activities, by number of water licences in force

Activity	Cost to be recovered	Number of water use licences	Average cost per licence
Water allocation planning	$2,836,669	13796	$ 206
Environmental water planning	$2,497,852	13796	$ 181
Surface water assessment	$ 500,918	13796	$ 36
Groundwater investigation, assessment and review	$6,792,664	13796	$ 492
Surface water information collection	$ 926,478	13796	$ 67
Groundwater information collection	$ 566,181	13796	$ 41
Water information management	$ 420,123	13796	$ 31
Total	$14,540,885	13796	$ 1,054

Cost of water allocation planning and support activities, by resource management category and number of licences in force

Resource management category	Number of water use licences	Cost share [1]	Average cost per licence
C1	1049	$ 165,587	$ 158
C2	2727	$ 1,721,853	$ 631
C3 / C4	10020	$12,653,445	$ 1,264
All	13796	$14,540,885	$1,054

[1] Based on estimate that total effort to support C3/C4 areas is twice that for a C2 area. Effort for C1 areas is a quarter of that of a C2 area.

Our allocation plans are broadly either R 2 or R 3 category. Our plans generally cover several management areas and many individual water resources. Therefore, the individual resource categories may vary within a plan. For water areas with a C2,

C3 or C4 resource management category, we respond with an R 2 or R3 plan to set the allocation limits, resource objectives, licensing approach and monitoring approach. For the C4 resources within a plan, we specify a recovery strategy which varies depending on circumstances and may include:

- a cap on use at current levels, recovery of water through licence and land use changes, and/or
- targeted compliance and efficiency strategies.

As we don't plan separately for C4 resources, there is no cost distinction between licences in a C3 and C4 area. Ideally, we could more actively monitor compliance in C4 areas, but given we have not been able to separately cost our current compliance effort, this has not been considered.

Allocations plans can take up to four years duration to complete, and therefore we have analysed financial data since 2006/07 and used work plan information from the Branch to estimate the full costs of those allocation plans prepared since this time. For the support activities, we have distributed them to the plans on a proportional basis because we have not had a mechanism in place to record the effort against each plan. The results are shown in the table below.

Cost to produce allocation plans

Allocation plan	Plan class [1]	Period of plan preparation [2]	Total cost of allocation planning and environmental water planning [3]	Total cost of other contributing activities [3 4]	Total cost [3]	Allocation limit (GL)	Cost per GL of resource available	% Allocated	No. licensees	Annual cost per licensee (over 10 years) adjusted for % allocated
Ord River, 2006	R3	00/01 – 06/07 (6 years)	$1,901,429	$2,185,131	$4,086,560 [6]	905.0	$4,516	38%	73	$2,127 [6]
Ord surface water 2010	R3	07/08 – 10/11 (4 years)								
La Grange groundwater, 2010	R2	08/09 – 09/10 (2 years)	$366,082	$472,181	$838,263	50.0	$16,765	8%	8	$838
Carnarvon Artesian Basin groundwater, 2007	R2	05/06 – 07/08 (2 years)	$64,206	$64,693	$128,899	30	$4297	90%	37	$314
Lower Gascoyne groundwater, in prep	R3	09/10 – 10/11 (2 years)	$389,693	$493,603	$883,296	18 [9]	$49,072	184%	159	$556

Allocation plan	Plan class [1]	Period of plan preparation [2]	Total cost of allocation planning and environmental water planning [3]	Total cost of other contributing activities [3 4]	Total cost [3]	Allocation limit (GL)	Cost per GL of resource available	% Allocated	No. licensees	Annual cost per licensee (over 10 years) adjusted for % allocated
Arrowsmith groundwater, 2010	R2	06/07 – 09/10 (4 years)	$385,223	$457,212	$842,435	184.9	$4,556	37%	138	$226
Jurien groundwater, 2010	R2	06/07 – 09/10 (4 years)	$433,546	$514,377	$947,922	91.6	$10,348	22%	53	$394
Gingin groundwater, 2010	R2	08/09 – 10/11 (3 years)	$195,615	$252,832	$448,447	191 [10]	$2,348	40%	461	$39
Gingin surface water, 2010	R2	06/07 – 09/10 (4 years)	$437,298	$509,683	$946,981	5.0	$189,396	91%	33	$2611
Cockburn groundwater, 2007	R2	05/06 – 06/07 (2 years)	$103,084	$103,867	$206,951	44.7	$4,629	81%	311	$54

Allocation plan	Plan class [1]	Period of plan preparation [2]	Total cost of allocation planning and environmental water planning [3]	Total cost of other contributing activities [3 4]	Total cost [3]	Allocation limit (GL)	Cost per GL of resource available	% Allocated	No. licensees	Annual cost per licensee (over 10 years) adjusted for % allocated
Southwest groundwater, 2009	R3	03/04 – 08/09 (5 years)	$2,605,304	$2,934,402	$5,539,706 [7]	212.4	$26,081	62%	2556	$134 [7]
Kemerton groundwater, 2007	R2	05/06 – 07/08 (3 years)								
Esperance groundwater, 2007	R2	05/06 – 06/07 (2 years)	$175,233	$176,563	$351,796	7.8	$45,102	40%	32	$440
Rockingham-Stakehill groundwater, 2008	R2	05/06 – 07/08 (3 years)	$231,034	$258,380	$489,414	23.8	$20,564	75%	397	$92
Gnangara groundwater, 2009	R3	06/07 – 09/10 (3 years)	$3,184,206	$3,790,361	$6,974,567	303.7	$22,965	87%	5097	$119

Allocation plan	Plan class [1]	Period of plan preparation [2]	Total cost of allocation planning and environmental water planning [3]	Total cost of other contributing activities [3 4]	Total cost [3]	Allocation limit (GL)	Cost per GL of resource available	% Allocated	No. licensees	Annual cost per licensee (over 10 years) adjusted for % allocated
Upper collie groundwater and surface water, 2009	R3	05/06 – 09/10 (5 years)	$2,029,029	$2,427,890	$4,456,919 [8]	136.3	$32,699	77%	55	$6,240 [8]
Lower Collie surface water, in prep	R3	06/07 – 10/11 (5 years)								
Whicher surface water, 2009	R2	06/07 – 09/10 (4 years)	$1,497,843	$1,767,526	$3,265,370	94	$34,738	15%	149	$329
Warren Donnelly, in prep	R2 / R4	06/07 – 10/11 (5 years)	$1,119,625	$1,388,892	$2,508,517	60.4	$41,531	43%	293	$368
Canning River, 2010	R3	06/07 – 10/11 (5 years)	$780,074	$911,732	$1,691,806	0.65 [10]	$2.6 m	100%	53	$3192

Allocation plan	Plan class [1]	Period of plan preparation [2]	Total cost of allocation planning and environmental water planning [3]	Total cost of other contributing activities [3 4]	Total cost [3]	Allocation limit (GL)	Cost per GL of resource available	% Allocated	No. licensees	Annual cost per licensee (over 10 years) adjusted for % allocated
Murray groundwater, 2010	R2	09/10 – 10/11 (2 years)	$280,385	$359,207	$639,591	55.0	$11,629	26%	230	$72

[1] Resource management category based on level of allocation (R2 – 30%-70% allocated, R3 – 30%-100% allocated)

[2] For those plans which commenced prior to 2006/07, costs for each year prior to 2006/07 has been assumed to be the same as the 2006/07 cost.

[3]Total cost over all years.

[4] Based on the total cost of those activities that contribute to allocation planning as shown in Figure B. This excludes costs of policy, enforcement, metering, and accounting.

[5] As of 30 June 2009 or 21 May 2010, depending on data available.

[6] Cost for Ord plans have been combined to give overall cost for this management area. The plans are complimentary, not duplicative, with the 2010 plan providing great clarity on environmental water provisions, and allocations for hydroelectric power generation.

[7] Cost of Southwest groundwater plan and Kemerton plan have been combined, as SW plan covers all of Kemerton area

[8] Cost of plans for Collie area have been combined and average over all groundwater and surface water users, due to complexity in coverage of plans.

[9] Current allocation limit set in previous plan, published in 2004.

[10] Draft allocation limit as plan still being finalised.

The information in the table above shows a very large variability in the total cost of plans, and that the costs do not necessarily reflect only the resource management category. The cost of plans also reflects a much broader range of factors, including the scope of the water resources addressed, the complexity of the water resources, the level of investigations required, the level of community interest, and the extent of dependent ecosystems.

Metering

Water metering costs only apply to licensees who have a government owned water meter in place. To date, the department has implemented metering programs in two water resource management areas, Carnarvon Groundwater Area and the Gnangara Mound. Our Gnangara Mound metering activities are most recent, and we use these to provide the per meter costs.

Cost of metering activities per meter installed at Gnangara for 2008/09

Area	Activity	Cost	Number of meters	Cost per meter
Gnangara	Meter supply and installation	$1,461,925 [1]	398	$ 3,673
	Meter maintenance	$ 78,670 [2]	28	$ 2,810
	Meter reading and other activities [3]	$1,157,292	1266	$ 914 [4]
Total		$2,697,887 [5]		

[1] Installation costs as per contract for service for 2008/09. Costs do not include internal management costs.

[2] Maintenance costs as per contract for service for 2008/09. Costs do not include internal management costs.

[3] Other costs include program planning and management, establishing and managing installation and maintenance contracts, data management, and reporting.

[4] Annual cost per meter, two readings per year.

[5] Remaining costs ($257,082) are for Carnarvon.

Likely future trends for this service output

We expect our effort in this service area will continue to increase over the next three years and beyond. The need for increased effort is driven by a number of factors:

- The growth in water use in WA, with an increasing number of water resource reaching higher levels of allocation, requiring a more detailed assessment , planning and management response;
- The commitment to the National Water Initiative to develop statutory plans which provide security for water users, based on a consumptive pool approach. This will require increasingly sophisticated planning and management response, with a great emphasis on monitoring and adaptive management.
- An increase need to focus on compliance and enforcement as water resources become more fully allocated.

4.4 Protecting public drinking water sources

Service description

The department undertakes a range of activities with the aim of protecting drinking water sources used by the Water Corporation and other public water supply service providers to provide water supplies to customers. Other service providers include AQWEST, the Busselton Water Board, mining companies and local government authorities.

Private parties associated with this service

The private parties associated with this service are public water supply customers around the state, via the public water supply service providers.

Attribution of activities to this service, private benefit proportion, and total cost to be recovered

The various departmental activities which contribute to the protection of public water supplies are shown in the table below.

Protecting public drinking water sources

Contributing activities	Percentage contribution to function	Percentage private benefit	Percentage cost to be recovered	Cost to be recovered
Water source protection planning	100	100	100	$1,106,436
Groundwater assessment, investigation and review	5	100	5	$ 485,190
Preparation of guidance notes	50 [1]	100	50	$ 425,738
Implementation of water source protection plans	20 [2]	100	20	$ 138,802
Acquisition of P1 land	100	100	100	$2,721,700
Land management	20 [3]	100	20	$ 67,565
TOTAL				$4,945,431

[1] Guidance notes are also used throughout the state to guide decision makers on the water impact of various land use activities.

[2] Percentage of implementation costs incurred by Water Corporation for activities such as signage. Remaining costs are attributed to land use developers via statutory referrals – see section 4.5.

[3] The department manages a large land portfolio. Only 20% of the land management activity costs are for management of P1 land in existing water supply catchments.

Cost of each service output

As of June 2009, there were 146 public drinking water sources in Western Australia, and of these, 102 had water source protection plans in place. The department prepares between 10 and 15 plans a year, depending on complexity, and is preparing 14 protection plans in 2009/10.

The effort involved in preparing water source protection plans depends on the complexity of land uses, the geographical location and the level of community interest/stakeholder involvement. We have classified plans into two categories, simple or complex, and for each type of plan, have estimated the relative effort involved. Plans take approximately 1 year duration to prepared, so we did not have sufficient time to gather data via a time keeping approach. However, the branch

maintains good staff work plans, and estimate that simple plans take 35 per cent of the effort of complex plans.

The table below shows the average cost for simple and complex protection plans prepared in 2008/09. It excludes the costs associated with acquisition of P1 land and land management as these activities do not apply across all plans.

Cost of water source protection plans in 2008/09

Plan type	Number produced in 08/09	Relative effort per plan [1]	Cost share	Average cost per plan
Simple	4	0.35	$ 407,923	$ 101,981
Complex	6	1	$1,748,243	$ 291,374
Total	10	7.4 shares	$2,156,166 [3]	

[1] Based on branch estimate of workload and costs involved, total relative effort is (4 x 0.35) + (6 x 1) = 7.5

[2] Relative effort per plan / total relative effort (7.5)

[3] Based on total cost of service in 08/09, excluding land acquisition and land management components which do not apply across all service providers.

The table below shows, for each service provider, the number of simple and complex plans which apply, the percentage of effort involved, and the cost. The cost excludes those associated with acquisition of P1 land, and land management. These two activities do not apply across all service providers.

Cost of water source protection plans by water service providers

Service Provider	Number of simple plans	Number of complex plans	% of cost attributable [1]	Annual cost [2]
Water Corporation	64	36	97.7	$2,106,574
AQWEST	0	1	1.7	$ 36,655
Busselton Water Board	1	0	0.6	$ 12,937
TOTAL	65	37		$2,156,166

[1] Based on relative effort of simple plans being 35% of complex plans, times the percentage of plans which apply.

[2] Based on total cost of service in 08/09, excluding land acquisition and management components which do not apply across all service providers = $2,156,166.

For the acquisition of P1 land, and ongoing management of this land, this should be recovered from the relevant public drinking water service provider on a case by case basis. Given the cost of land, the department generally purchases only one or two properties per year, and sometimes there are no acquisitions.

For the financial year 08/09, $2,721,700 was expended for purchase of properties in the Brookton- Happy Valley water reserve and Yerecoin water reserve, both highly vulnerable groundwater sources. Both sources are operated by the Water Corporation.

For ongoing management, all P1 properties purchased by the department are located in drinking water supply catchment operated by the Water Corporation. Therefore, the ongoing management costs for P1 land ($67,565 in 2008/09) should be recovered from the Water Corporation.

Likely future trends for this service output

There are unlikely to be significant cost trends for this service output. The department will continue to develop new plans for those areas that do not have plans in place, on a priority basis, and plans will be reviewed and revised for those areas experiencing rapid growth or land use change. Plan implementation is also expected to continue at around the current cost.

4.5 Providing advice on statutory referrals

Service description

The department receives referrals of land planning and development applications from local government authorities (LGAs) and the Western Australian Planning Commission (WAPC). These referrals provide the opportunity for the department to provide advice to decision making authorities on water management impacts (including impact on water source protection areas) of proposed land use development.

Private parties associated with this service

The private parties associated with this service are land use development proponents, ranging from individuals to companies, and including proposals related to urban development, industrial development, and intensification of rural activities. Where the proposals are at a local scale (sub-divisions or local planning and development proposals) the proponents can be identified. Where they occur at a district or regional scale, the proponents generally cannot be identified as the planning is often done in anticipation of development, not triggered by individual development proposals. In these cases, the potential beneficiaries of the work could be any holders of land within the areas concerned.

Attribution of activities to this service, private benefit proportion, and total cost to be recovered

The following table shows the activities involved, the proposed percentage share of the cost of those activities which should be recovered, and the total costs to be recovered.

Statutory referrals

Contributing activities	Percentage contribution to function	Percentage private benefit	Percentage cost to be recovered	Cost to be recovered
Statutory referrals	100	100	100	$1,424,201
Implementation of water source protection plans	80 [1]	100	80	$ 555,208
Preparation of guidance notes	50 [2]	100	50	$ 425,738
TOTAL				$2,405,147

[1] Reflects the component of water source protection plan implementation which relates to providing advice on land use and development proposals in public drinking water supply catchments.

[2] Reflects the component of guidance notes that contributes to providing advice on the impact of land use and development proposals.

Cost of each service output

In 2008/09, the department responded to 2189 statutory referrals. This gives an average cost per referral of $1099. However the referrals we deal with range greatly in their complexity and the effort involved in responding.

The department receives five different types of statutory referral, as shown in the table below. The referrals range from specific local scale proposals, such as subdivisions, to regional scale, strategic planning scheme referrals. Some statutory referrals are accompanied by a technical report, which is assessed as part of the referral. Generally the more strategic the referral, the greater the effort required to respond. However, the effort involved in local scale proposals also varies considerably based on the complexity of the proposal, the water resource risk, and the level of public interest.

The departments Statutory Referrals System is used to record the statutory referrals received by the department, and to document the responses. This is used for key performance indicator reporting. The system enables the department to report on the total number of referrals received, but it does not allow differentiation into the five referral types. The number of technical reports assessed along with statutory referrals is recorded separately.

In order to understand the effort involved in the various statutory referrals we deal with, the department implemented a two month time keeping exercise for relevant staff. Staff were asked to record the effort involved in responding to the five different types of statutory referrals, and to record additional details around the complexity,

level of public interest and water resource risk. They were also asked to record whether the referral involved assessment of a technical report, as we believed that this may add to the effort involved.

The results of the time-keeping exercise are shown in the tables below. The first table shows the average cost per referral type based on the relative effort, and the second table shows the overall annual cost for each referral type.

Relative effort in responding to statutory referrals over 8 weeks, April – May 2010

Referral type	**No referrals received**	**% of total effort involved**	**Average cost per referral**
Sub-division and development applications	233	45%	$651
Local planning proposals	40	38%	$3,167
District planning proposals	20	14%	$2,393
Regional planning proposals	3	0%	$437
Clearance of sub-division conditions.	8	2%	$819

Overall cost of each statutory referral type

Referral type	% of total effort involved	Total cost
Assessment of sub-division/Development proposal	45%	$1,091,827
Assessment of local level planning proposal	38%	$912,075
Assessment of district level planning proposal	14%	$344,599
Assessment of regional level planning proposal	0%	$9,441
Clearance of sub-division conditions	2%	$47,205
Total	100%	$2,405,147

There are some inherent assumptions and limitations to the data and approach taken, which have largely arisen due to the short timeframe available for data collection and analysis. Accordingly, it is likely the results of the analysis would change if the study was performed over a longer period of time. These limitations and assumptions include:

- for some types, particularly the more strategic ones, there are a limited number of data points available for analysis;
- for all of the referral types, there are apparent outliers, however as we have limited number of data points, we have not been able to determine whether these should be eliminated from the analysis;
- the existence of some low outliers suggests that the data may include time recorded on unfinished activities and therefore may be understated. This is particularly the case for the district and regional scale proposals, where assessment will be ongoing over a time period well in excess of the 2 months data recording period; and
- we have assumed the average labour cost per hour for each type of referral is the same.

Due to the above assumptions and limitations, more detailed analysis of the cost of different types of referral (for example, the differences in costs between simple and complex referrals) has been difficult. However, we provide the information for the sub-division and development applications, local planning proposals, and district planning proposals, where we have the greatest confidence in the data.

The table below shows the relative cost of simple, medium and complex referrals for the sub-division and development referrals, and the local and district level planning proposals.

Cost of simple versus complex referrals

Referral type	Average cost, high complexity referrals	Average cost, medium complexity referrals	Average cost, low complexity referrals
Sub-division and development applications	$2,060.64	$1,545.57	$414.12
Local planning proposals	$5,304.11	$3,941.53	$646.95
District planning proposals	$3,237.28	$1,945.19	$1,184.03

As expected, for all three category of referral, the level of effort involved reflects the level of complexity. However, we expect that the effort involved in district planning proposals may be understated due to the limitations of the data discussed above.

We also assessed the level of effort involved for the five different referral types depending on whether or not a technical report was submitted and also required consideration.

The results, shown in the table below, confirm that for most statutory referral types, the effort involved increases substantially where a technical report accompanies the application. However, the time taken for clearance of sub-divisions and regional scale planning proposals is less when a technical report is involved. This may be due to limitations of the data, or, for sub-division clearances, it may be that the substantiation of actions demonstrated in a technical report makes the assessment process quicker.

Effort to assess statutory referrals with and without technical reports

Referral type	Average hours with technical report	Average hours without technical report	Average hours total
Assessment of sub-division/Development proposal	2.96	0.76	1.16
Assessment of local level planning proposal	7.74	1.93	5.64
Assessment of district level planning proposal	4.95	2.64	4.26
Assessment of regional level planning proposal	0.75	0.83	0.78
Clearance of sub-division conditions	1.00	1.60	1.46

Likely future trends for this service output

We expect that there will be a continuing increase in the number of technical documents that the department receives for assessment, across all levels of planning and development referrals. However, we are working to offset this workload through working with local government to increase their capacity to assess water management issues, and through streamlining our responses in the sub-division area. We expect our overall costs to remain static.

4.6 Guiding urban drainage and water management

Service description

This service is primarily the provision of advice to guide the management of water in urban environments. We do this through the preparation of drainage and water management plans, undertaking technical assessments and drainage modelling, and developing best management practices.

Private parties associated with this service

The private parties associated with this service are landholders in existing urban areas with arterial drainage systems in place, and land developers in planned future urban areas. For planned future urban areas, the private parties cannot be identified, as the planning is at a strategic level and precedes urban development.

Specific urban development areas are not identified until detailed land use planning is undertaken.

Attribution of activities to this service, private benefit proportion, and total cost to be recovered

The activities involved in providing this service are shown in the table below.

Guiding urban drainage and water management

Contributing activities	Percentage contribution to function	Percentage private benefit	Percentage cost to be recovered	Cost to be recovered
Drainage and water management planning	100	0 [1]	100	Nil
Arterial drainage studies	100	100	100	$1,508,143
Groundwater assessment, investigation and review	5	0 [1]	100	Nil
TOTAL				$1,508,143

[1] No private benefit, as the private parties cannot be identified

Cost of each service output

The cost per unit output for services related to guiding urban drainage and water management cannot be determined at this stage.

The drainage and water management planning component is a relatively new activity in the department, and the nature of this planning is evolving. The plans prepared to date have varied significantly depending on the extent of previous work undertaken, whether they are green field sites or having some existing urban development, and/or the status of land use planning undertaken by the WA Planning Commission (WAPC). Some plans have also been cooperative ventures with the Water Corporation, WAPC, and local government.

Given the large variation in plans, the department would need to collect subsidiary information over a suitable length of time to be able to better cost this activity. It is estimated that the duration of time for plans to be prepared is between one to two years, and this would be the appropriate time period over which to collect information.

The cost per unit output for arterial drainage studies also cannot be determined at this stage. There is no defined standard product for this activity area, with the scope of the studies varying greatly depending on the management issues involved. The

department would need additional time to collect information on the scope of each study, activities involved, and the costs that are incurred.

4.7 Providing floodplain management advice

Service description

This is the service we provide externally to give advice on floodplain areas and flood levels, generally related to specific planning and development proposals. The objective is to protect life and property by ensuring that development does not occur in areas with an unacceptable risk of flood.

Private parties associated with this service

The private parties associated with this service are primarily proponents of land use and development proposals in or near floodplain areas via local government authorities, the WAPC or consulting companies. The department also receives requests for information from property valuers, real estate agents, and other government agencies.

Attribution of activities to this service, private benefit proportion, and total cost to be recovered

There is only one activity area which contributes to this service, as shown in the table below. We believe that all this activity is for private benefit.

Providing floodplain management advice

Contributing activities	Percentage contribution to function	Percentage private benefit	Percentage cost to be recovered	Cost to be recovered
Floodplain management advice	100	100	100	$ 728,300
TOTAL				$ 728,300

Cost of each service output

Cost per unit output

All requests to the department for floodplain advice are recorded in a spreadsheet within the work area. The requestor and nature of the request are recorded, but not the time taken to respond to the request. Therefore we do not have real data to distinguish the costs of requests, depending on complexity or scope. Advice from

the branch is that it can take as little as thirty minutes to as much as four days to provide the advice.

For 2008/09, the department responded to 895 requests for floodplain information. With a total cost of $728,300, this gives an average cost per enquiry of $814.

Given the comparatively low average cost per service, the cost of recovering funds for this service may outweigh the benefits.

Likely future trends for this service output

The department does not expect any significant trends for this service over the next few years.

4.8 Providing water information

Service description

Each year, the department services around 2800 requests for water data from its comprehensive water information systems, covering groundwater and surface water around the state.

Private parties associated with this service

Data requests are received from consultants, state government agencies, private individuals, companies, universities, and the commonwealth government. For consultants and companies, the data is for private benefit, usually to support documentation for major development proposals in the state.

Attribution of activities to this service, private benefit proportion, and total cost to be recovered

There is only one activity that contributes to this service as shown below.

Providing water information

Contributing activities	Percentage contribution to function	Percentage private benefit	Percentage cost to be recovered	Cost to be recovered
Water information provision	100	50[1]	50	$276,577
TOTAL				$276,577

[1] Based on subsidiary information maintained by the branch which demonstrates that 51% of data requests are for private parties.

Cost of each service output

The data provision group in the department maintains records of all data provision requests, including the scope of the data and the requesting party. The records show that only about 51per cent of data requests are for private organisations. The remainder are from commonwealth, state and local governments, universities, and non-government organisations.

There were 1804 private sector data requests for the 2009 calendar year. This gives an average cost of each data request of $153.

Likely future trends for this service output

The Bureau of Meteorology (BoM) collects water information (at no cost to them) from the department under its powers in the Commonwealth Water Act 2007 (under that Act we are compelled to provide it promptly to BoM).

BOM will be making the supplied information available free from its Australian Water Resource Information System (AWRIS) platform in the near future. There may be less demand for data from DoW, although this will depend in the functionality of the BoM system.

With the introduction of the AWRIS as an alternative free service, there is likely to be a lower level of demand for this service from the department, and the cost of recovering funds is likely to outweigh the benefits.

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