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GOVERNMENT NOTICES • GOEWERMENTSKENNISGEWINGS

DEPARTMENT OF WATER AND SANITATION

NO. 4992

21 June 2024

NATIONAL WATER ACT. (ACT NO.36 OF 1998)**REVISED PRICING STRATEGY FOR RAW WATER USE CHARGES IN TERMS
OF SECTION 56 (1) OF THE NATIONAL WATER ACT, 1998.**

I, Senzo Mchunu, MP, Minister of Water and Sanitation, with the concurrence of the Minister of Finance, hereby in terms of section 56(1) of the National Water Act, 1998 (Act No. 36 of 1998), publish the revised Pricing Strategy for Raw Water Use Charges, as contained in the schedule hereto.

SCHEDULE**A PRICING STRATEGY FOR RAW WATER USE CHARGES****PREFACE**

The National Water Act, 1998 (Act no. 36 of 1998), gives power to the Minister with the concurrence of the Minister of Finance, from time to time by notice in the Gazette to establish a Pricing Strategy for charges for any water use within the framework of existing relevant government policy.

The previous Pricing Strategy was published in March 2007 and since its publication, it was not aligned with the National Water Resource Strategy with its revisions. These include amongst others, the provisions for equitable allocation of water resources among users and the transparent application of the user pays principle in water resources.

The revised Pricing Strategy makes provision for a system of multi-year charges to ensure a predictable approach in raw water pricing. Different categories of water users are provided for such as Agricultural users, municipalities, industry and mining users, strategic users, stream flow reduction activities and non-consumptive water use. Different categories of charges are accounted for such as the water resource management charges, water resource infrastructure charges, waste mitigation charge, water research levy, economic regulation charges and a non-consumptive charge. This revised pricing strategy provides a greater degree of transparency on how raw water is priced in the country.

The effective date for the implementation of this Pricing Strategy by raw water management institutions is April 2026. This will be supported by the development of an implementation guide to ensure successful rollout of this Pricing Strategy.



Mr. S Mchunu, MP

Minister of Water and Sanitation

Pricing Strategy for Raw Water Use Charges

2024



water & sanitation

Department:
Water and Sanitation
REPUBLIC OF SOUTH AFRICA

Raw Water Pricing Strategy

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List of Acronyms

CMA	Catchment Management Agency
CPI	Consumer Price Index
CUC	Capital Unit Charge
DWS	Department of Water and Sanitation (formerly referred to as Department of Water Affairs or DWA)
eWULAAS	Electronic Water Use Licence Application and Authorisation System
GA	General Authorisation
GWS	Government Water Scheme
NWA	National Water Act, No. 36 of 1998
NWRIA	National Water Resource Infrastructure Agency
O&M	Operations and Maintenance
ROA	Return On Asset
SFRA	Stream-Flow Reduction Activities
VAT	Value Added Tax
WDCS	Waste Discharge Charge System
WMA	Water Management Area
WMC	Waste Mitigation Charge
WQPL	Water Quality Management Planning Limits
WRA	Water Research Act, No. 34 of 1971
WRC	Water Research Commission
WRL	Water Research Levy
WRM	Water Resource Management
WRMC	Water Resources Management Charge
WTE	Water Trading Entity
WUA	Water User Association
WULA	Water Use License Application

Definitions

In this pricing strategy, any word or expression to which a meaning has been assigned in the National Water Act shall bear that meaning, unless the context otherwise indicates –

Betterment:	The augmentation or alteration of an asset that results in a material improvement to the capacity or performance of that asset. Also known as upgrade.
Capital Unit Charge (CUC):	A system and/ or scheme based charge for repayment of loans/funds raised in commercial markets (off-budget) to fund the development of bulk raw water infrastructure.
Catchment Management Agency:	An entity established in terms of Chapter 7 of the National Water Act (No. 36 of 1998) as a Schedule 3A public entity in terms of the Public Finance Management Act (No. 01 of 1999). Catchment Management Agencies are responsible for the management of water resources in a water management area.
Catchment area:	As per Section 1(1)(iii) of the NWA, a catchment in relation to a watercourse(s) or part of a watercourse, means the area from which any rainfall will drain into the watercourse(s) or part of a watercourse, through surface flow to a common point(s).
Charge	As per Section 1 (1)(iv) of the NWA, a charge includes a fee, price, or tariff imposed under NWA.
Consumer Price Index:	Measures changes in prices for a range of consumer products, it reflects the general cost of living and is a representative basket of goods and services to the consumer.
Controlled Activity:	As per Section 37(1) of the NWA, a controlled activity is defined as irrigation of any land with waste or water containing waste; an activity aimed at the modification of atmospheric precipitation, power generation activity which alters the flow regime of a water resource; intentional recharging of an aquifer with any waste of water containing waste; any activity that has been declared as such under section 38.
Provision of Depreciation:	Cost intended to fund the refurbishment of the water infrastructure to restore the assets in real terms and improve its expected useful life.
Ecological infrastructure:	Water-related ecological infrastructure refers to functioning ecosystems that produce and deliver water-related services that are of value to society, such as water quality enhancement, flood attenuation, reduction of sedimentation of dams and streamflow regulation.
Full cost:	Means the recovery of the full operational costs (Direct and Indirect) including capital charges.
Government water works:	As per Section 1(x) of the NWA, a Government Water Works is a waterwork owned or controlled by the Minister and includes the land on which it is situated.
Operations and maintenance cost:	The estimated annual cost of operating and maintaining the water supply facility when operated at average day capacity.
Production Price Index:	A measure of the change in the prices of goods either as they leave their place of production or as they enter the production process. It reflects the

	cost of manufacturing goods and includes capital and intermediate goods excluding services.
Public interest functions:	Relates to water resource management activities that are in the public interest and the costs are funded through fiscal support.
Raw water:	Means untreated water from the water resources
Renewable energy	The process of harnessing the natural water sources to produce electricity
Resource poor farmer or tree grower:	Means a farmers or tree growers who are approved for financial assistance in terms of regulations set under Section 62 of the NWA.
Resource Quality Objectives:	Clear goals relating to the quality of the relevant water resources. The resource water quality objectives are numerical and narrative descriptors of quality, quantity, habitat, and biotic conditions that need to be met to achieve the required management scenario, as per Section 13 – 15 of NWA.
Scheme:	Means a single Government waterworks or collection of inter-related Government waterworks supplying raw water to authorised users.
Strategic Use:	Means uses that are strategically important to the national economy, as described in Section 6(1)(b)(iv) of the National Water Act and which must be authorised by the Minister, including the transfer of water from one water management area to another.
The Department:	Refers to the Department of Water and Sanitation (DWS), which includes any reference to the former Departments of Water Affairs and Forestry or Water Affairs as Gazetted as well as its successor.
Waste Discharge Charge System:	Is a framework for charging for the discharge of waste into water resource around the Polluter Pays Principle and the adoption of the economic instruments with the aim to promote the sustainable development and efficient use of water resources. It is informed by Section 56(5) of NWA in relation to water uses as per section 21 (e) (f) (g), and (h).
Waste Mitigation Charge:	Is related to the recovery of costs associated with mitigation and abatement measures employed in the water resource on the surface water and ground water. The User charge is established in terms of Section 56 of the NWA. It is based on the identification and assessment of feasible mitigation measures to reduce the catchment load or its impacts.
Waste:	Includes any solid material or material that is suspended, dissolved or transported in water (including sediment) and which is spilled or deposited on land or into a water resource in which such volume, composition or manner as to cause, or to be reasonably likely to cause the water resource to be polluted. As per section 1 (xxiii) of the NWA.
Water Reserves:	Means the quantity and quality of water required a) to satisfy basic human needs by securing basic water supply, as prescribed under the Water Services Act 108 of 1997 for people who now or who will in the reasonably near future be i) relying upon ii) taking water from iii) being supplied from the relevant water resource and b) to protect aquatic ecosystems in order to secure ecologically sustainable development and use of the relevant water resource as defined in Section 1(xviii) of the NWA
Water use:	As defined in Section 21 (a-k) of the NWA.

1. Introduction

1.1 Why this pricing strategy?

This pricing strategy provides the framework for the pricing of the use of water from South Africa's water resources and the discharge of water into a water resource or onto land. The overall objective of the pricing strategy is to promote the effective and efficient management of water to support equitable and sustainable economic growth and social development in line with the overarching goals of the National Water Resources Strategy.

It is developed in terms of Section 56 of the National Water Act, which empowers the Minister of Water & Sanitation, with the concurrence of the Minister of Finance, to establish a pricing strategy for charges of any water use within the framework of existing relevant government policy.

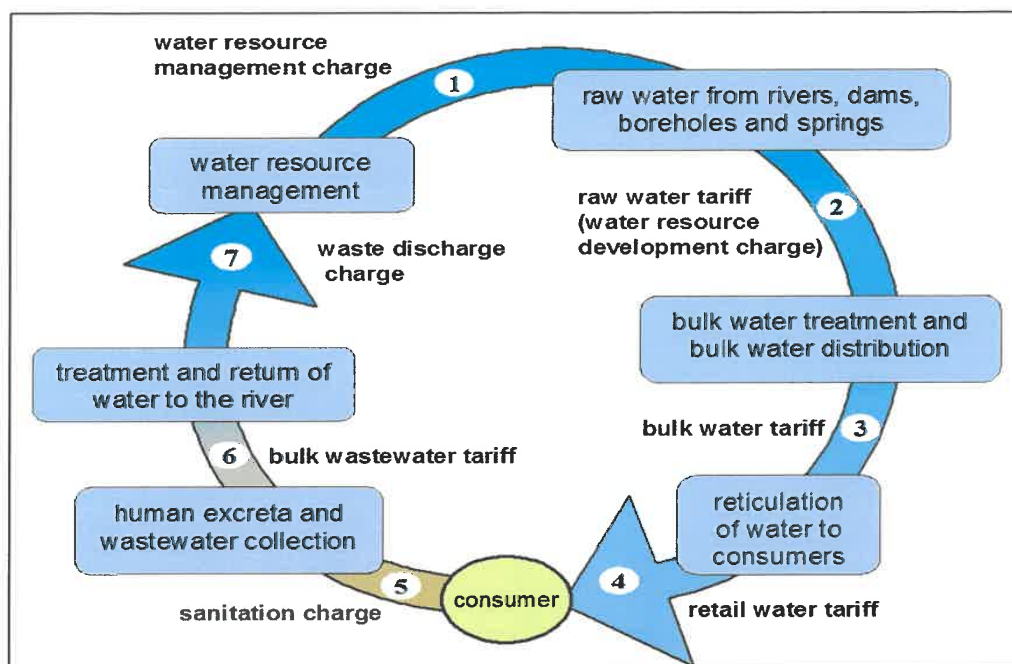
1.2 What are the objectives of the pricing strategy?

This strategy seeks to provide a transparent and predictable approach for raw water pricing. It is intended to support the achievement of the National Water Resources Strategy goals, that water is efficiently and effectively managed for equitable and sustainable growth and development. Within this context the primary objectives of this pricing strategy are to:

- Ensure that the costs of achieving and maintaining the Resource Quality Objectives are sufficiently recovered through the water use charges.
- Ensure that the water resource management systems implemented are cost effective and do not become an unnecessary financial burden on the water users.
- Ensure that there is adequate funding for the effective operation, maintenance and development of waterworks by the Department and other water management institutions.
- Provide an enabling framework for the transformation and equity objectives of the NWRS as it relates to the racial and gender imbalances in the access to water.
- Facilitate financial sustainability of water management institutions.
- Promote/facilitate water use efficiency. In the context of water scarcity, it is critical to ensure an efficient allocation, which requires that the price of water reflects its scarcity value, to ensure firstly that water is conserved and secondly that some water is redirected for optimal economic benefits while not harming social benefits.
- Establish a pricing regime for the use of raw water.

Pricing of water for each component in the water value chain is depicted below. This Pricing Strategy for Raw Water Use charges focuses on water resource management charges (1) that include waste discharge charges (7); and water resource infrastructure charge (2). In addition, the Pricing Strategy for Raw water Use charges provides for non-consumptive use which includes impeding or diverting the flow in a watercourse; engaging in a controlled activity; altering the bed, banks, course or characteristics of a watercourse and recreational uses

Figure 1: Water Value Chain



1.3 Pricing Strategy Principles

This pricing strategy is informed by the National Water Act and aims to provide a greater degree of transparency on how raw water is priced in the country. It recognises the developmental context of the South African water sector and acknowledges that where, for social equity, environmental or affordability reasons, water management cannot be sustainably financed from specific water users, then that shortfall must be recovered transparently.

Full Cost Recovery: The pricing strategy aims to promote the user pay principle by ensuring that the full costs associated with; the management, use, conservation & development of water resources, as well as the associated administrative and institutional costs are recovered from users.

Non-payment of water use charges will attract interest as per Section 80 of the PFMA. Further, S59(3)(b) of the NWA allows the Department to restrict or suspend the flow of water to defaulting water users. The defaulting water users will be given an opportunity to make representations within a reasonable period on any proposed restriction or suspension before the restriction on allocation or suspension of water use license is imposed.

Polluter pays to recover costs: The cost of treating water discharge and pollution must be recovered from users who discharge and impact or threaten Resource Quality Objectives or Resource Water Quality Objectives. The waste discharge charge system provides the context for this principle to apply.

Ecological sustainability: The pricing strategy will facilitate funding to ensure the provision of water for the ecological reserve and the water sector's contribution to maintaining water ecosystems. In setting a pricing strategy for water use charges, the Minister must in terms of the NWA S56(6)(a) of the NWA consider the class and resource quality objectives for different water resources. In terms of Chapter 3 of the NWA, the water needs for the effective functioning of aquatic ecosystems must be protected. This acknowledges the indivisibility of water as a natural resource, the role of ecosystems as the base from which the resource is derived, and the importance of healthy ecosystems in sustainable water use. The management activities required to ensure the provision of sufficient water for the ecological reserve and the water sector's contribution to maintaining water ecosystems must be paid for by all registered and billable users in terms of Section 56(2)(a)(iv) of the NWA as part of the water resources management charge. To promote the preservation of resource quality, the polluter pays principle is adopted in this pricing strategy.

Differentiated charges: The strategy allows for differential charges to designated water use categories to support the achievement of key national objectives, such as food security, racial and gender equity, job creation and economic development. S56(3) and 57 (1) of the NWA allows for the pricing strategy to differentiate on an equitable basis between different types of geographic areas, socio-economic attributes, categories of water use, and water users.

This pricing strategy therefore provides for the following categories of water use and water users:

Categories of water use: 1) abstraction use, 2) waste discharge use and 3) non-consumptive use.

Categories of water users: The pricing strategy will differentiate between 1) Agriculture users; 2) municipalities; 3) industry and mining users; 4) strategic users, 5) stream flow reduction activities and 6) non-consumptive water use.

The pricing strategy provides for the achievement of social equity and other national goals through differentiated charges.

Accountability and governance: Water management institutions must ensure funds are managed transparently and water resource services and development are undertaken in a cost effective and efficient manner to ensure affordable charges.

Equity and affordability: The water use charges under this pricing strategy take into account the principles of equity by ensuring that users are allocated with water resources based on their needs and affordability in access to water for poor, marginalised and historically disadvantaged communities.

1.4 Legal mandate of pricing strategy

In terms of Section 56 of the NWA, the Minister may, with the concurrence of the Ministry of Finance, from time to time by notice in the Government Gazette, establish a pricing strategy for charges for any water use within the framework of existing relevant government policy.

In terms of Section 11 of the Water Research Act (Act No. 34 of 1971) the Minister, in consultation with the Minister of Finance, from time to time by notice in the gazette, levy rates on land which may be irrigated by means of water supplied or made available by the State, an Irrigation Board or a Water Board; levy charges on water supplied or made available for use for agricultural purposes, urban purposes, industrial purposes or any other purposes by the State, an Irrigation Board, Water Board, local authority, or any other body; or levy both such rates and such charges.

The Pricing Strategy contains the objectives, methodology and implementation strategy for setting water use charges for purposes of:

- funding water resource management through water use charges, (Section 56 (2) (a));
- recovering the costs for water resource development and use of waterworks (Section 56 (2) (b));
- achieving the equitable and efficient allocation of water, (Section 56 (2) (c));
- providing for a differential rate for waste discharges, hereafter referred to as the WDCS, to enable the monitoring, control and treatment of pollution of water resources (Section 56 (5));
- enabling the provision of financial assistance and the use of water pricing to support the redress of racial and gender imbalances in access to water and to support the redistribution of water for transformation and equity purposes (Section 61 and 62).
- Funding for the promotion of water research and development within the water sector, (Section 11(1) of WRA)

1.5 Water use not subject to pricing

- **Permissible water use as described under Schedule 1 of the NWA.** A person may use water in or from a water resource for purposes such as reasonable domestic use, subsistence farming, animal watering and fire-fighting as set out in Schedule 1 of the NWA. Schedule 1 use is exempted from water use charges determined in terms of this strategy.
- **Ecological sustainability.** This represents the second component of the Reserve and refers to water (quantity and quality) required to protect the aquatic ecosystems of the water resources and ensure their sustainability.
- **International obligations.** The water required to meet South Africa's commitments regarding international waters will receive priority and agreements will be made concerning the supply of water to neighbouring countries.

1.6 Categories of water uses.

The pricing strategy prioritises uses of water stated below, and over time will charge for most defined water use after consultations with stakeholders.

Table 1 : Categories of water uses

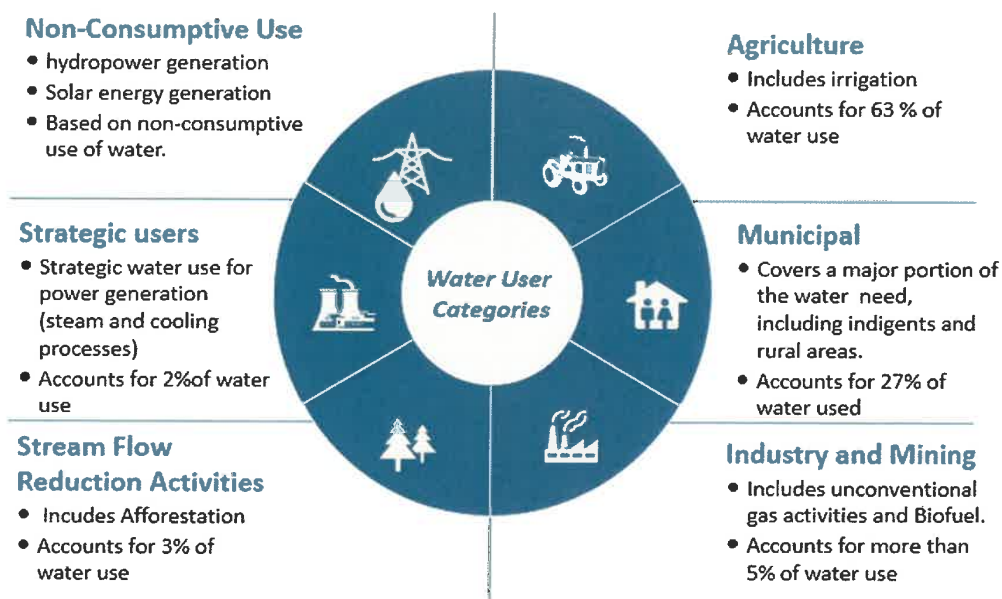
Three categories of water uses	Water use described in section 21(a) to (k)
Abstraction use	(a) taking water from a water resource (b) storing water (d) engaging in a stream flow reduction activity (i.e. land-based activities which significantly reduce stream flow); (j) removing, discharging or disposing of water found underground;
Waste discharge use	(e) engaging in a controlled activity identified as such in section 37(1) or declared in section 38(c)(1) (f) discharging waste or water containing waste into a water resource; (g) disposing of waste in a manner which may detrimentally impact on a water resource; (h) disposing of water which contains waste from any industrial or power generation process; (j) removing, discharging or disposing of water found underground;
Non-consumptive	(c) impeding or diverting the flow in a watercourse (e) engaging in a controlled activity identified as such in section 37(1) or declared in section 38(c)(1) (i) altering the bed, banks, course or characteristics of a watercourse; (k) using water for recreational purposes.

2 Water User Categories

In terms of Section 56 (3) of the NWA, the pricing strategy may differentiate on an equitable basis, on the basis of geographic areas, and between different categories of water use; and different water users.

This pricing strategy provides for six water user categories, from the previous three, to better represent the water user groups and to allow for more clearly targeted charges.

Figure 2: Water user categories for charging purposes.



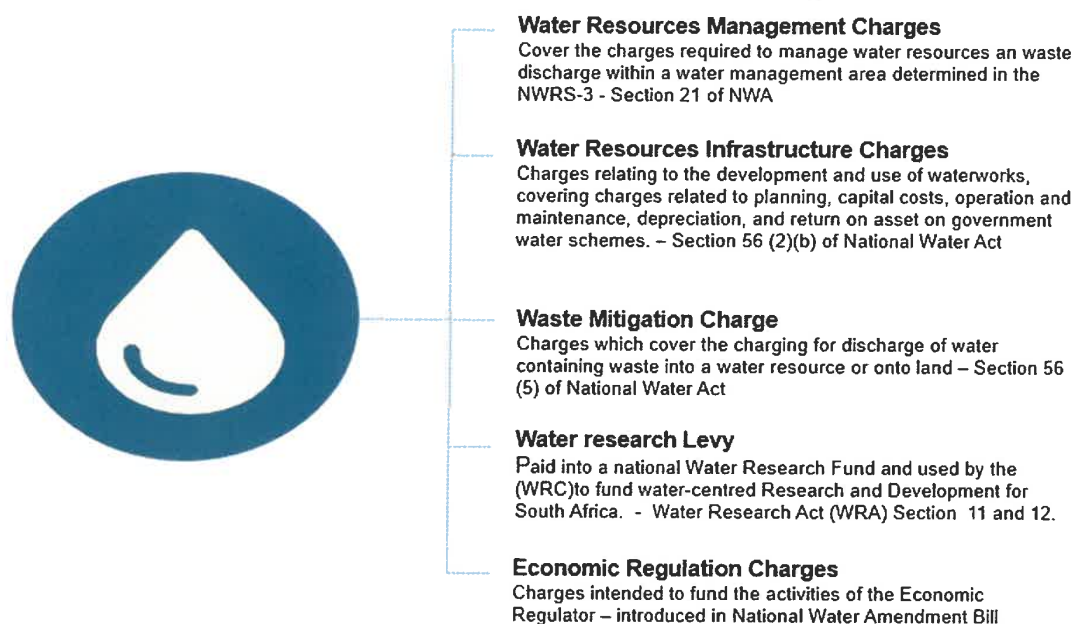
The main changes in these categories are the following:

- The split of the formerly Domestic and Industrial category into three separate groups, Municipal, Industrial/Mining and Strategic users.
- A category of Non-consumptive Use has also been introduced to allow for the costs associated with enabling non-consumptive use of water resources (beyond Schedule 1 uses) to be recovered

3 Categories of Charges

In terms of the Section 56(1) and (2) of the National Water Act, the pricing strategy may determine the methodology of setting water use charges.

Figure 3: Categories of Charges



3.1 Water Resources Management Charge

The Water Resources Management Charge (WRMC) funds water resource management activities in each of the WMAs. These activities relate to the protection, allocation, conservation, management and control of all of the nation's water resources. There are two components to WRMC, these being the abstraction water use charge and the waste discharge related water use charge. The activities that may be partially or completely funded from the WRMC are listed in Table 2.

Table 2: water resource management activities

Function / Activities	Taking water (abstraction) activities	Waste discharge activities
1. Catchment management strategy and water resources planning	- Resource studies, investigations and integrated strategy development - Allocation plans and administration	Water quality management plan
2. Resource directed measures	- Implement programmes to monitor Resource Quality Objectives (RQOs) - Implement source-directed controls to achieve resource quality objectives - Report against the achievement of the Class and RQOs - Report on the water balance per catchment (i.e. water available for allocation after consideration of ecological requirements)	
3. Water use authorization	- Registration of water use - Abstraction activities - Maintenance of water management area register of water use - Stream flow reduction activities authorization	Waste discharge activities authorization
4. Compliance Monitoring and enforcement of water use	- Compliance monitoring and enforcement of water users per sector. - To conduct investigations of water crimes in relation in accordance with the National Water Act and other relevant legislations. - Abstraction activities - Dam safety control and classification of dams - Compilation, Serve and implement administrative notices - Stream flow reduction activities control	- Waste discharge control - Compliance promotion and audit sampling (users discharge)
5. Disaster management/ Pollution control and emergency incidents	Planning and preventative management of disaster (administration) including risk monitoring (management).	Pollution incident planning and response (management) (intervention)
6. Water resources management programmes	- Integrated water resources programmes - Implementing of water management strategies (e.g. water conservation and water demand management)	Implementing of water management strategies (e.g. cleaner technology, dense settlements, waste discharge strategies)
7. Water related institutional development (Stakeholder Management empowerment)	- Stakeholder participation, empowerment, institutional development & coordination of activities - Establishment and regulation of water management institutions - Stakeholder consultations - Capacity and Empowerment of stakeholders	
8. River health, Maintenance and Restoration of Ecosystems and its Infrastructure to improve water resources	- Aquatic weeds control - Planning and implementation of ecosystem maintenance and rehabilitation programs, required for water resource protection and achievement and maintenance of RQO's, e.g. sediment control, nutrient trapping, riparian and wetland rehabilitation - Ecological Infrastructure. - Eradication and control of invasive alien plants with acknowledged negative impacts on water resources, e.g. riparian zones, strategic water source areas, wetlands and in areas where there could be an impact on aquifers	
9. Geo-hydrology and hydrology	- Groundwater and surface water monitoring - Compiling of maps and yield information - Extending and maintaining the hydrological database & compilation of information	
10. Administration & Overheads	Administrative, institutional & overheads for regional office or CMA	

3.1.1 Abstraction Related Uses

This charge will be WMA specific and will be based on the CMAs' total costs of undertaking water resources management functions within a Water Management Area. There are no concessions granted to any sector on the WRMC except for registered and approved resource poor farmers and resource poor tree growers as per section 62 of the NWA. It will apply as follows:

Figure 4: WRM charges for abstraction related water use

	Agriculture will be liable for all WRMC, pro rata to its use in the WMA. WRMC for approved resource poor farmers will be phased in over ten years, from the date of registration of the water use, with no charge imposed for the first five years, and the charges will then be phased in incrementally at 20% per annum until the full charge is imposed in year 10.
	Municipal users will attract all abstraction related water resources management costs pro rata to its use in the WMA.
	Industry and mining will attract all abstraction related WRM costs pro rata to its use in the WMA.
	Strategic users will attract all abstraction related WRM Costs pro rata to its use in the WMA.
	Afforestation will attract all abstraction related WRM costs, pro rata to its use in the WMA, except for dam safety control. WRMC for resource poor tree growers will be phased in over ten years, from the date of registration of the water use, with no charge imposed for the first five years, increasing incrementally at 20% per annum until the full charge is imposed in year 10.

The allocation of functions, in terms of abstraction and waste discharge related users, will be in terms of Table 2 above. Integrated costs for abstraction and waste discharge activities will be split between the two charges, in volumetric proportion between abstraction and waste.

The principles for determining the registered volumes for each sector, as well as the methodology for calculating the unit cost:

- In situations where there is an under recovery of costs, or where there are limited revenue opportunities in the WMA, to cover the costs of public interest functions, i.e. activities that are in the interest of the broader society, the Department will engage with National Treasury through the annual budgeting processes to provide augmentation funding to support the affected CMAs.
- In the case of inter-basin transfers, the proportional water resources management costs of exported water will be raised in the receiving WMA and transferred to the transferring WMA. Wherever possible,

interlinked catchments will be combined for WRM charge purposes and the funds will be allocated in proportion to the functions performed in each catchment. Where the quality of streamflow from an upstream WMA imposes a water quality management cost on the downstream WMA, this additional cost will be funded by WRMCs on waste dischargers in the upstream WMA.

3.1.2 Waste Discharge Related Water Use

This component of the WRMC relates to waste discharge related use, as defined in Section 21 (e) – (h) of the NWA. All water use sectors, excluding stream flow reduction activities, will be liable for these charges.

The calculation of charges will be based on the registered waste volumes, measured in cubic metres.

The budgeted water resources management activity costs allocated to waste discharge related water use will be allocated to the water use categories according to the volumetric proportion between abstraction and waste.

S21 Waste Discharge related water use

- Engaging in a controlled activity (where the controlled activity relates to waste discharge activities)
- Discharging waste or water containing waste into a water resource
- Disposing of waste in a manner which may detrimentally impact on a water resource
- Disposing in any manner of water which contains waste from, or which has been heated in, any industrial or power generation process

3.2 Waste Discharge Charge System

The WDCS is based on the polluter-pays principle and aims to promote the sustainable development and efficient use of water resources; internalise the environmental and social costs of using water; create financial incentives for water users to reduce waste and use water resources more optimally, and recover costs associated with impacts of waste discharges. The WDCS consists of WRM charge for waste related activities, referred to in section 3.1.2, and the Waste Mitigation Charge.

3.2.1 Waste Mitigation Charge

The Waste Mitigation Charge (WMC) provides for the recovery of costs associated with mitigation and abatement measures employed to achieve RQOs or WQPLs. The mitigation charge provides for the recovery of costs associated with the planning, design, construction, operations and maintenance, depreciation and other quantifiable costs incurred in the mitigation of direct impacts of waste discharge. The WMC is therefore applicable to all dischargers but will only be implemented where identified interventions are to be affected. Dischargers will only pay according to their proportional contribution to the problem. The WMC enforces the polluter pay principle and is not a levy/tax imposed to users as specified in section 57(5) of the NWA

The WMC will be applied at a catchment level, the catchment area will be defined as those areas that have a significant impact on or are impacted by the specific water quality problem. This may therefore be an

entire catchment in which a wide-spread water quality problem exists or may be a sub-catchment within a larger basin, which is bounded by reservoirs and/or sub-catchments with insignificant contaminant loading. The potential impact of waste disposal on groundwater resources is recognised. The WMC may be implemented in catchments for which Resource Quality Objectives (RQOs) are either exceeded or threatened but may also be implemented in areas where identified water quality challenges are prevalent and require redress. In the absence of a class and associated RQOs, Water Quality Planning Limits (WQPLs) (previously referred to as Resource Water Quality Objectives) must guide the management water quality.

The mitigation charge will consider:

- Key representative pollutants
- The direct impact costs of the discharge/ disposal of waste
- Abatement costs for categories of pollutants
- Costs for the administration and oversight of mitigation interventions; and
- Charge estimation and distribution models.

The following are four scenarios for which the Waste Mitigation Charge may be considered:

- Removal of load from the water resource: costs for developing and operating regional mitigation schemes, initiatives or projects for the reduction of water quality loads within the water resource.
- Water resource system operation for water quality management: costs associated with reduced system yield associated with the management of river-reservoir systems to reduce the impact of water quality problems.
- Treatment for downstream water users: costs incurred in developing and operating additional treatment requirements for downstream users, particularly where water quality does not meet specified resource quality objectives.
- Treatment at source: costs of reducing waste load from a specific source, including regional schemes to collect and treat waste from a number of sources before it enters the water resource.

Waste Mitigation Charge

- Facilitates the recovery of costs to mitigate the impacts of waste discharge on surface water resources.
- Charged to registered water users discharging waste in the impacted catchments.
- Dependent on net waste load (load in discharge, less load in intake) in the return flows.

The Waste Mitigation Charge will be charged on water quality variables that critically impact on the RQOs or WQPLs, which will be selected with due consideration to the type of waste discharge sources, the nature of the waste typically discharged, and the cost-effectiveness of monitoring different variables. Therefore, the

charge rates will be location specific and will not be the same across the different catchments. The charge rates are also dependent on the water quality variable/s¹ to be addressed.

The WMC will facilitate the recovery of the full costs to mitigate the impacts of waste discharge on surface water resources. It will be a charge to registered water users, discharging waste in the impacted catchments, and will be dependent on the net waste load (load in discharge, less load in intake) in the return flows and not on the concentration. The Department will be responsible for the costs associated with load that cannot be charged to registered water users (registered point source and registered discharge to land facilities).

- The WMC may be applied to all discharges contributing to the load in an upstream catchment where downstream resource quality objectives are threatened or exceeded, even where incremental upstream resource quality objectives are met.
- The mitigation measures and thus the associated waste discharge charges may be phased in to enable planning by dischargers and to allow adaptive setting of charges as conditions change.
- Minimum load thresholds for charging may be specified on the basis of administrative cost considerations.

3.3 Water Resource Infrastructure Charge

Section 56 2(b) and 111 of the NWA provides for the recovery of costs related to the acquisition, construction, alteration, repair, operations and control Government waterworks, including: the costs of investing and planning;

- (i) the costs of design and construction;
- (ii) pre-financing of development;
- (iii) the costs of operations and maintenance;
- (iv) a return on assets; and
- (v) the costs of water distribution

The pricing strategy considers the full lifecycle of the infrastructure and makes provision for the recovery of costs associated with:

- Operations and Maintenance (O&M)
- Provision for Depreciation
- Return On Asset (ROA), and

Need for water use charges.

- If water use charges are too low, they will lead to underinvestment, lack of maintenance and unwarranted fiscal subsidies.
- There is a need to adjust to higher real charges over time to accommodate the cost of investing in supply capacity to meet rising demand and to maintain, rehabilitate and refurbish existing infrastructure.

¹ The variables have been unpacked in the DWS Waste Discharge Strategy

- Capital Unit Charge (CUC).

The costs associated with these components of the water resources infrastructure charge will be based on annually updated capital and operational expenditure plans of institutions managing water resources infrastructure and will take into account parliamentary appropriations and other contributions. It will be a differentiated tariff for the water use categories, and all costs will be recovered on a scheme specific basis.

In future, that is for new schemes that are initiated after the approval of this Raw Water Pricing Strategy, funding will come from two principle sources: budget and off-budget funding. Future schemes will be funded off-budget to the extent this is feasible. Feasibility studies must be carried out to determine whether government funding is necessary and justified, and to what extent. The feasibility studies must be carried out in terms of guidelines to be agreed on by DWS and National Treasury.

The feasibility studies must take into account the user-pays principle, the affordability of the water to the different categories of users, and whether government can afford to provide a subsidy. Water users must also recognise that water from new schemes is becoming increasingly expensive, tariffs must reflect this reality to provide the correct incentives for water to be used sparingly. The pricing for new schemes will therefore follow the same principles and approach as set out in Table 3 below.

In principle, raw water pricing should not be used to subsidise water for the poor or for any sector. Any sectoral subsidies should be provided to the sector through the relevant sector department. Subsidisation of water prices for the poor is done in two ways. Firstly, a portion of the equitable share which municipalities receive from the fiscus is earmarked to enable municipalities to provide free basic water to the indigent. Secondly, municipalities can utilise variable step retail tariffs to provide basic quantities of cheaper water for the poor.

Table 3: The applicability of the infrastructure charges on the portion of the scheme funded by government and off-budget funded

Charge to be levied	Portion of scheme funded by government (or where loans fully repaid)	Portion of scheme funded off-budget (where loans are being repaid)
Operation and Maintenance	Yes	Yes
Depreciation	Yes	Yes
Return on Asset	Yes	No
Capital Unit Charge (CUC)	No	Yes

3.2.1. Operations and Maintenance (O&M)

This component will facilitate the recovery of the direct and indirect operations and maintenance costs on government water schemes to ensure that infrastructure is in an optimum condition and that there is continued security of supply as supported by NWA section 56(2) (b) (iv).

The O&M costs will be based on a zero-base budget for each year. It will be recovered on a scheme or system basis and can either be based on actual cost recovery or on a forecast of annual O&M costs and of water use. All components of all schemes must pay O&M and depreciation charges. Without these charges, existing infrastructure cannot be sustainably operated and maintained in working order.

The direct operation and maintenance costs include fixed and variable costs, which can be attributed directly to administering, operating and maintaining schemes (e.g. pumping cost, pump maintenance, flood gate maintenance). Direct costs will be allocated directly to sectors where this is possible. The indirect costs are the costs which cannot be directly attributed to a specific scheme, but which contribute towards the sustainable management of the water system. This includes the regional/ area office. Indirect operation and maintenance costs will be allocated to the different sectors in an equitable manner.

3.2.2. Provision for Depreciation

Depreciation provides for the loss in functional performance and real term value of existing water resource infrastructure that occurs due to wear and tear, decay, inadequacy and obsolescence. The depreciation component will be used to refurbish existing assets on a prioritised basis, as and when required. As refurbishment will only restore the original capital value of assets in real terms, no increases in charges will take place as a result of refurbishment. The provision for depreciation will be recovered from all sectors supplied from Government waterworks at a scheme or system specific level.

Standard performance and capital value can only be restored through refurbishment.

Examples are the replacement of pumps, sluice gates on dams, the concrete lining of a canal or a portion of a pipeline.

Depreciation will be provided for in compliance with the appropriate accounting standards. It will be based on the depreciation of the cost of the assets on a straight-line basis over the expected useful life or term of lease of each component of an item of property, plant and equipment. Depreciation commences when the asset is available for its intended use by management.

A cost or a depreciated replacement cost model would apply to determine the annual depreciation cost. The expected useful life over which the assets will be depreciated are in accordance with the table below.

Table 4: Expected Useful Life of assets for depreciation.

Component	Expected Total Useful Life (years)
Water storage related infrastructure:	
• Dams & Weirs	40 - 100
• Canals	40 - 100
• Tunnels	40 - 100
• Reservoirs	80
Pump Stations:	
• Structures	10 - 80
• Components	3 - 50
Pipelines	
• Syphons & Concrete pipelines	40 - 100
• Pipeline structures	25 - 75
• Pipeline components	20 - 75
Buildings	
• Building structures	50 - 80
• Building components	10 - 20

If the initial (or historic) capital cost is available or known for an existing or new asset, this value will be used as replacement cost. If the historical or initial capital cost is unknown, as is often the case with older schemes or assets, the depreciation replacement cost (DRC) approach would be followed. The DRC is equal to the cost to construct the asset in today's terms with the asset already depreciated since it became available for its intended use by management at the time when it was constructed.

3.2.3 The Return On Asset Charge

The National Water Act also provides for a return on assets (ROA) charge. The ROA charge enables the funding of the betterment of schemes (improvements and expansions). At a scheme level, the ROA is charged on the depreciated replacement value of all assets except those components for which the CUC is being charged. For assets (components of schemes) for which the CUC is being charged, the ROA charge starts to be levied once the loan is fully paid off and the CUC ceases to be charged.

In terms of the 2007 Raw Water Pricing Strategy, the ROA charge was only applied to schemes supplying commercial irrigators which were constructed after 2007. In terms of this revised policy, the ROA will also be extended to schemes constructed after 2007, but this will be subject to an impact assessment and will be phased in.

3.2.4. Capital Unit Charge

The current institutional framework empowers the Minister to direct the water management institutions to implement and fund government water schemes off-budget. These water management institutions are entitled to raise loans to finance the development of the new infrastructure, and to service these loans through cost recovery i.e. investment (loan), where such infrastructure is commercially viable.

Where the initial capital investment in a scheme is financed off-budget (through loans) the capital investment is recovered through a capital unit charge (CUC), to repay the off-budget finance, both the capital and interest. The CUC ceases to be charged once the loan is fully repaid. Where the users of new infrastructure fund their portion of such infrastructure planning, design and construction through a lump sum contribution they will not be liable for paying the CUC of that scheme.

The CUC will be determined for each scheme and will provide for the debt service costs on these commercially viable projects, taking cognisance of affordability, the economic life and the timing of potential future augmentation of the infrastructure.

The CUC will be formalised with the relevant water users through water supply agreements with either the Department or the WMI, depending on the implementation arrangements. The CUC will be subject to an annual review where increases are passed through automatically or under specific conditions negotiated between the parties.

3.2.5. Assurance of Supply

Assurance of supply means the probability, expressed as a percentage, that a water user will obtain their water requirements or a portion thereof without water restrictions. It is thus the probability that water will be supplied without any curtailments.

Strategic water users have a high assurance of water supply that is equal to 99.5%. This means that they should, on average, get their full supply of water for all but one year out of two hundred. Municipal and Industrial / Mining users have a 97% assurance of supply, which is higher than the assurance of supply of 91% for Agricultural users. Assurances of supply is factored into the calculation of the O&M, depreciation and CUC costs, resulting in users with a higher assurance level paying a higher infrastructure charge.

Assurance of Supply methodology

- Total volume of water available from a scheme or system is allocated to different water use categories that receive water as per assurance of supply that applies to each category
- Average volume of water that each water user category will receive from a scheme or system is adjusted by the assurance of supply that applies to the respective categories
- A new assurance of supply adjusted to the total volume of water is determined for each category
- Percentage cost allocation for each water user category is then determined by dividing the new assurance of supply adjusted volume for each water use category by the new assurance of supply total volume of water

3.2.6. Non-consumptive use charge

There are various non-consumptive uses of water resources where these non-consumptive uses result in water resource management costs. The pricing strategy needs to provide for these costs to be recovered. Examples of non-consumptive use include aquaculture, generation of renewable energy using water resources (such as hydropower and floating solar), and recreational use of water resources. The charge will provide for costs associated with issuing the required water-use authorisations; monitoring adherence to the conditions of the water-use authorisations; and a contribution to the operation and maintenance of the scheme to provide access to the water (e.g. operating and maintaining a canal in which a user has located a generator).

An implementation guide will be issued at a later stage for non-consumptive use charges. For example, charges for turbine driven generators will need to be structured differently to charges for floating solar, due to the need to measure the non-consumptive water use differently.

3.3 Water Research Levy

The Water Research Levy (WRL) is used for the promotion of water research and development on behalf of the nation and is levied in terms of Section 11 of the Water Research Act (WRA). It empowers the Minister, with the concurrence of the Ministry of Finance, to set tariffs in respect of water research charges levied on quantities of water supplied, or made available for use, for agricultural purposes, urban purposes, industrial purposes or any other purposes. While the Water Management Institutions will collect the WRL on behalf of the WRC, the WRL remains independent of changes in water use charges governed by the pricing strategy. The WRA allows for differentiated charges, based on geographic areas, categories of water use and water users.

The WRL is payable by all registered users. WRL will be based on the projected annual research requirements for the sector, contained in Water Research Business Plan, and will be levied on registered volumes for abstractive uses in the applicable water use sectors. The levying of water research charges on registered volumes will be phased in over a 3-year period, from the current use of volume of water supplied.

Section 11 of the WRA also empowers the Minister to levy rates on land which may be irrigated by means of water supplied or made available by the State, an irrigation board or a water board. This version of the pricing strategy phases out the rates on irrigated land in lieu of a registered water volume charge.

Given the current challenges in the water sector, including increasing pressure on water resources, challenges such as water quality and services delivery, the national policy requires an intensification of water research.

3.4 Regulator Charge (RC)

The Regulator Charge is proposed as a separate category and it is intended to recover the costs of regulation. It should be noted that the activities of the Regulator are not part of the costs to produce water, but that the Regulator has a critical role to play in all aspects of the water value chain. The NWA does not currently provide for levying a charge for these activities, and the charge will only be implemented once the necessary legislation provides for such charges.

The Regulator Charge will be based on the annual budget of the allowable regulatory activities and will be recovered on the total registered volume of users liable for the charge. The Regulator Charge will be payable by all sectors.

The Regulator Charge will be used to fund the cost of those regulatory functions which are not funded from the fiscus or from other charges.

3.5 Application of Charges to Water User Categories

Table 5: Application of Charges to Water User Categories

WATER USER CATEGORY	WATER RESOURCE MANAGEMENT CHARGES	INFRASTRUCTURE RELATED CHARGES	WASTE MITIGATION CHARGE ²	WATER RESEARCH LEVY
Municipal	WRM charges in place. Full cost recovery on abstraction and waste discharge related costs, including Regulator charge	<i>On-budget GWS:</i> Depreciation, ROA, O&M <i>Off-budget GWS:</i> CUC, Depreciation and O&M	Full costs of mitigation charge if applicable.	WRL is based on registered volumes and phased in over a 3 year period.
Industrial / Mining	WRM charges in place. Full cost recovery on abstraction and waste discharge related costs including Regulator charge.	<i>On-budget GWS:</i> Depreciation, ROA, O&M <i>Off-budget GWS:</i> CUC, Depreciation and O&M	Full costs of mitigation charge if applicable.	WRL is based on registered volumes and phased in over a 3 year period.
Strategic Users	WRM charges in place. Full cost recovery on abstraction and waste discharge related costs including Regulator charge	<i>On-budget GWS:</i> Depreciation, ROA, O&M <i>Off-budget GWS:</i> CUC, Depreciation and O&M	Full costs of mitigation charge.	WRL is based on registered volumes and phased in over a 3 year period.
Stream Flow Reduction Activities: Commercial growers	Cost recovery on abstraction related costs but excludes cost of Dam Safety Control and waste discharge related costs including Regulator charge.	No charge would be applicable unless the sector willingly buys in on the construction of the dams to compensate from stream flow reduction effects.	No charge	WRL is based on registered volumes and phased in over a 3 year period.

² Waste discharge charges to be implemented after registration of waste users as per catchment specific plans

WATER USER CATEGORY	WATER RESOURCE MANAGEMENT CHARGES	INFRASTRUCTURE RELATED CHARGES	WASTE MITIGATION CHARGE ²	WATER RESEARCH LEVY
Stream Flow Reduction Activities: Resource poor tree growers	Cost recovery on abstraction related costs but excludes cost of Dam Safety Control and waste discharge related costs including Regulator charge. WRM charge phased in over 10 years from the date of registration • Waived for first 5 years after registration and phased in over 5 year period that follows • Subsidy starts at 100% for 5 years, then reduces by 20% annually No WRM charge for forest plantations <10 ha.	No charge would be applicable unless the sector willingly buys in on the construction of the dams to compensate from stream flow reduction effects.	No charge	WRL is based on registered volumes and phased in over a 3 year period.
Agriculture: Commercial farmers	Full recovery of allocated costs including Regulator charge.	On-budget GWS: Depreciation, ROA, O&M Off-budget GWS: CUC, Depreciation and O&M Full cost recovery on ROA for schemes constructed after 2007 .	Full costs of mitigation charge for commercial farmers who are discharging directly to the source .	WRL is based on registered volumes and phased in over a 3 year period.

WATER USER CATEGORY	WATER RESOURCE MANAGEMENT CHARGES	INFRASTRUCTURE RELATED CHARGES	WASTE MITIGATION CHARGE ²	WATER RESEARCH LEVY
Agriculture: Resource poor farmers	WRM charge including Regulator charge will be phased in over 10 years from date of registration • Waived for first 5 years after registration and phased in over 5 year period that follows • Subsidy starts at 100% for 5 years, then reduces by 20% annually	Depreciation, O&M and ROA charges waived for a 5 year period and phased in over 5 year period that follows on existing and new schemes. • Subsidy starts at 100% for five years, then reduces by 20% annually • Capital subsidies available under certain conditions • Targeted subsidies to be provided by DWS for water resources infrastructure or purchase of water allocations	WMC charge phased in over 10 years from date of registration • Waived for first 5 years after registration and phased in over 5 year period that follows Subsidy starts at 100% for 5 years, then reduces by 20% annually	WRL is based on registered volumes and phased in over a 3 year period.
Non-consumptive use	An implementation guide will be issued at a later stage for non-consumptive use charges			

3.6 Indexation of Charges

The pricing strategy must use the index that is linked the closest to the cost being inflated or compared.

The CPI (Consumer Price Index) is a benchmark for how consumers perceive tariff increases relative to a basket of other goods consumed. While the CPI is a good overall test, this index should be limited to the O&M components when calculating the various raw water use charges, with the exception of energy costs. For the latter, an 'energy index' based on the average price of electricity as calculated from Eskom's Annual Report should be used as it reflects the energy cost the closest.

The PPI (Production Price Index) which reflects the cost of manufacturing goods, is a reflection of the cost of construction, and will therefore be applied in determining infrastructure related charges.

4. Licence application fees

The CMA should receive a pro rata portion of the license application fee as soon as it is performing licensing functions, and ultimately should receive the entire fee once it is the responsible authority.

WULA processing/ registration fee means the non-refundable fee required by the Department to process an application or registering water uses. In terms of section 41(1)(c) an application for a licence for water use must be accompanied by the processing fee, determined by the responsible authority. While on a general authorisation in terms section 29(1)(b) (vi), a responsible authority may attach conditions requiring the payment of a registration fee as a pre-condition.

The WULA processing/ GA registration fee covers department's cost to:

- Maintain and enhance eWULAAS
- Maintain register for unbillable water uses.

If an application or registration is declined, the fee will still be required when reapplication or reregistration is made.

Appendix 1: Implementation of the pricing strategy

1.1 Removal of pricing strategy cap and Resource Poor Farmer/Forester Subsidy

- 1.1.1. The price capping which was previously afforded to different user categories are removed. The phasing out of price capping to achieve full cost recovery will be done over a period 5 to 10 years. During implementation of the Pricing Strategy and the removal of price caps, a differentiation will be made between water users who are projected to achieve full cost recovery within a five-year timeframe and those expected to attain full cost recovery after five years but not exceeding a ten-year period.
- 1.1.2. The impact of the gradual removal of price caps for agriculture water on food prices will be monitored in collaboration with National Treasury and other relevant departments, and this gradual removal will be reduced if necessary.
- 1.1.3. Resource poor farmers and tree growers will be phased in over ten years, from the date of registration of the water use, with no charge imposed for the first five years, and the charges then imposed incrementally at 20% per annum until the full charge is imposed by year ten.

1.2 Scope of the pricing strategy

The Pricing Strategy is applicable to CMAs, Infrastructure Clusters (NWRIA), Water User Associations and Irrigation Boards, Water Research Commission or any water management institutions which is delegated by the Minister to undertake water resource management activities and infrastructure management.

1.3 Measurement of water use

Water resource management charges and the water research levy are based on registered water use. Adjustment will be made for assurance of supply as described in section 3.2.5.

Water infrastructure charges for municipal, industrial, mining and strategic users are based on actual use. Water infrastructure charges for agriculture are based on registered use.

1.4 Treatment of reserve funds for Depreciation and ROA

The Department will manage the funds from the depreciation and return on asset charges in a dedicated reserve fund. Use of funds from the depreciation charge will be prioritised for asset refurbishment in accordance with DWS integrated water resource risk management systems. The reserve fund will be transferred to the NWRIA once established.

1.5 Application of the Pricing Strategy for natural disasters

Section 56(3)(e) of the National Water Act allows the Minister to provide on an equitable basis for some elements of the charges to be waived in respect of specific users for a specified period of time. In addition to the support offered hereunder, any relief offered by other government departments at the time of the natural disaster could also be applied to offset further water charges.

1.6 Veld and forest fires and floods

In the event of veld and forest fires or floods, when water resources are not in use as a result of damages caused, the Minister may apply her/his mind to grant some form of relief to affected users. The relief will in all cases be limited to the actual Water Resource Management charges, which could be fully or partially waived for a fixed period of time. The Minister will consider the extent of damage to crops and/or plantations in determining the relief to be granted. The pricing strategy does not provide for the provision of cash grants as a relief.

1.7 Droughts

During times of droughts when it is necessary to curtail entitlements, the following guidelines will apply when water restrictions are imposed by the Department on established and resource poor farmers on existing Government Water Schemes. In schemes where the actual available supply is:

- greater than or equal to 70% of the irrigation quota, full charges will apply,
- less than 70% and equal to or above 50% of the irrigation quota, charges will be limited to the WRM charges and the O&M and ROA charges, while the Depreciation charges will be waived,

- less than 50% and equal to or above 30% of the irrigation quota, charges will be limited to the WRM charges and 30% of the O&M and ROA charges, and the depreciation charges will be waived,
- less than 30% and equal to or above 0%, of the irrigation quota, charges will be limited to the WRM charges, implying that the depreciation, ROA and O&M charges will not apply.

CMAs and WUAs must approach the Department with a motivation for the implementation of these drought measures when appropriate. When less than 50% of water is available, the Department will approach National Treasury for the shortfall in income to be recovered from the fiscus.

1.8 Purchase of “extra water” above the allocated/ registered volumes

The policy of allowing scheduled irrigators on Government water schemes to purchase “extra water” under certain conditions at heavily subsidized prices has been discontinued. Only under exceptional circumstance, such as an unexpected heat wave, may irrigators be allowed to purchase additional water over and above the quotas. The charge for such extra water will be the raw water charge for Industrial/Mining supply.

1.9 Multi-Year charges

The Department and CMAs will introduce with the implementation of this Pricing Strategy, a system of multi-year charges. In terms of this approach, sectoral charges will be developed during the budgetary process for each water management area and charges will be determined (not fixed) for a period of three years. Final sectoral charges will then be formalised and disseminated through the accounts receivable system to the water users prior to the commencement of the financial year and in accordance with the multi-year charges process.

For the first three years, these charges will be reviewed annually on a rolling-three year basis to ensure that the mechanisms and tools work effectively. Thereafter, i.e. in year four after the implementation of this strategy, the charges will be set for three years, every three years.

The water use charges must be approved on/ or before the 15th of September of every appropriate year, where after the charges must be provided to water services providers and

bulk water services providers in order to enable them to calculate bulk water tariffs before 30th of September³.

It must be noted that if water use charges are too low they may lead to non-viable institutions, sub-optimal water resources services and overall deterioration of the water resources. There is therefore a need to adjust to higher real charges within a limited time period to accommodate the cost of effective and financially sustainable water management institutions, taking cognisance of affordability constraints within user sectors.

1.10 Approval of Water Use Charges

The Minister approves the water use charges for government waterworks and for water resource management. The Regulator Commission reviews and advises the Minister on aspects such as revenue, cost and tariff trends, substantive parameters such as the affordability of tariffs, collection ratios and efficiency, the impact of an adjustment of tariffs on sectors and/or on the revenue and sustainability of the WTE or NWRIA, as well as compliance with the pricing strategy and other regulatory guidelines and requirements. The Minister presents the charges to the Portfolio Committee for comment, but the Minister remains ultimately responsible for the approval of water use charges.

1.11 Payment and collection of Water Use Charges

The Minister may appoint any appropriate body as a billing agent, such as a water board, CMA, WUA, irrigation board or other external body. Unless other arrangements are approved by the Department or CMA, all water use categories, with the exception of the agriculture and stream flow reduction sectors, will be invoiced on a monthly basis. The agriculture and stream flow reduction sectors will be invoiced on a six-monthly basis.

Minimum cut-off values for annual payment can be laid down by CMAs where the cost of collection would exceed income. Reimbursements of inter-WMA transfer payments will be done on a monthly basis in equal instalments.

Arrear water charges will attract interest at rates determined in terms of Section 80 of the Public Finance Management Act.

³ Bulk water service providers must commence with their consultation with water services authorities in October of every appropriate year in order to comply with the Norms and Standards in respect of tariffs for bulk water services supplied by bulk water services providers or regional water utilities to other water services institutions.

1.12 Implementation Date

This pricing strategy will be implemented in the tariff consultation process following the year of approval.

Appendix 2: Waste Discharge Charge System

The WMC will facilitate the recovery of the full costs to mitigate the impacts of waste discharge on surface water resources. It will be a charge to registered water users, discharging waste in the impacted catchments, and will be dependent on the net waste load (load in discharge, less load in intake) in the return flows and not on the concentration. The Department will be responsible for the costs associated with load that cannot be charged to registered water users (registered point source and registered discharge to land facilities).

Table 1 waste mitigation charge rate formula

$$CM_{xik} = RM_{xiy} \cdot [(Cd_{ik} \cdot V_{dk}) - (Ca_{ik} \cdot V_{ak})]$$

CM_{xik} = Waste Mitigation Charge for discharger k, mitigation measure x and water quality variable

RM_{xiy} = constant charge rate for mitigation measure x and variable i for a period y

Cd_{ik} = discharge concentration of variable i (registered) from discharger k

Ca_{ik} = abstraction concentration of variable i (registered) for discharger k

V_{dk} = discharge volume (registered) from discharger k

V_{ak} = abstraction volume (registered) for discharger k

The determination of the charge rate will be specific to the locality where it will be applied. Therefore, the charge rates will not be the same across the different catchments. The charge rates are also dependent on the water quality variable/s to be addressed.

Appendix 3: Public Interest Activities Weightings

The table below provides the classification and quantification of the public interest function on the water resource management activities performed by the Catchment Management Agencies.

No	Function	Activities	Beneficiaries	Classification	Rationale	Function % public
1.	Catchment management strategy and water resources planning	Resource studies, investigations and integrated strategy development at catchment level	All	Even mix	The public at large benefits from efficient water resource management planning. Customers experience additional benefits from efficient planning through improved water quality and ensured water resource availability.	67%
		Water allocation administration	All	Public		
		Water quality management plan	All	Even mix		
2.	Resource directed measures	Implement programmes to monitor Resource Quality Objectives (RQOs)	Customers	Private	Customers benefit from the improved water quality and should pay for the regulatory and operational activities associated with the management of their own water abstraction.	0%
		Implement source-directed controls to achieve resource quality objectives		Private		
		Report against the achievement of the Class and RQOs		Private		
3	Water use authorization	Report on the water balance per catchment (i.e. water available for allocation after consideration of ecological requirements)	Customers	Private	Public at large benefits from the economically and socially efficient allocation of water. Customers benefit directly from their water use allocation and should pay for this	0%
		Water use authorization [Registration of water use (Include Validation and verification of registered water use)]	Customers	Private		

No	Function	Activities	Beneficiaries	Classification	Rationale	Function % public
4	Control and enforcement of water use	Maintenance of water management area register of water use	Customers	Private	benefit.	
		Revenue management with the following charges Set, consult and collect WRM charges in the water management area aligned to the pricing strategy	Customers	Private		
		Abstraction & stream flow reduction activities Authorization	Customers	Private		
		Waste discharge activities Authorization	Customers	Private		
		Compliance Promotion and audit sampling (users discharge)	Customers	Private	Public at large benefits from investigations of water crimes occurring in the catchment.	0%
		Monitoring of water users (per sector: public institutions, mining, industry, agriculture and dam owners)	Customers	Private	Using the polluter-pays principle, the customers should pay for the regulatory functions associated with monitoring their activities.	
		Enforcement of Water Use (e.g. enforcing meter installations, suspending entitlements, enforcing licence conditions)	Customers	Private		
		To conduct investigations of water crimes are conducted in relation in accordance with the National Water Act and other relevant legislations.	Customers	Private		

No	Function	Activities	Beneficiaries	Classification	Rationale	Function % public
5	Disaster management/Pollution management and emergency incidents	Implementation of Strategies, SP's tools and guidelines	Customers	Private	This function is largely to do with the planning for disaster management and pollution control. The CMA participates in municipal processes as the representative of the customers. The municipality is responsible for representing other interests, including those of the Schedule 1 users. Therefore, this function is mostly in the private interest.	30%
		Compilation, Serve and implement administrative notices	Customers	Private		
		Abstraction & stream flow reduction activities control	Customers	Private		
		Waste discharge control	Customers	Private		
		Classification of dams	Customers	Private		
6.	Water resources management programmes	Planning and preventative management of disaster including risk monitoring (Management)	All	Mostly private	Design, management and implementation of water resource management programmes benefits public at large, international obligations and the ecological reserve. Customers benefit additionally from improved water quality and availability and should pay for a portion of the benefit.	53%
		Pollution incident planning and response (management)	All	Mostly private		
		Integrated Water resources programmes	All	Public		
		Implementing of Water management strategies (e.g. Water conservation and demand management)	All	Mostly private		

No	Function	Activities	Beneficiaries	Classification	Rationale	Function % public
		Implementing of Water management strategies (e.g. cleaner technology, dense settlements, waste discharge strategies)	All	Mostly private		
7.	Water related institutional Development (Stakeholder Management empowerment)	Stakeholder participation, empowerment, institutional development & coordination of activities	All	Mostly private	Customers will benefit from involvement in the stakeholder participation process. There is a public interest in expanding the institutional development to non-customers who are affected by the activities of the CMA.	20%
		Establishment and regulation of water management institutions (e.g. WUAs)	Customers	Private		
		Stakeholder consultations	Customers	Private		
		Capacity and Empowerment of stakeholders	All	Mostly private		
8.	River health Maintenance and restoration of ecosystems to improve water resources	Adopting of rivers by doing the following activities: Removal of solid waste in and around the river. Invasive plants removal on the river banks and within the river. Identify sources of pollution and other impacts to the river like soil erosion; develop interventions to curb further pollution and degradation of rivers. Monitoring (taking samples, in-situ monitoring of water quality, mini SASS, visual assessments) of the rivers.	All	Mostly public	Public at large will benefit from improved ecosystem health. Customers benefit additionally in the form of improved water quality.	70%

No	Function	Activities	Beneficiaries	Classification	Rationale	Function % public
		Stabilization and restoration of river banks by vegetating indigenous trees.				
		Rehabilitation of the eroded river banks.				
		Aquatic weeds control	All	Mostly public	Public at large will benefit from improved ecosystem health. Customers benefit additionally in the form of improved water quality.	70%
9.	Geo-hydrology and hydrology	Groundwater and surface water and eco system (quality) monitoring in respective catchment areas	Customers	Mostly private	This is the baseline for monitoring and enforcement, related to water quality and water resource availability. This benefits the public at large.	
		Maintaining the geo-hydrological database & compilation of information in respective catchment areas	Customers	Mostly private	Customers benefit from improved data availability for water resource management activities.	30%
10.	Administration & Overheads	Administration & overheads for regional office or CMA	All	Mostly private	The costs of the public interest are already incorporated into the other 10 functions (including staff costs allocated to these functions), so this function is about the management of the institution to benefit customers (billing, management, etc.) so is mostly in the private interest. The small public interest component is to ensure the sustainability of the overhead component of the CMA. By ensuring that the CMA is reliant on	30%

No	Function	Activities	Beneficiaries	Classification	Rationale	Function % public
					the tariff revenue, it encourages the CMA to bill and collect revenue.	

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