Two strategies have been identified for development, namely:

- 10.1 Water Services: Water Conservation and Demand Management
- 10.2 Agricultural Water Conservation and Demand Management

10.1 WATER SERVICES: WATER CONSERVATION & DEMAND MANAGEMENT

Management Objective

The objective of this strategy is to entrench the concept of effective WC/DM by local authorities, most particularly in areas where water shortages are experienced and where new supply schemes may otherwise have to be developed.

Situation Assessment

With the exception of efforts to clear invasive alien plants, very few attempts have otherwise been made by some water management institutions to implement WC/DM in the Breede WMA. It appears that many local water services officials have very little understanding of the principles of WC/DM, and that its importance is still largely being ignored. There are some exceptions, of which the successes achieved at Hermanus are most notable, and serve as an example to other local authorities.

Of the 184 million m^3/a net transfer to the Berg WMA (161 million m^3/a via Theewaterskloof Dam and 22,5 million m^3/a via the Palmiet transfer) the urban water users within the Berg WMA (notably the CCT) are the largest beneficiaries. The city is already actively implementing WC/DM and these efforts should also serve as an example to all other local authorities.

Although the urban water requirement accounts for less than 5% of the total in the Breede WMA, more efficient water use by the urban sector can save a significant portion of this, with those savings immediately available. National estimates suggest that savings of as high as 40% of all urban use could be realised. Presently there is almost no data on how much water is lost in towns, both between the bulk supply and treatment works, and in the reticulation system to the users. Without monitoring systems in place to measure water loss, the performance and progress of local authorities in terms of WC/DM cannot be assessed.

In Grabouw, Bonnievale and De Doorns, the spectre of water shortages threatens. Although less imminent water shortages also threaten Robertson, Montagu, Villiersdorp, Barrydale, Riviersonderend and the Greater Hermanus area. Future potential water supply options to towns in this WMA are discussed in the Supply to Local Authorities Strategy (12.1). That strategy assumes that all effective WC/DM steps are taken before any new schemes will be considered.

Some of the larger towns do re-use some of their treated effluent for irrigating sports fields and golf courses. Other possibilities include local irrigation projects. Worcester's treated effluent is discharged into the Breede River, becoming available for uptake downstream.

Strategic Approach

The apparent lack of understanding of the importance of WC/DM by some local authorities requires a concerted effort from DWAF to promote the principles of WC/DM, illustrating the benefits that can achieved – with Hermanus and the CCT as examples. Savings of at least 30% in urban water use should be targeted.

Local authorities will be required to implement WC/DM before DWAF will permit the development of new local supply schemes. In line with the strategy to provide technical assistance to local authorities for managing their supply schemes, technical support will be provided by DWAF in facilitating the implementation of WC/DM, where appropriate and possible. Water 'recovered' through urban WC/DM should be used to meet the needs of that sector.

Management Actions

The following actions are required:

- ⇒ The WSDPs of local authorities should set WC/DM strategies and targets and should list those initiatives that are being implemented.
- ⇒ The RO must assess the WSDPs and ensure that WC/DM targets that are set by local authorities are both reasonable and achievable, and that they are implemented.
- \Rightarrow In towns in which there is still lei-water use, the use and efficiency of these systems should be established as this offers a potential water exchange option for municipal use.
- \Rightarrow Install bulk water meters on all urban supply schemes from which supplies are not currently measured.

- \Rightarrow Procedures should be instituted to reconcile bulk supply with end-use so as to quantify the extent of unaccounted for water in the reticulation system.
- ⇒ Towns of greatest need (e.g. Grabouw, Bonnievale, De Doorns) must be prioritised for implementing WC/DM.
- \Rightarrow Opportunities for increased use of treated effluent should be identified.
- \Rightarrow Develop a policy regarding the re-use of treated effluent taking into account the water quality requirements of different users and the requirements of the NWA.
- \Rightarrow Develop a programme to inform and train water services officials on the need for WC/DM.
- ⇒ Encourage local authorities to implement step-wise billing to encourage more efficient water use.
- ⇒ WC/DM by the CCT must continue and intensify where possible, thus reducing demand from water out of the Breede WMA.

Responsibility and Priority

The implementation of the Strategy for **Water Conservation and Demand Management: Water Services** is at National level (Directorate: Water Use Efficiency) with input from the RO. It is of high priority (**Priority 2**) and is to be implemented on an ongoing basis.

10.2 AGRICULTURAL WATER CONSERVATION & DEMAND MANAGEMENT

Management Objective

The objective of this strategy is to create a culture of water conservation through efficient conveyance systems, on-farm irrigation methods, salinity management and the promotion of conservation awareness amongst all users.

Situation Assessment

The BRBS concluded that there is significant potential for implementing WC/DM measures in the agricultural sector. The agricultural water requirement in the Breede WMA constitutes 93% of the current total in-catchment water requirement, and this sector therefore offers the greatest potential savings. Previous studies in the Robertson area suggest that less than 50% of the water diverted into Brandvlei Dam reaches the farm boundaries.

The most significant losses in this WMA are evaporation losses, conveyance losses, and freshening releases in the Breede River (to reduce salinity for users in the middle reaches). On-farm losses occur between the point of abstraction and the field edge. Actual irrigation technologies are, for the most part, modern and sophisticated and do not leave much room for improvement.

Timing of releases from storage dams, (notably Theewaterskloof and Greater Brandvlei) into the river channels and conveyance canals, for uptake by farmers is not as efficient as it could be as these are not based on short-term demand projections.

It is recognised that many farmers have installed efficient on-farm irrigation methods such as drip and microjet, but the overall impression is that with the exception of invasive alien plant removal, virtually no WC/DM measures are being applied to the conveyance systems (canals) themselves. Whilst little can be done to reduce evaporation losses, proper maintenance and upgrading of aging water distribution infrastructure serving the WUAs, can significantly reduce conveyance losses.

The pilot study that was planned by DWAF for the testing of its Agricultural WC/DM Implementation Guidelines had included the Breede River component as one of the study areas but unfortunately this did not materialise in this region.

Strategic Approach

The water available to virtually all the existing irrigation water supply schemes in the WMA is fully allocated, and agricultural water users must be encouraged to use water more efficiently. This water saved could either be used to expand existing operations (an incentive to farmers) or could be made available for emerging farmers, or simply returned to the system in the event of compulsory licensing.

Improved management of the releases from large dams should be investigated to determine the savings that may be achievable through the use of short-term demand projections, taking soil moisture and crop requirements into account. Release volumes could then be accordingly adjusted.

The recommendations of the Water Quality Strategy (8.3) in terms of potential water saving through alternative methods of salinity management (interceptor drains and reduced freshening releases for example) should be studied at feasibility level to determine the potential water savings and the financial costs of implementing such measures.

Management Actions

The following actions are required:

- ⇒ Through a workshop type forum, a set of benchmark values needs to be adopted for efficient water use on irrigated crops. All role players involved in irrigated agriculture within the Breede WMA should be included in the forum.
- ⇒ Consideration should be given to the concept of managing irrigation water supply schemes on the basis of compulsory weekly demand projections, based on reliable soil moisture content and crop water demand data.

- ⇒ Assess the condition of the distribution system and the losses (in the river and canals) so as to prioritise the implementation of improvements to the system.
- ⇒ Investigate the potential benefits of short-term demand projections and corresponding co-ordination of releases from Theewaterskloof and Greater Brandvlei Dams. Real-time monitoring requirements will need to be investigated (along the Breede and Riviersonderend Rivers as well as major irrigation canals) to support this type of release management approach.
- ⇒ DWAF's pilot study for the testing of its Agricultural WC/DM Implementation Guidelines should implemented in the Breede River catchment to develop a quantitative picture of the scope for WC/DM in the agricultural sector.
- ⇒ Consider the salinity interception management options described in the Water Quality Strategy (8.3) for reducing the volumes of water required for freshening the middle and lower reaches of the Breede River.

Responsibility and Priority

The implementation of the **Agricultural WC/DM Strategy** is a Regional responsibility, in consultation with the Directorate: Water Use Efficiency. It is of a high priority (**Priority 2**).

125 CHAPTER 11: INTEGRATION AND CO-OPERATIVE GOVERNANCE STRATEGIES

Two strategies have been identified for development, namely:

- 11.1 Support to Resource Poor Farmers
- 11.2 Co-operative Governance

<u>11.1</u> SUPPORT TO RESOURCE POOR FARMERS STRATEGY

Management Objective

The objective of this strategy is to provide a measure of equity in the allocation of water resources within the WMA and to prioritise the allocation of available surplus water to assist in the establishment of resource poor farmers. This can be achieved through the Co-ordinating Committee for Agricultural Water Use (CCAW) and the Water User Associations (WUAs).

Situation Assessment

A large number of resource poor farmer developments in the Breede River component have been registered with the Department of Land Affairs. Of these developments, 15 projects had been implemented by March 2002, benefiting in excess of 1000 participants on some 2 200 ha. A further 29 projects benefiting 1 700 participants on 1 900 ha are in the process of implementation. Whilst little detail is available, most of these projects are thought to be on existing farms and where irrigation is involved, would be using existing allocations of water. The extent of irrigation within these projects is uncertain but is likely to be negligible in comparison with the total current irrigation requirement of 722 million m^3/a in the Breede WMA.

As owner of the Stettynskloof and Fairy Glen Dams, the Breede Valley Municipality should be entitled to plan for meeting their future urban water requirements from the estimated 14 million m³/a surplus available out of those dams. However, the municipality must be encouraged by DWAF to also identify opportunity to provide water towards the establishment of resource poor farmers.

Interest has been expressed by potential resource poor farmer groups in Ceres, the Hex Valley, the Buffeljags River catchment, Elim, Villiersdorp, Riviersonderend and Genadendal. The latter three all lie within the Riviersonderend sub-area in which there is no water available to allocate. However, there is a current surplus of 3 million m^3/a in the Buffeljags River catchment (out of Buffeljags Dam). The option of water trading provides an avenue through which water can be made available to the emerging farmers, in areas where there is currently no surplus.

Opportunity will also avail itself in the Palmiet and Bot River catchments, where forestry plantations are being cleared. This State owned land could be made available to establishing resource poor farmers. Soil suitability analysis and access to water will define the optimum areas in which to establish irrigated agriculture in these areas.

Strategic Approach

First and foremost, a workshop type forum should be conducted by DWAF to establish exactly where resource poor farmers have acquired land, how much of that is under irrigation, if the water provided to them is out of existing allocations, which of the projects are joint ventures and who the joint venture partners are.

Whilst the isolated development of unsupported new pockets of emerging farmers may be feasible in some WMAs, this is not considered a good route to take in the Breede WMA. The reason is primarily that new farmers will be required to compete in the production of high value export crops, against experienced and established commercial farmers. The development of new entrants into competitive commercial farming practices must be through committed and sustainable support mechanisms.

Joint venture partnerships with commercial farmers and/or support from the State, through the CCAW are both potential support mechanisms. DWAF will consider the licensing of water to a joint venture between established commercial interests and resource poor farmers in a favourable light. This could be for the allocation of water from newly established supplies (new dams) or even water re-allocated through compulsory licensing. The objective being to ensure the technology transfer required for sustainable, productive and competitive farming. Commercial farmers are aware that the balance in ownership of land and water must change. Joint ventures also offer existing enterprises with the one opportunity to grow their agricultural interests – the requirement being committed technology transfer.

More equitable water use for irrigation must be engendered in order to increase the current level of participation (currently very small) by the previously marginalized. This will not preclude further expansion by existing commercial farmers. It will however place a higher priority on allocating a fair amount of water to resource poor

farmers, after which some expansion of existing commercial irrigated agriculture in the Breede WMA can be considered.

The BRBS has identified that the potential exists to cost effectively develop up to an additional 140 million m^3/a of yield in the Breede River catchment. Ultimately, whatever Reserve scenario is implemented, it is likely that the development of potential yield in the Breede component of the WMA will have a significant component of irrigation expansion associated with it. A high priority will be placed on ensuring a fair share of any irrigation potential to resource poor farmers. As the first step, it must be accurately established exactly how much irrigated land is currently in the hands of resource poor farmers, what land is available, what the demand is, and where this demand is located.

Management Actions

The following actions are required:

- ⇒ Through the CCAW establish and document the current status in terms of how many hectares of irrigated land are currently held by resource poor farmers, what that water requirement is and how is the water being provided (i.e. through existing allocations or not).
- Also, through the CCAW, assess the demand for equity water for agriculture (emerging farmers) and evaluate this against potentially availability. GIS plots of requirements, for overlays on the distribution of availability, would be a useful tool.
- ⇒ Where water is identified as being potentially available for allocation (Worcester and Buffeljags areas, for example) programmes through local government should be encouraged to inspire, inform and train new entrants into the irrigation sector. An implementing agent (perhaps a NGO) would be required to drive such a programme, to assist new farmers, and to facilitate access to available support.
- Support for resource poor farmers must remain a continued focus of the CCAW, through co-operative governance between DWAF, the Department of Land Affairs, the Department of Agriculture, the Western Cape Nature Conservation Board (WCNCB) and Provincial government.
- \Rightarrow Ensure the inclusion and participation of resource poor farmers within the establishment of WUAs.
- ⇒ Implement soils analysis studies in the areas of the Palmiet and Bot River catchments where forestry plantations are being cleared, and establish the most viable areas for developing irrigated agriculture.
- ⇒ Investigate potential sources of water supply to prospective resource poor farmers in the Palmiet and Bot River catchments.
- \Rightarrow Link groundwater availability to the needs of resource poor farmers.

Responsibility and Priority

The implementation of the strategy for **Support to Resource Poor Farmers** is the responsibility of the RO in conjunction with the Directorate: Water Resource Finance and Pricing and the Directorate: Water Allocation. It is of **Priority 2** (High) to be implemented immediately and on an ongoing basis.

11.2 CO-OPERATIVE GOVERNANCE STRATEGY

Management Objective

The objective of co-operative governance is to ensure that all regulating authorities involved in the management of the WMA are fully aware of the impact which their functions, decisions, and planning have on the water resources of the WMA.

Situation Assessment

Effective water resource management involves many different role players. Local government, provincial government, water service authorities and water service institutions all play key roles in this. This Co-operative Governance Strategy is therefore an over-arching strategy that essentially involves all aspects of water resource management and integrates with every strategy in the ISP. This strategy serves to address the most pertinent issues and concerns relating to co-operative governance. To date a number of co-operative governance initiatives have been undertaken by the RO, and these are functioning well. These include:

- Memorandums of understanding between DWAF (RO), Department of Agriculture, Department of Environmental Affairs and Development Planning, and the Cape Nature Conservation Board in relation to land-use practices. An example being the need to control clearing of virgin soils for new irrigation development, in an attempt to reduce the salt concentrations washed from these lands into the rivers.
- The Co-ordinating Committee for Agricultural Water (CCAW) involves DWAF, the Department of Agriculture, Cape Nature Conservation Board, the Department of Land Affairs and the Provincial Government. The CCAW addresses, amongst other issues, the provision of water to resource poor farmers. Refer to the Support to Resource Poor Farmers Strategy (11.1).
- The Streamflow Reduction Activities Licence Assessment Advisory Committee (SFRA LAAC). This Committee makes decisions regarding the licence applications for stream flow reduction activities, at the moment limited to afforestation. Representation on the committee for a particular region may vary but for the Western Cape would typically include representation from Catchment Forums, DWAF, Land Affairs as well as the Provincial Departments of Environmental Affairs and Development Planning, Agriculture, Local Government and Housing, and various NGOs and other stakeholders. There is however not much call on the SFRA LAAC with respect to the Breede WMA.
- Sub-catchment stakeholder forums have been formed and extensive stakeholder consultation has taken place with a view to establishing a representative CMA.
- A plan to resurrect irrigation in the Koo Valley through a joint initiative between DWAF and Dept Agriculture. The provision of water is via deep drilling into the Nardouw aquifer. The Dept Agriculture has paid for the groundwater exploration, drilling and casing of boreholes. Once fully established, the farmers will have to pay for the distribution of the water themselves.

There remain a number of shortcomings relating to the need for other co-operative governance structures in order to achieve truly integrated water resource management. These are briefly outlined below.

Water Quality

Enforcing water quality standards set by DWAF for the discharge of treated effluent by other authorities remains a shortcoming. The use of larger regional solid waste disposal sites is desirable, rather than small sites operated by individual towns. Closure of some smaller sites has taken place but these have not all been rehabilitated. Although urban growth is not a widespread problem in the Breede WMA, the management of the rapidly expanding settlement at Grabouw is of concern (Refer to the Water Quality Strategy - 8.3)

The problems associated with the management of diffuse pollution in the Bot River Lagoon are discussed in the Estuaries and Wetland Strategy (8.2) and a Management Plan is being drafted by the RO in consultation with all stakeholders.

A Structure Development Plan for the Lower Breede River is being drafted between DWAF and Provincial Government. This will address amongst other issues, the pollution of the lower Breede River and estuary, from increasing residential development and recreational use of the river.

Water Conservation and Demand Management

Water losses from poorly maintained and ageing canal systems and inefficient irrigation practices by some farmers need to be addressed through a co-operative approach with the Dept Agriculture. This is further addressed in the Agricultural Water Conservation and Demand Management Strategy (10.2).

Resource Poor Farmers

The availability of land and good soil in the Breede River component would allow for large areas for establishment of resource poor farmers. Water availability is more limited. DWAF on the one hand must inform the CCAW of where surplus water is both currently and potentially available, and the CCAW on the other hand must determine the demand for water by emerging farmers in those areas.

Invasive Alien Plant Removal

A co-ordinated approach to the removal of invasive alien plants in the Breede WMA has yet to be implemented. Co-operation between WfW, Dept Agriculture and DWAF will be necessary in order to implement the Clearing of Invasive Alien Plants Strategy (9.6) with maximum efficiency.

Water Supply to Local Authorities

There is pressure in the Coastal catchments, for expansion and some increased water requirements can be expected. Future possible supply options are presented in the Supply to Local Authorities Strategy (12.1) and these must be aligned within the WSDPs and IDPs being prepared by local authorities, as well as this ISP.

Monitoring Information

The sharing of monitoring data between the Department and other water management authorities is to be encouraged. DWAF is playing a leading role in developing a monitoring strategy for the Western Cape, supported by all government partners engaged in monitoring. Refer to the Monitoring Networks and Data Capture Strategy (15.2).

Strategic Approach

The importance of co-operation across Government Departments is now recognised more clearly than ever at all levels. Water is absolutely central to this, given the pivotal role it plays in all development. DWAF is very aware of its role as a co-operative governance partner. The historical approach of "demand and we will deliver" has become one of "if you require, or are going to require water, we will explore options with you".

DWAF does not wish to exercise undue power through its control over the water resources. The approach is one of maximising the provision of information to and the understanding of all water users, and co-operation and negotiation to ensure wise management and an equitable sharing. This requires taking a very active role in all development and other co-operative governance, and in ensuring that water has a permanent position on the planning agenda of co-departments.

A major issue is the frequent lack of compliance by some local authorities, particularly in terms of discharges from WWTWs. Co-operative governance approaches are at present the only available tool, but DWAF has been forced to investigate whether other methods can be invoked against non-compliant authorities. This is being addressed at national level, but it would be best to find regional solutions. The first step in the right direction is to identify the poorly managed WWTWs and SWDSs and to propose and support ways of improving the situation. The preferred option in terms of improved management of solid waste is to make use of larger regional solid waste facilities.

The Provincial Liaison Committee (PLC) comprising the various Western Cape Government Departments should be used as the forum for addressing co-operative governance issues, and the CMAs should be ultimately represented on the PLC. In so doing many issues could be resolved at regional level without requiring National involvement.

The responsibilities and roles of co-operating institutions need to be clearly identified. For example in terms of developing resource poor farmers, DWAF's role and responsibility is to inform the Department of Agriculture, through the CCAW, as to where water is available for potential resource poor farmer development.

Management Actions

The following general actions are required at Regional level:

- ⇒ Compliance in the management of WWTW and discharge of effluent needs urgent attention. Policies must be developed to deal with disputes between local authorities and the RO in relation to effluent quality and management of WWTW. A process of resolution between government institutions is required at National level.
- ⇒ Identify opportunities for sharing both monitoring and the capture of water management information, and for the sharing of information with other authorities, to avoid duplication of effort.
- ⇒ Identify the relevant local authorities and develop strategies with them relating to pollution of rivers, taking into account the recommendations of the dense settlement strategy (DWAF/DANIDA).
- ⇒ DWAF and Provincial Government need to push for agreement on the Draft Structure Development Plan for the Lower Breede River.

Responsibility and Priority

The implementation of the **Strategy on Co-operative Governance** is at National level (Directorate: Institutional Oversight) with input from the RO. This is of **Priority 2** (High).

CHAPTER 12: INSTITUTIONAL DEVELOPMENT AND SUPPORT STRATEGIES

One strategy has been identified for development, namely:

12.1 Supply to Local Authorities

12.1 SUPPLY TO LOCAL AUTHORITIES STRATEGY

Management Objective

To ensure that the WSDPs, IDPs and all other planning processes are aligned with this ISP and with the realities of available water supply to Local Authorities and District Municipalities. The current sources of supply to all towns and the potential options for future supply need to be identified and strategies developed to ensure sustainable water provision.

Situation Assessment

As part of the Integrated Development Plans (IDPs), local authorities have been requested to prepare Water Services Development Plans (WSDPs). These are intended to highlight the current sources of supply and future anticipated sources of supply to these authorities for further distribution to users. Certain of the WSDPs have already been submitted. However, the detail and information provided varies and is often inadequate or incomplete. Future sources of supply to urban users, as best understood and recommended by DWAF, are suggested within this strategy (see Table 12.1.1).

In the Overberg catchments two rural water supply schemes (Ruensveld West and Ruensveld East) import water from the Riviersonderend River. Both are operated and maintained by the Overberg Water Board. Although these schemes are primarily for rural domestic water supply, the Ruensveld West Scheme also supplies water to the town of Caledon, Bredasdorp and Arniston. A third rural water supply scheme, the Duiwenhoks Scheme, imports water from the Duiwenhoks River Dam in the Gouritz WMA to supply farms in the Lower Breede sub-area. This scheme also supplies the town of Witsand with water. With the exception of the towns of Greyton and Riviersonderend (both supplied from Theewaterskloof Dam), the water requirements of all other towns in the Breede River component are supplied from local schemes operated by the local authorities. Use is made of both surface and groundwater.

Water shortages are imminent at the towns of Grabouw, Bonnievale and De Doorns. De Doorns will be granted an allocation out of the proposed Osplaas Dam should this be built. At Robertson, Montagu, Barrydale, Villiersdorp, Riviersonderend and the Greater Hermanus area, planning to meet future water requirements is also a high priority. Potential for groundwater abstraction out of the TMG has been confirmed at Hermanus.

The Water Services: Water Conservation and Demand Management Strategy (10.1) addresses the steps that must be taken to effectively implement WC/DM as a prerequisite to any further development of local supply schemes.

Strategic Approach

The responsibility for resolving local water supply problems lies with the local authorities. DWAF is nevertheless responsible for the overall management and allocation of the resource and will, before authorising any new allocation, take steps to ensure that the local authorities have access to the necessary information for decision-making, and that they have taken all possible steps to manage the existing allocation carefully.

With regard to the allocation of possible resources to be used in local supply schemes, DWAF will first focus on ensuring that adequate steps are taken by local authorities to implement the broad principles of WC/DM (water reuse, savings, leakage reduction, invasive alien plant removal, etc) and water trading. Thereafter groundwater will often be the preferred resource in this WMA, and DWAF will insist on proper groundwater investigations. Technical guidance will be provided by DWAF where possible and appropriate. More supportive technical assistance will be considered only where the towns do not have adequate resources themselves.

IDPs and WSDPs should include a review of supply options (as per Table 12.1.1), indications of growth rates, and plans for growth. Appropriate water supply and sanitation systems must be in place, taking into account the ability of the resource to handle waste discharge. DWAF will support the preparation of these documents through the provision of ideas, information, and technical expertise.

Management Actions

Local authorities will often need assistance and advice from DWAF in the planning of local schemes. The following actions are required in this regard:

- ⇒ Study available IDPs and WSDPs and check for alignment with the ISP in terms of water conservation and demand management, future supply, as well as projections of future requirements.
- ⇒ Liase with local authorities and District Municipalities to ensure that alignment is reached, with regard to both demand and supply, either through adjustments to the IDP / WSDPs or to the ISP.
- ⇒ Develop and provide local authorities with the principles against which DWAF will license water use.
- \Rightarrow Indicate to the local authorities the degree to which support could be provided by the Department.
- \Rightarrow Provide support as appropriate.
- \Rightarrow Develop and provide availability maps.

Responsibility and Priority

The implementation of the **Supply to Local Authorities Strategy** is the responsibility of the RO, providing guidance to local authorities and in consultation with the Directorate: National Water Resource Planning. It is of moderately high priority (**Priority 3**) to be implemented on an ongoing basis over the long term.

TABLE 12.1.1: CURRENT AND POTENTIAL SUPPLY OPTIONS TO URBAN USERS IN THE BREEDE WMA

LOCAL MUNICIPALITY	USER	CURRENT SOURCES OF SUPPLY	FUTURE POSSIBLE SOURCES OF SUPPLY
Witzenberg	Prince Alfred Hamlet.	Borehole and Wabooms River Diversion.	Adequate supply for the next 40 years.
	Ceres.	Koekedouw Dam.	Excess water is available but at high cost.
	Wolseley.	Tierhoek Stream.	Wolseley's unused allocation out of the Artois Canal.
Breede Valley	De Doorns.	Mountain stream, Sandrift Government Water Scheme.	50 000 m ³ /a from proposed Osplaas Dam. Also boreholes.
	Rawsonville.	Smalblaar River.	Water trading and groundwater.
	Worcester.	Stettynskloof Dam, Fairy Glen Dam, and allocation out of the Hex River.	Some unused allocation out of Stettynskloof Dam currently utilised by the Holsloot Irrigation Board, under agreement with the Breede Valley Municipality - adequate for next 40 years.
Breede River / Winelands	Robertson.	Dassieshoek and Koos Kok Dams.	Water trading (adequate for 10 years). Potential to supply Robertson out of a potentially augmented Greater Brandvlei Dam.
	McGregor.	Houtbaais and Hoeks River.	Water trading and groundwater.
	Bonnievale.	Breede River via the Zanddrift Canal.	Water trading.
	Montagu.	Mountain streams, Breede River and borehole.	Cogmanskloof Scheme as well as possible groundwater out of the TMG. Also possible to link to Ashton through a pumping scheme.
	Ashton.	Breede River via the Cogmanskloof Scheme and private pumping scheme.	Cogmanskloof Scheme as well as possible groundwater out of the TMG.

TABLE 12.1.1 (cntd) CURRENT AND POTENTIAL SUPPLY OPTIONS TO URBAN USERS IN THE BREEDE WMA

LOCAL MUNICIPALITY	USER	CURRENT SOURCES OF SUPPLY	FUTURE POSSIBLE SOURCES OF SUPPLY
Theewaterskloof	Villiersdorp	Borehole and Elandskloof Dam. Winter water out of the Kommissiekraal River (tributary of the Elands River).	Water Conservation and Demand Management (WC/DM) and water trading.
	Genadendal	Mountain stream.	WC/DM. Existing sources can supply more if there is additional storage. Also groundwater.
	Greyton.	Mountain streams and Theewaterskloof Dam.	WC/DM. Trading with irrigators currently supplied out of Theewaterskloof Dam is also an option.
	Riviersonderend.	Mountain stream and Theewaterskloof Dam.	WC/DM. Trading with irrigators currently supplied out of Theewaterskloof Dam is also an option.
	Overberg Water.	Theewaterskloof Dam allocation.	Same as current + possible increased imports from Gouritz WMA (Duiwenhoks Scheme).
	Grabouw.	Eikenhof Dam and Wesselsgat Weir.	Palmiet River and TMG aquifer.
	Botriver.	Boreholes and springs and Railways Dam.	Groundwater.
	Caledon.	Ruensveld West Scheme (Overberg Water), out of the Riviersonderend River & boreholes.	Ruensveld Scheme and groundwater.
Langeberg.	Witsand.	Duiwenhoks Scheme (via Overberg Water Board)	Groundwater piped from Potberg. Desalination of Breede River Water. Possible excess winter water from Duiwenhoks River.
	Infanta.	Boreholes.	Groundwater (Potberg).
Swellendam	Barrydale.	Huis River/ Small Dam.	Groundwater development is an option as well as additional supply from the Huis River.
	Swellendam.	From a small stream (Klip River) into 3 small dams.	Has adequate supply. Peak demands could be met from groundwater.
	Suurbraak.	Buffeljags River and a spring.	Buffeljags River abstraction to off-channel storage.
	Buffeljags settlement.	Untreated water from Buffeljags Dam.	Buffeljags Dam.
	Rietkuil community.	Overberg Water.	Overberg Water.

TABLE 12.1.1 (cntd) CURRENT AND POTENTIAL SUPPLY OPTIONS TO URBAN USERS IN THE BREEDE WMA

LOCAL MUNICIPALITY	USER	CURRENT SOURCES OF SUPPLY	FUTURE POSSIBLE SOURCES OF SUPPLY
Overstrand	Pringle Bay, Rooi Els.	Buffels River Dam and springs.	Palmiet River and groundwater.
	Bettys Bay, Kleinmond.	Both from Palmiet River and also 3 boreholes for Kleinmond supply.	Palmiet River (adequate for 15+ years).
	Hermanus, Fisherhaven, Vermont, Onrus River, Sandbaai.	De Bos Dam.	TMG Aquifer, desalination and Klein River Dam.
	Gansbaai.	De Kelder springs, Franskraal Dam, boreholes and 2 million m ³ /a from Kraaibosch Dam (Uilkraals sub-area).	Groundwater. Also possible artificial aquifer recharge using treated effluent.
	Stanford.	Groundwater.	Groundwater. Also possible artificial aquifer recharge using treated effluent.
	Tesselaarsdal Community.	Mountain stream, supplemented from boreholes and springs.	Groundwater.
	Pearly Beach.	Springs and Boreholes.	This needs to be addressed. Possible groundwater supply.
	Baardskeerdersbos.	Community Water and Sanitation Services (CWSS) Project 2004/5.	Tributary of Boesmans River and boreholes.
Cape Agulhas	Elim / Spanjaardskloof & Sandfontein.	Borehole and spring. Sandfontein supplied from CWSS project.	Additional boreholes and surplus winter water from Nuwejaars River.
	Bredasdorp.	Boreholes, Klein Sandrift Dam and Ruensveld East Scheme.	Ruensveld East Scheme via pipeline already installed. Also further development of local groundwater resource.
	Struisbaai, L' Agulhas & Suiderstrand.	Boreholes	Further development of groundwater.
	Arniston / Waenhuiskrans.	Bredasdorp Municipality and Ruensveld East Scheme. Groundwater used to meet peak demands but is of high salinity and treatment costs cannot be afforded by the local authority.	Supply from Bredasdorp and groundwater.
	Napier.	Borehole & mountain stream (Vlermuiskelderskloof).	Groundwater.
	Protem / Klipdale.	Ruensveld East Scheme (Overberg Water Board).	Ruensveld East Scheme (Overberg Water Board).

CHAPTER 13: SOCIAL STRATEGY

DWAF recognises that no decision regarding the use of water resources should be made without due consideration of the social, economic and ecological impacts of such decisions. Together with the technical and economic aspects this multi-faceted decision base has become more and more necessary as the resource becomes ever more scarce.

It is important that DWAF highlights the social aspects of its agenda. These are already very clear in the quest for equity, in the support for resource poor farmers, in the water supply and sanitation programme, and in the poverty eradication, but it is nevertheless very important that any decision by DWAF remains transparent and that the Department never loses sight of its social responsibilities. Extensive public participation has been mandated through the NWA for many DWAF activities and those strategies appearing in this ISP with a strong social and public participation component are:

- Groundwater Utilisation (7.4)
- Reserve and Resource Quality Objectives (8.1)
- Changing land-use Clearing of Invasive Alien Plants (9.6)
- Water Conservation and Demand Management (10.1 and 10.2)
- Strategy for Supply to Local Authorities (12.1)
- ISP Implementation (16)

DWAF is required to include the public in much of its management and decision-making process and the ISP Implementation Strategy (No 16.1) is be aimed at putting this into effect for the ISP process.

There are two strategies under this heading, namely:

- 14.1 Management of Reserve Releases from Private Dams
- 14.2 Recreation on Dams and Rivers

14.1 MANAGING RESERVE RELEASES FROM PRIVATE DAMS

Management Objective

To develop protocols for the releases of water from private dams as a contribution to the Reserve requirement of the river systems in which they occur.

Situation Assessment

Currently environmental releases from privately owned in-channel dams are specified only for three dams in the Breede WMA. These are the Eikenhof Dam on the Palmiet River, the Koekedouw Dam on the Koekedouw River at Ceres, and Kraaibosch Dam on the Uilkraals River. Whilst releases do take place from other private/municipal dams (De Bos Dam in the Onrus River catchment and Arieskraal Dam in the Palmiet catchment, for example) these are primarily for the benefit of other users downstream and not for the environment. The conditions attached to the authorisation for operating each of the three dams in question are unique to each of them and are briefly explained below:

Eikenhof Dam

The spillway of the Eikenhof Dam (Palmiet River) was raised and augmented in 1998, prior to the implementation of the NWA. Based on Ecological Water Requirement studies undertaken, the licence conditions for the raising were set, such that a release of 2 million m^3/a via a continual flow release into the Palmiet River be made.

Koekedouw Dam

The dam (in the Upper Breede) was reconstructed in 1998 and under the new licence, releases for Ecological Water Requirements were stipulated. Although the NWA had yet to be passed, the understanding of the requirements of the Reserve was already in place and the licence conditions were set with this in mind. The releases are based on fixed monthly percentages of modelled inflow for each month, and not on actual recorded inflow records. The licence has a condition for a 50% cutback in releases during drought periods, and this condition was implemented in September 2003 at the onset of the summer season.

Kraaibosch Dam

This dam, on the Uilkraals River, was approved prior to the implementation of the NWA. Releases for Ecological Water Requirements were stipulated, and licence conditions set with the Reserve in mind. During summer 100% of the inflow into the dam is released. Inflow is recorded at an upstream gauging station and the outlet releases adjusted to match. This is reset every second day. During winter, 60% of the inflow is stored and 40% released via a continual release process, based on the same inflow measuring process used in summer. The dam has a storage capacity of only 30% of the MAR and as a result fills relatively quickly in winter. When spilling starts, the outlet valves are simultaneously opened to assist in providing peak flows downstream in winter. The monitoring of flow releases is conducted by DWAF.

The Arieskraal Dam on the Palmiet River was authorised prior to the implementation of the NWA (1998) and a continual but small flow release is made from it, via a small diameter orifice plate. This release is to provide water to a downstream user who has a licence to abstract that water. The existing outlet infrastructure will not be able to make Reserve type releases. This presents a potential problem for implementing the Palmiet River Reserve. The only means of making environmental releases to the river downstream is by first filling Arieskraal Dam through releases made from the upstream Kogelberg Dam. Arieskraal is then allowed to fill and spill. Not only is this inefficient (particularly in summer) but means that with its current outlet infrastructure, Arieskraal Dam itself will be unable to contribute to the eventual Reserve requirement.

Strategic Approach

The importance of efficient water use is stressed throughout this ISP and solutions must be found to overcome the specific problem at Arieskraal Dam. More broadly, all large private dams should eventually be making a contribution towards the Reserve. The flow release conditions being implemented at Kraaibosch Dam for example, present a good illustration of what can be achieved, where the outlet infrastructure is in place to make such releases.

A Palmiet Catchment Management Plan has been developed by the RO and this management plan should be integrated with the strategies of this ISP.

Management Actions

The following actions are required:

- ⇒ Implement the Palmiet Catchment Management Plan.
- ⇒ The Reserve for the Palmiet River and estuary should be determined and the relative contribution from Arieskraal Dam to that Reserve be established.
- ⇒ Through negotiation with the owners, a solution to the problem at Arieskraal Dam must then be sought. A water efficient solution would be to replace the current orifice plate with a suitable outlet control structure at the dam.
- ⇒ Use the Kraaibosch Dam as an example to illustrate to stakeholders at other private dams how seriously the Department considers the importance of providing for the Reserve.
- ⇒ Encourage the Koekedouw Irrigation Board to establish a record of inflow into the dam so as to implement a responsive release management strategy, similar to that adopted at Kraaibosch Dam.

Responsibility and Priority

The implementation of the **Managing Reserve Releases from Private Dams Strategy** the responsibility of the RO in conjunction with the Directorate: RDM, the Directorate: Abstraction and Instream Use and the Directorate: National Water Resource Planning. This strategy is of highest priority (**Priority 1**).

14.2 RECREATION ON DAMS AND RIVERS

Management Objective

To identify and implement the zoning policy on existing dams and to manage recreational activities on the inland water bodies of the WMA.

Situation Assessment

The NWA defines recreation on rivers and dams as a water use. General Authorisations have been developed to establish the limits within which water resources may be used for recreational purposes. There is an existing policy in place for zoning of dams, concessions, and stakeholder involvement as far as recreational use is concerned.

Within the Breede WMA, the Greater Brandvlei Dam, Theewaterskloof Dam and the main stem Breede River itself are currently extensively used for recreational purposes. The Breede River in particular is of significant recreational importance in the WMA, one notable event being the Breede River Canoe Marathon held annually between Robertson and Swellendam.

The Greater Brandvlei Dam consists of the Brandvlei and Kwaggaskloof Dams. Motorised water sport is permitted on Kwaggaskloof Dam and yachting on Brandvlei. At Theewaterskloof Dam motorised water sport is permitted and yachting is very popular. Future planning in terms of zoning will need to take this into account, particularly in the case of the Greater Brandvlei and Kwaggaskloof Dams. These two dams share one water surface when they reach certain storage levels. This will be more frequent if the potential augmentation of Greater Brandvlei Dam comes to fruition, and the development of lakeside properties should be managed accordingly.

Strategic Approach

In the Breede WMA, DWAF sees its role as being to maximize recreational benefit from the use of state assets. At the same time this should not be at unreasonable cost to other water users. The RO must list and categorise all those dams and rivers that serve as 'recreational assets' in this WMA. The future management of these assets, and the likely negative impacts that current use might have, need to be evaluated. At the same time the very real social benefits of the recreational opportunities provided by dams and rivers need to be taken into account. No asset should be further restricted or closed to use without very close consideration of the social cost that this might carry, and such a decision should not be taken lightly. It is important that facilities should not be exclusive and bound to traditional users. DWAF must ensure that equity is achieved in making its resources available to all users.

Management Actions

The following actions are required:

- \Rightarrow Review and implement the existing recreational use policy in the Breede WMA.
- \Rightarrow Utilisation of the dams for recreational purposes should be promoted.
- ⇒ Strategies developed by the Sub-directorate: Environment and Recreation, on how these dams could best be utilised, should be implemented.

Responsibility and Priority

The implementation of the **Recreation on Dams and Rivers Strategy** the responsibility of the RO and is of a relatively low priority (**Priority 4**).

CHAPTER 15: MONITORING AND INFORMATION STRATEGIES

Two strategies have been identified for development, namely:

- 15.1 Abstraction Control Monitoring
- 15.2 Monitoring Networks and Data Capture

15.1 ABSTRACTION CONTROL MONITORING

Management Objective

To facilitate improved control and management of water abstractions, compliance with authorisations, and reliable information on actual water use.

Situation Assessment

It is probable that in certain areas of the WMA, some unlawful water use (such as exceedance of licensed volumes) is taking place, making the monitoring and control of abstraction a necessary activity. Within formal WUAs it is expected that the activities of members will be monitored by the WUAs themselves. The control of abstraction outside of formal WUAs presents a more formidable challenge, particularly in the Overberg catchments where farmers have historically not operated within the umbrella of irrigation boards.

Through the ISP process to date, indications are that possible areas of concern include the following:

- The extent of abstraction of groundwater within the Ceres sub-area exceeds the preliminary estimates of sustainable abstraction,
- Where artesian boreholes are found to occur, these are often not being appropriately capped (sealed) between periods of use. Under this type of non-continuous use, water is not being efficiently used,
- The extent of groundwater abstraction in the Hex sub-area and its impact on the available surface water resource,
- The current abstraction of groundwater out of the alluvium, in the area between quaternary catchment H10F and Greater Brandvlei Dam is estimated at 25 million m³/a. The preliminary groundwater Reserve suggests a sustainable abstraction volume of 20 million m³/a out of the alluvium in that area,
- The extent of summer abstraction of surface water from the Breede River and Riviersonderend River tributaries,
- Groundwater and surface water abstraction in the Tradouw sub-area, particularly to the north of the Langeberg mountains,
- The abstraction / storage of water by private irrigators in the Palmiet River,
- The RO does not currently have the resources available to monitor and police abstraction on behalf of the Reserve,
- In general, abstraction for irrigation purposes outside of irrigation schemes is difficult to control and would require continual policing to ensure compliance with licence conditions.

A protocol for abstraction of water from all water resources in the Breede WMA is currently being developed by the RO. Abstraction control by large private users from their own infrastructure will ultimately become the responsibility of the WUAs who will be responsible for monitoring the collective water use of all members.

Strategic Approach

Abstraction control and management is going to become ever more critical as water becomes scarcer and competition for the resource intensifies. This is a particular concern in the case of relatively uncontrolled shared water, such as aquifers accessed by many different users, and where dam releases are made for selective uptake by farmers further downstream. These are systems open to abuse.

Abstraction and monitoring must go hand in hand, and monitoring systems implemented to achieve the desired objective of stopping illegal and unpaid for water use. The Allocation and Licensing Strategy (9.3) provides recommendations on how new applications for abstraction licences should be managed within the Breede WMA. These recommendations must be taken into account when designing abstraction control monitoring networks.

Whilst it is understood that there is probably some over-abstraction by irrigators (the Ceres, Hex and Palmiet subareas for example), and this may be lawful use resulting in an effective over-allocation, this component of overallocation should be resolved through the WUAs themselves. Any illegal use will be identified during the verification of existing lawful use process and the suggested actions of that strategy (9.2) applied.

Management Actions

The following actions are required:

- \Rightarrow Review and document the acceptability of current monitoring of use (what is currently monitored, how acceptable is it and what is required to meet the needs).
- ⇒ Groundwater abstraction licences should be written with a proviso statement under which special conditions such as borehole capping, control valves and monitoring come into effect if artesian water is encountered once the borehole is drilled.
- ⇒ The management of abstraction by irrigators must become part of the WUA responsibility and monitoring will have to be implemented by the WUAs to ensure that their members are compliant.
- \Rightarrow The monitoring of abstraction and storage of water from the Palmiet River must receive high priority as identified in the Verification of Existing Lawful Use Strategy (9.2).
- ⇒ Identify the extent of additional resources that would put the necessary monitoring in place to ensure that the requirements of the Reserve are not being impacted upon by illegal abstraction.
- ⇒ Develop capacity within the Breede CMA to undertake monitoring.

Responsibility and Priority

The implementation of the Abstraction Control Monitoring Strategy is the responsibility of the RO in conjunction with the Directorate: Water Abstraction and Instream Use. It is of **Priority 2** – High.

15.2 MONITORING NETWORKS AND DATA CAPTURE

Management Objective

The design and implementation of effective monitoring networks and repository databases to ensure adequate quantification of the balance between sustainable water use and protection for surface freshwater bodies and groundwater.

Situation Assessment

Some notable issues in the Breede WMA relate to inadequate groundwater monitoring, groundwater / surface water interaction, and a need to implement flow gauging into estuaries.

A. SURFACE WATER MONITORING

- Determining and implementing the Reserve is only one part of the picture. Monitoring to gather and evaluate baseline river data and assess the effectiveness of implementing the Reserve, is not yet in place.
- The Water Quality Management Strategy (8.3) identified the need for establishing and monitoring the extent of discharge and/or irrigation with inadequately treated or untreated agricultural effluent (particularly from small-scale polluters who are more difficult to monitor) and salinity.
- Flow gauging in the rivers of the Breede WMA is adequate from a hydrological perspective.
- Baseline monitoring (monitoring to establish current river health) of the wetlands and estuaries is inadequate throughout the WMA. An exception is the Bot River estuary (a managed system) in which baseline monitoring does take place.

B. GROUNDWATER MONITORING

- Groundwater abstraction licences cannot be issued without a preliminary groundwater Reserve determination and there is often insufficient monitoring data available to support a determination.
- The monitoring network can be expanded by attaching monitoring conditions to new licence applications. However, without first having that information to undertake a preliminary Reserve, the licence conditions cannot easily be set.
- Over-abstraction of groundwater takes place in the Ceres catchment and the actual extent of current abstraction out of the alluvium in the Upper and Middle sub-areas is not reliably known.

C. INTEGRATED WATER RESOURCE MONITORING

- The effects of snow melt on surface water flow and groundwater recharge is not well understood.
- The RO is developing a strategy/protocol on abstraction and allocation from all water resources in the Breede WMA.
- The raingauging network in the high rainfall areas of the Breede WMA is not adequate for accurate hydrological modelling of surface water runoff but expansion of the network is planned by the RO.
- Aquaculture taking place in Kraaibosch Dam (Uilkraals River) is being monitored by Gansbaai Municipality. This monitoring will serve as a baseline monitoring study to determine aquaculture impact on water quality of dams in general. This type of involvement by local authorities should be encouraged.

Strategic Approach

Surface Water Monitoring

Baseline monitoring in the Riviersonderend River is a high priority in order to gather information that will be required to support decisions on the Reserve for that river. Monitoring will bring an understanding of how the river system functions under present day flow conditions. Once the environmental requirements have been established and an understanding of the river system has been developed, then a detailed protocol for implementing the eventual Reserve can be put in place.

Groundwater Monitoring

The Groundwater Utilisation Strategy (7.4) lists the improvements required in terms of groundwater monitoring. In the interim, licence applications for groundwater abstraction do not need to be put on hold. Expert opinion coupled with the findings of the BRBS should be used to refine the recommendations of the Allocation and Licensing Strategy (9.3) as to where, and under what resource protection conditions licences for groundwater abstraction can be issued. Improvements to groundwater monitoring networks must be focussed on those areas which are most vulnerable and in which the use is most extensive. These include the Ceres, Hex and Upper Breede sub-areas, with particular emphasis on the alluvial aquifer and its interaction with surface flow and the TMG aquifer.

Water Quality

The extent of precautionary measures that need to be taken by polluters, and the effects of those measures, will need to be established through a census by the RO. The focus should first be on establishing the extent and impact of small-scale irrigation with inadequately treated effluent and to verify that the water quality requirements of the GAs for irrigating with wastewater, are being met.

Data Sharing

In the Western Cape a start has already been made by getting all the co-operative governance partners involved in monitoring, to coordinate a strategy, based on mutual needs and on achieving efficiencies by combining efforts in terms of both data collection and information management. DWAF has proved to be an obvious driver in this process and has been requested to maintain this role. More attention and resources are required if this is to keep its momentum. One of the core strategic approaches already adopted by the RO is that no data should have exclusive ownership and that the sharing of data should be maximised to the benefit of all. There are concerns regarding the possible misinterpretation of organisation-specific data by others, and there will inevitably be the need for some cost recovery in certain instances – however these broad principles are endorsed and need to be carried forward through this strategy. Monitoring by local authorities should be encouraged.

Management Actions

The following general actions are required:

- ⇒ As recommended in the Releases from Private Dams Strategy (14.1) a review of the current monitoring of releases from such dams should be undertaken.
- \Rightarrow In terms of the Reserve, a two-fold monitoring programme needs to be adopted to ensure that:
 - o the Reserve requirements are being complied with, and
 - baseline data on river conditions is continually monitored so as to establish whether or not the ecological objectives of the setting the Reserve in the first place are being met (the Riviersonderend River is a priority for baseline monitoring).
- ⇒ Developing an understanding of the overall resource (of which snow melt is one component) is an important requirement for future water resource planning.
- ⇒ Further study is required to identify suitable monitoring criteria and sites so as to improve on the understanding of the surface water/groundwater interaction, particularly that of the alluvium (its core space volume, recharge, etc.). It is important to establish the potential of the alluvium for further development of yield in the Breede WMA.
- ⇒ The abstraction strategy/protocol being developed by the RO for the Breede WMA will be extended to also include the management of the alluvium.
- ⇒ Implement baseline monitoring to determine the ecological status of the estuaries and wetlands in the order of priority identified in the Estuaries and Wetlands Strategy (8.2). As a first step, the inflow to the estuaries should be monitored.
- ⇒ The RO must continue their investigation into establishing new raingauging stations in the mountain catchments of the Western Cape, establish new stations, and ensure that existing stations that are already in place, be maintained.
- ⇒ Develop and implement the Provisional Regional Monitoring strategy that has been drafted by the Western Cape RO.

Responsibility and Priority

The implementation and co-ordination of the **Monitoring Networks and Data Capture Strategy** must be driven at WMA level by the RO in consultation with the Directorate: Information Programmes and the Directorate: Hydrological Information. This of **Priority 2** – High.

CHAPTER 16: IMPLEMENTATION STRATEGIES

One strategy has been identified for development, namely:

16.1 ISP Implementation

16.1 ISP IMPLEMENTATION

Management Objective

To ensure that the approaches put forward by the Department through this ISP are adopted and implemented in the Breede WMA. This will require commitment, funding and capacity.

Situation Assessment

The ISP is an internal document developed by the Department of Water Affairs and Forestry. The ISP sets out the approaches which the Department is taking towards water management in the Breede WMA – and lists suggested actions towards achieving good management of the water resources.

The wider public has had no direct input into the writing of this ISP - yet it is recognised that the approaches suggested have a significant impact on the people of the Breede WMA. Whilst the approach to date in developing this ISP may seem non-participatory, it must be remembered that this is not a Catchment Management Strategy – but DWAF setting out how it sees the situation, and the steps which it views as most appropriate in dealing with that situation. Interactions with the public have been an important influence in developing the approaches adopted.

This ISP is not a closed document but is to be made available to the wider public for comment and input. This makes the ISP an inherently transparent document – opening out the thinking and planning of the Department. Although DWAF makes no commitment to adopt every comment made, these will be taken seriously and the ISP will be updated and improved as newer and better perspectives are formed. Once the CMA has been established it will be required to develop a CMS, and this will require full public participation. It is to be hoped that the ISP will be taken as useful baseline information and, indeed, that the approaches adopted here are found to be acceptable to, and adaptable by, the new dispensation.

Strategic Approach

ISPs for each WMA are guided by the NWRS – and decisions affecting national resource distribution and use, as presented in the NWRS, are binding on each ISP. This ISP does, however, make a number corrections and improvements which serve as knowledge updates to the NWRS, particularly as regards catchment water balances and the availability of water for purposes of allocation. The ISP is signed off by the Director NWRS and approved by the Department's Water Resources Functional Management Committee. It is also published on the Departmental website. It therefore has the status of an official document containing current best available knowledge with regard to water resource use and availability.

The ISP should be updated as and when new information becomes available and will serve as the primary source document for decision-making, within the framework provided by the NWRS.

The implementation of the ISP is an enormous task and will have to be tackled in a stepwise fashion. Much of what is in this document describes the day-to-day functions of the Department – but there are many new tasks, functions, and actions set out in response to DWAF's visions for the future.

It is recognised that it is quite impossible to immediately launch into, and achieve, all that is required by this ISP. Funds and capacity are real constraints. The approach is to take the ISP and to use it as instruction, guidance, and motivation in the development of yet clearer management and action plans. These must be built into Departmental Business Plans, and budgeted for as part of Departmental operating costs. This will necessarily be in a phased manner as dictated by available resources, but it is important that the ISP be used to leverage maximum funds, maximum capacity, and to bring optimum management to the WMA.

The position with regard to the 'Authority of Information Contained in the ISP' is further set out in Para. 1.3.4 of Chapter 1 of this ISP document.

Management Actions

The following actions are required:

- ⇒ Publish the ISP to be accessible for public input and comment (consider hard-copy and web-based options). Copies will be presented to key stakeholders on request. It is not the intention to have a major drive for public input, but merely to create opportunity for input.
- ⇒ Develop materials which help to take the ISP to Provincial, District and Local Government authorities. Also to support the Water Services Development Plan, organised agriculture, emerging farmers, and others. Materials should be useful in preparation of the Provincial Growth and Development Strategy and other regional and provincial planning activities.
- ⇒ There are many actions in the ISP which do require public involvement and it is important that the thinking with regard to, for example, the use of groundwater, and the importance of WC/DM, is delivered forcefully to local authorities, other direct water users such as agriculture, and the wider public.
- \Rightarrow Collate and consider all comment in revising and improving the ISP.
- \Rightarrow The ISP should be open to continuous improvement, with updating on a regular basis.
- ⇒ All Regional Office water resource management staff, Working for Water, CCT and other major stakeholders should have access to, or copies of, the ISP.
- ⇒ Approaches set out in the ISP need to be accepted and adopted by both national and regional staff. Where there is resistance to ideas then this needs to be resolved in an open climate of debate and understanding. Modification of the ISP is not ruled out.
- \Rightarrow The practicalities of implementation demands must always be considered.
- \Rightarrow Most actions in this ISP have been assigned to the Region. It is critically important that the tasks outlined are prioritised, budgeted for, and built into regional and national business plans and budgets.

Responsibility and Priority

The RO is responsible for implementing this strategy. It is of the highest priority (**Priority 1**). The implementation is to be ongoing until the Breede CMA is established and the ISP is superseded by a CMS.

REFERENCES

- 1) **Department of Water Affairs and Forestry**, South Africa. 1988. *Eastern Overberg Coastal Zone Water Supply*. Prepared by Ninham Shand Inc. DWAF Report No. 2760/7927.
- **2) Department of Environmental Affairs and Tourism**, South Africa. 1989. *National Conservation Act.*
- **3) Department of Water Affairs and Forestry**, South Africa. 1998. *National Water Act.* (Act No 36 of 1998).
- 4) **Department of Water Affairs and Forestry**, South Africa. 2000. *Western Overberg Coastal Zone Water Supply Overview*. Prepared by V3 Consulting Engineers. Report No. US048583.
- 5) Department of Water Affairs and Forestry, South Africa. 2002. Breede Water Management Area. Water Resources Situation Assessment, Main Report Volume 1. Prepared by Ninham Shand Inc. in association with Jakoet & Associates. DWAF Report No. P 18/000/00/0101.
- 6) **Overstrand Municipality**. 2002. *Overstrand Water Resource Investigation*. Prepared by V3 Consulting Engineers. Report No. USO/15782.
- 7) **Department of Water Affairs and Forestry**, South Africa. 2002. Water Quality Management Series, Sub Series No MS 7 National Water Quality Management Framework Policy, Draft 2.
- 8) Department of Water Affairs and Forestry, South Africa. 2003. Breede River Basin Study *Main Report*. Prepared by Ninham Shand Inc. in association with MBB Consulting Engineers and Jakoet & Associates. DWAF Report No. P H /00/00/3102.
- **9) Department of Water Affairs and Forestry**, South Africa. 2003. *Breede Water Management Area: Overview of Water Resources, Availability and Utilisation*. Prepared by BKS Incorporated. DWAF Report No. P WMA 18/000/0203.
- **10) Department of Water Affairs and Forestry**, South Africa. 2004. *National Water Resource Strategy, First Edition.*
- **11) Department of Water Affairs and Forestry**, South Africa. 2004. *Berg Water Management Area, Internal Strategic perspective, Version 1.* Prepared Ninham Shand (Pty) Ltd in association with Tlou & Matji, Umvoto Africa and Jakoet & Associates. DWAF Report No. PWMA 19/000/00/0304.