Determination of Water Resources Classes and Resource Quality Objectives in the Berg Catchment (i.e. former Berg Water Management Area)

Background Information Document

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PURPOSE OF THIS DOCUMENT

The purpose of this Background Information Document (BID) is to inform stakeholders about the water resource classification and resource quality objective process that has recently been initiated by the Department of Water and Sanitation (DWS) in the Berg Catchment area comprising of the former Berg WMA.

Through this process water resources within the WMA will be classified in accordance with the Water Resource Classification System (WRCS) and Resource Quality Objectives determined.

Stakeholders are invited to participate in the process by contributing information at meetings or workshops, or by corresponding with the technical team at the address provided below:

Technical team Contacts:

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BACKGROUND

The National Water Act (No. 36 of 1998) (NWA) provides for the protection, use, conservation, management and control of our water resources in an efficient, sustainable, and equitable manner. The NWA is founded on the principle that our Government has overall responsibility for and authority over water resource management for the benefit of the public without seriously affecting the functioning of the water resource systems.

In order to achieve this objective, Chapter 3 of the NWA provides for the protection of water resources through the implementation of resource directed measures which includes the classification of water resources, setting the Reserve and determination of Resource Quality Objectives (RQOs). The Chief Directorate: Water Ecosystems of the Department of Water and Sanitation (DWS) is responsible for the classification of water resources in accordance with the Water Resource Classification System (WRCS) and the determination of Resource Quality Objectives. Classification of water resources aims to ensure that a balance is sought between the need to protect and sustain water resources in a catchment and the need to develop these resources in support of sustainable social and economic development whilst the RQOs are set to give effect to the class.

Water Resources classes and RQOs have previously been determined for the catchments of Olifants-Doorn. Hence there is a need for this study in order to complete the determination of water resources classes and RQOs for the Berg-Olifants WMA.

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WATER RESOURCE CLASSES AND RESOURCE QUALITY OBJECTIVES

The WRCS is a step-wise process whereby water resources are categorised according to specific Water Resource Classes (WRCs) that represent a management vision of a particular catchment, by taking into account the current state of the water resource and defining the ecological, social and economic aspects that are dependent on the resource. The resulting WRCs are then used to set specific Resource Quality Objectives (RQOs) which are numerical and/or narrative descriptive statements of conditions which should be met in the receiving water resources in order to ensure that the water resource is protected.

PURPOSE OF THE STUDY

The purpose of this Study is to determine the Water Resources Classes and Resource Quality Objectives of all significant water resources in the former Berg Water Management Area (WMA), through the application of the WRCS. The outcomes of this study will assist the Department of Water and Sanitation (DWS) to make sound management decisions regarding these stressed catchments, and also ensuring continuous provision of ecosystem services upon which society and the economy depend.

OVERVIEW OF STUDY AREA

The Study Area is all the significant water resources of the Berg-Olifants WMA that lie outside the Olifants-Doring section of the WMA, covering a total area of 13000 km^2. The Berg-Olifants WMA falls within the Western Cape Province. The Berg River is the largest catchment in the study area, which also includes a number of smaller catchments such as the Diep, Kuils, Eerste, Sir Lowry's Steenbras, as well as various small catchments on the Cape Peninsula and along the West Coast between Cape Town and Saldanha Bay.

The economy of the Study Area is closely linked to the economic powerhouse of the City of Cape Town Metropole (WCG Provincial Treasury, 2013). The Cape Town Metropole contributes close to three-quarters of the real value-add generated in the Western Cape Province and is an important contributor to the economic growth in the Study Area. Economic activity in the Study Area is quite diverse and includes tourism, irrigation and dryland agriculture, wine-making, canning, food processing, manufacturing, fisheries, commercial forestry, financial services, information technology and communications, mining, nuclear power generation, hydropower generation and port operations.

There are 22 estuaries in the study area including the Berg and the Langebaan Lagoon estuary which receives contributions from groundwater. There have also been a number of reserve studies in the catchment and additional analysis of ecological condition which will be used with regards to determining environmental water requirements (EWRs), resource classifications and RQOs.

INFORMATION AND DATA COLLECTION

An initial assessment of available information has been compiled. Water resource information and gap analysis has outlined specific models which will be used for surface water and ground water analysis. In terms of Ecological Water Requirement, surface water, water quality, groundwater, estuary, wetland, dam and socio-economic data it is considered that there is enough data available for the level of detail required in this project.

INTEGRATED UNITS OF ANALYSIS (IUAs)

The first step of the classification procedure is to delineate Integrated Units of Analysis (IUAs) and describe the status quo of the water resources and communities in these areas. The IUAs represent the spatial units that are defined as significant water resources. Each IUA represents a relatively homogeneous area which requires its own specification of the Water Resources Class. The objective of defining IUAs is to establish broader-scale units for assessing the socio-economic implications of different catchment configuration scenarios and to report on ecological conditions at a sub-catchment scale. Delineation of IUAs is required as it would not be appropriate to set the same Water Resource Class for all water resources in a catchment.

A total of eleven IUAs have been defined for the Berg Catchment by combining socio-economic conditions with resource units. These are shown in the map of the study area given below and in the associated table which includes the associated river resource unit.

In addition to the IUAs a number of biophysical nodes have been identified for which ecological water requirements (EWRs) will be derived and used to evaluate the proposed WRC and associated socio-economic impacts.

Table 1: Composition of individual provisional IUAs for the Berg Catchment

Zone Code	Socioeconomic Zone	River Units	IUA code	IUA #	IUA Name
A	West Coast	Berg Estuary	A1	1	Berg Estuary
		Langebaan	A2	2	Langebaan
		Dwars Mosselbank	A3	3	Dwars Mosselbank
B	Lower Berg	Lower Berg	B4	4	Lower Berg
C	Tulbagh	Berg Tributaries	C5	5	Berg Tributaries
D	Winelands	Lourens Eerste	D6	6	Lourens Eerste
		Upper Berg	D7	7	Upper Berg
		Middle Berg	D8	8	Middle Berg
		Diep Mosselbank	D9	9	Diep Mosselbank
E	Cape Town	Peninsula	E10	10	Peninsula
		Kuils	E11	11	Cape Flats

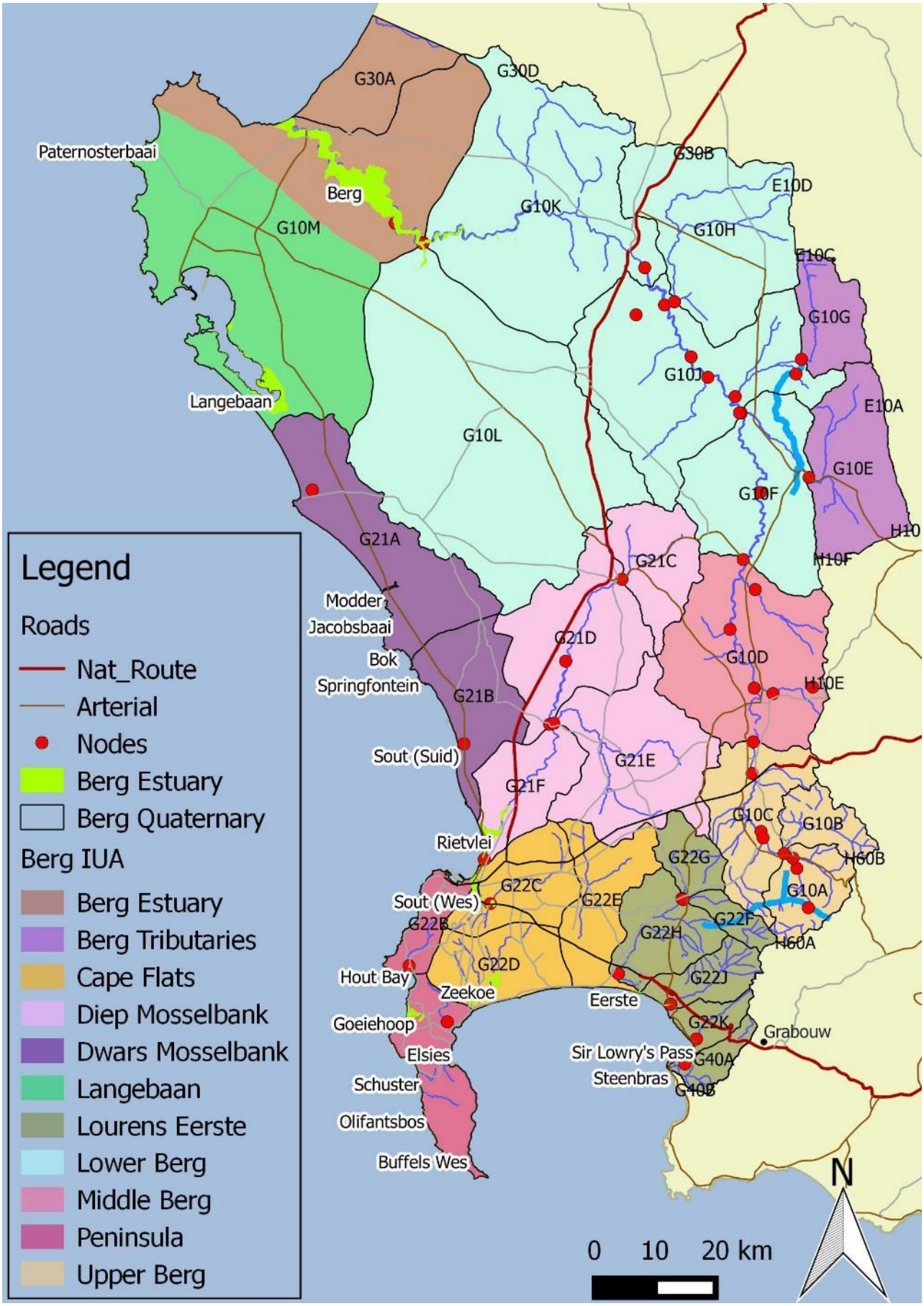

Figure 1: Location of the proposed Integrated Units of Analysis (IUAs), estuaries and EWR nodes for the Study Area (former Berg WMA).

STAKEHOLDER ENGAGEMENT

The NWA requires that stakeholders be involved throughout the project. There are many stakeholders with an interest in the Study Area. Key stakeholders will be identified throughout the duration of the Study. Representative members of the public are encouraged to be involved as stakeholders.

Public Meetings

Two public meetings will be held during the project. To create awareness at the beginning of the project and to present the draft water resources classes and RQOs prior to gazetting.

Project Steering Committee (PSC)

The PSC should be representative of all major sectors and interests within the Study Area, in order to provide strategic advice and guidance. The PSC will meet at key times during the project duration to provide critical inputs to the classification process and the determination of relevant RQOs.

On-going consultation

Stakeholders will continue to be informed of progress with the study through a newsletter and their inputs will be required on an ongoing basis. Comments can be forwarded to the project team (Berg.Class.RQO@gmail.com) or via DWS officials at national or regional level.

Please make sure you register as a stakeholder using the reply sheet to receive further information on the study

WHY YOU SHOULD BE INVOLVED IN THE PROJECT

It is important to understand that this study will eventually impact on you as a water user, as it will determine the management measures your organisation may have to implement, it may result in stricter controls, it will determine the limits with regard to discharges and disposal of waste and wastewater, and will have a bearing on future water uses. These measures are not meant to be restrictive but rather to sustainably manage the water resources of the area catering for all water users including the aquatic ecosystem.

Since this is your catchment, it is important that you become involved and contribute to the process.

TIME FRAME

Following the initial public consultation process, individual stakeholder representatives will be invited to contribute to the Project Steering Committee (PSC). The PSC will form the primary advisory board for the development of the water resource classifications and RQOs. Individuals interested in being a representative of the PSC should contact DWS or the Project Team as soon as possible.

The next phase in the project will be the completion of the status quo assessment, which will then be followed by an evaluation of alternative classification scenarios that will be used to inform the final recommended WRC. The RQOs will then be determined for the priority water resource units (RU).

Documents on the processes can be accessed on DWS website using the following link:
https://www.dwa.gov.za/rdm/Documents.aspx

DEFINITIONS

Ecological Water Requirements (EWR): The flow patterns (magnitude, timing and duration) and water quality needed to maintain a riverine ecosystem in a particular condition. This term is used to refer to both the quantity and quality components.

Ecological Water Requirement Sites: Ecological Water Requirement (EWR) sites are set at specific points on the river. These sites provide sufficient indicators for the specialists to assess environmental flows and information about the variety of conditions in a river reach. An EWR site consists of a length of river which may consist of various cross-sections for both hydraulic and ecological purposes.

Integrated Units of Analysis (IUAs): The basic unit of assessment for the classification of water resources. The IUAs incorporates socio-economic zones and is defined by catchment area boundaries.

Reserve: The quantity and quality of water needed in a water resource (e.g. estuaries, rivers, lakes, groundwater and wetlands) to sustain basic human needs and protect aquatic ecosystems to ensure ecologically sustainable development and utilisation of the resource.

Significant Water Resources: Water resources that are deemed to be significant from a water resource use perspective, and/or for which sufficient data exist to enable an evaluation of changes in their ecological condition in response to changes in their quality and quantity of water. Water resources are deemed to be significant based on factors such as, but not limited to, aquatic importance, aquatic ecosystems to protect and socio-economic value.