DEPARTMENT OF WATER AND SANITATION
REBPUBLIC OF SOUTH AFRICA

REQUEST FOR BID

REQUEST FOR BID NUMBER: WP11580

DESCRIPTION

APPOINTMENT OF A PROFESSIONAL SERVICE PROVIDER (PSP) FOR THE UPPER UTHEKELA RIVER AUGMENTATION PROJECT – BRIDGING STUDY (UTRAP) FOR A PERIOD OF 36 MONTHS

ISSUE DATE:

20 NOVEMBER 2026

CLOSING DATE:

09 FEBRUARY 2027
TIME: 11:00

Non-Compulsory Briefing Session
Date: 30 November 2026
Time: 09:00
Join: https://teams.microsoft.com/meet/3902601107279208?p=HxlOVAMspyPipbHuSv
Meeting ID: 390 260 110 727 920 8
Passcode: 7WU2Jv3e

SUBMIT TENDER DOCUMENT
TO

ALL BID REPONSES MUST BE SUBMITTED ONLINE THROUGH E-TENDER'S E-SUBMISSION PORTAL

PLEASE NOTE THAT NO BID DOCUMENTS WILL BE ACCEPTED VIA EMAIL OR DEPARTMENTAL TENDER BOX.

TENDERER: (Company address and stamp)

SCAM ALERT: BIDDERS ARE ALERTED TO SCAM SYNDICATES OPERATING AS DEPARTMENT OFFICIALS. BIDDERS ARE THEREFORE ADVICED TO REPORT ANY SUSPICIOUS INFORMATION TO THE DEPARTMENT. DEPARTMENT OFFICIALS WILL NOT CONTACT BIDDERS FOR BRIBES IN EXCHANGE OF BID AWARDS

water & sanitation
Department:
Water and Sanitation
REPUBLIC OF SOUTH AFRICA

DIRECTIVE TO BIDDERS ON COMPLETION OF SBD FORMS AND PACKAGING OF BID PROPOSAL

The purpose of this document is to guide bidders on the completion of SBD forms and packaging of a Bid Proposals with each document being placed under the correct Annexure. The last column of the table below (this column must be ticked as an indication that each document and its requirements have been complied with by the bidder). The dates on this all-SBD forms must be a date which is within the bid advert period

TABLE OF CONTENTS FOR BID PROPSALS

DOCUMENT	ANNEXURE	DIRECTIVE	COMPLIED/NOT COMPLIED
SBD 1	**A**	Bidders are required to complete this document in full and be signed off. The date on this form must be a date which is within the bid advert period	
SBD .3.3	**B**	Bidders are required to complete the applicable form in full and ensure that the amounts in the document are properly calculated. The total amount (inclusive of VAT) as reflected herein will be regarded as the Total Bid Price. **Bidders who are not VAT Vendors are not allowed to charge VAT** Bidders are required to constantly verify their TAX Status on CSD to ensure that their task matters are in order	
SBD 4	**C**	This document must be completed in full. **Bidders' attention is drawn particularly to paragraph 2.3 which requires the bidder to disclose if the company or any of its directors have interest in other companies whether they have bidded or not. Bidders are required to provide all information. Should a bidder have more companies to declare, such information can be provided on a separate sheet in the format prescribed in the form and be attached to the SBD 4. Information captured must be in line with what is captured in the CSD report**	
SBD 6.1	**D**	This document must be completed in full. Bidders are advised to ensure that information captured in this this form is aligned to information contained in the CSD Reports.	
BBBEE Certificate/Sworn affidavit	**E**	Bidders are required to submit a valid BBBEE Certificate or sworn affidavit.	
CSD Report	**F**	Bidders are requested to provide copies of reg CSD Report.	
Certificate of authority for signatory	**G**	3 Different forms are attached. Bidders are required to only complete one form which is relevant to their situation	
Copy of an Identity document of the authorised individual	**H**	The ID copy to be attached should be that of a person authorised to represent the Service provider as per the completed certificate of authority for signatory form	
Copy of Company's CIPC Certificate	**I**	Bidders are required to attach copies of the CIPC Certificates	
Bid Proposal	**J**	A detailed bid proposal inline with the Specifications must be attached	

PART A
INVITATION TO BID

YOU ARE HEREBY INVITED TO BID FOR REQUIREMENTS OF THE (*NAME OF DEPARTMENT/ PUBLIC ENTITY*)					
BID NUMBER:	**WP11580**	CLOSING DATE:	**09 FEBRUARY 2027**	CLOSING TIME:	**11H00**
DESCRIPTION	**APPOINTMENT OF A PROFESSIONAL SERVICE PROVIDER (PSP) FOR THE UPPER UTHEKELA RIVER AUGMENTATION PROJECT – BRIDGING STUDY (UTRAP) FOR A PERIOD OF 36 MONTHS**				
BID RESPONSE TO					
ALL BID REPONSES MUST BE SUBMITTED ONLINE THROUGH E-TENDER'S E-SUBMISSION PORTAL PLEASE NOTE THAT NO BID DOCUMENTS WILL BE ACCEPTED VIA EMAIL OR DEPARTMENTAL TENDER BOX.					

BIDDING PROCEDURE ENQUIRIES MAY BE DIRECTED TO		**TECHNICAL ENQUIRIES MAY BE DIRECTED TO:**	
CONTACT PERSON	**Mr Jacob Mabusela**	CONTACT PERSON	**Mr Mehari Frezghi**
TELEPHONE NUMBER	**012 336 7240**	TELEPHONE NUMBER	**012 336 7004**
CELLPHONE		CELLPHONE	
E-MAIL ADDRESS	mabuselaj@dws.gov.za	E-MAIL ADDRESS	Frezghim@dws.gov.za

SUPPLIER INFORMATION					
NAME OF BIDDER					
POSTAL ADDRESS					
STREET ADDRESS					
TELEPHONE NUMBER	CODE		NUMBER		
CELLPHONE NUMBER					
FACSIMILE NUMBER	CODE		NUMBER		
E-MAIL ADDRESS					
VAT REGISTRATION NUMBER					
SUPPLIER COMPLIANCE STATUS	TAX COMPLIANCE SYSTEM PIN:		**OR**	CENTRAL SUPPLIER DATABASE No:	MAAA
B-BBEE STATUS LEVEL VERIFICATION CERTIFICATE	TICK APPLICABLE BOX] ☐ Yes ☐ No		B-BBEE STATUS LEVEL SWORN AFFIDAVIT		[TICK APPLICABLE BOX] ☐ Yes ☐ No

[A B-BBEE STATUS LEVEL VERIFICATION CERTIFICATE/ SWORN AFFIDAVIT (FOR EMES & QSEs) MUST BE SUBMITTED IN ORDER TO QUALIFY FOR PREFERENCE POINTS FOR B-BBEE]

ARE YOU THE ACCREDITED REPRESENTATIVE IN SOUTH AFRICA FOR THE GOODS /SERVICES /WORKS OFFERED?	☐Yes ☐No [IF YES ENCLOSE PROOF]	ARE YOU A FOREIGN BASED SUPPLIER FOR **THE GOODS /SERVICES /WORKS OFFERED?**	☐Yes ☐No [IF YES, ANSWER PART B:3]
QUESTIONNAIRE TO BIDDING FOREIGN SUPPLIERS			

IS THE ENTITY A RESIDENT OF THE REPUBLIC OF SOUTH AFRICA (RSA)?	☐ YES ☐ NO
DOES THE ENTITY HAVE A BRANCH IN THE RSA?	☐ YES ☐
NO	
DOES THE ENTITY HAVE A PERMANENT ESTABLISHMENT IN THE RSA?	☐ YES ☐ NO
DOES THE ENTITY HAVE ANY SOURCE OF INCOME IN THE RSA?	☐ YES ☐
NO	
IS THE ENTITY LIABLE IN THE RSA FOR ANY FORM OF TAXATION?	☐ YES ☐
NO	

IF THE ANSWER IS "NO" TO ALL OF THE ABOVE, THEN IT IS NOT A REQUIREMENT TO REGISTER FOR A TAX COMPLIANCE STATUS SYSTEM PIN CODE FROM THE SOUTH AFRICAN REVENUE SERVICE (SARS) AND IF NOT REGISTER AS PER 2.3 BELOW.

PART B
TERMS AND CONDITIONS FOR BIDDING

1.	**BID SUBMISSION:**
1.1.	BIDS MUST BE DELIVERED BY THE STIPULATED TIME TO THE CORRECT ADDRESS. LATE BIDS WILL NOT BE ACCEPTED FOR CONSIDERATION.
1.2.	**ALL BIDS MUST BE SUBMITTED ON THE OFFICIAL FORMS PROVIDED–(NOT TO BE RE-TYPED) OR IN THE MANNER PRESCRIBED IN THE BID DOCUMENT.**
1.3.	THIS BID IS SUBJECT TO THE PREFERENTIAL PROCUREMENT POLICY FRAMEWORK ACT, 2000 AND THE PREFERENTIAL PROCUREMENT REGULATIONS, 2022, THE GENERAL CONDITIONS OF CONTRACT (GCC) AND, IF APPLICABLE, ANY OTHER SPECIAL CONDITIONS OF CONTRACT.
1.4.	**THE SUCCESSFUL BIDDER WILL BE REQUIRED TO FILL IN AND SIGN A WRITTEN CONTRACT FORM (SBD7).**
2.	**TAX COMPLIANCE REQUIREMENTS**
2.1	BIDDERS MUST ENSURE COMPLIANCE WITH THEIR TAX OBLIGATIONS.
2.2	BIDDERS ARE REQUIRED TO SUBMIT THEIR UNIQUE PERSONAL IDENTIFICATION NUMBER (PIN) ISSUED BY SARS TO ENABLE THE ORGAN OF STATE TO VERIFY THE TAXPAYER'S PROFILE AND TAX STATUS.
2.3	APPLICATION FOR TAX COMPLIANCE STATUS (TCS) PIN MAY BE MADE VIA E-FILING THROUGH THE SARS WEBSITE WWW.SARS.GOV.ZA.
2.4	BIDDERS MAY ALSO SUBMIT A PRINTED TCS CERTIFICATE TOGETHER WITH THE BID.
2.5	IN BIDS WHERE CONSORTIA / JOINT VENTURES / SUB-CONTRACTORS ARE INVOLVED, EACH PARTY MUST SUBMIT A SEPARATE TCS CERTIFICATE / PIN / CSD NUMBER.
2.6	WHERE NO TCS IS AVAILABLE BUT THE BIDDER IS REGISTERED ON THE CENTRAL SUPPLIER DATABASE (CSD), A CSD NUMBER MUST BE PROVIDED.
2.7	NO BIDS WILL BE CONSIDERED FROM PERSONS IN THE SERVICE OF THE STATE, COMPANIES WITH DIRECTORS WHO ARE PERSONS IN THE SERVICE OF THE STATE, OR CLOSE CORPORATIONS WITH MEMBERS PERSONS IN THE SERVICE OF THE STATE."

NB: FAILURE TO PROVIDE / OR COMPLY WITH ANY OF THE ABOVE PARTICULARS MAY RENDER THE BID INVALID.

SIGNATURE OF BIDDER: .....

CAPACITY UNDER WHICH THIS BID IS SIGNED: .....
(Proof of authority must be submitted e.g. company resolution)

DATE: .....

PRICING SCHEDULE
(Professional Services)

NAME OF BIDDER: ..... BID NO: **WP11580**

CLOSING TIME 11:00 ..... CLOSING DATE: 09 FEBRUARY 2027

OFFER TO BE VALID FOR **180 DAYS** FROM THE CLOSING DATE OF BID.

ITEM NO	DESCRIPTION	BID PRICE IN RSA CURRENCY ** (ALL APPLICABLE TAXES INCLUDED)

1. The accompanying information must be used for the formulation of proposals.
2. Bidders are required to indicate a ceiling price based on the total estimated time for completion of all phases and including all expenses inclusive of all applicable taxes for the project. R.....

3. PERSONS WHO WILL BE INVOLVED IN THE PROJECT AND RATES APPLICABLE (CERTIFIED INVOICES MUST BE RENDERED IN TERMS HEREOF)

4. PERSON AND POSITION	HOURLY RATE	DAILY RATE
----------	R----------	----------
----------	R----------	----------
----------	R----------	----------
----------	R----------	----------
----------	R----------	----------

5. PHASES ACCORDING TO WHICH THE PROJECT WILL BE COMPLETED, COST PER PHASE AND MAN-DAYS TO BE SPENT

----------	R----------	---------- days
----------	R----------	---------- days
----------	R----------	---------- days
----------	R----------	---------- days

5.1 Travel expenses (specify, for example rate/km and total km, class of airtravel, etc). Only actual costs are recoverable. Proof of the expenses incurred must accompany certified invoices.

DESCRIPTION OF EXPENSE TO BE INCURRED	RATE	QUANTITY	AMOUNT
----------	.....	.....	R.....
----------	.....	.....	R.....
----------	.....	.....	R.....
----------	.....	.....	R.....

TOTAL: R.....

"" all applicable taxes" includes value- added tax, pay as you earn, income tax, unemployment insurance fund contributions and skills development levies.

Bid No.: .....

Name of Bidder: .....

5.2 Other expenses, for example accommodation (specify, e.g. Three star hotel, bed and breakfast, telephone cost, reproduction cost, etc.). On basis of these particulars, certified invoices will be checked for correctness. Proof of the expenses must accompany invoices.

DESCRIPTION OF EXPENSE TO BE INCURRED	RATE	QUANTITY	AMOUNT
----------	.....	.....	R.....
----------	.....	.....	R.....
----------	.....	.....	R.....
----------	.....	.....	R.....

TOTAL: R.....

6. Period required for commencement with project after acceptance of bid .....

7. Estimated man-days for completion of project .....

8. Are the rates quoted firm for the full period of contract? *YES/NO

9. If not firm for the full period, provide details of the basis on which adjustments will be applied for, for example consumer price index. .....

.....

.....

.....

*[DELETE IF NOT APPLICABLE]

SBD 4

BIDDER'S DISCLOSURE

1. PURPOSE OF THE FORM

1.1 Any person (natural or juristic) may make an offer or offers in terms of this invitation to bid. In line with the principles of transparency, accountability, impartiality, and ethics as enshrined in the Constitution of the Republic of South Africa, 1996 (Constitution), and further expressed in the various applicable legislation, it is required for the bidder to make this declaration in respect of the details required hereunder.

1.2 If a person is listed in the Register for Tender Defaulters and/or the List of Restricted Suppliers, that person will automatically be disqualified from the bid process.

2. DECLARATION ON EMPLOYMENT BY ORGAN OF STATE

2.1 Is the bidder, or any of the directors / trustees / shareholders / members / partners of the bidder employed by an organ of state, as defined in section 239 of the Constitution? **YES/NO**

2.2 If YES, furnish particulars of the names, individual identity numbers, in the table below:

Full Name	Identity Number	Name of organ of state

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1. the power, by one person or a group of persons holding the majority of the equity of an enterprise, alternatively, the person/s having the deciding vote or power to influence or to direct the course and decisions of the enterprise.

2.3 Do you, or any person connected with the bidder, have a relationship with any person who is employed by the procuring institution? **YES/NO**

2.3.1 If so, furnish particulars:

.....
.....
.....

2.4 Does the bidder or any of its directors/trustees/shareholders members/partners or any person having a controlling interest in the enterprise have any interest in any other related enterprise, whether or not they are bidding for this contract? **YES/NO**

2.4.1 If so, indicate all companies registered in the CSD in the table below:

Supplier registration number (MAAA)	**Status (active/inactive/deleted)**

Failure to disclose all CSD-registered active companies linked to all Directors will lead to disqualification.

3 GENERAL DECLARATION

I, ..., the undersigned, in submitting the accompanying bid, do hereby make the following statements that I certify to be true and complete in every respect:

3.1 I have read and I understand the contents of this disclosure.

3.2 I understand that the accompanying bid will be disqualified if this disclosure is found to be false.

3.3 The bidder has arrived at the accompanying bid independently from, and without consultation, communication, agreement or arrangement with any competitor.

3.4 In addition, there have been no consultations, communications, agreements or arrangements with any competitor regarding the quality, quantity, specifications, prices, including methods, factors or formulas used to calculate prices, market allocation, the intention or decision to submit or not to submit the bid, bidding with the intention not to win the bid and conditions or delivery particulars of the products or services to which this bid invitation relates.

3.5 The terms of the accompanying bid have not been, and will not be, disclosed by the bidder, directly or indirectly, to any competitor, prior to the date and time of the official bid opening or of the awarding of the contract.

3.6 There have been no consultations, communications, agreements or arrangements made by the bidder with any official of the procuring institution in relation to this procurement process prior to and during the bidding process except to provide clarification on the bid submitted where so

required by the institution; and the bidder was not involved in the drafting of the specifications or terms of reference for this bid.

3.7 I am aware that, in addition and without prejudice to any other remedy provided to combat any restrictive practices related to bids and contracts, bids that are suspicious will be reported to the Competition Commission for investigation and possible imposition of administrative penalties in terms of section 59 of the Competition Act, 1998 (Act No. 89 of 1998) and or may be referred to law enforcement agencies for criminal investigation and or may be restricted from conducting business with the state for a period not exceeding 10 years in terms of the Prevention and Combating of Corrupt Activities Act, 2004 (Act No. 12 of 2004) or any other applicable legislation.

I CERTIFY THAT THE ABOVE IS CORRECT.

I ACCEPT THAT THE PROCURING INSTITUTION MAY REJECT THE BID OR TAKE APPROPRIATE ACTION AGAINST ME IF THIS DECLARATION IS FALSE.

.....	.....
Signature	Date
.....	.....
Designation	Name of bidder

PREFERENCE POINTS CLAIM FORM IN TERMS OF THE PREFERENTIAL PROCUREMENT REGULATIONS 2022

This preference form must form part of all tenders invited. It contains general information and serves as a claim form for preference points for specific goals.

NB: BEFORE COMPLETING THIS FORM, TENDERERS MUST STUDY THE GENERAL CONDITIONS, DEFINITIONS AND DIRECTIVES APPLICABLE IN RESPECT OF THE TENDER AND PREFERENTIAL PROCUREMENT REGULATIONS, 2022

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1. GENERAL CONDITIONS

1.1 The following preference point systems are applicable to invitations to tender:

- the 90/10 system for requirements with a Rand value above R50 000 000 (all applicable taxes included); and

1.2 To be completed by the organ of state

a) The applicable preference point system for this tender is the 90/10 preference point system.

1.3 Points for this tender (even in the case of a tender for income-generating contracts) shall be awarded for:

(a) Price; and

(b) Specific Goals.

1.4 To be completed by the organ of state:

The maximum points for this tender are allocated as follows:

	POINTS
PRICE	90
SPECIFIC GOALS	10
Total points for Price and SPECIFIC GOALS	100

1.5 Failure on the part of a tenderer to submit proof or documentation required in terms of this tender to claim points for specific goals with the tender, will be interpreted to mean that preference points for specific goals are not claimed.

1.6 The organ of state reserves the right to require of a tenderer, either before a tender is adjudicated or at any time subsequently, to substantiate any claim in regard to preferences, in any manner required by the organ of state.

2. DEFINITIONS

(a) **"tender"** means a written offer in the form determined by an organ of state in response to an invitation to provide goods or services through price quotations, competitive tendering process or any other method envisaged in legislation;

(b) **"price"** means an amount of money tendered for goods or services, and includes all applicable taxes less all unconditional discounts;

(c) **"rand value"** means the total estimated value of a contract in Rand, calculated at the time of bid invitation, and includes all applicable taxes;

(d) **"tender for income-generating contracts"** means a written offer in the form determined by an organ of state in response to an invitation for the origination of income-generating contracts through any method envisaged in legislation that will result in a legal agreement between the organ of state and a third party that produces revenue for the organ of state, and includes, but is not limited to, leasing and disposal of assets and concession contracts, excluding direct sales and disposal of assets through public auctions; and

(e) **"the Act"** means the Preferential Procurement Policy Framework Act, 2000 (Act No. 5 of 2000).

3. FORMULAE FOR PROCUREMENT OF GOODS AND SERVICES

3.1. POINTS AWARDED FOR PRICE

3.1.1 THE 80/20 OR 90/10 PREFERENCE POINT SYSTEMS

A maximum of 80 or 90 points is allocated for price on the following basis:

80/20 **or** **90/10**

$$Ps = 80\left(1 - \frac{Pt - P\,min}{P\,min}\right) \text{ or } \quad Ps = 90\left(1 - \frac{Pt - P\,min}{P\,min}\right)$$

Where

Ps = Points scored for price of tender under consideration

Pt = Price of tender under consideration

Pmin = Price of lowest acceptable tender

3.2. FORMULAE FOR DISPOSAL OR LEASING OF STATE ASSETS AND INCOME GENERATING PROCUREMENT

3.2.1. **POINTS AWARDED FOR PRICE**

A maximum of 80 or 90 points is allocated for price on the following basis:

80/20	or	90/10
$Ps - 80\left(1 + \frac{Pt-P\,max}{P\,max}\right)$ or		$Ps - 90\left(1 + \frac{Pt-P\,max}{Pmax}\right)$

Where

Ps = Points scored for price of tender under consideration

Pt = Price of tender under consideration

Pmax = Price of highest acceptable tender

4. POINTS AWARDED FOR SPECIFIC GOALS

4.1. In terms of Regulation 4(2); 5(2); 6(2) and 7(2) of the Preferential Procurement Regulations, preference points must be awarded for specific goals stated in the tender. For the purposes of this tender the tenderer will be allocated points based on the goals stated in table 1 below as may be supported by proof/ documentation stated in the conditions of this tender:

4.2. In cases where organs of state intend to use Regulation 3(2) of the Regulations, which states that, if it is unclear whether the 80/20 or 90/10 preference point system applies, an organ of state must, in the tender documents, stipulate in the case of—

(a) an invitation for tender for income-generating contracts, that either the 80/20 or 90/10 preference point system will apply and that the highest acceptable tender will be used to determine the applicable preference point system: or

(b) any other invitation for tender, that either the 80/20 or 90/10 preference point system will apply and that the lowest acceptable tender will be used to determine the applicable preference point system,

then the organ of state must indicate the points allocated for specific goals for both the 90/10 and 80/20 preference point system.

Table 1: Specific goals for the tender and points claimed are indicated per the table below.

(Note to organs of state: Where either the 90/10 or 80/20 preference point system is applicable, corresponding points must also be indicated as such.

Note to tenderers: The tenderer must indicate how they claim points for each preference point system.)

The specific goals allocated points in terms of this tender	Number of points allocated (90/10 system) (To be completed by the organ of state)	Number of points claimed (90/10 system) (To be completed by the tenderer)
Women	2	
People with disability	2	
Youth (35 and below)	2	
Location of enterprise (Province)	1	
B-BBEE status level contributors from level 1 to 2 which are QSE or EME	3	
Total points for SPECIFIC GOALS	10	

DECLARATION WITH REGARD TO COMPANY/FIRM

4.3. Name of company/firm.....

4.4. Company registration number: .....

4.5. TYPE OF COMPANY/ FIRM

Partnership/Joint Venture / Consortium
One-person business/sole propriety
Close corporation
Public Company
Personal Liability Company
(Pty) Limited
Non-Profit Company
State Owned Company
[TICK APPLICABLE BOX]

4.6. I, the undersigned, who is duly authorised to do so on behalf of the company/firm, certify that the points claimed, based on the specific goals as advised in the tender, qualifies the

company/ firm for the preference(s) shown and I acknowledge that:

i) The information furnished is true and correct;

ii) The preference points claimed are in accordance with the General Conditions as indicated in paragraph 1 of this form;

iii) In the event of a contract being awarded as a result of points claimed as shown in paragraphs 1.4 and 4.2, the contractor may be required to furnish documentary proof to the satisfaction of the organ of state that the claims are correct;

iv) If the specific goals have been claimed or obtained on a fraudulent basis or any of the conditions of contract have not been fulfilled, the organ of state may, in addition to any other remedy it may have –

(a) disqualify the person from the tendering process;

(b) recover costs, losses or damages it has incurred or suffered as a result of that person's conduct;

(c) cancel the contract and claim any damages which it has suffered as a result of having to make less favourable arrangements due to such cancellation.

(d) recommend that the tenderer or contractor, its shareholders and directors, or only the shareholders and directors who acted on a fraudulent basis, be restricted from obtaining business from any organ of state for a period not exceeding 10 years, after the *audi alteram partem* (hear the other side) rule has been applied; and

(e) forward the matter for criminal prosecution, if deemed necessary.

.....

SIGNATURE(S) OF TENDERER(S)

SURNAME AND NAME: .....

DATE: .....

ADDRESS: .....

.....

.....

.....

STANDARD EVALUATION CRITERIA IN TERMS OF THE PREFERENTIAL PROCUTEMENT REGULATIONS 2022

THE 90/10 POINTS AWARDED FOR PRICE AND SPECIFIC GOALS

The 90/10 Preferential Procurement System will be used in evaluating these bids:

Evaluation element	Weighting (Points)
SPECIFIC GOALS	10
PRICE	90
Total	**100**

Price

A maximum of 90 points are allocated for price on the following basis:

$$Ps = 90\left(1 - \frac{Pt - P\ \min}{P\ \min}\right)$$

Where:
Ps = Points scored for comparative price of bid under consideration
Pt = Comparative price of bid under consideration
Pmin = Comparative price of lowest acceptable bid

Preference point system

SPECIFIC GOALS	NUMBER OF POINTS TO BE ALLOCATED
Women	**2**
People with disability	**2**
Youth (35 and below)	**2**
Location of enterprise (Province)	**1**
B-BBEE status level contributors from level 1 to 2 which are QSE or EME	**3**
Total points for SPECIFIC GOALS	**10**

Documents Requirement for verification of Points allocation: -

Procurement Requirement	**Required Proof Documents**
Women	Full CSD Report
Disability	Full CSD Report
Youth	Full CSD Report
Location	Full CSD Report
B-BBEE status level contributors from level 1 to 2 which are QSE or EME	Valid BBBEE certificate/sworn affidavit Consolidated BEE certificate in cases of Joint Venture Full CSD Report

The definition and measurement of the goals above is as follows:

Women, disability, and youth:

This will be measured by calculating the pro-rata percentage of ownership of the bidding company which meets this criterion. E.g., Company A has five shareholders each of whom own 20% of the company. Three of the five shareholders meet the criterion, i.e. they are women/disability/youth. Therefore, this bidder will obtain 60% of the points allowable for this goal.

Location of enterprise

Local equals province. Where a project cuts across more than one province, the bidder may be located in any of the relevant provinces to obtain the points.

B-BBEE status level contributors from level 1 to 2 which are QSE or EME

Measured in terms of normal BBBEE requirements.

Note: Formula for calculating points for specific goals

Preference points for entities are calculated on their percentage shareholding in a business, provided that they are actively involved in and exercise control over the enterprise. The following formula is prescribed:

$$PC = Mpa \times \frac{P\text{-}own}{100}$$

Where

PC= Points awarded for specific goal

Mpa= The maximum number of points awarded for ownership in that specific category

P-own = The percentage of equity ownership by the enterprise or business

Annexure A

GOVERNMENT PROCUREMENT

GENERAL CONDITIONS OF CONTRACT
July 2010

NOTES

The purpose of this document is to:

(i) Draw special attention to certain general conditions applicable to government bids, contracts and orders; and

(ii) To ensure that clients be familiar with regard to the rights and obligations of all parties involved in doing business with government.

In this document words in the singular also mean in the plural and vice versa and words in the masculine also mean in the feminine and neuter.

- The General Conditions of Contract will form part of all bid documents and may not be amended.

- Special Conditions of Contract (SCC) relevant to a specific bid, should be compiled separately for every bid (if (applicable) and will supplement the General Conditions of Contract. Whenever there is a conflict, the provisions in the SCC shall prevail.

TABLE OF CLAUSES

1. Definitions
2. Application
3. General
4. Standards
5. Use of contract documents and information; inspection
6. Patent rights
7. Performance security
8. Inspections, tests and analysis
9. Packing
10. Delivery and documents
11. Insurance
12. Transportation
13. Incidental services
14. Spare parts
15. Warranty
16. Payment
17. Prices
18. Contract amendments
19. Assignment
20. Subcontracts
21. Delays in the supplier's performance
22. Penalties
23. Termination for default
24. Dumping and countervailing duties
25. Force Majeure
26. Termination for insolvency
27. Settlement of disputes
28. Limitation of liability
29. Governing language
30. Applicable law
31. Notices
32. Taxes and duties
33. National Industrial Participation Programme (NIPP)
34. Prohibition of restrictive practices

General Conditions of Contract

1. Definitions

1. The following terms shall be interpreted as indicated:

1.1 "Closing time" means the date and hour specified in the bidding documents for the receipt of bids.

1.2 "Contract" means the written agreement entered into between the purchaser and the supplier, as recorded in the contract form signed by the parties, including all attachments and appendices thereto and all documents incorporated by reference therein.

1.3 "Contract price" means the price payable to the supplier under the contract for the full and proper performance of his contractual obligations.

1.4 "Corrupt practice" means the offering, giving, receiving, or soliciting of any thing of value to influence the action of a public official in the procurement process or in contract execution.

1.5 "Countervailing duties" are imposed in cases where an enterprise abroad is subsidized by its government and encouraged to market its products internationally.

1.6 "Country of origin" means the place where the goods were mined, grown or produced or from which the services are supplied. Goods are produced when, through manufacturing, processing or substantial and major assembly of components, a commercially recognized new product results that is substantially different in basic characteristics or in purpose or utility from its components.

1.7 "Day" means calendar day.

1.8 "Delivery" means delivery in compliance of the conditions of the contract or order.

1.9 "Delivery ex stock" means immediate delivery directly from stock actually on hand.

1.10 "Delivery into consignees store or to his site" means delivered and unloaded in the specified store or depot or on the specified site in compliance with the conditions of the contract or order, the supplier bearing all risks and charges involved until the supplies are so delivered and a valid receipt is obtained.

1.11 "Dumping" occurs when a private enterprise abroad market its goods on own initiative in the RSA at lower prices than that of the country of origin and which have the potential to harm the local industries in the RSA.

1.12 "Force majeure" means an event beyond the control of the supplier and not involving the supplier's fault or negligence and not foreseeable. Such events may include, but is not restricted to, acts of the purchaser in its sovereign capacity, wars or revolutions, fires, floods, epidemics, quarantine restrictions and freight embargoes.

1.13 "Fraudulent practice" means a misrepresentation of facts in order to influence a procurement process or the execution of a contract to the detriment of any bidder, and includes collusive practice among bidders (prior to or after bid submission) designed to establish bid prices at artificial non-competitive levels and to deprive the bidder of the benefits of free and open competition.

1.14 "GCC" means the General Conditions of Contract.

1.15 "Goods" means all of the equipment, machinery, and/or other materials that the supplier is required to supply to the purchaser under the contract.

1.16 "Imported content" means that portion of the bidding price represented by the cost of components, parts or materials which have been or are still to be imported (whether by the supplier or his subcontractors) and which costs are inclusive of the costs abroad, plus freight and other direct importation costs such as landing costs, dock dues, import duty, sales duty or other similar tax or duty at the South African place of entry as well as transportation and handling charges to the factory in the Republic where the supplies covered by the bid will be manufactured.

1.17 "Local content" means that portion of the bidding price which is not included in the imported content provided that local manufacture does take place.

1.18 "Manufacture" means the production of products in a factory using labour, materials, components and machinery and includes other related value-adding activities.

1.19 "Order" means an official written order issued for the supply of goods or works or the rendering of a service.

1.20 "Project site," where applicable, means the place indicated in bidding documents.

1.21 "Purchaser" means the organization purchasing the goods.

1.22 "Republic" means the Republic of South Africa.

1.23 "SCC" means the Special Conditions of Contract.

1.24 "Services" means those functional services ancillary to the supply of the goods, such as transportation and any other incidental services, such as installation, commissioning, provision of technical assistance, training, catering, gardening, security, maintenance and other such obligations of the supplier covered under the contract.

1.25 "Written" or "in writing" means handwritten in ink or any form of electronic or mechanical writing.

2. Application

2.1 These general conditions are applicable to all bids, contracts and orders including bids for functional and professional services, sales, hiring, letting and the granting or acquiring of rights, but excluding immovable property, unless otherwise indicated in the bidding documents.

2.2 Where applicable, special conditions of contract are also laid down to cover specific supplies, services or works.

2.3 Where such special conditions of contract are in conflict with these general conditions, the special conditions shall apply.

3. General

3.1 Unless otherwise indicated in the bidding documents, the purchaser shall not be liable for any expense incurred in the preparation and submission of a bid. Where applicable a non-refundable fee for documents may be charged.

3.2 With certain exceptions, invitations to bid are only published in the Government Tender Bulletin. The Government Tender Bulletin may be obtained directly from the Government Printer, Private Bag X85, Pretoria 0001, or accessed electronically from www.treasury.gov.za

4. Standards

4.1 The goods supplied shall conform to the standards mentioned in the bidding documents and specifications.

5. Use of contract documents and information; inspection.

5.1 The supplier shall not, without the purchaser's prior written consent, disclose the contract, or any provision thereof, or any specification, plan, drawing, pattern, sample, or information furnished by or on behalf of the purchaser in connection therewith, to any person other than a person employed by the supplier in the performance of the contract. Disclosure to any such employed person shall be made in confidence and shall extend only so far as may be necessary for purposes of such performance.

5.2 The supplier shall not, without the purchaser's prior written consent, make use of any document or information mentioned in GCC clause 5.1 except for purposes of performing the contract.

5.3 Any document, other than the contract itself mentioned in GCC clause 5.1 shall remain the property of the purchaser and shall be returned (all copies) to the purchaser on completion of the supplier's performance under the contract if so required by the purchaser.

5.4 The supplier shall permit the purchaser to inspect the supplier's records relating to the performance of the supplier and to have them audited by auditors appointed by the purchaser, if so required by the purchaser.

6. Patent rights

6.1 The supplier shall indemnify the purchaser against all third-party claims of infringement of patent, trademark, or industrial design rights arising from use of the goods or any part thereof by the purchaser.

7. Performance

7.1 Within thirty (30) days of receipt of the notification of contract award,

security

the successful bidder shall furnish to the purchaser the performance security of the amount specified in SCC.

7.2 The proceeds of the performance security shall be payable to the purchaser as compensation for any loss resulting from the supplier's failure to complete his obligations under the contract.

7.3 The performance security shall be denominated in the currency of the contract, or in a freely convertible currency acceptable to the purchaser and shall be in one of the following forms:

(a) a bank guarantee or an irrevocable letter of credit issued by a reputable bank located in the purchaser's country or abroad, acceptable to the purchaser, in the form provided in the bidding documents or another form acceptable to the purchaser; or

(b) a cashier's or certified cheque

7.4 The performance security will be discharged by the purchaser and returned to the supplier not later than thirty (30) days following the date of completion of the supplier's performance obligations under the contract, including any warranty obligations, unless otherwise specified in SCC.

8. Inspections, tests and analyses

8.1 All pre-bidding testing will be for the account of the bidder.

8.2 If it is a bid condition that supplies to be produced or services to be rendered should at any stage during production or execution or on completion be subject to inspection, the premises of the bidder or contractor shall be open, at all reasonable hours, for inspection by a representative of the Department or an organization acting on behalf of the Department.

8.3 If there are no inspection requirements indicated in the bidding documents and no mention is made in the contract, but during the contract period it is decided that inspections shall be carried out, the purchaser shall itself make the necessary arrangements, including payment arrangements with the testing authority concerned.

8.4 If the inspections, tests and analyses referred to in clauses 8.2 and 8.3 show the supplies to be in accordance with the contract requirements, the cost of the inspections, tests and analyses shall be defrayed by the purchaser.

8.5 Where the supplies or services referred to in clauses 8.2 and 8.3 do not comply with the contract requirements, irrespective of whether such supplies or services are accepted or not, the cost in connection with these inspections, tests or analyses shall be defrayed by the supplier.

8.6 Supplies and services which are referred to in clauses 8.2 and 8.3 and which do not comply with the contract requirements may be rejected.

8.7 Any contract supplies may on or after delivery be inspected, tested or analyzed and may be rejected if found not to comply with the requirements of the contract. Such rejected supplies shall be held at the

cost and risk of the supplier who shall, when called upon, remove them immediately at his own cost and forthwith substitute them with supplies which do comply with the requirements of the contract. Failing such removal the rejected supplies shall be returned at the suppliers cost and risk. Should the supplier fail to provide the substitute supplies forthwith, the purchaser may, without giving the supplier further opportunity to substitute the rejected supplies, purchase such supplies as may be necessary at the expense of the supplier.

8.8 The provisions of clauses 8.4 to 8.7 shall not prejudice the right of the purchaser to cancel the contract on account of a breach of the conditions thereof, or to act in terms of Clause 23 of GCC.

9. Packing

9.1 The supplier shall provide such packing of the goods as is required to prevent their damage or deterioration during transit to their final destination, as indicated in the contract. The packing shall be sufficient to withstand, without limitation, rough handling during transit and exposure to extreme temperatures, salt and precipitation during transit, and open storage. Packing, case size and weights shall take into consideration, where appropriate, the remoteness of the goods' final destination and the absence of heavy handling facilities at all points in transit.

9.2 The packing, marking, and documentation within and outside the packages shall comply strictly with such special requirements as shall be expressly provided for in the contract, including additional requirements, if any, specified in SCC, and in any subsequent instructions ordered by the purchaser.

10. Delivery and documents

10.1 Delivery of the goods shall be made by the supplier in accordance with the terms specified in the contract. The details of shipping and/or other documents to be furnished by the supplier are specified in SCC.

10.2 Documents to be submitted by the supplier are specified in SCC.

11. Insurance

11.1 The goods supplied under the contract shall be fully insured in a freely convertible currency against loss or damage incidental to manufacture or acquisition, transportation, storage and delivery in the manner specified in the SCC.

12. Transportation

12.1 Should a price other than an all-inclusive delivered price be required, this shall be specified in the SCC.

13. Incidental services

13.1 The supplier may be required to provide any or all of the following services, including additional services, if any, specified in SCC:

(a) performance or supervision of on-site assembly and/or commissioning of the supplied goods;
(b) furnishing of tools required for assembly and/or maintenance of the supplied goods;
(c) furnishing of a detailed operations and maintenance manual for each appropriate unit of the supplied goods;
(d) performance or supervision or maintenance and/or repair of the supplied goods, for a period of time agreed by the parties,

provided that this service shall not relieve the supplier of any warranty obligations under this contract; and

(e) training of the purchaser's personnel, at the supplier's plant and/or on-site, in assembly, start-up, operation, maintenance, and/or repair of the supplied goods.

13.2 Prices charged by the supplier for incidental services, if not included in the contract price for the goods, shall be agreed upon in advance by the parties and shall not exceed the prevailing rates charged to other parties by the supplier for similar services.

14. Spare parts

14.1 As specified in SCC, the supplier may be required to provide any or all of the following materials, notifications, and information pertaining to spare parts manufactured or distributed by the supplier:

(a) such spare parts as the purchaser may elect to purchase from the supplier, provided that this election shall not relieve the supplier of any warranty obligations under the contract; and

(b) in the event of termination of production of the spare parts:

(i) Advance notification to the purchaser of the pending termination, in sufficient time to permit the purchaser to procure needed requirements; and

(ii) following such termination, furnishing at no cost to the purchaser, the blueprints, drawings, and specifications of the spare parts, if requested.

15. Warranty

15.1 The supplier warrants that the goods supplied under the contract are new, unused, of the most recent or current models, and that they incorporate all recent improvements in design and materials unless provided otherwise in the contract. The supplier further warrants that all goods supplied under this contract shall have no defect, arising from design, materials, or workmanship (except when the design and/or material is required by the purchaser's specifications) or from any act or omission of the supplier, that may develop under normal use of the supplied goods in the conditions prevailing in the country of final destination.

15.2 This warranty shall remain valid for twelve (12) months after the goods, or any portion thereof as the case may be, have been delivered to and accepted at the final destination indicated in the contract, or for eighteen (18) months after the date of shipment from the port or place of loading in the source country, whichever period concludes earlier, unless specified otherwise in SCC.

15.3 The purchaser shall promptly notify the supplier in writing of any claims arising under this warranty.

15.4 Upon receipt of such notice, the supplier shall, within the period specified in SCC and with all reasonable speed, repair or replace the defective goods or parts thereof, without costs to the purchaser.

15.5 If the supplier, having been notified, fails to remedy the defect(s) within the period specified in SCC, the purchaser may proceed to take such remedial action as may be necessary, at the supplier's risk and expense and without prejudice to any other rights which the purchaser

may have against the supplier under the contract.

16. Payment

16.1 The method and conditions of payment to be made to the supplier under this contract shall be specified in SCC.

16.2 The supplier shall furnish the purchaser with an invoice accompanied by a copy of the delivery note and upon fulfillment of other obligations stipulated in the contract.

16.3 Payments shall be made promptly by the purchaser, but in no case later than thirty (30) days after submission of an invoice or claim by the supplier.

16.4 Payment will be made in Rand unless otherwise stipulated in SCC.

17. Prices

17.1 Prices charged by the supplier for goods delivered and services performed under the contract shall not vary from the prices quoted by the supplier in his bid, with the exception of any price adjustments authorized in SCC or in the purchaser's request for bid validity extension, as the case may be.

18. Contract amendments

18.1 No variation in or modification of the terms of the contract shall be made except by written amendment signed by the parties concerned.

19. Assignment

19.1 The supplier shall not assign, in whole or in part, its obligations to perform under the contract, except with the purchaser's prior written consent.

20. Subcontracts

20.1 The supplier shall notify the purchaser in writing of all subcontracts awarded under this contracts if not already specified in the bid. Such notification, in the original bid or later, shall not relieve the supplier from any liability or obligation under the contract.

21. Delays in the supplier's performance

21.1 Delivery of the goods and performance of services shall be made by the supplier in accordance with the time schedule prescribed by the purchaser in the contract.

21.2 If at any time during performance of the contract, the supplier or its subcontractor(s) should encounter conditions impeding timely delivery of the goods and performance of services, the supplier shall promptly notify the purchaser in writing of the fact of the delay, its likely duration and its cause(s). As soon as practicable after receipt of the supplier's notice, the purchaser shall evaluate the situation and may at his discretion extend the supplier's time for performance, with or without the imposition of penalties, in which case the extension shall be ratified by the parties by amendment of contract.

21.3 No provision in a contract shall be deemed to prohibit the obtaining of supplies or services from a national department, provincial department, or a local authority.

21.4 The right is reserved to procure outside of the contract small quantities or to have minor essential services executed if an emergency arises, the supplier's point of supply is not situated at or near the place where the supplies are required, or the supplier's services are not readily

available.

21.5 Except as provided under GCC Clause 25, a delay by the supplier in the performance of its delivery obligations shall render the supplier liable to the imposition of penalties, pursuant to GCC Clause 22, unless an extension of time is agreed upon pursuant to GCC Clause 21.2 without the application of penalties.

21.6 Upon any delay beyond the delivery period in the case of a supplies contract, the purchaser shall, without canceling the contract, be entitled to purchase supplies of a similar quality and up to the same quantity in substitution of the goods not supplied in conformity with the contract and to return any goods delivered later at the supplier's expense and risk, or to cancel the contract and buy such goods as may be required to complete the contract and without prejudice to his other rights, be entitled to claim damages from the supplier.

22. Penalties

22.1 Subject to GCC Clause 25, if the supplier fails to deliver any or all of the goods or to perform the services within the period(s) specified in the contract, the purchaser shall, without prejudice to its other remedies under the contract, deduct from the contract price, as a penalty, a sum calculated on the delivered price of the delayed goods or unperformed services using the current prime interest rate calculated for each day of the delay until actual delivery or performance. The purchaser may also consider termination of the contract pursuant to GCC Clause 23.

23. Termination for default

23.1 The purchaser, without prejudice to any other remedy for breach of contract, by written notice of default sent to the supplier, may terminate this contract in whole or in part:

(a) if the supplier fails to deliver any or all of the goods within the period(s) specified in the contract, or within any extension thereof granted by the purchaser pursuant to GCC Clause 21.2;

(b) if the Supplier fails to perform any other obligation(s) under the contract; or

(c) if the supplier, in the judgment of the purchaser, has engaged in corrupt or fraudulent practices in competing for or in executing the contract.

23.2 In the event the purchaser terminates the contract in whole or in part, the purchaser may procure, upon such terms and in such manner as it deems appropriate, goods, works or services similar to those undelivered, and the supplier shall be liable to the purchaser for any excess costs for such similar goods, works or services. However, the supplier shall continue performance of the contract to the extent not terminated.

23.3 Where the purchaser terminates the contract in whole or in part, the purchaser may decide to impose a restriction penalty on the supplier by prohibiting such supplier from doing business with the public sector for a period not exceeding 10 years.

23.4 If a purchaser intends imposing a restriction on a supplier or any person associated with the supplier, the supplier will be allowed a time period of not more than fourteen (14) days to provide reasons why the

envisaged restriction should not be imposed. Should the supplier fail to respond within the stipulated fourteen (14) days the purchaser may regard the intended penalty as not objected against and may impose it on the supplier.

23.5 Any restriction imposed on any person by the Accounting Officer / Authority will, at the discretion of the Accounting Officer / Authority, also be applicable to any other enterprise or any partner, manager, director or other person who wholly or partly exercises or exercised or may exercise control over the enterprise of the first-mentioned person, and with which enterprise or person the first-mentioned person, is or was in the opinion of the Accounting Officer / Authority actively associated.

23.6 If a restriction is imposed, the purchaser must, within five (5) working days of such imposition, furnish the National Treasury, with the following information:

(i) the name and address of the supplier and / or person restricted by the purchaser;
(ii) the date of commencement of the restriction
(iii) the period of restriction; and
(iv) the reasons for the restriction.

These details will be loaded in the National Treasury's central database of suppliers or persons prohibited from doing business with the public sector.

23.7 If a court of law convicts a person of an offence as contemplated in sections 12 or 13 of the Prevention and Combating of Corrupt Activities Act, No. 12 of 2004, the court may also rule that such person's name be endorsed on the Register for Tender Defaulters. When a person's name has been endorsed on the Register, the person will be prohibited from doing business with the public sector for a period not less than five years and not more than 10 years. The National Treasury is empowered to determine the period of restriction and each case will be dealt with on its own merits. According to section 32 of the Act the Register must be open to the public. The Register can be perused on the National Treasury website.

24. Anti-dumping and countervailing duties and rights

24.1 When, after the date of bid, provisional payments are required, or anti-dumping or countervailing duties are imposed, or the amount of a provisional payment or anti-dumping or countervailing right is increased in respect of any dumped or subsidized import, the State is not liable for any amount so required or imposed, or for the amount of any such increase. When, after the said date, such a provisional payment is no longer required or any such anti-dumping or countervailing right is abolished, or where the amount of such provisional payment or any such right is reduced, any such favourable difference shall on demand be paid forthwith by the contractor to the State or the State may deduct such amounts from moneys (if any) which may otherwise be due to the contractor in regard to supplies or services which he delivered or rendered, or is to deliver or render in terms of the contract or any other contract or any other amount which may be due to him

25. Force Majeure

25.1 Notwithstanding the provisions of GCC Clauses 22 and 23, the supplier shall not be liable for forfeiture of its performance security, damages, or termination for default if and to the extent that his delay in performance or other failure to perform his obligations under the contract is the result of an event of force majeure.

25.2 If a force majeure situation arises, the supplier shall promptly notify the purchaser in writing of such condition and the cause thereof. Unless otherwise directed by the purchaser in writing, the supplier shall continue to perform its obligations under the contract as far as is reasonably practical, and shall seek all reasonable alternative means for performance not prevented by the force majeure event.

26. Termination for insolvency

26.1 The purchaser may at any time terminate the contract by giving written notice to the supplier if the supplier becomes bankrupt or otherwise insolvent. In this event, termination will be without compensation to the supplier, provided that such termination will not prejudice or affect any right of action or remedy which has accrued or will accrue thereafter to the purchaser.

27. Settlement of Disputes

27.1 If any dispute or difference of any kind whatsoever arises between the purchaser and the supplier in connection with or arising out of the contract, the parties shall make every effort to resolve amicably such dispute or difference by mutual consultation.

27.2 If, after thirty (30) days, the parties have failed to resolve their dispute or difference by such mutual consultation, then either the purchaser or the supplier may give notice to the other party of his intention to commence with mediation. No mediation in respect of this matter may be commenced unless such notice is given to the other party.

27.3 Should it not be possible to settle a dispute by means of mediation, it may be settled in a South African court of law.

27.4 Mediation proceedings shall be conducted in accordance with the rules of procedure specified in the SCC.

27.5 Notwithstanding any reference to mediation and/or court proceedings herein,

(a) the parties shall continue to perform their respective obligations under the contract unless they otherwise agree; and
(b) the purchaser shall pay the supplier any monies due the supplier.

28. Limitation of liability

28.1 Except in cases of criminal negligence or willful misconduct, and in the case of infringement pursuant to Clause 6;

(a) the supplier shall not be liable to the purchaser, whether in contract, tort, or otherwise, for any indirect or consequential loss or damage, loss of use, loss of production, or loss of profits or interest costs, provided that this exclusion shall not apply to any obligation of the supplier to pay penalties and/or damages to the purchaser; and

(b) the aggregate liability of the supplier to the purchaser, whether under the contract, in tort or otherwise, shall not exceed the total contract price, provided that this limitation shall not apply to the cost of repairing or replacing defective equipment.

29. Governing language

29.1 The contract shall be written in English. All correspondence and other documents pertaining to the contract that is exchanged by the parties shall also be written in English.

30. Applicable law

30.1 The contract shall be interpreted in accordance with South African laws, unless otherwise specified in SCC.

31. Notices

31.1 Every written acceptance of a bid shall be posted to the supplier concerned by registered or certified mail and any other notice to him shall be posted by ordinary mail to the address furnished in his bid or to the address notified later by him in writing and such posting shall be deemed to be proper service of such notice

31.2 The time mentioned in the contract documents for performing any act after such aforesaid notice has been given, shall be reckoned from the date of posting of such notice.

32. Taxes and duties

32.1 A foreign supplier shall be entirely responsible for all taxes, stamp duties, license fees, and other such levies imposed outside the purchaser's country.

32.2 A local supplier shall be entirely responsible for all taxes, duties, license fees, etc., incurred until delivery of the contracted goods to the purchaser.

32.3 No contract shall be concluded with any bidder whose tax matters are not in order. Prior to the award of a bid the Department must be in possession of a tax clearance certificate, submitted by the bidder. This certificate must be an original issued by the South African Revenue Services.

33. National Industrial Participation (NIP) Programme

33.1 The NIP Programme administered by the Department of Trade and Industry shall be applicable to all contracts that are subject to the NIP obligation.

34. Prohibition of Restrictive practices

34.1 In terms of section 4 (1) (b) (iii) of the Competition Act No. 89 of 1998, as amended, an agreement between, or concerted practice by, firms, or a decision by an association of firms, is prohibited if it is between parties in a horizontal relationship and if a bidder (s) is / are or a contractor(s) was / were involved in collusive bidding (or bid rigging).

34.2 If a bidder(s) or contractor(s), based on reasonable grounds or evidence obtained by the purchaser, has / have engaged in the restrictive practice referred to above, the purchaser may refer the matter to the Competition Commission for investigation and possible imposition of administrative penalties as contemplated in the Competition Act No. 89 of 1998.

34.3 If a bidder(s) or contractor(s), has / have been found guilty by the Competition Commission of the restrictive practice referred to above, the purchaser may, in addition and without prejudice to any other remedy provided for, invalidate the bid(s) for such item(s) offered, and / or terminate the contract in whole or part, and / or restrict the bidder(s) or contractor(s) from conducting business with the public sector for a period not exceeding ten (10) years and / or claim damages from the bidder(s) or contractor(s) concerned.

RESOLUTION OF BOARD OF DIRECTORS FOR COMPANY /CLOSE CORPORATION/ PARTNERSHIP

RESOLUTION of a meeting of the Board of *Directors / Members / Partners of:

_____

(legally correct full name and registration number, if applicable, of the Enterprise)

Held at_____*(place)*

on_____*(date)*

RESOLVED that:

1. The Enterprise submits a Bid / Tender to the Department of Water and Sanitation in respect of the following project:

   _____

   (project description as per Bid / Tender Document)

   Bid / Tender Number:_____*(Bid / Tender Number as per Bid / Tender Document)*

2. *Mr/Mrs/Ms: _____

   in *his/her Capacity as:_____ *(Position in the Enterprise)*

   and who will sign as follows: _____

   be, and is hereby, authorized to sign the Bid / Tender, and any and all other documents and/or correspondence in connection with and relating to the Bid / Tender, as well as to sign any Contract, and any and all documentation, resulting from the award of the Bid / Tender to the Enterprise mentioned above.

	Name	Capacity	Signature
1			
2			
3			
4			
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8			
9			
10			
11			
12			
13			

Any reference to words "Bid" or Bidder" herein and/or in any other documentation shall be construed to have the same meaning as the words "Tender" or "Tenderer".

14			
15			
16			
17			
18			
19			
20			

The bidding enterprise hereby absolves the Department of Water and Sanitation from any liability whatsoever that may arise as a result of this document being signed.

Note:

1. ** Delete which is not applicable.*
2. ***NB:** This resolution must, where possible, be signed by all the Directors / Members / Partners of the Bidding Enterprise.*
3. *In the event that paragraph 2 cannot be complied with, the resolution must be signed by Directors / Members / Partners holding a majority of the shares / ownership of the Bidding Enterprise (attach proof of shareholding / ownership hereto).*
4. *Directors / Members / Partners of the Bidding Enterprise may alternatively delegate a person to sign this document on behalf of the Bidding Enterprise, which person must be so authorized by way of a duly completed Delegation of Authority letter, signed by the Directors / Members / Partners holding a majority of the shares / ownership of the Bidding Enterprise (proof of shareholding / ownership and Delegation of Authority letter are to be attached hereto).*
5. *Should the number of Directors / Members / Partners exceed the space available above, additional names and signatures must be supplied on a separate page.*

ENTERPRISE STAMP

RESOLUTION OF BOARD OF DIRECTORS TO ENTER INTO CONSORTIA OR JOINT VENTURES

RESOLUTION of a meeting of the Board of *Directors / Members / Partners of:

_____

_____

(Legally correct full name and registration number, if applicable, of the Enterprise)

COMPANY - CLOSE CORPORATION - PAR

Held at _____ *(place)*

on _____ *(date)*

RESOLVED that:

1. The Enterprise submits a Bid /Tender, in consortium/Joint Venture with the following Enterprises:

   _____

   _____

   (List all the legally correct full names and registration numbers, if applicable, of the Enterprises forming the Consortium/Joint Venture)

   to the Department of Water and Sanitation in respect of the following project:

   _____

   _____

   (Project description as per Bid /Tender Document)

   Bid / Tender Number: _____ *(Bid / Tender Number as per Bid / Tender Document)*

2. *Mr/Mrs/Ms: _____

   in *his/her Capacity as: _____ *(Position in the Enterprise)*

   and who will sign as follows: _____

   be, and is hereby, authorised to sign a consortium/joint venture agreement with the parties listed under item 1 above, and any and all other documents and/or correspondence in connection with and relating to the consortium/joint venture, in respect of the project described under item 1 above.

3. The Enterprise accepts joint and several liability with the parties listed under item 1 above for the due fulfilment of the obligations of the joint venture deriving from, and in any way connected with, the Contract to be entered into with the Department in respect of the project described under item 1 above.

4. The Enterprise chooses as its *domicilium citandi et executandi* for all purposes arising from this joint venture agreement and the Contract with the Department in respect of the project under item 1 above:

   Physical address: _____

   _____

   _____

_____ (code)

Resolution of Board of Directors to enter into Consortia or Joint Ventures

Postal Address: _____

_____

_____

_____ (code)

Telephone number: _____

Fax number: _____

	Name	Capacity	Signature
1			
2			
3			
4			
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12			
13			

The bidding enterprise hereby absolves the Department of Water and Sanitation from any liability whatsoever that may arise as a result of this document being signed

Note:

1. ** Delete which is not applicable.*
2. ***NB:** This resolution must, where possible, be signed by all the Directors / Members / Partners of the Bidding Enterprise.*
3. *In the event that paragraph 2 cannot be complied with, the resolution must be signed by Directors / Members / Partners holding a majority of the shares / ownership of the Bidding Enterprise (attach proof of shareholding / ownership hereto).*
4. *Directors / Members / Partners of the Bidding Enterprise may alternatively delegate a person to sign this document on behalf of the Bidding Enterprise, which person must be so authorized by way of a duly completed Delegation of Authority letter, signed by the Directors / Members / Partners holding a majority of the shares / ownership of the Bidding Enterprise (proof of shareholding / ownership and Delegation of Authority letter are to be attached hereto).*
5. *Should the number of Directors / Members / Partners exceed the space available above, additional names and signatures must be supplied on a separate page.*

ENTERPRISE STAMP

SPECIAL RESOLUTION OF CONSORTIA OR JOINTVENTURES

RESOLUTION of a meeting of the duly authorized representatives of the following legal entities who have entered into a consortium/joint venture to jointly bid for the project mentioned below: *(legally correct full names and registration numbers, if applicable, of the Enterprises forming a Consortium/Joint Venture)*

1. _____

_____

2. _____

_____

3. _____

_____

4. _____

_____

5. _____

_____

6. _____

_____

7. _____

_____

8. _____

Held at_____

_____(*pla*

*ce)*on

_____(*dat*

e)

RESOLVED that:

A. The above-mentioned Enterprises submit a Bid in Consortium/Joint Venture to the Department of Water and Sanitation in respect of the following project:

_____

_____

(*Project description as per Bid /Tender Document)*

Bid / Tender Number:_____(*Bid / Tender Number as per Bid /Tender Document)*

B. *Mr/Mrs/Ms:_____in *his/her

Capacity as:_____(*Position in the Enterprise)*and who will sign as follows: _____

be, and is hereby, authorized to sign the Bid, and any and all other documents and/or correspondence in connection with and relating to the Bid, as well as to sign any Contract, and any and all documentation, resulting from the award of the Bid to the Enterprises in Consortium/Joint Venture mentioned above.

C. The Enterprises constituting the Consortium/Joint Venture, notwithstanding its composition, shall conduct all business under the name and style of:

_____

D. The Enterprises to the Consortium/Joint Venture accept joint and several liability for the due fulfilment ofthe obligations of the Consortium/Joint Venture deriving from, and in any way connected with, the Contract entered into with the Department in respect of the project described under item A above.

E. Any of the Enterprises to the Consortium/Joint Venture intending to terminate the consortium/joint venture agreement, for whatever reason, shall give the Department 30 days written notice of such intention. Notwithstanding such decision to terminate, the Enterprises shall remain jointly and severally liable to the Department for the due fulfilment of the obligations of the Consortium/Joint

Venture as mentioned under item D above.

F. No Enterprise to the Consortium/Joint Venture shall, without the prior written consent of the other Enterprises to the Consortium/Joint Venture and of the Department, cede any of its rights or assign any of its obligations under the consortium/joint venture agreement in relation to the Contract with the Department referred to herein.

G. The Enterprises choose as the *domicilium citandi et executandi* of the Consortium/Joint Venture for all purposes arising from the consortium/joint venture agreement and the Contract with the Department in respect of the project under item A above:

Physical address:_____

_____

_____

_____

(code)Postal Address:_____

_____

_____

_____ (code)

Telephone number: _____

Fax number: _____

	Name	Capacity	Signature
1			
2			
3			
4			
5			

6			
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8			
9			
10			
11			
12			
13			
14			
15			

The bidding enterprise hereby absolves the Department of Water and Sanitation from any liability whatsoever that may arise as a result of this document being signed.

Note:

1. ** Delete which is not applicable.*
2. ***NB:** This resolution must be signed by all the Duly Authorized Representatives of the Legal Entities to the consortium/joint venture submitting this tender, as named in item 2 of **RESOLUTION OF BOARD OF DIRECTORS TO ENTER INTO CONSORTIA OR JOINT VENTURES***
3. *Should the number of the Duly Authorized Representatives of the Legal Entities joining forces in this tender exceed the space available above, additional names, capacity and signatures must be supplied on a separate page.*
4. ***RESOLUTION OF BOARD OF DIRECTORS TO ENTER INTO CONSORTIA OR JOINT VENTURES**, duly completed and signed, from the separate Enterprises who participate in this consortium/joint venture,must be attached to this **SPECIAL RESOLUTION OF CONSORTIA OR JOINT VENTURES***

LETTER OF AUTHORITY FOR SOLE PROPRIETOR OR SOLE TRADER

I, ...hereby confirm that I am the sole owner of the business trading as .....

Signature: Sole owner..... .....

Date.....

Witnesses:

1. _____ Date : _____

2. _____ _____

ENTERPRISE STAMP

LETTER OF AUTHORITY FOR SOLE PROPRIETOR OR SOLE TRADER

I, ...hereby confirm that I am the sole owner of the business trading as .....

Signature: Sole owner..... .....

Date.....

Witnesses:

1. _____ _____
Date :

2. _____ _____

ENTERPRISE STAMP

water & sanitation

Department:
Water and Sanitation
REPUBLIC OF SOUTH AFRICA

DIRECTORATE: WATER RESOURCES DEVELOPMENT PLANNING

TERMS OF REFERENCE

UPPER uTHUKELA RIVER AUGMENTATION PROJECT - BRIDGING STUDY FOR A PERIOD OF 36 MONTHS

JULY 2026

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LIST OF ACRONYMS AND ABBREVIATIONS

AADD	Average Annual Daily Demand
BoQ	Bill of Quantities
CD: IWRP	Chief Directorate: Integrated Water Resource Planning (now CD: NWRP)
CD: NWRP	Chief Directorate: National Water Resource Planning (previously CD: IWRP)
CMA	Catchment Management Agency
D: NWRP	Directorate: National Water Resources Planning (now D: SWRP)
D: SWRP	Directorate: Strategic Water Resources Planning (previously D: NWRP)
D: WRMP	Directorate: Water Resource Management Planning (previously D: WRPS)
D: WRPS	Directorate: Water Resources Planning Systems (now D: WRMP)
DFFE	Department of Forestry, Fisheries and the Environment
DMR	Department of Mineral Resources
DWA	Department of Water Affairs (now the DWS)
DWAF	Department of Water Affairs and Forestry (now the DWS)
DWS	Department of Water and Sanitation
EAP	Environmental Assessment Practitioner
ECO	Environmental Control Officer
EIA	Environmental Impact Assessment
EIR	Environmental Impact Report
EMP	Environmental Management Plan
EMPr	Environmental Management Programme
EWR	Ecological Water Requirements
FSL	Full Supply Level
GWS	Government Water Scheme
HFL	High Flood Level
HFY	Historical Firm Yield
HPP	Proposed Hydropower Plant

I&APs	Interested and Affected Parties
IVRS	Integrated Vaal River System
LIMCOM	Limpopo Watercourse Commission
LHWP	Lesotho Highlands Water Project
LM	Local Municipality
LSY	Long-term Stochastic Yield
MAE	Mean Annual Evaporation
MAP	Mean Annual Participation
MAR	Mean Annual Runoff
MCDA	Multi-Criteria Decision Analysis
O&M	Operation and Maintenance
PPE	Personal Protective Equipment
PPP	Public Participation Process
PSP	Professional Services Provider
PSR	Project Summary Report
PWWD	Peak Weak Water Demand
RDM	Reserve Determination Model
RMF	Regional Maximum Flood
RSA	Republic of South Africa
SADC	Southern African Development Community
SEF	Safety Evaluation Flood
SMC	Study Management Committee
SSC	Study Steering Committee
TCTA	Trans-Caledon Tunnel Authority
ToR	Terms of Reference
TWP	Tugela Water Project
URV	Unit Reference Value
UTRAP	Upper uThukela River Augmentation Project
VAPS	Vaal Augmentation Planning Study
WC/WDM	Water Conservation and Water Demand Management
WMA	Water Management Area
WRPM	Water Resource Planning Model
WRSM	Water Resource Simulation Model
WRYM	Water Resource Yield Model
WTW	Water Treatment Works
WUL	Water Use License

LIST OF MEASUREMENT UNITS

km^2	square kilometre
million m^3	million cubic meters
million m^3/a	million cubic meters per annum
Mℓ/d	megalitres per day
mm/a	millimetre per annum
R/m^3	Rand per cubic meter

1 INTRODUCTION, BACKGROUND, AND STUDY AREA

1.1 Introduction

The uThukela River Catchment is a key strategic water resource system that supports water requirements within KwaZulu-Natal and contributes to national water security through transfers to the Integrated Vaal River System (IVRS). Water is currently transferred from the uThukela River Catchment to the IVRS via the Drakensberg Transfer Scheme, and the catchment continues to support domestic, industrial, agricultural and environmental water requirements.

Recent water resource planning studies have highlighted increasing pressure on available water resources within several sub-systems of the catchment. Future water requirements, together with environmental obligations and existing allocations, require the careful planning and optimisation of future water resource developments.

The purpose of the Upper uThukela River Augmentation Project (UTRAP) is to:

- Augment the water supply to the Integrated Vaal River System (IVRS) in support of national water security and water quality management; and
- Improve water supply reliability for key urban and economic centres within the uThukela catchment in KwaZulu-Natal.
- The project aims to augment water supply while simultaneously supporting water quality management in both the Thukela and Vaal-Orange systems, particularly in maintaining dilution capacity and controlling salinity levels.

A Bridging Study is a study that bridges the gap between previous planning/feasibility investigations and implementation readiness. The Bridging Study for the Upper uThukela River Augmentation Project (UTRAP) will consist of reviewing and updating the TWP Feasibility Study (2001). In addition to this, it will define a scheme configuration that will make sure there is water for towns in the upper catchment like Newcastle, Dundee and Ladysmith. It will also take into account water requirements in the lower catchment, where water is transferred from the Middledrift and the Lower Thukela Bulk Water Supply Schemes.

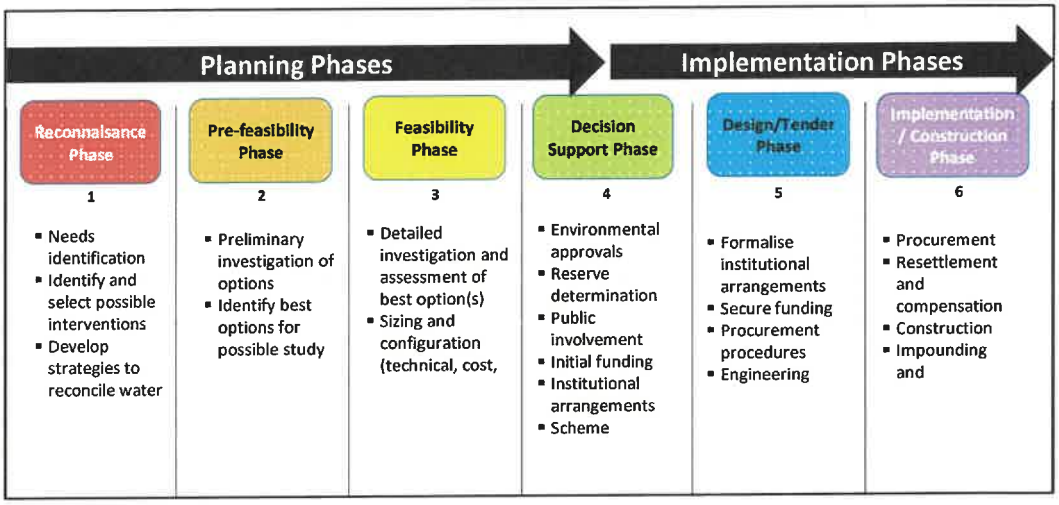

Figure 1-1 Planning and Implementation Phases of Infrastructure Development

To achieve the above, the UTRAP Bridging Study will consist of engineering work at a feasibility level of detail for the Jana dam and at a pre-feasibility level of detail for all the possible dam development options at Buffels River and an alternative conveyance route to link Jana and Mielietuin dams to an alternative storage on the escarpment. The pre-feasibility investigation will consist of, among others, water resource analysis, engineering analysis/reviews, scheme optimisation, pre-feasibility design, socio-economic impacts, geophysical and geotechnical assessments, system operations and environmental sensitivity analysis.

The bridging study at the feasibility level of detail will consist mainly of:

1. Review and update of the Jana Dam Feasibility Study that was done for the TWP Feasibility Study (2001), and the
2. Environmental Impact Assessment and subsequent environmental approvals for the Jana Dam and the conveyance route to the existing Drakensburg Pump Storage Scheme

1.2 Key Objectives

A key objective of this study will be to update the Jana Dam assessments that were done during the TWP Feasibility Study so that a Record of Implementation Decisions (RID) can be developed. It will therefore require an environmental impact assessment for the Jana Dam and the conveyance route to the existing Drakensburg Pump Storage

Scheme to obtain environmental authorisation for dam construction and the conveyance route. In addition to this, institutional and funding arrangements recommendations will be required.

According to the feasibility study of 2001, the TWP will store water in the Upper uThukela River and then transfer water at a rate of 15 m^3/s via the existing Drakensberg Pumped Storage Scheme to the IVRS when required. It comprises two large storage dams and a conveyance system:

- Jana Dam (160m high) in the uThukela River, approximately 7km downstream of the confluence of the Thukela and Klip Rivers.
- Mielietuin Dam (96m high) in the Bushmans River upstream of the western boundary of the Weenen Nature Reserve, and or a possible dam on the Buffels River.
- Aqueducts linking the proposed dams and the existing Kilburn Dam via the existing Drakensberg Pumped Storage Scheme. The options for the aqueducts include open canals, pipelines or a combination of open canals and a pipeline
- Infrastructure, including pump stations, access roads and bulk electricity supply.
- An alternative storage dam over the catchment divides in the Vaal River as an alternative to the existing Sterkfontein Dam.

Once completed, the reconfigured TWP will have water available for inter-basin transfer to the IVRS and for KwaZulu-Natal (KZN) province.

The pre-feasibility level of detail will identify the optimum scheme configuration for all possible dam development options. It will optimise the layout for the most engineering sound and cost-effective solution, taking into account all new developments since the first scheme configuration. The optimisation must also identify possible bottlenecks and or solutions for all the possible water transfers.

To recommend an optimum scheme, the following factors must be taken into account: Economic and environmental impacts. It is envisaged that phasing of the project will be required. The main components to be considered include the existing proposed conveyance infrastructure to Kilburn Dam, a new conveyance system to Ladysmith or

to the Ingula Pump Storage Scheme; the Jana Dam; the Mielietuin Dam and/or a dam on the Buffels River.

An environmental sensitivity analysis for the following needs to be conducted:

- A dam on Buffels River;
- Mielietuin Dam;
- Possible Spioenkop Dam raising.
- Conveyance infrastructure routes (new), and
- Additional balancing storage on the escarpment.

The pre-feasibility study of the alternative conveyance route will recommend the operation of the system linking the Jana Dam and Mielietuin dams to the alternative balancing storage on the escarpment.

During the pre-feasibility study, the PSP will be required to do a geophysical survey for a recommended dam on the Buffels River and the alternative conveyance route. Once completed, the PSP will draft a scope of services for a geotechnical assessment, for the appointment of a geotechnical contractor, which must include a bill of quantities.

The PSP will be required to liaise closely with the organs of state; Departments and state-owned enterprises for example, ESCOM, Department of Forestry, Fisheries and the Environment, Department of Mineral Resources and other role players in the study area.

1.3 Study Team Organisation

The PSP team must provide the multi-disciplinary skills and expertise required to undertake this study within the time constraints provided. The study leader must be a professional engineer, experienced in coordinating and managing a study of this nature (dam development/planning), who will form the main link between the DWS and the study teams, as shown in Figure 1-2 below.

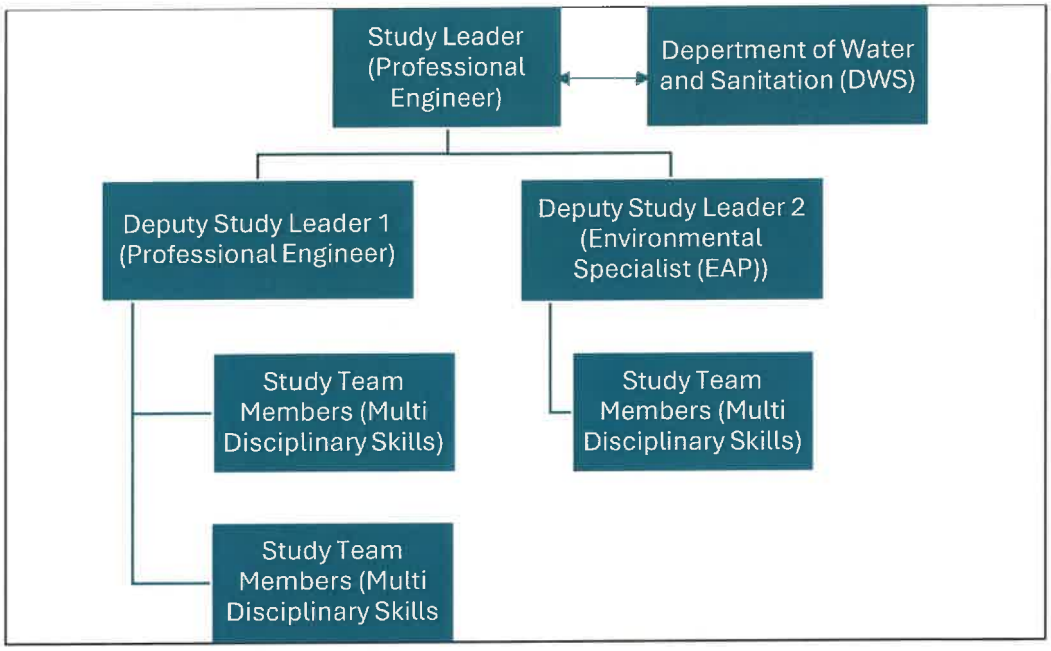

Figure 1-2: Study Team Structure with Reporting Link

The envisaged tasks for this study are set out in the Scope of Services. The PSP will be appointed by DWS to carry out all the necessary work as described in the Scope of Services (Section 5) to facilitate the successful conclusion of the Study. The Scope of Services will be the minimum requirements that DWS will accept. The estimated duration of the Study is thirty-six **(36) months.**

The bid price must be fixed for 36 months. Escalations (CPI, or PPI and/or Construction price index) can be requested formally as a variation order after 36 months by the preferred bidder. The preferred bidder will have to prove that time extensions were not due to slow progress/performance and or external unforeseen circumstances.

The DWS will act as the Client for this Study and will retain overall responsibility for governance, decision-making, and approvals. The Study will be implemented through the appointment of a PSP, procured in accordance with applicable public-sector procurement legislation and DWS supply-chain management procedures.

The appointed PSP will be responsible for the execution, coordination and integration of all technical, environmental, socio-economic and specialist workstreams required to

deliver the Study outputs, in accordance with these Terms of Reference. The PSP shall operate under the oversight of the DWS Project Manager and in consultation with the Study Management Committee (SMC) and Project Steering Committee (PSC), through which strategic guidance, progress monitoring and key decisions will be effected.
The Study is structured as a phased intervention, with defined deliverables and decision points at the conclusion of each phase. Upon completion of each phase, DWS shall have the discretion to proceed to the subsequent phase, amend the scope, or terminate the Study, subject to internal approvals and funding considerations. The procurement and management of this Study are therefore outcome-driven, with payments linked to the satisfactory delivery and approval of agreed outputs rather than time expended.

1.4 Background

The uThukela Water Project (TWP) Feasibility Study was completed in 2001 and identified the Upper uThukela Catchment as a viable source of water for both local use and augmentation of the Integrated Vaal River System. The project included major storage, conveyance and transfer infrastructure intended to improve long-term water security. Subsequent national water resource planning processes resulted in priority being given to the implementation of Phase 2 of the Lesotho Highlands Water Project, resulting in the postponement of the TWP. Since completion of the TWP Feasibility Study, significant advances have occurred in hydrological assessments, environmental legislation, water resource planning methodologies, infrastructure development and system operating requirements. The hydrology of the uThukela Catchment has recently been updated and incorporated into the 2024 reconciliation studies.

Recent reconciliation studies have reaffirmed the strategic importance of the catchment and identified increasing water supply deficits within several uThukela sub-systems. Updated assessments indicate the need to revisit and optimise future water resource development opportunities within the catchment while ensuring compliance with current environmental and regulatory requirements.

To fast-track the delivery of the project, the bridging study for the UTRAP will be undertaken both at pre-feasibility and at feasibility levels of detail. The project schedule, as per international best practices are described in Table 1-1:

Table 1-1-1: The anticipated programme for project development

Planning/Implementation Phases	Duration
Bridging Study	3 years
Decision Support for Jana Dam	3 years
Construction for Jana Dam	4 years
Feasibility Study and EIA for the remaining infrastructure	4 years
Decision Support for the remaining infrastructure	3 years
Construction for the remaining infrastructure	5 years

1.5 Study Area

The uThukela River Catchment, situated predominantly within KwaZulu-Natal, is one of South Africa's major water resource systems. The catchment covers approximately 30 000 km² and extends from the Drakensberg escarpment along the borders of Lesotho and the Free State to the Indian Ocean. Major tributaries include the Klip, Bushmans, Sundays, Mooi, Buffalo and Little uThukela Rivers. The study area covers the upper uThukela River Catchment and associated areas that may be affected by future dam, conveyance and storage infrastructure. The location and extent of the catchment as shown in Figure 1-3.

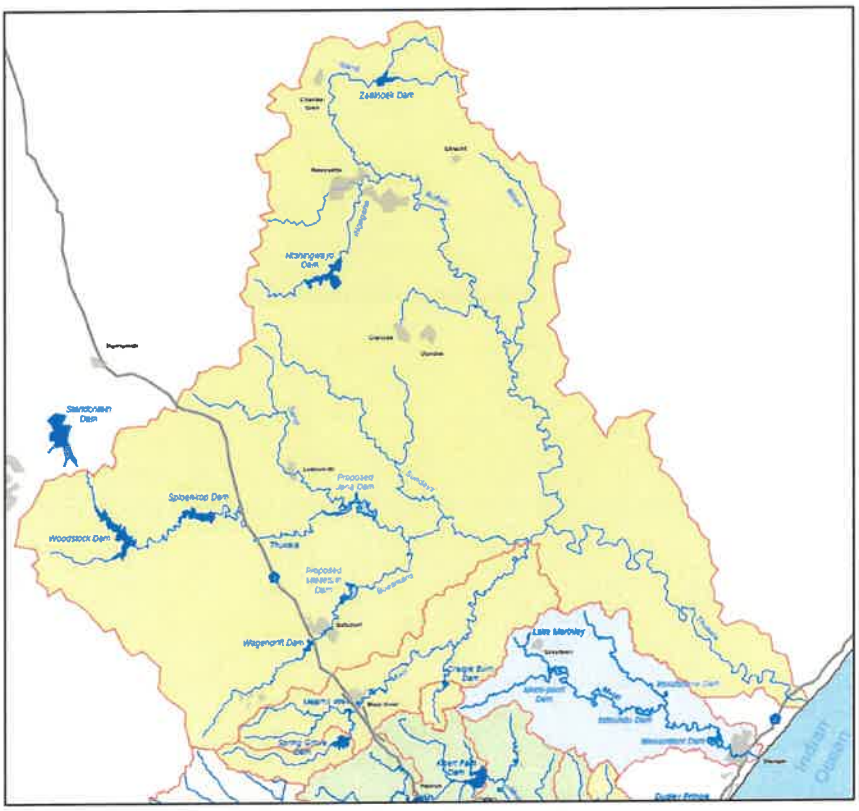

Figure 1-3: Extent of uThukela River Catchment

2 STUDY OBJECTIVE AND STUDY METHODOLOGY

2.1 Study Objective

The bridging study for the Upper uThukela River Augmentation Project (UTRAP) will consist of a review and update of the TWP Feasibility Study (2001). The main objective of this bridging study is to review and update the Jana Dam feasibility-level assessments undertaken as part of the TWP Feasibility Study. To develop a Record of Implementation Decisions (RID). It will therefore require an environmental impact assessment for the Jana Dam and conveyance route to the existing Drakensberg Pump Storage Scheme to obtain environmental authorisation for dam construction from DFFE and DMPR. In addition, recommendations on institutional and funding arrangements will be required.

Additional objectives are to identify the optimum scheme configuration for all possible dam development options. To optimise the layout for the most engineering-sound and cost-effective solution, taking into account all new developments since the first scheme configuration. The optimisation must also identify possible bottlenecks and/or solutions for all the possible water transfers.

To recommend an optimum scheme, the following must be taken into account: Economic and environmental impacts. It is envisaged that phasing of the project will be required. Main components to be considered are the existing proposed conveyance infrastructure to Kilburn Dam, a new conveyance system up to Ladysmith or to the Ingula Pump Storage Scheme, an alternative storage dam on the escarpment, the Jana Dam, the Mielietuin Dam and or a dam on the Buffels River.

The scheme configuration should ensure there is a water supply for towns in the upper catchment, such as Newcastle, Dundee and Ladysmith. It should also take into account water requirements in the lower catchment, where water is transferred from the Middledrift and the Lower uThukela Bulk Water Supply Schemes.

Summary of the objectives of the bridging for the Upper uThukela River Augmentation Project are:

- to review and update the Jana Dam feasibility-level assessments undertaken as part of the TWP Feasibility Study. To develop a Record of Implementation Decisions (RID)
- an environmental impact assessment for the Jana Dam and conveyance route to existing Drakensberg Pump Storage Scheme to obtain environmental authorisation for dam construction from DFFE and DMPR
- to identify the optimum scheme configuration for all possible dam development options at pre-feasibility level
    - a dam on Buffels River
    - a new conveyance system up to Ladysmith or to the Ingula Pump Storage Scheme,
    - an alternative storage dam on the escarpment

2.2 Study Methodology

2.2.1 Phase1 - Inception

The appointed PSP will be required to undertake a thorough review of all relevant previous study reports, and other available information, and to become familiar with the uThukela River catchment. The key completed and current studies, as well as other information relevant to this study. are listed and described in the Section 4. It will be necessary to update and maintain a list of such studies and their relevance to this assignment. The PSP will also be required to liaise and engage with all relevant stakeholders and key role players during the preparation and execution of the study.

Following the review, the PSP shall compile a draft Inception Report consisting of an updated and refined scope of work, methodology, study budget, study programme, human resource schedule and cashflow projections. This draft will be discussed with the Client, and all aspects and uncertainties will be clarified. Once approved by the Client, the final Inception Report will form part of the contract and will constitute the agreed final Terms of Reference (ToR) for the study.

The purpose of the Inception Report is to capture and refine all important work that would be necessary for the successful completion of the study that may, for any reason, have been overlooked in the compilation of the original ToR or in the proposal submitted

by the PSP during tendering. Such omissions can only be identified once the study has commenced and the team has had the opportunity to familiarize itself with all available information on the study, which is often extensive.

The Inception Report is a formal document that will cover all aspects of the original proposal, as well as any updates that may be required to the scope of work, contract amount and contract period. The Inception Report will list all required tasks, the team members for each task and their time allocation, hourly rates per task, anticipated disbursements, and the revised study programme, among other details. **The appointment of new team members to the study or any changes to the team and their rates must be approved by the Client before such changes can be implemented**. The Inception Report can therefore be considered a revised Technical and Financial Proposal.

After the Contract has been signed by both parties, the PSP will commence with the study in accordance with the approved Inception Report. A site visit to the study area shall be arranged by the PSP (with support where required from DWS) and undertaken together with DWS and other stakeholders early in the Inception Phase.

The PSP shall also compile a consolidated budget schedule and study programme as well as cashflow containing all scope activities; develop a full list and description of all study reports to be produced and indicate when these are to be delivered; and undertake stakeholder analysis and develop an outline Stakeholder Management Plan, propose a draft composition of the study steering committee and assist with its establishment. The roles and responsibilities of key stakeholders should be articulated.

Deliverables: **Inception Report** including an update of the proposed scope of work, methodology, budget, study program and cash flow. It is anticipated that the Inception Report shall be completed three (3) months after the signing of the Contract for this Study. Therefore, Study Part 1 shall be completed within three (3) months after the signing of the Contract for this Study.

2.2.2 Phase 2 - Pre-feasibility level of detail for the scheme configuration and infrastructure requirements (dam/s, conveyance, pumpstations etc)

Phase 2 entails undertaking the necessary pre-feasibility-level investigations and comparative analyses, including a due diligence assessment for all possible water resource development options, or hybrids thereof, as well as the scheme configuration for each option. From a national perspective, the best water resource development option shall be selected and recommended for advancement to detailed feasibility level studies during the follow-on feasibility study. the prefeasibility phase shall specify the optimal water resource size (including phasing), as well as the configuration, composition, location and size of the key infrastructure elements of the recommended resource.

A Pre-feasibility Study Report (including all agreed supporting reports) shall be compiled in a manner that explicitly defines and motivates the selection of the preferred route, and its associated infrastructure to be carried forward to the detailed feasibility study stage. The criteria for selecting the preferred scheme shall be based on the best national interest, inferred from existing guidelines and legislation governing infrastructure development, and shall draw on integrated and robust optimization as well as best international practice. The UTRAP Pre-feasibility Study Report shall document all aspects specified in this section, including water requirements and "integration" chapters. It is important to note that the outcome of the pre-feasibility study will inform the scope of work during a further feasibility study.

Deliverables: **UTRAP Pre-Feasibility Study Main Report,** together with all applicable and agreed **supporting reports**. Study Phase 2 shall be completed within twelve (12) months from the end of Phase 1.

2.2.3 Phase 3 and Phase 4 - Updating the Jana Dam Feasibility Study and applying for environmental authorization

Phase 3 and Phase 4 will consist of finalising the Jana Dam feasibility assessment and undertaking an Environmental Impact Assessment (EIA) for Jana Dam and the conveyance route to the existing Drakenberg Pump Storage Scheme to obtain environmental authorisation for the dam.

Phase 3 will include the detailed optimisation of the selected best scheme based on further technical analyses, geotechnical investigations, topographical surveys, environmental studies, updating the feasibility level designs, spillway hydraulic modelling, detailed bills of quantities and costing, finalisation of the institutional arrangements, financial and bankability assessment, record of implementation decision, etc.

The level of output from the feasibility study shall be sufficient to allow immediate commencement of detailed design and, ultimately, construction of the preferred option once the environmental authorisation and requisite licenses have been issued.

Deliverables: **Main Report** together with all applicable and agreed **supporting reports**, **RID and Environmental Authorisations** together with all applicable and agreed **supporting reports**. Study Phase 3 and Phase 4 shall be completed within twenty (20) months from the end of Phase 2.



Figure 2-1: Upper uThukela River Augmentation Scheme

2.2.4 Phase 5 - Implementation of the Pre-feasibility Outcome

Phase 5 depends on the outcome of the pre-feasibility stage and on when **DWS has selected** the best water resource option **from a national perspective**. Once the suitable option has been selected, a new contract for the feasibility study will be procured with the full scope of feasibility studies and investigations for that water resource development scheme. The implementation phasing, however, is critical for decision-making and needs to be investigated to provide the most cost-effective option.

Deliverables: **Implementation Phasing Report** together with all applicable **supporting reports**. Study Phase 5 shall be completed within twelve (12) months from the end of Phase 2.

2.3 Outline of Important Terms of Engagement

The attention of the bidders is drawn to the following selected terms of engagement, which relate solely to the technical scope of work. These are not exhaustive. Other terms are provided elsewhere.

The **task descriptions and methodologies** specified in this document shall be construed as minimum requirements or as a guide. These are neither intended to be exhaustive nor prescriptive.

The bidders' tender pricing of all parts should be balanced and aligned to the scope of work specified for each phase. Bidders who do not comply with this requirement will lose marks in the final moderation of scores.

DWS may appoint a separate PSP to assist in reviewing the study work and reports and/or to manage the study. The successful PSP for the bridging study shall liaise and cooperate with the project management and shall promptly provide all reasonably required information.

All feasibility-level geotechnical investigations shall be executed in compliance with applicable Occupational Health and Safety legislation, and bidders are encouraged to adopt collaborative arrangements, including joint ventures, that strengthen integrated responsibility for safety, quality, and technical outcomes.

Remuneration for any work undertaken will be based on the approved contract task budget for actual deliverables as approved by the client, and not on time expended. Draft reports that meet the required standard, which require minimal corrections (i.e. reports ready to be signed off by supervisors), may be invoiced. The final invoice for reports will only be payable once reports are signed off and hard copies, as well as Word and PDF versions, have been handed over.

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Two percent (10%) of the total contract amount will be retained and will be paid after the delivery and approval of all reports in the specified format.

3 STUDY APPROACH

This study shall be undertaken in parts, as outlined in **Sub-section 2.2** above. The study team shall investigate and report on options for a planning horizon of fifty (50) years.

Water availability estimates for the proposed water resource development options must consider the existing studies, with appropriate consideration of the applicability of the yield figures for this study. Additional yield should be created by providing new storage to cater for the existing and currently planned uses, while ensuring the health of the river systems is maintained. It will be important to consider developments and water requirements in all the yielding catchments.

The water resource development options to be investigated shall include the provision of storage reservoirs, conveyance systems (pipelines, pump stations, etc.) and ancillary works. Reference must be made to previous planning investigations and studies. The engineering evaluation and costing of the water supply infrastructure shall be based on available information, applying appropriate interpolations where different system sizes need to be considered.

The conveyance infrastructure and route identification shall be defined from basic principles and should include all feasible options such as tunnelling, canals, and pipelines, as possible means of transfer where relevant. If rivers or canals are used as conduits, losses must be assessed. Known environmentally sensitive areas should be avoided in the identification of conveyance routes.

The current and projected future water requirements must be presented to the Client (the DWS) for the final selection of water requirements to be applied in this Study, including an assessment of the viability of the recommended water resource development option for the pre-feasibility investigation. Furthermore, an Economic Discount Model (EDM) shall be compiled to calculate the Unit Reference Values (URVs) expressed in R/m^3, for each alternative option proposed by this study for comparison purposes.

An overview report of the legislative, institutional, and governance arrangements shall be provided. A Legal, Institutional, Financial and Operational Aspects Report covering the requirements at various stages of the Project, from inception to implementation, is required (refer to **5.5** below).

The key deliverables of this study will be the Record of Implementation (RID) for Jana Dam, supported by the necessary supporting reports describing all the investigations that were undertaken, the findings from this Study, and the recommendations of this Study. Appropriate large-scale maps and schematic diagrams presenting the water resource development options should be prepared.

The appointed PSP must undertake all work for this Study in close consultation with the Client (the DWS) to ensure all assumptions with potential significant influence on the outcome of this Study are approved by the Client. Appropriate field visits are required for this Study.

In establishing the overall costs of the potential water resource development options, the following should be considered, amongst others:

- Capital cost of the bulk raw water conveyance infrastructure (e.g., pipelines, pump stations, etc.) and the appurtenant works;
- Refurbishing costs of existing Eskom Infrastructure that could potentially be utilized, or incorporated, for transferring and supplying water to IVRS;
- Operation and Maintenance (O&M) costs of the bulk raw water conveyance infrastructure and the appurtenant works in consultation with the DWS;
- Energy costs associated with pumping, and
- Impact on the water tariff of existing and new water users.

The appointed PSP for this study is expected to apply its experience in selecting the most sensible potential water resources development options for the pre-feasibility Investigations, and to recommend the preferred water resources development option for feasibility Investigations.

In addition to investigating the most sensible water resources development option, the following aspects shall be considered, but are not limited to:

- Geotechnical investigations (geophysics, foundation and material assessments) at the Jana Dam wall site;
- Spillway modelling, selection and configuration of Jan Dam components;
- Water Resource Analysis for each dam, including the transfer capacity per dam and the optimal Scheme yield
- Environmental Sensitivity Analysis for a dam on Buffels, Mielietuin Dam, possible Spioenkop Dam raising and connecting conveyance infrastructure routes;
- Limnology assessments of all dams and the interaction between water bodies;
- Ecological consequences of transferring water between water bodies or catchments;
- Geohydrological assessment of groundwater;
- Phasing of scheme development;
- Potential environmental and social impacts, including potential fatal flaws (refer to Sub-section 5.4 below);
- Socio-economic impacts;
- Water availability and timing, as well as the future phasing of new developments;
- Water requirements and ecological water requirements;
- Impacts on affected communities and existing infrastructure;
- Suitability of geotechnical and foundation conditions for the construction of any new dams, bulk raw water conveyance infrastructure and appurtenant works;
- Availability of construction materials, as well as
- Hydropower potential.

The above-mentioned aspects will have to be assessed through site visits by a multi-disciplinary team comprising at least experienced on:

- Water Resource Engineers;
- Geotechnical Engineers;
- Hydrologists;
- Design Engineers;
- Engineering Geologists, where applicable, to assess the geological conditions for new civil Works; and
- Environmental Practitioners experienced in bulk water projects.

The appointed PSP must provide the diverse skills and expertise required to undertake and complete this Study within the prescribed timeframe and while managing associated risks and constraints. The appointed PSP for this Study will be required to liaise closely with municipalities, traditional authorities in the study area as well as with the relevant national and provincial government departments, other PSPs as well as other role players. The study team must have a Study Leader (Professional Engineer), experienced in coordinating and managing a study of this nature. The Study Leader will be the main link between the DWS and the study team.

The PSP will be appointed by the DWS to undertake and complete all the necessary work as described in the **Scope of Services Required** (refer to **Section 5** below) to facilitate the successful conclusion of this Study. The Scope of Services Required for this Study will be the minimum requirements that the DWS will accept.

The estimated duration of this Study is a maximum of **thirty-six (36) months**, which will include all the tasks as outlined in the Scope of Services Required (refer to **Section 5** below).

4 RELATED PAST, ENVISAGED AND CURRENT STUDIES

This Study will be informed by related past and present studies. The appointed PSP shall collate, review, assess, and report on the findings of such related past and envisaged studies and shall utilise the current studies to ensure that there is no duplication of work.

4.1 Related Past Studies

The available related past study reports, and other information are listed below, some of which are briefly discussed in this **Sub-section**. It should be noted that this is not necessarily a complete list of all available relevant past study reports and other information. Accordingly, the appointed PSP will be expected to undertake a thorough literature review to identify and source any additional relevant information. The current related planning studies, being undertaken by the DWS, are listed in **Sub-section 5.3** below.

The available related past study reports include, but are not limited to, those described in Table 1:

Table 4-1: Reports and strategies referencing the uThukela Water Project

Date	Description
1993 - 1994	The Reconnaissance Phase for the Vaal Augmentation Planning Study: Tugela-Vaal Transfer Scheme was initiated to investigate further development of the uThukela River Catchment water resources. The findings were that the Tugela-Vaal Transfer Scheme (TVTS) would be the cheapest delivery alternative.
1994 - 1996	The Pre-Feasibility Phase of the Vaal Augmentation Planning Study: Tugela-Vaal Transfer Scheme was done. In this phase, the two most attractive schemes were identified. These schemes could provide the water separately or in combination. The Southern Tributary Transfer scheme (STTS) could deliver 12.8 m^3/s and was cheaper than the other option. The findings further indicated uncertainty about the layout of the STTS, and an interim phase was conducted. The interim phase formulated the uThukela Water Project (TWP).
1997 - 2001	The uThukela Water Project Feasibility Study – Feasibility Phase was conducted. The results indicated that TWP was viable from all perspectives (Main Report - V 000/00/9700).

Date	Description
2005	A Decision Support Phase Report PWMA07/V00/001405 was written in support of the uThukela Water Project.
2009	Vaal River System: Large Bulk Water Supply Reconciliation Strategy: Executive Summary - P RSA C000/00/4406/09. The outcome of the Vaal Augmentation Comparison Study led to the decision by the Minister of the Department of Water Affairs and Forestry, and ratified by Cabinet (in December 2008), to proceed with the negotiations with the Government of Lesotho for the implementation of Phase 2 of the Lesotho Highlands Water Project and place TWP on hold pending further developments.
2010	A Vaal River WRDP: Comparative Study between LHWP Phase 2 and uThukela Water Project (Main Report P RSA C 000/00/12009/1) was conducted.
2013	The National Water Resource Strategy states that "The required additional water (for the Vaal Integrated River system) from the uThukela or Orange Rivers needs to be held in reserve in both these systems."- Annexure A page 2 para (iv) and Annexure A page 11 para (i).
2017	Continuation of the Reconciliation Strategy of the KwaZulu-Natal Coastal Metropolitan Area: Phase 2 – TWP cannot supply Richards Bay. P WMA 4/000/00/3517
2024	According to the uThukela Reconciliation Strategy (DWS, 2024), the whole uThukela Catchment is currently in deficit if the transfer of full allocation for the Integrated Vaal River System (IVRS) is considered. The system is also expected to be in deficit by 378 million m^3/a volume in 2050 after considering all the Ecological Water Requirements (EWR), water transfers to the Integrated Vaal River System (IVRS) and the local water requirements (Report number P RSA 000/00/23121/6/4).

4.2 Outline of Important Terms of Engagement

The attention of the bidders is drawn to the following selected terms of engagement related solely to the technical scope of work. These are not exhaustive. Other terms are provided elsewhere.

The **task descriptions and methodologies** specified in this document shall be construed as minimum requirements or as a guide. These are neither intended to be exhaustive nor prescriptive.

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Upon completion of each **study phase**, the Client shall be entitled to decide at its sole discretion to either proceed with further phases or to terminate the study at this stage.

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The bidders' **tender pricing of all phases should be fairly balanced** and aligned to the scope of work specified for each phase. Bidders who do not comply with this requirement will lose marks in the final moderation of scores.

***

DWS may appoint a **separate PSP to assist in reviewing the study work** and reports and/or to manage the study. The successful PSP for the bridging study shall liaise and cooperate with the Project Management PSP and shall promptly provide all reasonably required information.

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Remuneration for any work undertaken will be **based on the approved contract task budget of actual deliverables** as approved by the Client, and **not on time**.

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Ten percent (10%) of the total contract amount will be **retained** and will be paid after the delivery and approval of all reports in the specified format.

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If, in the opinion of the PSP, there is a need to undertake additional work not covered in the contract, the PSP shall immediately inform the Client. Such work **shall not commence until a variation proposal is approved in writing** and signed by the Client.

5 SCOPE OF SERVICES REQUIRED

5.1 Study Phase 1 – Inception

The appointed PSP will be required to undertake a thorough review of all relevant studies and available information. In addition, the PSP shall liaise with all relevant organisations and role players in preparation for this bridging study.

The PSP shall compile an Inception Report comprising a detailed description of tasks, a study programme, and a study budget, in accordance with the criteria set out in Section 7. The Inception Report shall form part of the Contract and shall stipulate the scope of work for the study, the Contract Amount and the Contract Period. Upon signing of the Contract by both parties, the PSP may commence work. The Contract, however, allows for revision through the submission of an Inception Report, which, once agreed and approved by the Client, will fix the final scope of work for the study.

The purpose of the Inception Report is to capture any important work necessary for the successful completion of the study that may, for any reason, have been overlooked during the compilation of the original Study TOR or the proposal submitted by the PSP. Omission of such additional work is often identified once work on the study has commenced, and the study team has had sufficient opportunity to familiarise itself with the detailed requirements of the tasks necessary to ensure the successful completion of the study.

The Inception Report is a formal document that shall cover all aspects of the original proposal, as well as the additions to the scope of work, Contract Amount and Contract Period that may be required. The Inception Report shall list all required tasks, the team members assigned to each task, their time allocation and hourly rates per task, anticipated disbursements, and a revised study programme, among other details. The rates of all new team members must be approved by the Client before they may be engaged. The Inception Report may therefore be regarded as a revised Technical and Financial proposal.

For this study, the Inception Report shall be finalised and co-signed by the Client and PSP within three (3) months of commencement of the study.

5.2 Study Phase 2 – Pre-Feasibility

The following key water resources were identified, investigated and selected as viable development options during previous studies conducted in 2001. The UTRAP will store water in the Upper uThukela River and then transfer water at a rate of 15 m^3/s via the existing Drakensberg Pumped Storage Scheme to the IVRS when required. It comprises two large storage dams and a conveyance system:

- **Jana Dam** (160m high) in the uThukela River, approximately 7km downstream of the confluence of the uThukela and Klip Rivers.
- **Mielietuin Dam** (96m high) in the Bushmans River, upstream of the western boundary of the Weenen Nature Reserve, and/or a possible dam on the Buffels River.
- **Aqueducts** linking the proposed dams and the existing Kilburn Dam via the existing Drakensberg Pumped Storage Scheme. The options for the aqueducts include open canals, pipelines or a combination of open canals and a pipeline
- **Associated Infrastructure**, including pump stations, access roads and bulk electricity supply.
- **An alternative storage dam** over the catchment divide in the Vaal River as an alternative to the existing Sterkfontein Dam.

Once completed, the reconfigured UTRAP will have water available for KwaZulu-Natal (KZN) province and inter-basin transfer to the IVRS.

The PSP shall ensure that all available information on previous related studies is assessed/used and that no work is duplicated.

The above water resource development options, together with their associated infrastructure elements (inter alia abstraction works, pipelines, pump stations, water treatment plants and reservoirs), will be assessed during this Study at varying levels of feasibility. Due cognisance must be taken of minimising social and environmental impacts of the development option under consideration.

In addition to the usual assessment criteria of technical viability, financial and economic feasibility, and environmental acceptability, the Study shall also consider other important

criteria, including but not limited to: risks and redundancy built into the options, minimisation of the impacts arising from proposed scheme abstractions, optimal integration and utilisation of available capacities in any existing infrastructure, taking into account its physical condition and remaining useful life, institutional arrangements for ownership and operation, financing options, affordability and bankability, attractiveness to private investors and off-balance sheet funding, opportunities for phased implementation and fast-tracked development, stakeholder preference, etc. The resource and scheme capacity shall be optimised through system analyses, stakeholder engagement and assessments of infrastructure condition.

As part of the Pre-Feasibility Phase, the PSP shall identify, define, and assess up to four (4) potential dam options on the Buffels River. These options may include alternative dam sites and/or alternative configurations at selected sites, informed by previous studies, available topographical, geological, hydrological, environmental, and land-use information. Each Buffels River dam option shall be investigated at a pre-feasibility level of detail sufficient to enable comparative evaluation. The assessment shall consider, inter alia, indicative storage capacity, yield to the local water users and transferable to the IVRS, dam type suitability, preliminary geotechnical and foundation conditions based on available data and geophysical investigations, inundation extent, environmental sensitivity, constructability considerations, and preliminary cost implications.

The identified Buffels River dam options shall be comparatively assessed against the Mielietuin Dam option using a structured Multi-Criteria Decision Analysis (MCDA) framework. The MCDA shall be applied to determine whether a preferred Buffels River dam option provides a more advantageous solution, from a national and regional perspective, than the Mielietuin Dam option, taking into account technical, environmental, economic, operational, and implementation considerations.

The outcomes of the assessment shall include a ranked list of the Buffels River dam options, identification of a preferred Buffels River dam option (if applicable), and a clearly motivated recommendation on whether the preferred Buffels River option should be advanced in preference to, or in combination with, the Mielietuin Dam option in subsequent phases of the Project.

Without limiting the generality of the above specification, the following specific requirements are provided as guidance only and are not listed in any particular order. These requirements shall be considered and investigated as part of the Pre-Feasibility Phase.

5.2.1 Review of Water Resources

The assessment of the water resources (availability and requirements) for the entire uThukela River catchment is available and has been undertaken by the Directorate: Strategic Water Resource Planning. The appointed PSP shall review the work done. Any outstanding work on water resources work should be done at the pre-feasibility level, and a detailed water resources analysis at the feasibility level should be costed under section 5.3.

5.2.2 Sedimentation Impact Assessment

Sedimentation analysis shall be undertaken by the appointed PSP for a preferred dam option in the Buffels River. The assessment will be required to improve understanding of the impact of the long-term sediment yield on potential on-channel storage dams. The analysis should be at the pre-feasibility level.

The WRC regional sediment yield prediction empirical methodology for South Africa shall be used as a first step. A detailed hydrological modelling methodology must then be developed to refine the initial sediment yield using the SHETRAN model. SHETRAN, a physically based rainfall-runoff-sediment transport and routing model, must be set up on a 3-arc DEM, and simulated daily catchment flows must be calibrated against the observed flow records. The latest land-use scenario must be considered to predict climate and land-use change up to the year 2100. Long-term daily flow records and sediment loads must be simulated to determine the long-term sediment yield, which must be calibrated/validated against observed reservoir sediment yields and compared with the TSS samples collected during fieldwork.

5.2.3 Yield Assessment

The scheme capacity and abstraction rates shall be optimised through system analyses, taking cognisance of the impacts on the yield of the system. The study will involve a determination of the available yield for the water resource options. The study shall consider the latest system yield data available from other reports. The capacity and incremental system yield of each of the identified options shall be determined using the Water Resources Yield Model (WRYM). River losses associated with each resource option shall be taken into consideration and analyse using WRYM. A historic yield analysis and review shall be performed using the latest hydrology in order to determine the relationship between yield and full supply capacity.

5.2.4 Identification and Analyses of Water Resource Development Options

Review and consolidate the information and individual analyses undertaken previously by DWS or others during the studies outlined in the previous sections. Determine conceptual layouts for each of the identified resources and schemes. This shall include all elements of the proposed infrastructure, such as: abstraction works, a weir (if required), raw water pump stations, pipelines, water treatment plants (if required), access roads, river and road crossings, power supply infrastructure, etc. Where necessary, the PSP shall liaise with the entities who commissioned the original studies (and/or their respective consultants) to clarify background and uncertainties.

Given that information about the previously identified competitive options is available from investigations undertaken at widely varying levels of detail (ranging from reconnaissance to pre-feasibility levels), the PSP should carefully consider how best to use this information in this comparative study, without unduly advantaging or disadvantaging any of the competitive options.

For each water resource option, select the optimal dam type, construction material, and optimum storage capacity for the dam resource. It is imperative that this work be undertaken during the pre-feasibility phase, as it may influence the costing and ultimately the selection of the best option.

Undertake a pre-feasibility level assessment of the physical condition and the remaining expected useful life of any existing infrastructure available to form part of the new scheme (where applicable). This assessment shall take this into account in the cost estimates and economic evaluation by properly accounting for the residual values of competitive options. The bidders shall propose the approach to this task in line with best practice.

For each competitive option, consider opportunities for the optimal utilisation of existing and planned infrastructure owned by DWS and other role players, such as Eskom, as well as the seamless integration of the new scheme into the existing systems. This shall include consideration of institutional arrangements for the operation of the new scheme. Consultations should be undertaken in this regard. The convenience and ease of operation and maintenance for each option should also be considered. This task shall form a stand-alone chapter in the UTRAP Pre-feasibility Report.

Each competitive resource option should undergo a high-level environmental and social screening to identify potential fatal flaws or significant environmental impacts/constraints which could affect the viability of the scheme. A high-level socio-economic assessment should be undertaken for each resource option and considered in the evaluation criteria.

5.2.5 Environmental Sensitivity

It will be required of the PSP, for the purposes of this task, to undertake a complete Environmental Screening of the dam development options, including the main infrastructure components, advanced infrastructure, bulk water distribution infrastructure, irrigation development, and any other related components.

The Environmental Sensitivity task is intended to identify and investigate any fatal flaws and potential negative impacts at an early stage, in order to guide the selection of the preferred dam development option and to pave the way for the more detailed Environmental Screening, which will be initiated at a later stage during a separate Feasibility Study to be commissioned.

Deliverable

An Environmental Sensitivity Report is required at the pre-feasibility level.

5.2.6 Water Quality and Limnological Review

It is envisaged that the water quality and limnology task for the Buffels River will be undertaken by Umgeni Water. However, the PSP is requested to include the pricing of this task in the financial proposal in the event that the assessment is not undertaken by uMgeni uThukela Water. The appointed PSP is required to liaise with uMgeni uThukela Water to ensure that the information that they require for any engineering or other component is provided. Project management of the uMgeni uThukela Water team shall be undertaken by the PSP to ensure that information is made available in the correct format and at the appropriate time for the remainder of the study. Technical outputs of these assessments must be incorporated into the feasibility designs for the scheme.

5.2.7 Ecological Impact

The Comprehensive Reserve Determination Study for the uThukela River has been completed. In the 2024 water resource reconciliation strategy study, the Jana and Mielietuin dams were included; however, no dams were considered in the Buffels River. A detailed evaluation of the ecological consequences should be undertaken for the selected dam options in the Buffels River, as well as for any other potential dam impacts that were not assessed in the reconciliation strategy study. As a contribution to the impact assessment as well as to comply with the National Water Act (Act 36 of 1998), the ecological consequences of all options on the recommended ecological category should be evaluated to provide the required information when determining the management classes. This evaluation should be undertaken using the DWS-approved or recommended tools. To ensure consistency with the ecological reserve results, the model setups currently used to determine the present ecological state and to evaluate operational scenarios must be used. These models are available from the Chief Directorate: Water Ecosystems (CD: WE). The evaluation must be undertaken using the existing Environmental Water Requirements (EWR) sites downstream of the proposed dams. In addition, a preliminary analysis should be undertaken to determine which floods, or portions of the recommended EWR floods, should be released from both dams. This analysis will be required to determine the available yield from the dams and, therefore, plays a vital role in the decision-making process regarding the two options. All work to be undertaken in this subtask is required at prefeasibility level.

5.2.8 Conveyance Route

Aqueducts linking the proposed dams (Jana and Mielietuin dams) and the existing Kilburn Dam via the existing Drakensberg Pumped Storage Scheme were investigated at the feasibility level. The options for the aqueducts include open canals, pipelines or a combination of open canals and pipelines. Associated Infrastructure, including pump stations, access roads and bulk electricity supply. As part of this task, the readiness of the Drakensberg Pump Storage shall be reviewed, and an assessment shall be provided indicating whether any refreshment or updates are required, together with an associated timeline. In addition, an assessment shall be undertaken at the pre-feasibility level for an alternative conveyance route linking the proposed dams to the Ingula Pump storage Scheme, as well as an alternative storage dam over the catchment divide in the Vaal River as an alternative to the existing Sterkfontein Dam.

Assessment of the alternative conveyance route to the Ingula Pumped Storage Scheme shall be conceptual, sufficient only to identify fatal flaws, indicative yields, high-level costs, and system integration implications.

5.2.9 Materials Investigation

The main focus of the material investigation will be to identify, at a pre-feasibility level, the potential material for at least 2 sites on the Buffels River. A geophysical assessment will therefore be required for the two most appropriate sites.

The following must be costed for:

- Electrical Resistivity 2X300m and 6X250m
- Seismic Refraction 4X200m

The materials investigation will aim to identify suitable sources of material for the construction of dams and other civil works at the identified sites for the various options. During the pre-feasibility investigation of dam options, the availability of sufficient suitable material (1.5 times of pre-feasibility design requirements) at or near the identified dam site must be established. This can typically be determined by inspection and limited material investigation.

The quality and quantity of suitable material for the pre-feasibility level investigation of options must be confirmed through adequate sampling and laboratory testing. Material of acceptable quality and quantity (equal to at least twice the volume required for the preferred dam) located as close as possible to the dam site, preferably within the dam basin, shall be regarded as the most suitable material.

The material investigations to be conducted for the evaluation of the various options shall include:

- Borrow areas for embankment materials;
- Borrow areas for sand (filters and concrete aggregate); and
- Quarries for concrete aggregate, rockfill and rip-rap.

The identified material sources shall be indicated on a map showing their aerial extent and haulage distances to the dam site.

The material investigations must be carried out by an experienced team supervised by a dam design engineer with experience in a variety of large dam types (Category 2 and 3 dams). Borrow areas and quarry sites must be identified and assessed by an engineering geologist or geotechnical engineer with proven experience in the construction of dams and other large civil works.

The PSP shall separately price, in the financial proposal, for the professional time of the professional team members responsible for the procurement of a reputable geotechnical sub-contractor, the supervision of the investigations and reporting on the findings of these investigations. The work undertaken by a specialist geotechnical sub-contractor shall be priced, in addition to the above, and shall include material assessment, administration and interpretation. It should be noted that the DWS reserves the right to withdraw this task or any other task if it deems it not necessary to proceed with.

5.2.10 Geotechnical Investigations

This sub-task entails obtaining information on the foundation conditions at dam sites on the Buffels River and for other large civil works to facilitate pre-feasibility level investigation and evaluation of these options. The stability of the dam basin slopes at these sites also needs to be assessed. A report on the geotechnical investigations is

required and must be of an acceptable standard, particularly with regard to core photographs.

The PSP shall separately price, in the financial proposal, the professional time of the team members who will be responsible for the procurement of a reputable geotechnical sub-contractor, the supervision of the investigations, and reporting on the findings thereof. Information required from geophysical assessments must be used to compile a bill of quantities and draft a task description for the physical drilling that will take place during the feasibility study at a later stage.

The following must also be costed for:

Electrical Resistivity

- River section 6X80m and 2X300m
- Left flank 4X175m
- Right flanks 4X175m

Seismic Refraction

- Left flank 2X200m
- Right flanks 2X200m

5.2.11 Topographical Surveys

Certain topographical surveys will need to be undertaken during the pre-feasibility investigation of dam sites on the Buffels River to determine the capacity of the dam basin and the extent of the dam wall, and the alternative route to the Ingula Pump Storage Scheme. More extensive surveys, at a suitable scale for detailed design purposes, will be necessary for the feasibility investigation of the recommended options. The PSP shall price, in the financial proposal, for the professional time of the professional team members responsible for surveying of two (2) dam sites.

5.2.12 Dam Type Selection

The pre-feasibility level investigation of the potential dam sites on the Buffels River shall include a comparison of dam types suitable for each site. The factors that influence dam type selection for a suitable site include, but are not limited to, the following:

- Foundation requirements and availability of construction materials;
- Suitability of the site for a particular dam type and spillway configuration;
- Magnitude and accommodation of floods;
- River diversion aspects;
- Environmental impact of the dam wall and spillway type, such as side channels and open channels;
- Difficulty or ease of access to the site; and
- Cost of construction in relation to the dam yield.

5.2.13 Storage Capacity and Yield of Dams

The water availability assessment and pre-feasibility investigation of options will include the determination of storage capacities and yields for various dam sizes at the sites under consideration. The yield-cost relationship is one of the criteria for evaluating and comparing the various identified dam sites and various capacities at a particular site.

The storage capacity of a dam at a particular site can be restricted by factors such as the available yield, natural saddles in the basin requiring an additional embankment, negative environmental and social impacts, and the inundation of existing infrastructure.

During the feasibility investigation of the recommended options, an accurate determination of the elevation-capacity-area relationship must be undertaken for each dam site.

5.2.14 Optimisation of Water Supply Options

During the evaluation and optimisation of water supply options for the catchment (using updated/latest costs), factors that need to be considered at pre-feasibility level include the following:

- The choice of dam site and capacity, or other suitable water source;
- The locality and detail of works for river abstraction;

- The type and route of the conveyance system from source to the point of supply (bulk storage reservoir, water treatment works, etc.);
- The URV to determine the optimum component size (dam, pipeline, pump station) and layout of the option;
- Comparison to the Desalination option should also be considered
- Environmental sensitivity

The operational requirements and associated costs must be determined as part of the optimisation process for each option. These requirements include gauging weirs (including site selection and conceptual design), telemetry, operational staff housing and offices.

The operation and maintenance (O&M) costs must also be determined as part of the economic assessment of the life cycle cost for each option. The life-cycle cost of a project includes the initial capital cost as well as the operation, maintenance, and replacement of mechanical and electrical equipment over a lifetime of, for example, 50 years. The O&M costs of the options being investigated should be estimated in accordance with current best practice. The recommendations contained in the *Vaal Augmentation Planning Study: Guidelines for the Preliminary Sizing, Costing and Engineering Economic Evaluation of Planning Options* (VAPS), DWA, 1996, may be used as a guideline. Costs should also be verified against the latest water infrastructure projects completed in South Africa.

5.2.15 Pre-feasibility Investigation of Identified Options

The interventions identified above as acceptable options to supply the water requirements of the uThukela River catchment and Vaal Augmentation must be investigated to a suitable (pre-feasibility) level to allow for comparison, evaluation and ranking of the various options. An alternative route to linking the Jana and Mielietuin dams to an alternative storage scheme (as an alternative to the Drakensburg Pump Storage Scheme) should be investigated at the pre-feasibility level. During the investigation of options, projects currently being undertaken, as well as proposed developments, must be taken into consideration.

The pre-feasibility and feasibility investigation of options includes, but is not limited to, the following:

- Identification of dam, pipeline routes and sites for associated infrastructure;
- Conceptual layouts and design of options;
- Preliminary geotechnical, seismic and material investigations;
- Topographical surveys;
- Dam type selection;
- Flood hydrology and backwater analysis;
- Capacity and yield of dams, and sedimentation analysis;
- Optimisation of the layout and sizing of project components;
- Feasibility design of project components;
- Investigation of hydropower potential;
- Cost estimates and economic analyses;
- Affordability;
- Identification of environmental and social impacts;
- Land acquisition and servitude requirements;
- Assessment of access and power supply to sites;
- Relocation of affected infrastructure;
- Legal, institutional and funding arrangements; and
- Estimation of timeframes for implementation.

As part of the pre-feasibility investigation, the PSP shall undertake a structured Multi-Criteria Decision Analysis (MCDA) to support the comparative evaluation and ranking of the identified water resource development options. The MCDA shall be used as a decision-support tool to determine the preferred dam development option on the Buffels River and to assess whether the preferred Buffels River option is superior to the Mielietuin Dam option. The MCDA shall also consider the implications of the alternative conveyance route to the Ingula Pump Storage Scheme, including the provision of conceptual balancing storage on the escarpment.

The MCDA shall be undertaken at pre-feasibility level only and shall not be used to confirm final designs or implementation-ready solutions.
The MCDA shall, as a minimum, include the following:

- Definition and documentation of the water resource development options to be evaluated, including:
    - Buffels River dam option(s);
    - Mielietuin Dam option to be compared against the preferred dam option in Buffels River; and
    - associated conveyance and system configuration assumptions applicable to each option.
- Identification and application of a transparent and consistent set of comparison criteria, which shall include, but not be limited to:
    - water resource yield and system contribution;
    - capital and indicative lifecycle cost implications (pre-feasibility accuracy);
    - environmental sensitivity and potential fatal flaws;
    - geotechnical and constructability considerations based on available data;
    - conveyance complexity and system integration requirements (including Ingula Pump Storage Scheme interface);
    - operational and flexibility considerations; and
    - potential implementation risks and uncertainties.
- Assignment of relative weightings to the evaluation criteria. The proposed criteria and weightings shall be motivated and presented to the Client for acceptance prior to finalisation of the MCDA.
- Comparative scoring of each option against the agreed criteria, supported by a clear qualitative and quantitative rationale for the scores assigned.
- Sensitivity testing of the MCDA results to demonstrate the robustness of the preferred option under reasonable variations in key assumptions and weightings.

The outcomes of the MCDA shall be clearly documented and shall include:

- a ranked list of the evaluated options;
- identification of the preferred dam development option at the t pre-feasibility level;
- a clear statement on whether the preferred Buffels River option is considered superior to the Mielietuin Dam option based on the MCDA outcomes; and
- a summary of key trade-offs, uncertainties, and residual risks to be carried forward to subsequent feasibility or environmental assessment phases.

The MCDA shall form a distinct and clearly identifiable section of the Pre-Feasibility Study Report and shall provide a transparent and auditable basis for decision-making. The MCDA shall not replace informed engineering judgement, but shall support and structure the decision-making process

Note: It is critical that each of the identified competitive options be conceptualised, priced and compared on a common base to allow meaningful evaluation and conclusive recommendation.

Deliverables: Pre-feasibility Study Reports

Pre-Feasibility Study Main Report, together with all applicable and agreed **supporting reports**.

5.3 Study Phase 3 – Feasibility

5.3.1 Feasibility Investigation Background

The original feasibility investigation was undertaken in TWP 2001. The tasks need to be reviewed and updated to reflect the changes in the project area. The 2001 Feasibility study made recommendations on certain aspects that now require review and updating, and these updates must be costed for in the proposals.

- Review outcomes of the TWP (2001);
- Identify gaps, limitations, or outstanding work;
- Update only where necessary, based on:
    - changed standards,
    - new regulations,
    - updated hydrology or environmental requirements.

In reviewing the outcomes of the TWP (2001) Feasibility Study, the PSP shall not only identify any gaps or limitations but shall explicitly confirm whether the available data is sufficient to support implementation-ready feasibility conclusions, or clearly motivated recommendations for further work at the detailed design stage.

The tasks to be included, but are not limited to, the following:

a) Topographical surveys to obtain information on the dam basin, dam site and other infrastructure components;
b) Geotechnical investigations to determine foundation conditions for the dam, foundation of the dam spillway and other components;
c) Material investigations to determine the availability and quality of materials for the construction of the dam and other components;
d) Optimisation of the layout and detailing of the dam and other components;
e) Evaluation and finalisation of flood hydrology and dam yield;
f) Backwater analysis, calculation of the high flood level and determination of the dam boundary line;
g) Review of the dam type selection process and confirmation of the recommended dam type;
h) Stability analysis and feasibility-level design of the recommended dam type and its components;
i) Calculation of spillway capacity and freeboard, confirmation of spillway type, and design of spillway;
j) Calculation of outlet capacity, and design of a multi-level intake tower (assume free-standing) and outlet pipe work;
k) Design of river diversion works for construction;
l) Design of a pump station at the required sites;
m) Electricity requirements for the pump stations and dam wall, and possible route selection for transmission lines;
n) Assessment of existing infrastructure and dwellings affected by the dam basin and other infrastructure components;
o) Design of access roads to the dam and other components (assume a total length of 10 km);
p) Determination of flow gauging requirements;
q) Preparation of a bill of quantities to include all scheme components and cost items;
r) Pricing of the bill of quantities;
s) Specification of operation and maintenance requirements; and
t) Preparation of the required technical reports on the bridging feasibility investigation.

5.3.2 Environmental Screening

It will be required of the PSP, for the purposes of this task, to undertake a complete Environmental Screening of the Jana Dam, including the main infrastructure components, the conveyance route to the Drakensburg Pump Storage Scheme, advance infrastructure, bulk water distribution infrastructure, irrigation development, and any other related components. Environmental screening inputs related to flood behaviour and downstream impacts shall be based on the final preferred spillway configuration.

The Environmental Screening task is intended to identify and investigate any fatal flaws and potential negative impacts at an early stage, in order to guide the selection and scheme configuration for the Jana dam and to pave the way for the more detailed EIA process, which will be undertaken as part of this Study. The Environmental Screening is required to define the Scope of Services required for the EIA.

The screening output will be used by the Environmental Assessment Practitioner (EAP) during the EIA Process. The Environmental Screening work undertaken must ensure a smooth transition of relevant information for the EIA, as well as facilitate the fast-tracking of the EIA Process.

Deliverable

An Environmental Screening Report is required, which must be of a high standard and satisfy the requirements of all applicable legislation, all relevant authorities and applications for the requisite authorizations.

5.3.3 Sedimentation Impact Assessment

Sedimentation Impact assessment was undertaken as part of TWP 2001, at the feasibility level. The PSP shall review the work done in the TWP 2001 and assess if there are any requirements for further sedimentation analysis. The PSP shall cost for any further sedimentation assessment required. Sedimentation assessment are required to improve understanding of the impact of the long-term sediment yield on potential on-channel storage dams.

The WRC regional sediment yield prediction empirical methodology for South Africa shall be used as a first step. A detailed hydrological modelling methodology must then be developed to refine the initial sediment yield using the SHETRAN model. SHETRAN, a physically based rainfall-runoff-sediment transport and routing model, must be set up on a 3 arc DEM, and simulated daily catchment flows must be calibrated against the observed flow records. The latest land-use scenario must be considered to predict climate and land use change up to the year 2100. Long-term daily flow records and sediment loads must be simulated to determine the long-term sediment yield, which must be calibrated/validated against observed reservoir sediment yields and compared with the TSS samples collected during fieldwork.

5.3.4 Water Resources Assessment

The assessment of the water resources (availability and requirements) for the uThukela River Catchment was recently updated in the Reconciliation study conducted in 2024. The appointed PSP shall review the work undertaken as part of the project.

This assessment must review and update the yield of the uThukela River Catchment to supply the various water users and the EWR. A water balance for the catchment will then indicate the volume of water available for transfer to the Vaal River Catchment. The anticipated tasks associated with this water resource assessment are briefly described in the following sections.

5.3.5 Yield Analyses with the Water Resources Yield Model

Historical firm yields and stochastic yields must be determined. The stochastic analysis must be undertaken for the short-term and long-term analyses for the new preferred scheme as per the outcome of the phase 2 prefeasibility study. The assurance of supply will be determined in consultation with stakeholders; however, the typical norms are 98% assurance for domestic use, 80% assurance for permanent crops such as citrus, and 70% assurance for cash crops such as vegetables. The objective of this task will be to review the yield analyses (including the network diagram, user priority classification, and yields of the sub-systems, etc.) undertaken in the uThukela River reconciliation study 2024.

Typical stakeholders to be involved in the compilation of the user priority classification table include, but are not limited to, the following:

- The forestry industry;
- uThukela District Municipality;
- Amajuba District Municipality;
- uMgungundlovu District Municipality;
- uMzinyathi District Municipality;
- Local municipalities;
- Irrigation boards;
- Representatives of informal irrigation;
- Mining companies and major industries;
- Chambers of commerce;
- KZN Department of Local Government and Traditional Affairs;
- Department of Mineral Resources;
- DWS KZN Regional Office; and
- KZN Department of Agriculture and Environment Affairs.

A review and recommendation of the current operating rules for the various water supply schemes and/or combinations of water resource development options in the catchment must be undertaken in consultation with DWS KZN Regional Office, water services authorities and other role players. This review aims to select the most appropriate operating rules for use in the WRYM and WRP analysis to model the existing system and future raising and abstraction options.

Long-term stochastic yield (LSY) analyses must be undertaken for each dam option to assess long-term water supply in the uThukela River catchment.

5.3.6 Future Water Balance for the Project

The objective of this task is to confirm and/or determine all current and projected future water requirements for all water-use sectors within the uThukela River Catchment. This information will be compared with water availability in the catchment to determine the water balance and availability for transfer from the uThukela River system. The long-term

stochastic yield results and the determined water requirements from the uThukela River Reconciliation study 2024 must be reviewed and updated for annual water balances from 2027 to 2050. Typical user sectors shall include the following:

- *Urban domestic*: All towns and formal settlements that are supplied from the catchment's water resources.
- *Rural domestic*: All informal settlements and dwellings that rely on the catchment's water resources for their water supply.
- *Irrigation*: All irrigation allocations in the catchment.
- *Industrial*: All existing and future industrial abstractors along the uThukela River and its tributaries.

The water demand projections for the transfer of water from the uThukela River to the IVRS must be reviewed and confirmed. This information should be available from DWS.

5.3.7 Development of Short-term Stochastic Yield Reliability Curves

Short-term yield analyses must be reviewed for the proposed water supply options, and short-term yield reliability curves must be developed for each decision month as required by water users of the uThukela Water System. These curves will be used for conducting analyses with the water resources planning model (WRPM).

5.3.8 Water Resources Planning Model

The WRPM setup from the uThukela River Reconciliation study 2024 must be reviewed and updated, where required, to assess development options in order to:

- derive final system operating rules;
- derive drought curtailment rules, and
- determine the volume of water that can be transferred.

The envisaged sub-tasks are as follows:

a) Configuration and testing of the WRPM

The network diagram must be reviewed and updated and included as part of the deliverables for this sub-task. Before proceeding with any analyses, the WRPM

configuration must be thoroughly tested to ensure that all components function correctly and that the intended system operation is indeed simulated correctly. The deliverables for this sub-task include an electronic copy of the final WRPM for the uThukela River catchment, supported by the associated report.

b) Development of scenarios

Following the update of the WRPM, the scenarios to be analysed must be developed and defined in consultation with DWS and other major water users. The results of the analysis must be in the form of box plots, with the format and types to be agreed with DWS prior to production. The results of the initial scenarios will be presented and discussed with DWS during the execution of the task, and where necessary, these scenarios may either be adjusted or completely new scenarios developed.

5.3.9 Water Quality and Limnological Review

It is envisaged that the water quality and limnology task for the Jana Dam will be undertaken by uMgeni uThukela Water (UUW) Board. However, the PSP is requested to include the pricing of this task in the financial proposal in the event that the assessment is not undertaken by UUW. The appointed PSP is required to liaise with UUW to ensure that the information that they require for any engineering or other component is provided. The PSP shall undertake Project management of the UUW Team to ensure that information is made available in the correct format and at the appropriate time for the remainder of the study. Technical outputs of these assessments must be incorporated into the feasibility designs for the scheme.

The PSP must cost for drilling boreholes of different depths to assess the water quality and desktop geological structural analysis in the vicinity of the coal mining. Geological structural analysis of the area. in the coal mining vicinity. to understand the geology and movement of water and interaction with the coal mining. Three boreholes of 30, 50 and 100 meters depth and 8-inch diameter from the seam are required at the vicinity of the coal mining to be drilled to assess the impact of the coal mining on water quality, and it is implication on the water that will be stored in the Jana Dam.

5.3.10 Ecological Reserve and Classification

The comprehensive reserved determination and water classification study for the uThukela Catchment has been completed. The 2024 reconciliation study assessed the Jana dam's impact on the ecological reserve requirements and reviewed the consequences. The PSP will be required to review the work undertaken in the classification and reconciliation study and identify any gaps that may exist. PSP is required to cost for the review of the work done and for any possible gaps in the work done. The ecological impact and consequences thereof should be thoroughly investigated due to the construction of the Jana dam.

5.3.11 Engineering Investigation

5.3.11.1 Dam and Associated Infrastructure

The 2001 TPW feasibility study recommended an RCC gravity dam for the proposed Jana Dam; however, the final configuration of the dam components was not finalised. It was recommended that a specific geotechnical investigation be undertaken with the aim of developing a rock-mass model of the valley and riverbed immediately downstream of the proposed Jana Dam site. This model should be used as the basis for constructing a scale model to test various potential spillway configurations. The main focus of this task is to select a final spillway configuration and all associated dam components.

In the feasibility study "The downstream area of Jana Dam was recognised as potentially unstable due to weak, erosion-prone geology, but a formal stability assessment of a downstream embankment or tailwater dam was not completed and was deferred for further investigation." Hence, embankment stability downstream of the Jana Dam wall must be demonstrated. The recommended dam type may change once the type and configuration of the spillway have been finalised; accordingly, all investigations required for the revised dam type must be undertaken.

5.3.11.2 Materials Investigation

Review the material investigation that was undertaken as part of the TWP (2001). Material investigation is required to determine the sources of the material for the construction of the dam spillway and other civil works at the identified site of the Jana dam spillway.

The following must be costed for:

- Electrical Resistivity 2X300m and 6X250m
- Seismic Refraction 4X200m

The main focus of the geotechnical investigation will be to identify, at a feasibility level, the potential foundation conditions for the dam spillway site. Using information obtained from the geophysical assessment, the PSP must develop terms of reference for comprehensive material analysis.

The focus of the materials investigation will be to identify suitable sources of material for the construction of the Jana dam spillway and/or spillway position. The quality and quantity of suitable material for the feasibility-level investigation of the Jana Dam spillway needs to be confirmed by adequate sampling and laboratory testing. Material of acceptable quality and quantity (equal to at least twice the volume required for the Jana dam spillway) located as close as possible to the dam site, preferably within the dam basin, shall be regarded as the most suitable material. The PSPs shall cost for twenty (20) test pits, and in addition, the bid must include laboratory testing of sixty (60) samples.

The material investigations to be conducted for the evaluation of the various options shall include the following:

- Borrow areas for embankment materials;
- Borrow areas for sand (filters and concrete aggregate); and
- Quarries for concrete aggregate, rockfill and rip-rap.

The identified material sources should be indicated on a map showing their aerial extent and haulage distances to the dam site.

The material investigations must be carried out by an experienced team supervised by a dam design engineer with experience in a variety of large dam types (Category 3 dams). Borrow areas and quarry sites must be identified and assessed by an engineering geologist / geotechnical engineer with proven experience in the construction of dams and other large civil works.

The PSP must appoint a subcontractor to undertake the material investigation in accordance with the specification provided below, supervise the investigations and report on the findings of these investigations and the interpretation of the material assessment.

5.3.11.3 Seismic and Geomorphology Investigation

Review the Seismic and Geomorphology investigation conducted as part of the TWP (2001). This sub-task includes the identification of active faults within 10 km of the Jana dam spillway site and other major infrastructure components. A seismic and geomorphology study must be undertaken at the proposed spillway site during the feasibility investigation component of this Study.

5.3.11.4 Geotechnical Investigations

TWP (2001) recommended further work on the geotechnical investigation in the tail pond dam area and on the alignment of spillways C1 and C2, and additional investigation on spillway line D. The PSP shall review the geotechnical investigation undertaken as part of TWP (2001) and determine whether additional investigations are required over and above those previously identified in TWP (2001).

This sub-task entails obtaining detailed information on the foundation conditions at the Jana Dam spillway site and for other large civil works, to facilitate feasibility-level investigation and evaluation of these options. The stability of the dam basin slopes at these sites also needs to be assessed. A report on the geotechnical investigations is required and must be of an acceptable standard, particularly with regard to the core photographs, position and storage. The geotechnical investigations shall include, but not be limited to, the following:

i. Spillway site foundations (Left Flank Spillway) if required

Investigations shall be undertaken to determine all the typical parameters required for dam design at the site, which include:

- Core drilling hard rock at strategic positions on the site;
- Limited pit and trench excavations;
- In-situ permeability tests to estimate grout takes;

- Laboratory testing of samples to determine shear strength, compressibility, and durability of the foundation materials;
- Evaluate the stability of the spillway approach channel;
- Petrographic analysis of rock samples;
- Compressive strength testing of rock cores;
- Description and quantification of faults; and
- Description of the weathering resistance of the founding rock.

The following must also be costed for the following geophysics:

Electrical Resistivity

- River section 2X80m and 2X200m
- Left flank 6X60m and 2X300m

Seismic Refraction

- Left flank 2X200m

The following geotechnical drilling will be required if a left flank spillway is recommended: The PSP must cost for an assessment, including the drilling of fourteen (14) boreholes to a depth of thirty (30) metres. In addition, provision must be made for the testing of one hundred and forty (140) samples. It should be noted that the DWS reserves the right to withdraw this task or any other task if it deems it not necessary to proceed with. The following results will be used to assess the spillway site foundation conditions at the proposed dam spillway site, determine parameters for stability analyses and predict excavation depths.

ii. Slopes stability downstream of the dam wall

For the central and left flank spillways configuration, an investigation into the stability downstream of the dam wall slopes shall be undertaken. This investigation shall include the identification of potentially critical slopes in the downstream of the Jana dam wall being evaluated. Detailed investigation of potentially critical slopes shall include:

- Determination of overburden depth by means of test pits, trenches or core drilling;

- Assessment of overburden material properties in both the dry and submerged states; and
- Assessment of rock strata joint orientation and joint fill material.

The following must also be costed for the following geophysics:

Electrical Resistivity

- River section 6X80m and 2X300m
- Left flank 5X120m and 4X175m
- Right flanks 5X120m 4X175m

Seismic Refraction

- Left flank 2X250m
- Right flanks 2X250m

The following geotechnical drilling will be required for slope stability downstream of the dam wall:

The PSP must cost for an assessment, including the drilling of fourteen (14) boreholes to a depth of thirty (40) metres. In addition, provision must be made for the testing of one hundred and forty (140) samples. It should be noted that the DWS reserves the right to withdraw this task or any other task if it deems it not necessary to proceed with.

The following must be included as a cost for geotechnical drilling for both of the above:

- Insurances
- Occupational Health and Safety (OHS)
- Environmental Management Plan (EMP)
- Site Facilities
- 10% Contingency for each of the above drilling requirements
    - The core samples must be stored at Midmar Dam Office.

Where required, these investigations shall be concluded with stability analyses and accompanied by suitable recommendations on potential methods for slope stabilisation.

iii. Large civil works components

A detailed geotechnical investigation must be undertaken, as part of the feasibility level investigations.

The investigations described in (a) to (c) above shall be supervised by a qualified and suitably experienced engineering geologist / geotechnical engineer with proven experience in dam construction. The PSP must cost for an assessment, including the drilling of fourteen (14) boreholes to a depth of thirty (30) metres. In addition, provision must be made for the testing of one hundred and forty (140) samples. It should be noted that the DWS reserves the right to withdraw this task or any other task if it deems it not necessary to proceed with.

The PSP shall include the price in the financial proposal for the geotechnical contractors, supervision of the investigations, and reporting on the interpretation of the investigation results. Geotechnical specifications shall be developed for the Spillway foundation and/or downstream dam basin slopes.

For feasibility-level geotechnical investigations, the preferred professional arrangement between consulting engineers/geotechnical specialists and geotechnical contractors shall be a Joint Venture (JV) rather than a subcontracting arrangement.
This preference intend to promote integrated technical responsibility, shared risk, improved quality management, and enhanced alignment between investigation design, execution, and interpretation.

Notwithstanding the above, all parties participating in feasibility-level geotechnical investigations, whether operating under a joint venture or any other approved arrangement, shall fully comply with the Occupational Health and Safety Act, 1993 (Act No. 85 of 1993), including all applicable regulations, site-specific health and safety plans, risk assessments, and statutory appointments.

5.3.11.5 Topographical Surveys

A topographical survey is required for Jana Dam, Mielietuin Dam, and the conveyance route to the Drakensberg Pump Storage Scheme. The PSP is requested to include costing in the financial proposal.

Topographical surveys will need to be undertaken during the bridging study of the Jana Dam Site to determine the capacity of the dam basin and the extent of the dam wall. Extensive surveys, at a suitable scale for preliminary design purposes, will be necessary for the feasibility investigation of the recommended option.

5.3.11.6 Dam Type Selection

TWP 2001 recommended an RCC gravity dam; however, the spillway type and configuration are not finalised. This task might be required if the final spillway type requires a different Dam type.

The feasibility level investigation of the potential dam site shall include a comparison of dam types suitable for the preferred site. The factors that influence dam type selection on a suitable site include, but are not limited to, the following:

- The foundation requirements and availability of construction materials;
- The suitability of the site for a particular dam type and spillway configuration;
- The magnitude and accommodation of floods;
- River diversion aspects;
- Environmental impact of the dam wall and spillway type, such as side channels and open channels;
- Difficulty or ease of access to the site; and
- Cost of construction in relation to the dam and system yield.

5.3.11.7 Storage Capacity and Yield of the Preferred Dam

TWP feasibility study (2001) has produced the storage capacity and yield of the preferred dam and the preferred Jana Dam for construction is 160 meters in height. Since then, the water resource classification and the environmental requirements for the downstream of the dam have been finalised. Update the storage capacity and yield of the preferred dam based on the water availability assessment that was undertaken in the uThukela Reconciliation Study in 2024. The water availability assessment and feasibility investigation of options will include the determination of storage capacities and yields for various dam sizes on the sites under consideration. The yield-cost relationship is one of

the criteria for evaluating and comparing the various identified dam sites, and various capacities at a particular site.

The storage capacity of a dam on a particular site can be restricted by factors such as; the available yield, natural saddles in the basin requiring an additional embankment, negative environmental and social impacts, and the inundation of existing infrastructure.

During the feasibility level investigation of the recommended options, an accurate determination of the elevation-capacity-area relationship must be made for each for Jana Dam.

5.3.11.8 Flood Determination and Backwater Calculations

The TWP 2001 identified that further work is required on the detailed assessment/investigation of extreme flood events within the applicable area of northern KwaZulu-Natal, which should be undertaken. These investigations should also consider the climate change impact on the magnitude of the floods at the various return periods in consideration.

The determination of extreme flood magnitudes at the Jana dam site is required for the various return periods needed for feasibility design purposes, namely:

- River diversion works (1:5, 1:10, 1:20 or 1:50 year flood, depending on dam type);
- High flood line (1:100 year flood);
- Spillway design and freeboard (1:200 year flood); and
- Safety evaluation flood (Regional maximum flood).
- Potential maximum Flood

These flood determinations need to be undertaken by an experienced hydrologist/hydraulics engineer.

Backwater calculations are required during the feasibility investigation of dam options to determine the high flood level (1:100 year flood) in the dam basin. The impact of 50 years

of sediment deposition on this flood level must be included in these calculations. The flood routing should assume that the dam would be full when the high flood occurs.

The elevation of the dam boundary (purchase) line for the dam basin is determined by adding a buffer zone to the high flood level. The buffer zone is an additional 1.5 m, measured vertically in steep areas, or 15 m, measured horizontally in flat areas of the basin. This principle is applied to the high flood level to obtain a series of straight lines that define the area to be acquired for the dam basin. The final dam boundary line is determined during implementation after the spillway design has been finalised, as this affects the backwater level.

5.3.11.9 Land and Servitude Requirements

The land and servitude requirements need to be determined for the feasibility level investigation of options. This includes the area required for:

- The dam basin (as described above);
- The dam wall and associated works;
- Storage reservoirs;
- Pipeline and access road servitudes; and
- Any other structures required for the various options.

The ownership of the land required for each option, including servitudes, needs to be determined, namely:

- Privately owned land, which is acquired at market value, including betterments and financial losses due to the acquisition; and
- State-owned land, which is managed or utilised by government departments, municipalities, traditional leaders or other authority. Compensation is applicable for the relocation of infrastructure and people on this land.

A cost estimate of land and servitude acquisition shall be determined for the recommended options based on land ownership, betterments, relocation of affected communities and infrastructure, land utilisation. The estimated cost for the relocation of roads and power lines shall also be determined and reported under a separate item.

5.3.11.10 System/Catchment Management

The PSP must assess losses on the uThukela River. This task will improve the operation of the system, including providing optimum water use/releases for environmental requirements. To achieve this, a Water Balance Model (WBM) for the uThukela River must be configured. This model must be user-friendly for later use by DWS operators and planners. The interaction between streamflow and groundwater must also be investigated. Further, the PSP must develop a calibrated hydrodynamic model for the uThukela River. The following parameters must be considered for the study:

- main channel and tributary flow,
- water released for irrigation and for domestic use,
- return flow by WWTW's and WTW's,
- pump abstractions by all water users,
- provision for identification modelling of illegal use,
- rainfall and evaporation on the water surface, and
- evapotranspiration.

The above information must be used to assist, recommend or determine the optimum pumping time for the project.

The model must be developed to assist with current water measuring practises or as a future alternative to measuring of water river balances.

5.3.11.11 Assessment of the Potential for Hydropower Generation at the Dams (Water Resources)

The purpose of this task is to assess the potential of the Jana dam to develop hydropower. The power generated would either be available for local use or supplied to the national grid. To obtain conservative results, all analyses will be undertaken using the Medium Demand Scenario.

The assessment of hydropower generation potential shall be undertaken as a secondary and opportunistic evaluation, contingent on the final Jana Dam spillway, outlet works, and operating rules determined primarily for water supply, dam safety, and environmental flow requirements.

Under no circumstances shall hydropower considerations influence, modify, or drive decisions related to spillway sizing, flood handling capacity, dam safety requirements, operating rules, or environmental obligations.

The characteristics of a typical hydropower plant best suited to the water releases data from the Water Resource Study must be determined. An assessment must be conducted on the economic viability of developing hydropower capability at the Jana dam. The results are to be discussed with the Client, in consultation with Eskom and DMRE, to obtain a decision on whether to include hydropower further into the feasibility study. All results must be well documented in the feasibility final reports.

The first deliverable of this task will be the production of a timeseries of flow releases and the associated water levels in the proposed dam for the historical inflow sequence. This must be undertaken for three (3) different future demand horizons. These dates are not fixed and will be finalised through discussion with the DWS during the investigations, when more information will be available.

The monthly flow releases obtained must be converted into daily flow releases that take account of the hydrographs required for both the EWR and other downstream users. The method and assumptions used for converting monthly flows into daily flows must be clearly described and presented in tables and graphs in the Hydro Power Assessment Report.

The second deliverable of this task will be to determine the characteristics of hydropower plants that would be suitable for the derived flow release data. These characteristics must then be applied in the WRYM to assess the hydropower potential at the proposed dam for each specific planning horizon. The results of this task will typically include Energy and Power Duration Curves for each month of the year, and all the months combined (total) must be provided in the form of graphs and tables. These results must also be submitted to the engineering study team, who will then have to assess the economic viability of the proposed hydro scheme for hydropower generation.

The hydropower assessment shall utilise release regimes, water levels, and operating rules confirmed through feasibility-level optimisation, and shall not propose alternative release strategies for the purpose of energy maximisation.

Deliverable

A Preliminary report on the Water Resources Assessment for Hydropower Generation Potential for the proposed dam development scheme.

5.3.11.12 Optimisation of Water Supply Options

Optimisation of water supply options during the Feasibility Phase shall be undertaken specifically to confirm the integration and performance of the final Jana Dam spillway configuration within the overall system, including operating rules, yields, reliability, and environmental flow requirements. This optimisation is not intended to re-evaluate or compare alternative water resource development options, dam sites, or transfer schemes previously assessed under the uThukela Water Project (2001) or the Pre-Feasibility Phase of this Bridging Study. Rather, it shall demonstrate that the final spillway solution does not introduce unacceptable operational, reliability, or system-wide constraints.

During the evaluation and optimisation of water supply options for the catchment, factors that need to be considered include the following:

- The choice of dam site and capacity, or other suitable water source;
- System yields;
- The locality and detail of works for river abstraction;
- The type and route of the conveyance system from source to the point of supply (bulk storage reservoir, water treatment works, etc.);
- The URV to determine optimum component size (dam, pipeline, pump station) and layout of the option.
- Environmental screening

The operational requirements and the cost thereof, need to be determined as part of the optimisation process for each option. These requirements include gauging weirs (including site selection and conceptual design), telemetry, operational staff housing and offices.

The operation and maintenance (O&M) costs also need to be determined as part of the economic assessment of the life cycle cost for each option. The life cycle cost of a project includes the initial capital cost plus operation, maintenance, and replacement of mechanical and electrical equipment over a lifetime of say 50 years. The O&M costs of the options being investigated should be estimated according to current best practice. The recommendations in the *Vaal Augmentation Planning Study: Guidelines for the Preliminary Sizing, Costing and Engineering Economic Evaluation of Planning Options* (VAPS), DWA, 1996 can be used as a guideline. Costs should also be verified with the latest water infrastructure projects completed in South Africa.

5.3.11.13 Record of the Final Operating Rules

This sub-task comprises a record in the report of the final operating rules for the recommended development option, existing dams and to be built dams for the uThukela River Catchment as derived from the results of the WRPM analysis.

5.3.11.14 System Configuration

The objective of the feasibility investigation of identified intervention or recommended options is to objectively and rationally assess the practicality and economic viability of improving of the long-term water requirements of the uThukela River Catchment. This chapter describes the investigations required to achieve this objective.

It will be required from the PSP to optimize the scheme/s for the uThukela Catchment (with all its components- dams, transfer infrastructure, monitoring etc) and how it will interact with IVRS.

5.3.11.15 Cost Estimate

The primary cost of options shall be estimated by a cost engineer or other suitably qualified person who has both a proven record and experience in estimating construction costs and is still employed in this field. The cost estimate shall include all the items in the bill of quantities for each option. The design engineers will therefore need to assist in identifying the billing items that should be included in the cost estimates.

Typical billing items can be found in the Vaal Augmentation Planning Study: Guidelines for the Preliminary Sizing, Costing and Engineering Economic Evaluation of Planning Options (VAPS), DWA, 1996. Costs for items that will make up 80% of the project construction costs, e.g. excavation, fill material, concrete, etc., should be developed from first principles considering the costs of labour, plant, material, energy and transport (hauling). The remaining items having a minor impact on the overall cost of the project may be estimated by other means. Costs should also be verified with the latest water infrastructure projects completed in South Africa.

Rates determined shall exclude contingencies and VAT. Cost estimates are required for both the feasibility screening of options as well as the feasibility investigation of the recommended options.

5.3.12 Study Reports

5.3.12.1 Main Feasibility Report

The Main Feasibility Report will be the central synthesis of all workstreams. It will integrate technical analyses, environmental and social assessments, financial and economic appraisals, and legal and institutional reviews into a single, coherent document. Structured to be accessible to both technical and policy audiences, the report will present the preferred dam option, the basis for its selection, and the feasibility-level design. The content will be limited to approximately 200 pages, with supporting detail provided in annexes. Draft and final versions will be prepared, ensuring sufficient opportunity for review and refinement.

5.3.12.2 Executive Summary Report

To complement the full feasibility report, an Executive Summary will be prepared, distilling the key findings and recommendations into a concise format suitable for decision-makers. This summary will highlight the project rationale, preferred option, cost and benefit outcomes, institutional requirements, and proposed implementation path. The concise form will allow Ministers, senior officials, and financiers to quickly grasp the essential elements without needing to review the full technical report.

5.3.12.3 Project Implementation Report

The Implementation Programme will translate the feasibility study findings into a clear roadmap for action. It will outline the required phasing of design, procurement, and construction; set out indicative timelines; and identify critical path activities. The programme will also address resourcing, institutional responsibilities, and preparatory steps such as land acquisition, resettlement planning, and environmental approvals. By linking these milestones to financing requirements and governance structures, the programme will provide a practical guide to moving from feasibility into execution.

5.3.12.4 Project Summary

A Project Summary Report will be prepared in both preliminary and final forms. This report will provide a balanced overview of the project, capturing the essential technical, environmental, and social findings in a format accessible to a wider audience. It will serve as a reference for stakeholders who require a clear and integrated description of the project without the detail of the full feasibility report.

5.3.12.5 Record of Implementation Decision

The appointed PSP will be responsible for writing a Record of Implementation Decisions (RID) document, which describes to the implementing agent what needs to be implemented. A template for the format of the RID will be provided by DWS and agreed upon with the PSP before it is drafted. The RID includes:

- The scope of the Project;
- A summary of the feasibility investigation and design;
- The specific configuration of the scheme to be implemented;
- The required implementation time lines;
- The finalisation of required institutional arrangements;
- The required environmental mitigation measures as described in the Environmental Impact Report;
- The environmental authorisation and conditions prescribed by the Department of Forestry, Fishery, and the Environment (DFFE).

5.3.12.6 Book of Drawings and Maps

A Book of Drawings and Maps, which meets the DWS Standards, must also be prepared. Furthermore, soft copies of all the maps and drawings, Google Earth files, as well as GIS files must be submitted to the DWS. All these soft copies must be properly indexed, accessible, and usable for implementation in the future.

5.3.12.7 Close-out Report

Upon completion of this Study and approval of all the deliverables and reports by the DWS, the appointed PSP for this Study will also be required to prepare and submit a Close-out Report for this Study to the DWS, which must be of a high standard. The Close-out Report will be the final deliverable for this Study and should serve as feedback on all the following aspects:

- Deliverables;
- Milestones;
- Stakeholder Participation;
- Capacity Building and Training;
- Challenges;
- Contact Details of all the Stakeholders and I&APs;
- Lessons Learned, as well as
- Recommendations that can be considered for similar studies in the future.

The Close-out Report should not exceed one hundred (100) pages in total. The structure and contents of the Close-out Report will be agreed upon between the DWS and the appointed PSP for this Study during the Inception Stage of this Study.

5.3.12.8 Capacity Building and Training

The appointed PSP for this Study will be required to undertake Capacity Building and Training of DWS officials and/or interns in one (1) or more of the following aspects of this Study:

- Project Management;
- Technical Aspects, as well as
- Legal, Institutional, Financial and Operational Aspects.

Five DWS officials and/or interns could therefore be seconded to the PSP for certain Portions of this Study to gain practical experience. The cost to the PSP would be time to mentor the DWS interns as well as the provision of office space and resources.
Alternatively, the PSP can arrange one-day accredited Continued Professional Development (CPD) training workshops to present certain technical aspects of this Study to the DWS officials and/or interns. Copies of all the presentations and other training materials must be submitted to the DWS. Furthermore, the PSP must also email electronic copies of all the presentations and other training materials to the DWS officials and/or interns who attended these workshops.

5.4 Study Phase 4 – Environmental Impact Assessment, Authorisation, Water Use License and other Approvals

The EIA forms part of a bridging study to obtain statutory environmental authorisation for the Jana Dam and the conveyance route to the Drakensberg Pumped Storage Scheme as defined through previous feasibility-level investigations undertaken under the uThukela Water Project (2001), as updated through this Bridging Study or the alternative conveyance if it is found to be more feasible. The EIA shall not re-open infrastructure siting or alignment alternatives previously assessed, except where required to address regulatory changes, newly identified fatal flaws, or material changes in environmental or social conditions.

5.4.1 Applicable Legislation

The applicable legislation to the EIA stage for this study includes, but is not limited to the following:

- National Environmental Management Act (No. 107 of 1998, as amended);
- National Environmental Management Act: EIA Regulations (2014, as amended)
- National Environmental Management: Waste Act (No. 59 of 2008, as amended);
- National Environmental Management: Biodiversity Act (No. 10 of 2004, as amended);
- Mineral and Petroleum Resources Development Act (No. 28 of 2002, as amended);

- National Water Act (No. 36 of 1998, as amended);
- National Forests Act 84 of 1998 (amended in 2024 via Act 1 of 2022 now in force);
- NEM: Integrated Coastal Management Act 24 of 2008;
- NEM: Protected Areas Act 57 of 2003; and
- National Heritage Resources Act (No. 25 of 1999, as amended) (NHRA).

5.4.2 Public Participation Process

An integral part of this EIA Study will be the Public Participation Process (PPP), which is vital during both the Environmental Scoping and EIA Phases of this EIA Study. The Public Participation Process shall be limited to the proposed Jana Dam and the associated conveyance route to the Drakensberg Pumped Storage Scheme, as assessed at the feasibility level during the uThukela Water Project (TWP) Feasibility Study (2001) and updated through this Bridging Study.

The PPP shall be informed by the outcomes of the Bridging Feasibility Study and its specialist investigations. Information presented to Interested and Affected Parties (IAPs) shall reflect the confirmed project footprint, infrastructure components, and environmental assumptions as defined at the feasibility level, including the preferred spillway configuration and flood release regime.

Proper planning and timing of this process are essential to ensure compliance with the revised timeframe of the amended EIA Regulations (2014). It is also recognised that affected communities have local in-depth knowledge of the study area and can provide valuable insight into the proposed development, which may positively inform technical details and designs.

It shall be the responsibility of the PSP to ensure that all Interested and Affected Parties (IAPs) are provided with a reasonable opportunity to participate in the PPP. This shall include *inter alia* the publication of newspaper advertisements in both local and regional media, the erection of site notices in affected communities, the facilitation of public meetings, and ensuring notifications, reports, and meetings are conducted in a language appropriate to the communities being engaged. For this EIA Study, English and relevant local languages shall be used in all communication with the public and stakeholders.

As part of the PPP, the PSP shall appoint local facilitators or a public relations officer sourced from the local communities, or a suitably experienced person familiar with the area, through a process to be agreed with the DWS. Local facilitators are critical to the success of the PPP, as they have an understanding of local communities, traditional leadership and political structures. They also provide an effective communication channel between the project team and the stakeholders, the communities. Local facilitators shall assist with translation during meetings and with the translation of relevant documentation. The PSP shall include the cost for the use of local facilitators during this EIA Study (refer **7.5** below).

Bidders shall include, as a minimum, the costs associated with the following key PPP deliverables in their Financial Proposals:

a) Identification of members of the public, key stakeholders, local authorities, Government Departments, and environmental groups who may have an interest in, or be affected by, the proposed projects;

b) Identification of all directly affected landowners, residents and communities;

c) Maintaining a register/database of all IAPs and their contact details for the duration of the project;

d) Advertising of the Environmental Scoping and EIA Process for the proposed projects in local and regional media;

e) Developing and maintaining project information suitable for publishing on the DWS website, during the EIA Process;

f) Preparation of a detailed Background Information Document (BID) and circulation thereof to all the identified IAPs on commencement of the EIA;

g) Notification of all identified IAPs of the EIA Process, and of their roles and responsibilities in terms of the relevant environmental legislation;

h) Circulation of all relevant information and environmental reports to IAPs for review and comment;

i) Providing, where necessary, translations in local languages of executive summaries of reports;

j) Arranging, coordinating and facilitating public and focus group meetings to present information on the EIA Process, to obtain comment and input from IAPs, and to minute these proceedings;

k) Recording all comments and responses received from IAPs in a report;

l) Circulating all IAPs issues and comments to the project team so as to obtain feedback and inform the technical detail of the project, as well as

m) Notification of all registered IAPs of the decision by the DEA on the EA and the methods available to them, should they wish to appeal the decision.

All issues raised during the PPP shall be systematically recorded in an Issues and Responses Register. The Register shall demonstrate how stakeholder inputs have informed project design, environmental mitigation measures, and the Environmental Management Programme, or provide clear justification where no changes have been made. The PPP documentation, including notices, attendance registers, minutes, and correspondence, shall be maintained in an auditable format suitable for regulatory review and appeal proceedings under NEMA.

Furthermore, PPP activities related to downstream flow behaviour, flood impacts, safety considerations, and construction impacts shall be based on the final preferred spillway configuration and confirmed operational assumptions, to ensure accurate, transparent, and meaningful engagement with IAPs.

5.4.3 Environmental Scoping

Review the environmental work done during the feasibility study, which was undertaken as part of the TWP Decision Support Phase. In terms of Section 24 of the National Environmental Management Act, 1998 (Act No.107 of 1998 as amended) (NEMA), the proposed Jana Dam and the conveyance route to the Drakensburg Pump Storage Scheme infrastructure will require environmental authorisation.

The Environmental Scoping Phase will build on the Environmental Screening Report, which will be prepared during the Technical Feasibility phase of this Study. This phase entails the process of collecting, organising, analysing, interpreting and communicating information that is relevant in the EIA Process. This phase will include, but are not limited to, the description of the environment and identification of the direct, indirect and

cumulative physical, biological, social, economic and cultural aspects of the environment that may be impacted upon by the proposed development projects.

Environmental screening outputs produced during the technical feasibility phase are non-statutory and serve solely to inform the scope and focus of specialist studies during the EIA. All potential impacts and mitigation measures shall be confirmed, refined, or revised through the EIA-phase specialist studies and public participation process.

The EAP shall undertake a targeted validation of the conveyance route alignment to confirm whether material changes in land use, environmental sensitivity, settlement patterns, or protected areas have occurred since the TWP (2001) feasibility study. Any changes with potential material implications for the EIA shall be identified early during Scoping.

Engaging with the public and key stakeholders during the Environmental Scoping Phase is required in order to provide input into the identification of potentially significant environmental impacts requiring assessment. It is also necessary to deal with matters related to the ownership and acquisition of land, as well as the relocation of people, infrastructure and services.

A Plan of Study for the EIA needs to be included in the Environmental Scoping Report. This plan should provide detail on the proposed methodology that will be adopted in assessing the potential impacts, and the details of the independent specialist studies that will be undertaken.

The following deliverables will be required from the appointed PSP for the Environmental Scoping Phase of this EIA Study:

a) Pre-application consultation with the DEA and completion as well as the submission of the relevant EIA application forms in order to obtain an official project reference number;

b) Compilation of the draft Environmental Scoping Report and Plan of Study for the EIA Process, which provides details of all identified social and environmental impacts and the proposed methodology for assessment;

c) A clear and concise description of the IAPs, as well as

d) Compilation and submission of a final Environmental Scoping Report to the DEA, which includes details of comments received and how any additional issues or concerns raised by IAPs will be addressed during the EIA Phase.

5.4.4 Environmental Impact Assessment

Therefore, the environmental process must fulfil the requirements of all relevant legislation quoted above.

The EAP must ensure that the application for authorisation covers all listed activities triggered by the proposed development projects. The works include, but are not limited to, the following:

- All the construction sites (including the construction camp and laydown areas);
- Construction of temporary cofferdams;
- Construction of new permanent and temporary access roads;
- Construction of abstraction weirs, pump stations and associated pipelines;
- Workshops and storage facilities;
- Storage of hazardous materials;
- Concrete mixing plant, stone crushers, etc.;
- Water treatment works;
- Bulk raw water conveyance infrastructure;
- Relocation of infrastructure, such as roads, power lines and telephone lines;
- Proposed quarries and borrow pits;
- Power supply for construction purposes, as well as
- River flow gauging weirs.

A Plan of Study for the EIA Process should be compiled and accepted before this EIA Study commences. The Plan of Study for the EIA should include the following:

a) A description of all issues, identified in the Environmental Scoping Phase, that will require further investigation by way of specialist studies, as well as an explanation of issues considered insignificant;

b) Identification of additional information required to determine the potential impacts of the proposed activities, and

c) All potential impacts should be identified throughout the project life cycle i.e. design, construction and operation.

After completion of the specialist studies an EIR must be drafted for comment and approval. The EIR is a detailed report outlining all possible impacts (nature, extent, duration, intensity and probability) and the appropriate mitigation measures required. The EIR must propose feasible mitigation measures that can avoid, minimize, remedy or compensate for any identified adverse impacts of the project infrastructure. The final EIR must be submitted to DEA for Environmental Authorization (EA) of the proposed development projects.

It will be the responsibility of the PSP to obtain all other relevant approvals for the projects to be implemented, in addition to the EA, for example:

- Approval from the South African Heritage Resources Agency (SAHRA), if cultural heritage sites will be affected;
- Approval from the DMR to develop quarries and borrow areas, as well as
- A draft a Relocation Policy Framework (RPF) for relocation and compensation of affected communities on tribal land.

The PSP must draft and place the relevant advertisements for the EIA Process and EA in accordance with NEMA on behalf of the DWS, as well as notify all IAPs.

5.4.5 Specialist Studies

Various specialist studies will be required, as part of the EIA Process, to quantify and assess social and environmental impacts in order to identify suitable mitigation measures. Standard specialist studies that are envisaged for this project are, but not limited to, the following:

- Impact Assessment on aquatic ecology, flora, fauna and avifauna;
- Heritage Impact Assessment;
- Visual Impact Assessment;
- Local Social Impact Assessment;
- Water Quality Study;
- Re-allocation Framework;
- Wetland Study, and
- Biodiversity Offset Study.

Bidders shall make provision in their Financial Proposal for all costs associated with conducting the above-mentioned specialist studies. Bidders should also make cost provision in the financial proposal for any anticipated additional specialist study requirements that are not included in the above list.

A list of the proposed specialist team members must be included in the Technical Proposal, together with their curriculum vitae and previous experience on similar projects. Should further unforeseen specialist studies be required for the EIA Process, the necessary specialist/sub-consultant must be appointed. Prior approval will, however, be required from the DWS before such a specialist/sub-consultant can commence with any work. A cost for the appointment for unforeseen specialist studies during this EIA Study shall be included in the financial proposal.

5.4.6 Socio-Economic Assessment

The objective of this task is to conduct a comparative socio-economic analysis to determine the water value in the uThukela River Catchment versus the Integrated Vaal River System. Produce a comparative evaluation report that shows the assessment, methodology used and results. Tools/modules that can be used are, but not limited to, the following:

- Cost-Benefit Analysis, and
- General Equilibrium Modules.

5.4.7 Environmental Management Programme and Monitoring

The PSP is required to compile an EMPr that will address mitigation measures for environmental impacts during design, construction and operation of the proposed projects.

The preparation of a framework for environmental impact monitoring is also required. This is a continuous process used for evaluation of the performance of projects during implementation and operation.

5.4.8 Assist with Appeals

The PSP will remain involved until final project authorization has been obtained from the Department of Forestry Fisheries and the Environment (DFFE). As such, it is required that the PSP provides a support service to DWS in handling all comments received and appeals lodged with DFFE against the project. This implies that the PSP will have to perform all administrative and other tasks, such as setting up meetings with DFFE,

meetings with appellant parties and to assist with responses, etc. This task will always require close collaboration with DWS on all issues. Allowance for 6 months has been made in the program for this.

To cover the cost of possible appeals, the bidder must make provision in the bidders' financial proposals.

5.4.9 Water Use Licences

The PSP must compile the information necessary for submitting applications for the Water Use Licences (WUL) that will be required in terms of Section 21 of the National Water Act, Act 36 of 1998 (NWA) before implementation of any development activities can commence. It is expected that Water Use Licence applications will have to be made in terms of Sections 21 (a), (b), (c) and (i) but the PSP must confirm whether applications in terms of the other sub-sections of the NWA are also required.

DELIVERABLES: All requisite WUL applications for applicable licences should be prepared, as drafts that can be submitted to all relevant authorities in the name of DWS.

5.4.10 Other Approvals

Advanced consultations should be held with the relevant authorities and owners of reserves and land, to establish their wayleave requirements and whether installation of infrastructure within or along road reserves will be allowed, and on what conditions. The methods and conditions for road and river crossings and registration of servitudes should also be confirmed with the relevant authorities. Consultations with a representative group of affected private landowners should also be held. Provision for meeting the conditions should be made in costing.

Suitable quarries and borrow areas that will be utilised for construction must also be identified during the feasibility phase. In accordance with the requirements of the Minerals and Petroleum Resources Development Act, Act 28 of 2002 (M&PRDA), all mining activities, including the extraction of material from borrow pits and quarries that are greater than 5 ha in size, require authorisation from the Department of Mineral Resources. This permit application process would require the following:

- An application form and fee for the permit application;
- An EMP that must describe the surrounding environment, assess the potential impacts of the proposed prospecting or mining operation on the

environment, socio-economic conditions and cultural heritage, as well as proposed suitable mitigation measures for closure and rehabilitation; and

- A survey and site mine plan of suitable quarries and borrow areas.
- Depending on the size and location of the quarries and borrow areas, approval may also be required in terms of NEMA and the NHRA. A proposed programme for the required processes and time allowed for decision-making by authorities must be provided in the proposals, including key milestones and deliverables.
- At this stage it will not be required to obtain wayleaves for the installation of pipelines and infrastructure and to register servitudes. However, the PSP shall carry out consultations with the relevant authorities and owners of reserves and land, to establish their wayleave requirements in respect to environmental and social matters. Consultations with a representative group of affected private landowners should also be held.

DELIVERABLES: All requisite applications for applicable licences should be prepared, submitted to all relevant authorities and approvals obtained.

5.5 Other Concurrent Tasks

5.5.1 Institutional, Financial and Operational Aspects

Financial aspects:

The financial aspects to be investigated and addressed as part of this Study include:

- The financial viability of the recommended options; and
- The affordability of water supplied by these options regarding the various user groups and DWS Pricing Strategy.

Institutional and operational aspects:

The institutional arrangements for the implementation of the recommended options need to be investigated. These arrangements are determined by the role players responsible for implementation and operation, as well as the funding options for the project.

Recommendations need to be made on the legal, administrative and financial arrangements and responsibilities for project implementation.

5.6 Project Management and Co-ordination

The **Project Management and Coordination** of this Study will be the responsibility of the appointed PSP for this Study under the supervision of the DWS Project Manager. This will involve several meetings and the appointed PSP for this Study must make provisions for these meetings as specified in **Table 5.6** below which may exclude other meetings required. These meetings shall be priced per meeting and not as a collective.

The appointed PSP for this Study will be responsible for the Subsistence and Travel Costs of the Study Team Members attending meetings and site visits. It will also be required of the appointed PSP for this Study to provide secretarial services at all the meetings and workshops.

Table 5.6.: Meetings to be Priced by Bidder in the Financial Proposal

Meeting	Number of Meetings	Venue	PSP Obligations
Study Management Committee (SMC), excluding Inception Meetings	Once every two (2) months (Price for 36)	Assume venue is in the study area.	• Arrangements for Meetings; • Attendance; • PowerPoint Presentations of Study Progress, as well as • Minute Taking and Distribution.
Project Steering Committee (PSC) and/or Stakeholder Meetings	Once every three (3) months	Assume venue is in the study area.	• Arrangements for Meetings; • Attendance; • PowerPoint Presentations of Study Progress, as well as • Minute Taking and Distribution.
Presentation to the DWS Management	Assume Seven (7) Presentations.	DWS Pretoria and Musina.	• High-Quality PowerPoint Presentations by One or Two Study Team Members.

Meeting	Number of Meetings	Venue	PSP Obligations
Meetings with Key Stakeholders (Arranged by the PSP)	Assume six (6) events and twelve (12) meetings.	Assume venue is in Project area for all these meetings.	• Arrangements for Meetings; • Attendance; • PowerPoint Presentations of Study Progress, as well as • Minute Taking and Distribution. • Arrange refreshments.
Liaison with Role Players (Municipalities, other Government Departments, etc.)	As required (Price for 10)	Assume venue is in Project area for all these meetings.	• Arrangements for Meetings; • Attendance; • PowerPoint Presentations of Study Progress, as well as • Minute Taking and Distribution.

5.6.1 Study Management Committee Meetings

The DWS will provide the appointed PSP for this Study with the names and contact details of the DWS officials and other officials that will be nominated to the Study Management Committee (SMC). The coordination, arrangements, and costs of meetings with key SMC members, as well as liaison with role players such as municipalities, other Government departments, etc., will be the responsibility of the appointed PSP for this Study.

5.6.2 Project Steering Committee Meetings

The DWS will provide the appointed PSP for this Study with the names and contact details of the DWS officials and other officials that will be nominated to the Project Steering Committee (PSC). The coordination, arrangements, and costs of meetings with key stakeholders, as well as liaison with role players such as municipalities, other Government departments, etc., will be the responsibility of the appointed PSP for this Study.

5.6.3 Liaison with Role Players and Stakeholders

The appointed PSP for this Study will be responsible to arrange Liaison Meetings with role players, which may, or may not be, attended by the DWS Project Manager and the DWS Regional Offices. Typical role players and stakeholders would be, but are not limited to, the following:

- Local municipalities in the Study Area;
- District municipalities in the Study Area;
- Irrigation Boards in the Study Area;
- Water Boards in the Study Area;
- The appointed PSP for the Study, Development, Updating, and Review of the Strategies to Reconcile Water Availability, and Requirements in the East and Central Planning Area, which includes the IVRS;
- The appointed PSP for the Development of Operating Rules for Water Supply and Drought Management of Stand-Alone Dams, Schemes, and Integrated Systems in the Eastern Planning Area;
- Interested and Affected Parties (I&APs), as well as
- Other National and Provincial Government departments, as well as institutions and any other appointed PSPs.

5.6.4 Coordination and Management of the Study Team

It will be the Study Leader's responsibility to ensure that all Study Team members and tasks are activated and completed at the right times. The appointed PSP for this Study will be responsible to provide Project Progress Reports for the PSC and SMC Meetings.

5.6.5 Quality Control of Study Reports

It will be Study Leader's responsibility to review all reports (Draft or Final) before submitting thereof to the DWS. The Study Leader shall ensure that all reports are produced in the format required by the DWS and conform to the template that will be provided at the start of this Study. Quality control of reports includes ensuring that language use and grammar are of a high standard and that reports contain all information required to take the Preferred Transfer Option forward to implementation in the future. Any reports that display a lack of review and scrutiny by the Study Leader will be sent back to the appointed PSP for this Study before the DWS Project Manager will review these reports and approve payment of the next invoice.

5.6.6 External Specialist Reviewers

The bidder shall price based on historical estimates from similar studies, to appoint **External Specialist Reviewers**, as required, to review the technical content of selected Specialist Reports if applicable, to confirm or improve the quality of these reports.

The **Amount** for the **External Specialist Reviewers** shall be **included** in the **Financial Proposal** by all the Bidders to cover these costs. Furthermore, Bidders **must make provision** in their **Financial Proposals** for **assisting the DWS with the Procurement (Specifications, Evaluation of Quotations and Recommendations) of the Services of Specialist Reviewers** as a **percentage (%)** of the **Amount** and for the **Management of Payments to the Specialist Reviewers** as a **percentage (%)** of the **Amount** through the appointed PSP's invoices. The man hours utilised must be stipulated for this task to ensure alignment between the resource input and cost.

5.6.7 Financial Management

The Study Leader shall ensure that the DWS is invoiced as required and that invoices will be supported by all the necessary documentation, which is required by the DWS. It is the responsibility of the appointed PSP for this Study to ascertain themselves of the DWS requirements at the onset of this Study. Progress Reports must be submitted together with the draft invoice, which cover the Invoice Period. These Progress Reports are in addition to the Progress Reports that have to be prepared for SSC Meetings that cover the period between two successive SSC Meetings. It should be noted that the appointed PSP's Study Leader will be responsible for, and be up to date with, financial-related issues of this Study. The DWS Project Member shall advise if the draft invoice and supporting documentation is acceptable before the PSP may submit a final signed invoice. Please refer to **Section 8.3** for further information.

5.6.8 Maintain and Update the Project Website

It will be necessary to provide information to the DWS Web Service Manager to update and maintain the DWS Website for the dissemination of information during the Study Period. The following information must be published:

- Notices of all public meetings;
- Minutes of all public meetings and presentations;
- Scanned versions of newspaper advertisements;

- Approved study reports and supplementary reports;
- Approved Scoping Reports;
- Approved EIRs and presentations;
- Approved EMPr, as well as
- A copy of the official Environmental Authorisations (EAs) for the project issued by DFFE and DMR.

5.6.9 Collaboration between Study Teams

A close collaboration needs to be maintained between the EIA Study Team and the Technical Feasibility Study Team. The main objectives for this collaboration are, but not limited to, the following:

- To make both teams aware of all the environmental impacts at an early stage;
- To support each other in establishing suitable mitigation measures for environmental impacts;
- To assess the cost of proposed environmental mitigation measures and include it as part of the overall project cost, as well as
- To avoid conflicting Project Reports produced by the two different study teams.

5.7 Implementation Programme for the Preferred Water Resource Development Option

This task involves determining the date that the project needs to be commissioned taking into consideration the current water use projections as well as the actual time required to implement the project.

The timing of the project from a water resources perspective will be determined by means of analysis performed with the WRPM. This analysis will be conducted as part of the system analysis task. However, the date so obtained may have to be adjusted as a result of practical constraints with regards to lead times and the actual construction time required.

Hence, this task would mostly entail determining the required implementation programme for the project comprising the following programme components:

- Tender design;

- Detail design (will follow on tender design and carry on during construction);
- Letting of tenders;
- Adjudication and award of contract, as well as
- Actual construction.

The PSP is expected to provide a very detailed programme utilizing Microsoft Project, or any other similar software acceptable to the Client.

5.8 Implementation Programme for the Preferred Water Resource Development Option

The timing of the project from a water resources perspective will be determined by means of analysis performed with the Water Resources Planning Model. This analysis will be conducted as part of the system analysis task. However, the date so obtained may have to be adjusted because of practical constraints with regards to lead times and the actual construction time required.

Hence this task entails determining the required implementation programme, in MS Project format, for the recommended options, comprising the following main programme components:

- Approvals, authorisations, funding and institutional arrangements;
- Appointment of project management team;
- Detailed geotechnical and material investigations for design;
- Tender design of the recommended options;
- Compliance with conditions of environmental authorisation;
- Appointment of environmental control officer and heritage specialist;
- Detail design (will follow on tender design and carry on during construction);
- Land acquisition and relocation of affected people;
- Vetting of tenders;
- Adjudication and award of contract, and
- Actual construction.

6 STUDY PROGRAMME

The appointed PSP for this Study is required to develop a **Detailed Programme for this Study** to be completed within **thirty-six (36) months**. The Study Programme must be prepared with **MS Project** and not with MS Excel. A detailed Study Programme, broken down to specific tasks and time allocated for each task must be submitted and the critical path shall be indicated. The Study Programme must indicate all study landmarks and target dates for deliverables.

7 PROJECT PROPOSAL

Bidders are required to submit, at their own cost, a Proposal (Bid), which consists of the following documents:

- **Standard Bidding Documents**, as specified under **Sub-section 7.3** below;
- A **Technical Proposal**, to demonstrate the capability of the Bidder to perform the full scope of this Study as presented in this Terms of Reference (ToR), and
- A **Financial Proposal**, to provide the cost to undertake this Study.

Bidders should submit comprehensive Technical and Financial Proposals as this Study is managed to avoid variation orders as far as possible. There is a limit to the amount of variation of the original contract amount that is permitted by National Treasury Regulations, and any variation of scope or cost requires the approval of DWS regardless of extent. Bids that show a lack of understanding of the scope of services required, and that are not comprehensive enough will be evaluated accordingly.

7.1 Technical Proposal

7.2 Introduction

An Introductory Section should provide a brief overview of the Bidding Organization with particular emphasis on the available capacity to undertake this Study.

7.3 Past Experience

Bidders are required to provide information on the recent past ten (10) relevant assignments undertaken by the Bidding Organisation. Specific details must be given to indicate the extent to which these studies relate to the Scope of Services Required for this Study. The responsibility of the proposed Study Leader and the other key team members (Task Leaders and Specialists) for these past assignments must be specified. The client organizations and contact details (names, telephone numbers, and email addresses), indicative professional fees, and duration of the work program must also be specified for each assignment.

7.4 Estimated Total Hours

Bidders are required to include the **Required Summary of Hours** in **ANNEXURE B.1** in their **Financial Proposals** only **and not** in their **Technical Proposals**. Bidders are, however, required to **state** their **Estimated Total Hours** in

the **Technical Proposal** to **Undertake and Complete this Study** since the Bidder's Estimated **Total Hours** form part of the **Functional/Technical Evaluation** (refer to **8.3.3** below).

The **Estimated Total Hours** are for the **Bidder's Professional Fees**, including the hours of any **Sub-consultants** proposed by the Bidder.

The Estimated Total Hours, however, **exclude the time spent by the Sub-contractors** is so required by the PSP.

These **Estimated Total Hours** in the **Technical Proposal must correspond** to the **Estimated Total Hours in the Financial Proposal**. Any **discrepancies** between the **Estimated Total Hours** in the **Technical Proposal** and in the **Financial Proposal** to Undertake and Complete this Study could lead to possible disqualification.

7.5 Financial Proposal

The **Financial Proposal** is a stand-alone document that should provide comprehensive information on the cost of undertaking this Study but should be submitted together with the **Technical Proposal**.

Bidders shall make provision in their Financial Proposal for all costs and expenses to undertake and complete the tasks described in the Scope of Services Required. The DWS will make provisions for necessary **Contingencies**, and bidders must not add them to the Financial Proposal.

The Financial Proposal shall include the following:

- **Breakdown of Deliverables** and **Associated Costs** based on the allocation of resources to the various tasks, sub-tasks, and other activities described in the Scope of Services Required;
- **Value Added Tax** (VAT) at **15%** on the **Total Estimated Cost**. VAT must only be added as a **Penultimate Item** before the **Total Cost**, right at **the bottom** of the **Required Detailed Cost Summary Sheet** and the **Required Cost Summary Sheet.** (refer to **ANNEXURE B.2** and **ANNEXURE B.3**);
- **Escalation of Professional Fees, including Disbursements,** over the **Contract Period, must be built into the Deliverable Costs** and **may not be claimed separately later**. However, **escalation of Professional Fees**

beyond the Contract Period, if the **Contract is extended with costs**, must be stated separately as a **percentage (%) per annum** in the **last row** of the **Required Detailed Cost Summary Sheet** (refer to **ANNEXURE B.2**);

- **Monthly Cash Flow** for the contract period based on the **Work Programme**, as well as
- **Breakdown of Professional Fees** to show the amount earned by each team member and the fees earned by **Historically Disadvantaged Individuals (HDIs)**.

7.6 Cost of Deliverables

The **Cost of Deliverables** must be defined in the **Financial Proposal** as it is the intention to manage this Study based on deliverables and not on the number of hours worked. The person-hours, which also need to be provided, must therefore be linked to suitable deliverables that can be achieved regularly to provide a smooth cash flow that meets the requirements of the appointed PSP for this Study. Past experience has shown that, on average, most service providers cannot survive periods longer than three (3) months without payment. A **Guideline of the Expected Deliverables** is presented in **Section 9** below.

The **Required Detailed Cost Summary Sheet** is given in **ANNEXURE B.2** and the **Required Cost Summary Sheet** is given in **ANNEXURE B.3**

This information on the cost of deliverables will form the basis of the **Study Budget** and shall include the following:

a) **Professional Time-based Costs** and **Disbursements** for each task;

b) **Sub-consultants** whose costs are part of this Bid;

c) **Value Added Tax (VAT)** at **15%** on the **Total Estimated Cost**, which must appear on the **Required Detailed Cost Summary Sheet** and the **Required Detailed Cost Summary Sheet** (see **ANNEXURE B.2** and **ANNEXURE B.3**);

d) **Cash Flow** and **Estimated Total Cost**;

e) **Links** to the **Proposed Work Programme**, as well as

f) **Breakdown** by **Study Team Member Fees** including **fees earned by HDIs**.

ADMINISTRATIVE REQUIREMENTS

Bidders are required to comply with the following listed below:

No	Criteria	Yes	No
1.	Companies must be registered with National Treasury's Central Supplier Database. Provide proof of print out from CSD.		
2.	Tax compliant with SARS (to be verified through CSD).		
3.	Complete, sign and submit SBD 1, SBD 3.3, SBD 4 and SBD 6.1		
4.	General Conditions of Contract (GCC)		
5.	Active registration with Company Intellectual Property Commission (to be verified through CSD and CIPC) Attach copy of CIPC/CIPRO Certificate		
6.	The service provider (and in the case of a consortium or joint venture – at least one member of such consortium or joint venture) should submit a notary agreement between the parties must clearly identify the lead partner (if applicable)		
7.	CERTIFICATE OF AUTHORITY FOR SIGNATORY (bidders to complete the relevant form.)		
8.	Copy of an Identity document of the authorised individual to represent the Service provider as per the CERTIFICATE OF AUTHORITY FOR SIGNATORY form		
9.	Non-Compulsory Hybrid Briefing Session		

7.7 Evaluation System

Department of Water and Sanitation will evaluate all proposals in terms of the Preferential Procurement Regulations (PPR's) 2022. In accordance with the PPR's 2022, submissions will be adjudicated on 80/20 points system and the evaluation criteria. A three phase evaluation criteria will be considered in evaluating the bid. On the receipt of the proposals, the evaluation criteria shown below will be used for the selection of the most suitable bidder to undertake the assignment.

PHASE 1: MANDATORY COMPLIANCE (IF NOT COMPLIED WITH BIDDER WILL BE DISQUALIFIED)

PHASE 2: FUNCTIONAL / TECHNICAL EVALUATION

PHASE 3: POINTS AWARDED FOR PRICE AND SPECIFIC GOALS (80/20 PREFERENTIAL SYSTEM)

7.8 Phase 1: Mandatory Compliance

Please note that all bidders must comply with the following mandatory requirement. Failure to submit the document listed below will render your bid non-responsive and will be disqualified.

NO	DESCRIPTION	COMPLY	DO NOT COMPLY
1.	Attach a valid proof of membership/registration for the study leader and deputy study leader with either of the below Professional body: Study Leader: Engineering Council of South Africa (ECSA) as a Professional Engineer. Deputy Study Leader: Engineering Council of South Africa (ECSA)).		
2.	Attach a valid proof of membership/registration for the second study leader with the below Professional body: Second Deputy Study Leader: registered as EAP with the Environmental Assessment Practitioners Association of South Africa (EAPASA).		

Technical Proposals will be evaluated and scored in consultation with the Financial Proposals.

7.9 Phase 2: Functionality (Technical) Evaluation

The 80/20 point system will be used in evaluating all proposals. The criteria and guideline weighting points applicable are detailed in the following paragraphs.

Definition of values: 0= Very Poor…1 = Poor…2 = Average…3 = Good….4 = Very good…. 5 = Excellent

Criteria	Sub-Criteria	Points Value	Weight of Criterion	Bidder Score
Past experience of the company: 30% Provide details of work of a similar nature undertaken by the bidding PSP.	Specific details must be given to indicate the extent to which these previous studies relate to the work described below: • Feasibility designs of water resource projects (Dams, Conveyance structures); • Water Resource planning for infrastructure projects (Dams, conveyance structure); • Final designs of water resource projects (Dams, conveyance structures); *(Attach testimonial letters or references with contact details as proof of past experience. Reference letters should be on an official client letterhead, include the name of the organisation; Include the contact details and name of the responsible official)*		30%	
	≥10 years combined for 2 of the 3 items	5		
	Above 6 to 10 years combined for 2 of the 3 items	4		
	Above 5 to 6 years combined for 2 of the 3 items	3		
	Above 3 to 5 years combined for 2 of the 3 items	2		
	1 to 3 years combined for 2 of the 3 items	1		
	<1 year combined for 2 of the 3 items	0		
Team Capability: 25%	The **Study leader** must be a professional engineer (ECSA registered), with relevant		10%	

Criteria	Sub-Criteria	Points Value	Weight of Criterion	Bidder Score
The Team should have a range of experts in various fields (water resource engineer, hydrologist, geohydrologist, water quality specialist, environmentalist, stakeholder engagement specialist). A study team organogram must be provided indicating key positions such as Study Leader, Task Leader and supporting Specialists. The organogram shall also indicate the levels at which there will be interaction with the client and/or other interested bodies. Persons proposed for these positions must be identified and supported by CVs of one page each to be included in an **Appendix**. Brief capability statements must be given for each designated team member, emphasizing recent experience relevant	experience, and in coordinating and managing the following studies. • Feasibility Designs of Water Resource Projects (Dams, Conveyance structure); • Water Resource planning for infrastructure projects (Dams, Conveyance structure); • Final Designs of Water Resource Projects (Dams, Conveyance structure); *(Bidders are required to attach an abbreviated (2pages max) Curriculum Vitae (CV) highlighting the areas of work that was previously conducted).*			
	With more than 10 years' experience in at least 2 of the above specified items	5		
	With above 8 to 10 years' experience in at least 2 of the above specified items	4		
	With above 6 to 8 years' experience in at least 2 of the above	3		
	With 4 to 6 years' experience in at least 2 of the above	2		
	With 2 to 4 years' experience in at least 2 of the above	1		
	With less than 2 years' experience in at least 2 of the above	0		
	The **First Deputy Study Leader** must be registered with ECSA and have experience in projects in the water resource development environment (Dams, large pump stations and bulk water pipelines).		5%	

Criteria	Sub-Criteria	Points Value	Weight of Criterion	Bidder Score
to the task envisaged	*(Bidders are required to attach abbreviated (2pages max) Curriculum Vitae (CV) highlighting the areas of work that was previously conducted).*			
	With more than 10 years' experience	5		
	With above 8 to 10 years' experience	4		
	With above 6 to 8 years' experience	3		
	With 4 to 6 years' experience	2		
	With 2 to 4 years' experience	1		
	With less than 2 years' experience	0		
	The **Second Deputy Study Leader** must be registered as EAP with the EAPASA and have experience in projects in the Environmental Impact Assessment of water resource development environment (Dams, large pump stations and bulk water pipelines). *(Bidders are required to attach abbreviated (2pages max) Curriculum Vitae (CV) highlighting the areas of work that was previously conducted).*		5%	
	With more than 10 years' experience	5		
	With above 8 to 10 years' experience	4		
	With above 6 to 8 years' experience	3		
	With 4 to 6 years' experience	2		
	With 2 to 4 years' experience	1		

Criteria	Sub-Criteria	Points Value	Weight of Criterion	Bidder Score
	With less than 2 years' experience	0		
	The **Task leaders** (hydrologists/ engineers/scientists) *(Bidders are required to attach abbreviated (2pages max) Curriculum Vitae (CV) highlighting the areas of work that was previously conducted).*		5%	
	Task leaders with more than 10 years' experience	5		
	Task leaders with above 8 to 10 years' experience	4		
	Task leaders with above 6 to 8 years' experience	3		
	Task leaders with 4 to 6 years' experience	2		
	Task leaders with 2 to 4 years' experience	1		
	Task leaders with less than 2 years' experience	0		
Methodology: 35% Present a short concise description of the Scope of Work, such as to reveal **understanding of the study required**. The proposed approach and methods to be used during the study should be outlined with emphasis on the important or critical	Considers the responsiveness to the ToR, the level of detail in the proposal, attention to project management and innovative approaches and ideas. General approach planned methodology and proposed activities towards the undertaking of the project. The following items must be clearly indicated in detail: The methodology will be evaluated on the following: **1.** Broad methodologies in line with the task descriptions outlined under project scope/ task description.		35%	

Criteria	Sub-Criteria	Points Value	Weight of Criterion	Bidder Score
aspects of each task. This section may also be used by the bidding PSP to briefly present alternative proposals, innovative approaches or other special features of their proposal.	**2.** Clear milestones, timeframes and man hours required for each task to be completed. **3.** Detailed programme. **4.** Detailed method statement for each task within the study area. **5.** Demonstrate innovation **6.** Alignment of cost requirements to the Scope of Works/deliverables			
	All 6 items above included.	5		
	Items 2, 3, 4, 5 and 6 included	4		
	Items 1, 2, 3, 4 and 6 included.	3		
	Item 6 and any two of the items from items 1,2,3,4 and 5 included	2		
	Item 6 and any one of the items from items 1,2,3,4 and 5 included	1		
	None of the above items included	0		
Skill transfer: 10%	In terms of building capacity and ensuring skills transfer in the DWS, the PSP will be responsible for establishing a capacity building programme aligned to the skills developmental needs of identified officials responsible for water resource planning process. Provide clear proposals on Capacity Building and Training of 3 DWS officials in project management and/or technical aspects to be undertaken as part of this study. Capacity building is realised through the following components: 1. Hands on practical training including field work.		10%	

Criteria	Sub-Criteria	Points Value	Weight of Criterion	Bidder Score
	2. Inclusion of DWS officials in all phases of the project. 3. Develop a capacity building programme with quantifiable measures. 4. Relevant software training and training manuals; and 5. Inclusion of local specialists and stakeholders. *(The Service provider is requested to attach a capacity building programme to demonstrate how they will transfer skills through the identified components above)* PSP to submit a previous project with skills transfer plan executed and output thereof. (Provide portfolio of evidence).			
	All 5 items above included.	5		
	Items 2, 3, 4 and 5 included.	4		
	Items 1, 2, 3 and 4 included.	3		
	Items 1, 2 and 3 included.	2		
	Any 2 items from items 1,2,3,4 and 5 items included.	1		
	Only 1 item from items 1,2,3,4 and 5 items included	0		
Total			**100%**	

Bidders must score the required minimum of **70 points (70%)**, or higher, for **Functionality** (Past Experience, Methodology, Team Capability, and Capacity Building and Training), to qualify for further evaluation. Further evaluation is based on **Price and Preference** after the minimum score has been achieved by the bidder.

Please note, that in order to achieve a qualifying score for Functionality, bidders must have experience and capability to successfully undertake the updating of the water resource assessment and investigations of this Study. Bidders can form a joint venture, or other similar arrangement, to ensure that they are qualified for all aspects of this Study.

7.10 Phase 3: The 90/10 Principle based on Price and Specific Goals

The 90/10 Preferential Procurement System will be used in evaluating these bids:

Evaluation element	*Weighting (Points)*
SPECIFIC GOALS	***10***
PRICE	***90***
Total	***100***

Price

A maximum of 90 points are allocated for price on the following basis:

$$Ps = 90\left(1 - \frac{Pt - P\,\min}{P\,\min}\right)$$

Where:

Ps = ***Points scored for comparative price of bid under consideration***

Pt = ***Comparative price of bid under consideration***

Pmin = ***Comparative price of lowest acceptable bid***

Preference point system

SPECIFIC GOALS	***NUMBER OF POINTS TO BE ALLOCATED***

Women	***2***
People with disability	***2***
Youth (35 and below)	***2***
Location of enterprise (Province)	***1***
B-BBEE status level contributors from level 1 to 2 which are QSE or EME	***3***
Total points for SPECIFIC GOALS	***10***

Documents Requirement for verification of Points allocation: -

Procurement Requirement	***Required Proof Documents***
Women	***Full CSD Report***
Disability	***Full CSD Report***
Youth	***Full CSD Report***
Location	***Full CSD Report***
B-BBEE status level contributors from level 1 to 2 which are QSE or EME	***Valid BBBEE certificate/sworn affidavit*** ***Consolidated BEE certificate in cases of Joint Venture*** ***Full CSD Report***

The definition and measurement of the goals above is as follows:

Women, disability, and youth:

This will be measured by calculating the pro-rata percentage of ownership of the bidding company which meets this criterion. E.g., Company A has five shareholders each of whom own 20% of the company. Three of the five shareholders meet the criterion, i.e. they are women/disability/youth. Therefore, this bidder will obtain 60% of the points allowable for this goal.

Location of enterprise

Local equals province. Where a project cuts across more than one province, the bidder may be located in any of the relevant provinces to obtain the points.

B-BBEE status level contributors from level 1 to 2 which are QSE or EME

Measured in terms of normal BBBEE requirements.

Note: Formula for calculating points for specific goals

Preference points for entities are calculated on their percentage shareholding in a business, provided that they are actively involved in and exercise control over the enterprise. The following formula is prescribed:

$$PC = Mpa \times \frac{P\text{-}own}{100}$$

Where

PC= Points awarded for specific goal

Mpa= The maximum number of points awarded for ownership in that specific category

P-own = The percentage of equity ownership by the enterprise or business

8 GENERAL INFORMATION

8.1 Client and Study Title

The DWS will act as the **Client** for this Study. This Study shall be called: **The Upper uThukela River Augmentation Project - Bridging Study**.

8.2 Intellectual Property

The ownership of **intellectual property** derived from this Study shall vest with the DWS.

8.3 Invoices

The **Financial Proposal**, as well as invoices submitted for payment, must be structured in a way that makes it possible for payments to be linked to relevant deliverables. This information will enable the DWS to **monitor the study progress** by comparing invoices against approved contract deliverables. Invoice certification is required before payments are made.

The invoice format will need approval by the DWS at the commencement of this Study. A Pro-forma Invoice must be submitted for the approval process. Only **one (1) invoice** may be submitted for payment in any month of this Study although an invoice does not need to be submitted every month. Furthermore, the first invoice may only be submitted after the Contract has been signed between the parties and an Order Number has been created.

Under no circumstances may the PSP commence with any work before signing the Contract or before receiving an Order Number.

8.4 Level of Detail

The technical investigations must be undertaken at a very high level of detail, appropriate for taking decisions to inform the future technical feasibility phase. The study deliverables should allow the project to proceed immediately to the detailed technical feasibility stage within the shortest possible timeframe.

8.5 Retention on PSP Contracts

It is DWS's practice to impose a retention amount equal to 2% of the approved contract amount until the Final Reports are submitted and approved by the Client. The retention clause comes into effect near the end of the study.

8.6 DWS's PSP Database

The PSP must be registered on DWS's PSP Database.

8.7 PSP Team Member Replacement

The following conditions should be fulfilled for any PSP team member replacement:

- In the event that any key staff member appointed by the Bidder is unable to continue in their role due to resignation, death, or other valid reasons, the Bidder shall, within thirty (30) calendar days, propose a replacement of equivalent or superior qualifications and experience. Such replacement shall be subject to the prior written approval of DWS.
- The Bidder shall provide documentary proof of the circumstances necessitating the replacement, such as a certified copy of the death certificate in the case of death, or a formal resignation letter in the case of resignation.
- The Bidder shall ensure that the continuity of services is maintained during the transition period and that project delivery is not adversely affected. All costs associated with the replacement of team members under these circumstances shall be borne by the Bidder.
- For positions designated as key personnel, replacements shall only be permitted under exceptional circumstances (such as death, serious illness, or resignation) and must be fully justified to the satisfaction of DWS.

9 CONTACT DETAILS

The **DWS Directorate: Water Resources Development Planning** together with the **DWS Directorate: Supply Chain Management** is administering this ToR and Invitation to Bid. The Contact Persons for Enquiries about this Study are given in Table 9-1below:

Table 9-1: **Contact Persons for Enquiries about this Study**

Contact Persons		**Postal Address**
For Technical Matters	**For Bid Administrative Matters**	
Mr. Mehari Frezghi Tel: (012) 336 7004 E-mail: Frezghim@dws.gov.za		Private Bag X 313 PRETORIA 0001

Note:	*Email correspondence regarding this Bid should be sent to both contact persons listed in **Table 9.1** above.*