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Water and Sanitation
REPUBLIC OF SOUTH AFRICA



CLASSIFICATION OF SIGNIFICANT WATER RESOURCES AND DETERMINATION OF RESOURCE QUALITY OBJECTIVES FOR WATER RESOURCES IN THE USUTU TO MHLATHUZE CATCHMENTS (WP11387)

Project Steering Committee 3, Virtual: 2 December 2022



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Project Steering Committee Meeting 3

Classification of Significant Water Resources and Determination of Resource Quality Objectives for Water Resources in the Usutu to Mhlathuze Catchments

Date:	Friday, 2 December 2022		
Time:	09:00 (Meeting will be open from 08:30)		
Venue:	Microsoft Teams Platform		
Chairperson:	Ms Lebogang Matlala		
Purpose of the meeting:	<ul style="list-style-type: none"> • Provide feedback on progress; • Present the identification and description of operational scenarios within Integrated Water Resource Management (IWRM) 		
AGENDA			
09:00	1	Welcome and Introduction	Chairperson
09:10	2	Attendance and Apologies	Chairperson
09:20	3	Acceptance of Agenda	All
09:25	4	Purpose of Meeting	Chairperson
09:30	5	Approval of the previous Minutes (PSC No. 2 – 4 November 2022)	All
09:35	6	Matters arising from PSC No. 2	Chairperson
	6.1	Minute reference: 8g) The PSP will contact N Masikane for the sharing of data.	
09:45	7	Overview of study and progress (15 Minutes)	Mohlapa Sekoele / Caryn Seago (PSP)
10:00	8	Task 4: Identify and evaluate scenarios within Integrated Water Resources Management (IWRM) <ul style="list-style-type: none"> - Background - Proposed Scenarios - Additional Scenarios (discussion) - Final agreed Scenarios 	PSP Inputs from PSC
		Questions/Discussions	
11:00	9	Technical: way forward and next steps	PSP
11:10	10	Additions 10.1 10.2	All
11:20	11	Way forward	Mohlapa Sekoele
11:25	12	Date of Next Meeting: April 2023	All
11:30	13	Closure	Chairperson

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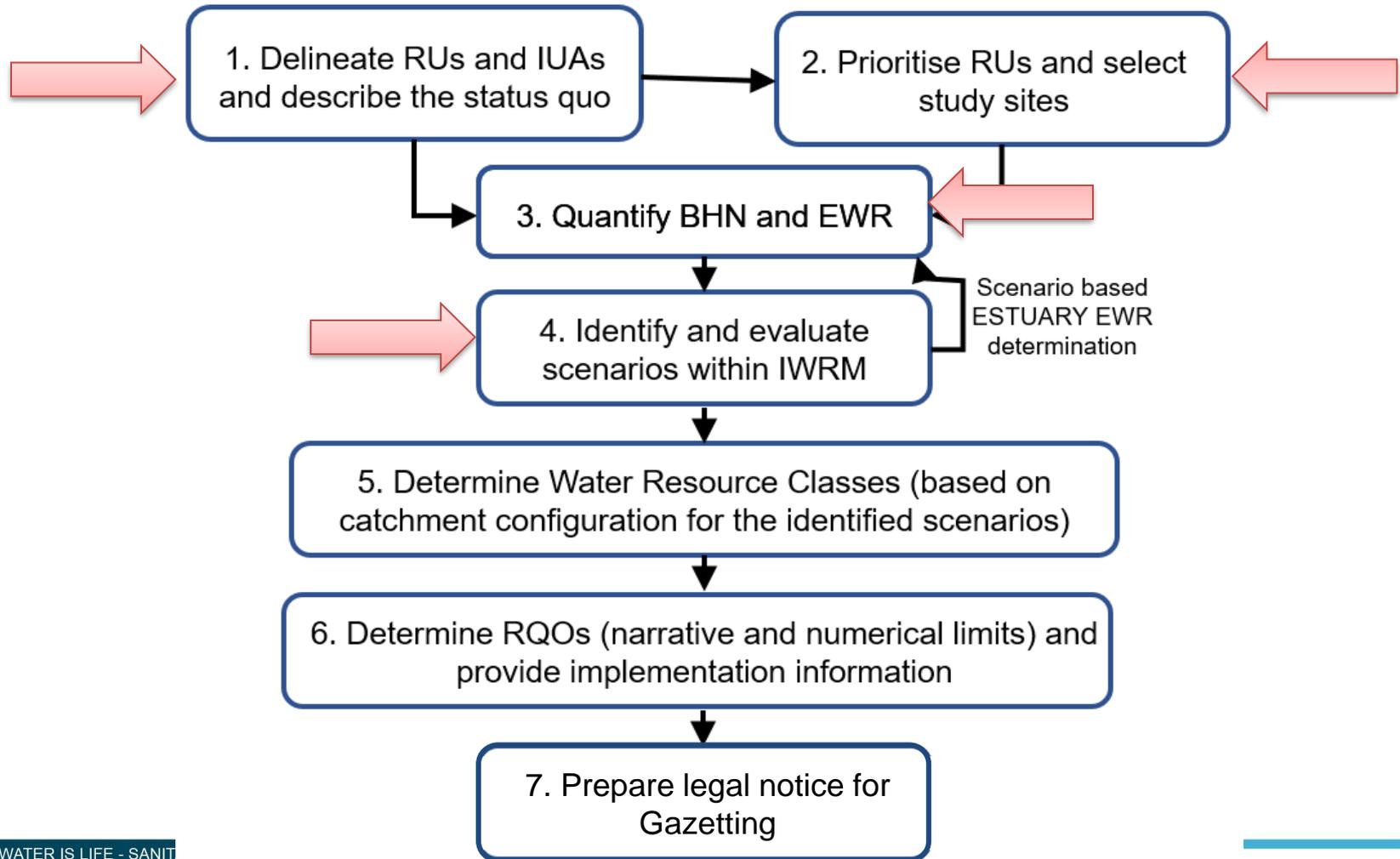
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7b. Status, Milestones, deliverables

Task	Sub-Task (Numbers co-incide with Tasks)	Contract Table n	Dec-21	Jan-22	Feb-22	Mar-22	Apr-22	May-22	Jun-22	Jul-22	Aug-22	Sep-22	Oct-22	Nov-22	Dec-22	Jan-23	Feb-23
INCEPTION	Info Review & Inception report	4.3.1			s,i												
INCEPTION	Stakeholder database and SEP	4.3.2			s,i												
INCEPTION	Mentorship Program	4.3.1			s,i												
INCEPTION	Kick off meeting	4.3.30, 4.3.31		s	i												
INCEPTION	Inception report presentation meeting	4.3.30, 4.3.31			s,i												
INCEPTION	PMC 1: dry run for PSC 1 and public meeting prep	4.3.30, 4.3.31						s,i									
INCEPTION	Public meeting 1	4.3.25						s,i									
TASK 1	1: Status quo, RU & IUA report	4.3.4					s	i									
TASK 1	PMC 2: dry run for PSC 2 (Step 3)	4.3.30, 4.3.31											s	i			
TASK 1	PSC meeting 1 (Step 1+2: Status Quo, Delin, IUAs)	4.3.23						s,i									
TASK 1	1: Review of PESEIS results	4.3.3			s,i												
TASK 2	2: RU Prioritisation report	4.3.5					s	i									
TASK 3	3.1: Hydrological Systems Analysis Report	4.3.6						s	i								
TASK 3	3.2: BHN Report	4.3.9								s	i						
TASK 3	3.3: Groundwater Report	4.3.10									s	i					
TASK 3	3.4: River EWR for the Desktop Biophysical Nodes Report	4.3.7							s	i							
TASK 3	3.5: EWR river site visit and site visit report	4.3.8								s,i							
TASK 3	3.5: EWR specialist workshop report (Assessment & report for Rivers)	4.3.11										s,i					
TASK 3	3.6: Estuary field sampling & Site Visit report	4.3.12											s,i				
TASK 3	3.6 Report: EWR report; rivers	4.3.14													s	i	
TASK 3	3.7: Wetland EWR report	4.3.13											s	i			
TASK 3	PMC 3: dry run for PSC 3 (Step 4)	4.3.30, 4.3.31												s,i			
TASK 3	PSC meeting 2 (Step 3: EWRs, BHN)	4.3.23												s,i			
TASK 3	PSC meeting 3 (Step 4: input to scenarios)	4.3.23													s,i		
TASK 4	4.1: Scenario description report	4.3.15														s	i
TASK 4	4.2 Estuary EWR/Consequences Specialist Meeting + data analyses	4.3.11															s,i
TASK 4	4.7: Water Resources Class decision making Tool	4.3.16															s,i
TASK 9	Technical Task Group (x 3)	4.3.24												s,i			
TASK 8	Training 1 (General overview)	4.3.28								s	i						
TASK 8	Stakeholder capacity building	4.3.28													s,i		
TASK 8	Emergent SMME	4.3.29							s,i					s,i		s,i	
		Completed															
		In progress															



The Study Plan is broken down in tasks and based on the integrated approach for Water Resource *Classification, Resource Quality Objectives (RQOs)* and the Reserve



8. Identify and Evaluate Scenarios within IWRM

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Background

Natural State
No Development

Present Day State

- Current use
- Current discharges
- Current infrastructure

Classification
process

**Recommended
Ecological State**

- From now on, this is how rivers/estuaries should look

Background

Natural State
No Development

Present Day State

- Current use
- Current discharges
- Current infrastructure

Classification
process

BUT!

**Recommended
Ecological State**

- From now on, this is how rivers/estuaries should look

**Future Water Resources
Planning**

- Future planning horizon
- Growing water requirements
- Future planned infrastructure

Background

Stressed / Developed Catchments, Classification process later

- Long list of options at various stages of implementation
 - Try to accommodate by assessing impacts on Ecological State
- Determine ‘most’ appropriate solutions considering all role-players
 - Classification

Less stressed / Undeveloped Catchments Classification process upfront

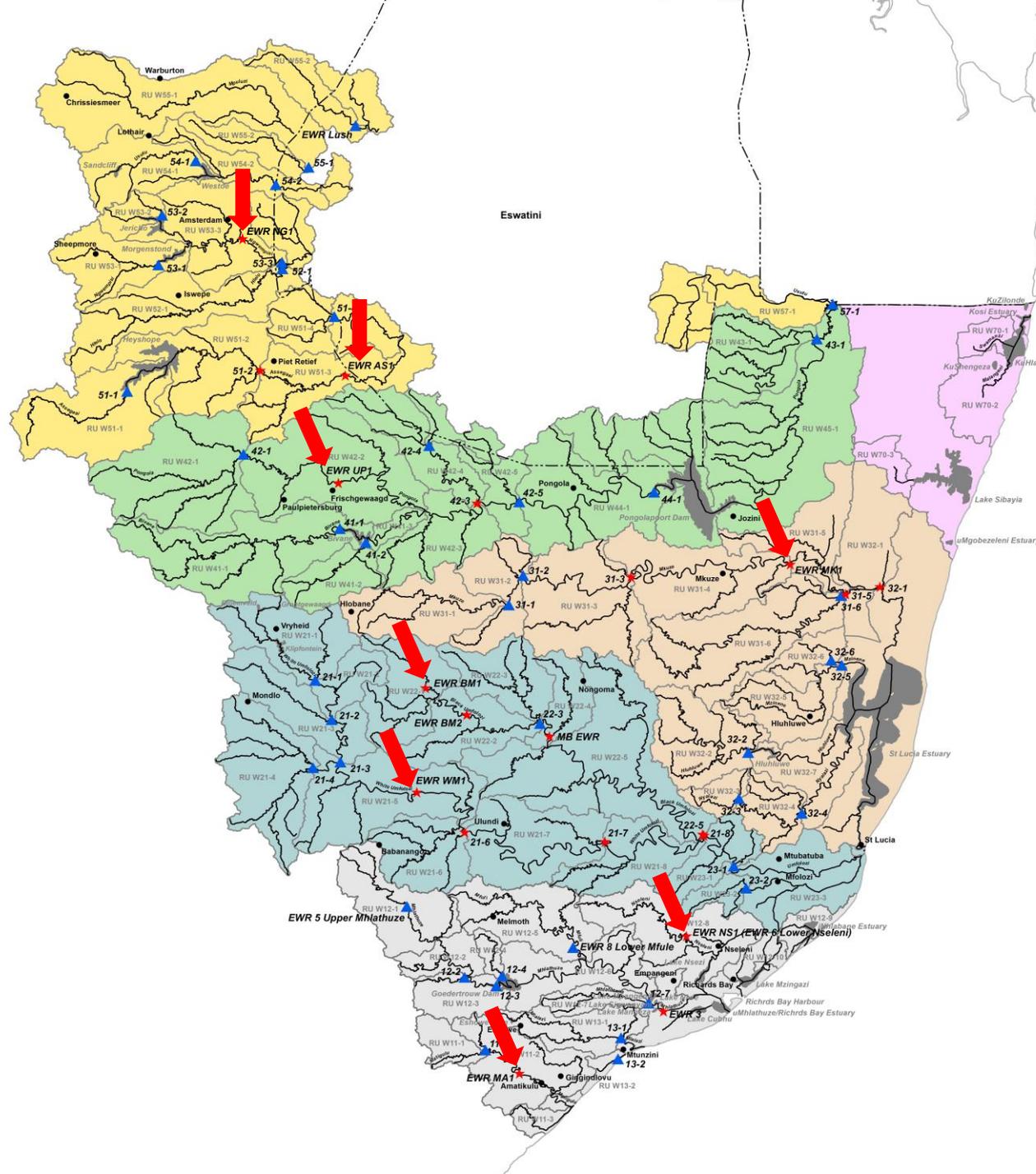
- Possible options/ideas, Not yet at pre-feasibility level
 - Assess options
 - Set Ecological Requirements, future development must comply



Scenarios

- Assessed only at pre-selected Comprehensive EWR sites where detailed historical information is available
- Plausible options that will change the existing situation
- Information should be quantifiable, e.g. size and location of future dam, WTW / WWTW increase in capacity

Comprehensive River EWR Sites



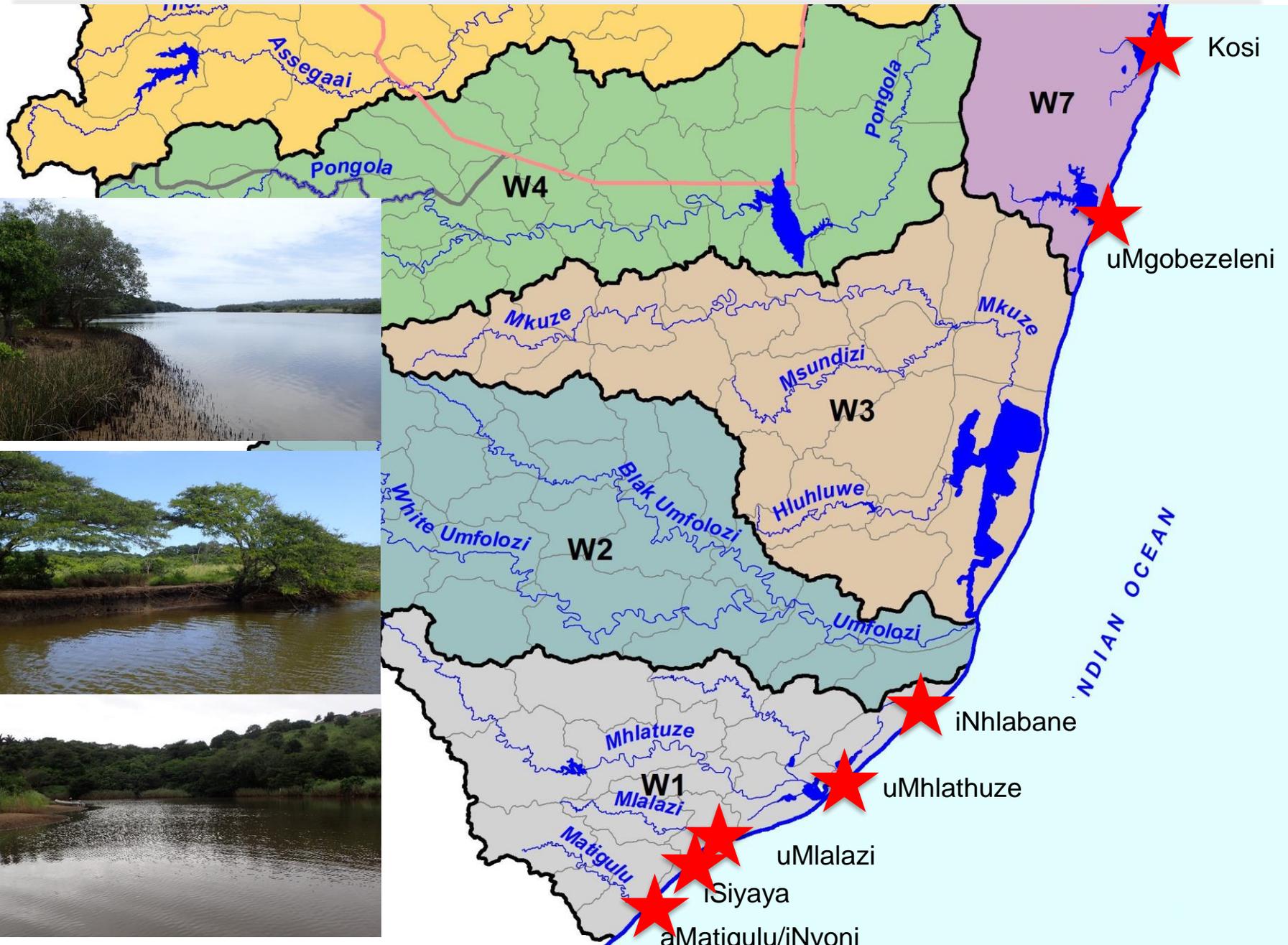
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ESTUARY EVALUATION



River Sites

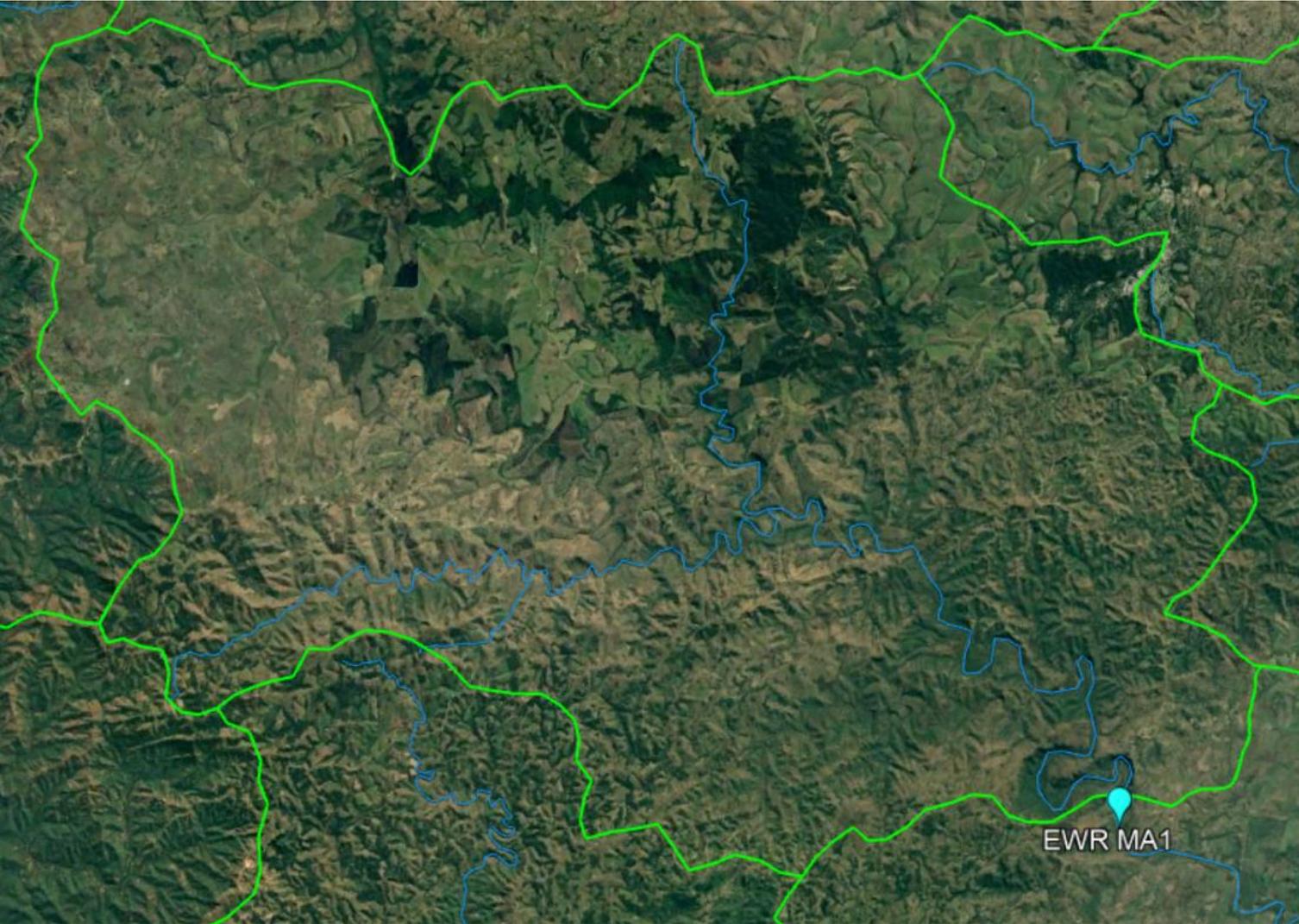
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EWR: MA1
River: Matigulu
Upstream landuse:
irrigation,
afforestation, farm
dams
No upstream
WTW or WWTW

Proposed
Scenarios:
No development
Climate Change

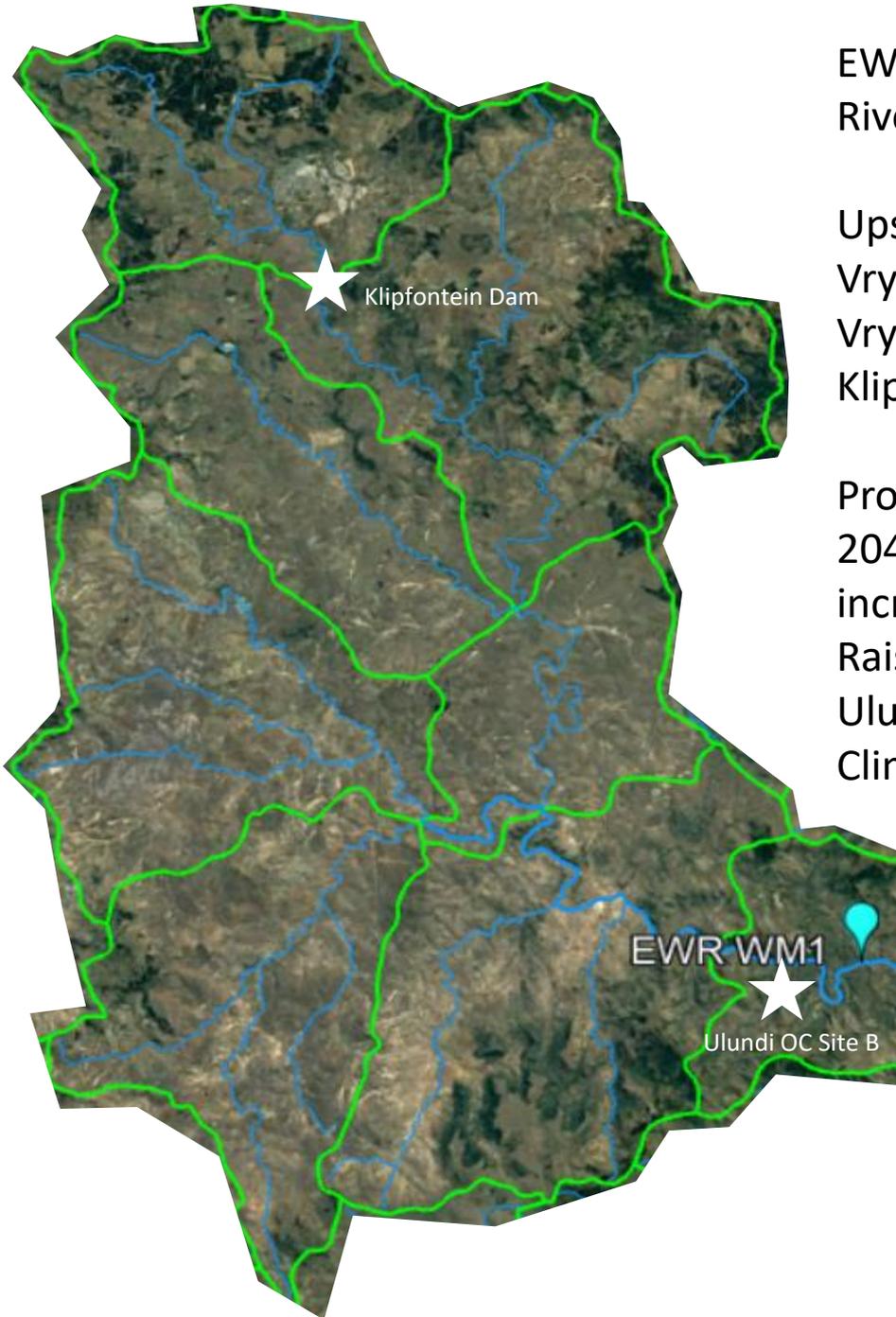
Confirm:
No major increase
in upstream
development
anticipated



EWR: NS1
River: Nseleni
Upstream
landuse: farm
dams.
Fundimvelo
Nature Reserve.
Sprawling
settlements.
No upstream
WTW or WWTW
Proposed Dam
site
downstream of
EWR site

Proposed
Scenarios:
No
development
Climate Change

Confirm:
No major
increase in
upstream
development
anticipated



EWR: WM1
River: White Umfolozi

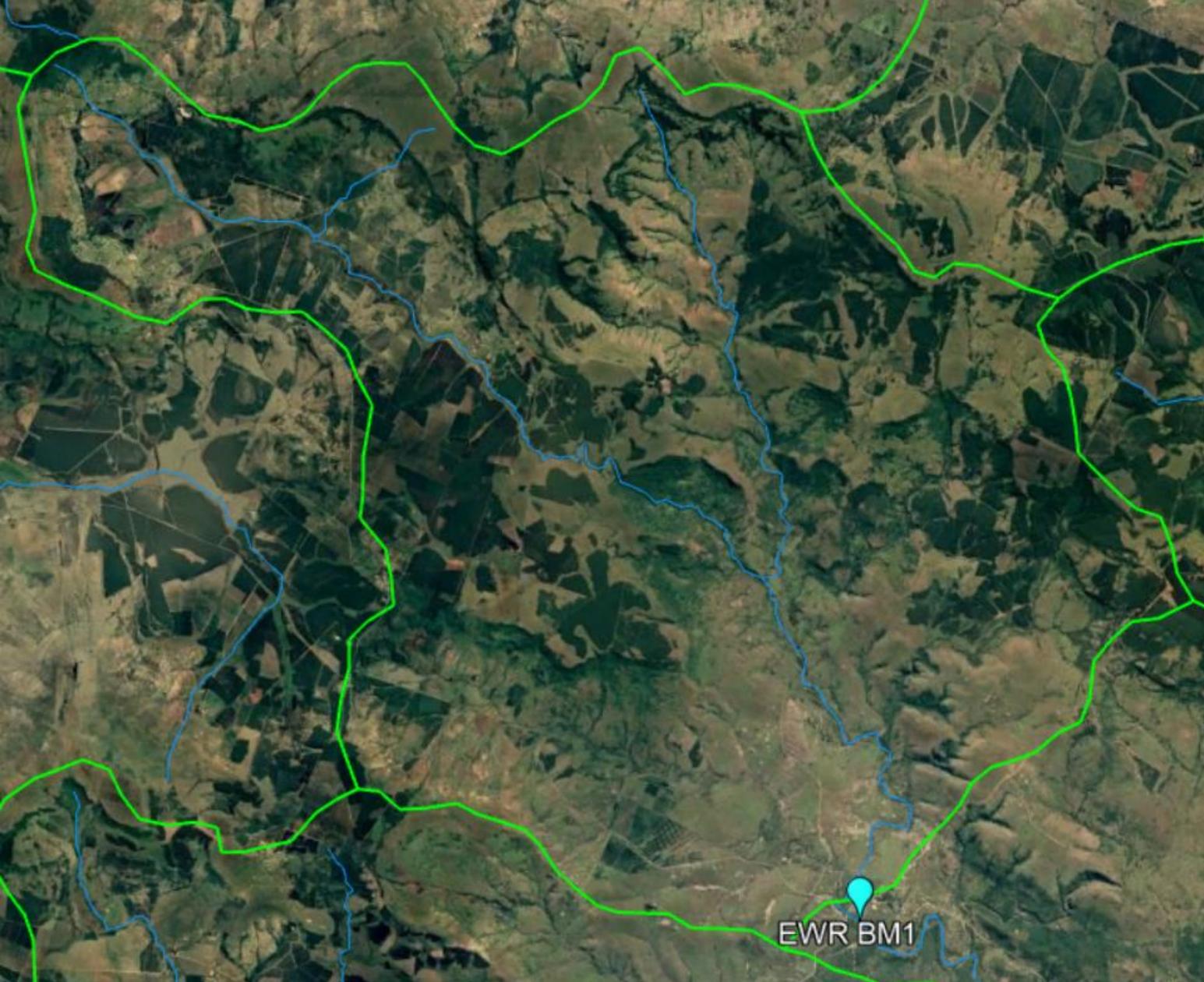
Upstream landuse: farm dams. Diffuse irrigation
Vryheid, Bloemveld, Emondlo WTW
Vryheid WWTW
Klipfontein Dam

Proposed Scenarios:
2040 water requirement development (and
increased return flows)
Raised Klipfontein Dam
Ulundi Off Channel Dam (Site B)
Climate Change

EWR WM1

Ulundi OC Site B

Ulundi weir downstream
Mpungamhlope abstraction downstream



EWR: BM1
River: Black
Umfolozi

Upstream
landuse: farm
dams. Diffuse
irrigation,
afforestation
Very small
domestic
abstraction

Proposed
Scenarios:
No development
Climate Change

Confirm:
No major
increase in
upstream
development
anticipated

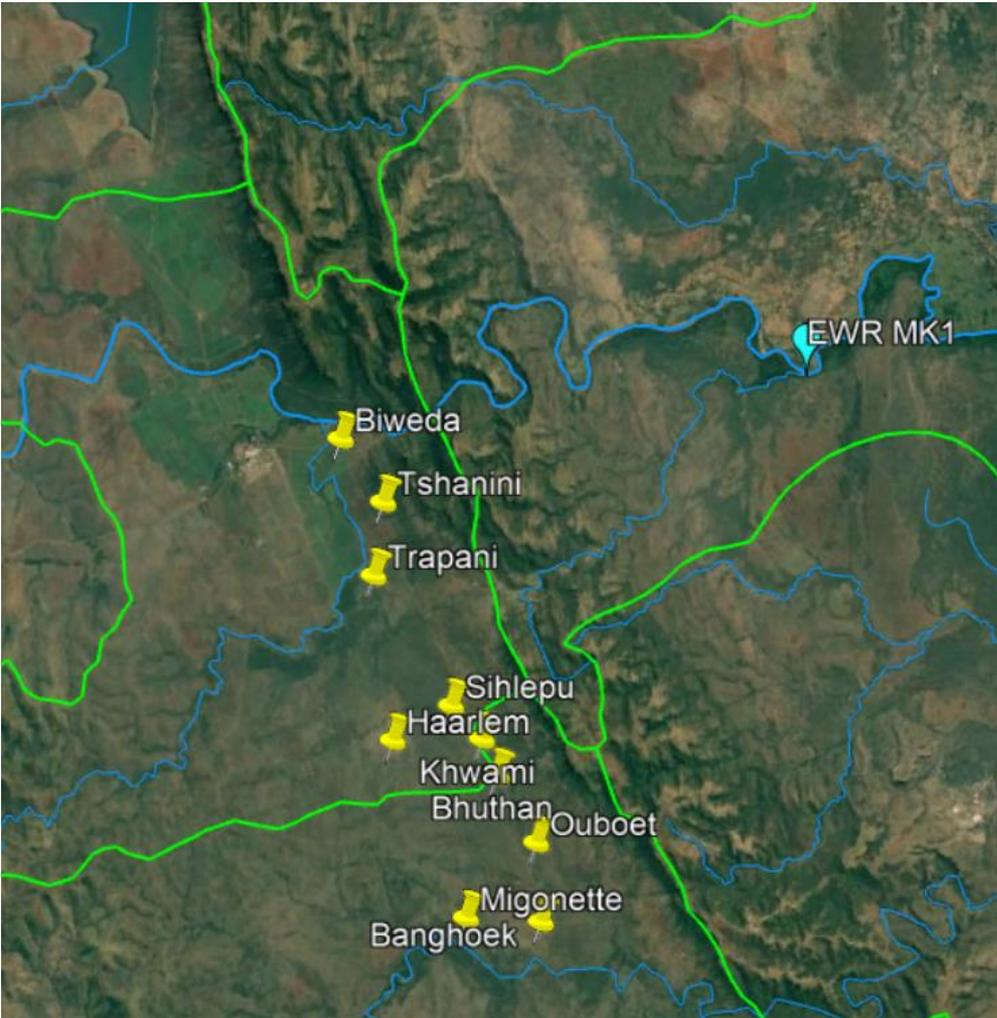


EWR: MK1
River: Mkuze

Upstream landuse: farm dams. Irrigation, afforestation
Domestic: Hlobane, Coronation, Mkuze

Proposed Scenarios:

- 2040 water requirement development (and increased return flows)
- Expansion of irrigation (already licensed) obtaining water from Pongolapoort Dam
- Climate change



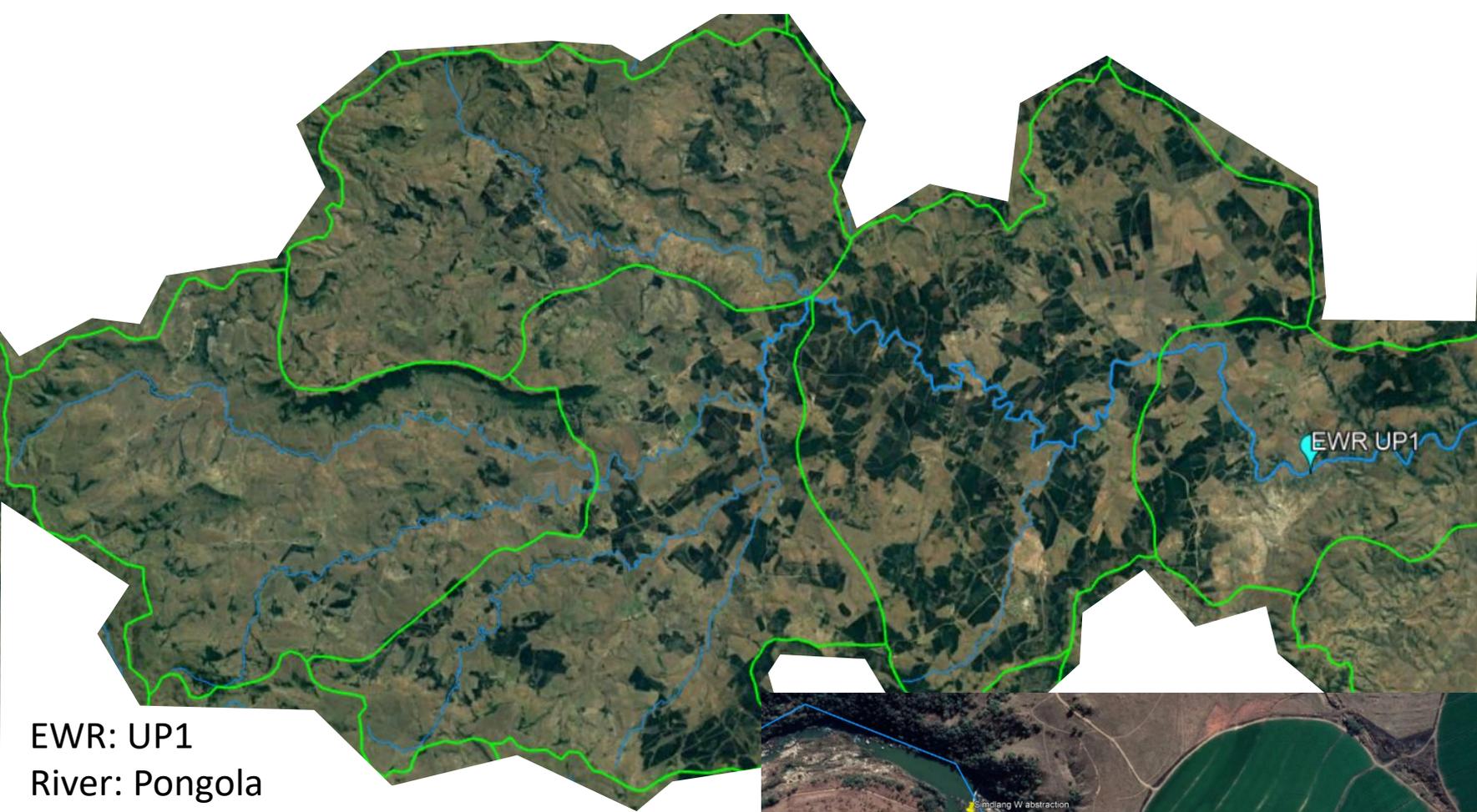
7. Description of the activity

This licence authorises Sibuyele Ekhaya Communal Property Trust-Trustees to abstract a total volume of forty one million cubic metres per annum (41 000 000 m³/a) of water from Pongolapoort Dam basin (Pongola Government Water Scheme), for the purpose of irrigating 4 300 hectares of agricultural crops. Irrigation will be on properties listed in table 1. The geographical location of the abstraction point is 27° 30' 14.3"S; 31° 59' 58.9"E.

4. Registered owner of the Property

Table1: Property owner details

Property description	Title Deed	Owner
Portion 2 of the farm Farm Mignonette 17233	T32311/2010	Sibuyele Ekhaya Communal Property Trust-Trustees
Portion 0 of the farm Banghoek 15666	T30832/2010	Sibuyele Ekhaya Communal Property Trust-Trustees
Portion 1 of the farm Banghoek 15666	T27089/2010	Sibuyele Ekhaya Communal Property Trust-Trustees
Portion 4 of the farm Banghoek 15666	T27219/2010	Sibuyele Ekhaya Communal Property Trust-Trustees
Portion 0 of the farm Ouboet 13631	T27137/2010	Sibuyele Ekhaya Communal Property Trust-Trustees
Portion 0 of the farm Bhutan 13632	T27137/2010	Sibuyele Ekhaya Communal Property Trust-Trustees
Portion 0 of the farm Kwami 113047	T35015/2010	Sibuyele Ekhaya Communal Property Trust-Trustees
Portion 0 of the farm Sihlepu 13060	T27137/2010	Sibuyele Ekhaya Communal Property Trust-Trustees
Portion 0 of the farm Haarlem 13061	T30070/2010	Sibuyele Ekhaya Communal Property Trust-Trustees
Portion 0 of the farm Trapani16851	T29041/2010	Sibuyele Ekhaya Communal Property Trust-Trustees
Portion 0 of the farm Tshaneni 16852	T29041/2010	Sibuyele Ekhaya Communal Property Trust-Trustees
Portion 0 of the farm Biweda 13061	T29041/2010	Sibuyele Ekhaya Communal Property Trust-Trustees
Portion 1 of the farm Tshaneni 12228	T27661/2010	Sibuyele Ekhaya Communal Property Trust-Trustees
Portion 2 of the farm Tshaneni 12228	T27661/2010	Sibuyele Ekhaya Communal Property Trust-Trustees



EWR: UP1

River: Pongola

Upstream landuse: farm dams. Irrigation, afforestation

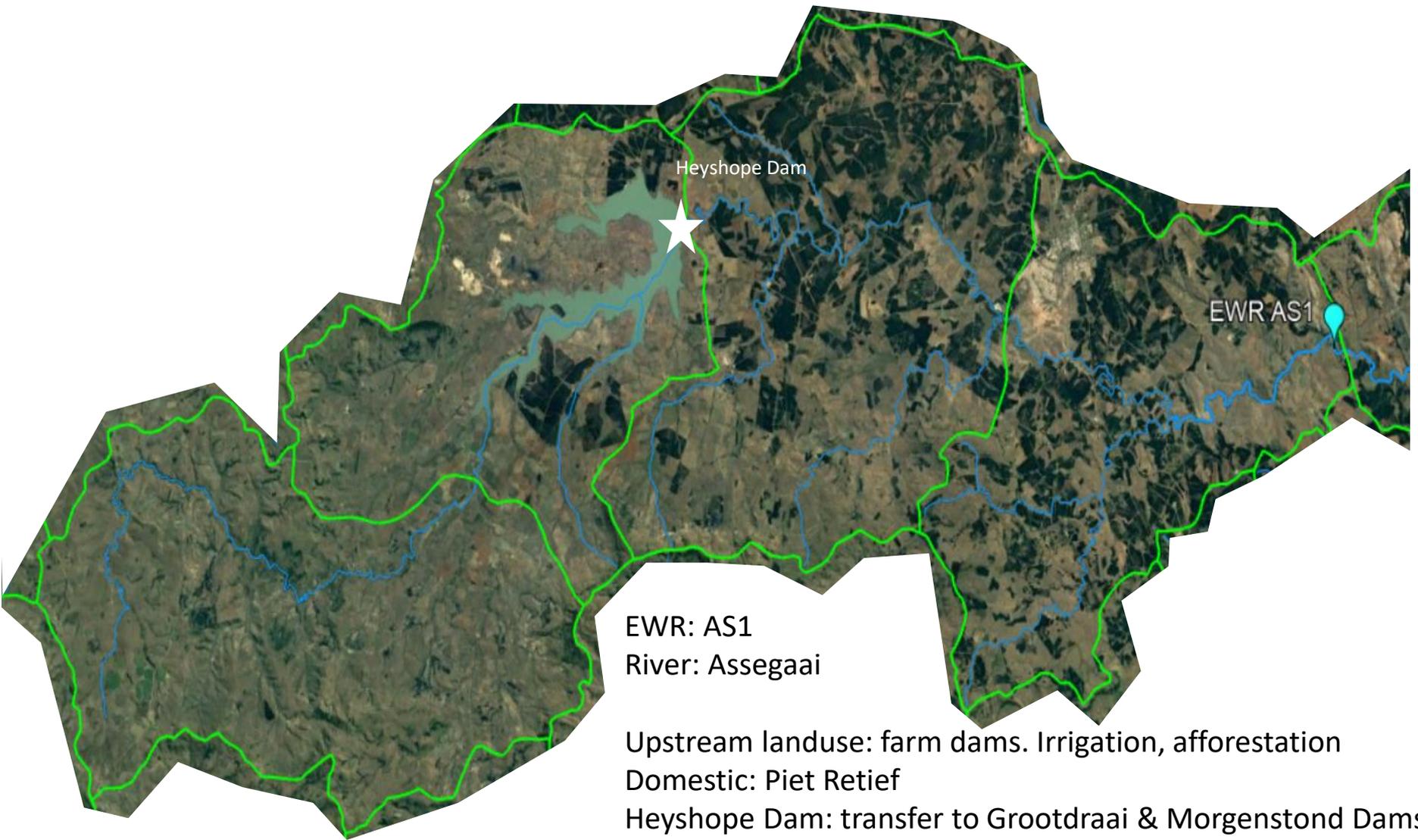
Domestic: Paul Pietersburg, Simdlangentsha West

Proposed Scenarios:

2040 water requirement development (and increased return flows)

Climate Change





EWR: AS1
River: Assegai

Upstream landuse: farm dams. Irrigation, afforestation

Domestic: Piet Retief

Heyshope Dam: transfer to Grootdraai & Morgenstond Dams

Proposed Scenarios:

2040 water requirement development (and increased return flows)

Consideration of Eskom requirements from Heyshope Dam

Improved operation of releases for EWR site if required

Climate Change



EWR: NG1

River: Ngwempisi

Upstream landuse: farm
dams. Irrigation,
afforestation

Domestic: Amsterdam

Morgenstond Dam

Jericho Dam: Usutu GWS
transfer

Proposed Scenarios:

2040 water requirement
development (and
increased return flows)

Consideration of Eskom
requirements from
Jericho Dam

Improved operation of
releases for EWR site if
required

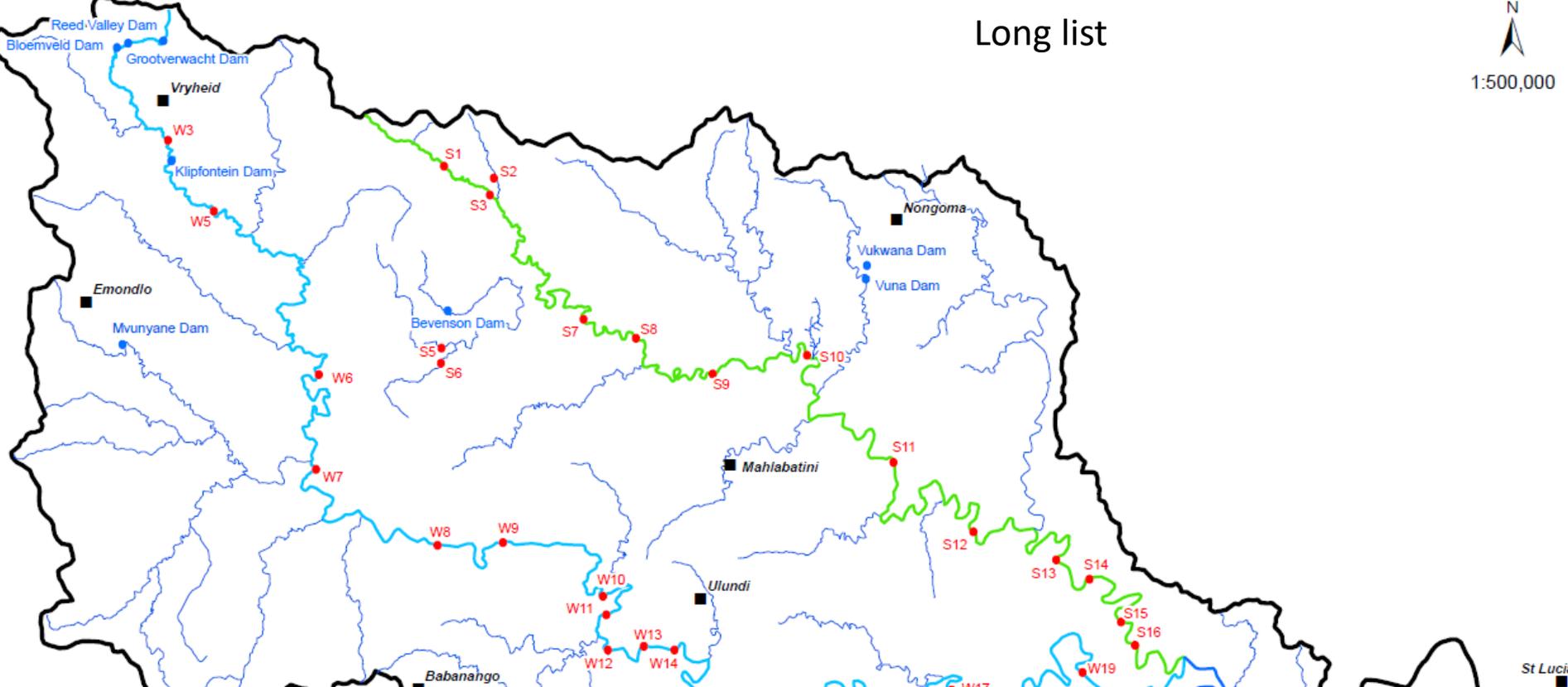
Climate Change

Estuary Scenarios

- Mtunzini increased WWTW discharges
- All: Increased (2040) upstream use
- Nhlabane: restoration scenario
- All: Climate change scenario, increased / decreased runoff
- Umfolozi: new dam

Long list

N
1:500,000



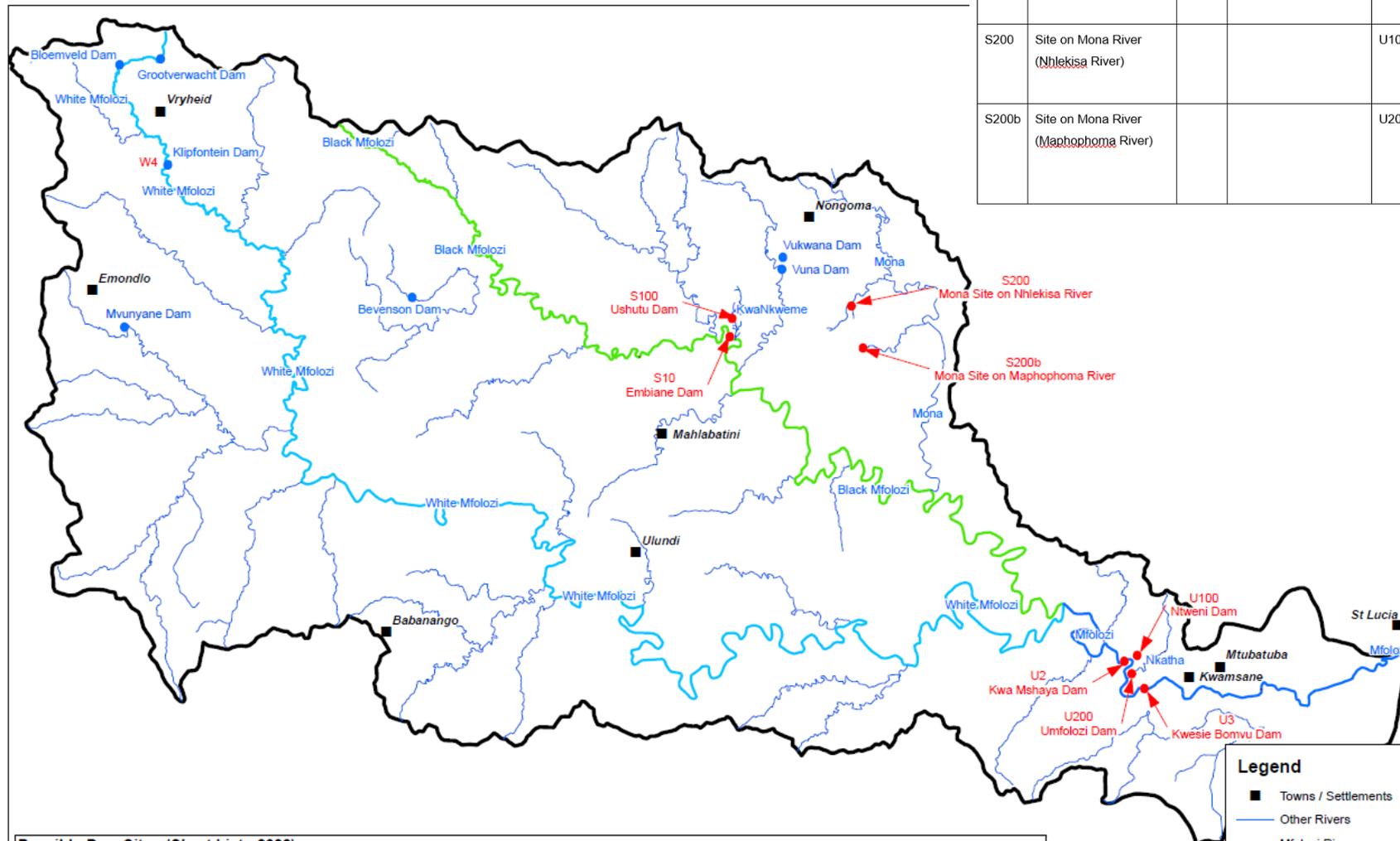
Possible Dam Sites (DWA - 1977)			
Black Mfolozi River	White Mfolozi River	Mfolozi River	
S1 Rendsburg	W1 Grootgewaagd /Grootverwacht	U1	Nkumbanani
S2 Mademoiselle	W2 Bloemveld	U2	KwaMshaya
S3 Brakfontein	W3 Mooiplaats	U3	Kwesi-Bomvu
S4 Bevenson	W4 Klipfontein		
S5 Schoonspruit	W5 Welgevonden		
S6 Onverwacht	W6 Onrust		
S7 Langverwacht	W7 Witpoort		
S8 Sidakeni	W8 Doornhoek		
S9 Ekukayeni	W9 Langverwacht		
S10 Embiane	W10 Harde Arbeid		
S11 Esigubudu	W11 Harde Arbeid Laer		
S12 Mbazaneni	W12a Doornkop		
S13 Kwa Somtuli	W12b Doornkop Laer		
S14 Mpila Enkulu A	W13 Ulundi Laer		
S15 Mpila Enkulu B	W13a Ulundi		
S16 Matshemhlope	W14 Vulcan		
	W15 Weltevreden		
	W16 Kwa Ninkoma		
	W17 Ku Ngqoloti		
	W18 Tokolwane		
	W19 Esiweni		

Legend

- Towns / Settlements
- Other Rivers
- Mfolozi River
- Black Mfolozi River
- White Mfolozi River
- Existing Dam
- Proposed Dam

Table 3-4: Short List of Potential Dam Sites (DWS – 2022)

	Black Mfolozi River	White Mfolozi River	Mfolozi River
S10	Embiane	W4 Klipfontein (Raising of Dam Wall)	U2 KwaMshaya (On-Channel Storage Dam)
S100	Usuthu (Off-Channel Storage Dam)		U3 Kwesi-Bomvu (On-Channel Storage Dam)
S200	Site on Mona River (Nhlekisa River)		U100 Ntweni (Off-Channel Storage Dam)
S200b	Site on Mona River (Maphophoma River)		U200 Mfolozi (Lake Nkatha: Off-Channel Storage Dam)



Legend

- Towns / Settlements
- Other Rivers
- Mfolozi River
- Black Mfolozi River
- White Mfolozi River
- Existing Dam
- Proposed Dam

Possible Dam Sites (Short List - 2022)		
Black Mfolozi River	White Mfolozi River	Mfolozi River
S10 Embiane	W4 Klipfontein (Raising of Dam Wall)	U2 KwaMshaya (On-Channel Storage Dam)
S100 Usuthu (Off-Channel Storage Dam)		U3 Kwesi-Bomvu (On-Channel Storage Dam)
S200 Site on Mona River (Nhlekisa River)		U100 Ntweni (Off-Channel Storage Dam)
S200b Site on Mona River (Maphophoma River)		U200 Mfolozi (Lake Nkatha: Off-Channel Storage Dam)

8. Inputs from PSC Members

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9: Technical way forward: Next steps

- Final date for inputs on Scenarios: 15 January 2023.
- Finalize Scenario Description report, due end Feb 2023.
- Estuary Specialist meeting: Feb 2023
- Assessment of impacts of Scenarios