



water affairs

Department:
Water Affairs
REPUBLIC OF SOUTH AFRICA

MOKOLO & CROCODILE WATER AUGMENTATION PROJECT (MCWAP)

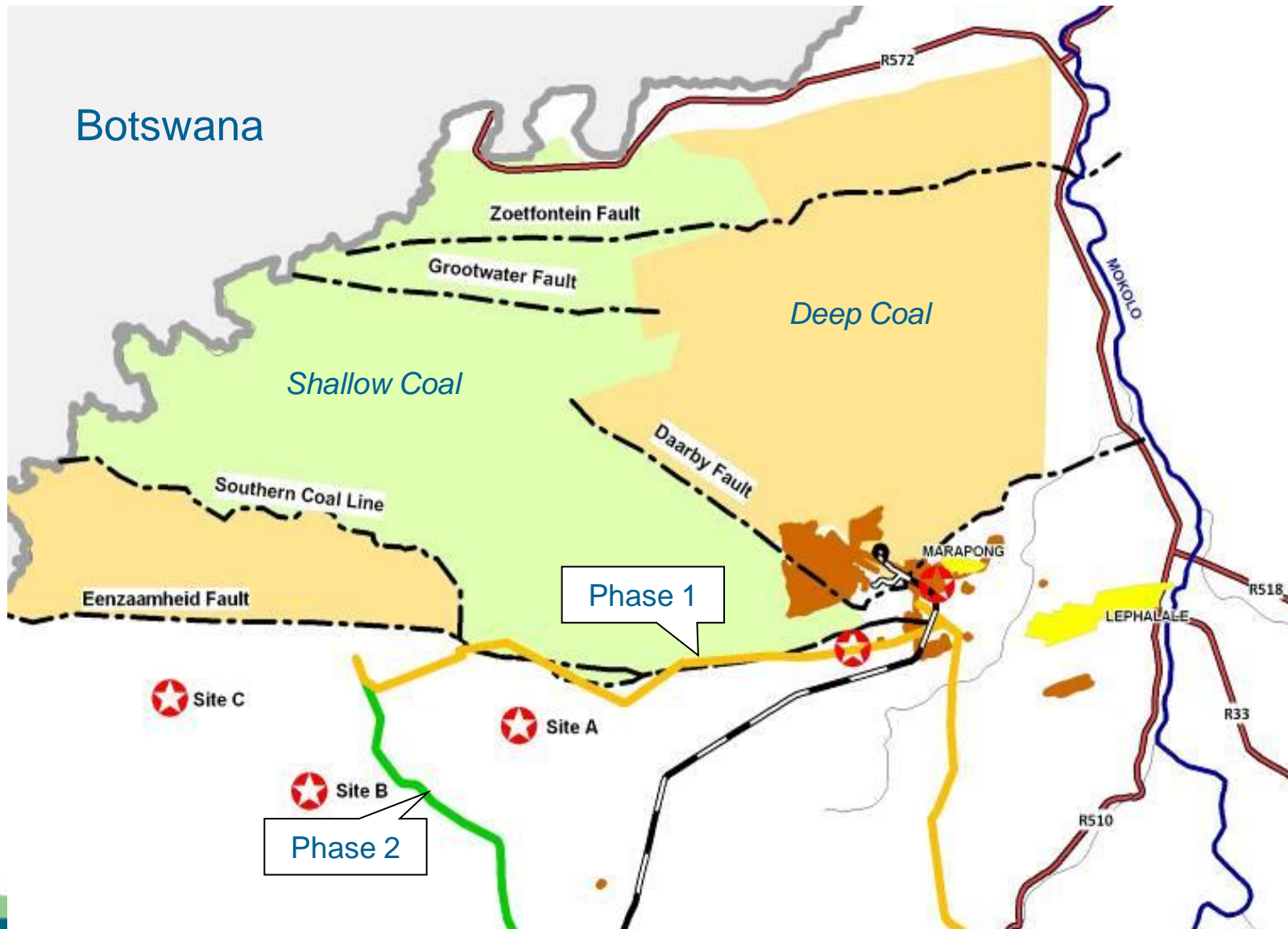
Crocodile West Water Supply System Maintenance of the Reconciliation Strategy

24 February 2011

Ockie van den Berg

Chief Engineer: Options Analysis North

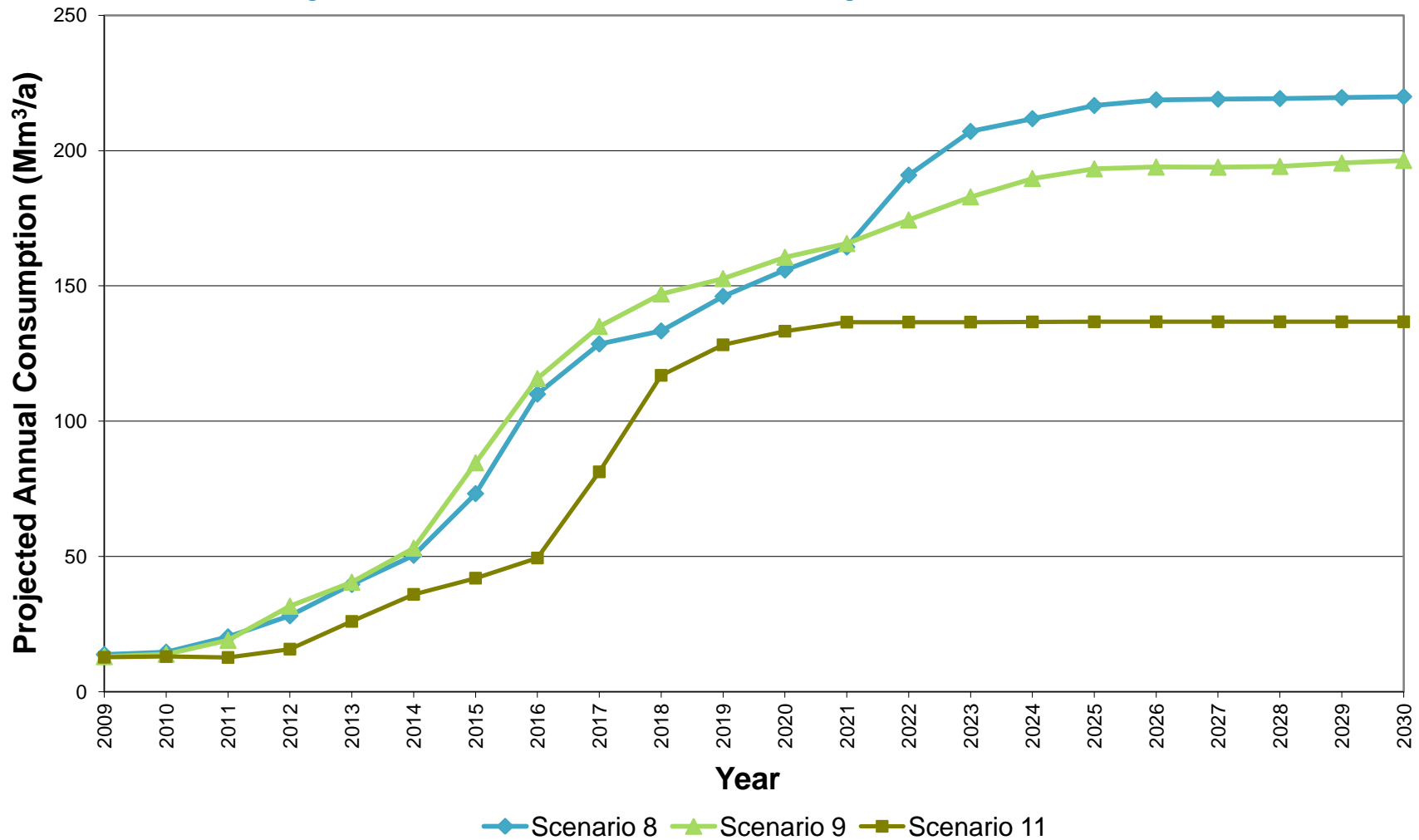
Waterberg Coal Fields



Objective of MCWAP

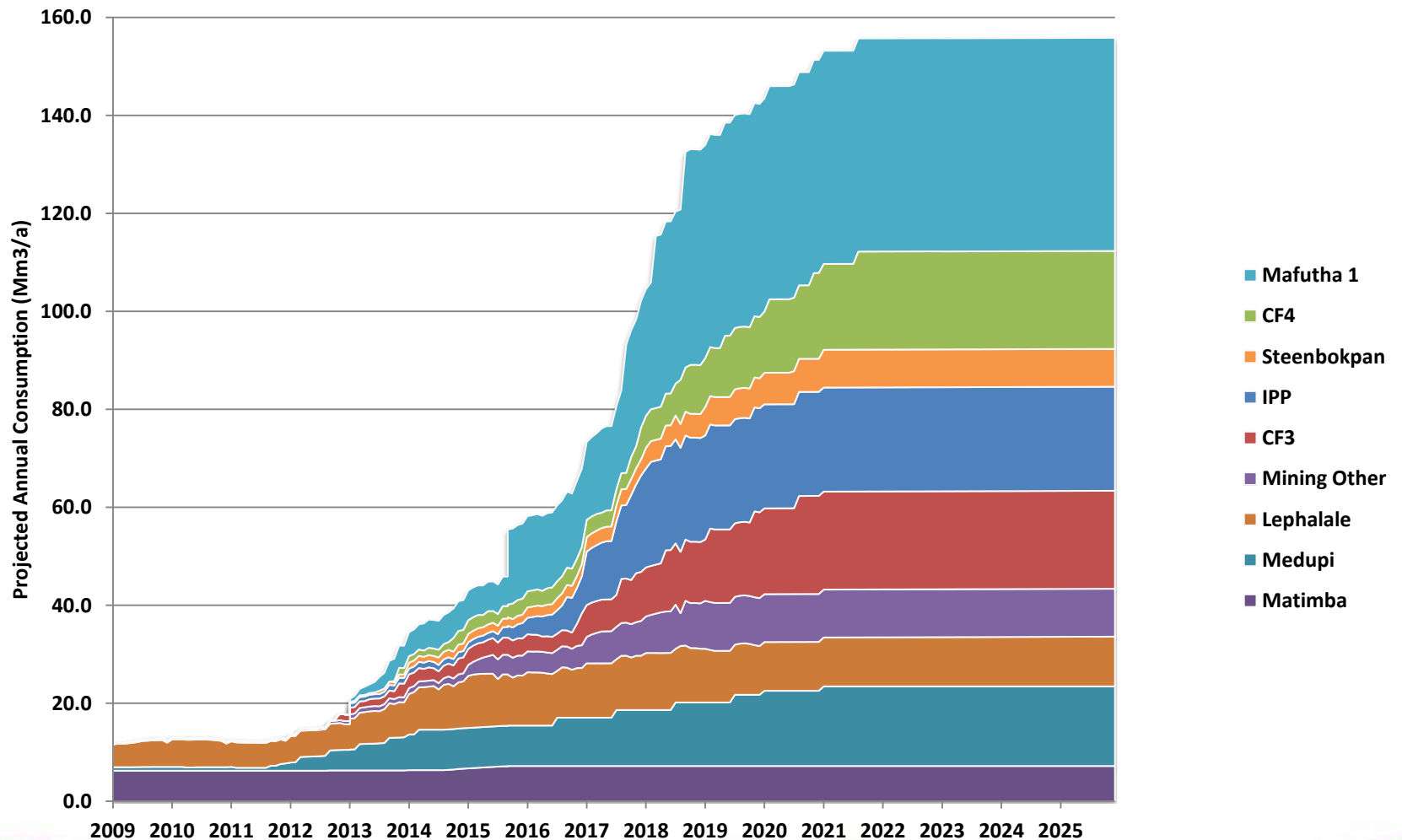
The objective of the MCWAP is to plan and implement feasible options to transfer water from the Mokolo River and Crocodile West River to Lephale and Steenbokpan without impacting on the water entitlements of existing users.

Comparison Of Water Requirement Scenarios



WATER REQUIREMENTS

5 Scenario 11 Projected Water Requirements

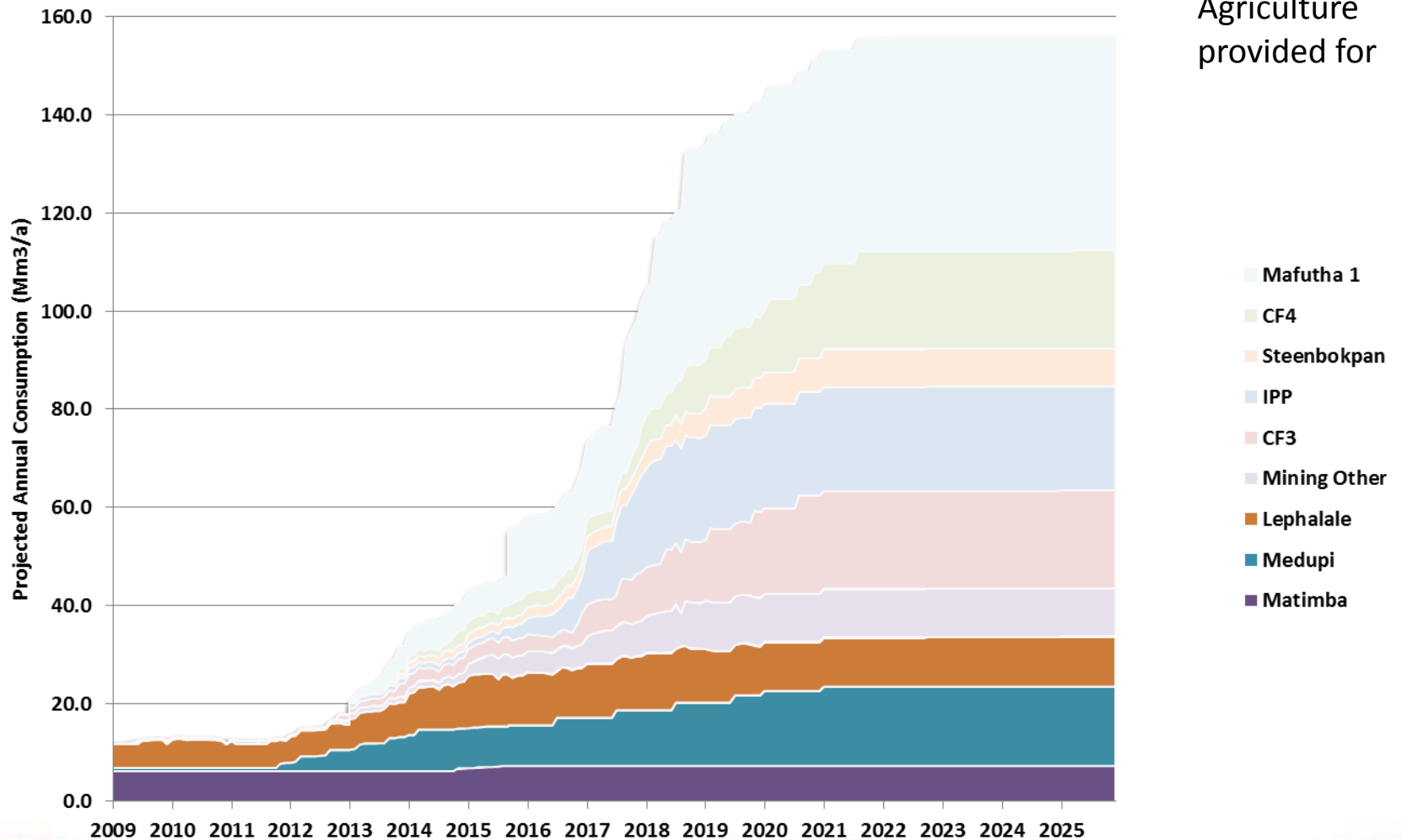


Demand Changes

- Planning performed on basis of Scenario 8, Scenario 9, Scenario 11;
- Scenario 11 provided for up to 4 Eskom power stations (incl Matimba and Medupi) plus IDP & Sasol's Mafutha 1
- Developments dependent on energy growth prospects, Gov decisions & funding constraints
- Dept of Energy's Draft Integrated Resource Plan
 - Initial focus on renewable energy sources and nuclear power
 - Next coal power station only in 2028,
- Sasol's development plan delayed,
- This impact on extent & timing of Phase 2,
- Inter-department discussions to resolve issue

SCENARIO 12

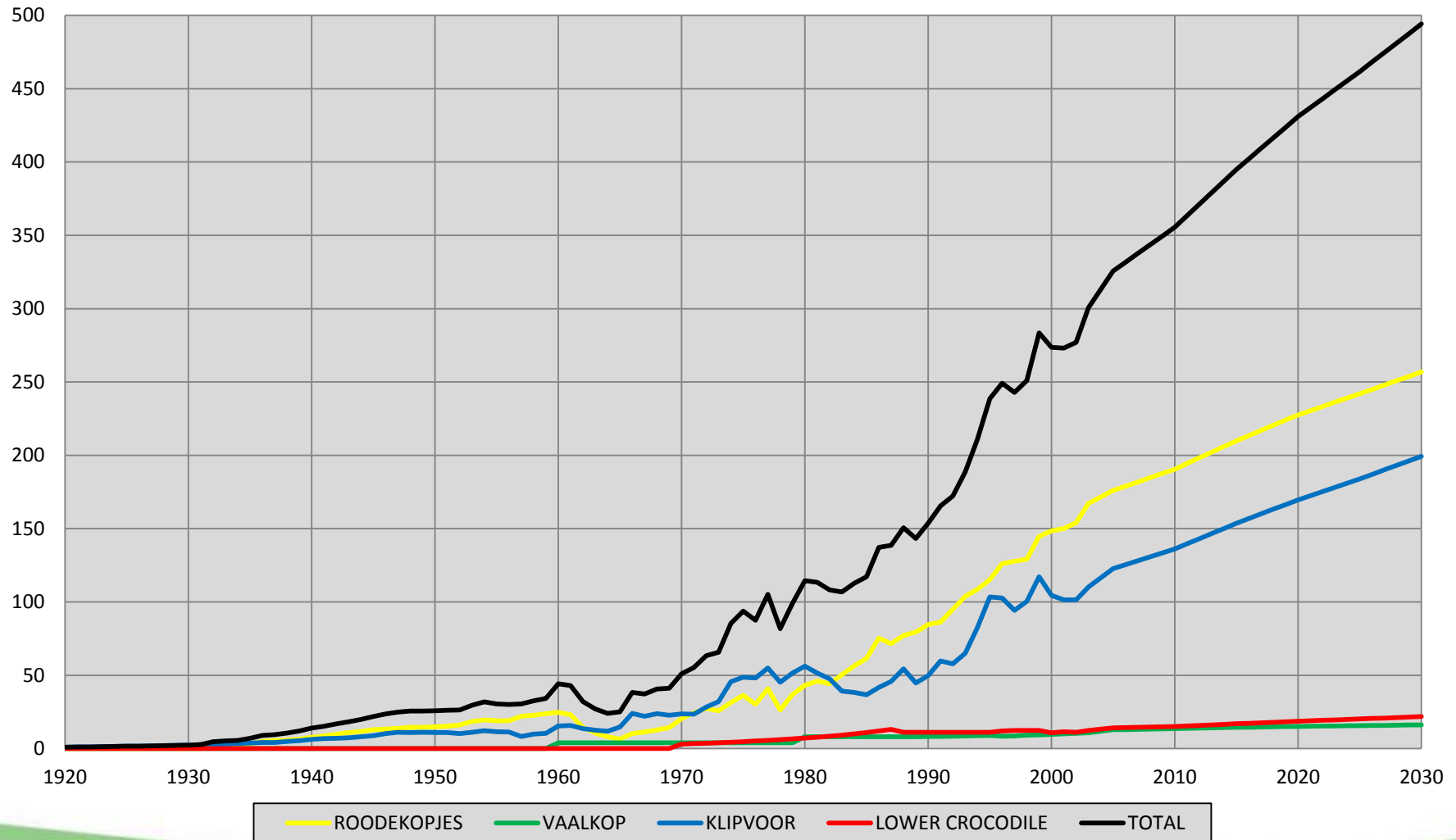
Phase 1 Projected Water Requirements



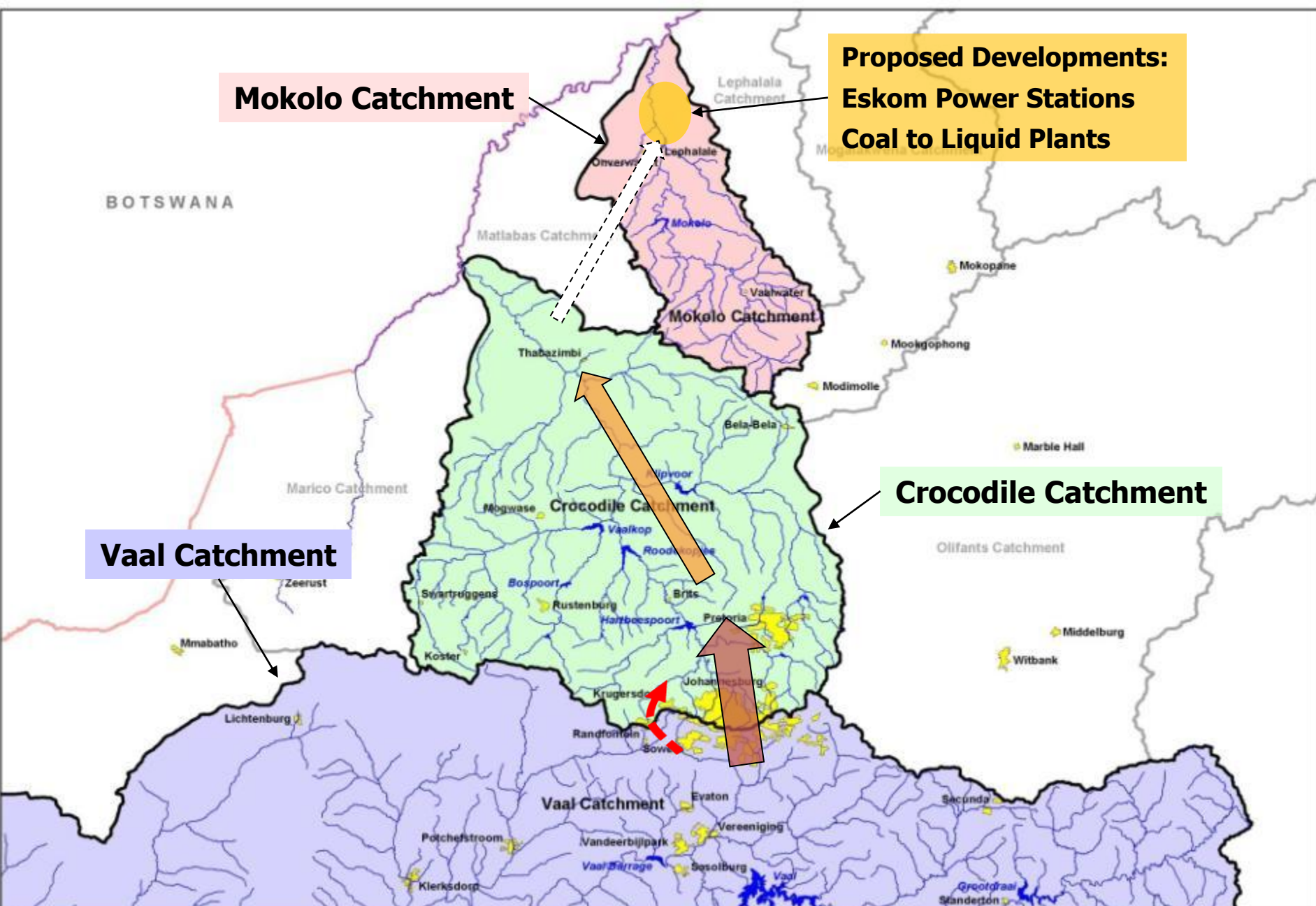
Sources of Water

- **Mokolo Dam (Existing supply),**
Switch from irrigation to game and cattle farming in the catchment of the Dam resulted in significant increase in yield
- **Return Flows in Crocodile West River (Future supply - indirectly imported via Vaal River system)**
- **Augmentation from the Vaal River**
- **Further options (important but limited)**
 - Groundwater
 - Water conservation & demand management
 - Re-use of local return flows

Return Flows in Crocodile River (West) Catchment (million m³/annum)



The map displays the Vaal River Catchment area, which is divided into several sub-catchments: Mokolo Catchment (pink), Crocodile Catchment (green), and Vaal Catchment (blue). Other nearby catchments include Lephalala, Matlabas, Marico, and Olifants. The map also shows the borders of Botswana to the west and Mozambique to the east. Key cities and towns are marked, including Johannesburg, Pretoria, Rustenburg, and Mmabatho. A yellow circle in the Mokolo Catchment is labeled 'Proposed Developments: Eskom Power Stations Coal to Liquid Plants'. A large orange arrow points from this area towards the Vaal Catchment. A red dashed arrow points from the Vaal Catchment towards the Mokolo Catchment. A green box labeled 'Crocodile Catchment' is also present.



Project Components and Phasing

- **Phase 1**

Augmenting supply from Mokolo Dam – duplicate pipeline

- **Phase 2**

Transfer growing return flow from Crocodile River (West)

To be implemented in sub-phases (Phase 2A and 2B) to match demand growth

River management system

- **Phase 3**

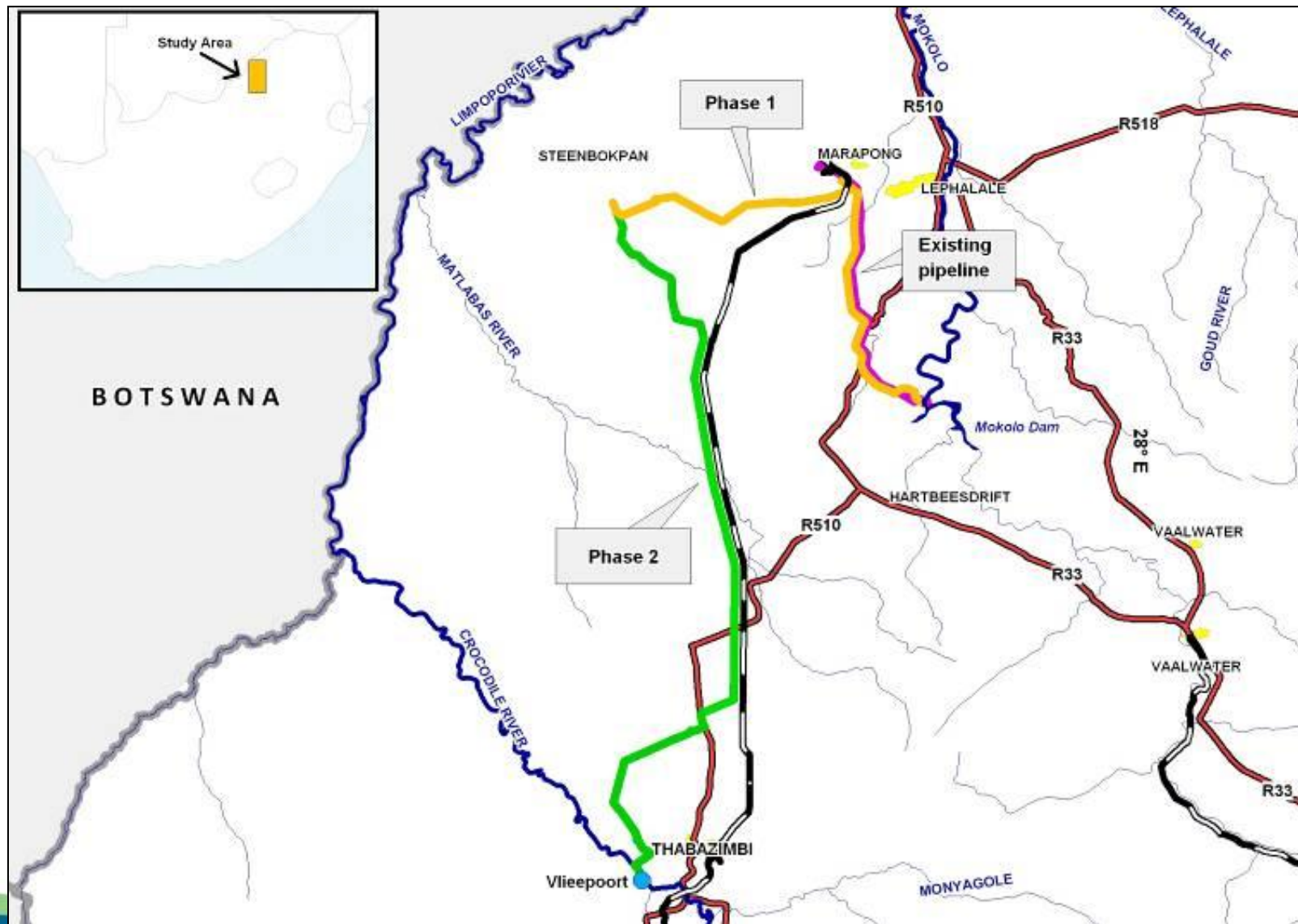
Possible Pipeline from Boschkop to Vlieëpoort to reduce river losses

- **Phase 4**

Augmentation from the Vaal River Basin

**Simultaneous utilisation of local resources
(return flows and groundwater required)**

Layout Phases 1 and 2



PROJECT STATUS

- **Phase 1**
 - EIA-Environmental Authorisation granted
 - User agreements finalised
 - Design in progress
 - Construction to start July 2011
 - Medupi first unit operational by September 2012

PROJECT STATUS Cont

- **Phase 2**

- EIA- second half of 2011
- Strategic considerations
 - Considered as required, irrespective of future developments
 - Necessary to supply strategic industries from multiple sources
- Funding approach under review by inter-departmental forum
- Required capacity & timing to be reviewed
- River management system to be implementation jointly with Water User Association

- **Phase 4**

- Delayed / required at all?

IMPLEMENTATION SCHEDULE

(Subject to environmental authorisation)

- **MCWAP-1: July 2011 – July 2013**
- **MCWAP-2A: Jan 2013 – Dec 2016** (To be confirmed)
- **MCWAP-2B and further phases: As required**



Thank you