



Magalies Water



BULK WATER SUPPLY INFRASTRUCTURE AUGMENTATION SCHEMES IMPLEMENTATION

**Crocodile West Reconciliation
Strategy Steering Committee**

25 July 2012

Presentation Contents

- MW Guiding Principles (S3)
- Background to Bulk Infrastructure Backlogs (S4)
- New Bulk Water Supply Capital Expenditure Projects (S5)
- Alignment of MW's Response to the 12 Government Outcomes (S6-S9)
- Current Situation – Vaalkop Area of Supply (S10-S15)
- Current Situation – Roodeplaat Development Area (S16-S18)
- Current Situation – Cullinan & Klipdrift Areas of Supply (S19-S24)
- MW Total Water Demand Projections (S25-S26)
- Raw Water Applications (S27)
- Major Capex Programme & Estimated Backlog Eradication (S28-S29)
- Joint Macro Planning & Prompt Conditions (S30-S31)
- Contribution to Community Development - CSI Programme (S32)
- Way forward (S33)
- Klipvoor Scheme Implementation Task Team (S34)

Magalies Water Guiding Principles

- Government committed all spheres to five priority areas;
 - Education, health, rural development and land reform, creating decent jobs and fighting crime
- Government's current **key focus** of work until 2014
 - Job creation
 - Infrastructure development
 - Infrastructure Operations and Maintenance
- **CoGTA strategy and state of Local Government in South Africa**
 - Backlogs
- Magalies Water as strategic partner will contribute significantly to national infrastructure expansion programmes as well as to strengthen O&M in terms of efficient service delivery – and is geared to implement on Government's delivery agenda

Background to Bulk Infrastructure Backlogs

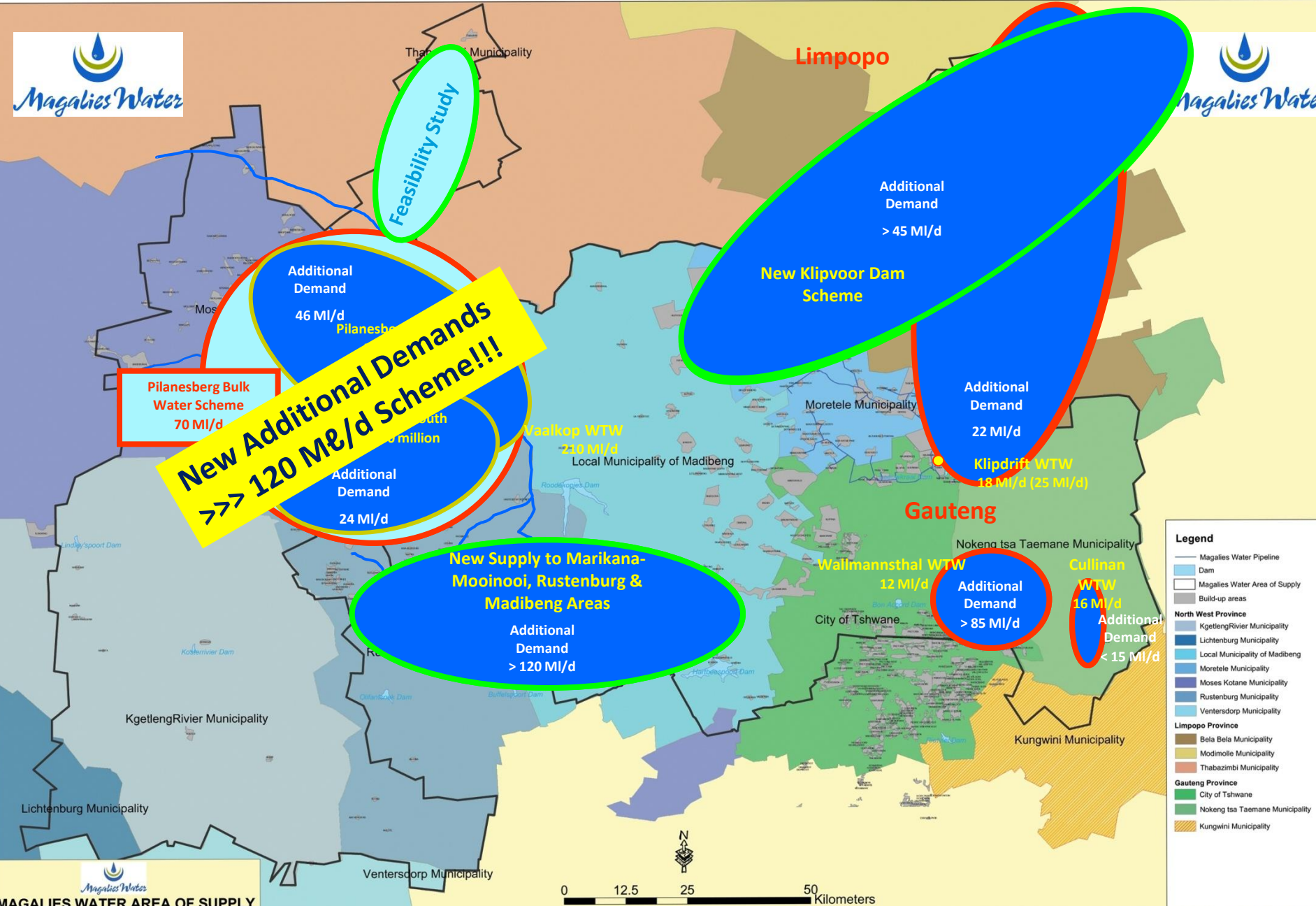
All Development Areas:

- Unavailability of sufficient bulk water (& infrastructure) to supply in demand
 - Delayed / restricted development over past more than 10 years
- Limitations on macro area planning (IDP, SDF, WSDP, etc.)
- Limitations on Capital Funds (both MW & WSA's)
 - adversely effect bulk infrastructure development & implementation
- Increased capital funding requirements must be defined & sourced in time

- Development needs & -dynamics require SDF's & IDP's to be reviewed timeously
- SDF's, IDP's & WSDP's to be updated & availed to DWA & WB's on approval
- New development scenarios affects current demand projections
(to be reviewed & included in infrastr. planning models & WSDP's)

New Bulk Water Supply Capital Expenditure Projects - Response to challenges

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New Additional Demands >>> 120 M€ /d Scheme!!!

- Legend**
- Magalies Water Pipeline
 - Dam
 - Magalies Water Area of Supply
 - Build-up areas
- North West Province**
- KgetengRivier Municipality
 - Lichtenburg Municipality
 - Local Municipality of Madibeng
 - Moretele Municipality
 - Moses Kotane Municipality
 - Rustenburg Municipality
 - Ventersdorp Municipality
- Limpopo Province**
- Bela Bela Municipality
 - Modimolle Municipality
 - Thabazimbi Municipality
- Gauteng Province**
- City of Tshwane
 - Nokeng tsa Taemane Municipality
 - Kungwini Municipality



Alignment of Magalies Water Response to the 12 Government Outcomes

- MW aligned its Business strategy to the strategic outcomes of Government



Magalies Water

Outcomes and Deliverables

Outcome 6

Infrastructure



**Pilanesberg Bulk Water Scheme:
35 Ml Tuschenkomst Reservoir**

Magalies Water's deliverables

- Currently implementing a R1.3 billion Bulk Water Supply Infrastructure Investment (Pilanesberg Water Scheme) to augment and address sustainability of bulk water supply (support water for growth, development and job creation)

Madibeng LM (DWA - RBIG Project):

- Emergency intervention in terms of water quantity and quality improvement
- Feasibility Study & Master Planning
- Conclude Implementation Ready Study/ies
- First 20 MI Water Treatment Works Expansion
- Confirmation of further bulk infrastructure augmentation requirements

Kgetleng Rivier LM (O&M Support – 5 year contr)
+ Intervention on water & bulk sanitation (RBIG)

Status Quo in the Bojanala District

Local municipality	Total number of households	Backlog -Water supply ((Number of Households)		
		Below RDP	On RDP (200m)	Above RDP
Madibeng LM	100165	17662	17007	65496
Moretele LM	65196	22244	40151	2801
Moses Kotane LM	83236	11828	48625	22783
Kgetleng Rivier LM	10703	2812	0	7891
Rustenburg LM	103149	5781	9724	87644
TOTAL	362449	60327	115507	186615

Source: Bojanala Water & Sanitation Backlog study, 2008

Status Quo Continue:

Local municipality	Total number of households	Backlog – Sanitation (Number of Households)		
		Below RDP	RDP VIP Toilets	Above RDP
Madibeng LM	100165	40428	9572	50000
Moretele LM	65196	56815	7948	433
Moses Kotane LM	83236	74237	3012	5987
Kgetleng Rivier LM	10703	2037	0	8666
Rustenburg LM	103149	52960	5630	44559
TOTAL	362449	226477	26162	109645

Source: Bojanala Water & Sanitation Backlog study, 2008

Similar Backlog Statuses exist in LM's within the Waterberg and other Districts



CURRENT SITUATION

(Focus on Vaalkop System only)



Magalies Water's started to implement the Pilanesberg Scheme from its Vaalkop WTW to supply bulk water for **domestic** and **industrial** use to urban, rural and industrial (mainly mining) consumers in Moses Kotane, Thabazimbi & Rustenburg LM's jointly with 4 new mines.

- Section B of Pilanesberg North Scheme (R190 million) completed & operational

- **Delayed implementation (global economic downturn & pending statutory approvals) resulted in further growth in demand for industrial and domestic use - to be supplied through an increased Pilanesberg bulk Water supply Scheme with additional phases of bulk infrastructure requirements, and further benefit of scale advantages.**

- Increased Scheme capacity >120 Mℓ/d required for implementation.

- Magalies Water is now proceeding with implementation of upgrades at Vaalkop WTW - Own Capital

- Mines will proceed with implementation of further phases of bulk infrastructure requirements

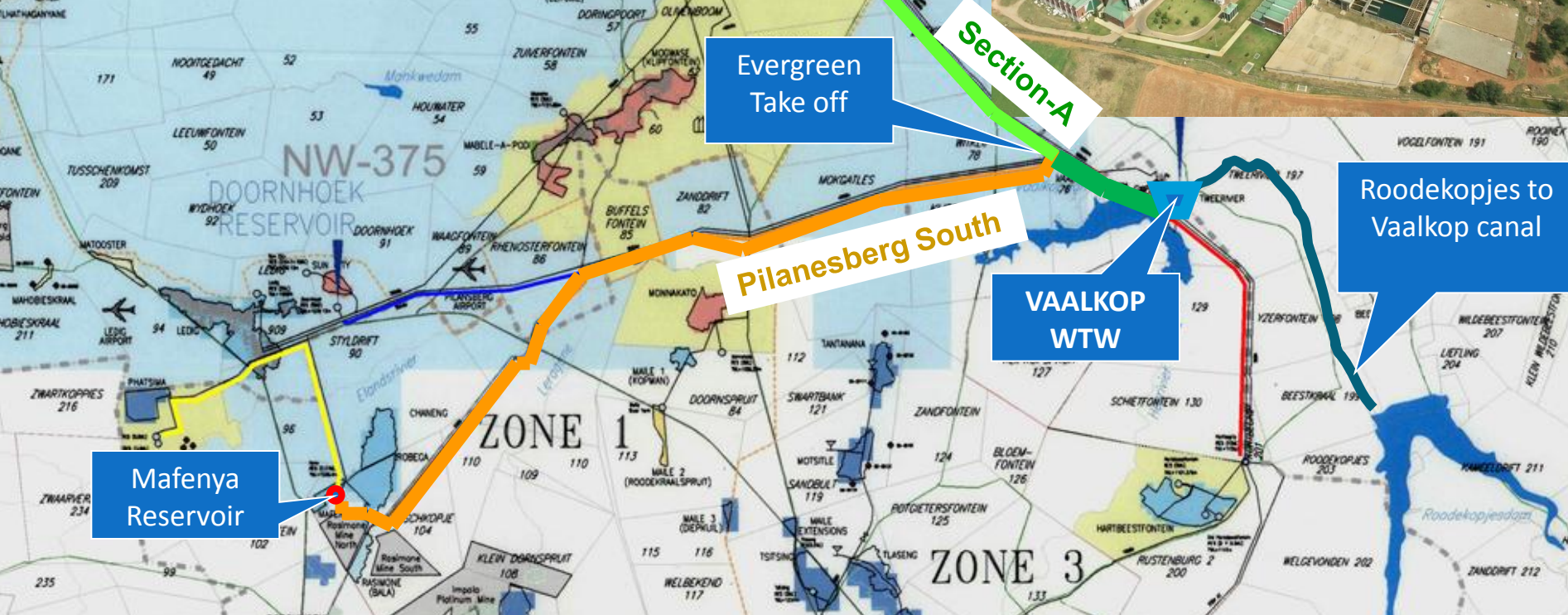
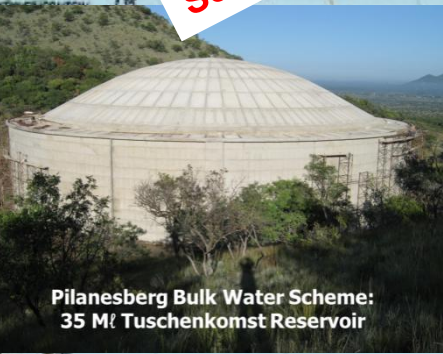
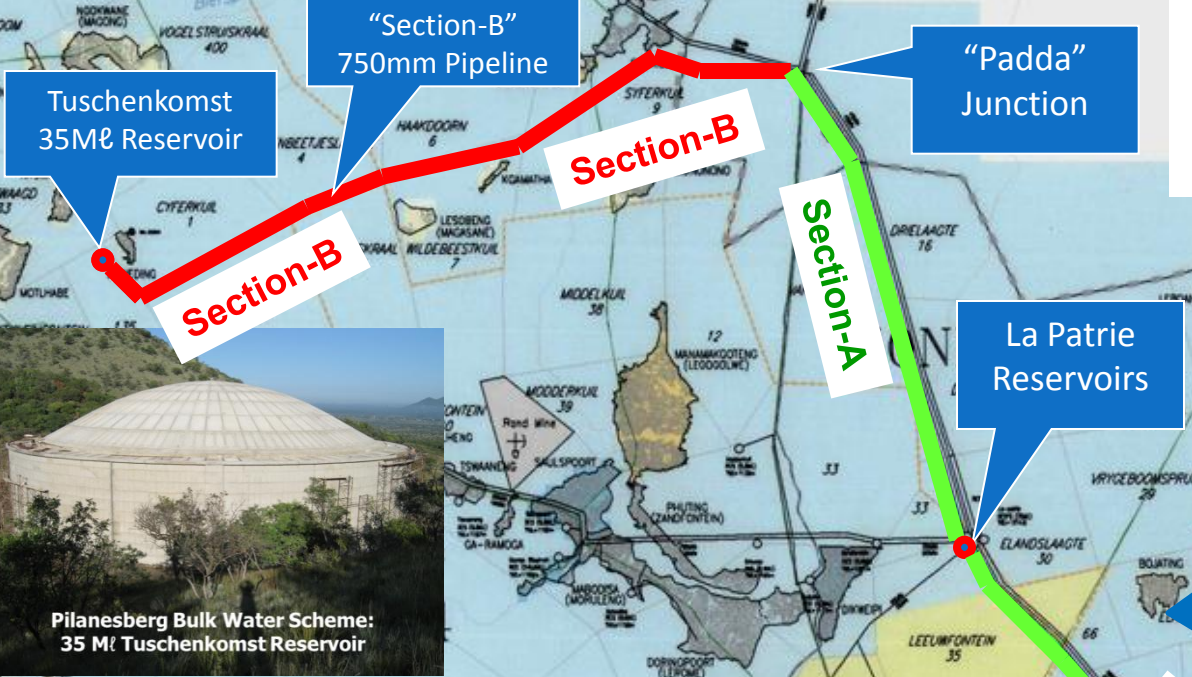
- Magalies Water is sourcing balance of funding requirements on behalf of LM's (domestic component) - RBIG, Borrowings, etc.

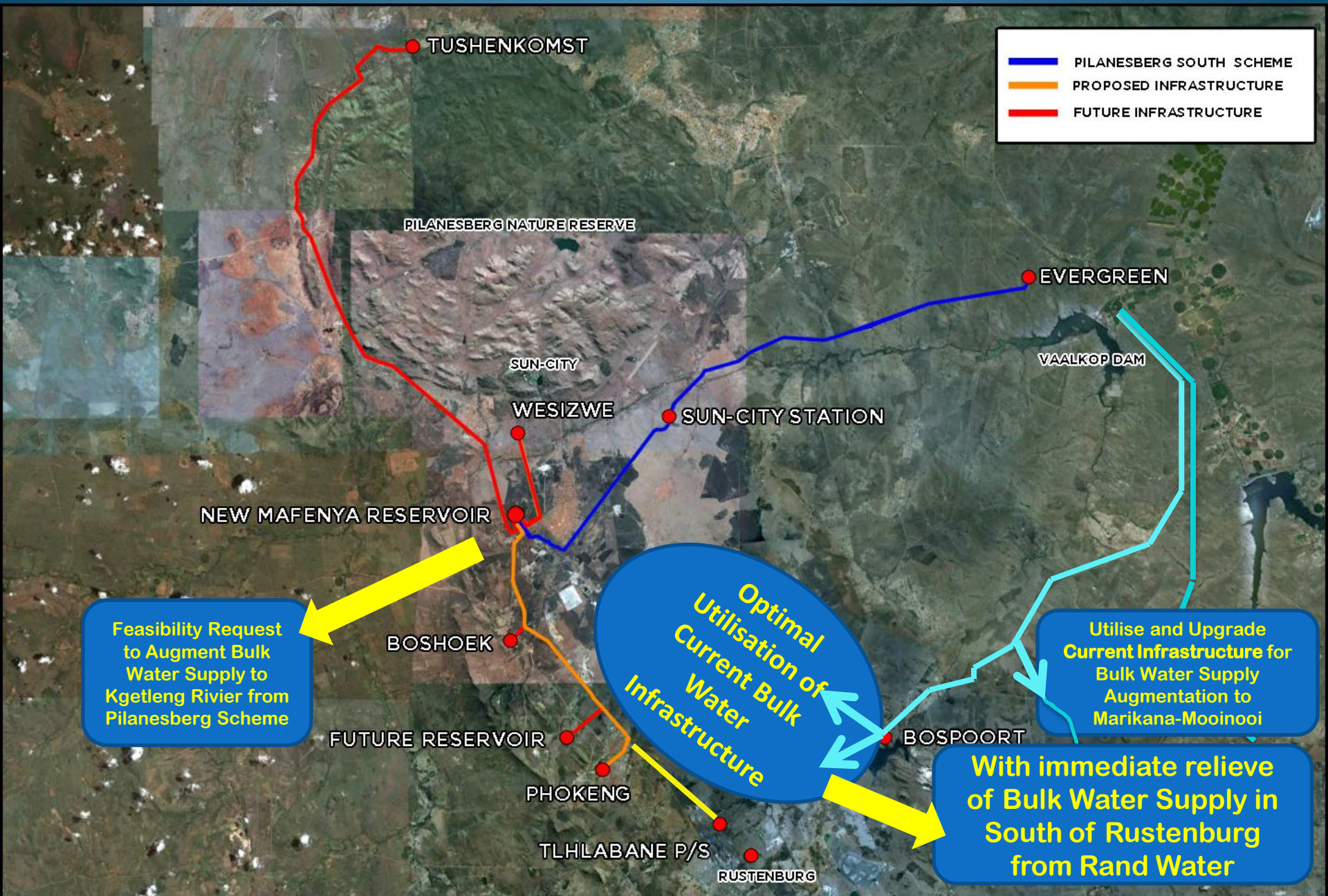
Current Situation

Vaalkop Area of Supply:

- Vaalkop WTW capacity: 210 ML/d
- Current demand / consumption = supply capacity (in peak demand periods)
- Pilanesberg Bulk Water Scheme will add 60 MI/d (NOW >120 MI/d) treatment capacity and will increase distribution capacity with 70 MI/d (NOW 140 MI/d)
- Total scheme cost R1.3 billion (NOW R1.8 b)
 - (52% Industrial consumers & 48% Domestic component)
 - (26% Industrial consumers & 74% Domestic component)
- Joint implementation / funding of Scheme by MW (for 3 LM's) and 4 mines
- One of the mines completed a new 30 km pipeline (750mm) and 35 MI reservoir at Tuschenkomst to the value of R190M (balance of scheme implementation delayed mainly due to global economic down turn and funding & institutional arrangements)
- This scheme will support mining development as well as mining related domestic development and stabilise and support backlog domestic supply to the region (mainly rural)

LAY-OUT OF EXISTING & PROPOSED NEW INFRASTRUCTURE





- █ PILANESBERG SOUTH SCHEME
- █ PROPOSED INFRASTRUCTURE
- █ FUTURE INFRASTRUCTURE

Optimal Utilisation of Current Bulk Infrastructure

Feasibility Request to Augment Bulk Water Supply to Kgetleng Rivier from Pilanesberg Scheme

Utilise and Upgrade Current Infrastructure for Bulk Water Supply Augmentation to Marikana-Mooinooi

With immediate relieve of Bulk Water Supply in South of Rustenburg from Rand Water

2007/8

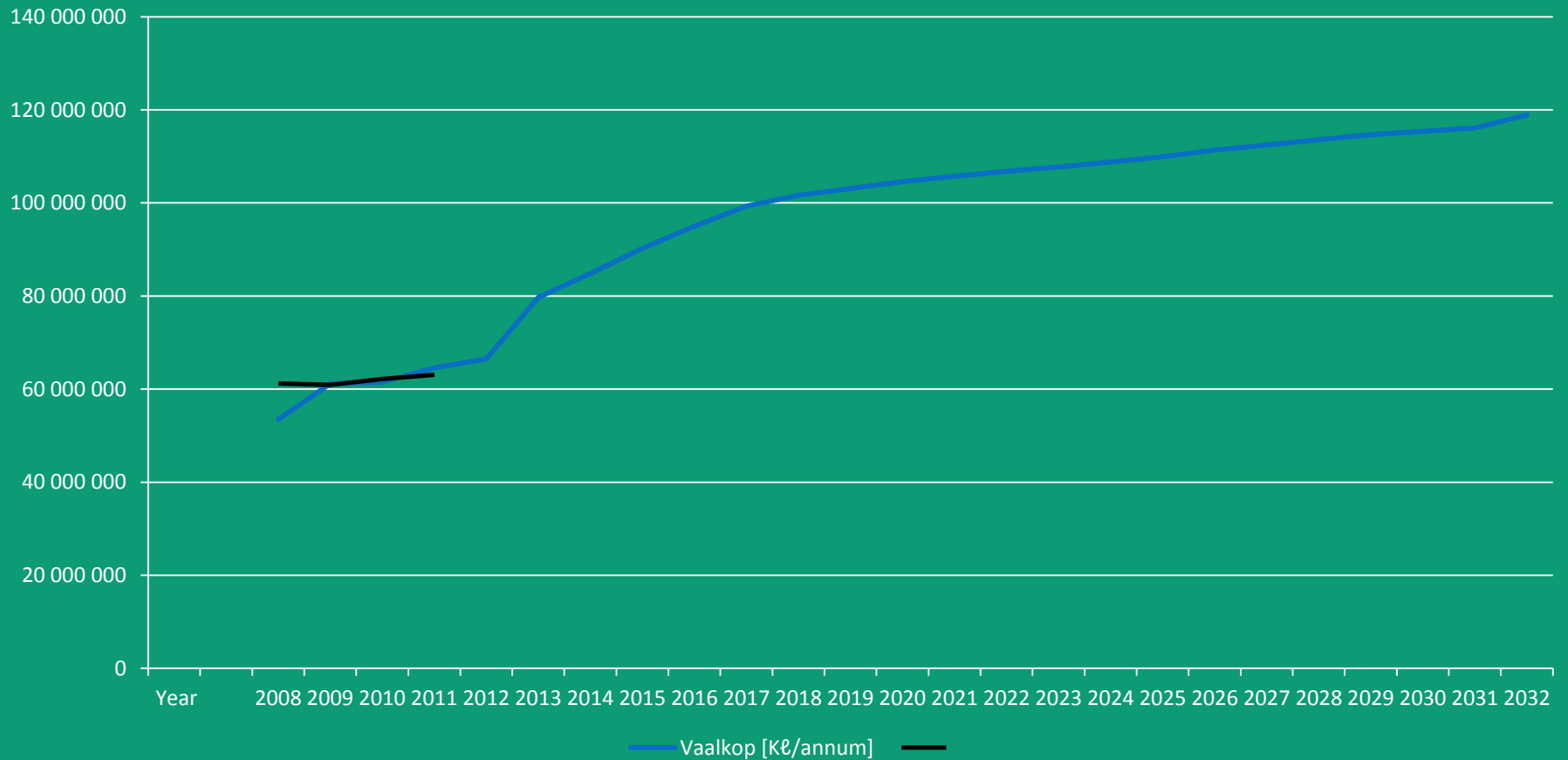
2012

Design Capacity	70 Mℓ/day	100 Mℓ/day	120 Mℓ/day	150 Mℓ/day
Capital Cost	R1 309 Million (escalated)	R1 495 Million (estimated)	R1 630 Million (estimated)	R1 800 Million (estimated)
Unit Capital Cost	R18-61/kℓ	R14-95/kℓ	R13-59/kℓ	R12-00/kℓ
Current O&M Cost	R3-20/kℓ (excl. capital)	R3-20/kℓ (excl. capital)	R3-20/kℓ (excl. capital)	R3-20/kℓ (excl. capital)

- 💧 MW as DWA's licensed bulk water service provider must implement **WDM & conservation measures** and **regulating actions** accordingly and is consistently encouraging all consumers to this effect
- 💧 **Magalies Water will ensure most economic product to end consumer!**

Demand Projections

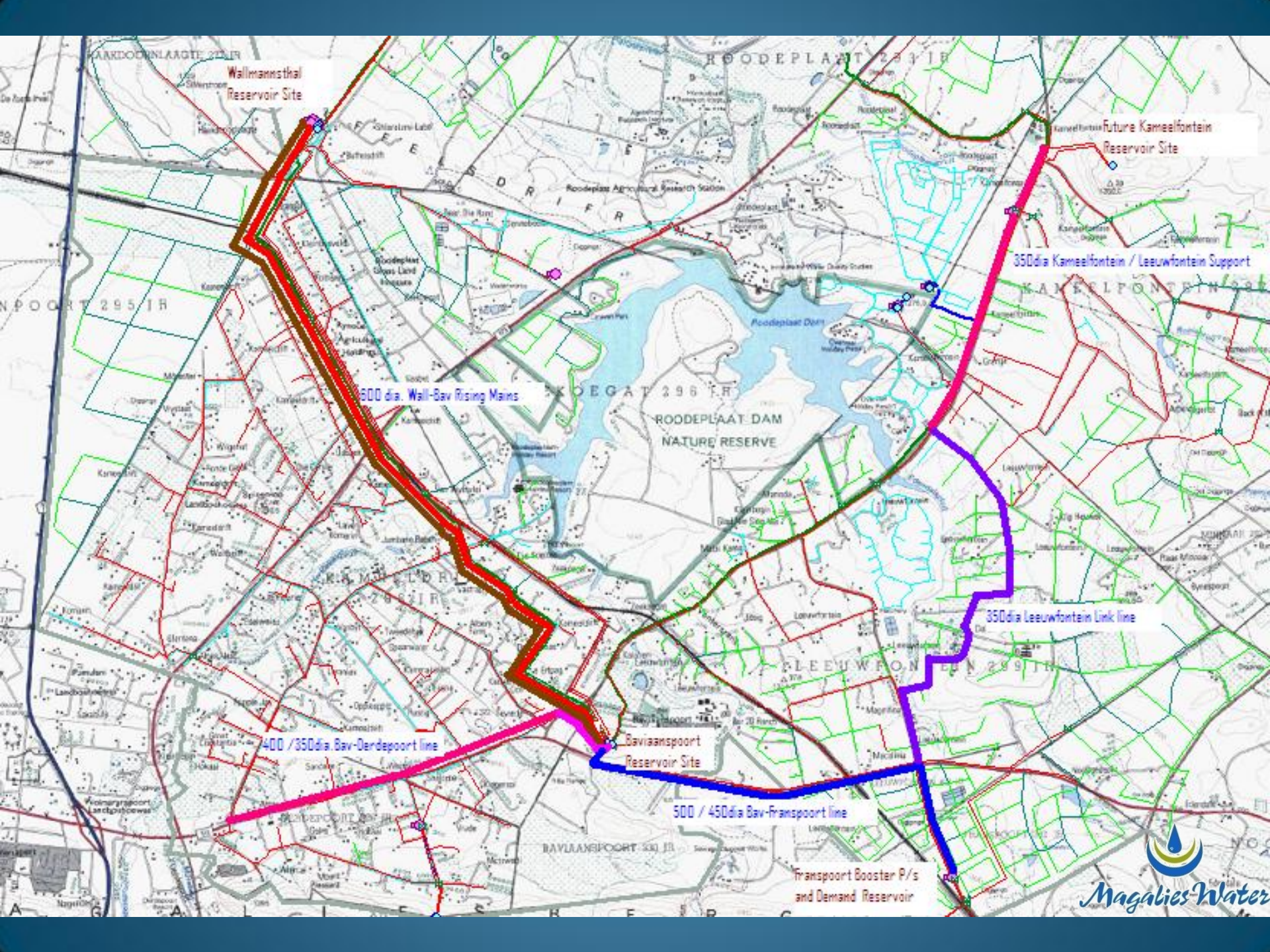
Vaalkop Water Demand Projections



Current Situation

Roodeplaas Development Area:

- Wallmannstal WTW capacity: 12 ML/d
- Current demand / consumption > supply capacity
- Add 10 ML/d from CoT's Roodeplaas WTW to increase supply capacity to 22 ML/d
- Short to medium term demand > 85 ML/d
- MW completed the completed first phases of bulk infrastructure upgrades
- Former Nokeng Tsa Taemane area now incorporated in City of Tshwane
- Magalies Water confirmed its position of Bulk Supplier with CoT
- Magalies Water will now continue with next phases of bulk infrastructure upgrades



Wallmannsthal Reservoir Site

Future Kameelfontein Reservoir Site

600 dia. Wall-Bav rising Mains

350 dia Kameelfontein / Leeuwfontein Support

400 / 350 dia. Bav-Derdepoot line

Bavianspoort Reservoir Site

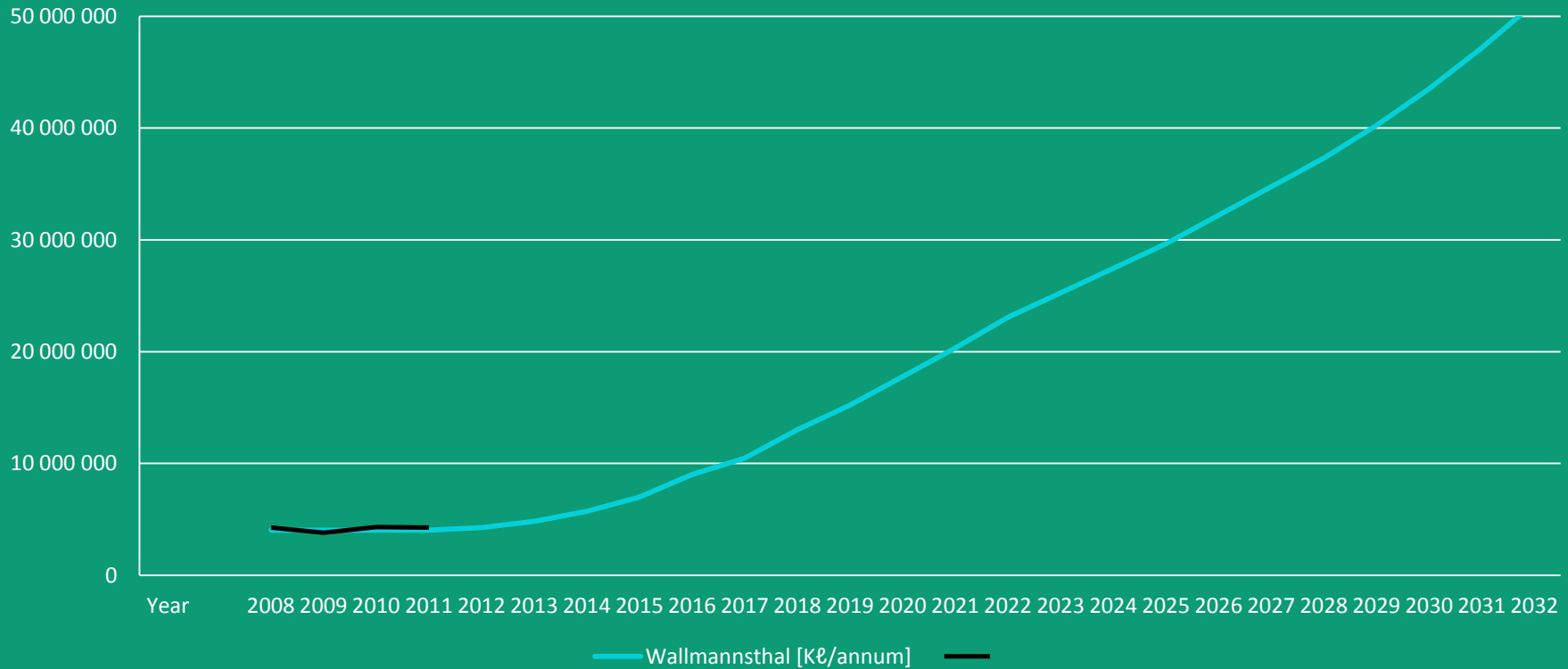
350 dia Leeuwfontein Link line

500 / 450 dia Bav-Transpoort line

Transpoort Booster P/s and Demand Reservoir

Demand Projections

Wallmannsthal Water Demand Projections



Note: Above projections not based on new SDF (CTMM) requirements!

Current Situation

Cullinan Area of Supply:

- Cullinan WTW capacity: 16 MI/d
- Current demand / consumption < supply capacity
- MW will upgrade the Rayton / Zonderwater pumpstation

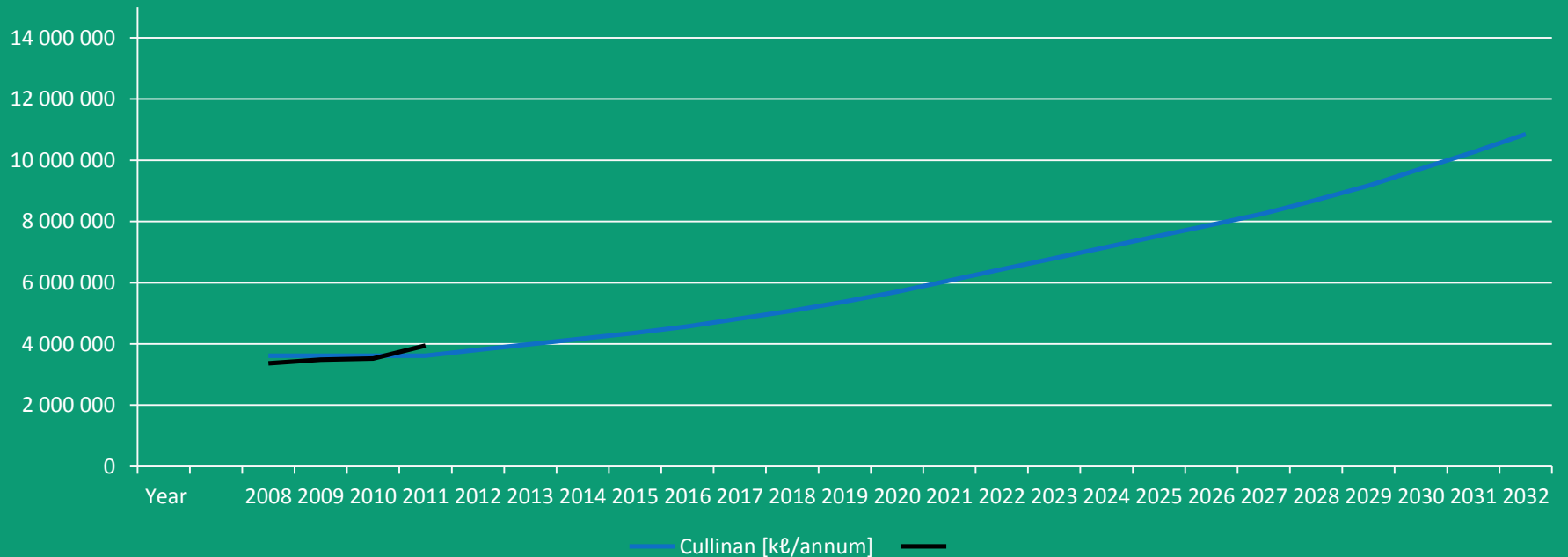
Klipdrift Area of Supply:

- Klipdrift WTW capacity: 18 MI/d
- Current demand / consumption > supply capacity
- MW currently upgrading Klipdrift to 36 MI/d
- CoT requested MW to supply Moretele LM directly from Klipdrift WTW
- MW confirmed with Crocodile West Team and DWA that current supply to Moretele plus augmentation to Moretele , Bela Bela, Modimolle & Mookgophong should be combination of Klipdrift and new Klipvoor Scheme
- It was also confirmed that there would be no negative effect to previous supply scenarios as same demands were modelled from Temba & Klipdrift



Demand Projections

Cullinan Water Demand Projections



2005/2006



2009/2010



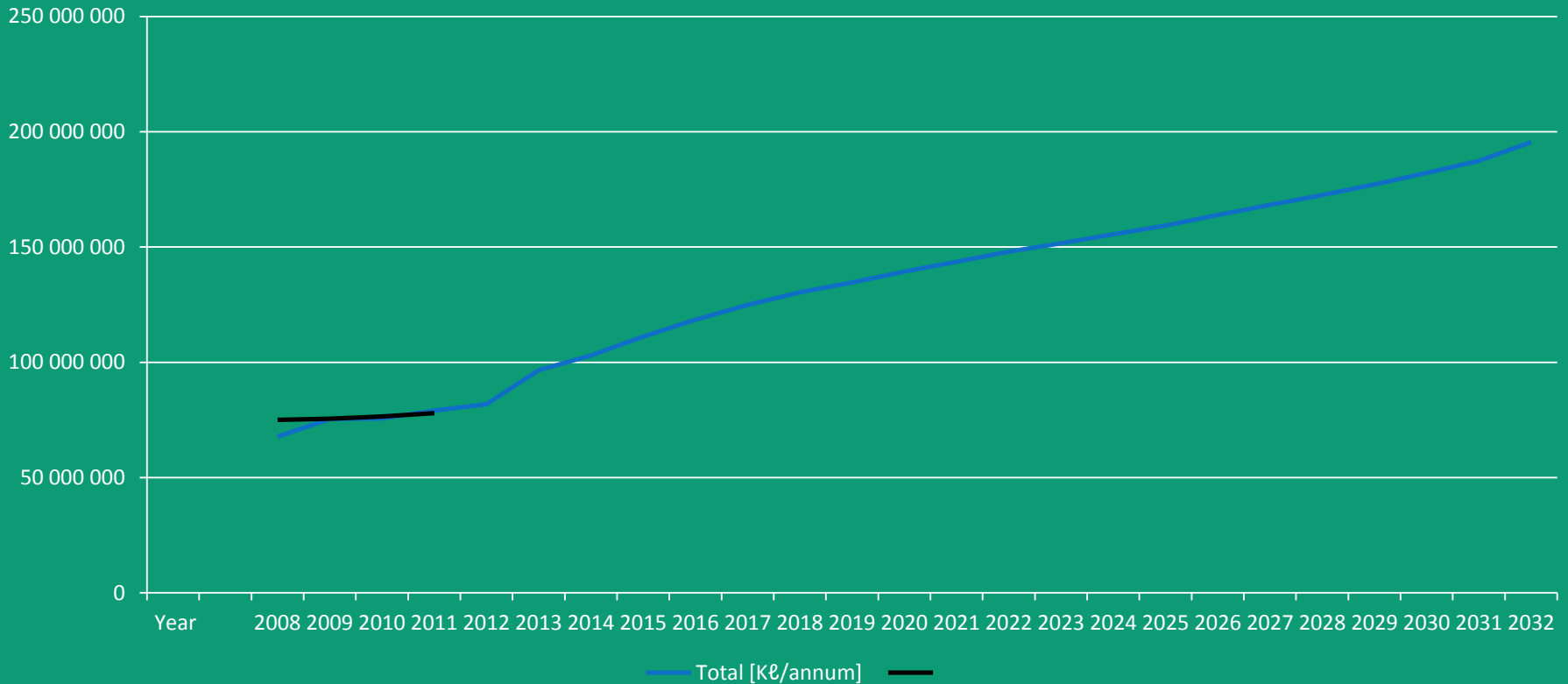
Demand Projections

Klipdrift Water Demand Projections



Magalies Water Total Demand Projections

Magalies Water Total Water Demand Projections



Note: These figures excludes the New Klipvoor Scheme
and Bulk water supply to Marikana-Mooinooi area



Capacity Utilization

Name	% Utilization	Design Capacity (MI/day)
• Vaalkop	90	210
• Klipdrift	>122	18
• Wallmannsthal	100	12
• Cullinan	82	14

Raw Water Applications



Additional raw water licenses applied for with DWA:

Plant	Current Capacity (Current License)	License applied for	Total Capacity (if approved)
Vaalkop	210 MI/d (180 MI/d)	70 MI/d APPROVED	270 MI/d APPROVED
Wallmannsthal	12 MI/d + 10 MI/d (12 MI/d)	> 30 MI/d	> 42 MI/d + 10 MI/d
Klipdrift	18 MI/d (20 MI/d)	16 MI/d	36 MI/d
Cullinan	16 MI/d (14.7 MI/d)	7.7 MI/d	22.4 MI/d
New Klipvoor Scheme	NEW	45 MI/d	45 MI/d

WSDP's, IDP's & SDF's only recently obtained from WSA's.

Detailed application reports are currently prepared & to be submitted to DWA upon completion

MAJOR CAPEX PROGRAM



Department / Plant	Description	GRAND TOTAL	FUNDING SOURCE					Expexted Starting Date	Expected Completion Date
			MINES	DPW	MW Funds	Financing & Borrowings	Grant Funding (RBIG)		
HEAD OFFICE	Strategic Asset Assessment and Planning	-			-				
	Capital Project Implementation Programme	17 502 000			17 502 000			July 2012	Ongoing
VAALKOP	Pipeline refurb section and repair.	2 314 000			2 314 000			January 2013	July 2014
	Upgrade Kortbegrip/Bethanie Pipeline	28 050 000				28 050 000		June 2013	July 2016
	Air Valve Replacement & Chamber Sheltering	1 010 000			1 010 000			January 2013	June 2014
	Pilansberg Northern System:	982 460 000	336 360 000	-	114 100 000	532 000 000	?	July 2012	July 2015
	- Bulk Power Supply Upgrade from Eskom	131 000 000			10 000 000	121 000 000		October 2012	December 2015
	- Power Supply for Increased Capacity at Pump St.	14 000 000			14 000 000			January 2013	July 2014
	- Existing Infrastructure Capacity Improvement	1 100 000			1 100 000			February 2013	January 2014
	- Increased Capacity at WTW (30 Ml/d Plant 3 ext)	58 000 000	34 000 000		24 000 000			July 2012	December 2013
	- Increased Capacity at WTW (30 Ml/d Plant 4 new)	139 000 000				139 000 000		July 2012	October 2015
	- Increased Capacity at Pumpstation	80 000 000			65 000 000	15 000 000		July 2012	Dec2013 & Jul'15
	- Rising Main from Vaalkop to Evergreen	85 000 000				85 000 000		September 2012	December 2013
	- Rising Main from Evergreen to La Patrie	110 000 000				110 000 000		September 2012	April 2014
	- Reservoir at La Patrie	30 000 000				30 000 000		October 2012	June 2014
	- Gravity Main from La Patrie to Padda	122 000 000	122 000 000					September 2012	April 2014
	- Project Management & Professional Fees	149 000 000	149 000 000					July 2012	June 2015
	- Acquisition of Servitudes	18 360 000	18 360 000					2013/2014	June 2015
	- Gravity Main from Padda to Tuschenkomst	Completed	Completed					Completed	Commissioned
	- 35 Ml Terminal Reservoir at Tuschenkomst	Completed	Completed					Completed	Commissioned
	- Supply Lines from Reservoir To Metering Points	13 000 000	13 000 000					2013/2014	June 2014
	- Incremental Capacity Increase of New Pipelines	32 000 000				32 000 000		September 2012	June 2014
	Pilansberg Southern System:	541 840 000	210 840 000	-	0	331 000 000	?	July 2012	July 2015
	- Existing Pipeline Capacity Improvement	1 590 000	1 590 000					February 2013	June 2014
	- Gravity Main from Evergreen to Sun City Station	296 000 000				296 000 000		2013/2014	July 2015
	- Gravity Main from Sun City Station to Mafenya	141 000 000	141 000 000					July 2012	December 2013
	- Reservoir at Mafenya	70 000 000	35 000 000			35 000 000		July 2012	October 2015
	- Acquisition of Servitudes	9 000 000	9 000 000					2013/2014	June 2015
	- Incremental Capacity Increase of New Pipelines	24 250 000	24 250 000					2013/2014	June 2015
WALLMANNSTHAL	Wallmannsthal System Upgrade	36 350 050				36 350 050		June 2013	May 2015
	25ML Reservoir	37 500 050			37 500 050			November 2012	April 2015
	Baviaanspoort Pumping System:								
	- Wallmannsthal-Baviaanspoort P/S & Rising Main	27 130 051			27 130 051			November 2012	August 2014
	- Existing Pipeline Capacity Improvement	920 000			920 000			January 2013	June 2013
	Zeekoegat Pipeline Upgrade (SAPS-Dog School)	15 320 000		15 320 000				July 2012	April 2014
	Office Building Upgrade	3 000 000				3 000 000		2014/2015	June 2015
KLIPDRIFT	Klipdrift Upgrade	12 000 000			12 000 000			August 2012	June 2014
	10ML Reservoir	14 650 000			14 650 000			August 2012	May 2014
	Steve Bikoville Pumping System (To Reservoir)	12 550 000			12 550 000			August 2012	February 2014
	Extension of plant	41 450 050			41 450 050			August 2012	April 2015
CULLINAN	Pipeline Capacity Improvement	990 000			990 000			October 2012	May 2013
	Upgrading of Zonderwater Pumpstation	1 685 000			1 685 000			October 2012	June 2013
	Pipeline Capacity Improvement	600 000			600 000			October 2012	April 2013
GRAND TOTAL		1 777 321 201	547 200 000	15 320 000	284 401 151	930 400 050	?		
	Magalies Water Funds				284 401 151				
	Public Works Funds			15 320 000					
	Mines Funds		547 200 000						
	Required Financing / Borrowings								

Pilansberg North Scheme Components

Pilansberg South Scheme Components

Estimated Backlog Eradication

DEPARTMENT/PLANT	Description	New / Existing CAPACITY	Estimated Backlog Eradication		
			Demand [M&d]		
			Additional	Backlog	% Backlog
VAALKOP	Pipeline refurb section and repair.	Sustain Existing			
	Upgrade Kortbegrip/Bethanie Pipeline	New Capacity	?		>80%
	Air Valve Replacement & Chamber Sheltering	Sustain Existing			
	Infrastructure Condition & Capacity Assessment	Sustain Existing			
	La Patrie Reservoir	New Capacity			
	Pilansberg Northern Scheme	New Capacity			
	Pilansberg Southern Scheme	New Capacity			
Incremental increase in Capacity of Pipelines	Future Additional	33.8 Domestic 36.2 Industrial 70 total	>20 Domestic 36.2 Industrial > 56 Total	>60% Domestic 100% Industrial 80% Total Bulk	
WALLMANNSTHAL	Wallmannsthal System Upgrade	New Capacity			
	25ML Reservoir	New Capacity	>30 Domestic	<10 Domestic >50 Total Bulk	<30% Domestic >200% Total Bulk
	Baviaanspoort Pumping System	New Capacity			
	Zeekoegat Pipeline Upgrade (SAPS-Dog Scho)	New Capacity	2	New facility	small
	Office Building Upgrade				
	Infrastructure Condition & Capacity Assessment	Sustain Existing			
KLIPDRIFT	Klipdrift Upgrade	New Capacity			
	10ML Reservoir	New Capacity			
	Steve Bikoville Reservoir	New Capacity	6 Domestic	>12 Domestic 6 Sustainability	200%
	Extension of Plant	New Capacity			
	Infrastructure Condition & Capacity Assessment	Sustain Existing			
CULLINAN	Upgrading of Zonderwater Pumpstation	New Capacity	2	1	50%
	Infrastructure Condition & Capacity Assessment	Sustain Existing			

Joint Macro Planning

- Development dynamics urged & resulted in joint macro planning & strategic coordination with WSA's, DM's & DWA
- New demand projections & infrastructure development requirements must be reflected in the respective WSDP's
 - MW currently coordinates these requirements with Thabazimbi LM, Moses Kotane LM, Rustenburg LM and RBA, Modimolle & Bela Bela and Moretele LM's
 - MW also negotiates funding approvals and grants (RBIG) with DWA & National Treasury (domestic & social components of the schemes)
- More focused water resources planning required
 - especially for the Roodeplaat & Klipdrift areas
 - MW currently coordinates with DWA Regional & National (limited local resources should be optimally resourced before more costly raw water augmentation schemes are considered)
- Optimal utilisation of existing bulk infrastructure is essential before new infrastructure is implemented

Prompt Conditions

- Prompt license approval is crucial, in order to supply in the growing demand of the area
- Capital funding requirements to be resourced timeously to implement supporting infrastructure in time
- Water Boards should apply for Grant Funding (e.g. RBIG) on behalf of WSA's to implement bulk water infrastructure projects
(DWA's current approach)
- EIA processes should be accelerated and not allowed to unnecessarily delay infrastructure project implementation
- Joint macro planning between MW & WSA's must continue
- Magalies Water will continue to partake in DWA's water resources planning and water resource management activities

Contribution to Community Development

Corporate Social Investment

- Magalies Water is proud of the fact that it has been a responsible corporate citizen in the District for more than 40 years. Since 1969, Magalies Water's corporate head office, operational divisions and employees have steadily committed their innovative spirit, resources and time to charitable causes and community efforts.
- Magalies Water is dedicated to being even more responsive to community needs, primarily in areas where it has facilities, by fostering partnerships with social and community based institutions, funding special programmes, and encouraging further employee involvement in these cases

Way Forward

- MW ready to support on Water Conservation and Demand Management interventions
- MW will confirm optimum bulk water infrastructure requirements to ensure most economical bulk water supply to all
- DWA, Bojanala, Waterberg and WSA's to support MW in pursuit of the optimum regional bulk water supply initiatives:
 - Pilanesberg Water Scheme
 - **New Klipvoor Bulk Water Supply Scheme**
 - Implementation Task Team to be established
- MW will continue with Regional Macro-Planning on key projects and water services provision
- All to forge ahead on backlog eradication (bulk and retail)
- Joint Services coordination and cooperation on water and sanitation provision in the area of operation

Klipvoor Bulk Water Supply Scheme Implementation Task Team

- Proposed Task Team:
 - Magalies Water
 - DWA North West
 - DWA Limpopo
 - DWA Planning
 - Waterberg DM
 - Bojanala DM
 - Relevant LM's

THANK YOU