

	Item 4: Pur _l Work	shop
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	Agenda				
	1	WELCOME AND INTRODUCTION OF MEMBERS	T. Nditwani		
	2	ATTENDANCE AND APOLOGIES	T. Nditwani		
	3	ACCEPTANCE OF AGENDA	T. Nditwani		
	4	PURPOSE OF WORKSHOP	T. Nditwani		
	5	ROLE OF THE STRATGIES STEERING COMMITTEE	T. Nditwani		
The Barre	6	BACKGROUND OF THE STUDY	T. Nditwani		
KU 16 13	7	UPDATING OF PRIORITY STRATEGIES: METHODOLOGY	C Talanda		
Z CONTRACT	8	UPDATED PRIORITY STRATEGIES			
		Bojanala Platinum DM Ngaka Modiri Molema DM Dr. Ruth S. Mompati DM Dr. Kenneth Kaunda DM	L de Jager/ A Jeleni		
8	9	REMAINDER OF THE STUDY PROGRAMME – PHASE 1	M. Esterhuizen		
	10	WAY FORWARD	T. Nditwani		
Talle.	11	GENERAL	T. Nditwani		
to Te	12	DATE OF THE NEXT MEETING AND CLOSURE	T. Nditwani		
The Park I	13	LUNCH	ALL		
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Item 4: Purpose of the Workshop

- SSC Workshop No. 1 held in April 2013:
 - To introduce the study to all Stakeholders (SH)
 - To establish and define the role of the Strategies Steering Committee (SSC)
 - Facilitate cooperation and interaction with the SH's
 - To outline findings during the Inception Phase
 - To outline the scope of work, methodology, way forward and preliminary study programme
 - To obtain comments and input from SH's
 - To prioritise the strategies to be updated

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Item 4: Purpose of the Workshop

- Purpose of this SSC Workshop No. 2:
 - Present methodology for updating strategies
 - Present the updated reconciliation strategies that were prioritised in the SSC Workshop 1
 - Agree on the preferred development scenarios
 - Obtain comments and inputs from the SSC
 - Way forward

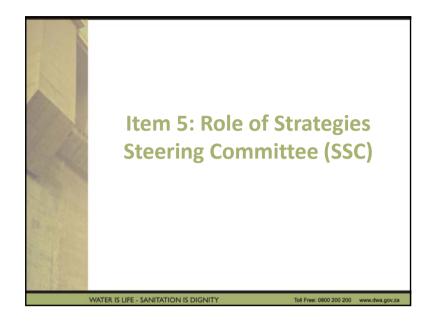
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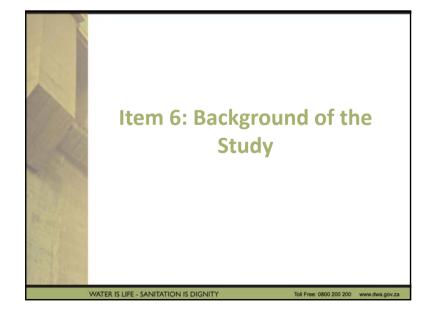
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Role of Strategies Steering Committee (SSC)

- SSC Terms of Reference (Information Pack)
- Provide executive guidance to the direction and outcomes of the study
- Provide supplementary information and input from a local and regional perspective
- Facilitate strategic linkages with other initiatives
- Disseminate information from study into the relevant organizations
- Incorporate strategies' recommendations into development plans such as WSDP's, IDP's, Implementation Readiness Studies (RBIG), License Applications etc.
- To facilitate the acceptance and sign-off of the updated Reconciliation Strategies

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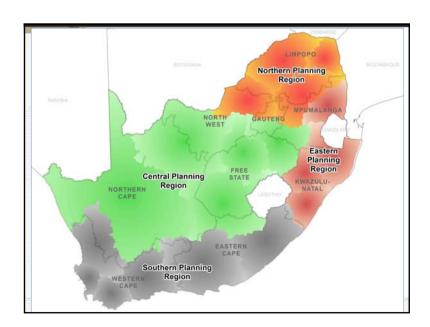


Background to This Assignment

- 2007: Development of Reconciliation Strategies for All Towns
- Key general messages from All Town Studies (2007-2011)
 - Improved management will solve largest portion of immediate problems
 - Minimal metering (limited water use records)
 - High per capita use in many towns pointing to WC/WDM potential
 - Groundwater remains a feasible source of water for many towns
 - Municipal infrastructure constraints rather than water resource availability limitations
 - Rudimentary strategies improvement required

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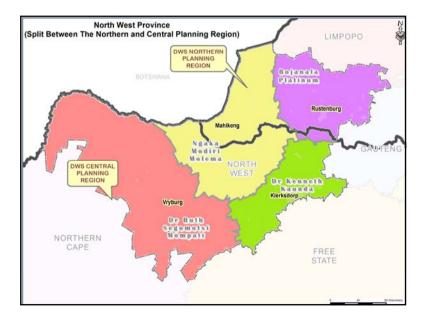
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Background to this Assignment

- 2012: Continuation of the DWS Planning Regions' All Town Reconciliation Strategies: Phase 1
 - Update and review priority strategies three year appointment (until 2015)

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Purpose of Study

- This assignment is the first review and updating of priority strategies
 - Budget constraints dictated that not all strategies can be reviewed and updated during this assignment
- On-going process even after these studies end
- Assist DWS and Water Services Authorities (WSAs) to:
 - Update and revise priority strategies
 - To remain technically relevant and sustainable
 - Reconcile water requirements and water resources (up to 2035)
 - Identify areas requiring comprehensive Recon Strategies

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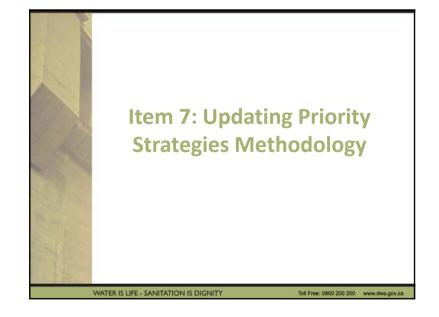
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Study Communication & Process All Towns SMT, Inception and Information on DWS Project **Prioritisation** Study Collection (Apr '13) (Inception: SSC 1 2012) Progress feedback, validation & scenario **Draft Strategies** (Priorities) (Jul '15) SSC 2 Approval of Technical Support and **All Towns** Strategies Final Updated Strategies **Strategies** & Sign Off Minutes, BID, Inception (2015)and Status Quo Reports

Purpose of Study cont.

- Assist DWS and WSAs (cont.) to:
 - Evaluation of interventions where shortfalls occur
 - Management and/or infrastructure
 - Align strategies with known development planning processes
 - Provide recommendations for the sustainable management of water resources
- Promote the use of strategies' information in local, provincial and national planning environments

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Prioritisation of Reconciliation Strategies

- Step 1: Identification of Category 4 strategies (towns currently in a water balance deficit)
- Step 2: Eliminate towns where solutions are in an advance stage of planning or implementation (RBIG projects)
- Step 3: Add towns where RBIG or other processes are in an early stage of planning and can still be influenced by strategy recommendations
- Step 4: Add any other hot spot areas identified on a national, provincial or local strategic level
- Step 5: Final selection was confirmed at Strategy Steering Committee Workshop 1

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Theoretical Water Requirements Population allocated to each Level of Service (LOS) category (Census 2011)

A	Category	Dwelling Type		Average Water Consumption (I/capita/day)	
	1		Flats	226	
	2		Clusters	255	
	3		Low Income	101	
	4	Single Residential	Medium Income	189	
	5		High Income	304	
ŝ	6		Very High Income	442	
	7	Informal	Below RDP Level	12	
	8		RDP Level	40	
	9		Above RDP Level	80	

- Assumed Losses: Water Treatment =10%, Distribution = 10% (DWS Guidelines)
- Indirect usage for established towns

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Updating Priority Reconciliation Strategies

- Detailed assessment of strategies according to the following themes:
- Demographics (Census 2011) & Economic Drivers, migration etc
- Water requirements (importance of metering)
- WC/WDM
- Infrastructure (RBIG Projects)
- Water resources
 - Surface water (DWS Studies)
 - Groundwater (desktop investigations)
- Water quality
- Linkages with Recon Strategies for Large Systems

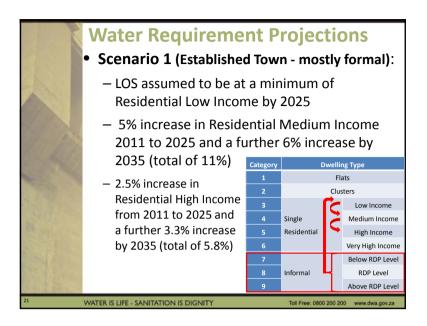
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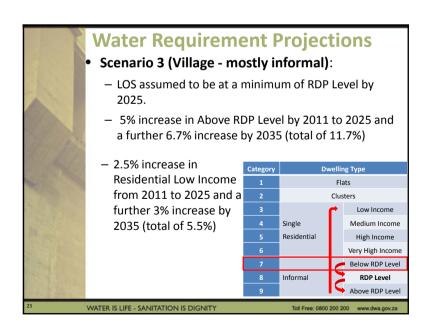
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Water Requirement Projections

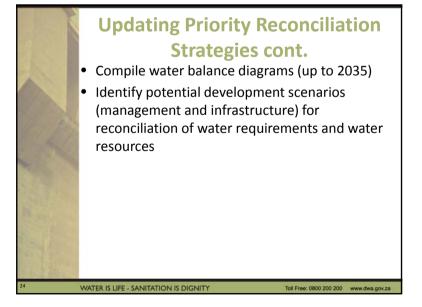
- Water Requirement projections derived
 - Unit consumptions calibrated according to actual use (theoretical values used where no info available)
 - Projected population per town (High Scenario)
 - Estimated timing and extent of upgrading of water services (selected scenario)

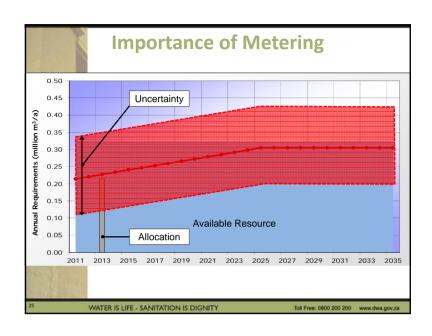
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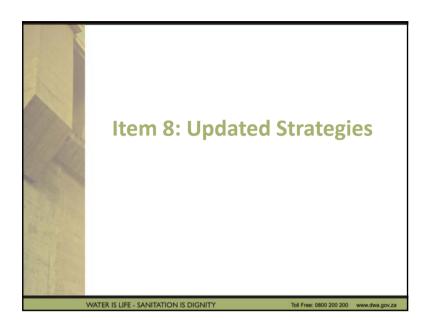


Water Requirement Projections Scenario 2 (Town/Village - formal and informal LOS): - LOS assumed to be at a minimum of Above RDP Level by 2025 - 5% increase in Residential Low Income 2011 to 2025 and a further 6% increase by 2035 (total of 11%) Category - 2.5% increase in Flats Residential Medium Clusters Income from 2011 to 2025 and a further Single 2.3% increase by 2035 Residential (total of 4.8%) Very High Income Below RDP Level Above RDP Level WATER IS LIFE - SANITATION IS DIGNITY

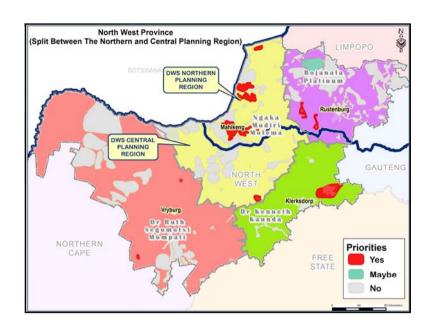




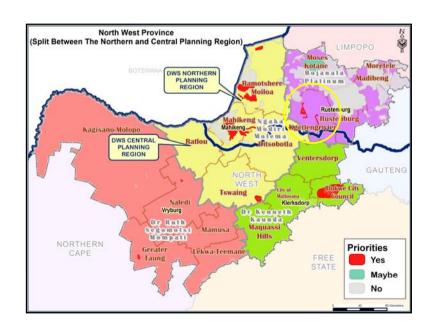


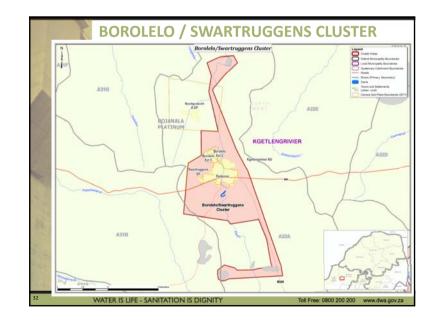


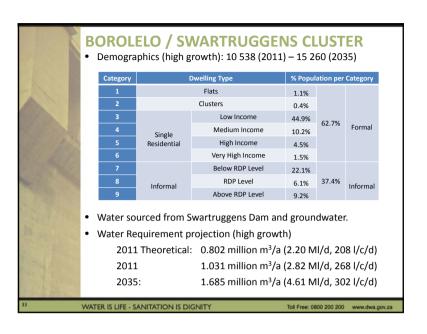
Strategies Addressed by DWS Crocodile West Recon Study			
District Municipality	Local Municipality	Strategy	
Bojanala Platinum	Rustenburg	Rustenburg Vaalkop BWS	
	Madibeng	Dikgophaneng and Fafung BWS	

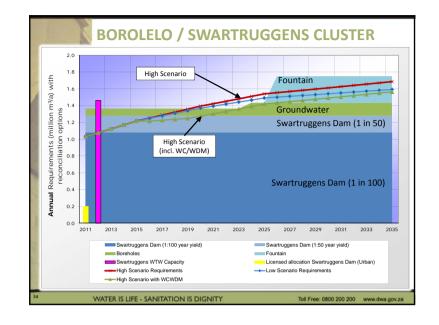




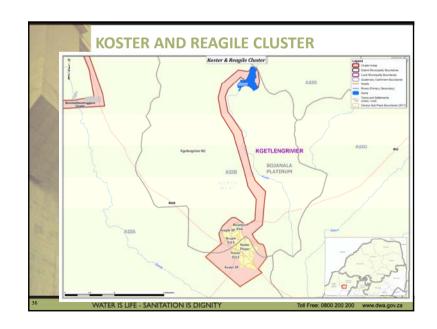








CONCLUSIONS AND RECOMMENDATIONS • Projected water requirements exceed available resources from 2019 (shortfall of 0.321 million m³/a (0.879 MI/d) by 2035). The following reconciliation measures are required: WSA to implement WC/WDM • Development of additional groundwater resources: 0.069 million m³/a (0.192 Ml/d) • Augmenting supply from fountain after confirming yield and supply infrastructure • Metering and monitoring of water use • Infrastructure assessment to deliver committed volume · Water use entitlements should be investigated and confirmed WATER IS LIFE - SANITATION IS DIGNITY Toll Free: 0800 200 200 www.dwa.gov.za



KOSTER AND REAGILE CLUSTER Demographics (high growth): 19 469 (2011) – 28 273 (2035) 0.9% 0.6% Low Income 43.4% Medium Income 9.8% Single High Income Residential 3.4% Very High Income 0.9% Below RDP Level RDP Level 7.2% Above RDP Level Water sourced from Koster Dam and groundwater • Water Requirement projection (high growth) • 2011 Theoretical: 1.475 million m³/a (4.04 Ml/d, 207 l/c/d) 2.041 million m³/a (5.59 MI/d, 287 I/c/d) • 2011:

3.109 million m³/a (8.51 MI/d, 301 I/c/d)

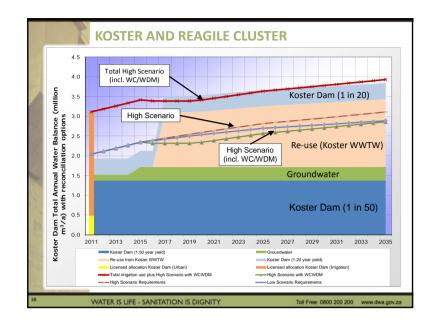
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• 2035:

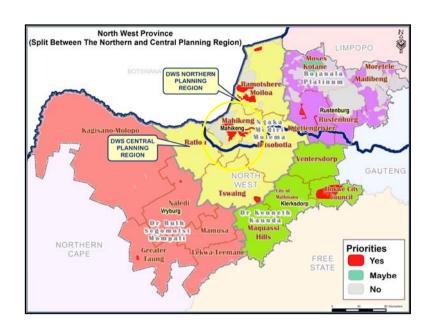
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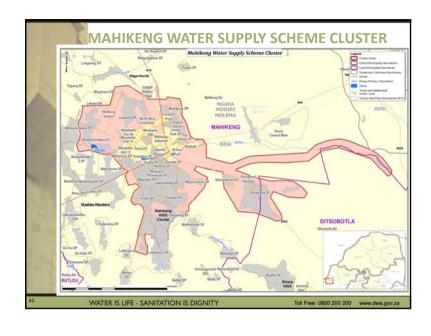
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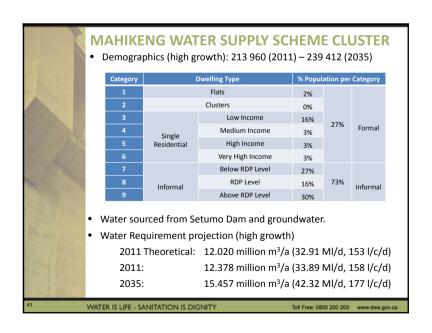


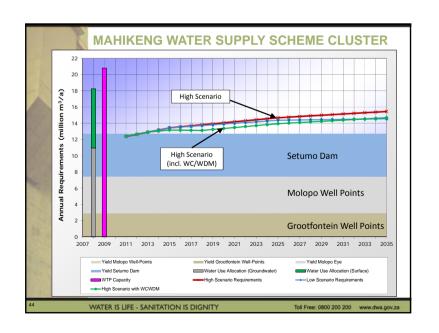
* Projected water requirements exceed available resources from 2012 (shortfall of 1.589 million m³/a (1.59 Ml/d) by 2035). The following reconciliation measures are required: * WSA to implement WC/WDM * Development of additional groundwater resources: 0.196 million m³/a (0.537 Ml/d) * WSA should undertake a feasibility study to confirm the viability of re-using treated effluent from the Koster WWTW (incorporate in RBIG IRS) * Metering and monitoring of water use * Infrastructure assessment to deliver committed volume * Water allocations should be aligned with the projected water requirements with WC/WDM measures included

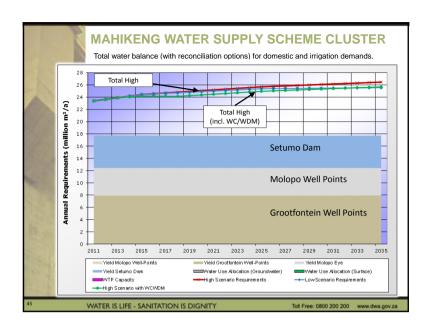


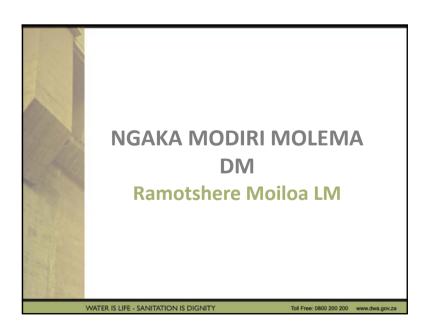




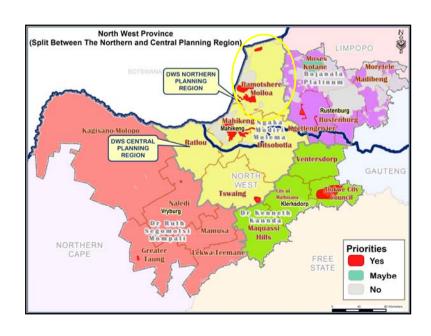


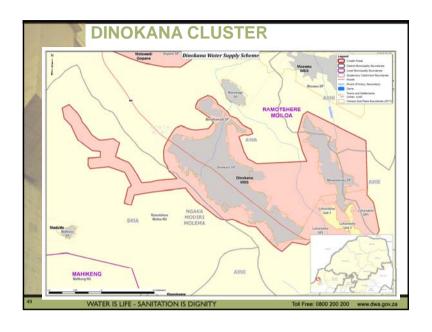


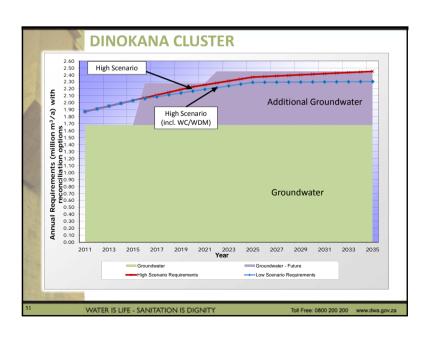


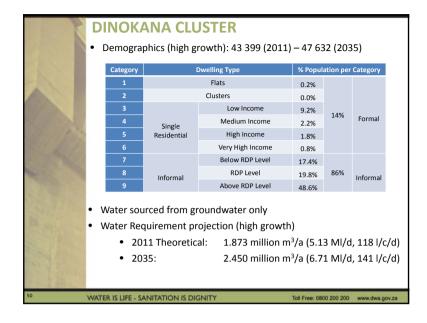


MAHIKENG WATER SUPPLY SCHEME CLUSTER • Projected water requirements exceed available resources from 2012 (shortfall of 7.278 million m³/a (1.59 MI/d) by 2035). The following reconciliation measures are required: WSA to implement WC/WDM • Development of additional groundwater resources. Feasibility study required to confirm development potential further afield • Should the above measures not be successful, feasibility study be undertaken to identify additional sources of water i.e. potential reallocation of water, pending agreement on policy and procedures · Metering and monitoring of water use • Infrastructure assessment to deliver committed volume, including treatment infrastructure • Water allocations should be aligned with the projected water requirements with WC/WDM measures included Comprehensive DWS Recon Strategy WATER IS LIFE - SANITATION IS DIGNITY Toll Free: 0800 200 200 www.dwa.gov.za





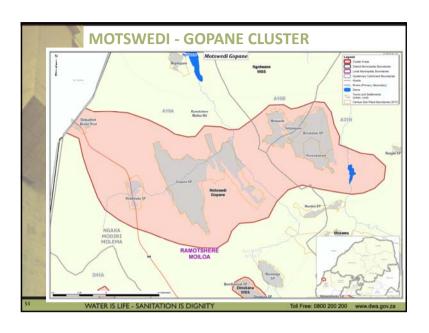


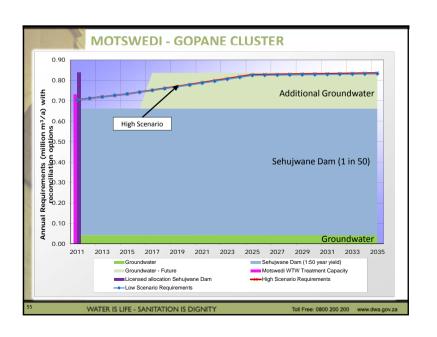


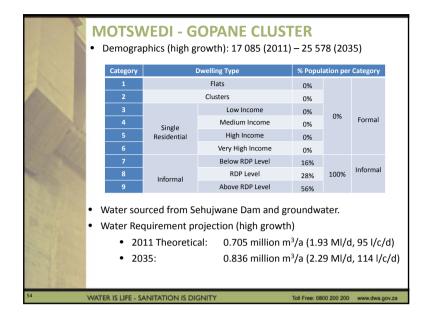
DINOKANA CLUSTER

- Projected water requirements exceed available resources from 2012 (shortfall of 0.771 million m³/a (2.111 Ml/d) by 2035). The following reconciliation measures are required:
 - WSA to implement WC/WDM
 - Development of additional groundwater resources: 0.771 million m³/a (2.111 Ml/d). Feasibility study required to confirm development potential (including quality and impact on baseflows)
- Metering and monitoring of water use
- Assessment of Infrastructure Capabilities to supply committed volumes
- Water allocations should be aligned with the projected water requirements with WC/WDM measures included

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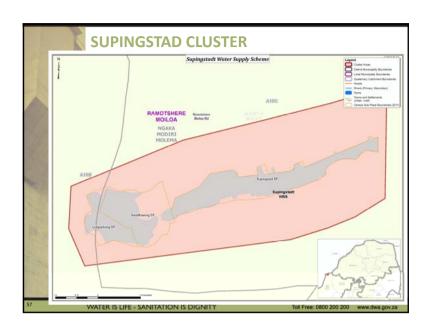


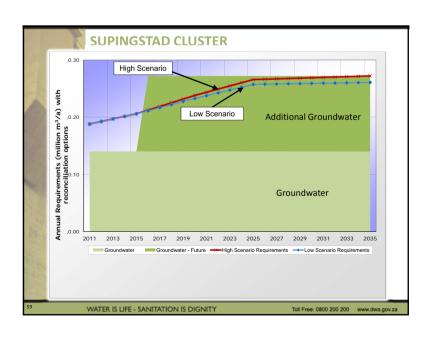


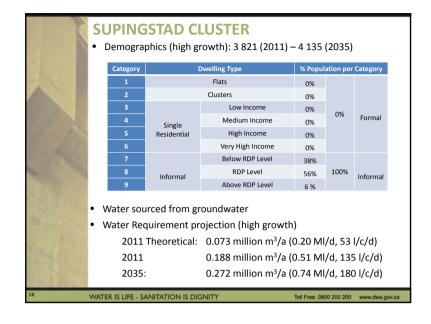
MOTSWEDI - GOPANE CLUSTER

- Projected water requirements exceed available resources from 2012 (shortfall of 0.174 million m³/a (0.476 Ml/d) by 2035). The following reconciliation measures are required:
 - WSA to implement WC/WDM, although no savings anticipated
 - Development of additional groundwater resources: 0.174 million m³/a (0.476 Ml/d). Feasibility study required to confirm development potential (including quality and impact on baseflows)
- . Metering and monitoring of water use
- Assessment of Infrastructure Capabilities to supply committed volumes
- Water allocations should be aligned with the projected water requirements with WC/WDM measures included

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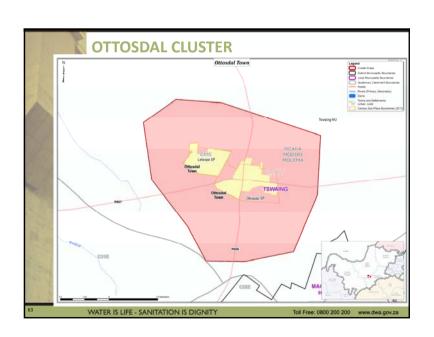


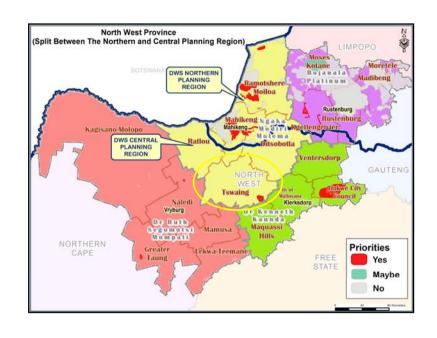
SUPINGSTAD CLUSTER

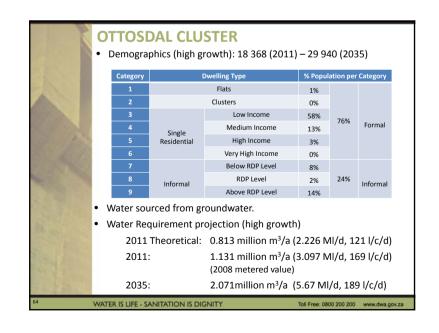
- Projected water requirements exceed available resources from 2012 (shortfall of 0.132 million m³/a (0.362 Ml/d) by 2035).
 The following reconciliation measures are required:
 - WSA to implement WC/WDM, although no savings anticipated
 - Development of additional groundwater resources: 0.132 million m³/a (0.362 Ml/d. Feasibility study required to confirm development potential (including quality and impact on baseflows)
- Metering and monitoring of water use
- Assessment of Infrastructure Capabilities to supply committed volumes
- Water allocations should be aligned with the projected water requirements with WC/WDM measures included

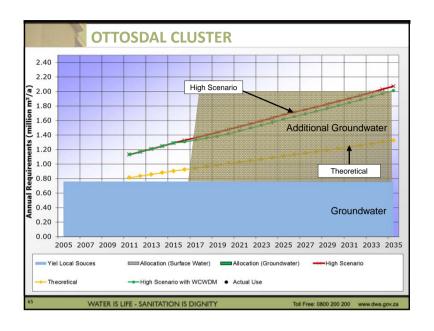
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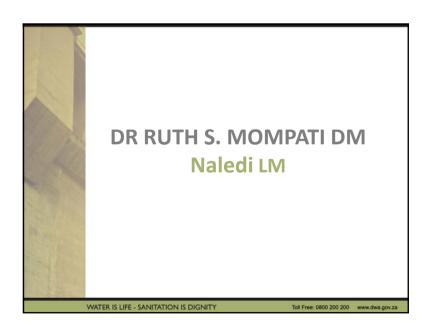




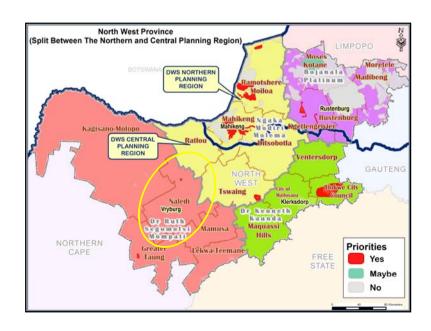


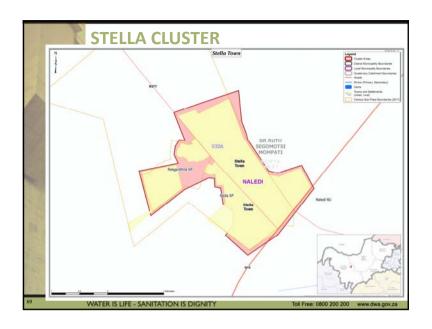


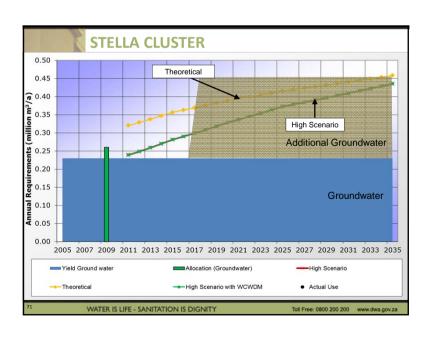


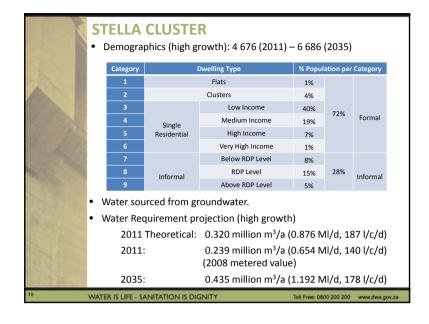


OTTOSDAL CLUSTER • Currently in deficit (2011: 0.371 million m³/a (1.016 Ml/d) and 2035: 1.251 million m³/a (3.425 MI/d)) incl. WC/WDM. The following reconciliation measures are required: • WC/WDM analysis indicates savings potential for savings. WSA to develop and implement WC/WDM strategy • Further groundwater development required (high yielding boreholes in 28 km radius). Feasibility study required • Transferring irrigation water rights in the adjacent farms to be considered as an alternative to costly regional bulk water supply schemes if required. · Metering and monitoring of water use • The viability of re-using treated WWTW effluent for potable, industrial and irrigation (incl. garden) needs to be • Elevated nitrate content in some production boreholes. Blending is expected to produce acceptable water quality (Feasibility Study) • Water allocation to be confirmed and should be aligned with the projected water requirements with WC/WDM measures included WATER IS LIFE - SANITATION IS DIGNITY Toll Free: 0800 200 200 www.dwa.gov.za





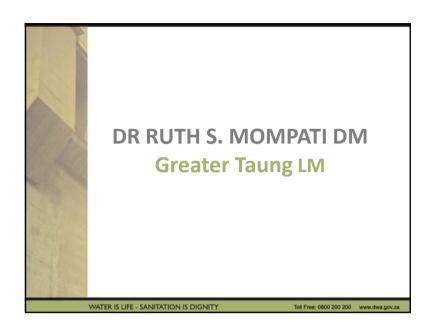


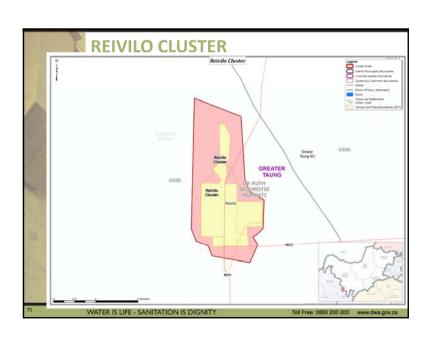


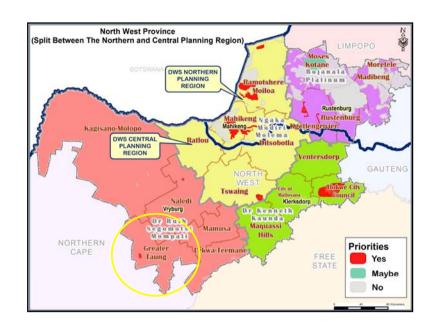
STELLA CLUSTER

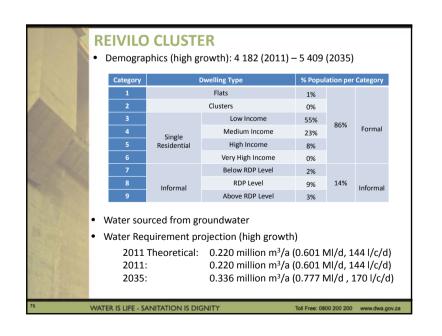
- Currently in deficit: 2011: 0.009 million m³/a (0.025 Ml/d) and by 2035: 0.205 million m³/a (0.561 Ml/d). The following reconciliation measures are required:
 - WSA to develop and implement WC/WDM strategy
 - Groundwater augmentation options include rehabilitation of old disused boreholes (located north of Stella and in town) and development of additional boreholes further north or south of Stella. Feasibility study required
 - Alternative options i.e. transferring irrigation water rights in the adjacent farms and/or extending the Taung-Vryburg regional bulk water supply scheme should only be considered after all the local groundwater options have been exhausted
- Metering and monitoring of water use
- WSA should apply for an increased water use entitlement once the following is considered and addressed:
 - WC/WDM strategy and implementation plan to reduce NRW and water losses by increasing the billed metered consumption

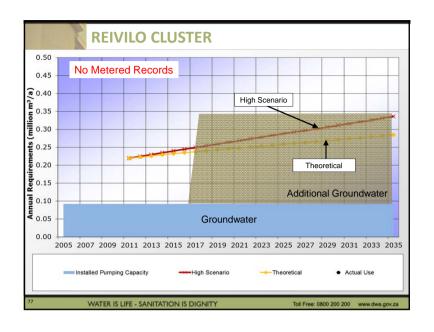
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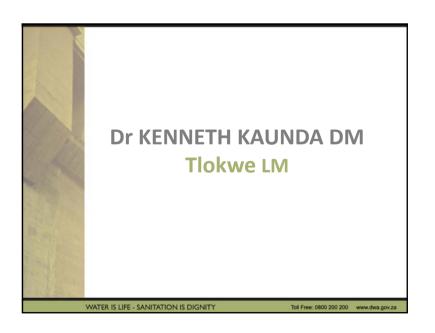




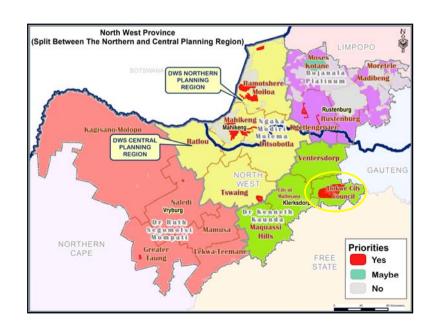


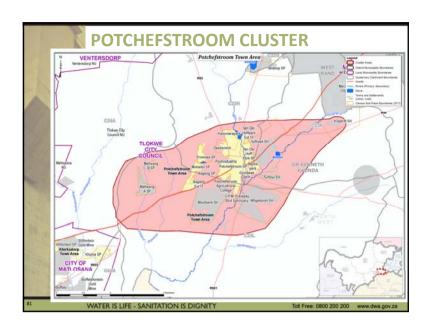


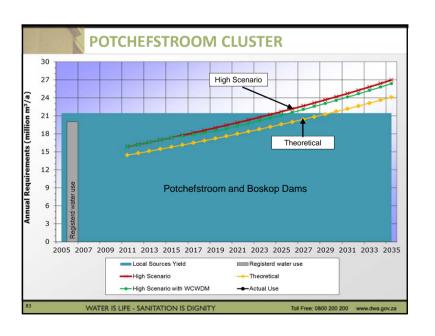




REIVILO CLUSTER • Currently in deficit: 2011: 0.128 million m³/a (0.350 Ml/d) and by 2035: 0.244 million m³/a (0.668 MI/d). The following reconciliation measures are required: WSA to implement its WC/WDM strategy GRA II assessment indicates that an aquifer area of roughly 8.4 km radius is required to support 2035 requirements (will require moving into private land) Feasibility study required • The open pit of the redundant Pering Mine to be investigated as an emergency supply resource Groundwater highly vulnerable to contamination (between +- 1.2 m to 3.0 m). Possibility of contamination of boreholes downstream of the communities. Boreholes to be established up-stream of Reivilo and chlorination of water is recommended · Registration, metering and monitoring of water use No water use registration records WSA to register water use in line with the projected water requirements (incl. with WC/WDM) WATER IS LIFE - SANITATION IS DIGNITY Toll Free: 0800 200 200 www.dwa.gov.za







POTCHEFSTROOM CLUSTER Demographics (high growth): 147 216 (2011) – 245 335 (2035) **Dwelling Type** % Population per Category Category Flats 13% Clusters 5% Low Income 33% Formal Medium Income 18% Single High Income 10% Residential Very High Income 2% Below RDP Level 2% RDP Level 3% Informal Informal Above RDP Level 14% Water sourced from Potchefstroom and Boskop Dams (Mooi System) Water Requirement projection (high growth) 2011 Theoretical: 14.457 million m³/a (39.58 MI/d, 268 I/c/d) 2011: 15.852 million m³/a (43.399 MI/d, 295 I/c/d) (2012 metered water use) 2035: 26.956 million m³/a (73.800 MI/d, 301 I/c/d) WATER IS LIFE - SANITATION IS DIGNITY Toll Free: 0800 200 200 www.dwa.gov.za

POTCHEFSTROOM CLUSTER

- Sufficient water resources availability until 2026. Water shortages have been experienced - related to internal management issues i.e. poor regulation of pumps/valves at the WTW plant resulted in the reservoirs running out of water
- Preliminary WC/WDM analysis indicates savings potential (4%). WSA to develop and implement a WC/WDM strategy
- HFY of available surface water resources available. Long-term Stochastic Yield analysis to be conducted
- Irrigation use needs to be validated and verified. Gross current use seems less than the allocation - potential to augment Potchefstroom water requirements
- Any planning regarding the future management of the mine water should investigate the implication on the yield of the system
- Abstraction and releases from Boskop and Potchefstroom Dams to be coordinated to ensure water supply is not affected by over or under-abstraction in relation to the released water

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POTCHEFSTROOM CLUSTER

- Maintain metering and monitoring of water use
- Water quality input into the Boskop Dam from the Wonderfontein Spruit system needs to be monitored – Boskop-Turffontein dolomitic compartment is the receptor of the water treated and released upstream by the mining companies
- Total registered urban water use is 20 million m³/a & meets the water requirements until 2024. WSA should apply for an increased water use entitlement once the following is considered and addressed:
 - WC/WDM strategy and implementation plan to reduce NRW and water losses by increasing the billed metered consumption

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Remainder of the Study Programme – Phase 1

- SSC to submit comments by 14 August 2015 to:
 - Northern Planning Region Deputy Study Leader:
 Ms Monja Esterhuizen (monjae@uwp.co.za)
 - Central Planning Region Deputy Study Leader:
 Mr Colin Talanda (colint@wrp.co.za)

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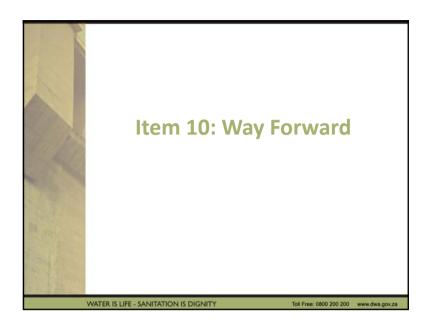
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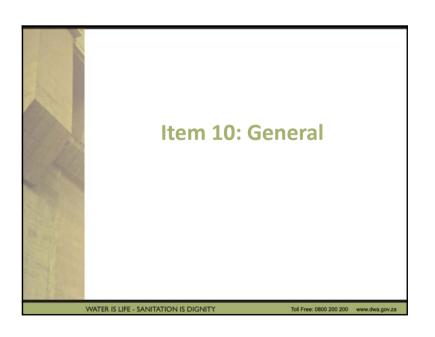
Item 9: Remainder of the Study Programme – Phase 1 WATER IS LIFE-SANITATION IS DIGNITY Toll Free: 0800 200 200 www.dwa.gov.za

Remainder of the Study Programme – Phase 1

- Distribution of the updated priority strategies for comment: on CD & upon request
- Review and incorporate comments
 - Prepare final priority strategies
 - Prepare final District Municipality Summary Reports
- Distribution of the final priority strategies & DM Summary Reports to
 - The DWS Head Office
 - DWS Regional Offices
- Final SMT meeting in September 2015

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Way Forward Incorporation of the strategies into annual planning cycle by the WSAs (WSDPs, IDPs, License Applications etc.): - Infrastructure planning, project development, - Water source planning and development DWS confirm and ensure planning, development and alignment with strategies (WSDPs, IDPs, License Applications etc.), monitor and enforce DWS identified priority areas for the development of in-depth reconciliation strategies: - Olifants-Sand Cluster (Limpopo province, Northern Planning Region) - Mahikeng Cluster (North West province, Northern Planning Region Continuous engagement with DWS – prioritise areas for the continuation of the All Towns Reconciliation Strategies -Phase 2 WATER IS LIFE - SANITATION IS DIGNITY Toll Free: 0800 200 200 www.dwa.gov.za

