



water & sanitation
Department
Water and Sanitation
REPUBLIC OF SOUTH AFRICA

CONTINUATION OF THE ALL TOWN RECONCILIATION STRATEGIES IN THE NORTH WEST PROVINCE

Strategies Steering Committee Workshop No. 2

DWS: National Water Resource Planning
Thursday, 23 July 2015
Grootbosch Wedding & Conference venue, Klerksdorp

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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 STRATEGIES STEERING COMMITTEE	T. Nditwani
6	BACKGROUND OF THE STUDY	T. Nditwani
7	UPDATING OF PRIORITY STRATEGIES: METHODOLOGY	C Talanda
8	UPDATED PRIORITY STRATEGIES <ul style="list-style-type: none"> - Bojanala Platinum DM - Ngaka Modiri Molema DM - Dr. Ruth S. Mompoti DM - Dr. Kenneth Kaunda DM 	L de Jager/ A Jeleni
9	REMAINDER OF THE STUDY PROGRAMME – PHASE 1	M. Esterhuizen
10	WAY FORWARD	T. Nditwani
11	GENERAL	T. Nditwani
12	DATE OF THE NEXT MEETING AND CLOSURE	T. Nditwani
13	LUNCH	ALL

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Item 4: Purpose of the Workshop

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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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Item 5: Role of Strategies Steering Committee (SSC)

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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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Item 6: Background of the Study

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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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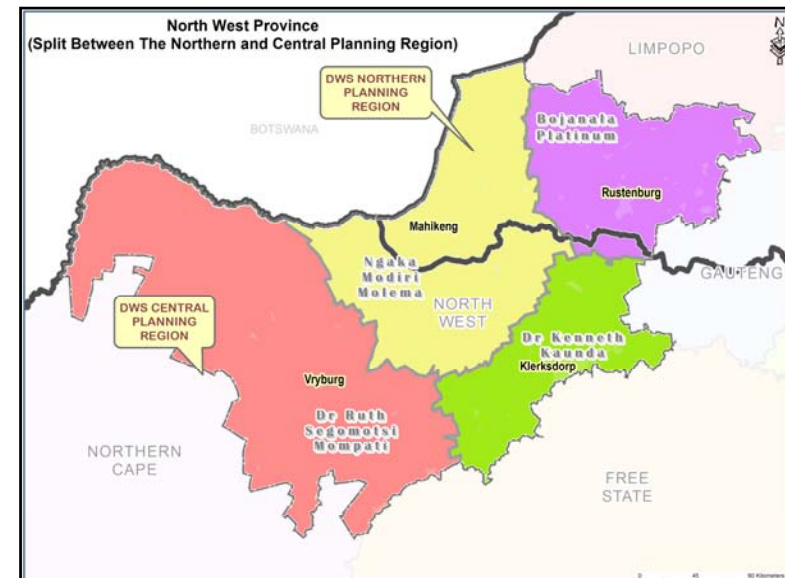
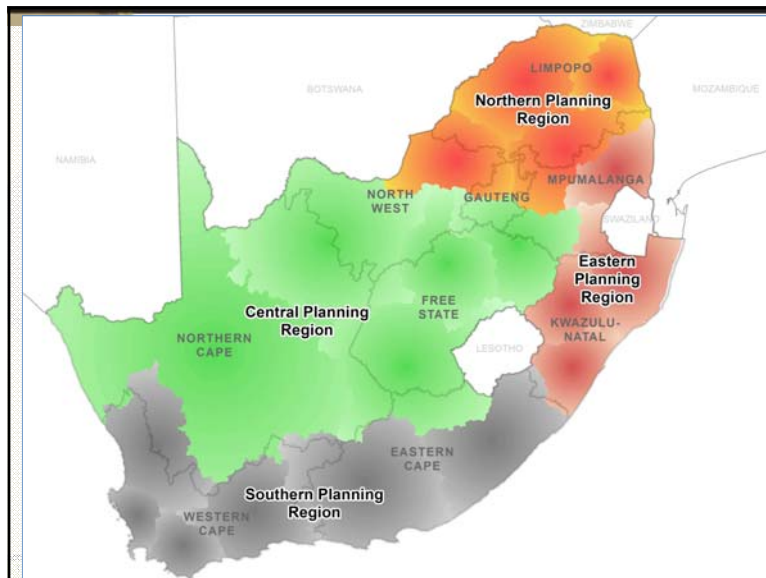
Background to this Assignment

- 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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Purpose of Study cont.

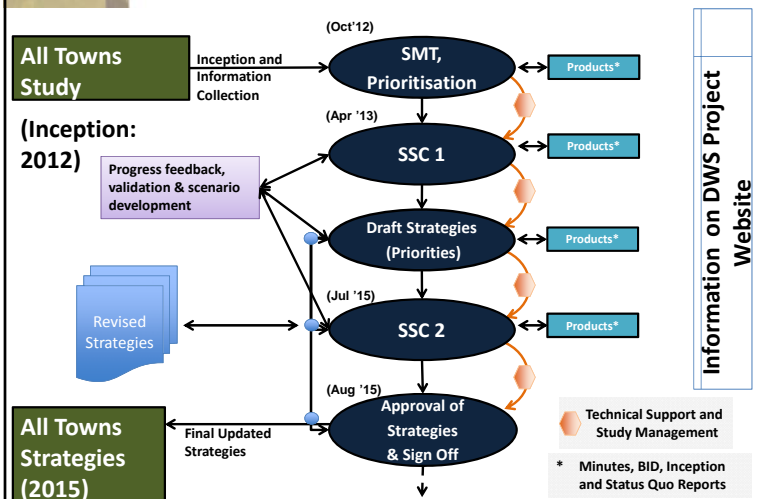
- Assist DWS and WSAs (cont.) to:
 - Evaluation of interventions where shortfalls occur
 - Management and/or infrastructure
 - Align strategies with known development planning processes
 - Provide recommendations for the sustainable management of water resources
- Promote the use of strategies' information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

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Study Communication & Process



Item 7: Updating Priority Strategies Methodology

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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

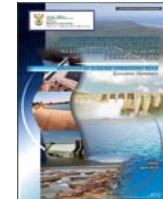
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Updating Priority Reconciliation Strategies

- 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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Theoretical Water Requirements

- Population allocated to each Level of Service (LOS) category (Census 2011)

Category	Dwelling Type		Average Water Consumption (l/capita/day)
1	Flats		226
2	Clusters		255
3	Single Residential	Low Income	101
4		Medium Income	189
5		High Income	304
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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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 1 (Established Town - mostly formal):

- LOS assumed to be at a minimum of Residential Low Income by 2025
- 5% increase in Residential Medium Income 2011 to 2025 and a further 6% increase by 2035 (total of 11%)
- 2.5% increase in Residential High Income from 2011 to 2025 and a further 3.3% increase by 2035 (total of 5.8%)

Category	Dwelling Type	
1	Flats	
2	Clusters	
3	Single Residential	Low Income
4		Medium Income
5		High Income
6		Very High Income
7	Informal	Below RDP Level
8		RDP Level
9		Above RDP Level

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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%)
- 2.5% increase in Residential Medium Income from 2011 to 2025 and a further 2.3% increase by 2035 (total of 4.8%)

Category	Dwelling Type	
1	Flats	
2	Clusters	
3	Single Residential	Low Income
4		Medium Income
5		High Income
6		Very High Income
7	Informal	Below RDP Level
8		RDP Level
9		Above RDP Level

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Water Requirement Projections

• Scenario 3 (Village - mostly informal):

- LOS assumed to be at a minimum of RDP Level by 2025.
- 5% increase in Above RDP Level by 2011 to 2025 and a further 6.7% increase by 2035 (total of 11.7%)
- 2.5% increase in Residential Low Income from 2011 to 2025 and a further 3% increase by 2035 (total of 5.5%)

Category	Dwelling Type	
1	Flats	
2	Clusters	
3	Single Residential	Low Income
4		Medium Income
5		High Income
6		Very High Income
7	Informal	Below RDP Level
8		RDP Level
9		Above RDP Level

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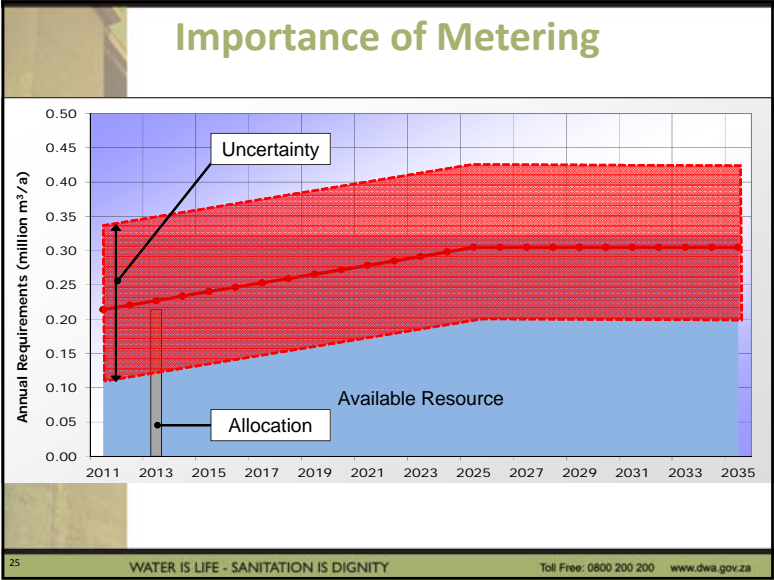
Updating Priority Reconciliation Strategies cont.

- Compile water balance diagrams (up to 2035)
- Identify potential development scenarios (management and infrastructure) for reconciliation of water requirements and water resources

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Item 8: Updated Strategies

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Prioritised Strategies Updated

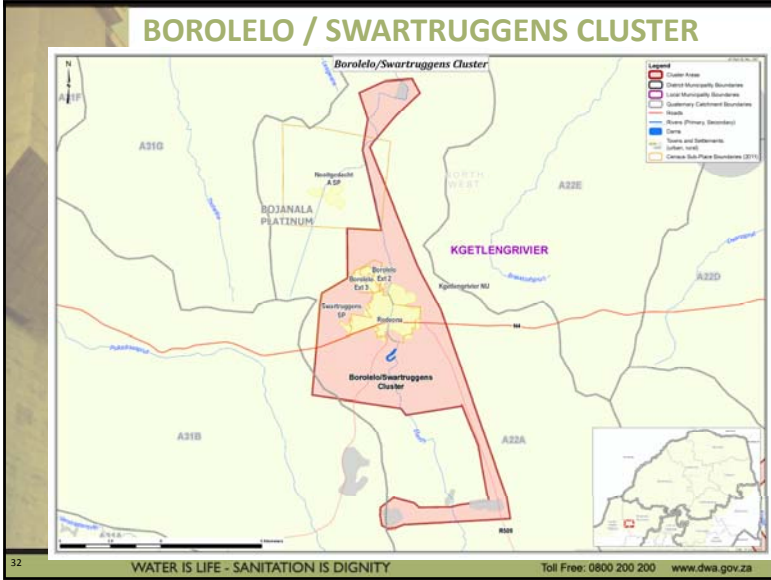
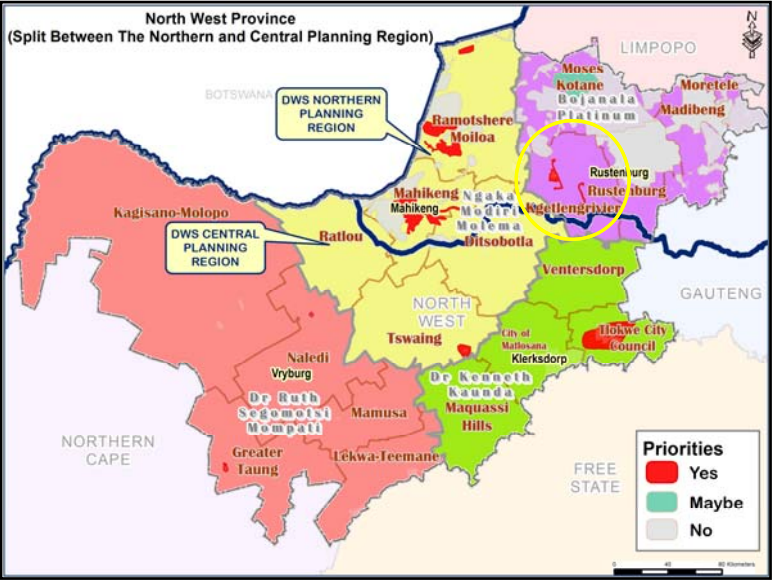
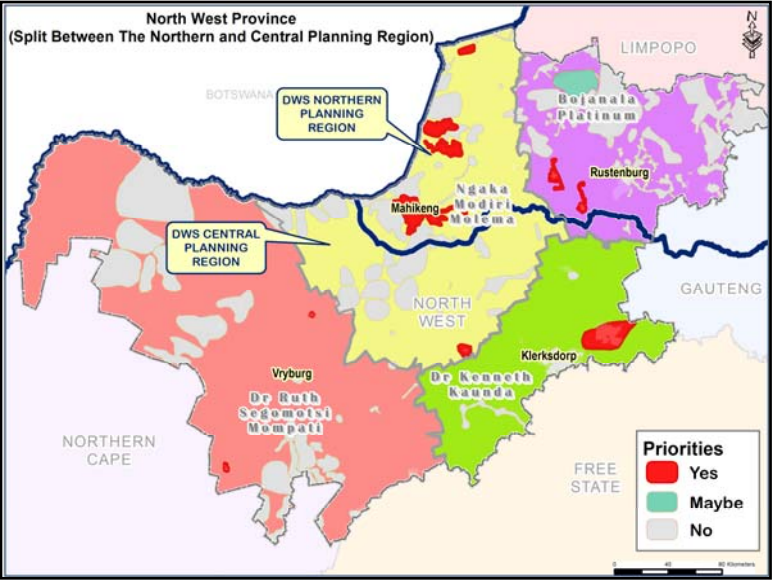
District Municipality	Local Municipality	Strategy
Bojanala Platinum	Kgetlengrivier	Borolelo & Swartruggens
		Koster & Reagile
Ngaka Modiri Molema	Mahikeng	Mahikeng
	Ramotshere Moiloa	Dinokana
		Motswedi Gopane
		Supingstadt
	Tswaing	Ottosdal
Dr. Ruth S. Mompati	Naledi	Stella
	Greater Taung	Reivilo
Dr. Kenneth Kaunda	Tlokwe	Potchefstroom Urban

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Strategies Addressed by DWS Crocodile West Recon Study

District Municipality	Local Municipality	Strategy
Bojanala Platinum	Rustenburg	Rustenburg Vaalkop BWS
	Madibeng	Dikgophaneng and Fafung BWS

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KOSTER AND REAGILE CLUSTER

- Demographics (high growth): 19 469 (2011) – 28 273 (2035)

Category	Dwelling Type	% Population per Category		
1	Flats	0.9%	58.9%	Formal
2	Clusters	0.6%		
3	Low Income	43.4%		
4	Medium Income	9.8%		
5	High Income	3.4%	41.1%	Informal
6	Very High Income	0.9%		
7	Below RDP Level	8.5%		
8	RDP Level	7.2%		
9	Above RDP Level	25.5%		

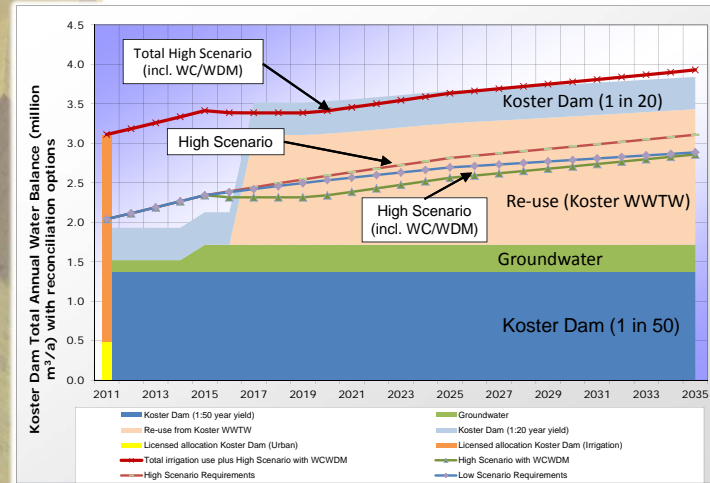
- Water sourced from Koster Dam and groundwater
- Water Requirement projection (high growth)
 - 2011 Theoretical: 1.475 million m³/a (4.04 MI/d, 207 l/c/d)
 - 2011: 2.041 million m³/a (5.59 MI/d, 287 l/c/d)
 - 2035: 3.109 million m³/a (8.51 MI/d, 301 l/c/d)

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KOSTER AND REAGILE CLUSTER



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KOSTER AND REAGILE CLUSTER

- Projected water requirements exceed available resources from 2012 (shortfall of 1.589 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: 0.196 million m³/a (0.537 MI/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

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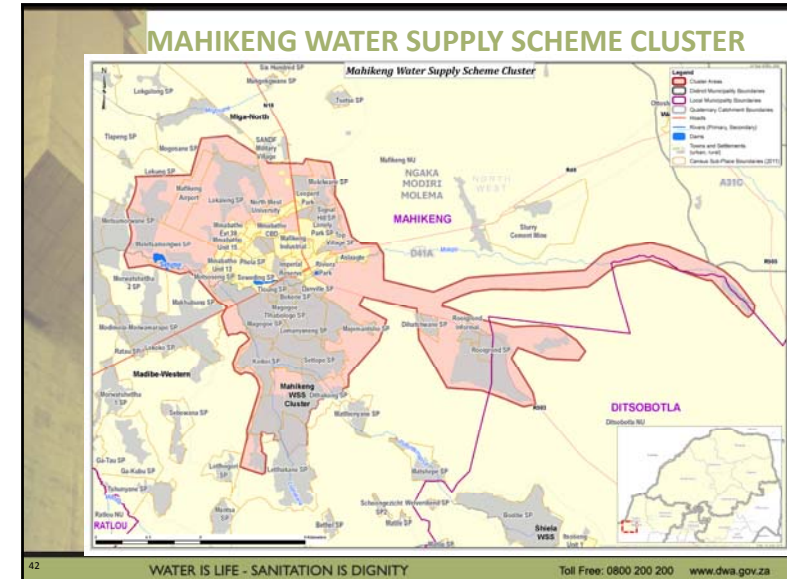
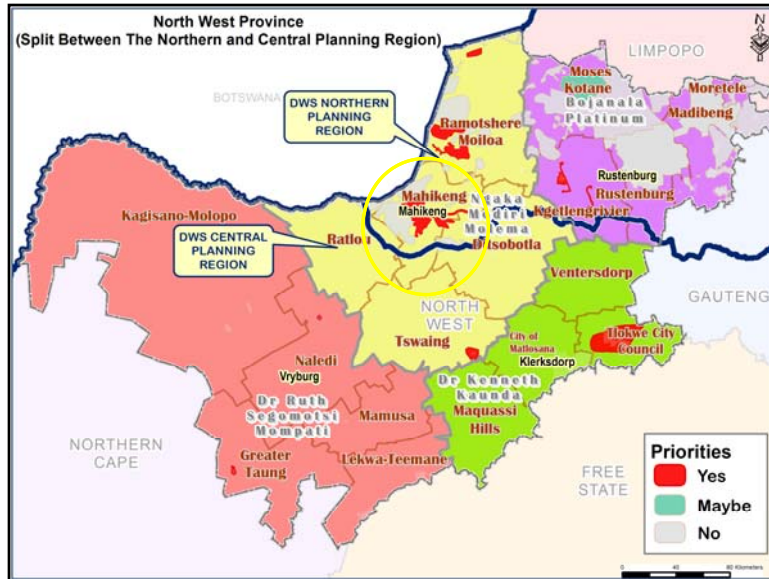
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NGAKA MODIRI MOLEMA
DM
Mahikeng LM

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MAHIKENG WATER SUPPLY SCHEME CLUSTER

- Demographics (high growth): 213 960 (2011) – 239 412 (2035)

Category	Dwelling Type	% Population per Category		
1	Flats	2%		
2	Clusters	0%		
3	Single Residential	Low Income	16%	27%
4		Medium Income	3%	
5		High Income	3%	
6		Very High Income	3%	
7	Informal	Below RDP Level	27%	73%
8		RDP Level	16%	
9		Above RDP Level	30%	

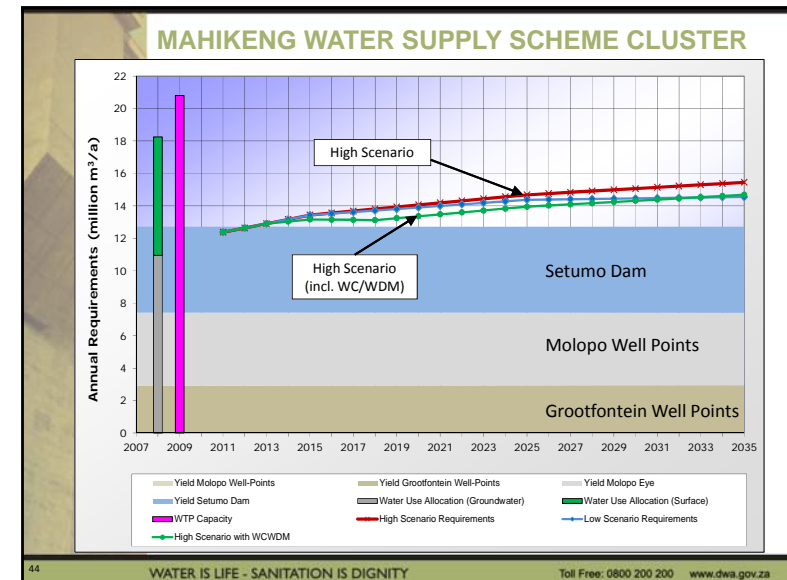
- Water sourced from Setumo Dam and groundwater.
- Water Requirement projection (high growth)

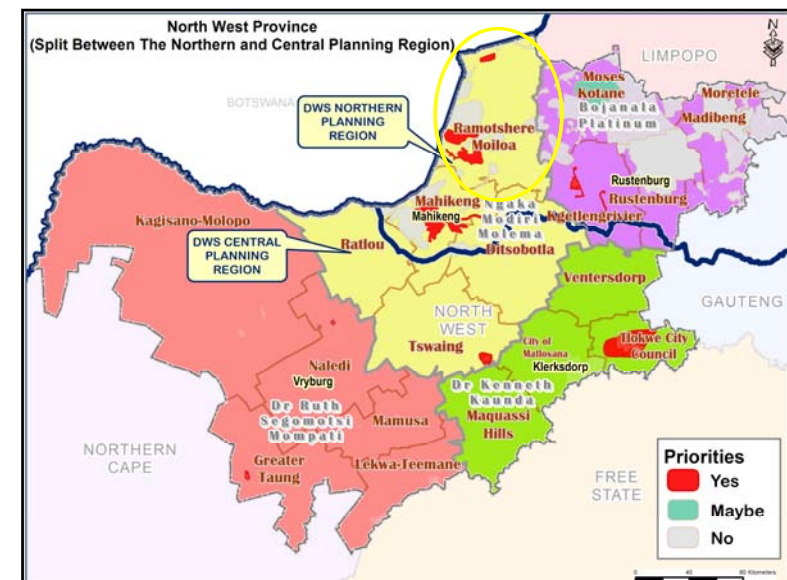
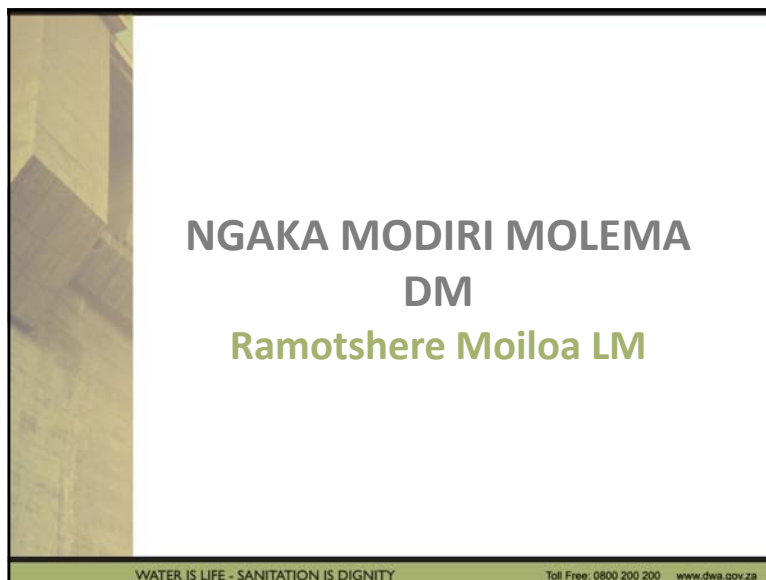
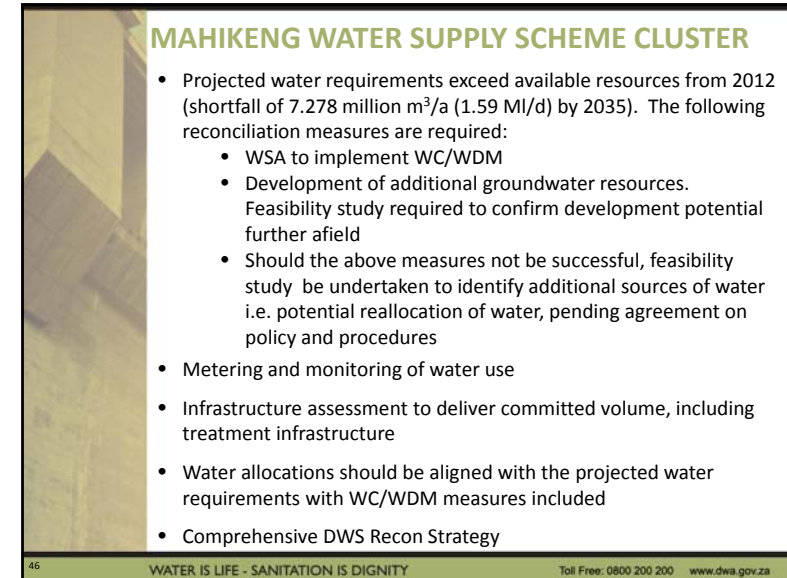
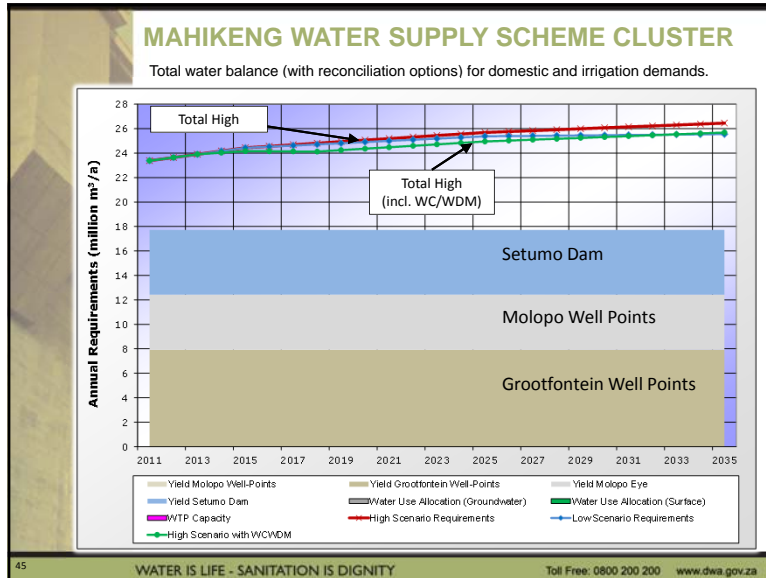
2011 Theoretical: 12.020 million m³/a (32.91 Ml/d, 153 l/c/d)
 2011: 12.378 million m³/a (33.89 Ml/d, 158 l/c/d)
 2035: 15.457 million m³/a (42.32 Ml/d, 177 l/c/d)

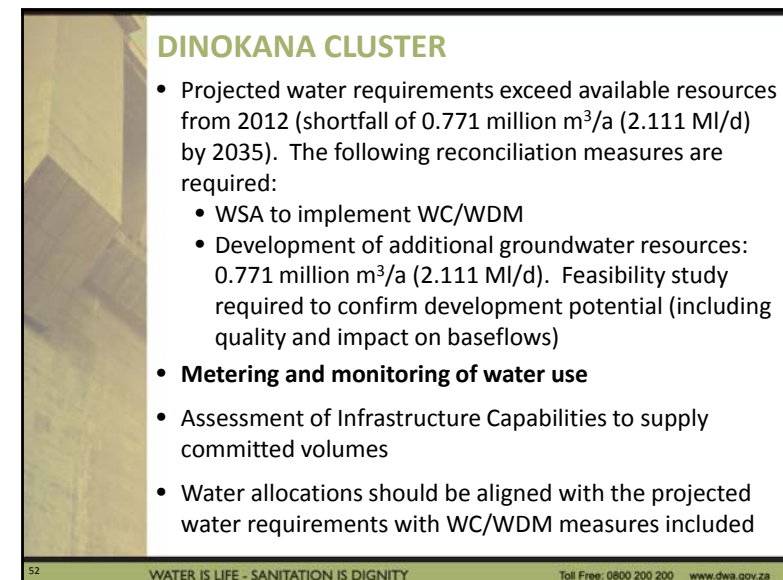
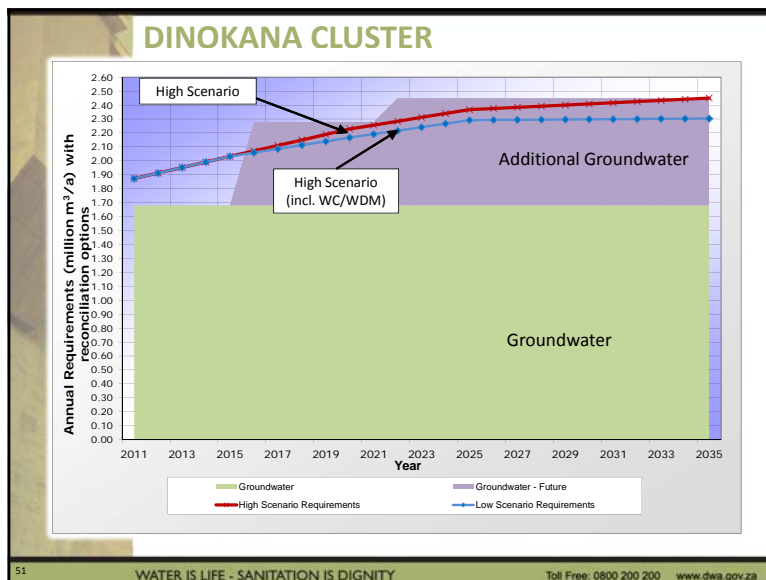
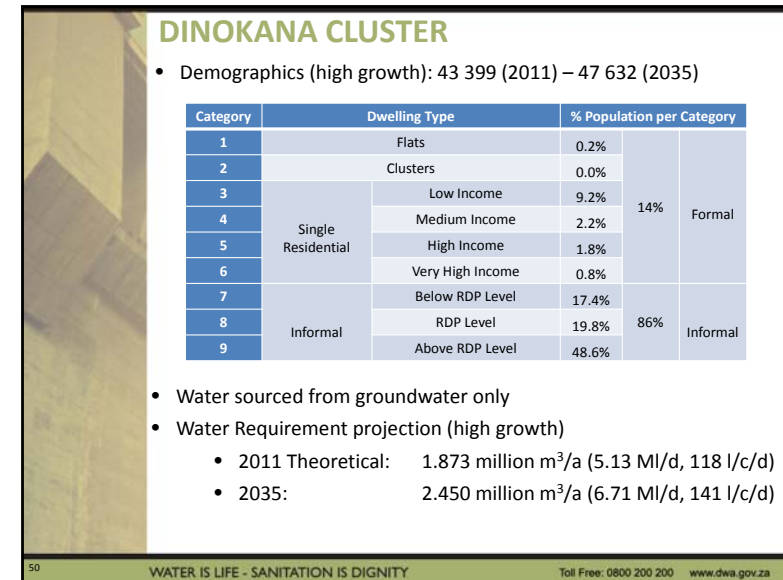
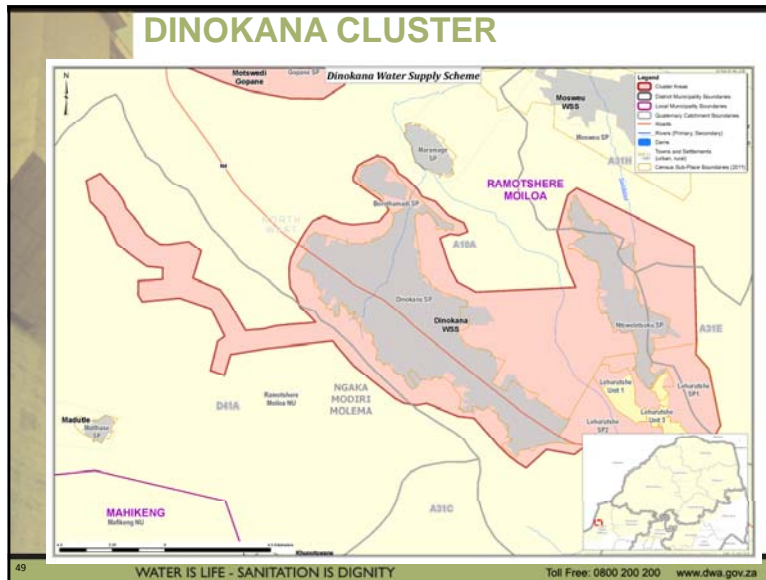
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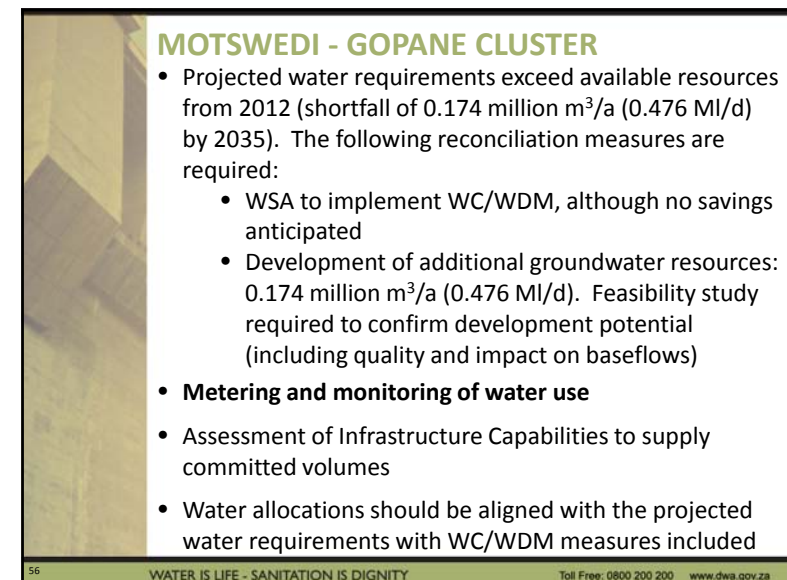
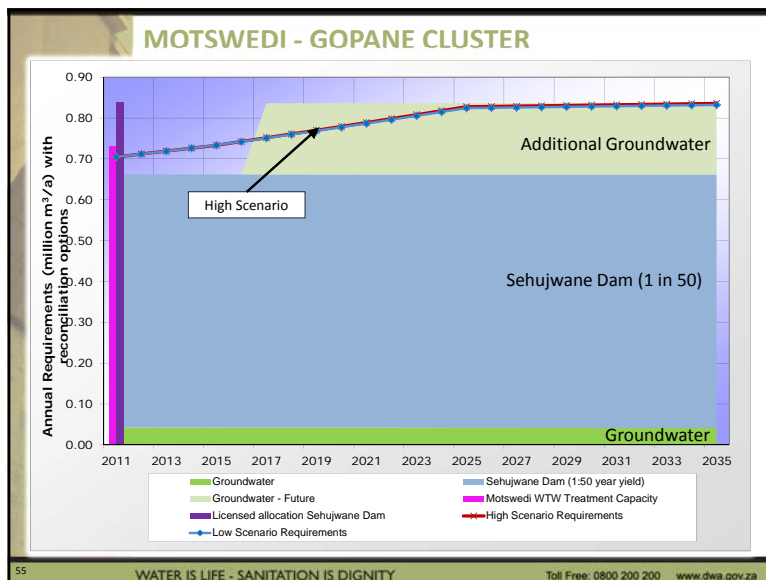
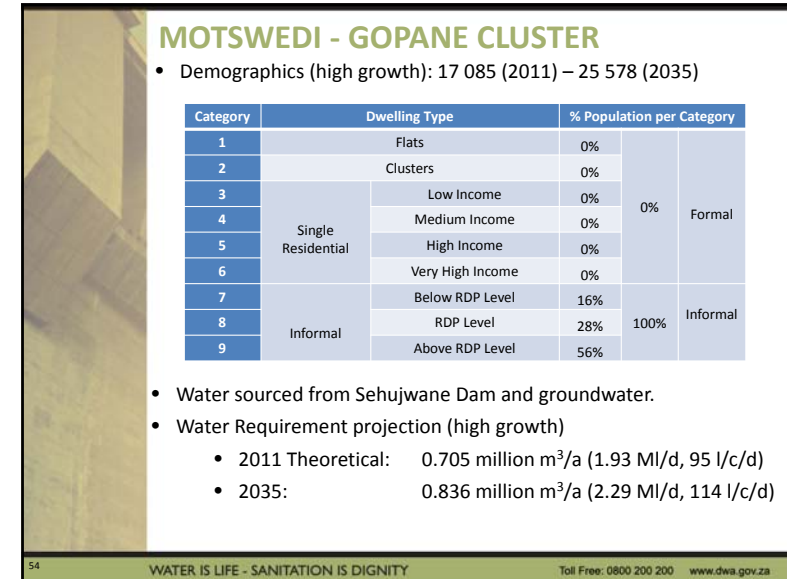
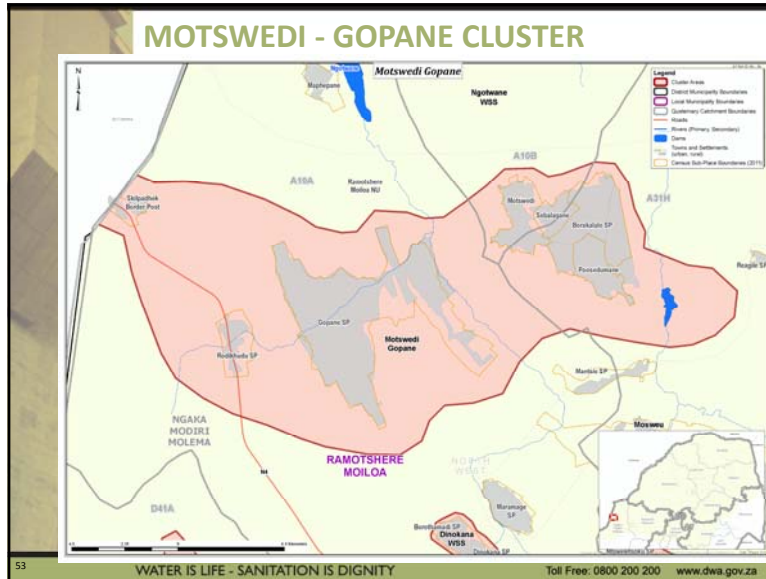
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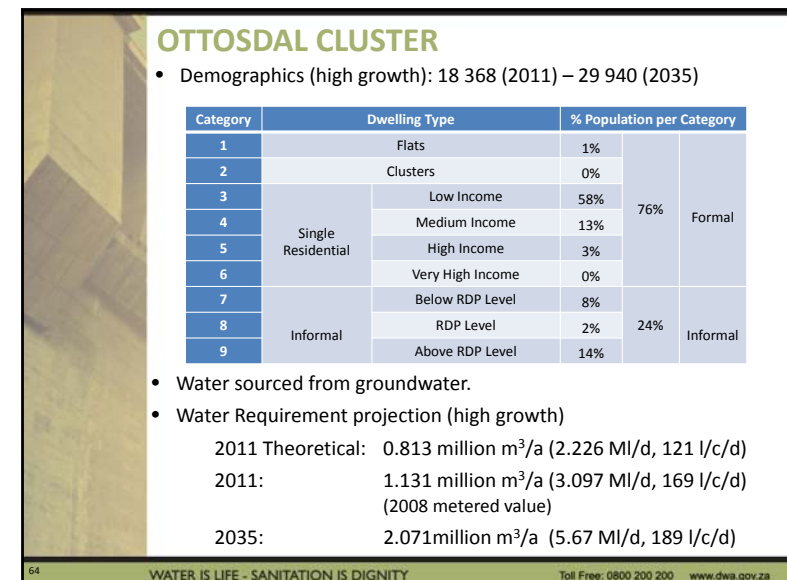
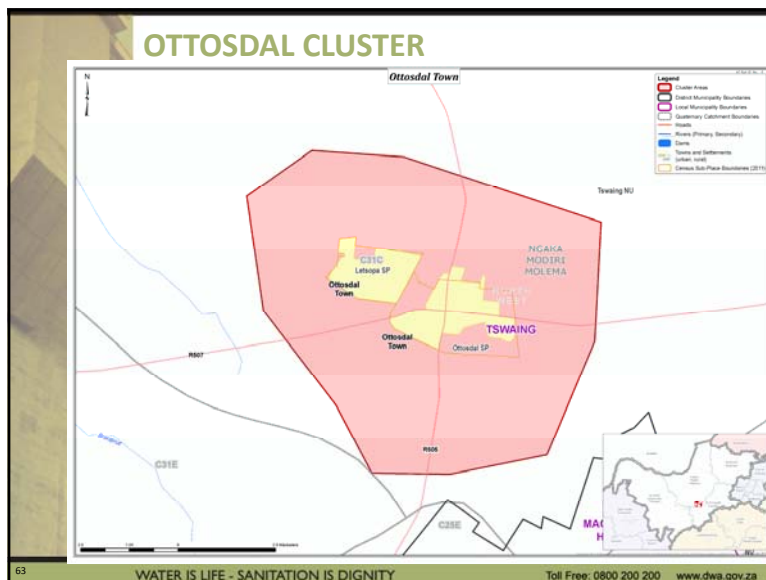
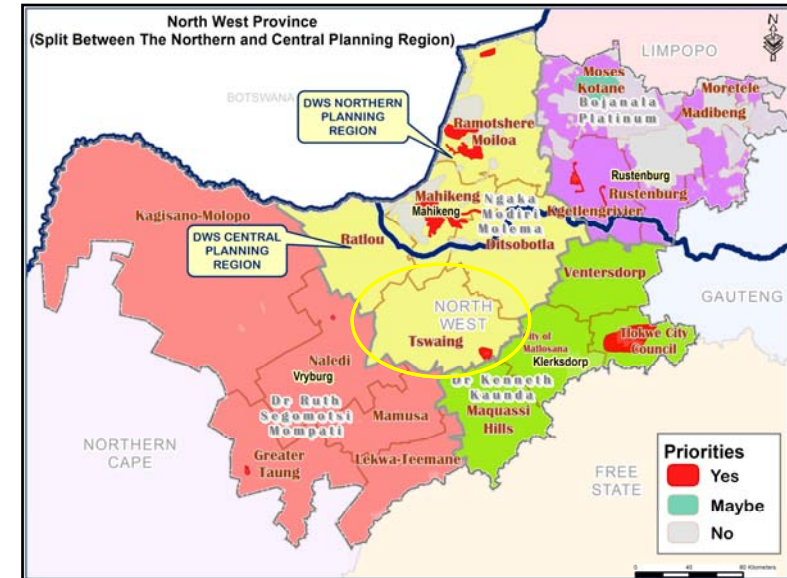
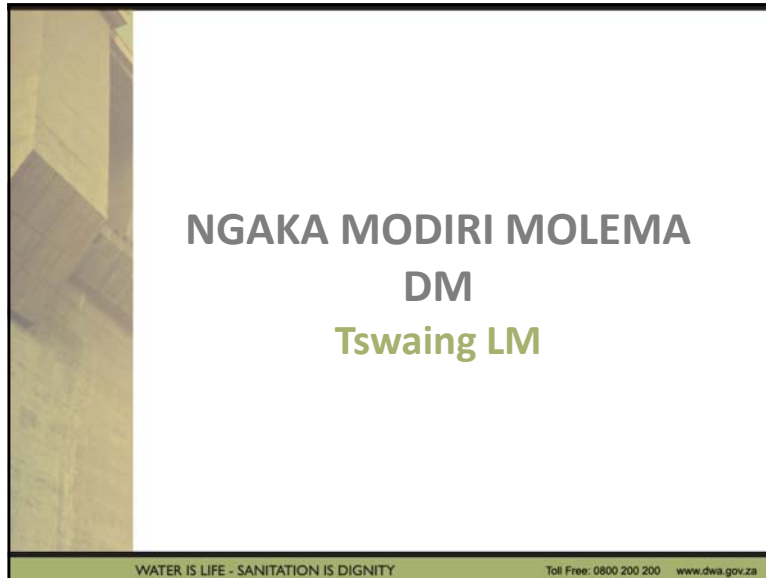
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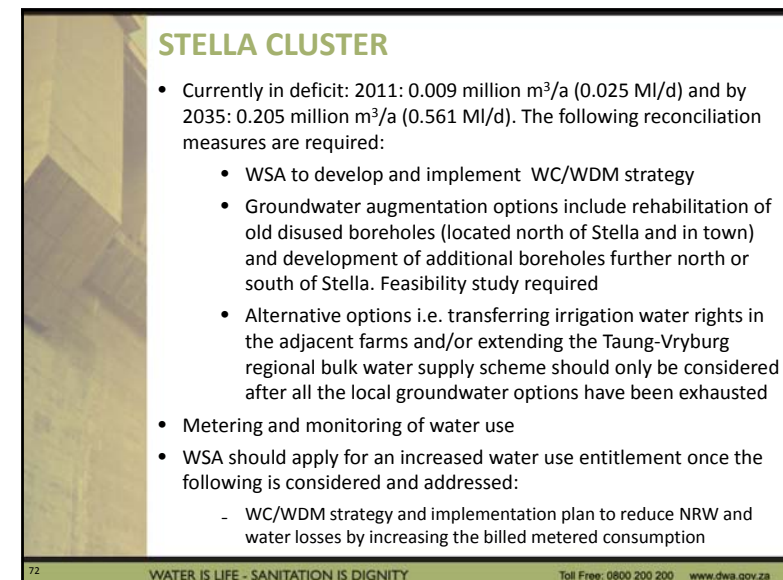
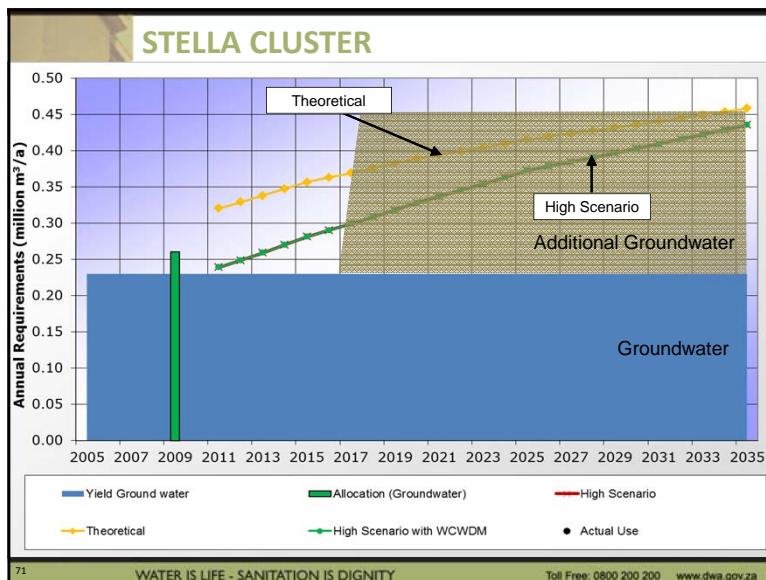
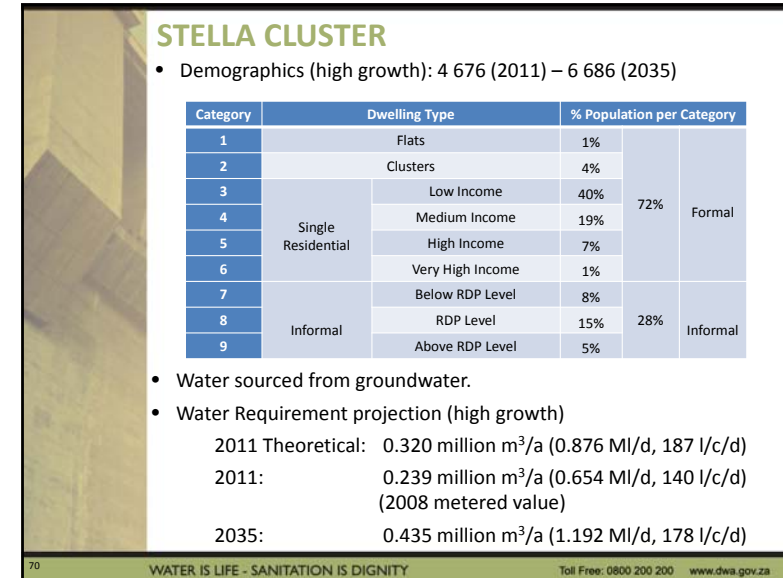
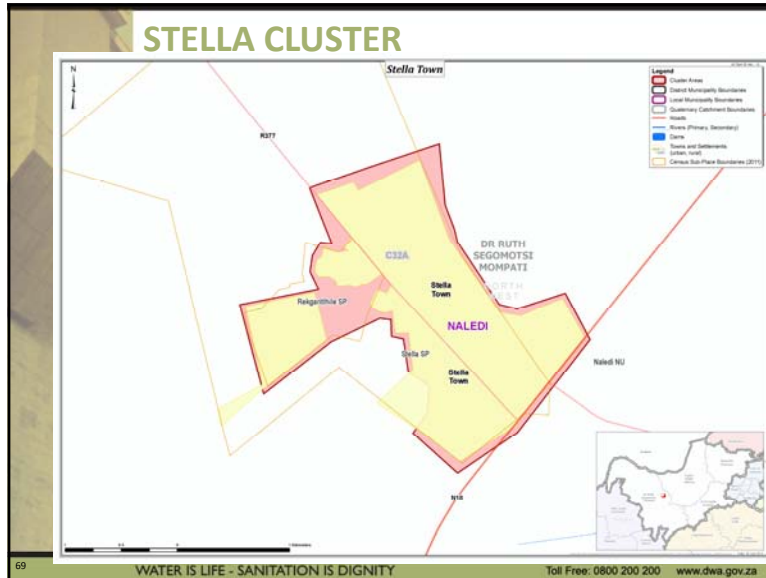




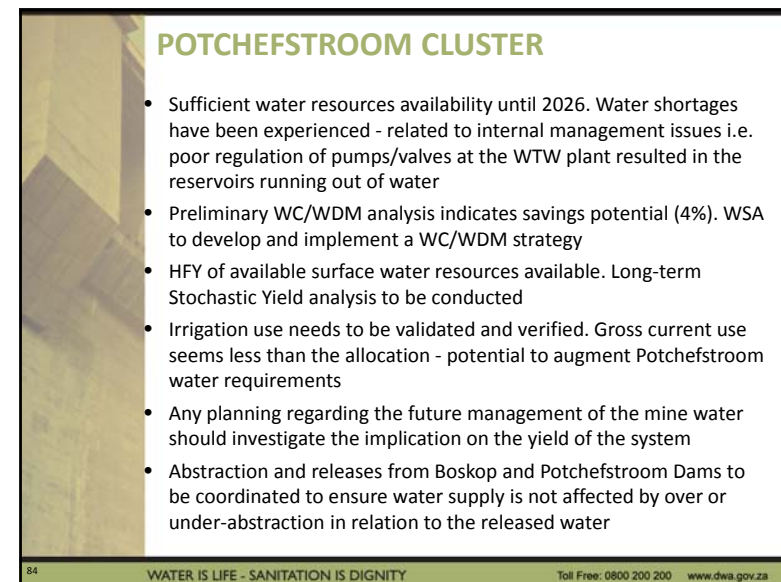
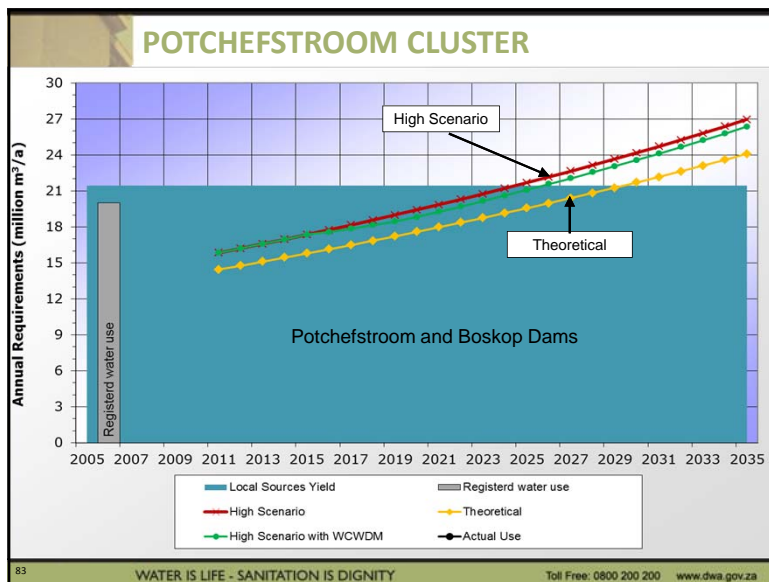
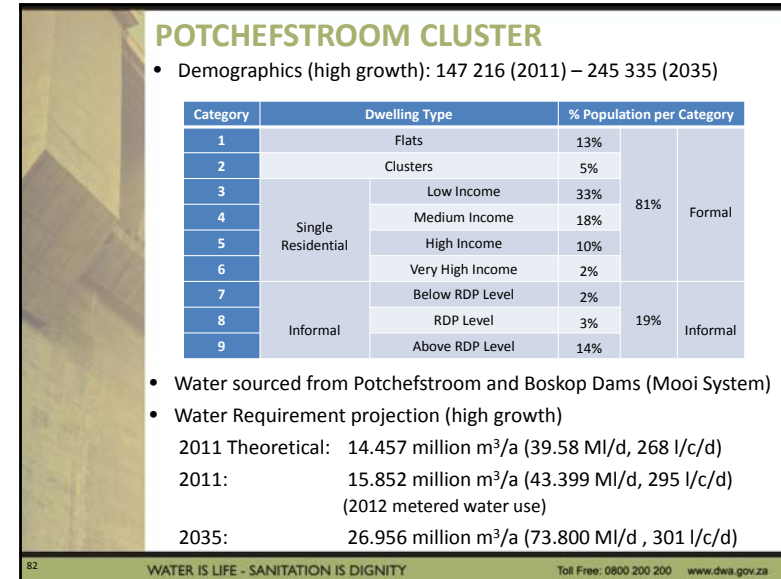
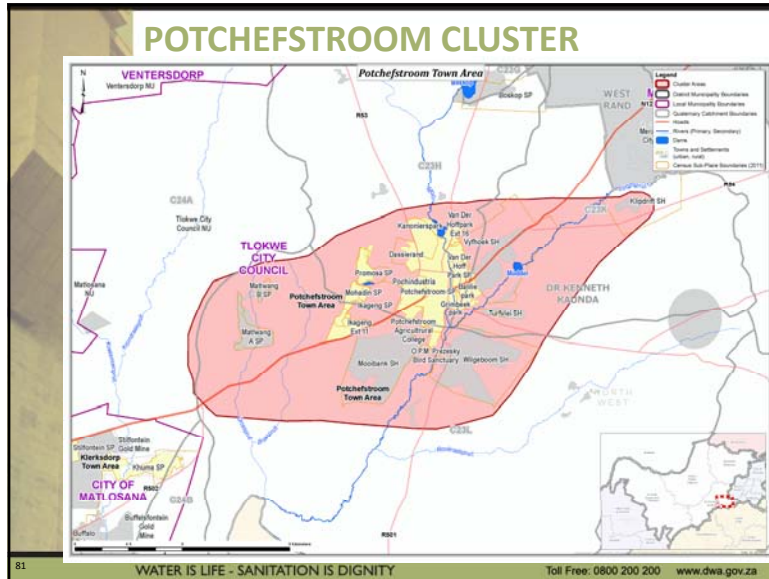












POTCHEFSTROOM CLUSTER

- 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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Item 9: Remainder of the Study Programme – Phase 1

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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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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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Item 10: Way Forward

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

Item 10: General

Item 11: Date of Next Meeting and Closure

