COSTING OF MUNICIPAL SERVICES

23 January 2015

FINANCIAL AND FISCAL COMMISSION

SALGA
South African Local Government Association

ia consulting

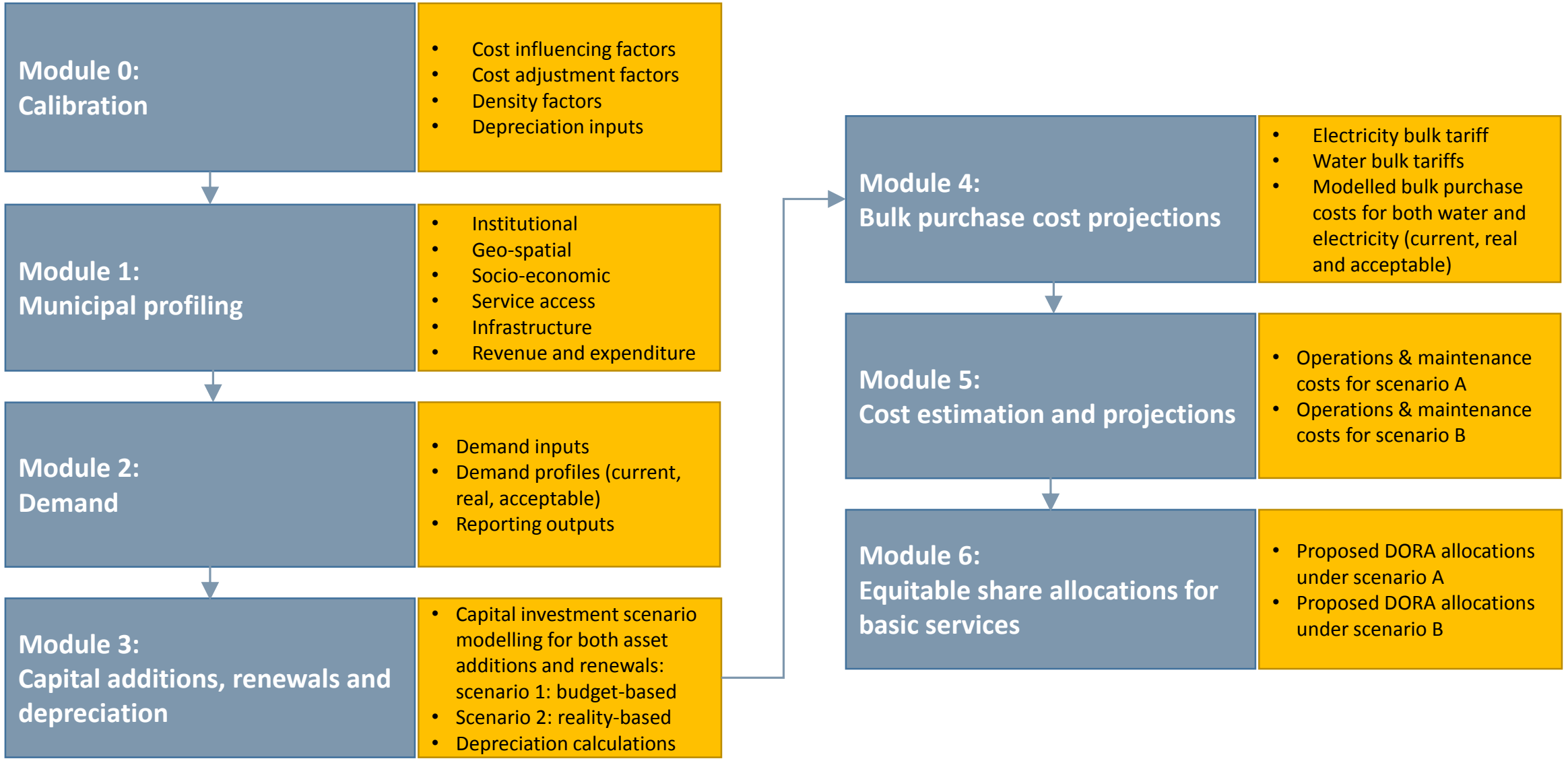
PROJECT PURPOSE

1. The FFC in the 2013/14 financial year formed part of a team that reviewed and implemented the new LES formula.
2. During the process it became clear that there is very little information or research on the costs of providing basic municipal services.
3. Much of the limited body of data is outdated, municipal financial reporting does not fully support services' cost analysis, and there is significant differences in the cost of delivering basic services as a result of economies of scale in operation, spatial patterns, local influencing factors such as topography etc.
4. The FFC in 2013/14 undertook research and the development of a fully functioning, flexible costing model to assist in allocating grants to municipalities. Due to funding constraints, work on the model in the first phase focussed on estimating the operating costs of:
    - Water
    - Sanitation
    - Refuse removal
5. **The FFC, in partnership with SALGA, has commenced with Phases 2 and 3 to expand the model to estimate both the capital and operating costs of all municipal basic services.**

PROGRAMME PHASING

Programme phasing	Municipal Services		Research Cycle
	Operating costs	Capital costs	
Phase 1	• Water • Sanitation • Refuse removal		2013/14
Phase 2	• Municipal roads and stormwater • Municipal administration • Municipal health services • Fire-fighting services	• Municipal roads and stormwater • Sanitation • Refuse removal • Electricity	2014/15
Phase 3	• Fire fighting services • Municipal roads • Storm water	• Municipal administration • Municipal health services • Fire-fighting services	2015/16

COST MODEL STRUCTURE



KEY MODEL FEATURES

1. Comprehensive municipal-specific profiling (e.g. nr of households in a particular municipality located on mountainous terrain).
2. The costs of municipal basic services can be moderated individually, per category or in total, based on exogenous cost-influencing factors such as spatial characteristics, topography and geology.
3. Ability to establish the cost of municipal services based on actual costs, benchmarked costs, average costs or some combination of these
4. The model allows for temporal adjustments to variable base datasets (e.g. population size and nr of households).
5. The model discourages municipal inefficiencies through the establishment of loss-limiting factors through a combination of quantification of demand based on national policy allowance and the setting of limits for unaccounted water and electricity.
6. The production of a proposed 3-year DORA allocation schedule and additional reporting capability.
7. Reporting capability in both tabular and graphical formats

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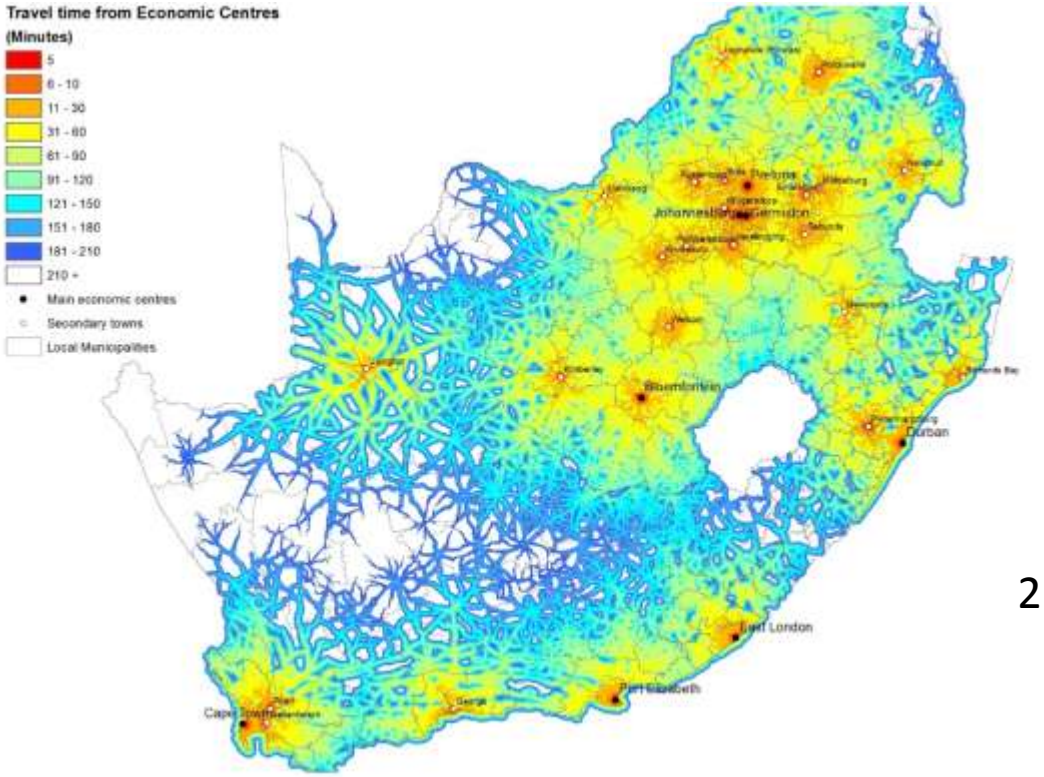

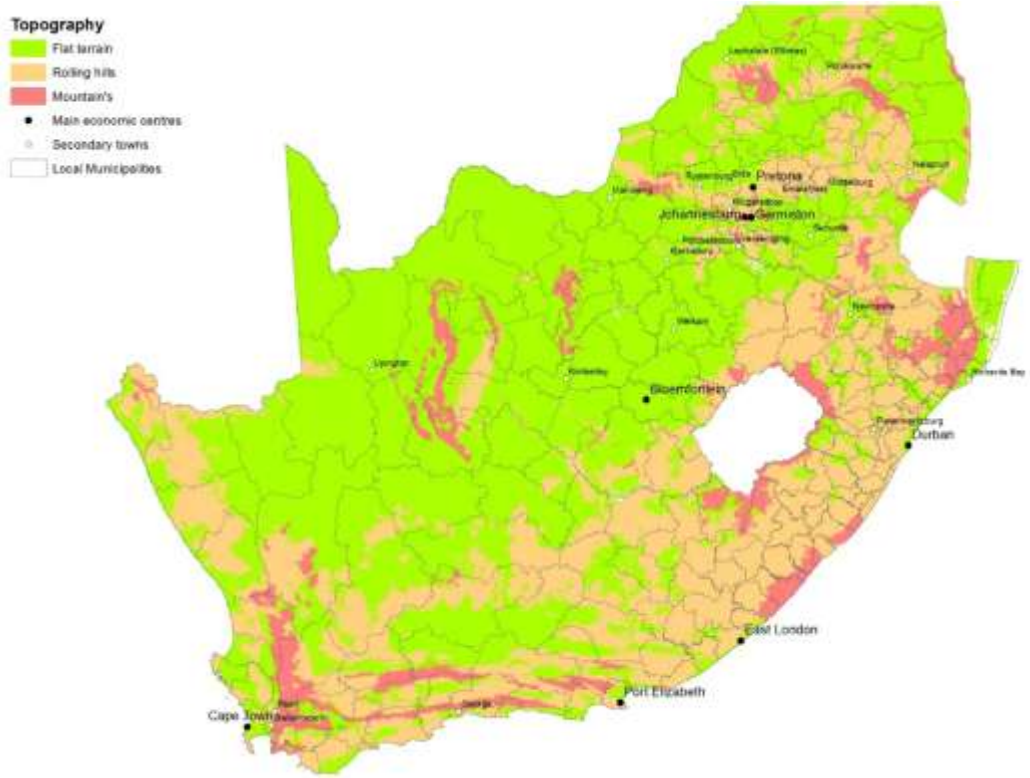

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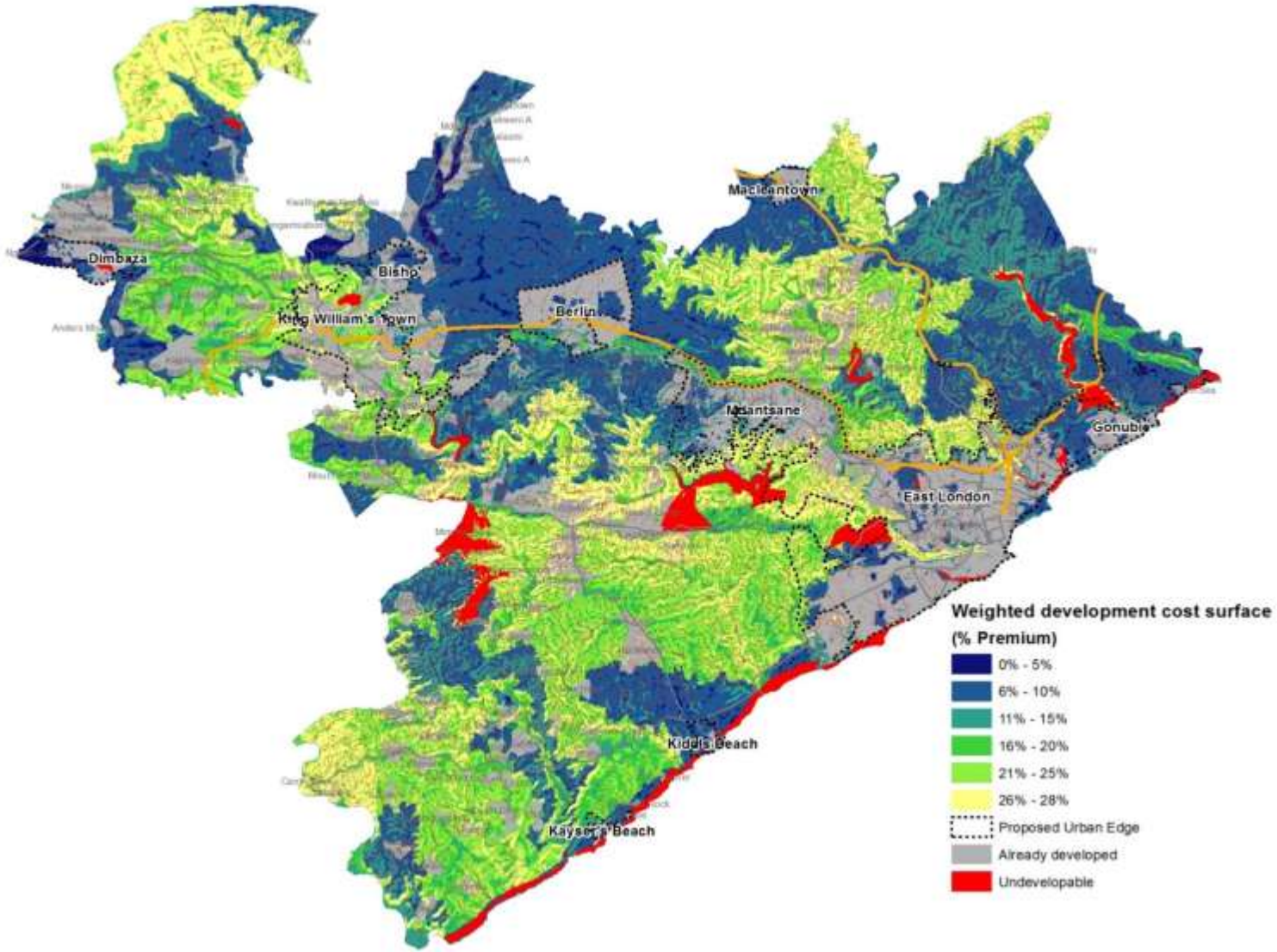
KEY MODEL FEATURES

Nuanced capital cost development surfaces:



KEY MODEL FEATURES

2. The costs of municipal basic services can be moderated individually, per category or in total, based on exogenous cost-influencing factors such as spatial characteristics, topography and geology.

Cost Influencing factors

To determine the cost impact resulting from various influencing Cost Factors to be added to repsective maintenance and operations cost elements

Legend: Input field; Calculated field

Cost influencing factor (on Operation and Maintenance) : 0% = no influence		Topography			Location		Distance from economic center			Development	Loss of Economy of scale			Asset % of CRC
Class	Cost influencing factor	Flat	Rolling	Mountainous	Coastal	Inland	Main city (A)	Secondary city (B1)	Towns (B3, B4, C1, C2)	Density	Munic Class: A	B1 and B2	B3, B4, C1, C2	Condition
Electricity	Bulk purchases	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
	Contracted services	0%	2%	4%	0%	0%	0%	5%	10%	Y	0%	2%	5%	0%
	Employee-related costs – salaries & wages	0%	2%	4%	0%	0%	0%	0%	0%	Y	0%	2%	5%	0%
	Insurance	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
	Other expenditure – Loose tools & overheads	0%	0%	0%	0%	0%	0%	5%	10%	0%	0%	2%	5%	0%
	Other materials	0%	0%	0%	0%	0%	0%	5%	10%	0%	0%	2%	5%	0%
	Rent of facilities and equipment	0%	0%	0%	0%	0%	0%	5%	0%	Y	0%	2%	5%	0%
	Operations / Repairs and maintenance	0%	0%	5%	0%	0%	0%	5%	10%	Y	0%	2%	5%	0.08%
	Transportation costs	0%	5%	10%	0%	0%	0%	5%	10%	Y	0%	2%	5%	0%
	Energy costs	0%	0%	2%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Refuse	Bulk purchases	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
	Contracted services	0%	5%	10%	0%	0%	0%	5%	10%	Y	0%	2%	5%	0%
	Employee-related costs – salaries & wages	0%	2%	5%	0%	0%	0%	5%	0%	Y	0%	2%	5%	0%
	Insurance	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
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	Energy costs	0%	0%	0%	0%	0%	0%	2%	0%	Y	0%	2%	5%	0%
Sanitation	Bulk purchases	0%	0%	0%	-2%	0%	0%	5%	10%	0%	0%	0%	0%	0%
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	Rent of facilities and equipment	0%	0%	0%	0%	0%	0%	5%	0%	Y	0%	2%	5%	0%
	Operations / Repairs and maintenance	3%	2%	7%	4%	0%	0%	5%	10%	Y	0%	2%	5%	0.08%
	Transportation costs	0%	3%	6%	0%	0%	0%	5%	10%	Y	0%	2%	5%	0%
	Energy costs	3%	2%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%

KEY MODEL FEATURES

Cost adjustment factors

Sources for % values are indicated

Legend input field

Cost structure	Source	Cost adjustment factor					
		2013/14	2014/15	2015/16	2016/17	2017/18	2018/19
Employee related costs	SALGA	6.65%	6.40%	6.40%	6.40%	6.40%	6.40%
CRC adjustment percentage	SAFCEC	5.70%	6.19%	6.19%	6.19%	6.19%	6.19%
Bulk purchases							
Water	DWA	Sheet name					
Electricity	NERSA media statement 13h00 28 February 2013	8%	8%	8%	8.00%	8.00%	8.00%
Other Materials	CPIX	5.40%	5.86%	5.86%	5.86%	5.86%	5.86%
Other expenditure	CPIX	5.40%	5.86%	5.86%	5.86%	5.86%	5.86%
Repairs and Maintenance	CPIX	5.40%	5.86%	5.86%	5.86%	5.86%	5.86%

Input Table to adjust the assumed amount of services used in the Real, Acceptable and Current Demand (not currently used or included in formula)

	usage increase					
Service	2013/14	2014/15	2015/16	2016/17	2017/18	2018/19
Water	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Electricity	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Sanitation	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Solid waste	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%

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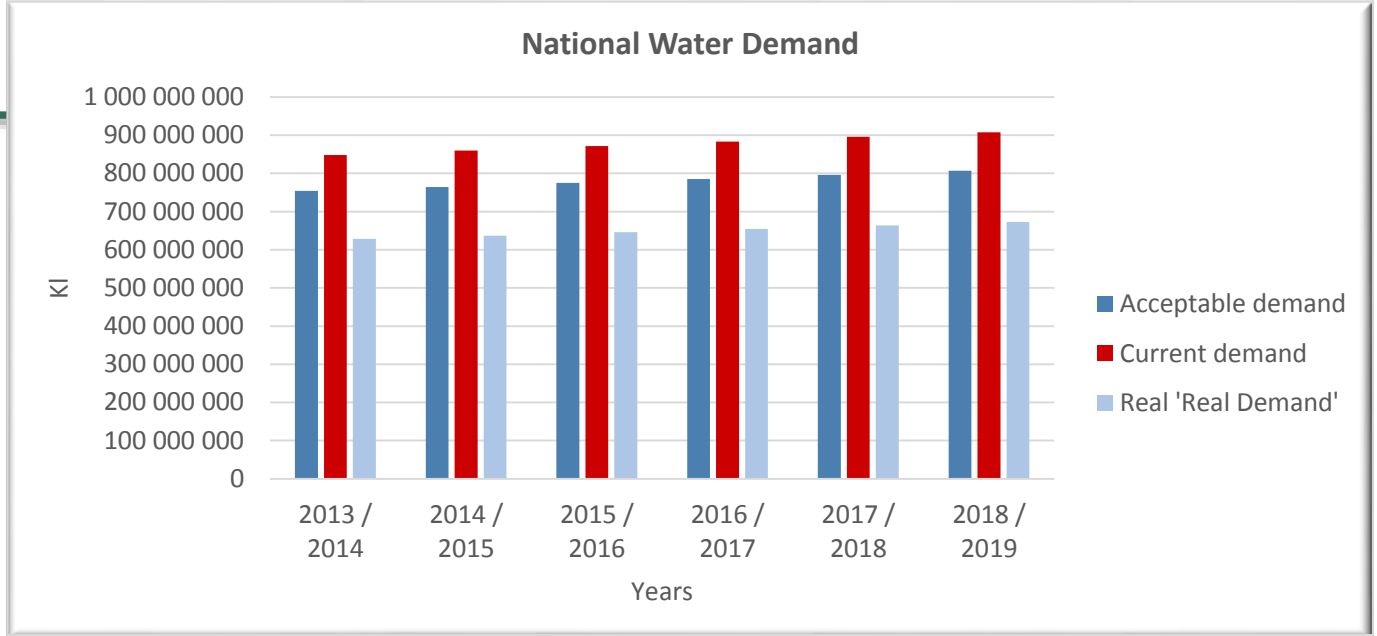

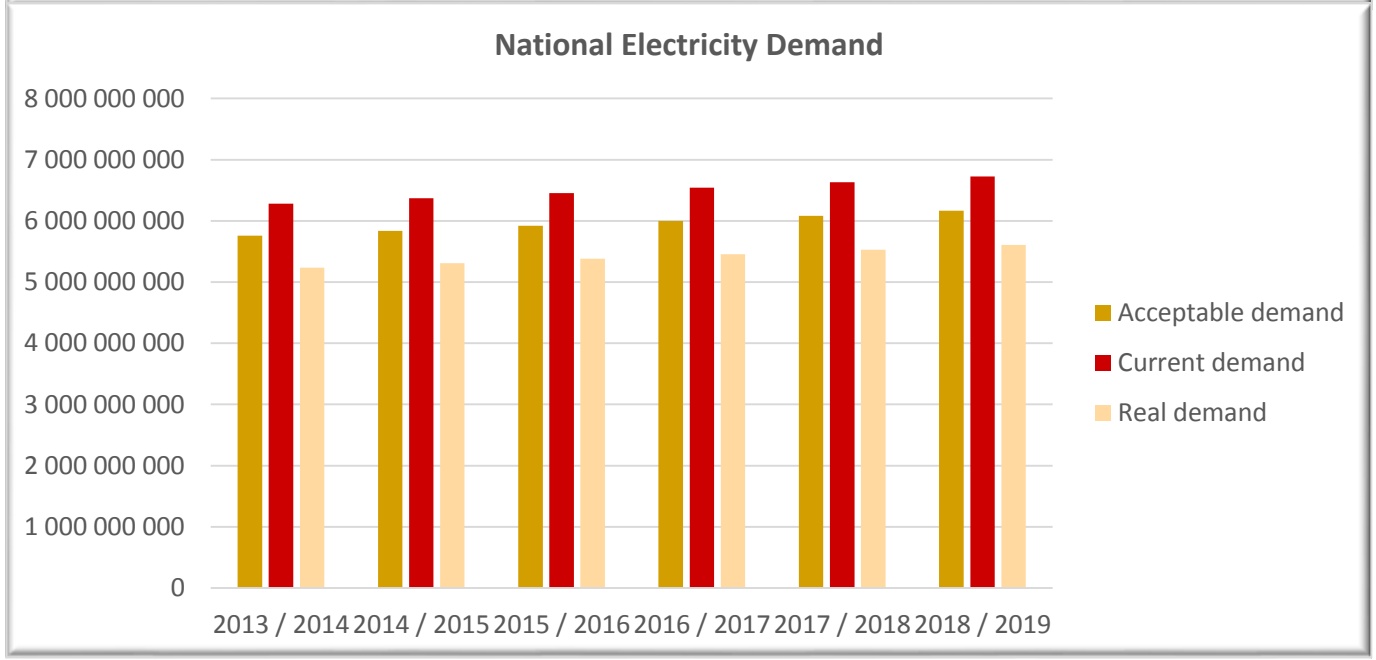

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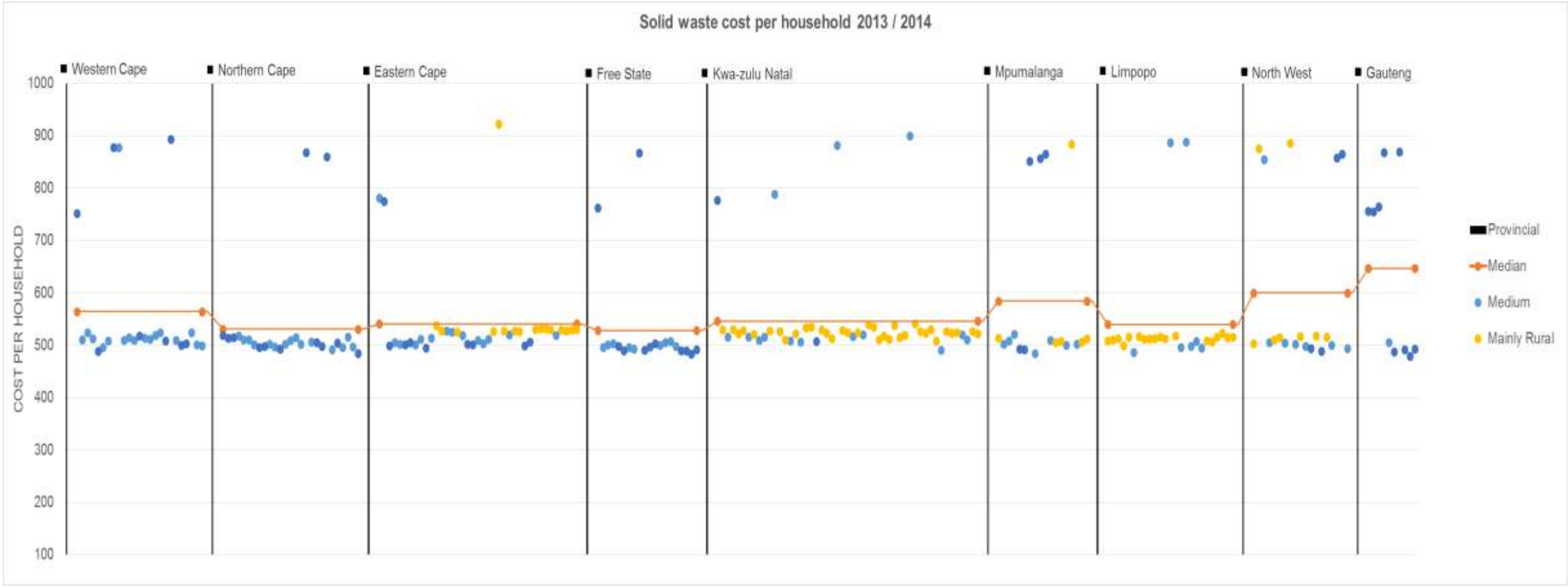
KEY MODEL FEATURES

6. The production of a proposed 3-year DORA allocation schedule and additional reporting capability.

Service	Cost/ HH/ annum 2013/14	Model B	ES 2013/14
Solidwaste	Bulk	0	
	Operations	5 326 816 995	
	Maintenance	179 424 150	
	Depr	268 348 678	
	Other		5 119 523 509
	Top-up		1 015 980 057
	Total	**5 774 589 823**	**6 135 503 567**
Water	Bulk	2 218 529 268	4 719 227 367
	Operations	1 421 347 433	
	Maintenance	1 923 807 089	
	Depr	1 756 931 679	
	Other		3 047 940 172
	Top-up		1 015 980 057
	Total	**7 320 615 469**	**8 783 147 596**
TOTAL		**35 511 965 389**	**27 961 295 150**

KEY MODEL FEATURES

7. Reporting capability in both tabular and graphical formats



APPROACH AND METHODOLOGY FOR ESTABLISHING COSTS

1. The basic costing methodology adopted in Phase 1 will be carried through to Phases 2 and 3 and, where credible data permits, extended to more fully estimate Activity-Based Costs.

2. The operating cost estimation exercise will be largely a desktop research exercise, based on available financial data published by the National Treasury. The team will however engage with selected municipalities to more fully analyse activity-based costs. To this end the team commenced analysis of costs in the Mogale City Municipality (GAU), and intends to include the following municipalities in the scope of the more detailed analysis:

    - Buffalo City Metropolitan Municipality (EC)
    - Nkangala District Municipality (MPU)
    - Thembisile Hani Local Municipality (MPU)
    - Polokwane Municipality (LIM)
    - Hessequa Municipality (WC)

    The above municipalities represent a fair mix of varying categories, size, geographic distribution, income base and level of wealth, municipal capacity, and urban/rural mix

APPROACH AND METHODOLOGY FOR ESTABLISHING COSTS

3. Estimating capital costs as well as depreciation. The Current Replacement Cost (CRC) methodology will be employed to estimate capital costs and the Depreciated Replacement Cost (DRC) methodology will be used to determine depreciation charges. CRC and DRC values have been calculated for dozens of municipalities in several provinces, and will be extrapolated to all municipalities considering the category of municipality.

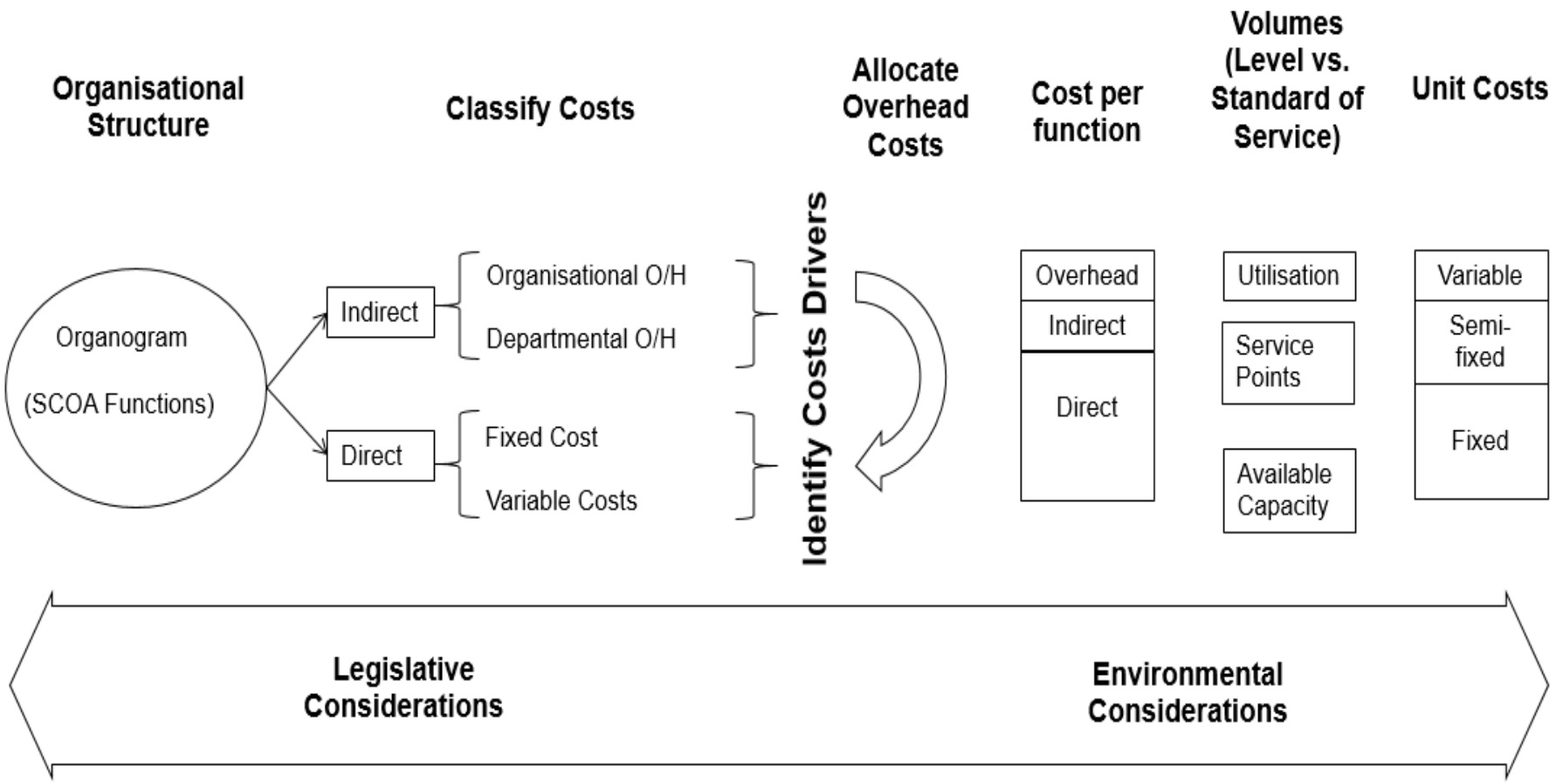
4. The financial year ending 2013 will be used due to the availability of audited results.

5. The following diagram summarised the approach to determining costs per service. Amongst others it involves:
   - understanding the service mandate of the municipality,
   - obtaining financial information,
   - categorisation of costs according to nature (direct or indirect costs) or behaviour (fixed, variable or semi-variable), and
   - calculating unit costs at various levels and standards of service, and product volumes.

Activity-Based Costing (ABC) links all costs relating to activities with the activities which drive the costs to determine the cost of services and functions. It would therefore be the preferred methodology as it includes both product costing as well as service costing.

APPROACH AND METHODOLOGY FOR ESTABLISHING COSTS

Methodology:

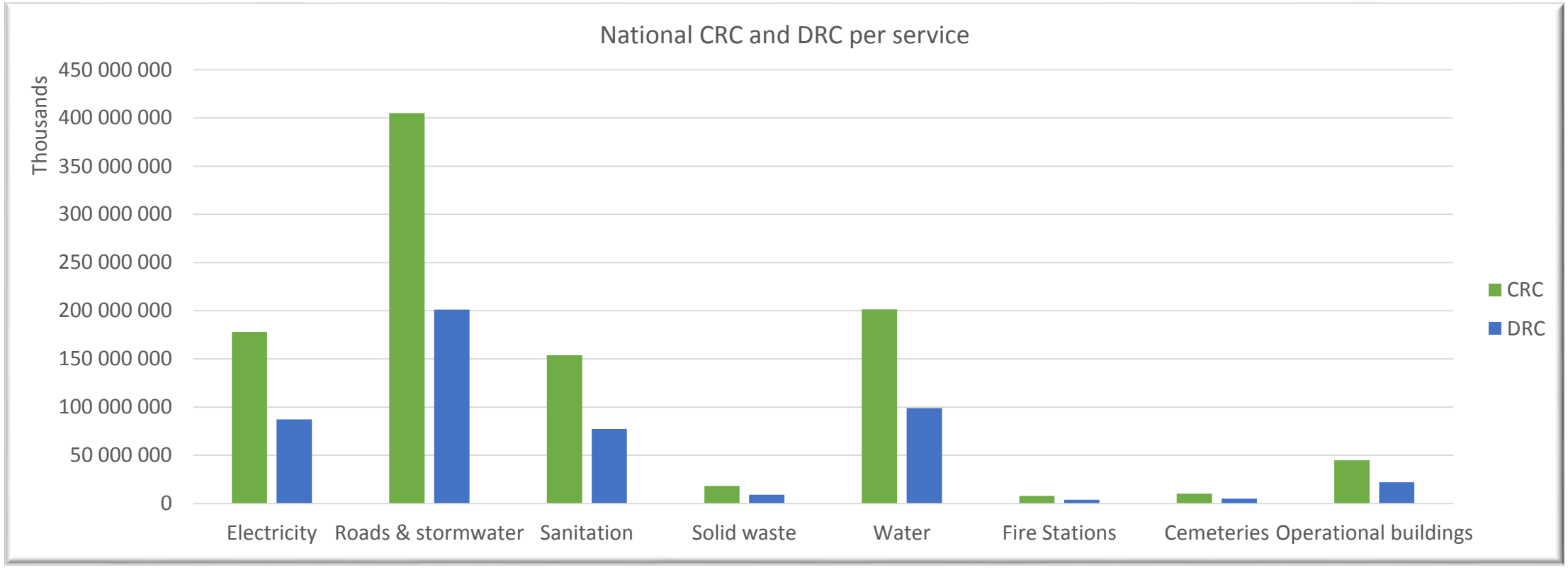


APPROACH AND METHODOLOGY FOR ESTABLISHING COSTS

Cost allocation methodology and hierarchy

		Allocation Methodology		
		Preferred	**Alternative 1**	**Alternative 2**
CFO	- Budget	Expenditure Budget	Expenditure Budget	Expenditure Budget
	- Revenue Management	Billed Revenue	Expenditure Budget	Expenditure Budget
	- Asset Management	FAR, Value of Assets	FAR, no of Assets	Expenditure Budget
	- Treasury Office	Cash flow requirements	Expenditure Budget	Expenditure Budget
	- Supply Chain Management	Procurement processes managed	Expenditure Budget	Expenditure Budget
Corporate Services	- Human Resources	Payroll	Head Count	Head Count
	- Information Technology	Number IT equipment	Value IT equipment	Head Count
	- Property Services	Value of Space occupied	Space occupied	Head Count
	- Fleet Management	Value of vehicles used	Number of Vehicles leased	Head Count
	- Legal Services	Legal services utilised(contract / cases)	Head Count of dept using legal services	Head Count
	- Marketing, Publicity and Media Co-ordination	Services provided	Head Count	Head Count
	- Risk Management	Risks managed / mitigated	Values of insurable assets and risks	Head Count
	- Security Services	Security Requirements	Head Count	Head Count
Internal Audit		Risk	No of Transaction	Expenditure Budget
Executive and Council	- Mayor and Council	Head count		
	- Municipal Manager	Head count		

SOME OUTPUTS: VALUE OF MUNICIPAL INFRASTRUCTURE NATIONALLY



Replacement value of municipal infrastructure: **R 1 090 195 397 865**

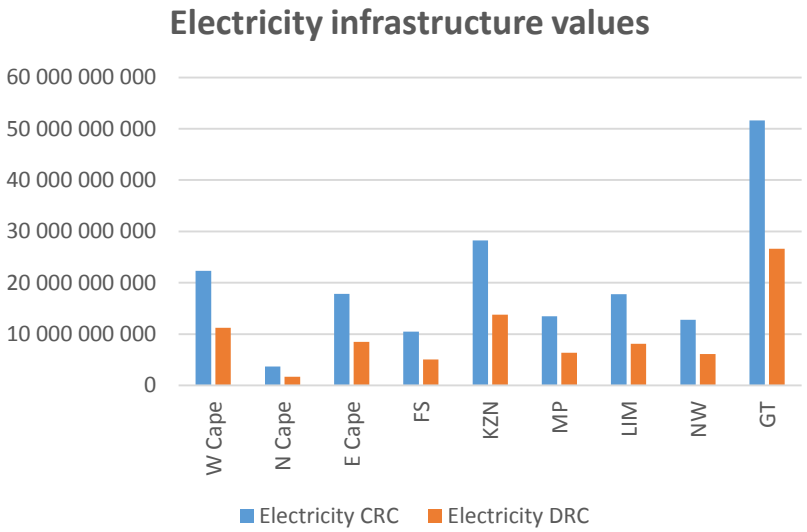
178 212 288 223

Carrying value of municipal infrastructure: **R 538 595 922 770**

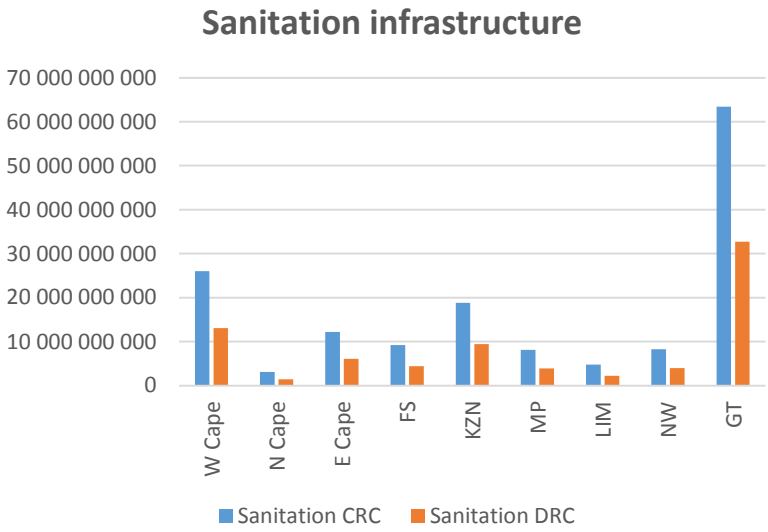
Annual depreciation: **R 269 294 503**

These are provisional results currently being reviewed

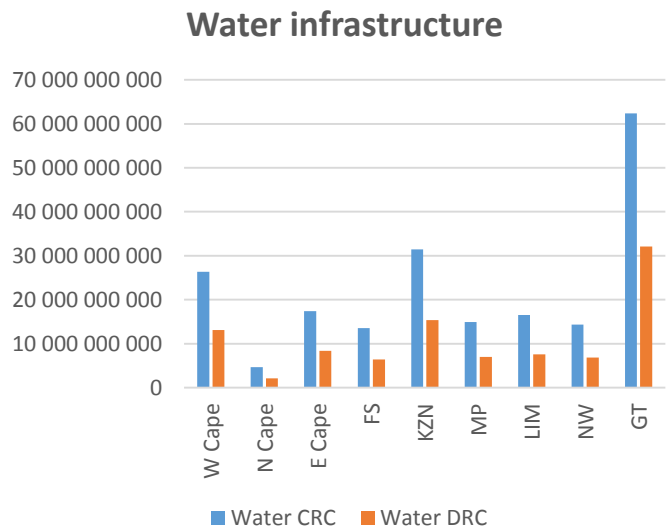
SOME OUTPUTS: VALUE OF MUNICIPAL INFRASTRUCTURE NATIONALLY



R 178.2 billion in replacement value



R 153.9 billion in replacement value



R 201.5 billion in replacement value

Combined value of these infrastructure networks: **R 533.6 billion**

SOME OUTPUTS: COMPARISON OF OPERATIONAL NEEDS TO EQUITABLE SHARE ALLOCATIONS

A ratio of 1 indicates equal values, larger than 1 indicates the value in terms of Model A is higher than the ES (1.1 being equal to 10 % higher)

Category	Electricity	Sanitation	Solid waste	Water	All services
Model A/ES - 2014	3.03	0.70	0.94	0.83	1.27
Model A/ES - 2015	2.86	0.70	0.99	0.86	1.27
Model A/ES - 2016	2.69	0.71	1.03	0.88	1.27

Category	Electricity	Sanitation	Solid waste	Water	All services
Model B/ES - 2014	3.03	0.70	0.94	0.83	1.27
Model B/ES - 2015	2.86	0.70	0.94	0.83	1.26
Model B/ES - 2016	2.70	0.70	0.94	0.83	1.24