City of Cape Town’s long term water supply plans

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Mayoral Committee Member for Informal Settlements, Water and Sanitation and Energy
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Bulk Water Infrastructure

- Western Cape Water Supply System
- Small volume from Atlantis artificial aquifer recharge scheme
- Sell some of our water to Stellenbosch and Drakenstein for part of their needs.
Water Reticulation System

- 15 dams (some City, some DW&S)
- 12 water treatment plants
- 24 reservoirs
- 422 pump stations
- 9,300km of sewer pipeline
- 11,000km of water pipeline
- 650,000 service connections
Water Use in Cape Town (2015/16) – mainly residential

- Houses, 55.6%
- Retail & Offices, 11.0%
- CCT Departments & Council-owned premises, 5.2%
- Industry, 3.9%
- Informal Settlements, 4.7%
- Domestic other, 1.8%
- Flats & complexes, 9.2%
- Other, 6.2%
- Government, 2.5%

70 % Residential
Population Growth and Water Use Efficiency

City’s demand-side programme has ‘flatlined’ consumption since 2000

Water Treated per year (million m$^3$)

Population (millions)
Water Allocations and Actual Demand

Allocation from Berg River Dam (84 Mm³) Fully Financed by CCT

Combined allocations from Voelvlei, Wemmershoek, Theewaterskloof and Steenbras Dams plus Palmiet Transfer (320 Mm³)

Proposed COCT Augmentation Schemes
Accelerated Programme (Additional 15 Mm³)

20% Saving

280-260 Mm³
Recent Drought Events

The chart shows the dam's fill percentage over the years, with drought periods indicated. The graph includes key data points:

- 2000: 62% full
- 2001: 75% full
- 2002: 62% full
- 2003: 30% full
- 2004: 15-20% full

Drought periods are marked with green arrows.
## New Accelerated Water Supply Schemes

<table>
<thead>
<tr>
<th>SCHEME</th>
<th>YIELD (ML/day)</th>
<th>DESCRIPTION</th>
<th>ESTIMATED COST</th>
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</thead>
<tbody>
<tr>
<td>TMG Aquifer</td>
<td>10</td>
<td>Development of well fields into deep aquifer at Steenbras, Wemmershoek and Theewaterskloof Dams</td>
<td>R 85 million</td>
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<tr>
<td>Seawater Desalination Package Plant</td>
<td>5</td>
<td>Primarily for sea water quality data acquisition as well as to improve supply security in Atlantis</td>
<td>R 100 million</td>
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<td>Wastewater Re-use (drinking water)</td>
<td>10</td>
<td>Treatment of effluent from Zandvliet WWTW for direct or indirect injection into bulk water supply system.</td>
<td>R 120 million</td>
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<td>Cape Flats Aquifer &amp; Atlantis Aquifer</td>
<td>5</td>
<td>Incremental drilling of boreholes to abstract water from the Cape Flats Aquifer in Mitchells Plain as well as expansion of well fields in Atlantis</td>
<td>R 50 million</td>
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<td>WC/WDM Strategy</td>
<td>100</td>
<td>Intensification of demand management measures:</td>
<td>R 10 million</td>
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<tr>
<td></td>
<td></td>
<td>• Water restrictions</td>
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<td></td>
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<td>• Pressure management</td>
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<td>• Water saving incentive schemes</td>
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<td>• Regulation of plumbing fittings and water using appliances</td>
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<td>• Informative water billing</td>
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<td>• Communication</td>
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<tr>
<td>Voelvlei Augmentation (Phase 1)</td>
<td>60</td>
<td>DWS Scheme – Pumped transfer of water from Berg River to Voelvlei Dam</td>
<td>R 300 million</td>
</tr>
</tbody>
</table>
Diversification of Water Sources

Cape Town's Possible Future Water Resource Mix

- Surface Water: 64%
- Groundwater: 17%
- Water Re-use (for Potable Use): 9%
- Desalination: 10%
Future Water Outlook

• **Key considerations:**
  – Growing regional demand and competition for water
  – Climate change requires diversification of water sources and improved water use efficiency
  – Unit cost of water is likely to increase as more costly alternatives to surface water schemes are implemented
  – Opportunity provided by current water crisis must be maximized to effect “quantum leap” change to the way water is resourced and utilized in CT.

• **Drive towards Cape Town as a Water Sensitive City that:**
  – Optimises and integrates the management of all available water resources – surface, ground, wastewater and stormwater - to improve resilience
  – Places high value on water and strives to increase water use efficiency through water sensitive urban design
The Future Cape Town – a Water Sensitive City
CITY OF CAPE TOWN
ISIXEKO SASEKAPA
STAD KAAPSTAD

Thank You

Making progress possible. Together.