



NATIONAL SANITATION PROGRAMME UNIT

Access to Sanitation Services and Options for Choice of Technology

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water & forestry

Department:
Water Affairs and Forestry
REPUBLIC OF SOUTH AFRICA



Progress

- Access to sanitation is a constitutional right.
- The Strategic Framework for Water Services sets the targets to be met.
- More than 6 million people have been provided with access to basic sanitation since 1994.

Universal Access to Sanitation Apr 08	1994	2004	Apr-08
Proportion of rural population with access to basic sanitation (%)	33%	45%	61%
Proportion of urban population with access to basic sanitation (%)	59%	77%	82%

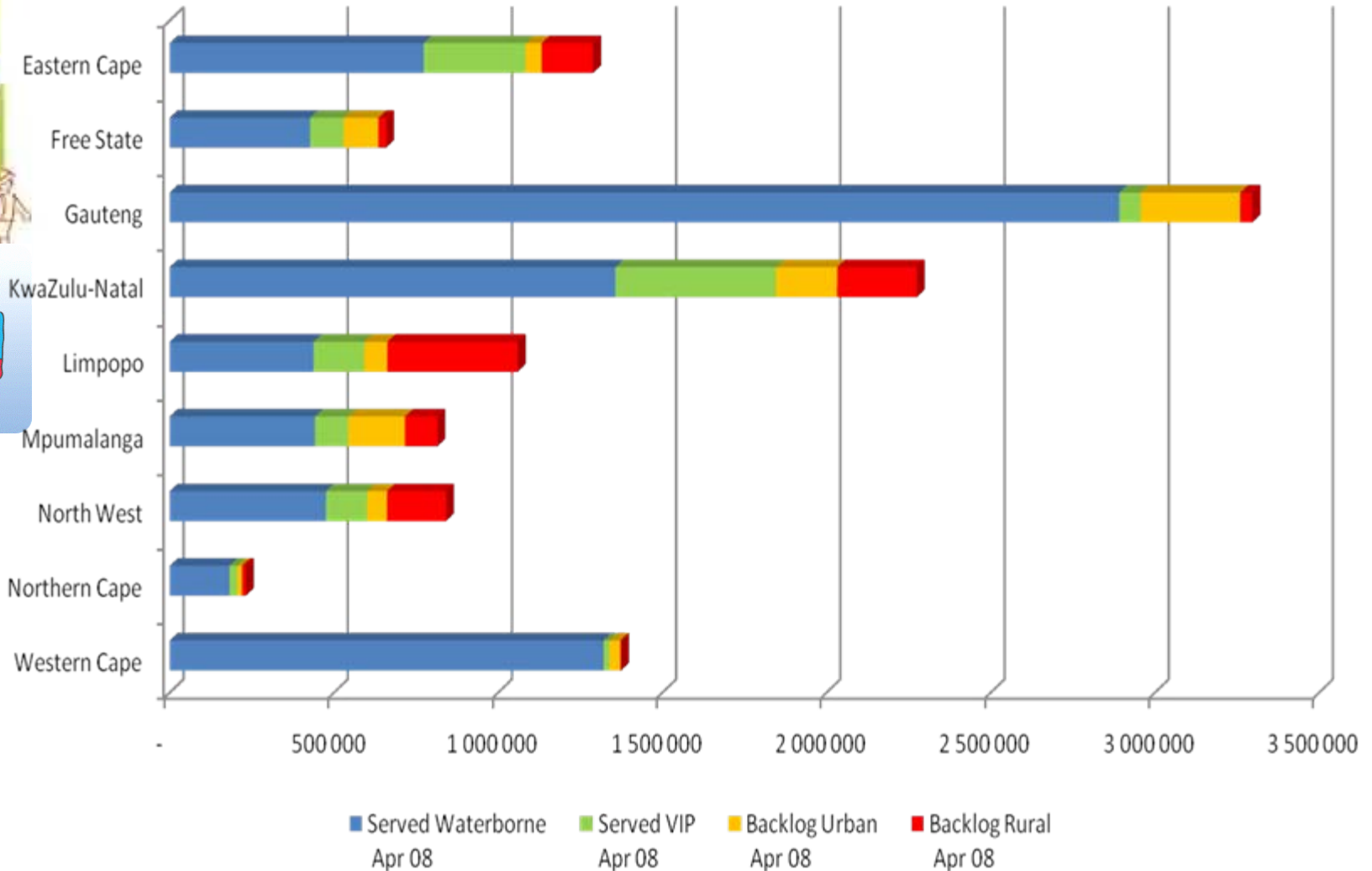


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Sanitation Served vs Backlog – Apr 08



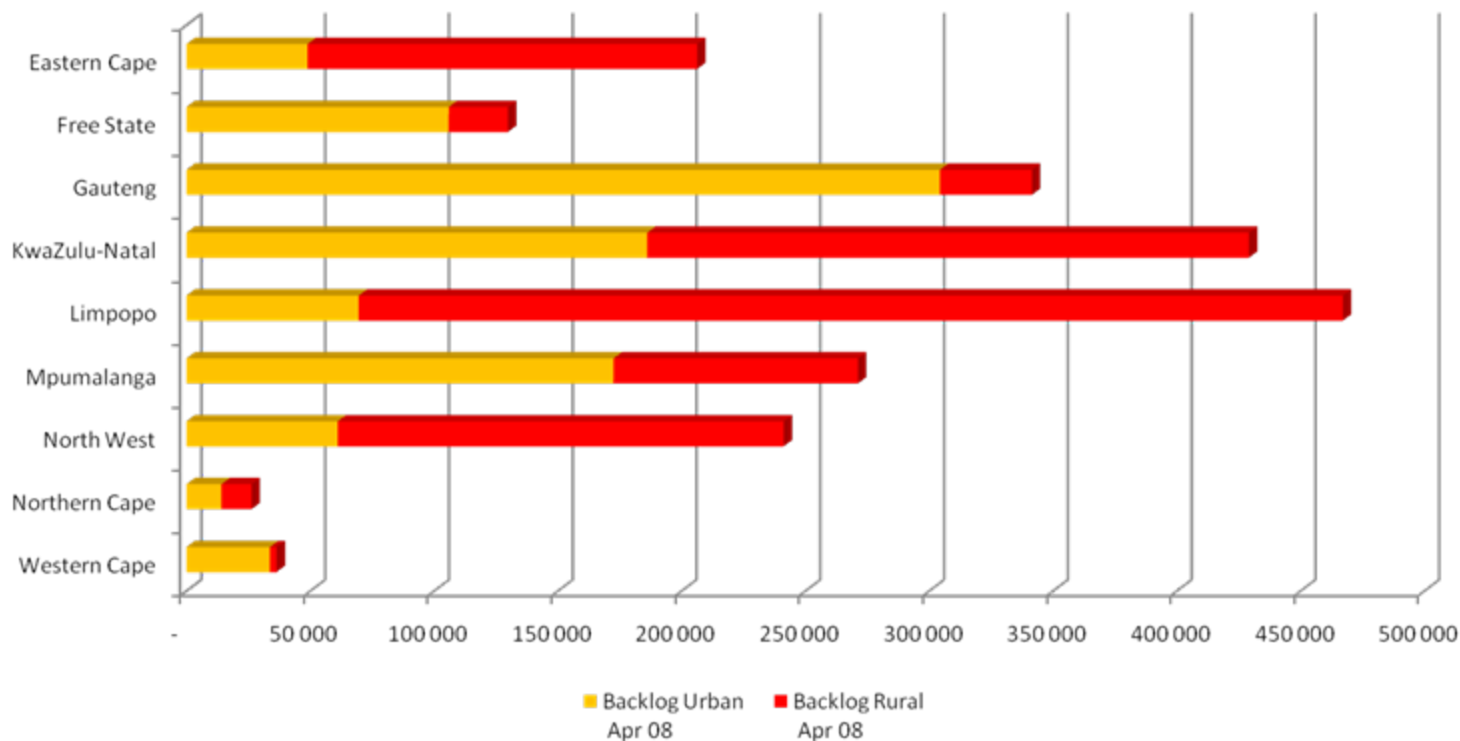


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Where are our biggest backlogs still to be found?





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Sanitation Technology Applications

- **Urban areas:** waterborne sanitation has generally been used
- **Peri-urban areas:** waterborne, aquaprivies, and dry sanitation (VIP or UDS) has generally been used
- **Rural areas:** dry sanitation (VIPs) has generally been used
- **Other areas:** small bore sewers and commercial on-site sanitation have also been used



What are the Recommended Technology Types?

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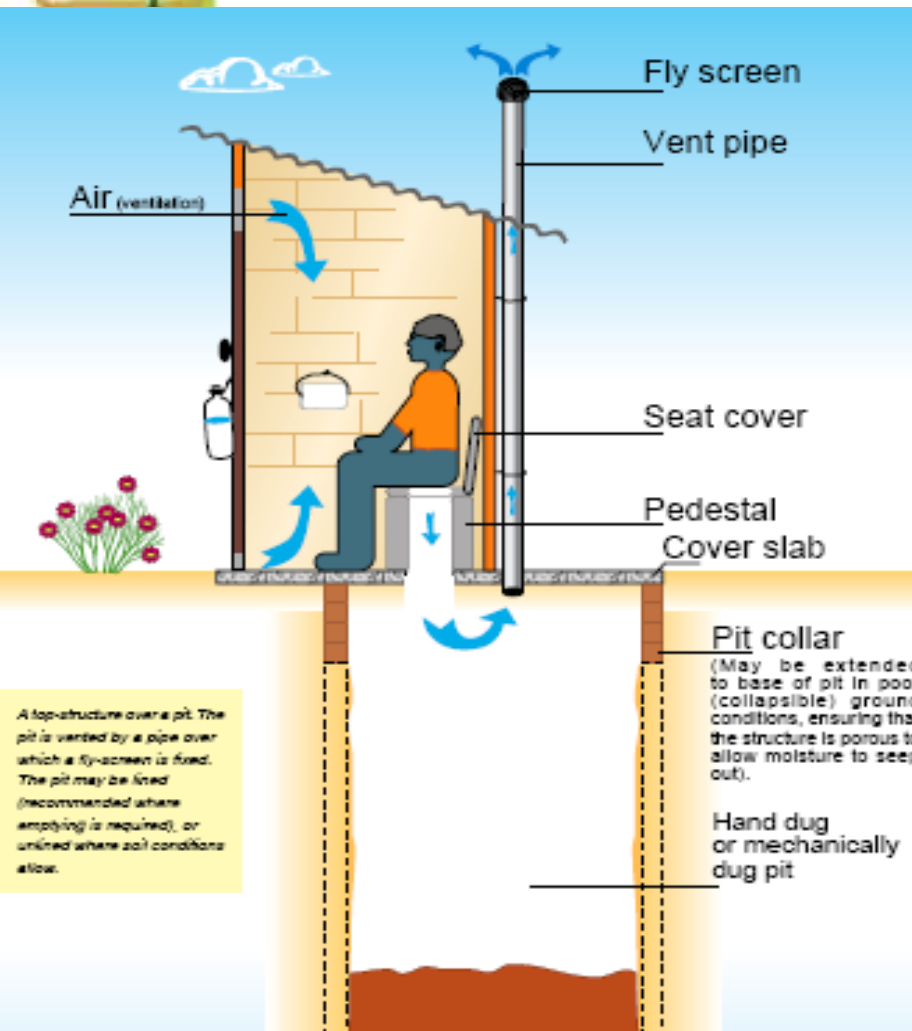
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Technology Types (1)

VIP Toilets

- Low cost
- Appropriate for areas without reliable household water connections
- Requires pit emptying service or option to move top structure
- Does not deal with grey water

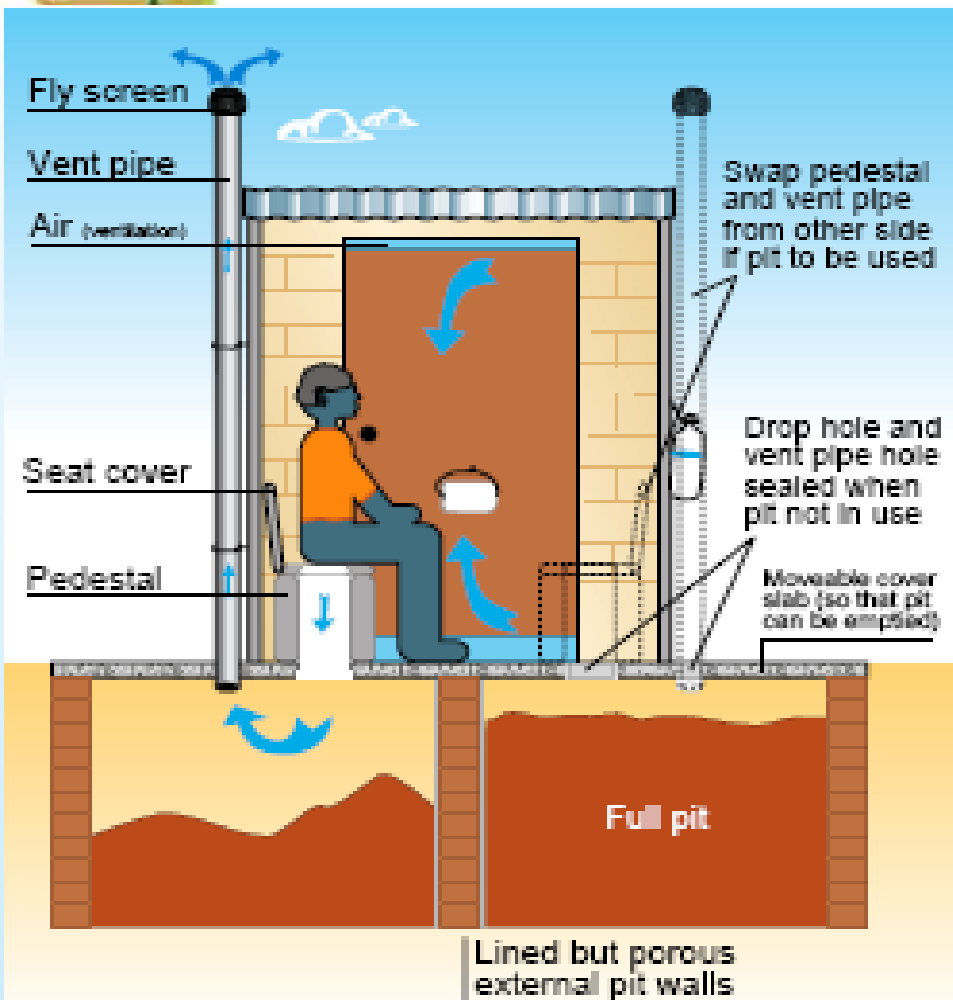




Technology Types (2)

VIP Double Pit Toilets

- Low cost
- Appropriate for areas without reliable household water connections
- Requires pit emptying service or can be emptied by homeowner
- Does not deal with grey water

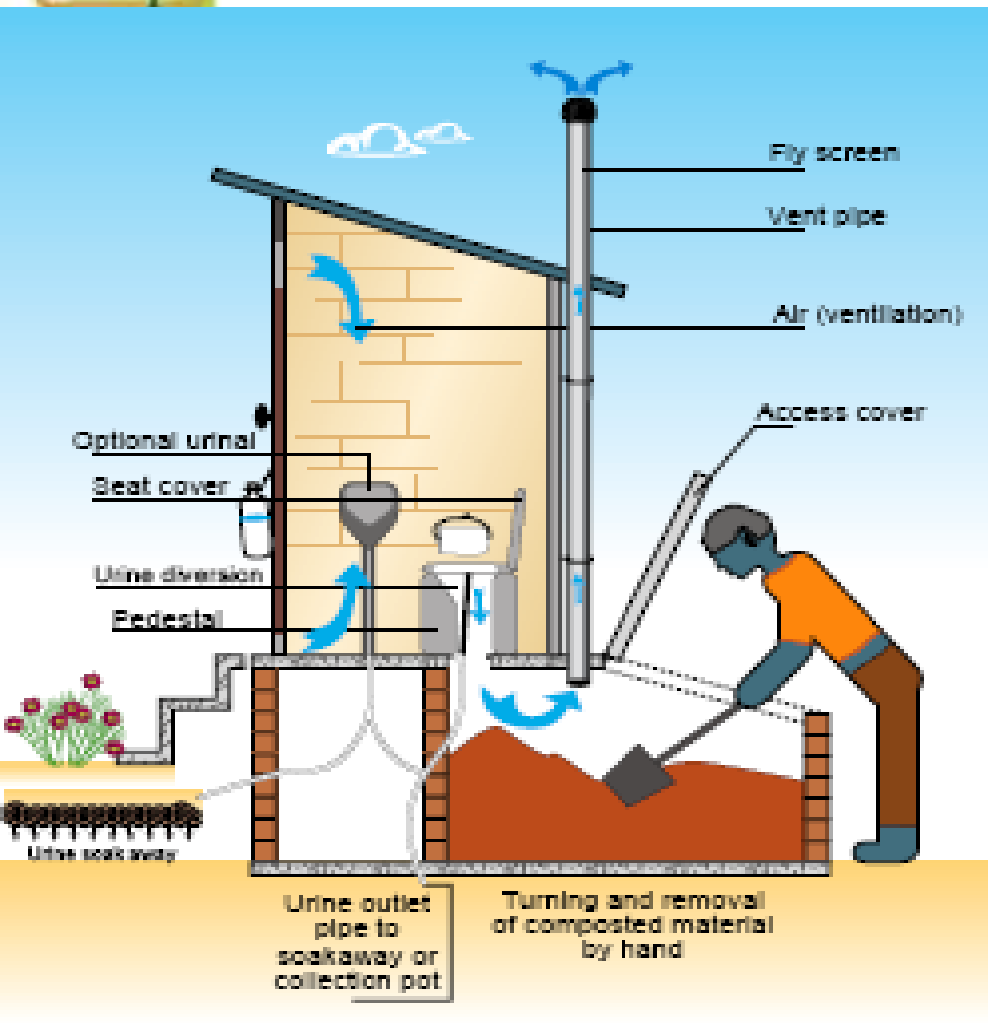




Technology Types (3)

Urine Diversion

- Intermediate cost
- Appropriate for areas without reliable household water connections
- Can be emptied by homeowner
- Does not deal with grey water
- Environmentally friendly

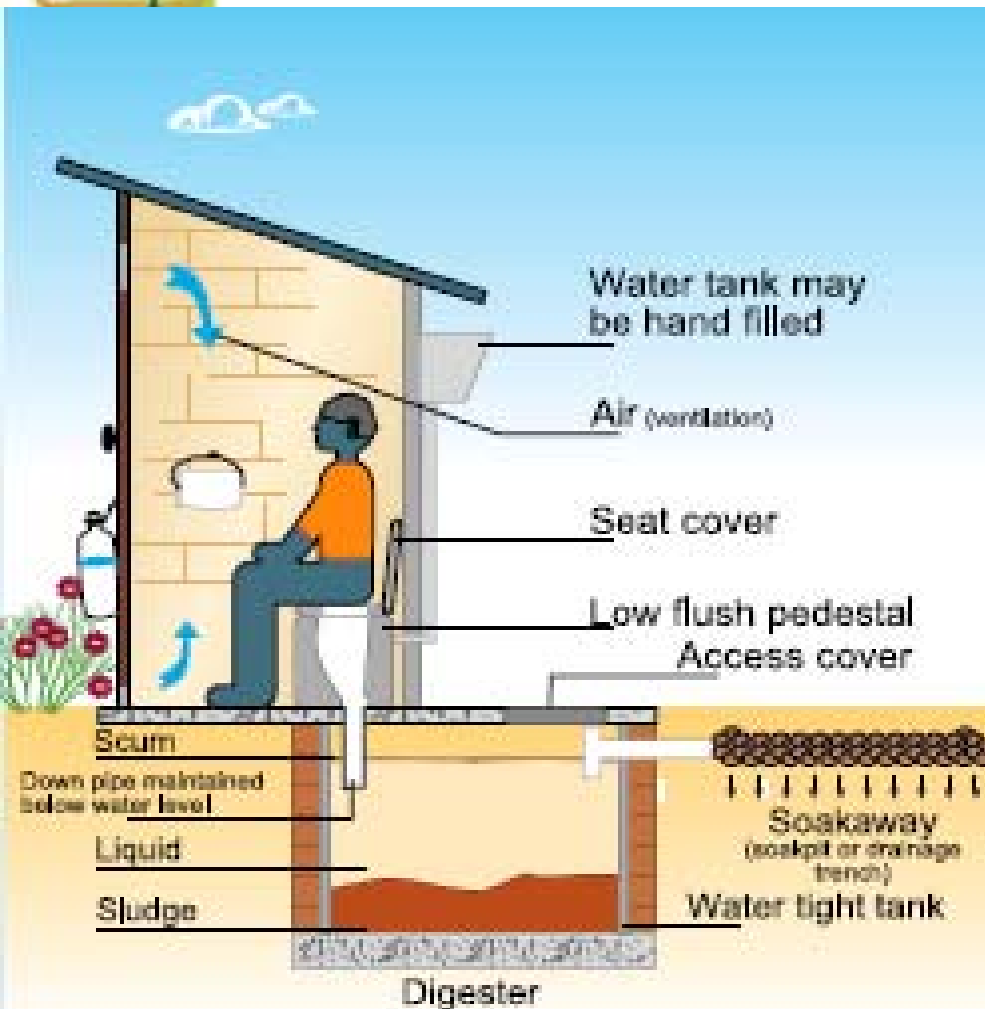




Technology Types (4)

Aqua Privy (Lo-Flo digester)

- Intermediate cost
- Appropriate for areas without reliable household water connections
- Provides low volume flush option
- Digester must be emptied of sludge at intervals
- Can deal with small amounts of grey water
- Environmentally friendly

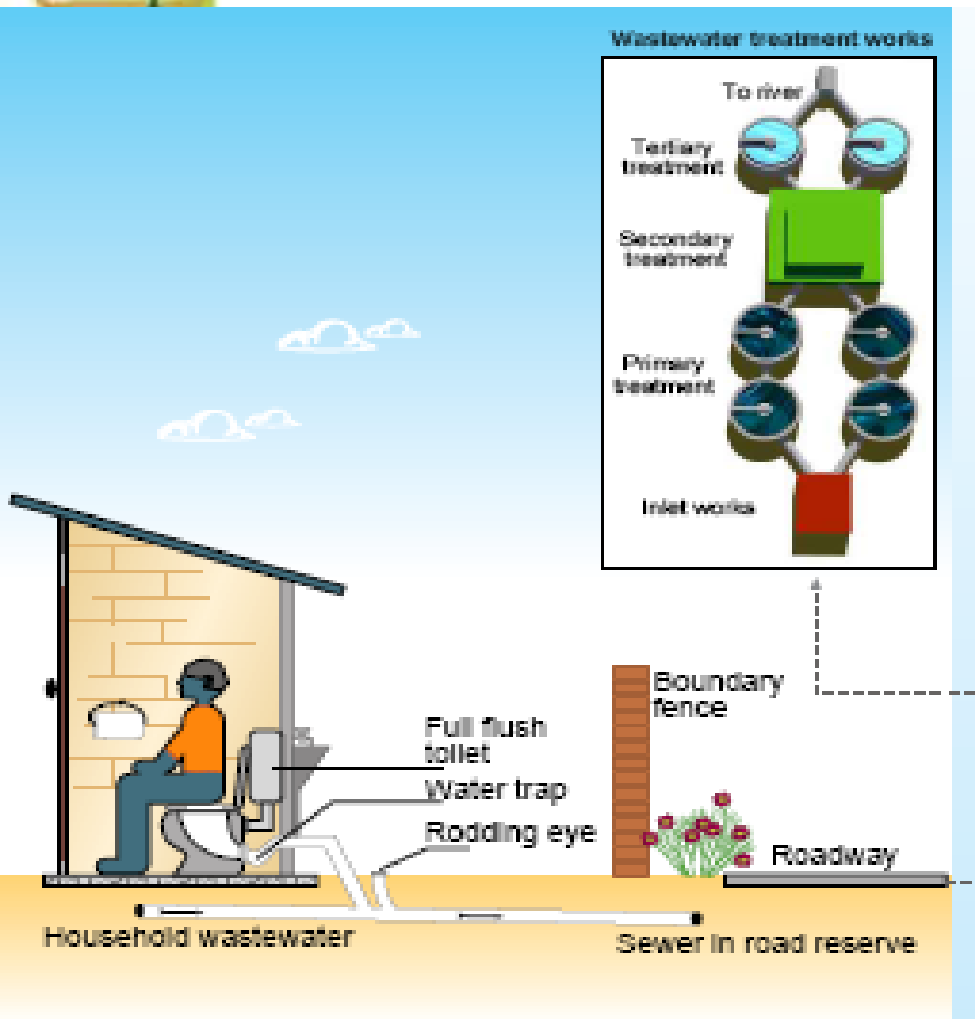




Technology Types (5)

Waterborne System

- High cost
- Appropriate for urban areas with reliable household water connections
- Provides in-house flush toilet
- Sewers and treatment plant require ongoing high level O&M
- Can deal with grey water
- Environmental risk if not well maintained

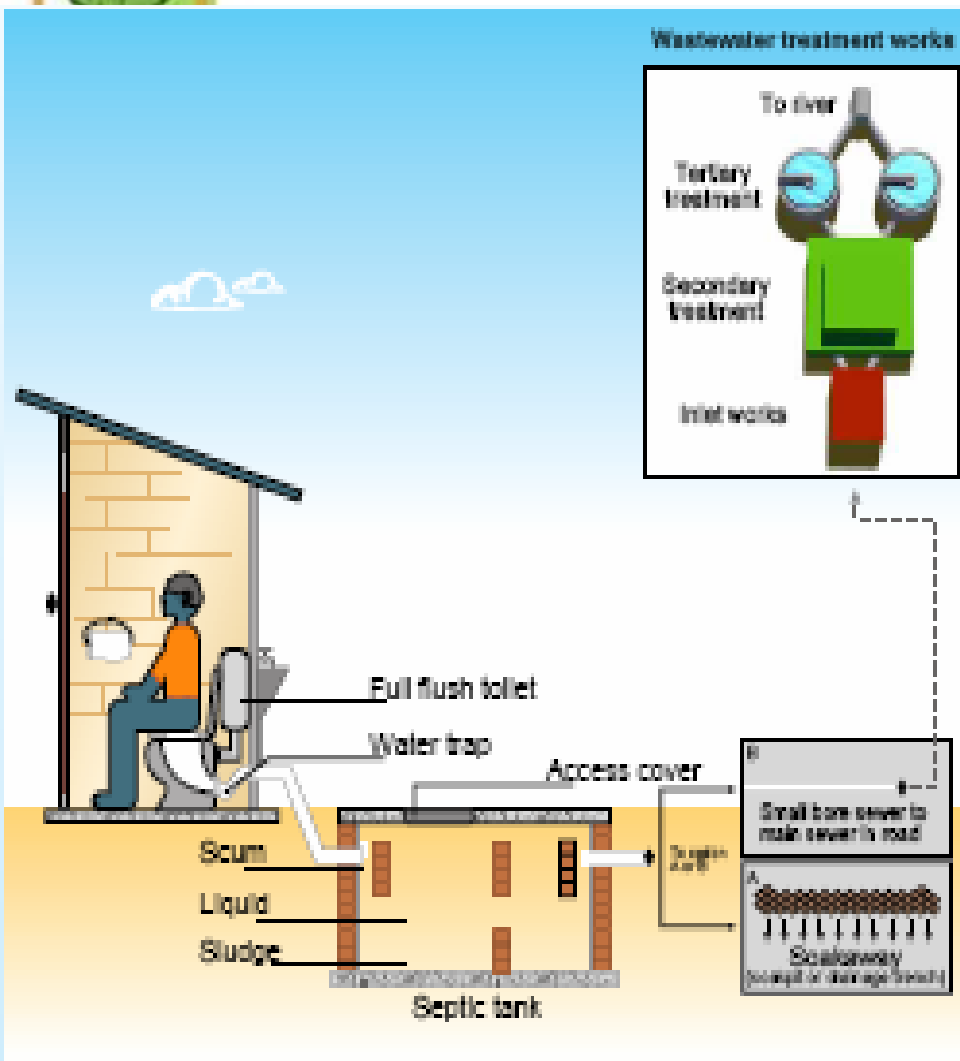




Technology Types (6)

Septic tank with soak-away or small bore sewer

- High cost
- Appropriate for peri urban less dense areas with reliable household water connections
- Provides in-house flush toilet
- Septic tank must be emptied at intervals
- Sewers and treatment plant require ongoing high level O&M
- Can deal with grey water
- Environmental risk if not well maintained

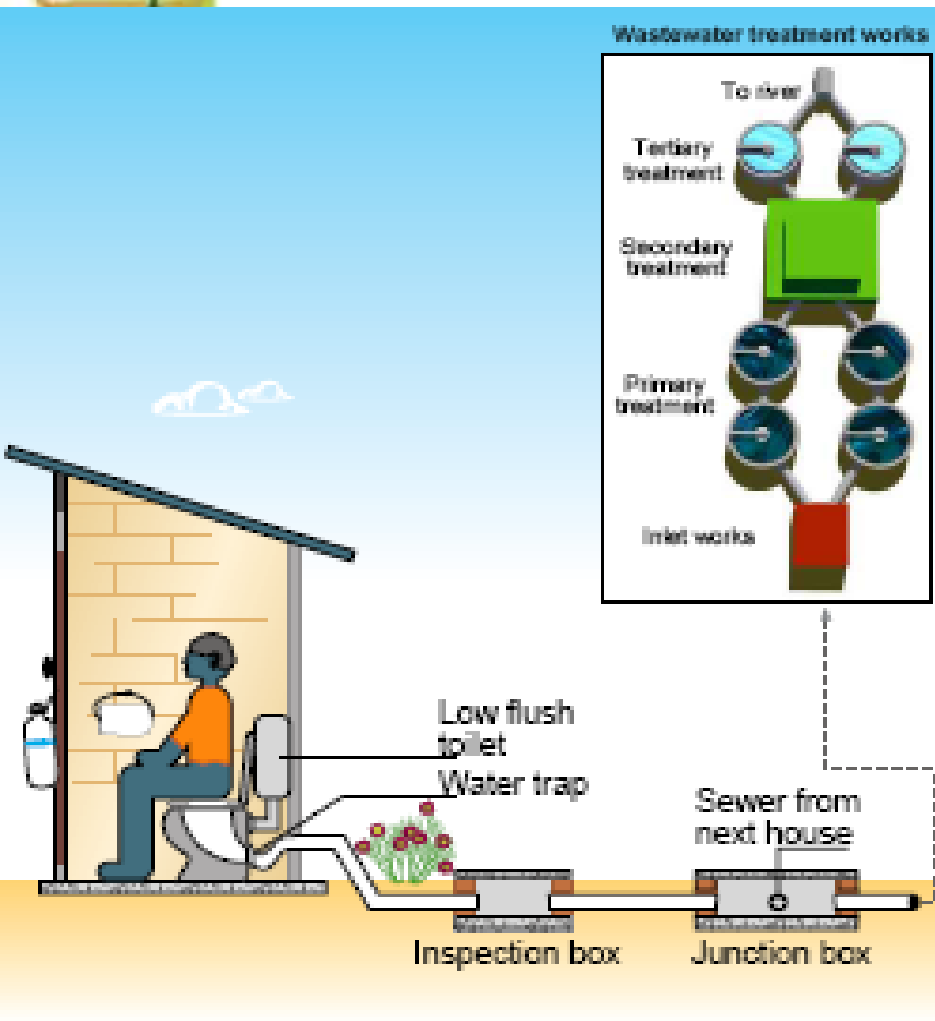




Technology Types (7)

Shallow Sewer System

- High cost
- Appropriate for urban dense areas with reliable household water connections
- Provides in-house flush toilet
- Home-owners take some responsibility for maintenance
- Sewers and treatment plant require ongoing high level O&M
- Can deal with grey water
- Environmental risk if not well maintained





Choosing an appropriate Technology

- Technology choice is dependent on a wide range of factors, including the original aims and objectives of the service delivery strategy.
- Final technology choice must be based on a thorough feasibility study.



CHOICE OF TECHNOLOGY

- **Factors that must be considered:**

- Capital costs
- Recurrent costs
- Job creation potential
- Availability and reliable and sustainable water resources
- Ground conditions (construction and/or drainage aspects)
- Operational requirements
- Environmental protection
- Settlement location and layout
- Past experience and preferences
- Existing infrastructure



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Management of Operation and Maintenance

- This remains a responsibility of all municipalities
- The funding for the related functions should be sourced from tariffs and the equitable share
- Specific requirements (sewage treatment plants):
 - Use of adequately trained operators
 - Monitoring of the effectiveness of plant operations
 - Monitoring of effluent quality
 - Reaction team to address blockages and pipe breaks
- Specific requirements (on-site sanitation):
 - Pit emptying programme (municipal or private or SMME)
 - Setting up awareness programmes and monitoring systems





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Conclusions

- The progress in delivery has increased substantially over the past 5 years
- We still need to substantially increase the rate of delivery, particularly in the rural areas
- There are a number of challenges to achieving this that will require a coordinated approach by all role players
- DWAF is willing and able to provide ongoing coordination and support to the sector.



Thank you