Working Group 2

Tools and Good Practices

"Forum on Disaster Reduction"

Shanghai, China, 28-31 July, 2010

Stephen Muller
Overstrand Municipality
Hermanus, South Africa

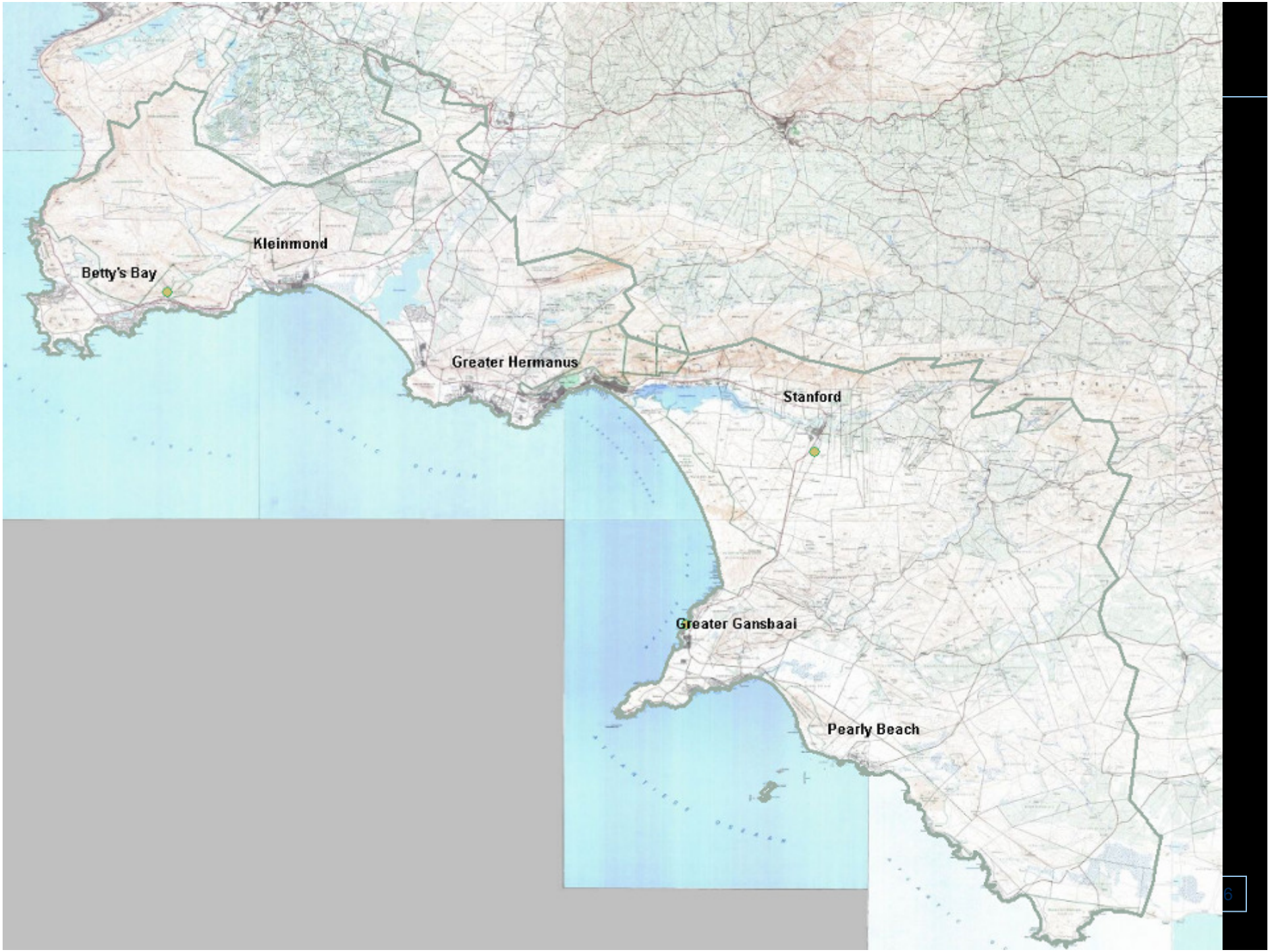
Focus on Checklist points 3, 4 and 8

3. Maintain up-to-date data on hazards and vulnerabilities, prepare risk assessments and use these as the basis for urban development plans and decisions. Ensure that this information and the plans for your city's resilience are readily available to the public and fully discussed with them.

4. Invest in and maintain infrastructure that reduces risk, such as flood drainage, adjusted where needed to cope with climate change.

8. Protect ecosystems and natural buffers to mitigate floods, storm surges and other hazards to which your city may be vulnerable. Adapt to climate change by building on good risk reduction practices.

CONTEXT


Kleinmond
Betty's Bay
Greater Hermanus
Stanford
Greater Gansbaai
Pearly Beach

CONTEXT

CONTEXT

- Total population = 73,000 people
- 11 towns spread over 230km of coast line
- Total developed urban properties = 25,000
- Total undeveloped urban properties = 10,000
- Large seasonal variation in population
- Largest industries are tourism and agriculture
- Budget per year: Operational =USD70m, Capital = USD25m
- Main town is Hermanus with a population of 37,000

Greater Hermanus Area

Municipal Risk Management

Ward Committees

- Ward 1
- Ward 2
- Ward 3
- Ward 4
- Ward 5
- Ward 6
- Ward 7
- Ward 8
- Ward 9

Risk Manager

Risk Committee

- Top 10 Risks
- Integrated Development Plan
- Budget

Municipal Directorates

- Infrastructure and Planning
- Finance
- Community Services
- Protection Services
- Management Services
- Local Economic Development

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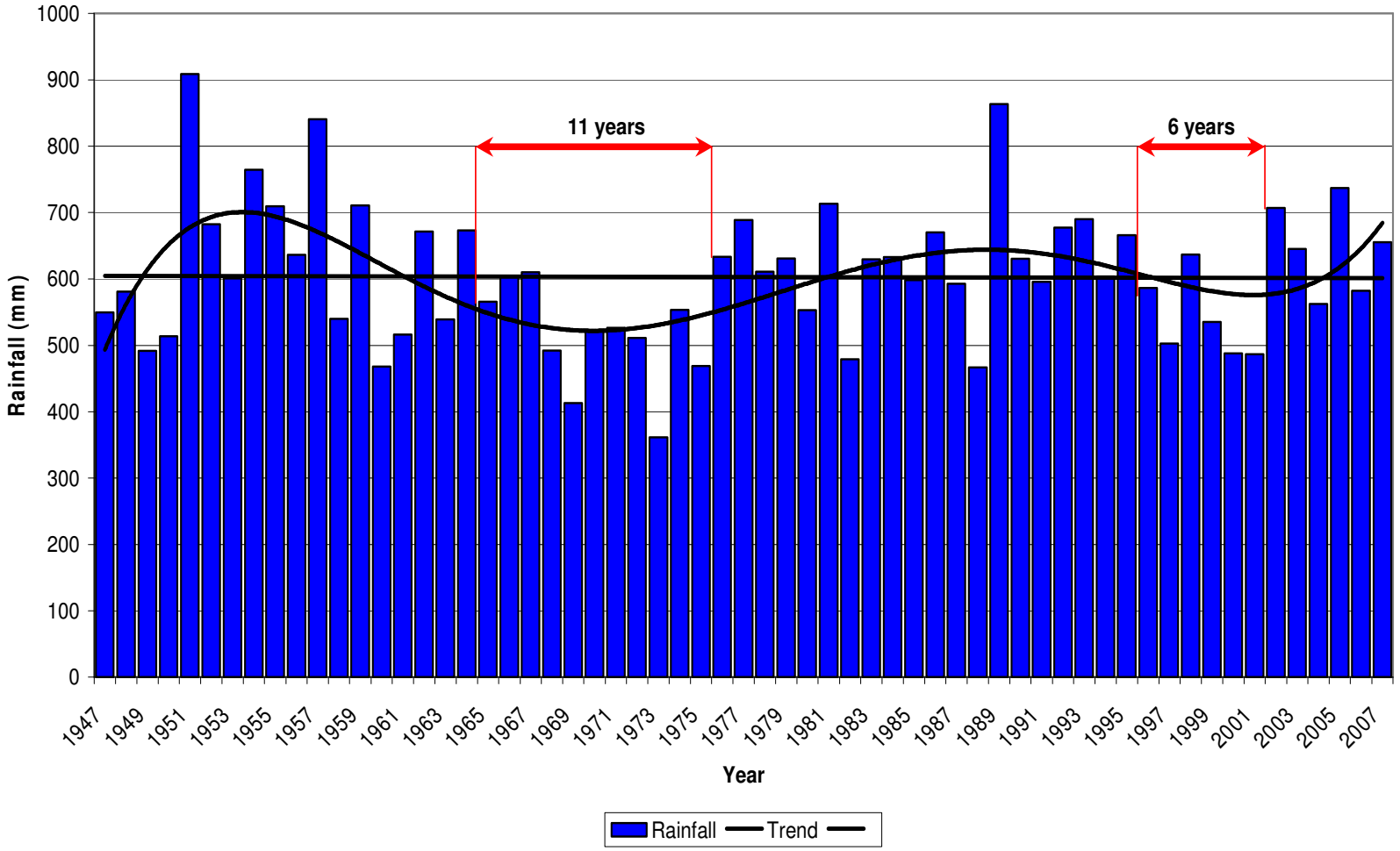
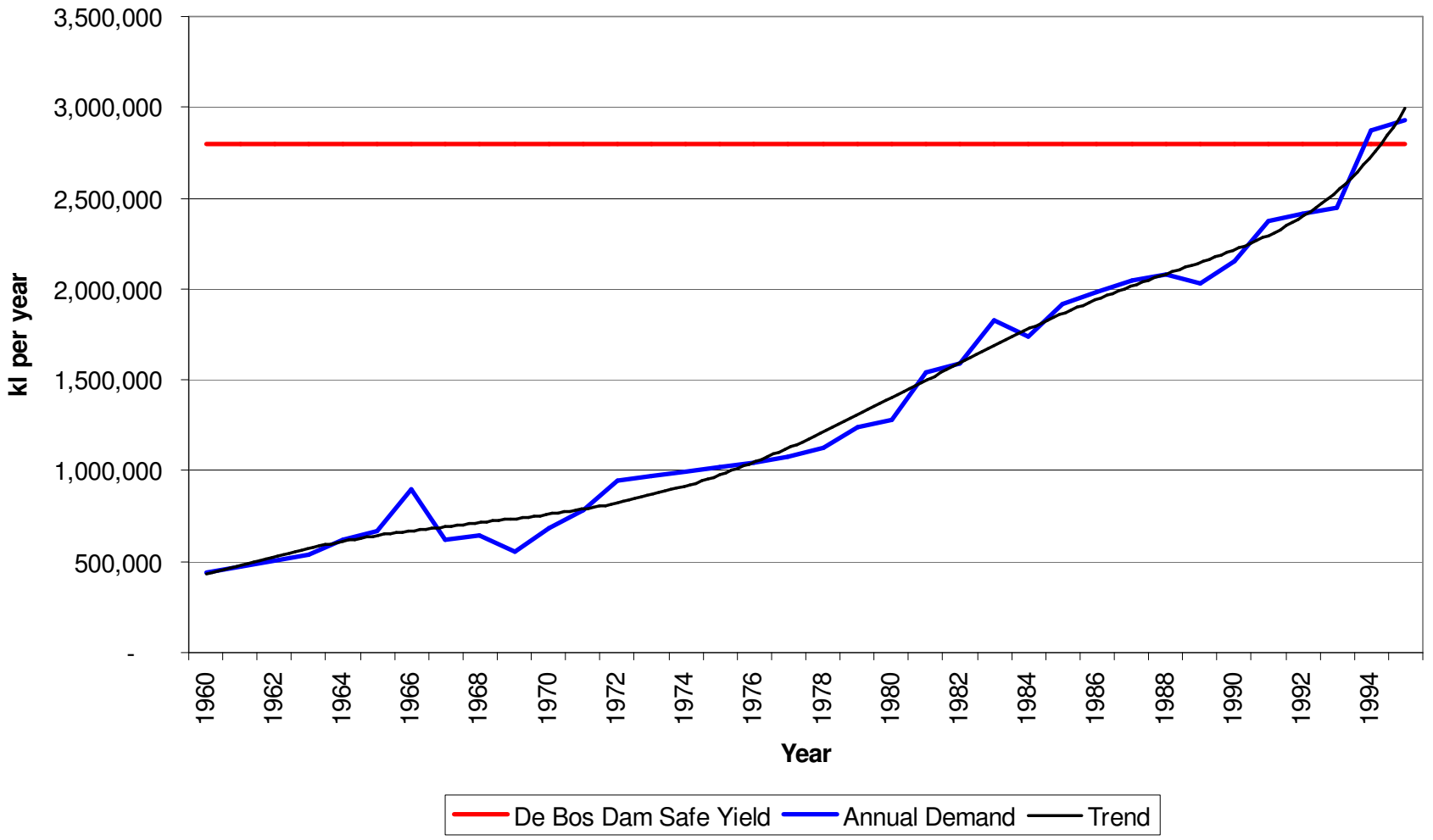
Disaster Risk and Vulnerability – PROFILE & TRENDS

- Drought and Water Scarcity
- Flooding
- Fire and wind in dry season (summer)
- Moving sand dunes

Disaster Risk and Vulnerability – PROFILE & TRENDS

Overstrand Municipality
Annual rainfall measured at Hermanus Magnetic Observatory





WHAT has been done so far to address the issue?

- Reduce demand (Water Demand Management)
- Additional supply

Water Demand Management

- Clearing Invasive Alien Plants (DWA WfW)
- Water wise gardening
- Public awareness campaign
- Leak detection and leak repair
- Water re-use (treated effluent)
- Pressure management
- Metering (bulk and domestic)
- Water tariffs
- Water restrictions
- Development restrictions

DWA : Working for Water

- Invasive alien plants pose a direct threat to biological diversity, water security, the ecological functioning of natural systems and the productive use of land. They intensify the impact of fires and divert enormous amounts of water from more productive uses.

- Alien plants cover about 10% of the country.

- Since 1995, the programme has cleared more than 1,000,000 hectares of invasive alien plants providing jobs and training to approximately 20,000 people from among the most marginalized sectors of society. Of these, 52% are women.

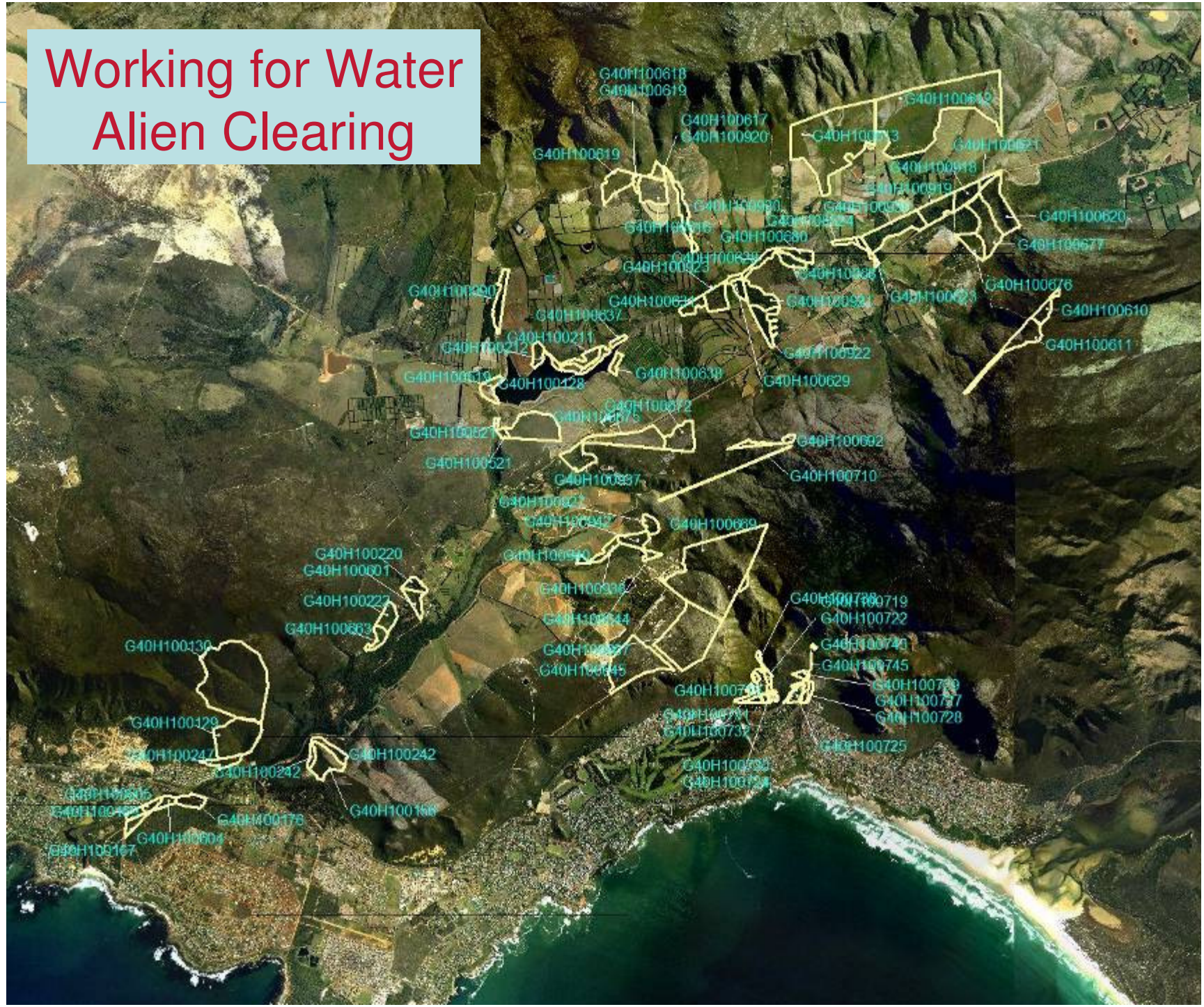
DWA : Working for Water

- The programme is globally recognised as one of the most outstanding environmental conservation initiatives in Africa. It enjoys sustained political support for its job creation efforts and the fight against poverty.

- WfW considers the development of people as an essential element of environmental conservation. The emphasis is on employing:
  - women (the target is 60%),
  - youth (20%), and
  - disabled (5%).

- Creating an enabling environment for skills training, it is investing in the development of communities wherever it works. Implementing HIV and Aids projects and other socio- development initiatives are important objectives.

Working for Water
Alien Clearing

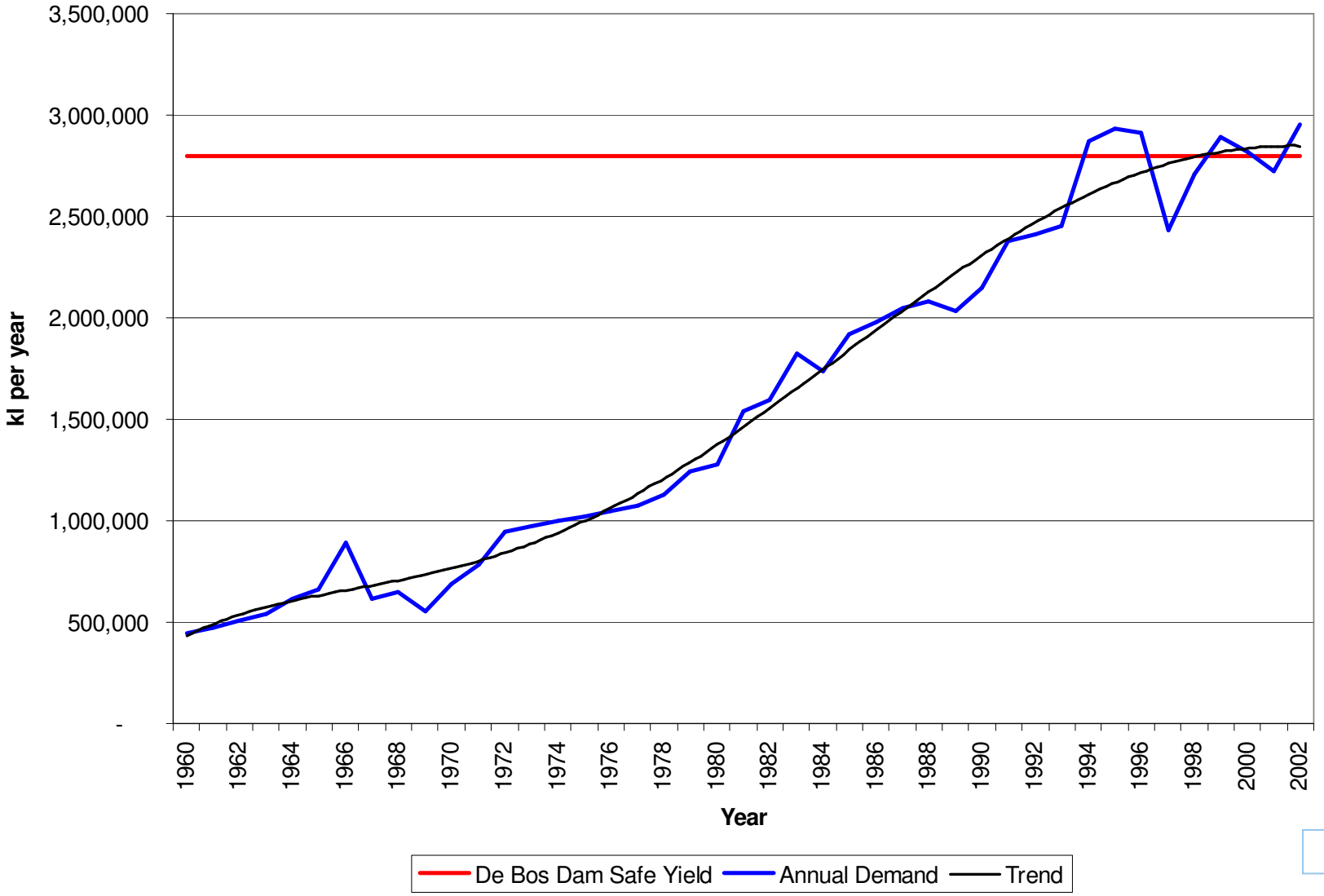


Working for Water - Alien Clearing

Water Demand Management

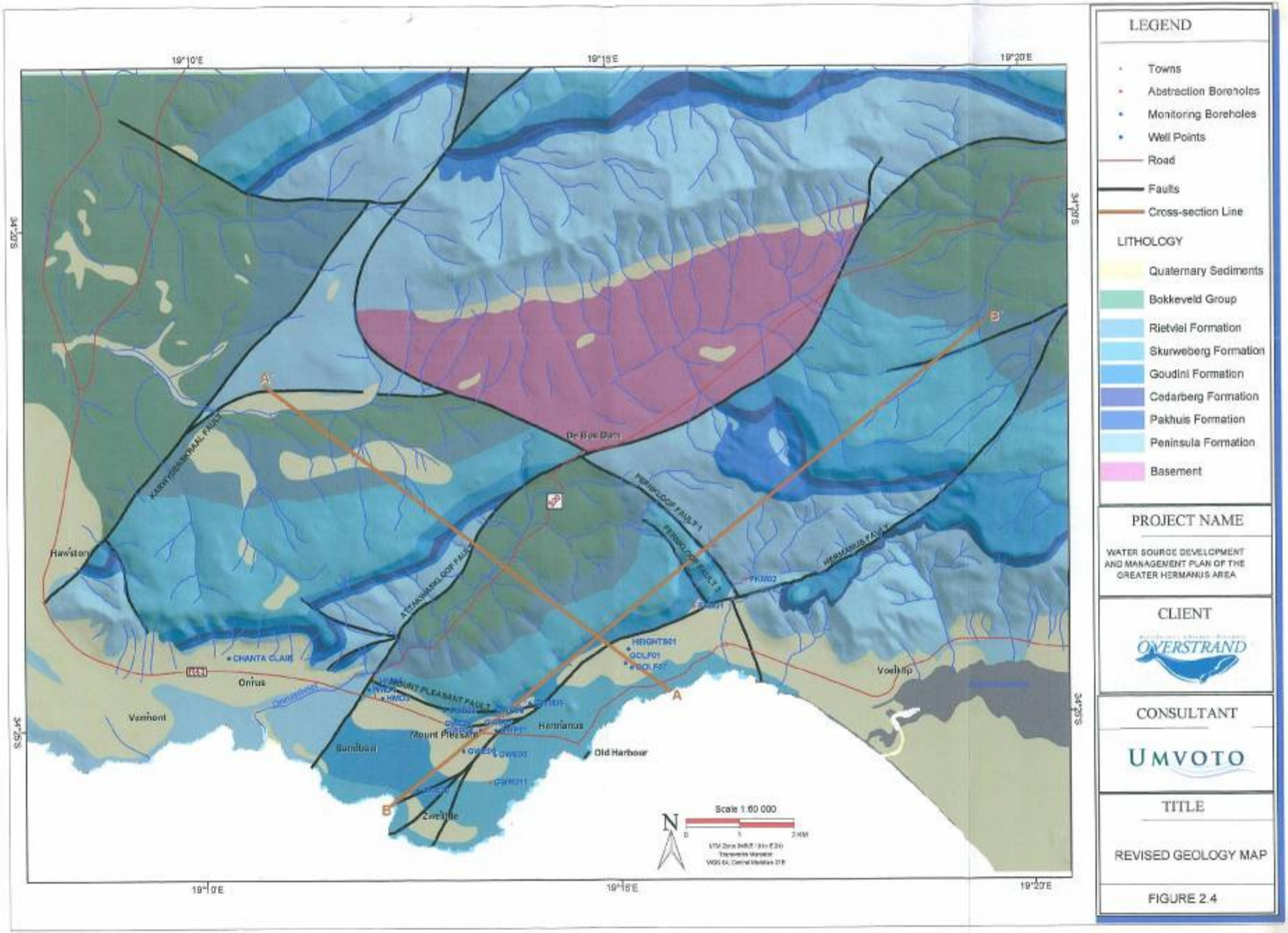
- Clearing Invasive Alien Plants (DWA WfW)
- Public awareness campaign
  - Water wise gardening
  - Water saving devices
  - General information
- Water re-use (treated effluent)
- Leak detection and leak repair
- Pressure management
- Metering (bulk and domestic)
- Water tariffs
- Water restrictions
- Development restrictions

Hermanus annual water demand



Additional supply and diversify sources

- Raise the De Bos Dam wall
- Build a new dam
- Abstraction of groundwater (boreholes)
- Desalination of sea water



LEGEND

- Towns
- Abstraction Boreholes
- Monitoring Boreholes
- Well Points
- Road
- Faults
- Cross-section Line

LITHOLOGY

- Quaternary Sediments
- Bokkeveld Group
- Rietvlei Formation
- Skurweberg Formation
- Goudini Formation
- Cedarberg Formation
- Pakhuis Formation
- Peninsula Formation
- Basement

PROJECT NAME

WATER SOURCE DEVELOPMENT AND MANAGEMENT PLAN OF THE GREATER HERMANUS AREA

CLIENT

OVERSTRAND

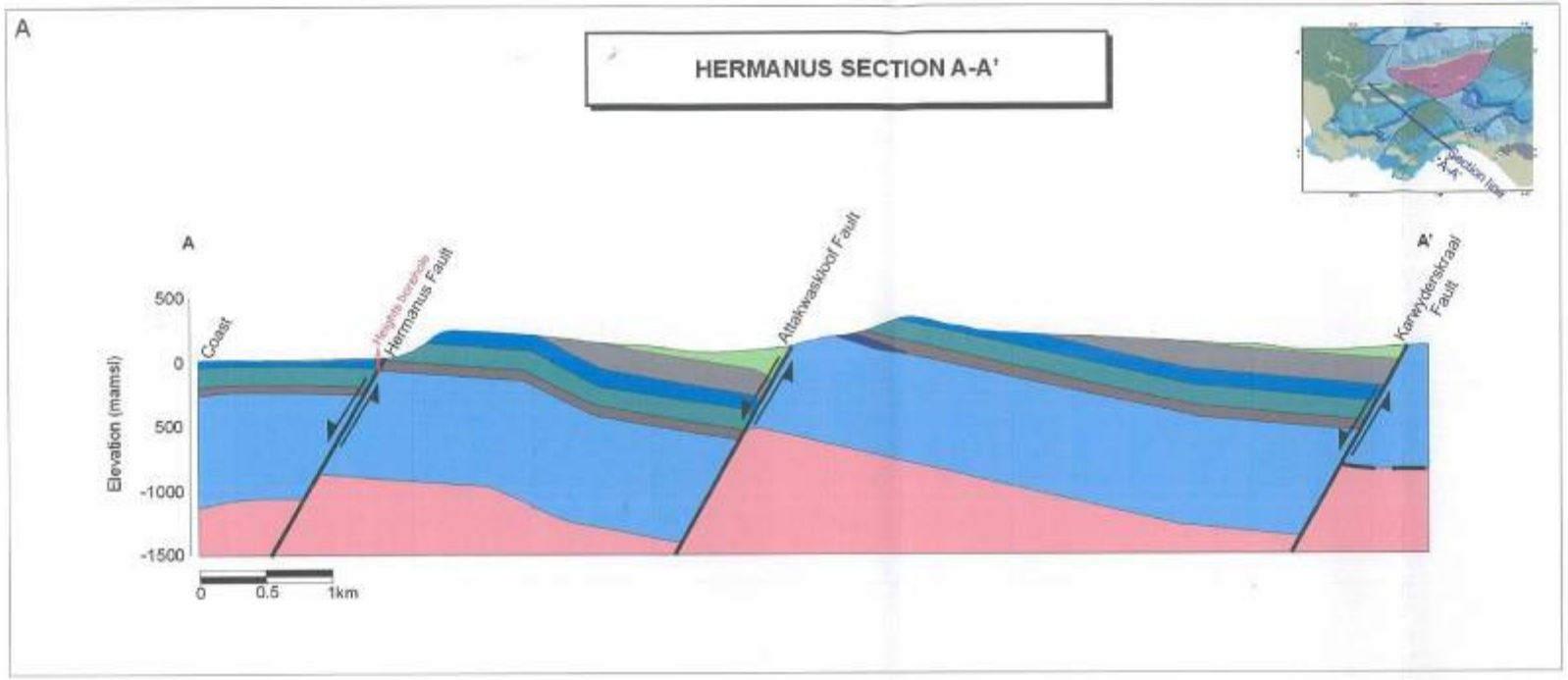
CONSULTANT

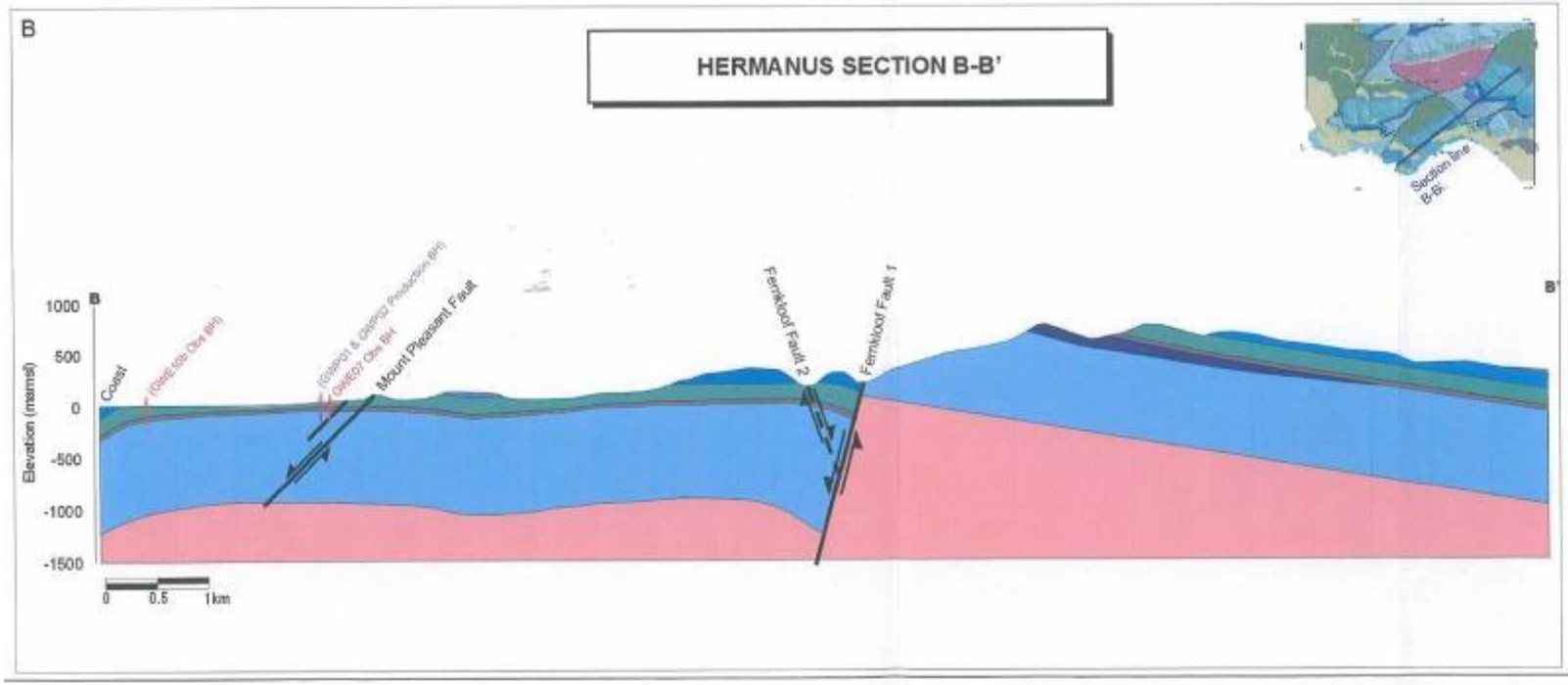
UMVOTO

TITLE

REVISED GEOLOGY MAP

FIGURE 2.4





LEGEND

Exploration Borehole
( ) Projected onto section
Production Borehole

Faults

Alluvium
Bokkeveld
Rietvlei
Skurweberg
Goudini
Cedarberg
Pakhuis
Peninsula
Basement

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NW-SE (A'-A) & NE-SW (B'-B) SECTIONS THROUGH HERMANUS

FIGURE 2.5

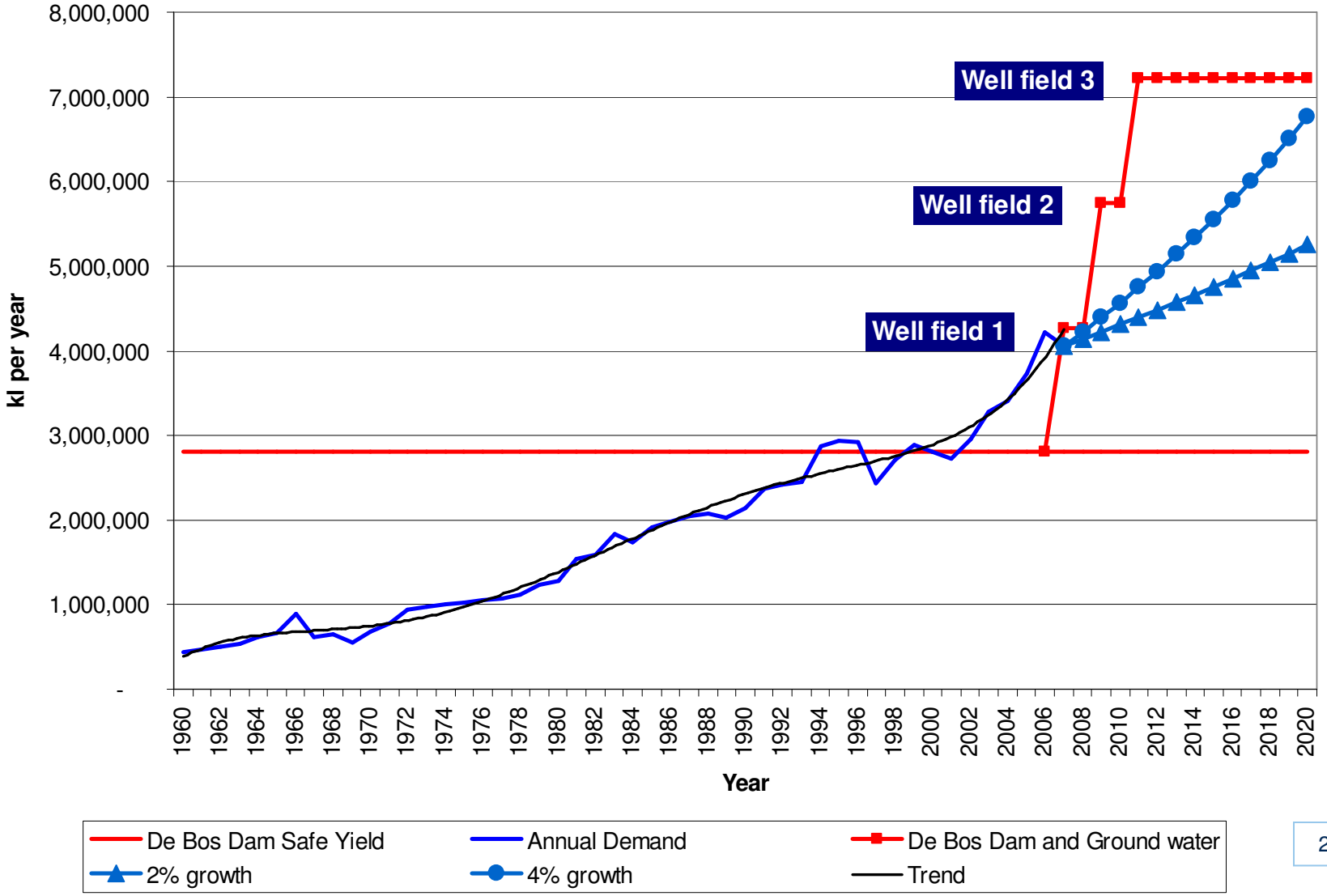
Hermanus ground water investigation

Hermanus ground water investigation

Hermanus ground water investigation

- 5 well fields identified
- 3 well fields established
- 1 well field in production
- Water quality
  - Water is rich in Iron and Manganese
  - Requires pre-treatment
- Cost
  - Ground water = USD 0.12 per kl
  - Surface water = USD 0.50 per kl
  - Desalination = USD 1.00 per kl

Hermanus annual water demand



What have been the GOOD PRACTICES…

- DWA “Working for Water” programme
  - Good inter-governmental co-operation on all levels (National, Provincial and Local) and between Departments.
  - Many positive outcomes: less water demand from invasive alien species, environmental restoration, job creation, skills training, entrepreneurial development, poverty alleviation, environmental education, empowerment of woman, the youth and the disabled, HIV and AIDS awareness.
  - National Programme with strong Local support
- Environmental management
  - Environmental Impact Assessment
  - Ecological monitoring

… and the LESSONS LEARNED

- Our fresh water resources are limited and it must be managed responsibly,
- Effective inter-governmental co-operation is possible,
- There are no sustainable “quick fixes” - an integrated long term approach must be followed,
- Public participation and support is important and enough time must be allowed for it.

What are the CHALLENGES ahead?

- Completing the well fields,
- Manage the well fields responsibly,
- Research to gain an even better understanding of the aquifer,
- Expanding the programme to other towns,
- Implement sea water desalination when appropriate.

… and HOW to address them?

- Ongoing implementation of the Hermanus Water Resource Development and Management Programme

CONLUSIONS

- The risk of drought/water scarcity has greatly been reduced by the implementation of the Hermanus Water Resource Development and Management Programme.
- The Programme yielded many additional benefits such as job creation, skills training and empowerment of woman and the youth.
- It is a sustainable Local solution with Provincial and National support.

Thank you