



water affairs

Department:
Water Affairs
REPUBLIC OF SOUTH AFRICA

Continuation of the Reconciliation Strategy of the KZN Coastal Metro Areas

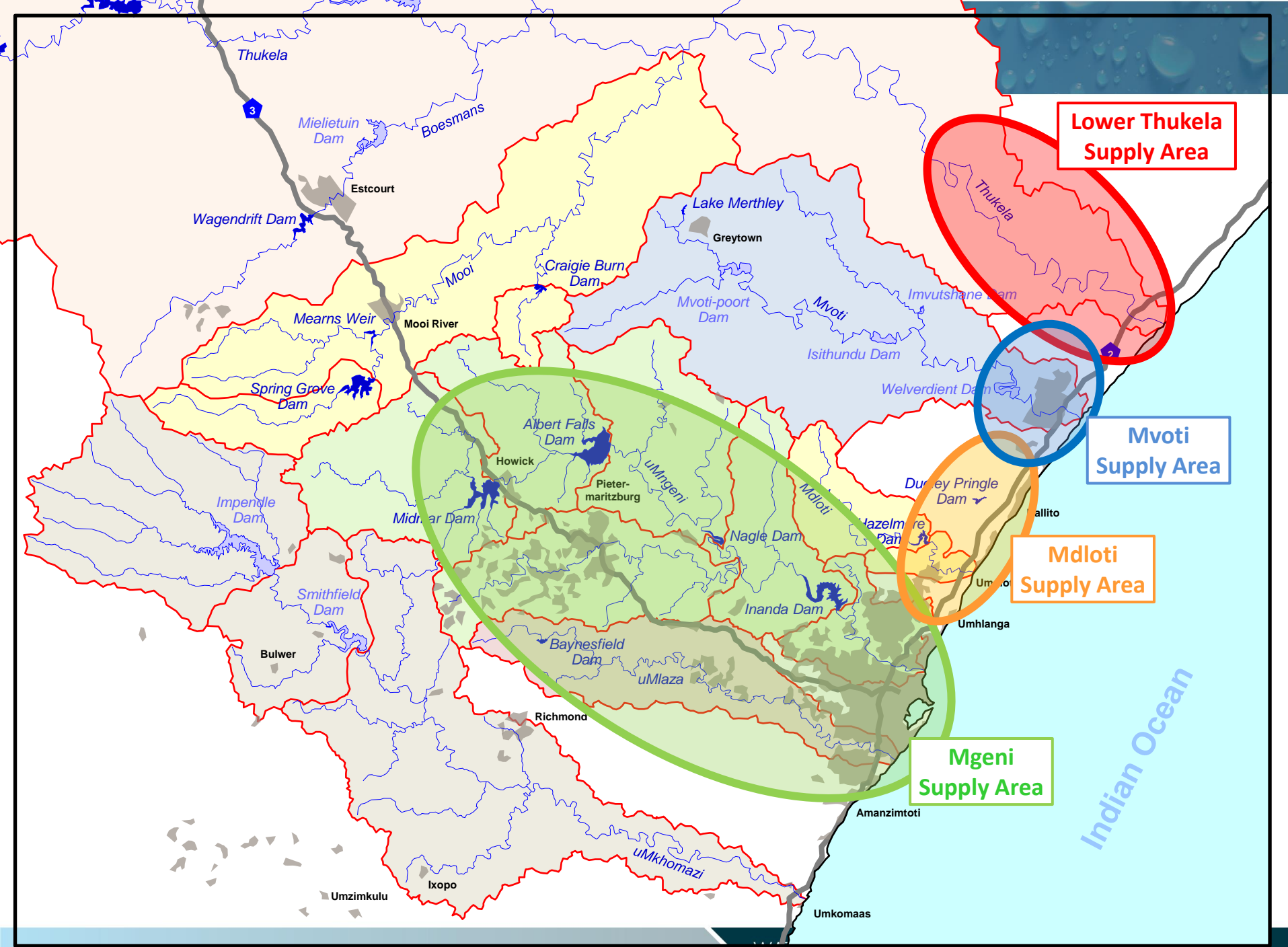
RESULTANT WATER BALANCES

2014

Presented by:
Jonathan Schroder

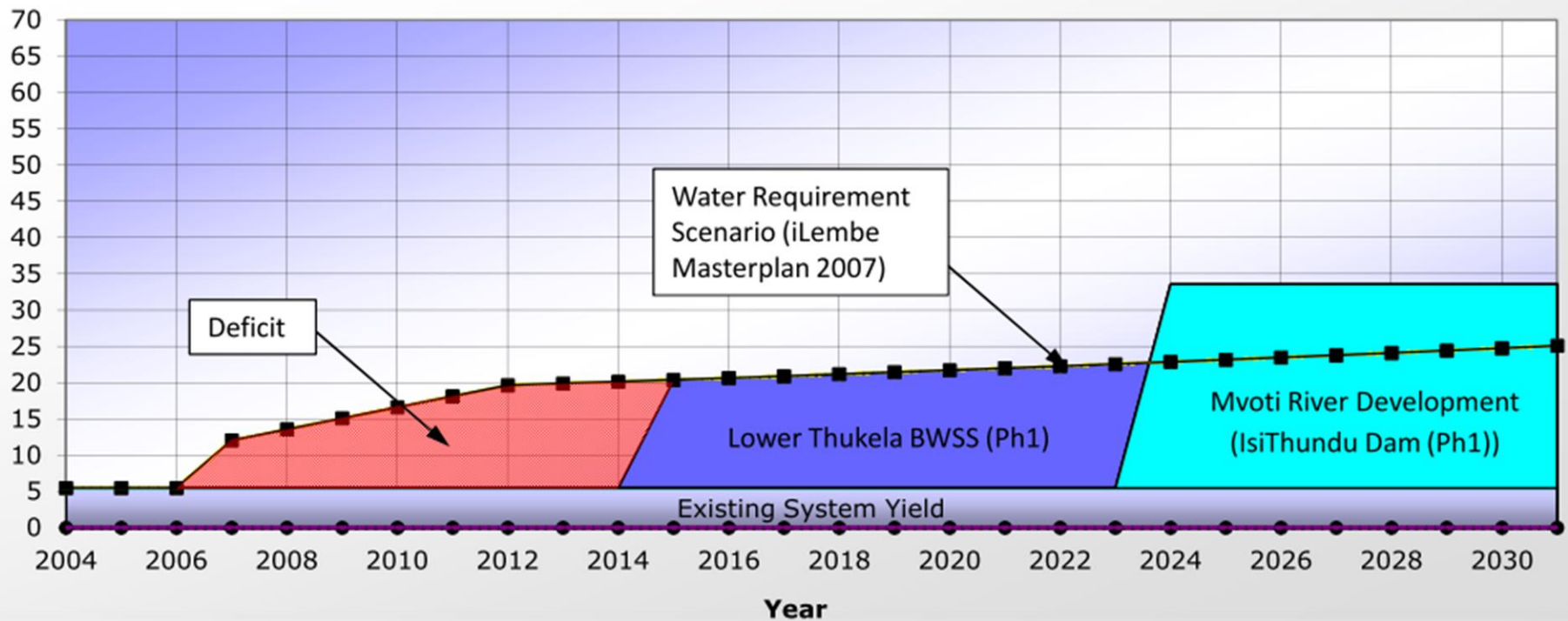


SSC5 Water Balances (September 2012)



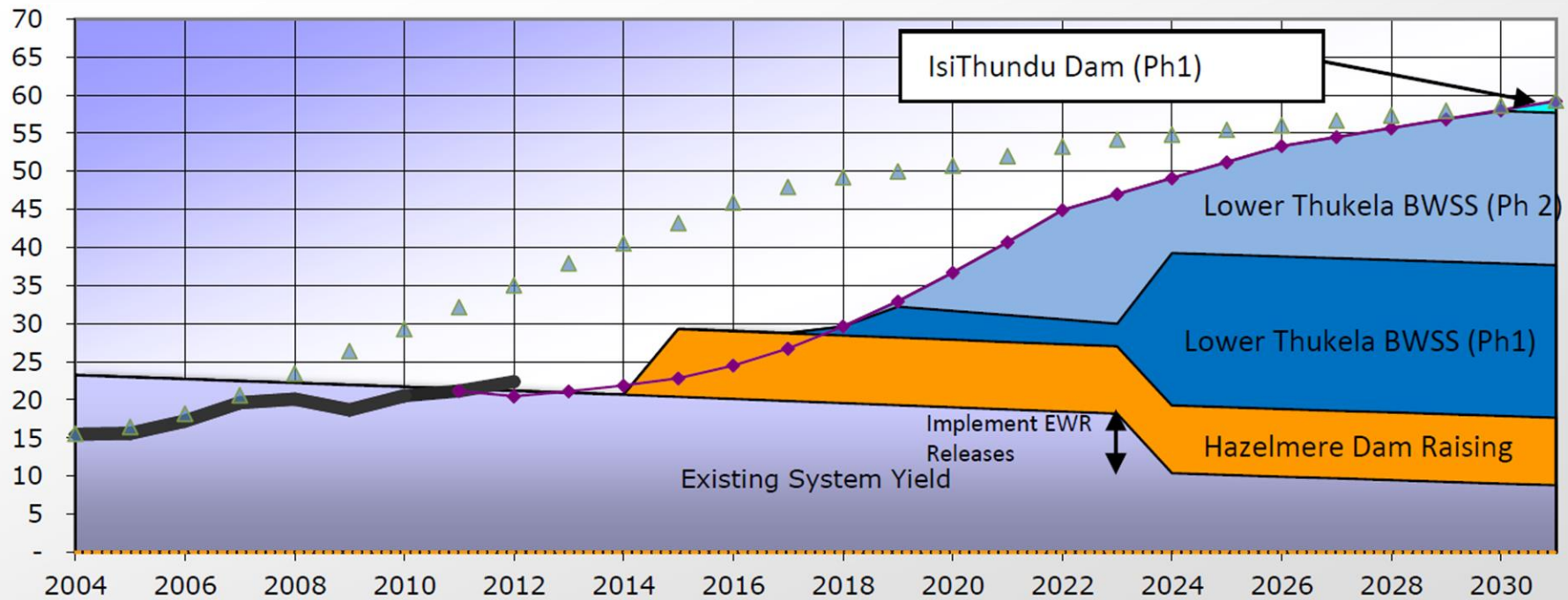
Water Balance: Mvoti System

(SSC 5)

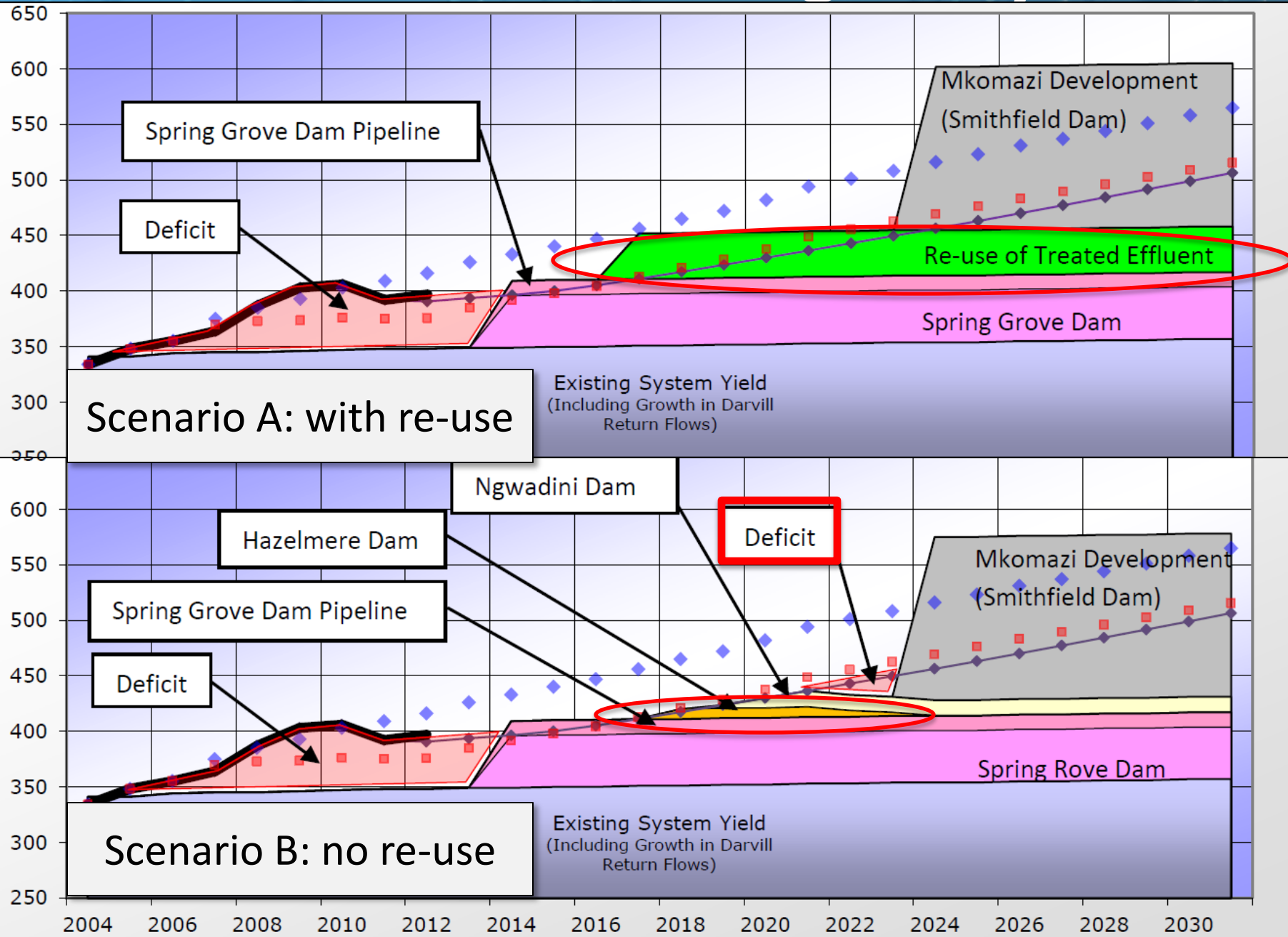


Water Balance: Mdloti System

(SSC 5)



SSC5 Water Balance: Mgeni System

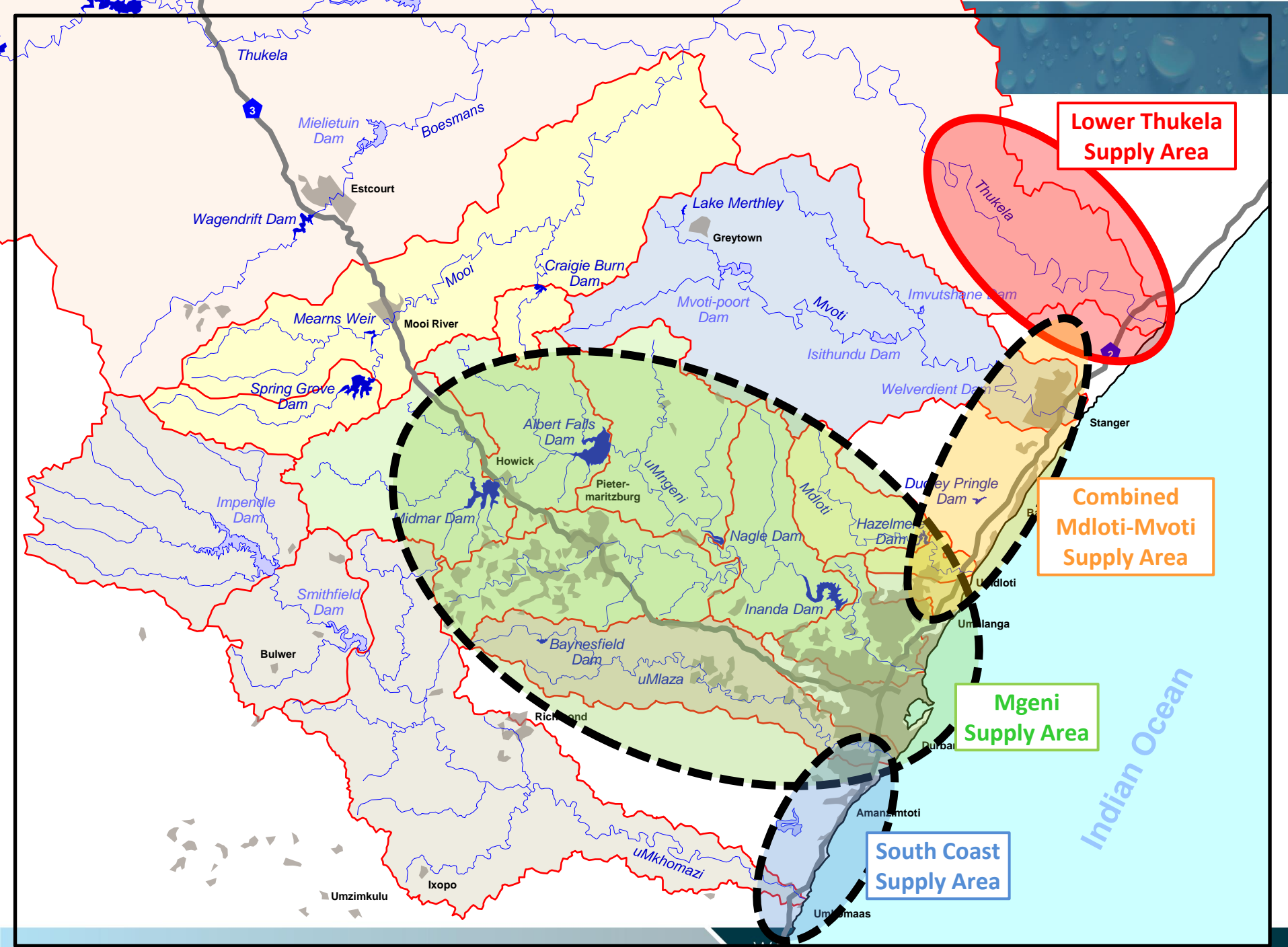




SSC6 Water Balances

Water Balance Scenarios

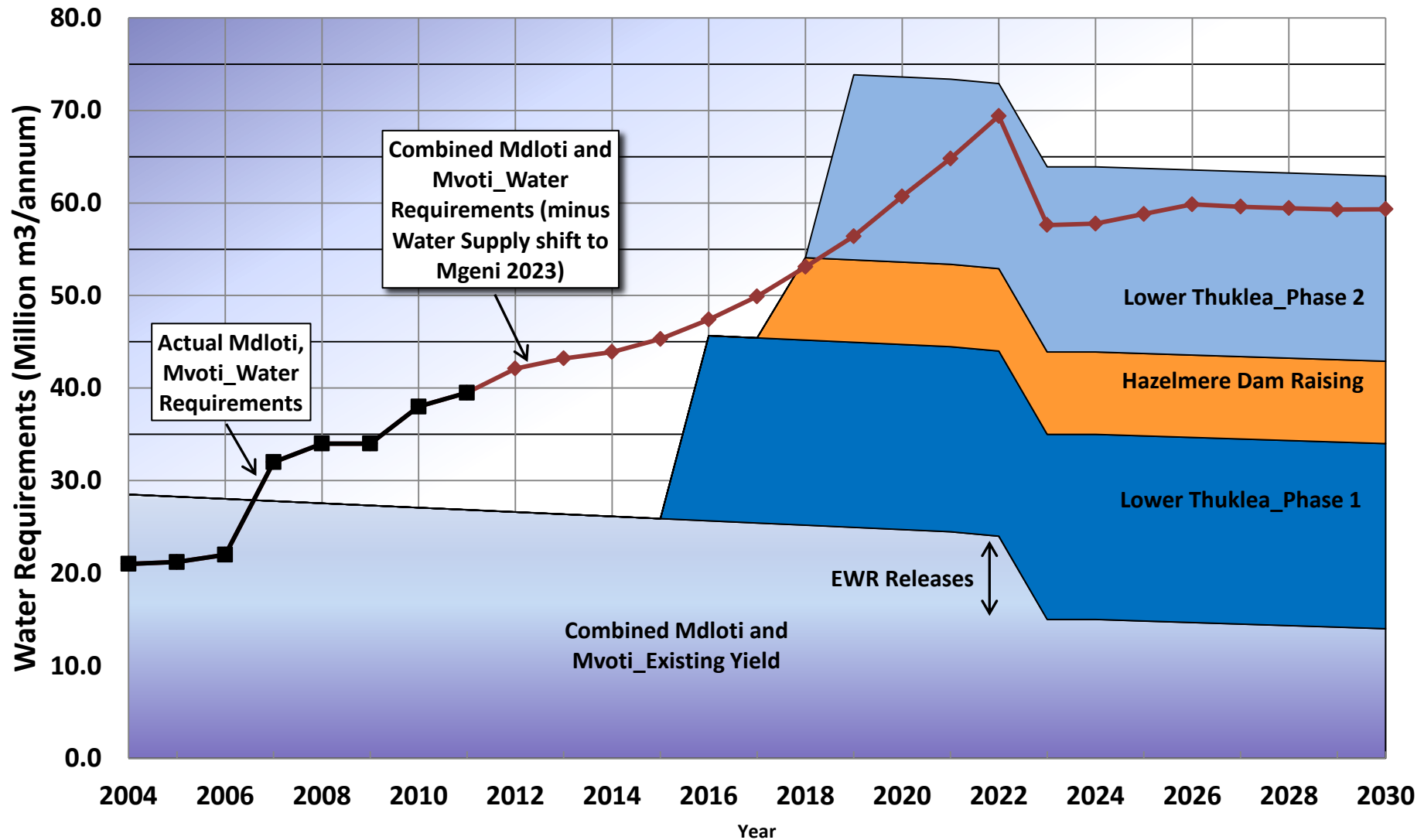
- Currently some interventions completion, or required intervention dates are uncertain. Therefore combinations of implementation dates and intervention options used to determine Scenarios:
 1. Scenario A1: reuse and uMWP1
 2. Scenario A2: reuse delayed and uMWP1
 3. Scenario B: desalination on North Coast and uMWP1
 4. Scenario C: reuse, desalination on North Coast and uMWP1
 5. Scenario D: uMWP1 only



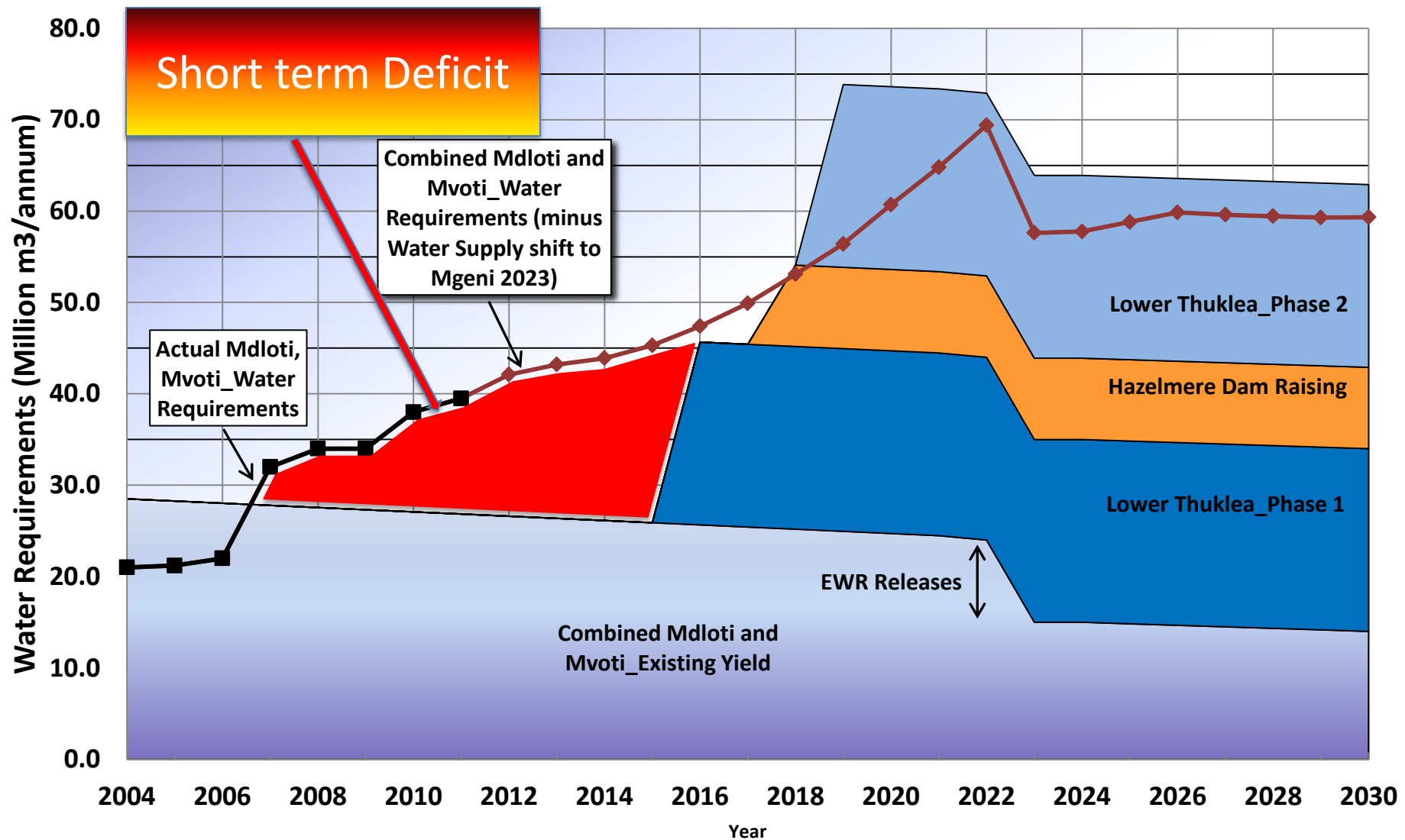


Mvoti and Mdloti Combined Water Balance

Combined Mdloti & Mvoti Water Balance



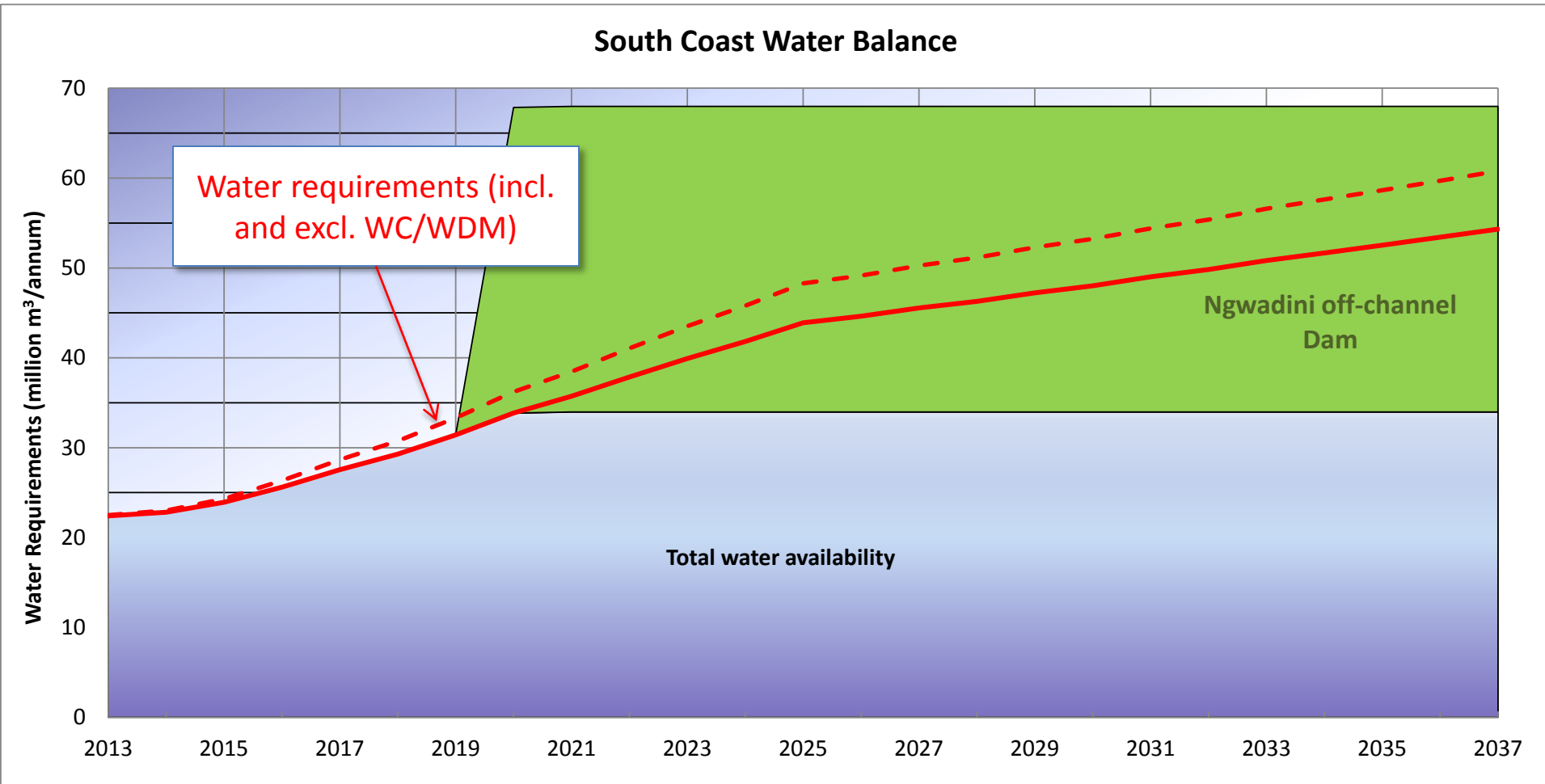
Combined Mdloti & Mvoti Water Balance



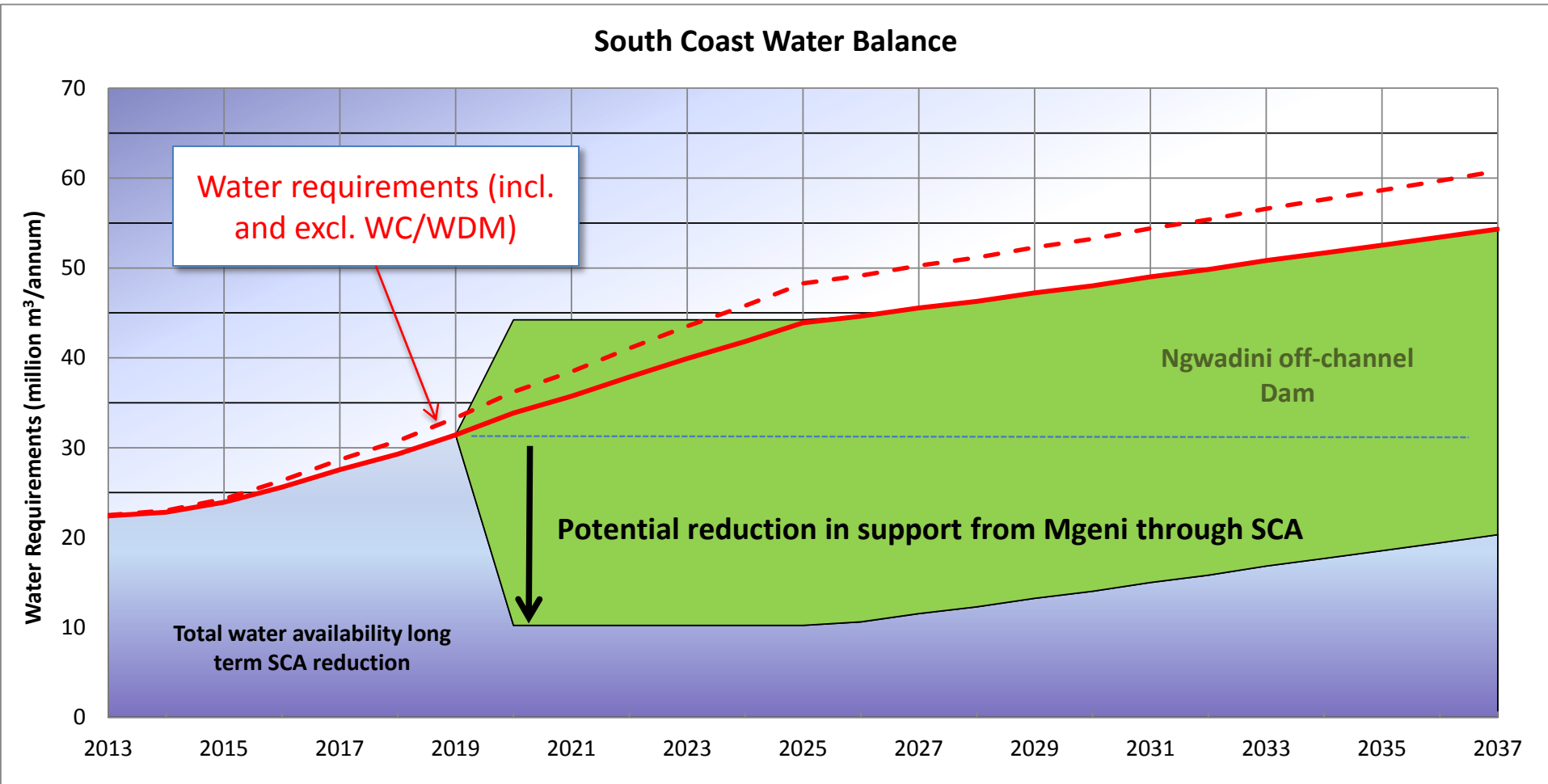


South Coast Water Balance

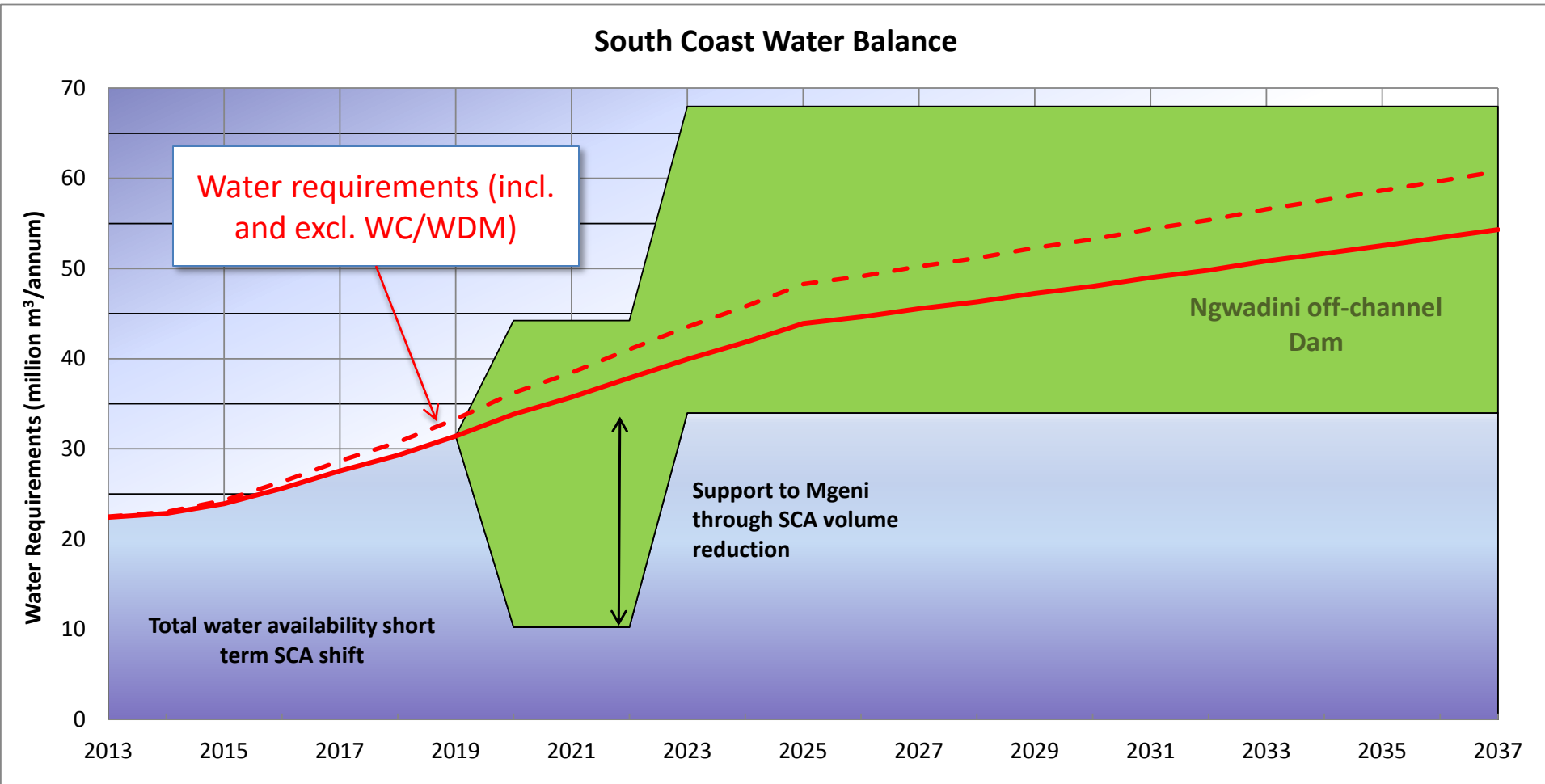
South Coast Water Balance (1 of 3)



South Coast Water Balance (2 of 3)



South Coast Water Balance (2 of 3)

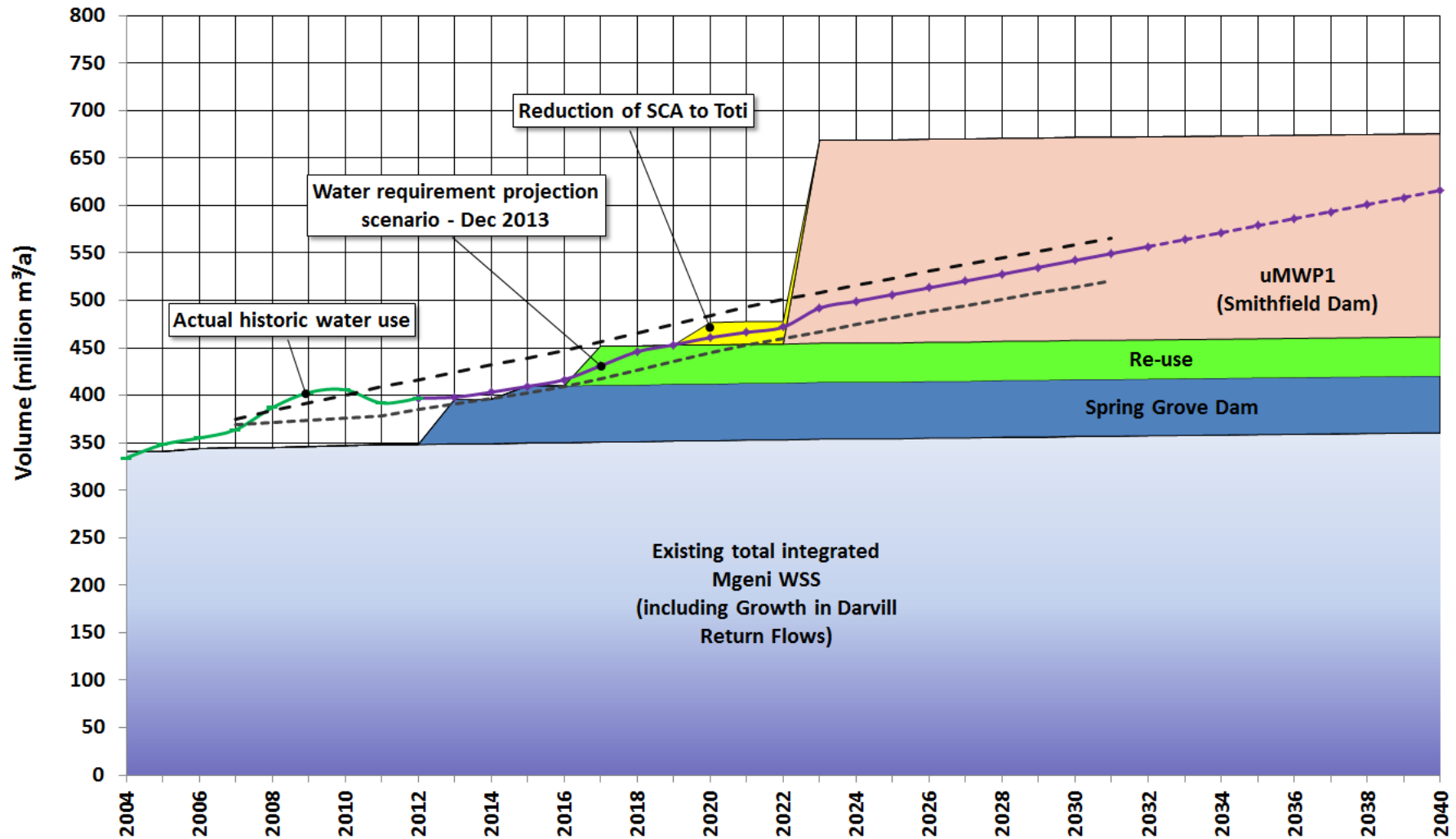




Mgeni Water Balance

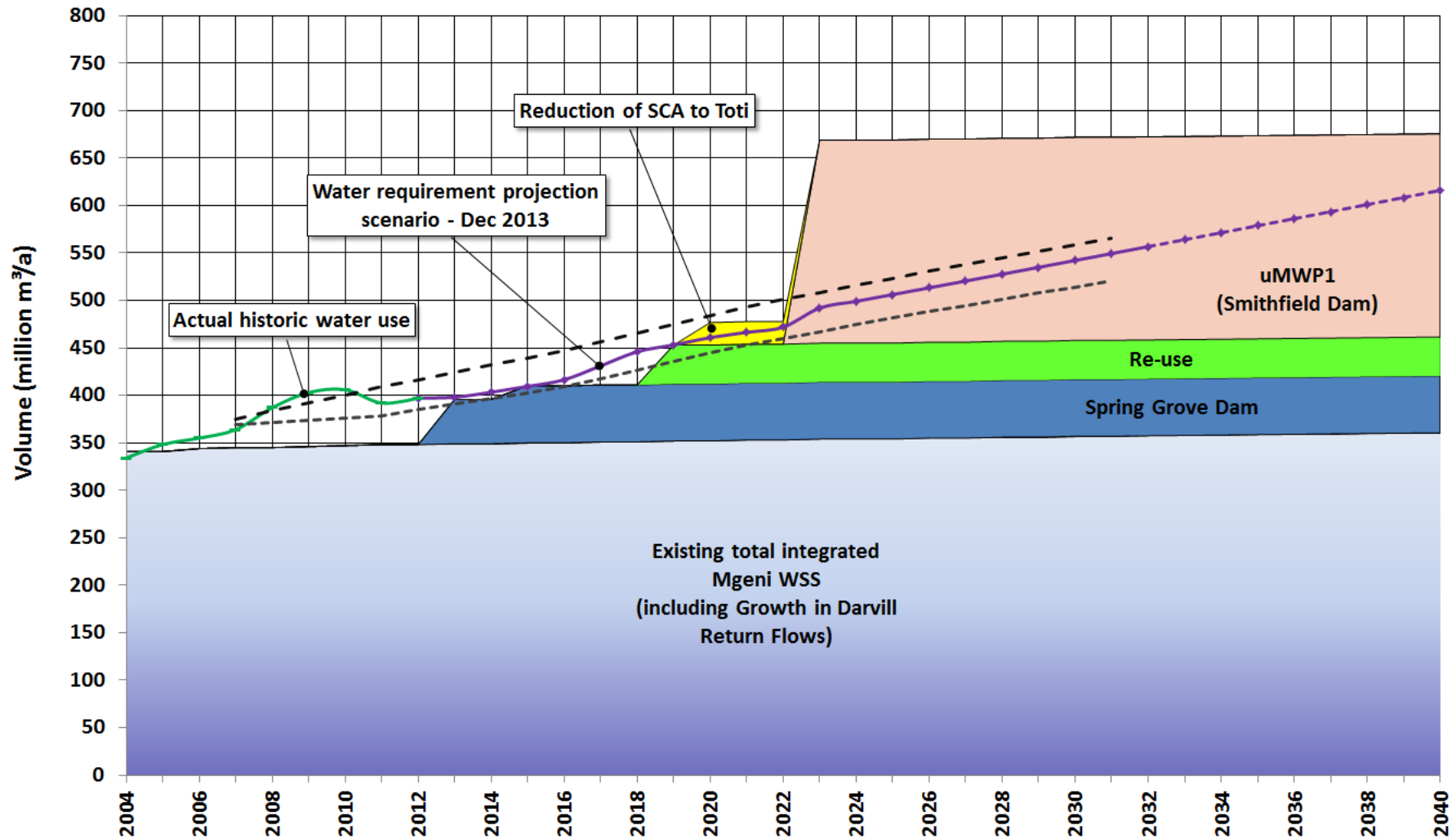
Mgeni Water Balance – Scenario A1

(Re-use 2017, uMWP1 2023)



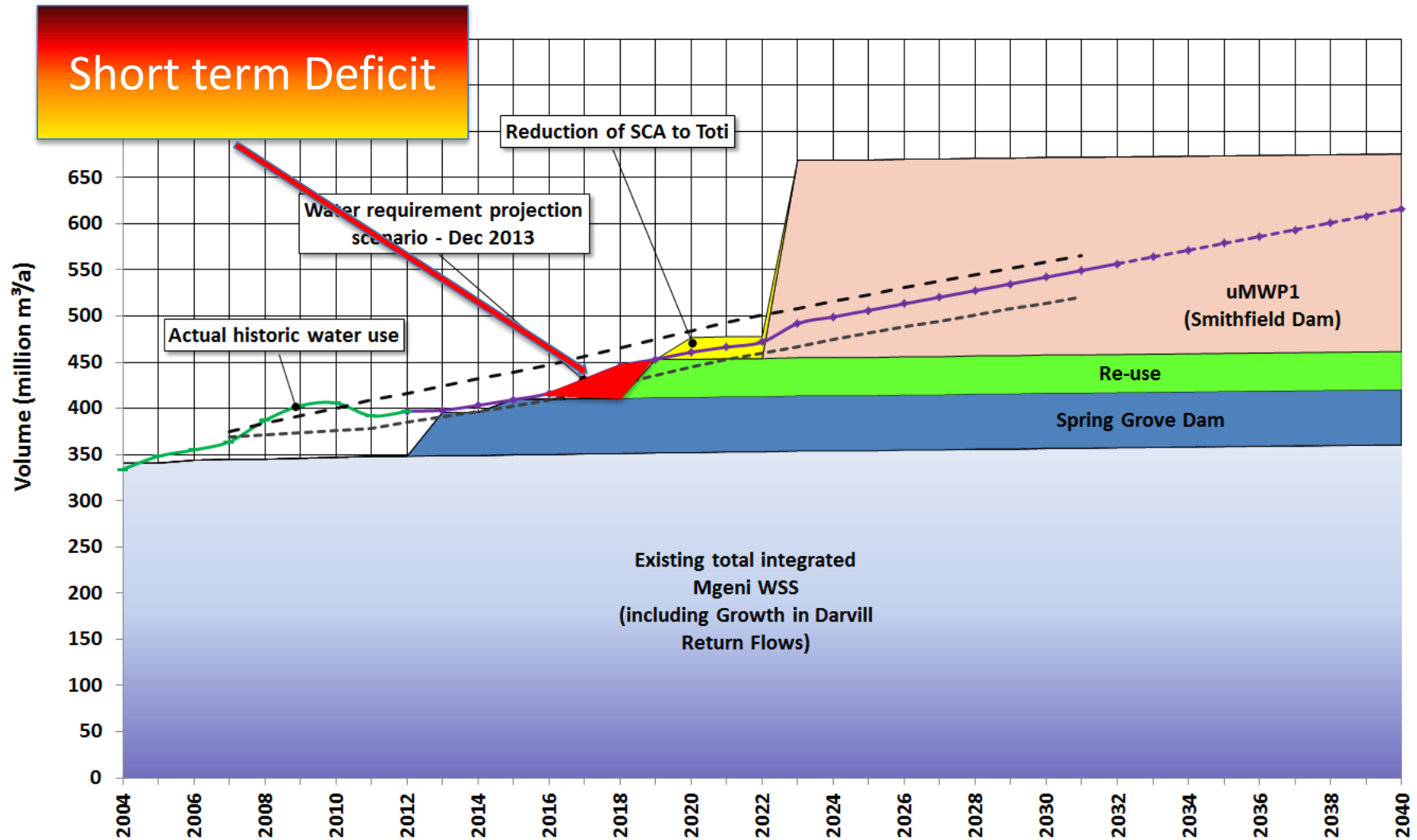
Mgeni Water Balance – Scenario A2

(Re-use 2019, uMWP1 2023)



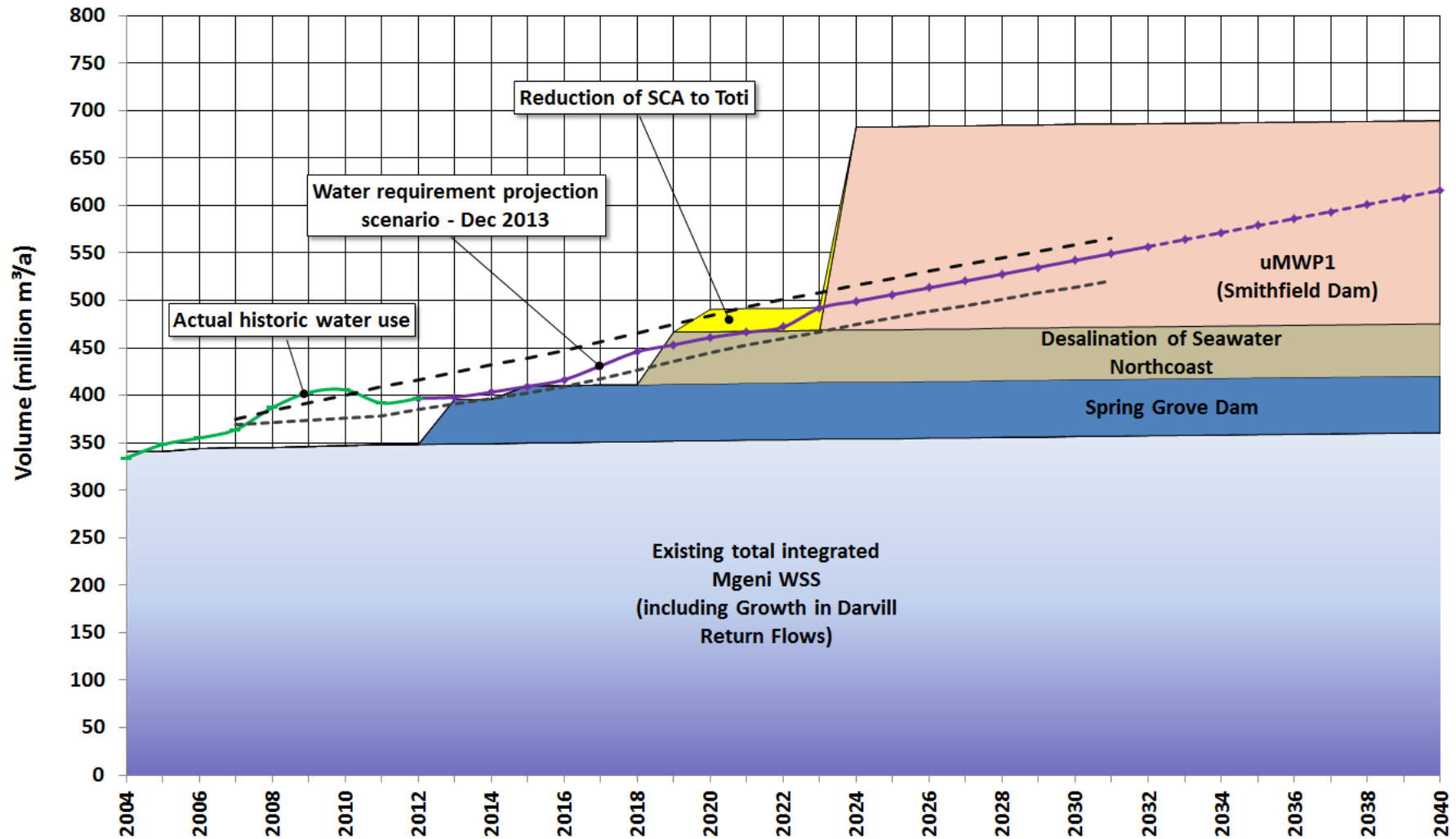
Mgeni Water Balance – Scenario A2

(Re-use 2019, uMWP1 2023)



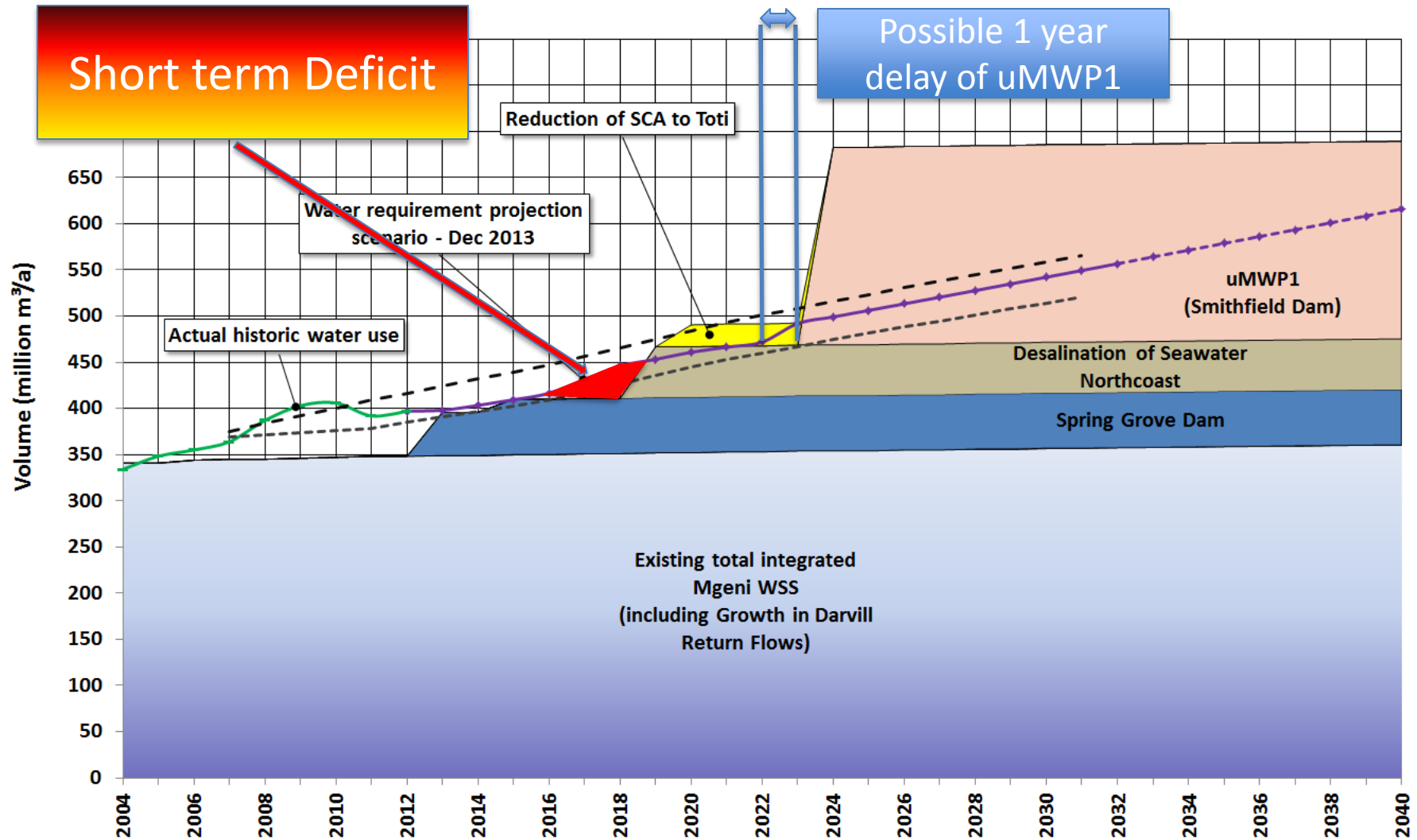
Mgeni Water Balance – Scenario B

(Desal 2019, uMWP1 2023)



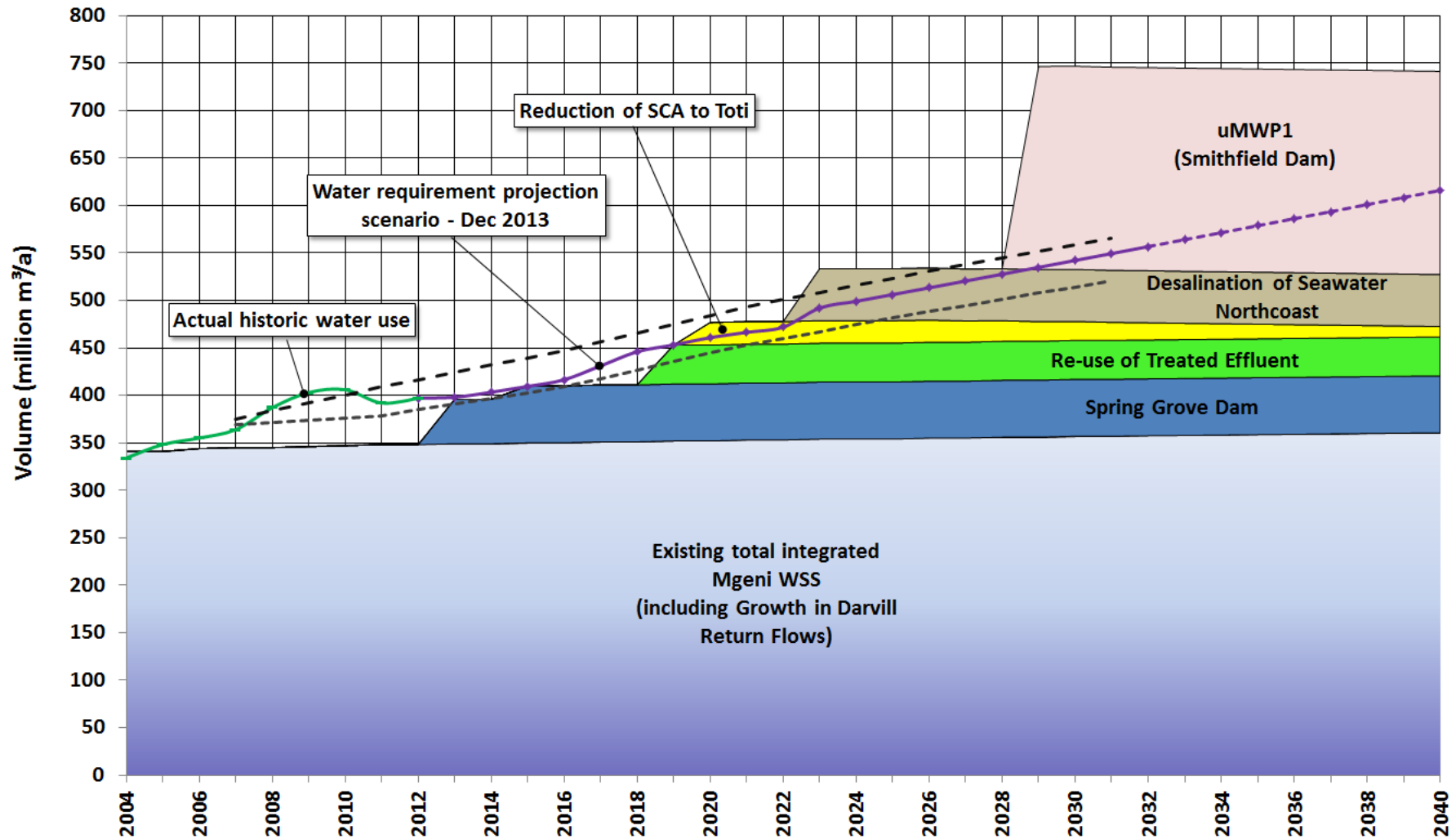
Mgeni Water Balance – Scenario B

(Desal 2019, uMWP1 2023)



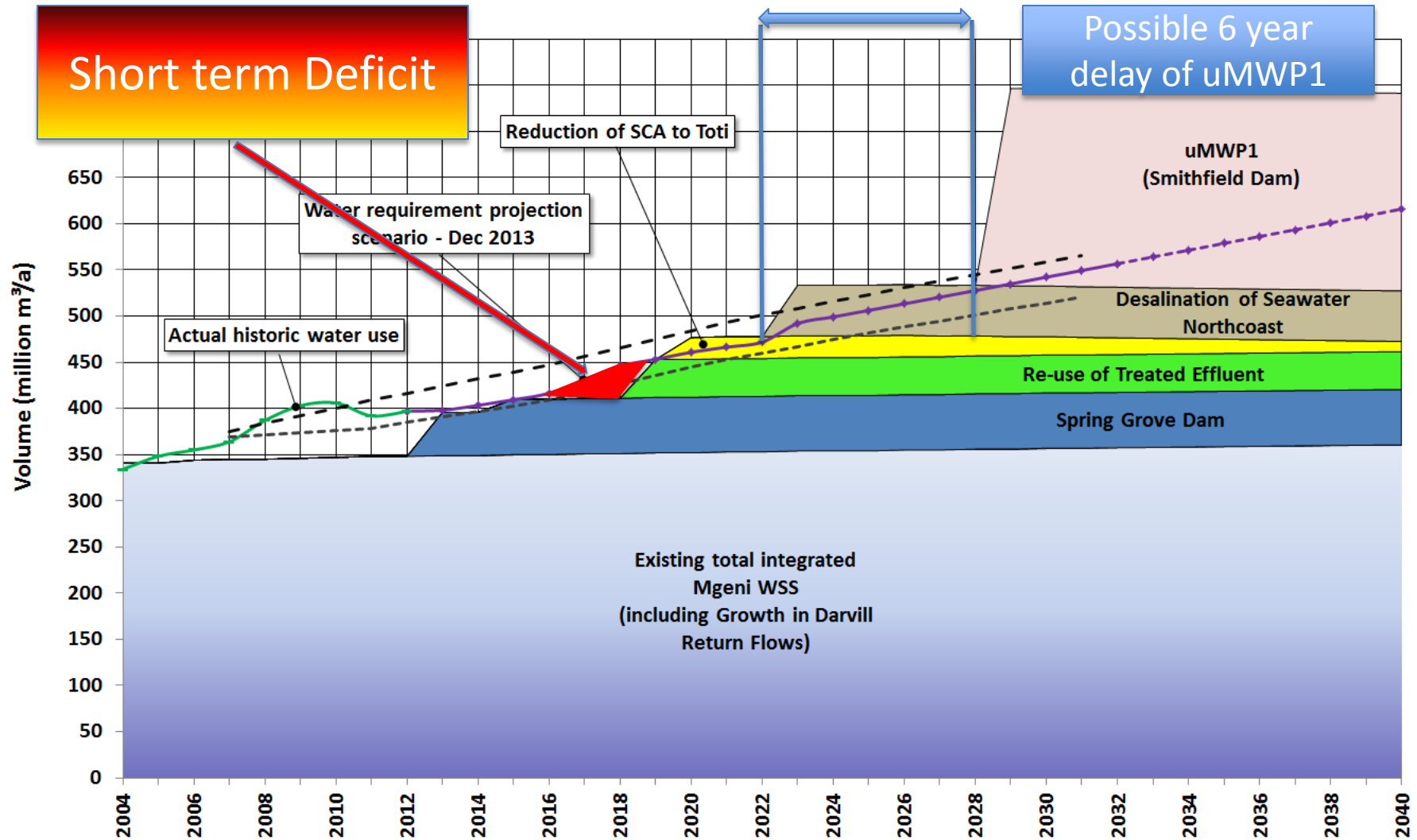
Mgeni Water Balance – Scenario C

(Reuse 2019, Desal 2023, uMWP1 2029)



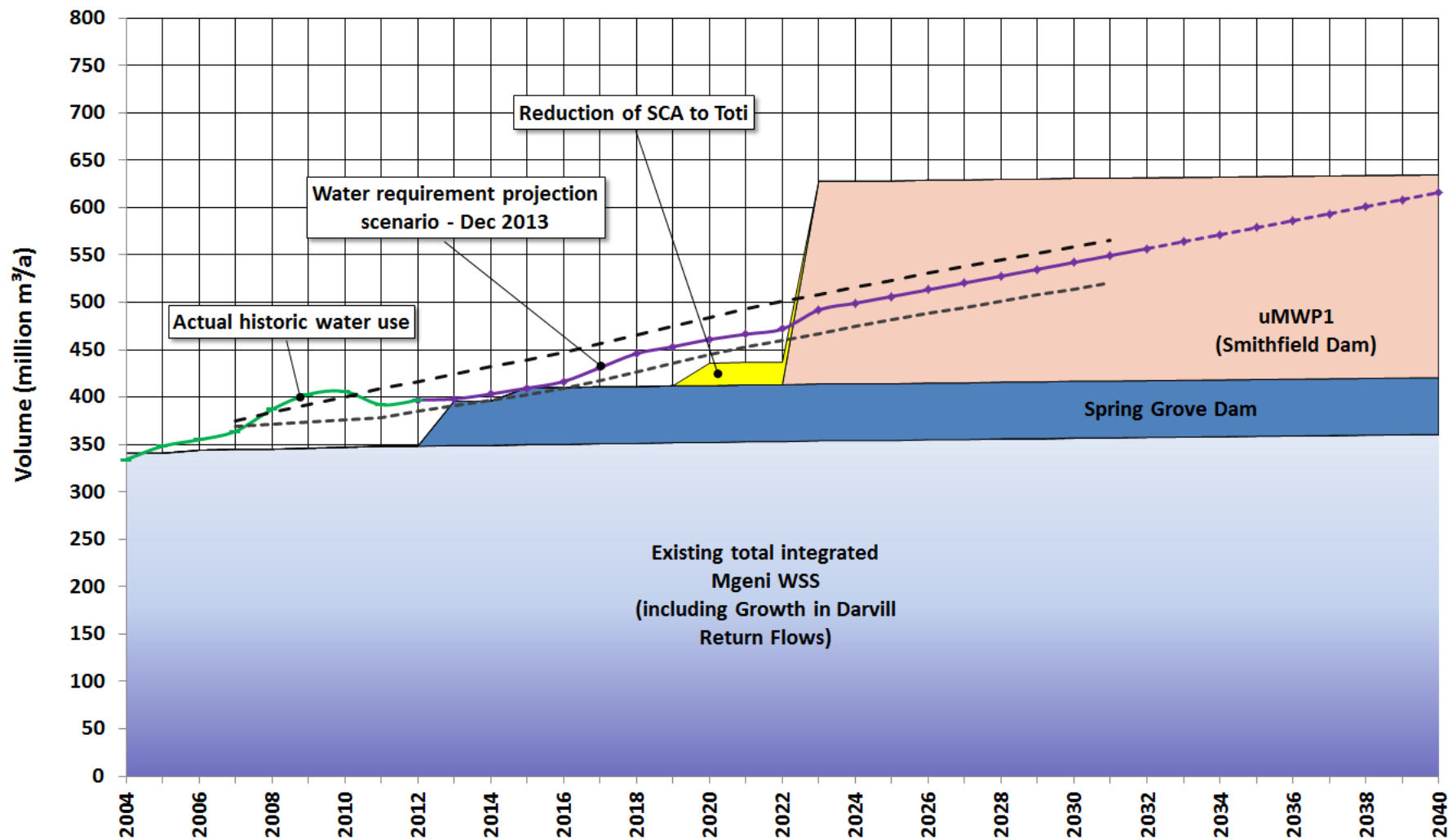
Mgeni Water Balance – Scenario C

(Reuse 2019, Desal 2023, uMWP1 2029)



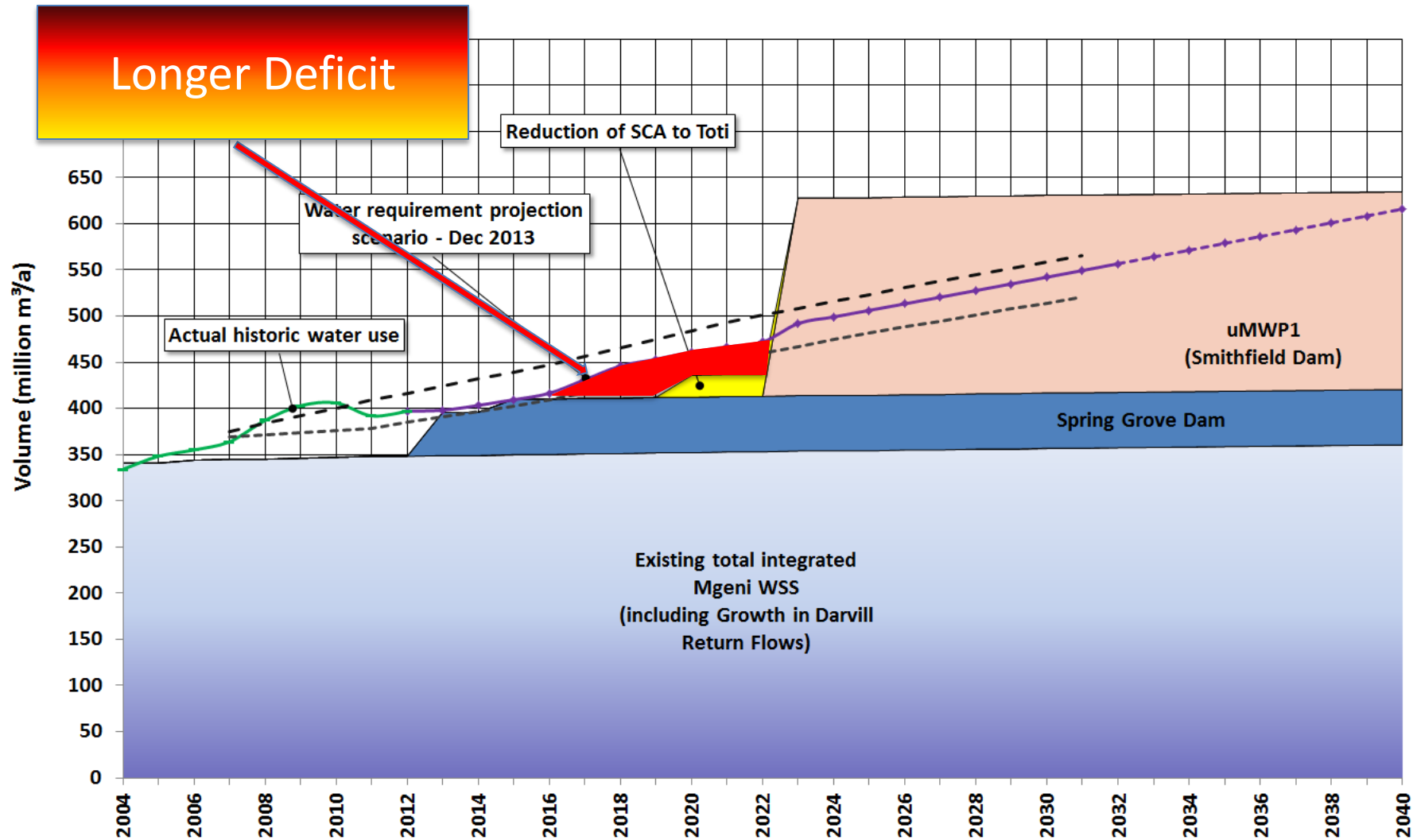
Mgeni Water Balance – Scenario D

(uMWP1 2023)



Mgeni Water Balance – Scenario D

(uMWP1 2023)



Conclusions (1 of 2)

The following is concluded from the water balances:

Mdloti/Mvoti

- A short term deficit exist until the Lower Thukela scheme is fully implemented and operational.
- Sufficient interventions are available in the medium to long term provided planning and implementation continues according to plan.

South Coast

- The current water resources and infrastructure capacities can take to South Coast up until 2019.
- The Lower uMkhomazi or Desalination of Seawater needs to be implemented as soon as possible to maintain a positive water balance there after.

Conclusions (2 of 2)

Mgeni

- Scenario A1: Positive water balance provided re-use is implemented by 2017 (unlikely) and uMWP1 is implemented in 2023.
- Scenarios A2 to D: Short term deficit between 2017 and 2019 due to delay in next augmentation (re-use, desal or neither) after MMTS2. uMWP1 returns system to a positive balance for the long term.

Short term deficits (scenarios A2 to D) would need to be managed through WC/WDM and early drought curtailments.



Thank you