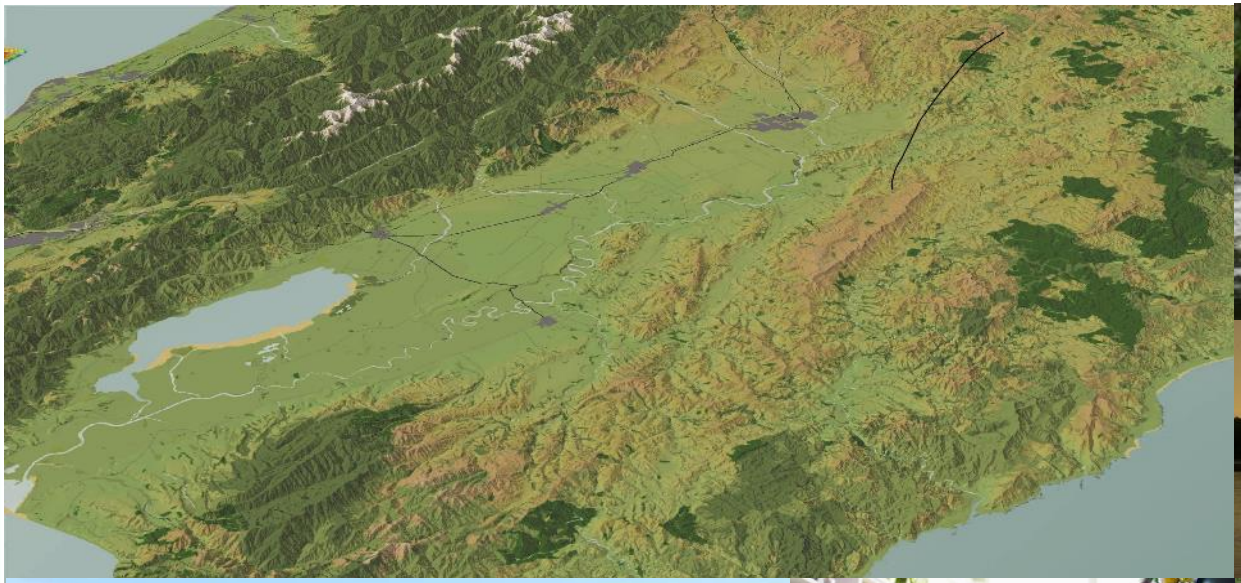
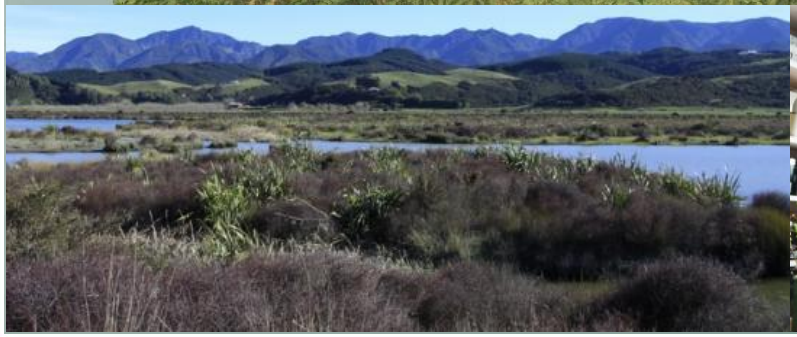
Whaitua Committee

Future Scenario – Water Storage

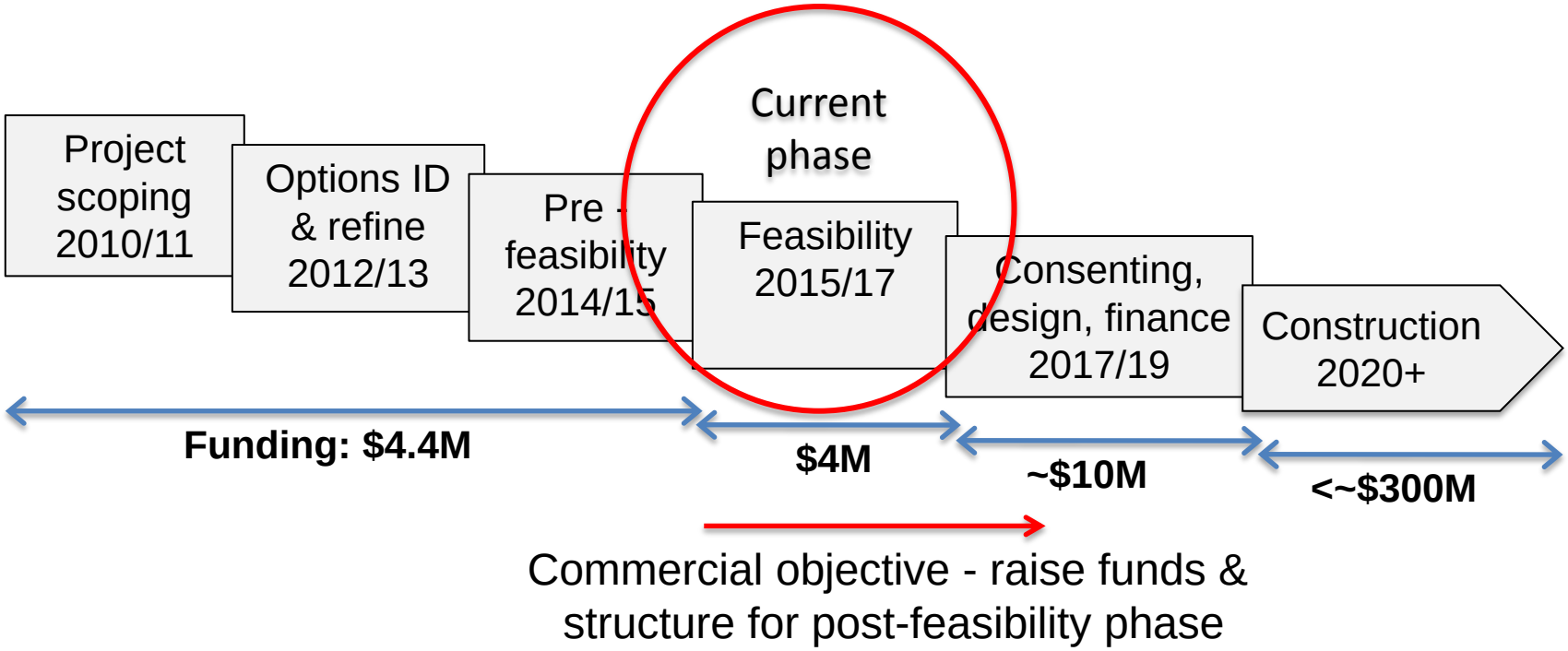




Agenda

- Project overview and status
- Community infrastructure
- Future land use scenario
- Future hydrological flow scenarios

Project status



Schemes

Black Creek including Wakamoekau

Tividale

Community infrastructure

- Urban water supply
- Stream/river flow augmentation
- Environmental flows (e.g. Papawai, Henley Lake, Waipoua R)
- Water race replacement/augmentation
- Wastewater integration

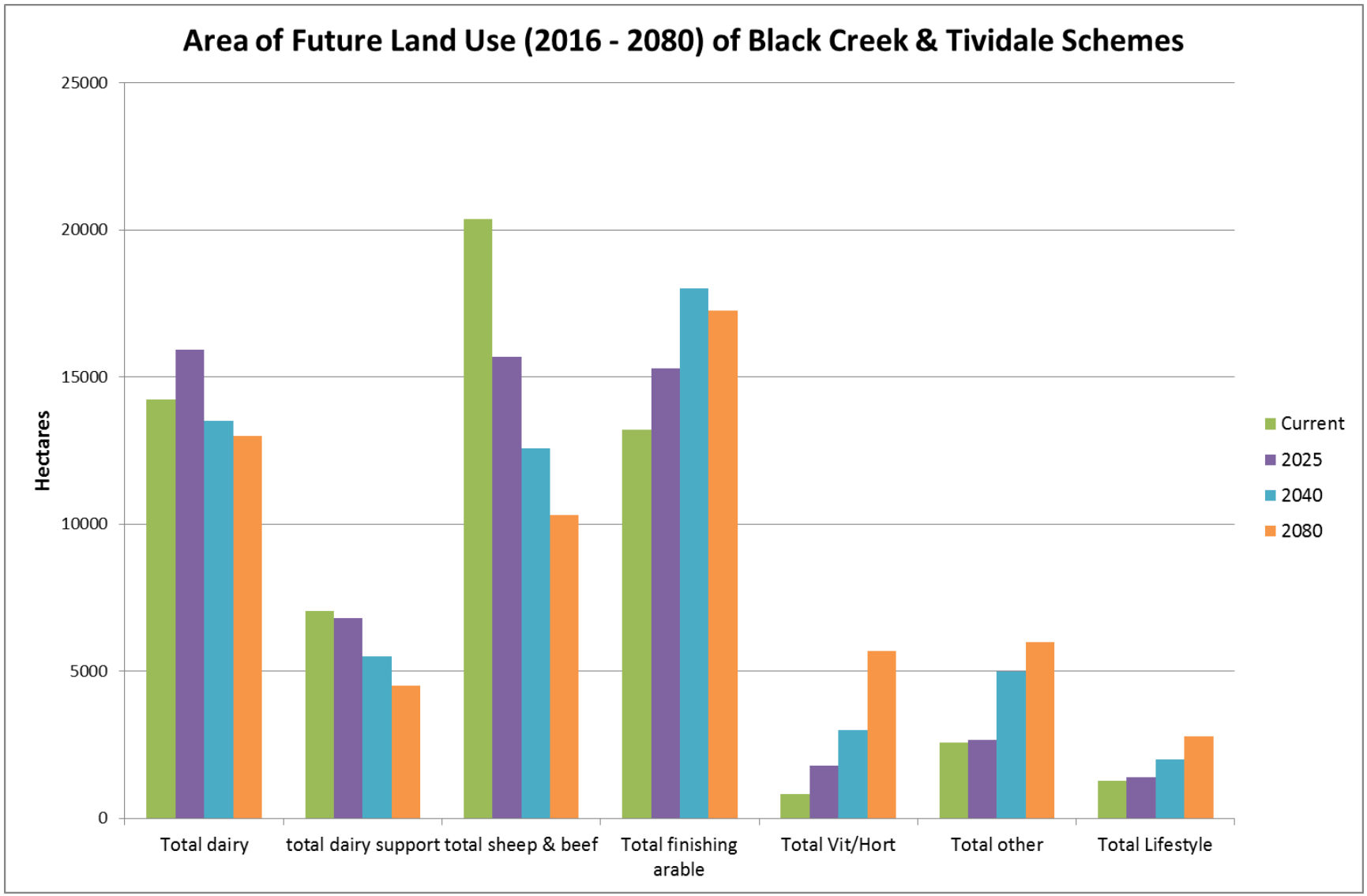
Future land use mix scenario

- BakerAg: Future Land Use Scenarios Report
- Current land use mix – 60,000 ha gross area of influence
- Soil classes in 3 groups
- Land use change drivers – with and without water storage
- Time periods and staged implementation
  - 2025 – 10,000 ha irrigated
  - 2040 – 30,000 ha irrigated
  - 2080 – 30,000 ha irrigated

  This excludes currently irrigated land
- Irrigation water subject to FMP/EMP's

Land use change drivers

- Current to 2025
  - Most farmers risk adverse, use existing skills, land sales to neighbours
  - Lack of irrigation expertise, slow adoption of technology
  - Value add processing and entrepreneurial approaches slow to come
- 2025 to 2040
  - Land tenure change will accelerate, higher risk appetite
  - Markets and value add processing will change land use
  - Climate change starting to impact, especially droughts and frosts
- 2040 to 2080
  - Consolidation, reduced land tenure change
  - Markets, technology and support services will continue to refine
  - Climate change impact significant


Area of Future Land Use (2016 - 2080) of Black Creek & Tividale Schemes
Hectares
25000
20000
15000
10000
5000
0
Total dairy
total dairy support
total sheep & beef
Total finishing arable
Total Vit/Hort
Total other
Total Lifestyle
Current
2025
2040
2080

Future flow scenario

- Harvesting for storage
  - A portion of unused core allocation
  - No supplementary allocation below median flow
  - 50% of proportional flows above median flows
  - Restrictions for very high flows due to sediment and intake structures
- Environmental flows from storage
  - Step down thresholds to protect core allocation
  - Consistent with principles behind the dNRP
  - Residual flows to maintain minimum flow levels
- Flushing flows from storage
  - Modelled at 3 x median flow for 10 hours – part of dead storage
  - Tividale: 2 – 3 times per year in addition to scheme supply release
  - Black Creek: 7 – 8 times per year

Black Creek 30 year storage level

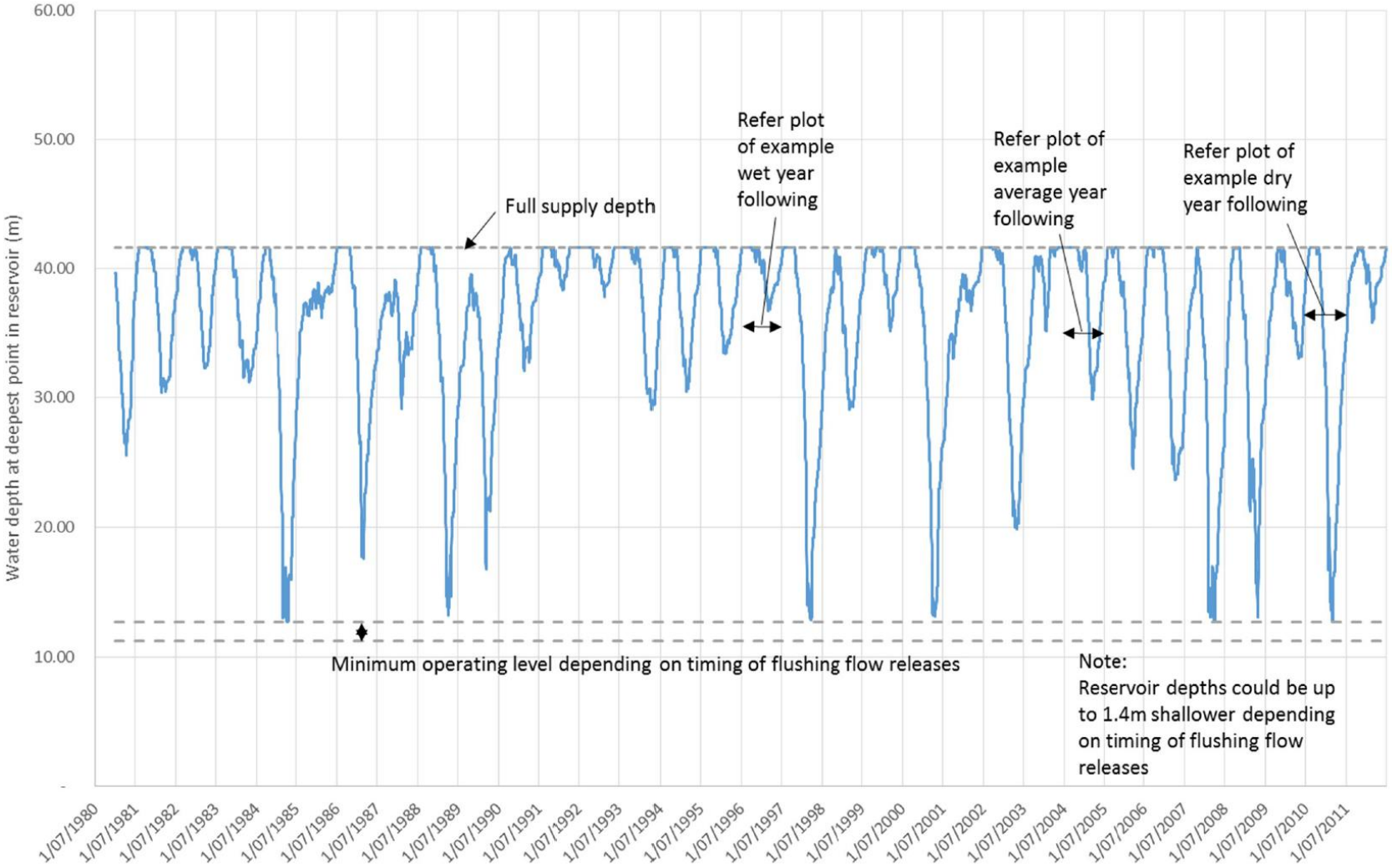


Figure 13-47 Black Creek Storage (Scheme 210): Modelled water depths (full 30 years modelled)

Black Creek ave. storage depth

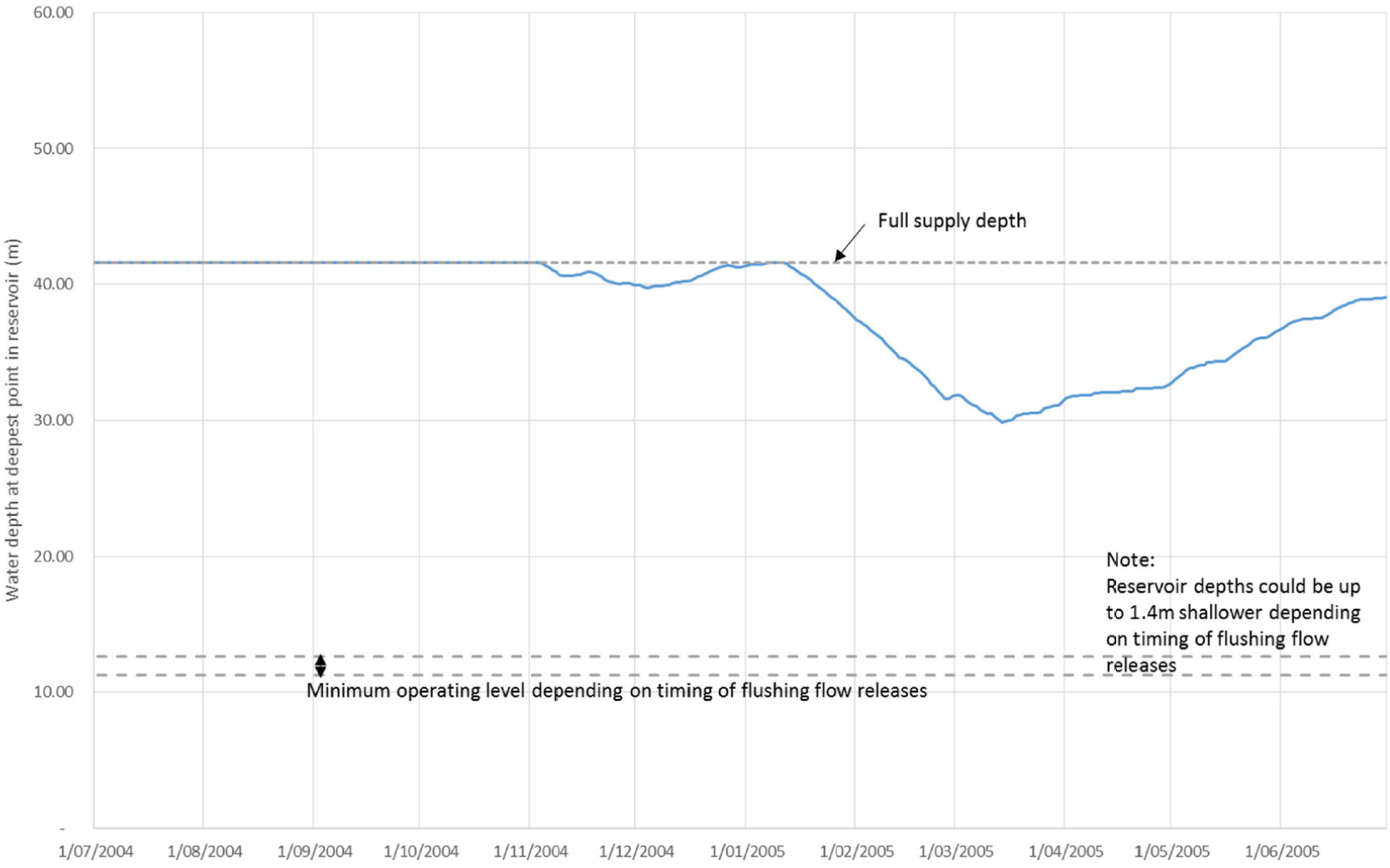


Figure 13-49 Black Creek Storage (Scheme 210): Modelled water depths (example average year)