

Manuherekia freshwater catchment management scenario framework - strawman

Manuherekia Reference Group
15 October 2019

Scope

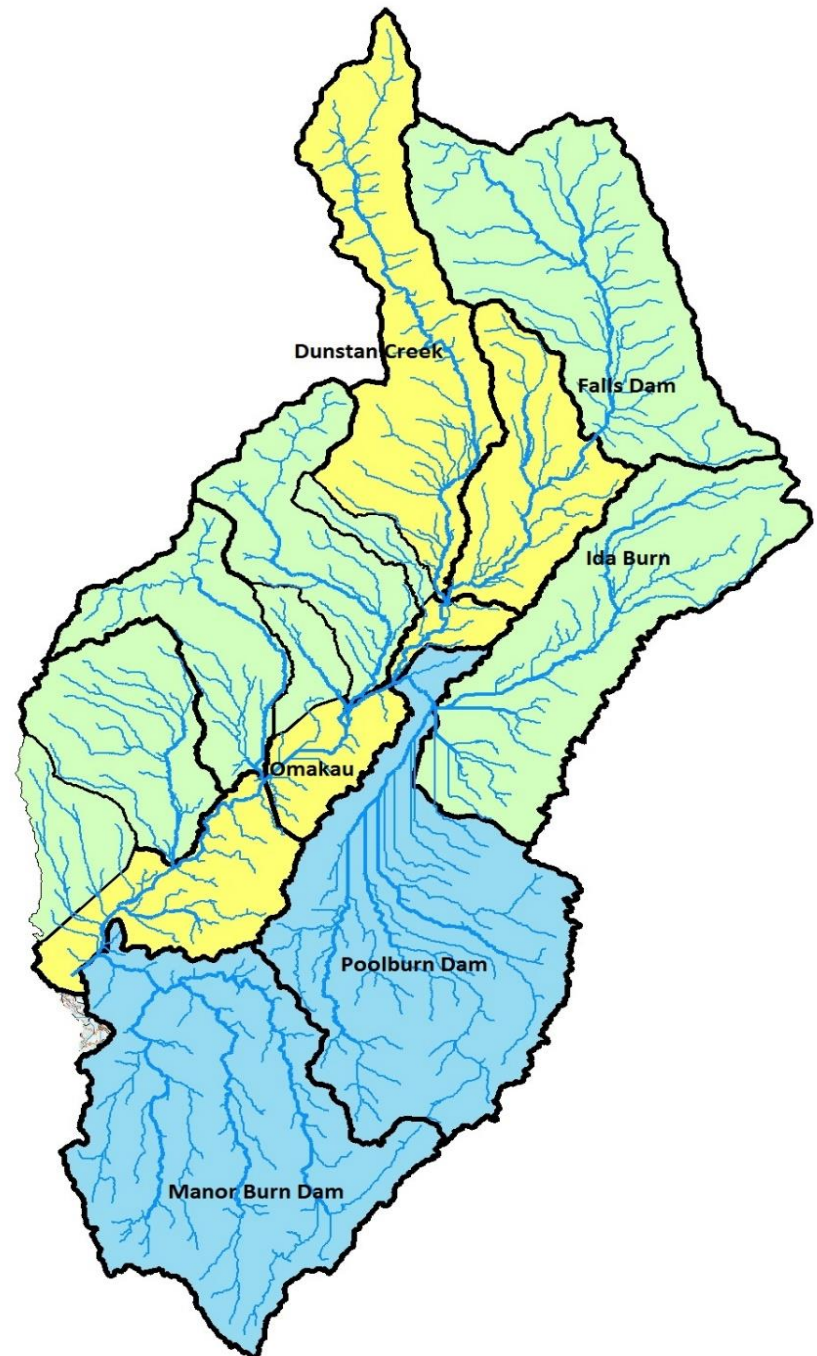
- Water quantity - flows and allocation – first order priority
- Water quality – focus on issues referenced against National Objectives Framework (NOF) parameters
- Aquatic biodiversity
- Community resilience and prosperity
- Constraints

Water quantity management scope will comprise

- Minimum flows (likely multiple points)
- Run-of-river allocation volume (primary):
 - linked to minimum flows
 - preferably aggregated to schemes (coops). Other?
- High flow allocation options, methods, locations

Water quality

- Primary focus on:
 - ecological health & human health
 - NOF (noting draft NPS & any adjustments)
- Scenarios will traverse (at a general level) land use within zones



Aquatic biodiversity

- Indigenous fish
- Game fish
- Wetlands (including saline wetlands)
- Avifauna (braided river/wading birds)

Community resilience & prosperity

- Enduring ability to operate (i.e. primary economic base is combination of agriculture & tourism)
- Changing climate?
- Farm viability (1) with, (2) with less, and (3) without water
- Aggregated catchment-wide farming/horticultural profitability. Flowing on to District economic cost benefit

Water Quantity Method(s)

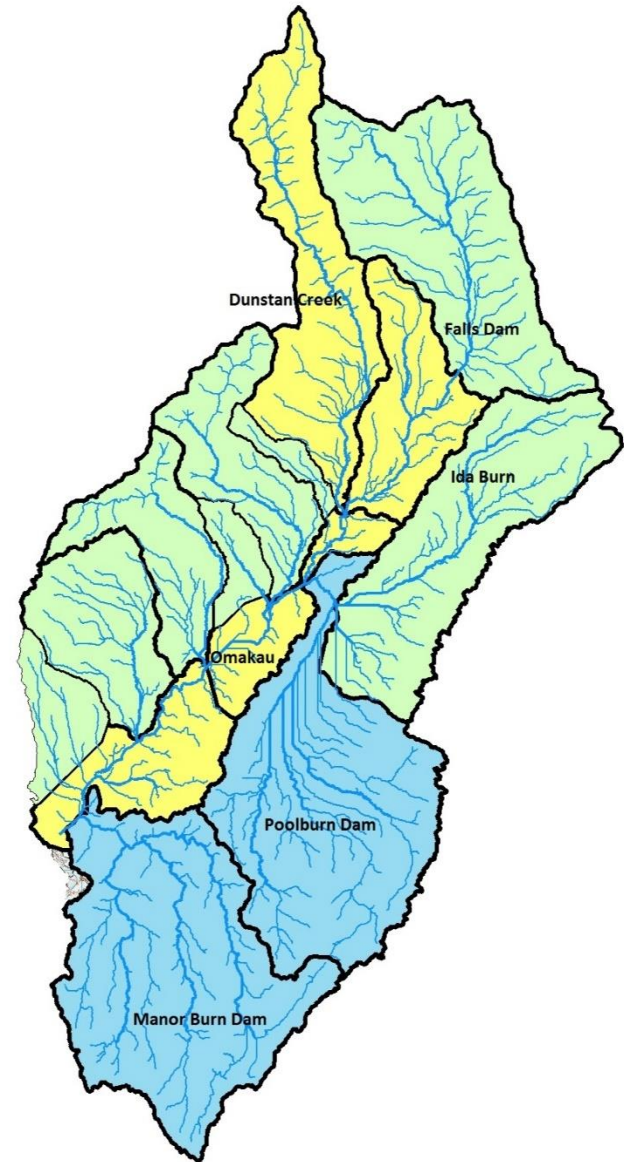
- Minimum flows/allocation volumes/run-of-river and high flows. Hydrological models, i.e. CHES and/or Goldsim
- Proposed parameters –
 - Start at “naturalised flows”, incl. identifying extreme years in the record i.e., high flows and low flows and “return periods” (Ability to do this for tributaries?)
 - Water abstraction – focus as a starting point actual abstraction not “permitted abstraction”

Water Quantity Method(s) – cont'd

- Minimum flows at:
 - 70% of MALF
 - 50% of MALF
 - 25% of MALF (status)
- Overlay habitat benefits
- Review on farm financial impact i.e., using MRL case studies then scaled up to catchment (case studies may need revisiting)
- Add in existing storage & re-run
- Review high flow water when and where in the context of the parameters above

Water Quality Method

- Review baseline data and (trends if possible, i.e. time series dependent)
- Identify primary issues and drivers of those issues
- Identify methods for resolution both at farm and zonal scale
- Assess cost issues if possible, i.e. using MRL case study farms?



Aquatic Biodiversity Method(s)

- Apply DOC framework – as per September presentation?
- Identify case studies (within DOC priority framework)
- Review methods of protection/enhancement and the scale of the challenge
- Assess financial implications of protection / enhancement
- Identify funding methods and sources

Community resilience & prosperity

- Assess community benefit/cost impacts of financial and economic scenarios associated with minimum flows/allocation (and other parameters as relevant)
- Assess benefits and costs on:
 - natural character,
 - recreational and
 - cultural valuesassociated with minimum flows/allocation

Community resilience & prosperity

- Consider methods of adjustment – e.g. irrigation efficiency and storage
- Consider possible costs of adjustment (case studies farm scale/infrastructure costs)
- Consider timeframes to adjust
- Consider whether farming sector alone can adjust i.e., test financial resilience of farms to finance adjustment
- Consider role of public sector in this context