Motupipi – issues and management options

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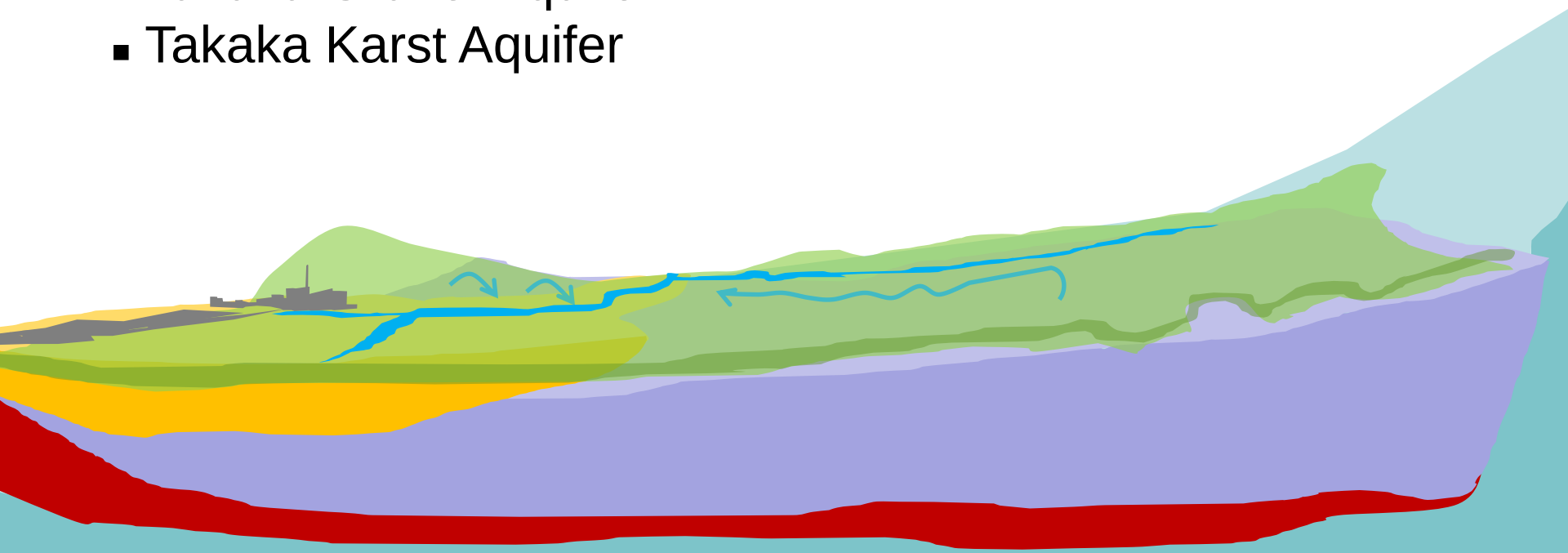
19 February 2016

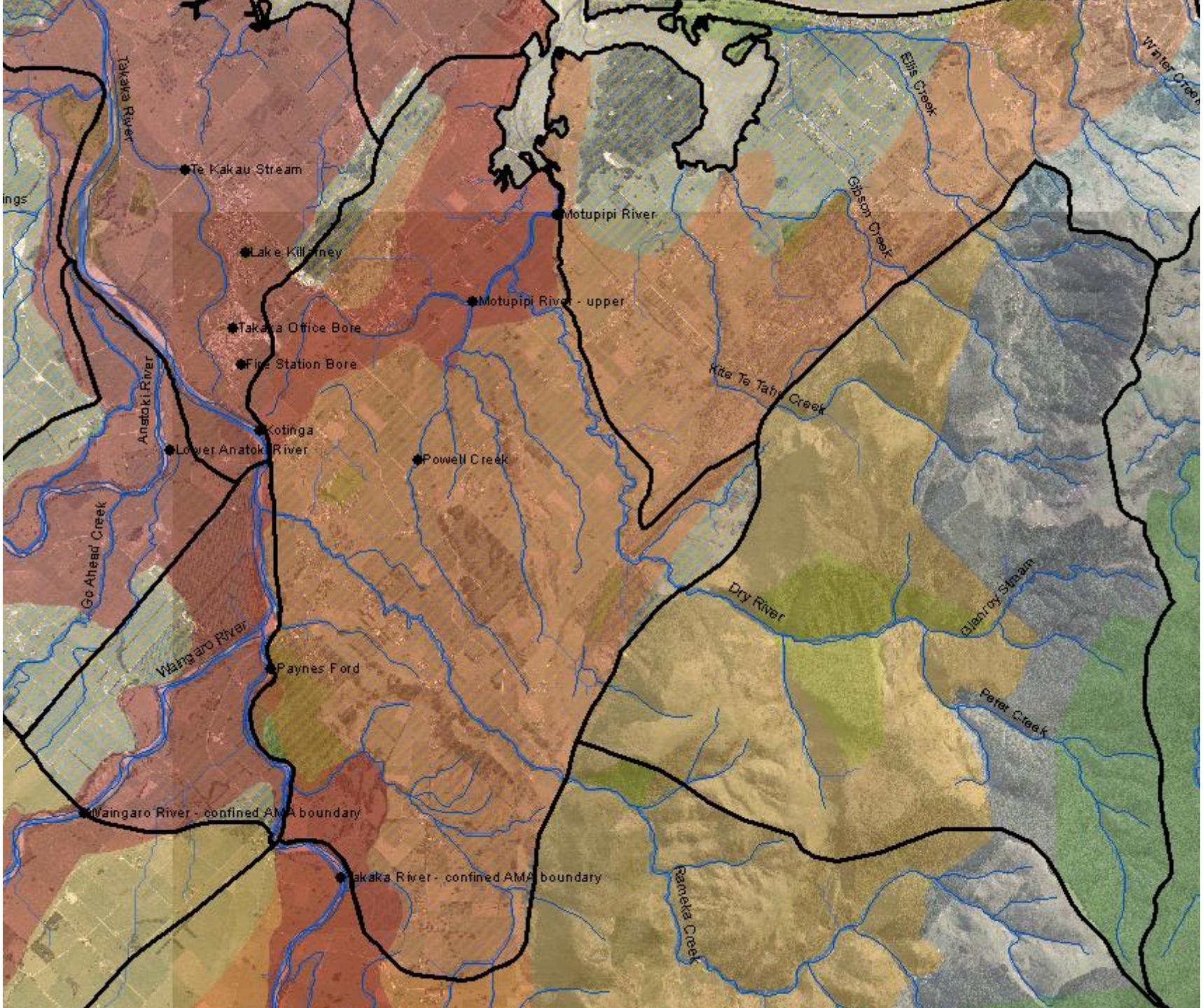
tasman district council

Zone overview

- Four main waterbodies
  - Motupipi River and tributaries (including part of Dry Creek)
  - Lower part of the Rameka Creek
  - Takaka Gravel Aquifer
  - Takaka Karst Aquifer



**rough schematic – not to scale*


Takaka River
Te Kakau Stream
Lake Killarney
Motupipi River
Motupipi River - upper
Takaka Office Bore
Fire Station Bore
Anatoki River
Kotinga
Lower Anatoki River
Powell Creek
Go Ahead Creek
Waingaro River
Paynes Ford
Waingaro River - confined AMA boundary
Takaka River - confined AMA boundary
Ellis Creek
Gibson Creek
Kite Te Tahi Creek
Dry River
Blakeroy Stream
Peter Creek
Rameka Creek

Summary of Water Quality Issues

- Motupipi River (refer meeting 2)
  - Nutrients (nitrate/phosphorus) (nitrate regularly over trigger)
  - Disease causing organisms (*E.coli* regularly over guidelines)
  - Riparian habitat loss
    - causing temperature issues on tributaries
    - causing excess light
    - impacts on biodiversity, aquatic habitat / ecological values
  - Nuisance plant growth (aquatic weed & algal blooms)
    - causing dissolved oxygen issues, potential to reduce clarity
    - exacerbated by lack of flushing flows, excess light, high temps and elevated nutrients
  - Sediment
    - exacerbated by lack of flushing flows, willows & aquatic weed
- Aquifers
    - Elevated nitrate in Takaka Karst Aquifer

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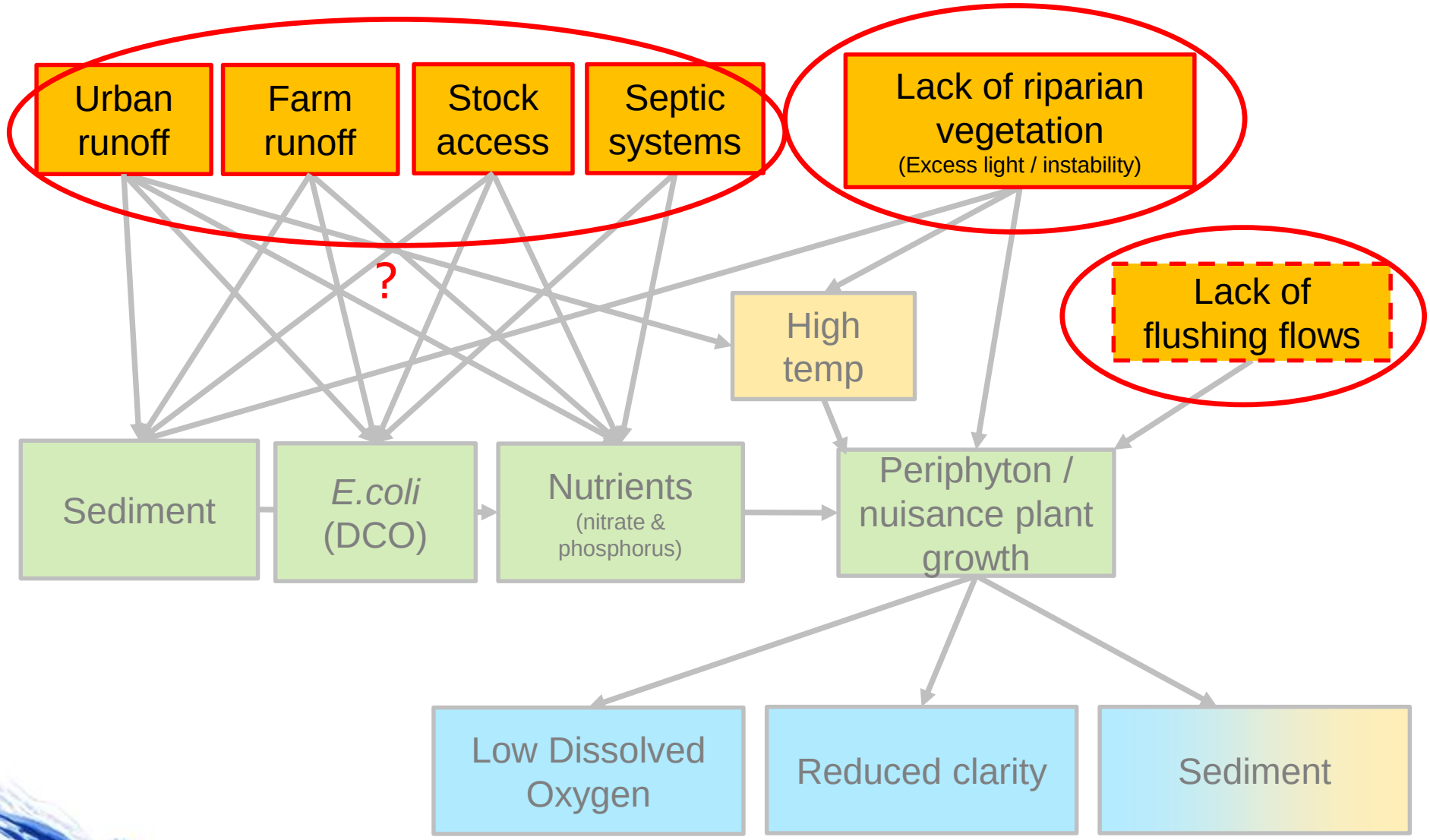
- Aquifers
  - Elevated nitrate – karst aquifer

Key attribute drivers



Nutrients and Disease Causing Organisms

- Isotope analysis: likely to be coming from effluent and fertiliser
- Sources could be farm/stock and onsite WW systems
- Nitrates not a toxicity issue, exacerbating nuisance plant growth

- Options for management
  - Faecal source tracking may indicate source types
  - Education and WOF for onsite wastewater systems (89)
  - Urban CMP project to identify urban runoff issues
  - Good/best land use practice (need to define)
  - Ongoing nitrate/phosphorus and *E.coli* monitoring
    - TDC going to monthly monitoring in Motupipi

Sediment

- From: land disturbance and land use runoff, river bank erosion and urban discharges
- Uncertain of relative generation from different sources
- Exacerbated by willows and aquatic weed

- Options for management
  - Good/best land use practice - with focus on land disturbance and sediment control practices
  - Stock exclusion from river banks
  - Riparian planting to stabilize and shade stream banks
  - Urban CMP project to identify urban runoff issues
  - River bed restoration (sediment build-up removal)
  - Ongoing estuary and stream sediment monitoring

Lack of riparian vegetation

- Historic losses and ongoing from stock grazing
- Causing high temperatures, exacerbating nuisance plant effects
- Causing habitat degradation and loss of:
  - Shading and cooling temperatures (microclimate effects)
  - Resilience of aquatic ecology during low flows
  - Food provision from leaf and insect fall
  - Habitat provision from woody material and root exposure
- Options for management
  - Replanting
    - Requires intensive management during establishment phase
    - Requires ongoing plant pest management
    - Time lag before sufficient canopy growth occurs to get full benefits
  - Fencing to control stock access to replanted areas
  - Replanting and fencing has already been done on some properties
    - Fencing – all but spring sources and some upper parts, ~10-20% planted

Lack of flushing flows

- Partly spring fed system with tributaries that dry up
- Exacerbated by Takaka River bed degradation (~0.5-1m) and flood management actions since 1983
- Exacerbating nuisance plant growth

- Options for management
  - Potentially difficult/expensive to improve flushing – however potential for investigation of options via CMP project
  - Focus on preventing nuisance plant growth through stream shading and nutrient reduction


Powell Creek
VISITOR
Fine Sediment

Great shape – just need to add trees


Motupipi Upper Spring

Questions for FLAG

Have we missed any key issues?

Have we missed any management options?

Are there any management options you have concerns about?

Motupipi - Methods of Implementation Overview

Lisa McGlinchey 19 February 2016

Methods of Implementation - overview

- Council (Plan framework and Implementation Plan)
  - Investigations and Monitoring
  - Education and Advocacy
  - Works and Services
  - Financial incentives
  - Regulatory
- Community/landowner driven/funded special projects
  - External funding sources and support
  - Local community networks
  - Council advice/support
- Industry/landowner driven/funded change
  - Market drivers
  - Council advice/support

Implementation – Investigations and monitoring

- Sampling or investigation projects:
  - Source sampling - faecals, sediment?
  - WOF programme for onsite wastewater systems (89)
  - Urban CMP project
    - to identify urban runoff issues
    - to investigate flushing options

- Ongoing monitoring (ie SOE programme):
  - Nitrate and Phosphorus
  - Disease causing organisms
  - Estuary and river sediment monitoring
  - etc

Implementation – Education and Advocacy

- Education and advocacy (council & industry bodies):
  - Onsite wastewater systems management for owners *
  - Erosion and sediment control good practice *
  - Industry specific good and best land use practice *
  - Replanting and management of water bodies *

Implementation – Special projects

- Landowner/community:
  - Bed restoration - sediment build-up removal
  - Replanting of stream banks* – initial focus on shade
  - Fencing of stream banks*
  - Willow control

Implementation – Financial incentives

- Council:
  - Sediment build-up removal
  - Replanting of stream banks – initial focus on shade (TDC 50% subsidy of $230k /year)
  - Fencing of stream banks (TDC budget ~20km/year)
  - Willow control

Implementation – Regulatory (policy & rules)

- Review of existing land disturbance rules (in progress)
- Addition of new policy/rules content for:
  - Minimum flow and allocation regimes
  - Rationing and cease take provisions

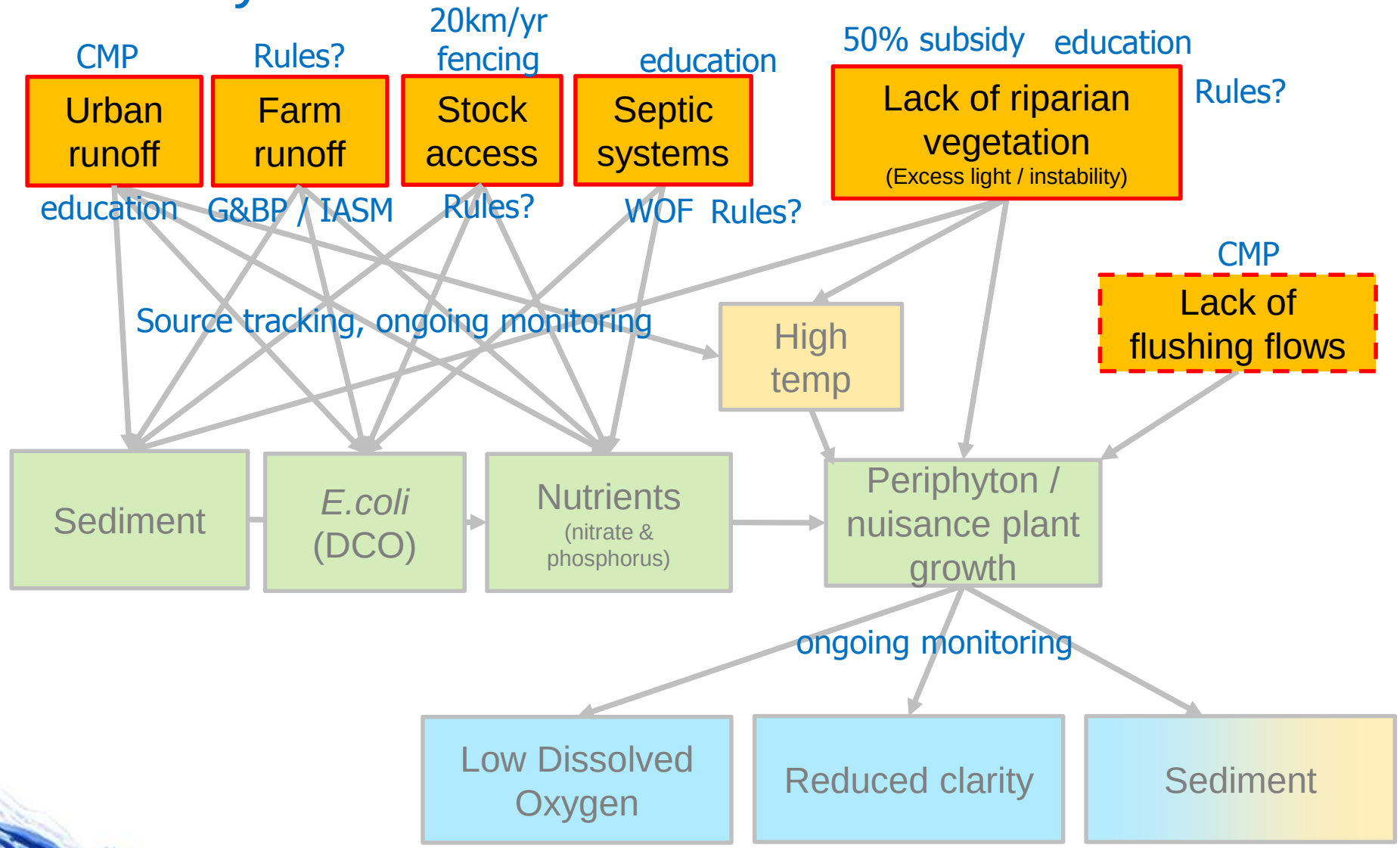
- Which land use aspects should be regulated to achieve water quality outcomes?
  - Good practice requirements (define)
  - ‘back stop or bottom line’ rules/limits?

- Waimea FLAG – looking at use of Industry Audited Self-Management systems in rule cascades – eg NZGAP
  - Avoid duplication costs for landowners
  - Avoid excessive compliance costs for council

Implementation – good / best land use practice

- Landowners:
  - Fertiliser and irrigation management
  - Silage, composting and offal pit location and management
  - Cultivation, cropping, harvest and feed management
  - Replanting of riparian vegetation
  - Stock exclusion from waterbodies, banks and sinkholes
  - Use of constructed wetlands at farm drainage points
  - Erosion and sediment control practices
  - etc
- Industry bodies:
  - Landowner education, incentives and support
  - Industry audit of self-management systems (IASM)
- Council:
  - Review of existing land disturbance rules
  - Landowner education, incentives and support
  - Audit of IASM programmes

Summary



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Questions / comments?

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Questions to consider next…

Which management options do we pursue?

Can we afford them?

How do we promote and incentivise landowners?

What gets regulated?

What should council pay for?