Workshop notes

Water quality
Wednesday 15 October 2014

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Session 1: Issues with the state of Northland's water quality

Key questions:

1. Have we correctly identified / described the issues with Northland's water quality?
2. Are there any issues that we have overlooked?

Discussion theme one: Identified issues with state of Northland's water quality

- There was general agreement that the water quality issues are correct, although other issues were identified (see "Discussion theme" two below)
- We cannot tackle every single issue due to resourcing constraints and the need to prioritise our efforts
- Issues need to be elaborated, nutrient enrichments rivers, dune lakes, needs to cover estuaries more fully.
- Elevated sedimentation in the Kaipara Harbour is a cross boundary issue. Auckland Council also has jurisdiction over the harbour and a lot of the sediment in the southern arm is coming from the Wairoa River.
- There is a close correlation between sediment and phosphorus and phosphorus could be used as a surrogate water quality indicator (or attribute) for sediment.

- Sediment is more of an issue than nutrients.

Discussion theme two: Other issues

- The key issues are focussed on fine sediment, nutrients, and faecal microbes. Are heavy metal levels in sediment going to be addressed through a new regional plan? Answer: The regional plans contain standards on heavy metals in rules for some discharges. We are thinking about expressing such standards as numeric water quality objectives in the new plan(s). It is important to note that in most parts of the region heavy metal levels are below low trigger guideline levels. The only area where heavy metals may be an issue is in the Hatea River delta of the Whangarei Harbour, the main receiving environment for stormwater discharges from Whangarei city. Heavy metals are correlated with other urban and non-conventional contaminants, e.g. polycyclic aromatic hydrocarbons.
- Sediment accumulation in rivers is also an issue.
- Climate change (increased extreme rainfall events and droughts) will increase problem of sediment in fresh and coastal waters and may cause salinity issues in shallow coastal aquifers.
- Wetlands should be addressed in the water quality work stream because the degradation and loss of wetlands and riparian margins affects water quality.
- Localised issues may still need to be addressed, such as hydrocarbons downstream of urban areas and heavy metals (e.g. mercury in the Puhipuhi area, and heavy metals in estuarine sediment). If such issues are not identified are they going to be addressed?
- Contamination of groundwater is potentially an issue.
- Identify and be proactive about emerging or potential issues, e.g. aquifer contamination from drilling.

Discussion theme three: Improving our information base

- There is a need to understand the relative impacts of historic activities and existing land use activities.
- There is a need to understand natural sediment levels in river and estuaries before targeting mitigation measures.
- Sedimentation accumulation rates could be influenced by sediment movement within estuaries and harbours, e.g. shifting mud and sand banks due to tidal activity.
- How much sediment is already in river systems? For example, re-working of entrained sediment and some forms of stream bank erosion are key sources but potentially unmanageable.
- NRC needs to compare erosion rates and sediment levels in unmodified catchments with rates and levels in modified catchments.
- NRC and the community needs better data, particularly on what water bodies are fenced.
- Do NRC's water quality monitoring programmes have good resolution to detect ammonia pulses following rainfall after droughts? Answer: Not sure, it depends on whether the time of monitoring coincided with such a rainfall event.
- Does NRC monitoring invertebrates in rivers? Answer. Yes, hard bottom sites have recorded better scores than soft bottom sites. We are looking at setting water quality

objectives for invertebrates based on the Macroinvertebrate Community Index (MCI). We recently commissioned John Stark to revise the MCI to reflect Northland's river ecosystems. The report can be found on our website.

- NRC routinely monitors a large number of lakes using the Lake Submerged Plant Index (LakeSPI). What has the monitoring found? Answer: Many of our lakes are in high or outstanding condition. However lakes are vulnerable as they are closed systems.
- It was highlight that additional water quality monitoring takes place outside of the river, lake, aquifer, and coastal water quality monitoring programmes, e.g. monitoring of resource consents.
- Questions were raised about the lack of data on biological attributes (e.g. fish and invertebrates) and water quality information for the coastal marine area. It was pointed out that NRC routinely monitors invertebrates at the River Water Quality Monitoring Network sites, but fish monitoring is resource intensive has hasn't been done routinely. NRC has only been monitoring periphyton for just over a year and some sites have been identified as having nuisance growths. NRC also monitors water quality in a number of estuaries and harbours. However, while nutrient levels are elevated in a number of estuaries with respect to the ANZECC guideline low trigger values we are not seeing any evidence of nuisance plant and algal growths.
- Can the sample data be expressed across a time period, taking into account, for example, heavy rain events where there are elevated levels of contaminants? In other words, can the water quality data be flow adjusted? Answer: The water quality data is not currently flow adjusted and therefore a degree of caution is needed when interpreting the water quality data with respect to the Appendix 2 attribute states in the NPS-FM 2014 and guideline levels.
- Are the sites in the River Water Quality Monitoring Network (RWQMN) representative of Northland's rivers, particularly reaches in the lower catchments? The example provided was the Wairoa River system of the Kaipara Harbour where most the RWQMN sites are in the mid to upper reaches and not one in the lower reaches. It was suggested that water quality monitoring sites in the mid to upper catchments will paint a relatively rosy picture with respect to water quality in the lower reaches. Answer: Our RWQMN programme has been externally reviewed by NIWA and found to be generally well designed and operated and the monitoring network as a good representation of sites.[1] With regard to the Wairoa River system, many of the lower reaches are influenced by salt water from the Kaipara Harbour and therefore are not appropriate for freshwater monitoring sites.
- NRC should expand the River Water Quality Monitoring Network by including more sites in the Wairoa River system, including on the Wairua River sub-catchment near Whakapara.
- Is NRC talking to NIWA about expanding their national rivers monitoring network in Northland? Answer: No, any new sites would be incorporated into NRC's monitoring network.
- Improved understanding of catchments is important to develop solutions to addressing water quality and quantity.

[1] Andrew Hughes, et al. (June 2010) Overview of the Northland Regional Council's Freshwater Quality Monitoring Programmes. Prepared for Northland Regional Council. *NIWA Client Report No: HAM2011-090.*

- NRC should do more biological monitoring, i.e. put more resourcing into invertebrate, fish and habitat monitoring.
- Some attributes such as pH and temperature are too variable.
- NRC needs to reality check its data, for example, there is a need to recognise that extreme events (eg peak flows/ droughts) can skew results and paint a worse picture than may be the reality. Water quality data needs to be flow adjusted.
- Oxygen and temp also important as is the monitoring methodology to capture extremes and diurnal fluctuations.
- There needs to be a greater focus on water quality in estuaries.
- Are changes in land use practices such as additional topdressing / cultivation rates picked up in monitoring data?
- Can we integrate other monitoring data from other sources, e.g. community groups and iwi? Answer: Yes it is possible, but it is difficult to determine if the data is robust.
- The location of the sites in the River Water Quality Monitoring Network need to be reviewed. River water quality changes drastically between reaches of the same river. The Kaihu River needs evaluation, which should be addressed when NRC define river management units; the Kawakawa River has two sites that reflect good conditions but the lower Kawakawa is completely different and has no sites.
- We need to understand what is manageable and what is not manageable due to natural processes. Goal setting must be linked to what is achievable.
- Fingerprinting of sediment is one of the tools that can help us identify the issues.
- Monitoring is expensive and what are we going to learn from new monitoring that we don't already know.
- NRC should partner up with other industries and groups that are already doing monitoring to pool data, potentially reduce costs?
- Concerned about political pressure leading to sites being moved, particularly long term sites. There are big benefits from keeping existing long term sites.
- How can the community help with monitoring water clarity in rivers?
- NRC monitors *E.coli* but the greater concern is pathogens, why not measure pathogens? *E.coli* do not necessarily cause health problems. This means that there is a lack of clarity in determining cause and effect, e.g. is *E.coli* from farms or human sources?
- Is NRC considering synergistic toxicity?
- NRC needs more water quality monitoring sites to improve its resolution on the issues.

Session 2: Issues with the management of Northland's water quality

Key questions:

1. Have we correctly identified the issues with the management of Northland's water quality?
2. Based on your experiences with the current regional plans, what are the main administrative issues with their policies and rules?

Discussion theme one: Identified issues with the management of Northland's water quality

General

- Remove ambiguity from permitted activity rules. Many of the permitted activity rules are too subjective and therefore provide discretion to NRC.
- NRC needs to be consistent in monitoring and enforcing its rules. Currently, some activities are more scrutinised than others.
- NRC needs to ensure that it correctly applies the RMA and national policy statements.
- Administration and implementation issues are the main problem with the management of Northland's water quality as generally the rules are ok.
- Land disposal is not always possible in Northland given its climate and soils.

Wastewater discharges

- NRC needs to enforce its wastewater discharge rules
- Wastewater management should focus on the discharge quality not the treatment and disposal systems.
- Land disposal shouldn't be the focus. Rather it should be wetlands that are promoted for effluent disposal.
- Why spend so much on land disposal when discharge to the coastal marine area is practicable. For example, Kaipara District Council could have discharged treated effluent from Mangawhai to the ocean via an outfall at a much lower cost than by land disposal
- Partially treated wastewater has adverse effects on the health of aquatic ecosystems, e.g. the Ruakaka River
- NRC needs to increase its monitoring of wastewater overflow and impacts in receiving waters.

Stormwater discharges

- NRC is not consistently enforcing its stormwater discharge rules as evidenced by the number of stormwater networks that are not covered by consents.
- Do the consented stormwater networks have water quality standards for faecal microbes? Answer: No
- Do the regional plans contain water quality standards for stormwater discharges? Answer: Yes for heavy metals and suspended solids but none for faecal microbes and nutrients.
- The cost of consenting every stormwater outfall to water would be very high.
- Stormwater discharges should be treated cumulatively rather than individually because generally the total load from a network causes sediment and heavy metal build up in the receiving environment.
- NRC needs to revisit the definition of stormwater within the regional plans.
- Fine sediment from unsealed roads is an issue.

Discharges of animal effluent, other agrichemical wastes, and fertilisers

- The discharge of animal effluent during winter is an issue for many farmers, and they need guidance on this.
- Fertiliser is not a significant component of nutrient losses and it is unlikely to be an issue except where nutrients are causing adverse effects, e.g. in sensitive dune lakes.

- Fertiliser application in forestry is a concern.
- Question about does NRC currently have rules covering nutrient inputs or losses. Answer: No.

Land disturbance activities (earthworks, vegetation clearance,. quarrying, livestock, land preparation)

- There needs to be stricter rules on kauri extraction from wetlands, the Regional Water and Soil Plan appears to only put restrictions on extractions occurring within 'significant' wetlands or indigenous forests. This is not enough.
- Currently, the Regional Water and Soil Plan does not control the access of stock to the beds of lakes, rivers and some wetlands. Addressing this issue will not be straightforward, however at a minimum new rules should at least be consistent with the Sustainable Dairying: Water Accord. Designing rules for smaller streams and around beef farming should be done in discussion with the industry and other relevant stakeholders.
- It was pointed out that there needs to be a stock exclusion policy for small streams that are not covered by the Sustainable Dairying: Water Accord that can potentially become larger streams over winter.
- The prohibited activity rule for stock in the coastal marine area is flawed due to lack of discretion. Has NRC encountered any issues with applying this rule?
- Beef access to the beds of water bodies is an issue.
- There is no evidence that traditional beef farming is making water quality worse
- Is drilling covered in the land disturbance activity rules in the Regional Water and Soil Plan? Answer: Not unless it is quarrying.
- Is the grading of roads covered in the land disturbance activity rules in the Regional Water and Soil Plan? Answer: No. But the plan contains rules for discharges of stormwater from roads.
- Is land clearance covered in the land disturbance activity rules? Answer: Yes in terms of land preparation and vegetation clearance. The strongest rules concern indigenous wetlands.
- It was clarified that district plans contain controls on earthworks for addressing nuisance and amenity issues.
- Roads and road embankments appear to be a significant source of sediment in water.
- Plantation forestry is often undertaken at a large scale and on erosion prone land. Does NRC need to exercise more control over forestry? Or should it recognise the benefits of the growth phase?
- The impacts of plantation forestry in Northland very underestimated, e.g. it is having big impacts on dune lakes
- Large intermittent pulses of sediment can cause more severe adverse effects than slow steady deposition.
- NRC's controls on quarrying are currently robust and should not be changed without good reason.
- The 5000m^3 permitted activity rule for earthworks is too permissive.

- Now does NRC monitor the volumetric thresholds for earthworks in the permitted activity rules? Who does a quantity survey? The rules need to be clear and potentially based on an area threshold rather than a volumetric threshold.
- NRC is inconsistent in its approach to controlling discharges from forestry tracks and discharges from farm tracks and roads.
- Sediment from unofficial earthworks is a concern.
- The Riparian Management Zone is hard to define and some of the rules relating to the Riparian Management Zone are unclear and unenforceable.

Discussion theme two: Other issues

- The Regional Water and Soil Plan does not contain any rules on riparian planting.
- How are agricultural chemicals managed and monitored with respect to waterways? Answer: If they are being used in the way that they have been approved and intended to use they are permitted. NRC does not actively monitor the use of agrichemicals unless an issue it brought to its attention.
- Cultivation is not identified as a source of sediment or currently controlled through the Regional Water and Soil Plan. At present it would appear that cultivation has not fully been discussed and land management was not listed in the activities of focus and yet it can have a significant influence on all water quality.
- Flood protection works and drainage districts have specific water quality issues e.g. channelisation leading to increased sediment and nutrient loads. Management of these areas has a big implication for mitigating water quality and quantity issues including adaptation to climate change.
- Climate change is not currently identified as a key water quality issue.
- The lack of regulation on activities that affect water quality is an issue.
- The lack of integrated management in the regional plans is an issue.
- There are no commonly excepted good management practices for farming and the Regional Water and Soil plan does not contain any rules requiring good management practices. This is different to other councils, e.g. Horizons.
- Restoring wetlands and floodplain functionality is difficult under the RMA and the Regional Water and Soil Plan. Flood management is addressed by the Land Drainage Act.
- Wilding pines that blow over in storms are a source of sediment.
- Access to water is a right and therefore sock access to a stream is a right
- The plans currently contain no incentives to achieve outcomes (objectives).
- Individual discharge quality standards don't take account of cumulative effects of multiple discharges on the receiving environment. Does council understand the cumulative impacts of discharges?
- Plans are currently hindering active management / sediment control by requiring consent for some activities.
- The thresholds for permitted activity rules are very important. For example, many resource consents simply repeat the conditions of the permitted activity rules. What is the point of a resource consent in such situations?
- River protection rules on activities for stopping river bank erosion have been inadequate and too restrictive. For example, erosion in the Waitangi catchment big

issue and landowners can address the issue, however the Regional Water and Soil Plan rules are too restrictive.
- Contamination of surface and ground water from drilling isn't being considered and needs to be. The Regional Water and Soil Plan does not contain any specific rules on this issue.

Discussion theme three: Improving our information base

- How do you value water quality to encourage people to put measures in place to avoid their impact on water quality?
- Oysters should be used as water quality indicators for faecal contamination from humans.
- The LAWA website should include information on discharges to rivers (consented, permitted, and unauthorised). It should also include a mechanism for public reporting.
- NRC needs to understand relative loads of nutrients from urban and rural environments across Northland. What are the impacts of impervious surfaces on water quality in terms nutrient and sediment loads?

Session 3a: Options for improving the state and management of Northland's water quality – objectives and limits

Key questions:

1. Should we set water quality objectives based on attributes that are not currently in the National Policy Statement for Freshwater Management 2014 (e.g. sediment and invertebrates) or should we wait for the Government to update the National Objectives Framework?
2. How should we define water quality management units?

Discussion theme one: Setting objectives for attributes that are not in the NPS Freshwater

- Is there national guidance on setting freshwater quality objectives and limits? Answer: there is some high level guidance but nothing substantive. MfE is expected to more guidance.
- Why are you considering setting river water quality objectives for both turbidity and deposited sediment, why not one? A. They measure different things. Deposited sediment has different impacts than suspended sediment.
- NRC needs to identify the sites or percentages of the regions rivers that are above or below the NPS-FM 2014, Appendix 2 "national bottom lines", e.g. for primary contact recreation.
- NRC should be careful about setting numeric river water quality objectives for sediment due to the level of uncertainty with the immature science.
- NRC should set river water quality objectives for macroinvertebrates based on the Macroinvertebrate Community Index.

- How do the ANZECC 2000[2] guideline low-risk trigger values relate to the NPS-FM 2014 Appendix 2 attribute states for rivers? Answer: The NPS-FM 2014 attribute states for rivers cover only a small number of water quality indicators. The ANZECC low-risk trigger values for nitrate and ammonia toxicity are similar to the ANZECC trigger values for toxicants at alternative levels of protection.[3]
- Timeframes are a key consideration when setting objectives, limits and targets. Appropriate timeframes are important given costs of improving water quality.
- It is important to ensure that NRC does not lock-up parts of the catchment where water quality is good (e.g. in upland streams) but allow water quality to deteriorate in downstream reaches.
- NRC should prepare a discussion document on how catchments would comply with different objective and limit options. This will help people understand what the likely costs of improving water quality.
- Rather than setting numeric objectives and limits for sediment, NRC should understand what landowners can achieve under best management practices. It is difficult to quantify sediment loads at the farm and forestry scale.
- NRC should set a coastal water quality objective that provides for contact recreation in all coastal waters.
- NRC needs to put in place a robust process of community engagement to identify values and whether they apply within management units and the wider region.
- NRC should take care not to set water quality objectives and limits that may constrain future regional growth, particularly where the objectives and limits do not directly relate to protecting values, e.g. Hawks Bay Regional Council has stringent N limits for water bodies in places that are close to pristine. This constrains future land use that doesn't actually result in loss of environmental values.
- NRC's proposed approach for setting water quality objectives and limits is supported. NRC should put bottom line water quality objectives and associated limits in plan right now for macroinvertebrates, periphyton, dissolved oxygen, etc.
- NRC should align its objectives and limits with other regions.
- NRC should set water quality objectives for attributes that are not currently in Appendix 2 of the NPS-FM 2014
- NRC should set water quality objectives for lakes based on the LakeSPI
- How do you consider the effects of other pressures on some attributes like MCI, e.g. introduced fish? NRC needs to understand the implications of its water quality objectives.
- Need to understand values before deciding objectives. This is important when dealing with competing values.
- TSS would be expensive attribute to monitor, but could be applied to particular catchments.
- Only set water quality objectives for attributes that are not in the NPS-FM if they are need to achieve water quality objectives. For example, the NPS does not address coastal water quality and in Northland estuaries and harbours are highly valued

[2] Australian and New Zealand Guidelines for Fresh and Marine Water Quality. Volume 1, The Guidelines. October 2000

[3] Table 3.4.1, ANZECC 2000.

areas and influenced by freshwater, so NRC may need to look at additional attributes, e.g. sediment.

- The MCI is a better measure of ecosystem health than toxicity or periphyton
- NRC should be prudent and not get ahead of national policy because of the potential impacts on the economy and the community's ability to pay for improving water quality. NRC should design its new regional plan to plug in updates to the NPS-FM 2014 over time.
- If NRC can measure and quantify attributes then it should setting objectives for them, but perhaps not for attributes that are not well understood or easily quantified.
- NRC should measure all water quality indicators now to improve data sets for future management frameworks.
- NRC should include "indicators" in the new regional plan that are less stringent than the water quality objectives and limits. This will provide a warning system when water quality is approaching the objectives/limits.
- NRC should set objectives and limits for sediment that take into account sediment peaks from flood events and harvesting forestry.
- The applicability of the NPS-FM 2014 Appendix 2 attribute states and ANZECC guideline low-risk trigger values to Northland are questioned, particularly for sediment because Northland has deeply weathered soils and a sub-tropical climate.
- NRC should use reference site data for developing water quality objectives for sediment in Northland.
- Water quality objectives and limits should be achievable and affordable. Will NRC do cost-benefit (RMA s32) analyses? Answer: Yes

Discussion theme two: Defining water quality management units

- Management units can be large and have multiple objectives
- NRC should use an integrated catchment approach for defining management units. Integrated catchment management covers the economic and social domains as well as the environment. This means using catchment, or clusters of catchments, as management units.
- NRC should define different water body types within a catchment and set limits and then manage the entire catchment holistically, e.g. this is the approach that Canterbury Regional Council is using.
- It is important that the regional council and district councils take an integrated approach to water management.
- NRC should use the River Environment Classification system or the Freshwater Ecosystems of New Zealand system to define management units.
- Management units need to have a strong social-economic component to them.
- Water quality and quantity management units should be aligned as far as possible – otherwise they could be too complex.
- If there is not much variation in water quality across the region then we do not need to many management units.
- REC or FENZ based management units could be very complex, e.g. one property council could presumably contain 3 or more different management units and associated objectives, limits and rules.
- Management units should be based on geology.

- Water quality is the main factor when defining management units. NRC could then look at the social-economic-cultural considerations second, i.e. base them on water quality science first and communities second.
- NRC should investigate using Land Use Classification maps for defining management units.

Session 3b: Options for improving the state and management of Northland's water quality – point source and diffuse discharges

Key questions:

1. Have we correctly identified the range of options for improving the management of the following activities? Are there any other solutions to addressing the issues?
    a. Wastewater discharges
    b. Stormwater discharges
    c. Industrial and trade discharges
    d. Discharges of animal effluent, other agrichemical wastes, and fertilisers
    e. Land disturbance activities (earthworks, vegetation clearance,. quarrying, livestock, land preparation)

2. What do you think "avoiding over-allocation" should look like in a planning framework (e.g. non-complying or prohibited rules)?

Discussion theme one: Avoiding and phasing out over-allocation

- NRC needs to be careful about way it interprets monitoring data when enforcing water quality objectives.
- NRC needs to be careful when putting in place rules for avoiding over-allocation. Water management under the NPS-FM 2014 is relatively immature and evolving fast.
- NRC monitors two sites in Lake Omapere. One site fails the national bottom lines in Appendix 2 of the NPS-FM 2014. The other doesn't. Does this mean that the lake fails the national bottom lines? A. Good question. We are not sure.
- NRC should focus on setting narrative water quality objectives particularly for attributes that are not well understood.
- The new regional plan should be realistic and clear about timeframes for achieving objectives. It may take decades.
- Best and good management practices should be used for maintaining and improving water quality. A lot of work has been done or is being done around good management practices. NRC should not reinvent the wheel.
- Using prohibited activity rules does not provide for flexibility if the science changes or improves. However, they provide certainty to resource users.
- A clear hierarchy and clarity in terms of activity status used is fundamental. Restricted discretionary activity rules can be useful in this regard. If all activities are subject to resource consent, then it would be hard for council to administer the system.
- Setting achievable and realistic objectives and limits will mean that there is less risk in the use of "avoid" or prohibited activity rules.

- The activity status of rules should relate directly to the level of confidence in science, cause and effect, and values at risk. For example, forestry and effluent disposal should be prohibited within the riparian management zone of outstanding dune lakes.
- NRC should set narrative outcome based objectives rather than numeric objectives. Potential resource users should be able to test their proposals against narrative objectives, e.g. exceeding a limit may have little material influence on the objectives. In addition, there can be trade-offs between attributes, e.g. a reduction in phosphorus to a lake but an increase in nitrogen over a limit may have no effect on lake ecology. Non-complying activity statuses are better than prohibited activity statuses in such circumstances.
- If 'hard limits' are used then this will enable offsets, e.g., a proposal for a dairy intensification may require the purchase and retirements of another part of the catchment to avoid exceeding a limit.
- The Supreme Court decision on King Salmon may be of relevance, however there are different opinions.
- How big of an issue will over allocation be? It could be a big challenge in terms of sediment but faecal contamination may be a bit easier.
- NRC should not use prohibited activity rules. It needs to understand resource use well before setting restrictive water quality limits.
- Contaminant trading could be too complex to implement.
- Prohibited activity rules are a step to far as they restrict innovative solutions and ideas
- Activities that would cause limits to be breached should be prohibited. Efficiency needs to be built in to this approach.
- Cumulative impacts could arise from the use of non-complying activity rules. For this reason they may not be appropriate.
- If farmers have to be put out of business because limits can't be achieved then too bad (that's the law). Not that we like it.....! Farmers will have to look at alternative land uses.
- NRC should incorporate buffers within the limits, e.g. an orange light goes on that you are approaching unacceptable standard
- Over allocation should not result in cross subsidisation to address it.
- NRC shouldn't overly restrict regionally significant infrastructure, particularly given the emphasis on it in RPS.

Discussion theme two: Managing point source and diffuse discharges

General

- NRC should put in place a water quality management framework that requires or incentivises the uptake of good management practices.
- NRC should not reinvent the wheel. It should look at what other regions are doing, e.g. Hawkes Bay Regional Council and their approach to managing sediment.
- Collaborative catchment planning is the way to go. However, NRC needs to put in place robust processes and structures to enable it. It can also be time consuming and expensive.
- Cost recovery from permitted activity. Use section 150 Local Government Act 2002

- Need output base standards in rules for contaminants such as nitrogen, phosphorous and sediment. Input based controls stifle innovation, are expensive to administer and are bureaucratic
- NRC should adopt an adaptive management approach through their new regional plan.
- NRC should be careful not to apply generic controls as water bodies are different. Solutions needs to be tailored to water bodies.
- NRC needs to use independent monitoring and compliance people.
- Do we need stronger rules? Taranaki Regional Council has used a no-regulatory approach to addressing diffuse sources over last 20 years. Although the effectiveness of the approach is uncertain.
- People undertaking good/best management practices should not subsidise other people in a catchment that are not.
- NRC should clearly define best/good management practices in its new regional plan.
- NRC should revise its permitted activity thresholds.
- NRC should include more permitted activity rules but make management plans compulsory
- Polluters should pay.
- NRC should partner with industries to agree on mandatory good management practices and regulate in partnership (e.g. audited self-management).
- Set the objectives and limits and the allow market forces to determine the most efficient means of allocating water quality resources.
- NRC's permitted activity rules should be clear and certain.
- NRC's new plan should enable the trading of contaminant loads.
- The new plan should require riparian buffer zones and wetlands, as they have multifaceted benefits.
- Non-regulatory intiatives have been supported by NRC for a long time but only work for the willing. Rules are needed capture the laggards.
- NRC and industry groups have not done a good job of communicating good management practices to land owners.
- NRC is doing a good job with outreach and support around good management practices. However, the Environment Fund needs to be enlarged.
- Requiring an approved farm plan through a permitted activity rule might mean less restrictive consent conditions.
- Industry and NRC need to communicate the same thing. Communities also need to get on board.
- Guidance is needed on appropriate riparian planting to address different issues.
- Do not over manage contaminants if they are not a big risk.
- Manage by catchment for a site specific solution.
- The community could monitor water quality and activities and third parties could step in to enforce. For example, a stock exclusion monitoring template was developed by Millan Ruka and could be used by the community
- Developing a simple integrated plan will be a challenge for council
- Fairness in implementation will drive awareness of shared costs
- There is an attitude shift occurring among farmers regarding the importance of good management practices in terms of cash flow and environmental benefits

- Audited self-management is an option but may not work for “fractured” industries like sheep and beef.
- Encourage industry best/good management practice through rules
- NRC needs to set the outcomes (objectives) and let the industries to work with members to achieve outcomes
- NRC needs to work with Auckland on the issues for the Kaipara Harbour
- NRC should collaborate as much as possible with other councils
- The council should control boating on Kai iwi lakes. Particularly discharges of fuel in cooling water
- NRC should be clear in the new plan where an abatement notice or infringement notice will be issued. Farmers want clarity on when they will be enforced. Current enforcement often seems ad hoc and inconsistent.
- The new regional plan needs to be easy to use, e.g. by using activity based rules. NRC should remember who the audience is.
- The new plan needs to be clear on when a public notification will be required.
- Rules should be risk based, e.g. by focussing on times of the year when certain activities like fertiliser application needs to be avoided or mitigated.
- Rules needs to be measurable and quantifiable
- Affordability is a big thing both in terms of measures to manage water quality and also in terms of losing a resource or impacts on international reputation and tourism.
- Need to improve water quality, but have to take into account willingness to pay and what community wants.
- Costs of improving water quality may be prohibitively expensive
- GIS mapping of riparian margins and fencing should happen.
- Rules should target the source of problems, generic controls may not work.

Wastewater discharges

- The current level of non-compliance is not acceptable. However, NRC should retain the current rules as generally they are robust.
- All wastewater overflows should be regulated by a controlled activity rule.
- Allow beneficial re-use of treated wastewater as a permitted discharge activity, e.g. for dust suppressant, irrigation. Currently rules impede this type of activity - needs a consent for every discharge location too costly
- NRC needs to monitor municipal wastewater discharges and prosecute when they are non-compliant
- NRC should require 5 year warrant of fitness’s for septic systems.

Stormwater discharges

- There is a lot of wriggle room in the current rules,
- Stormwater discharges to the CMA should be controlled
- Urban stormwater discharges should be a permitted activity with the requirement for good management practices. The rules should also be consistent across the CMA boundary.
- Retro fitting stormwater reticulation systems should be encouraged but not required

- Stormwater systems need to be maintained. If a system needs a resource consent it is important that the consent conditions require ongoing maintenance, particularly prior to heavy rainfall events.

Discharges of animal effluent, other agrichemical wastes, and fertilisers

- Animal effluent discharges should remain a permitted activity. This incentivises land disposal.
- Increase monitoring of animal effluent discharges.
- Animal effluent discharges should probably be a controlled activity. This would allow NRC to require best practicable options based on the farm system.
- NRC should require landowners to use industry guidelines, e.g. nutrient budgeting and soil sampling to allow targeted application of nutrients
- NRC should put in place nutrient loss rules that are based on the carrying capacity of the land, e.g. LUC.
- NRC should require industry good management practices to achieve nutrient loss limits.
- Intensification doesn't always lead to increased nutrient losses as they can be avoided and mitigated through technology and good management practices.
- NRC should align its animal effluent discharge rules with other regional councils.
- Nutrient management - GMP first, using advocacy etc., then rules imposed if there is no progress. NRC has done this with FWQIPs, with initial resistance, now well received.
- Forestry harvesting guidelines are a good example of how to show GMPs to operators. Attitude of council is important. Unnecessarily strict regime should be avoided in favour of advisory and promotion of GMPs
- The alternative to controlling outputs is controlling inputs, but such controls are hugely expensive and bureaucratic.
- Nutrient budgeting and accounting models are being developed and improved, e.g. “NGuru” and “Mitigator” identify critical source areas
- Overseer is good for determining trends but not for determining absolute numbers

Land disturbance activities (earthworks, vegetation clearance,. quarrying, livestock, land preparation)

- Pasture root structure is not sufficient for controlling erosion in prone areas
- Increase the use of floodplains as a means to reduce sediment loads from rivers. This means reducing flood banks.
- Instead of changing the threshold for the permitted activity rule for earthworks, require that people notify the council in advance of earthworks being undertaken. The compliance costs of lowering the rule threshold would be very high.
- The rules for forestry are generally ok
- Manage pugging with good management practices.
- Incentivise riparian planting.
- Earthworks rules should be area based, but should also consider slope.
- Erosion prone land - should review the definition in the Regional Water and Soil Plan. It probably does not capture all high risk areas.
- The permitted activity threshold for earthworks too permissive

- If cropping is an issue in the catchment that should be addressed through the regional plan.
- Allow flexibility around how stock are excluded e.g. it may not be necessary to be fence as there are other barriers.
- Land disturbance rules should be area based - limit areas exposed at any one time e.g. cut and cover (except roads/ quarries)
- How do you deal with sediment generation from roads given the political challenges around upgrading roads?
- Stopping small pulses of sediment may be a useful approach
- Wire is relatively cheap and fencing has benefits, e.g. avoiding animals falling into drains etc. It is better to do this sort of thing voluntarily rather than through a rule. Fonterra do a good job of managing the effects of farming on water.
- There are people operating outside the Sustainable Dairying: Water Accord. NRC needs rules for such people.
- Make the process easier for fill sites to be authorised. It is difficult to find places to take fill from roads and slips.
- Use the NES for Plantation Forestry - don't reinvent the wheel
- Combine and streamline regional and district council consenting processes for earthworks.
- Good management practices should be required to address sediment erosion.
- What are the practicable measures for controlling stream bank erosion?
- How do you implement/imbed good management practices for managing sediment in a regulatory framework?
- Permitted activity rules incur costs to ratepayers
- Should NRC being controlling mangroves to disperse sediment?

Other points

- Q. How does the workshop fit into the plan review and drafting process? A. It is the start of an engagement process. The purpose of the workshops is to test our draft findings, seek input, and show the council's commitment to working with stakeholders and the wider community.
- NRC monitoring budgets need to reflect what we are trying to achieve, i.e. NRC needs appropriate resources to monitoring its rules
- Recognise and ensure that NRC's rules do not hamper Treaty of Waitangi settlement developments.
- The council should consider including matauranga Maori - particularly for sites of cultural value – in its new regional plan.
- Lakes are important but it would be a shame to see river water quality decline because resources are going into lakes restoration.