QUEENSTOWN LAKES DISTRICT COUNCIL

# Minutes of Meeting

Kingston HIF WW Discharge Consent Application

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| Subject | Kingston Community Association submission on wastewater discharge consent | Page | 1 |
| Venue | Kingston Golf Club – Gloucester Street | Time | 6:30pm |
| Invited Participants | **QLDC:** Tim Court-Patience (TCP), Joel Steven (JS), Ulrich Glasner (UG), Penny Clark (PC)<br>**KCA:** Steve Osborne (SO), Hanna Golata (HG), Athol Elliott (AE)<br>**LEI:** Brian Ellwood (BE)<br>**BOFFA MISKELL:** Ralph Henderson (RH)<br>**MEMBER OF PARLIAMENT:** Joseph Mooney (JM) | | |
| Apologies | | | |
| File/Ref No. | Kingston HIF Schemes: Bundle 18/19 | Date | 24-November-21 |
| Distribution | As above | | |

Note: amended minutes in red following review by KCA

| ITEM | DESCRIPTION | ACTIONS |
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| **1** | **Introduction and Overview** | |
| 1.1 | Attached to these minutes is the powerpoint presentation referred to throughout the meeting. This details responses to KCA concerns that were raised in their submission on the wastewater discharge consent (RM20.164). Additional information discussed is contained within these minutes. | N/A |
| 1.2 | SO noted two main concerns:<br>• Current state of the environment appears to be degraded/degrading, and the discharge consent does not detail how application will improve the current state; specifically in the shorter term before the existing township septic tanks are removed. Application appears to only offset (nitrogen specifically), rather than improve.<br>*General discussion about the requirements of the current regulatory framework i.e. RMA, Regional Plan Water, NPS FM. Noted that the application demonstrates an improvement to the environment in the ultimate scenario (removal of septic tanks) for nitrogen; but that interim stages is more of a nitrogen offset from existing land use (stock, crops) to new dwellings.*<br>*Condition 30 also provides the consent authority with the ability to review conditions of the consent; specifically noting changes to standards, regulations and/or policy statements*<br>*The application and the wider wastewater treatment design balances investment with other outcomes.* | N/A |

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| | • The current QLDC Ten Year Plan does not include connection of existing Kingston properties to WW network. So how does this application address the scenario where the existing community is all still on septic tanks and the new development is completed?<br>*Condition 11 of the consent application protects the environment from this scenario by restricting further development beyond ~400 dwellings until the existing septic tanks are decommissioned.* | |
| 1.3 | SO: "Why don't we wait until the 3 water entities are in place and can fund the project?"<br>*Discussion about the details of the three waters reform to regulation and delivery still being unclear and we are working within the current mandate for the project and within the current regulations/standards/policies. Also noted the project costs will continue to increase. Project is ready and has funding to get underway now; noting this funding is for the treatment plant and trunk infrastructure only and not connection of the existing township. Remembering that condition 30 also provides review opportunity to the consent conditions following three waters reform details coming into effect.* | N/A |
| **2** | **KCA Concerns** | |
| 2.1 | KCA Concern 1:<br>• Insufficient data on the receiving environment<br>Discussed the issue with taking surface water samples in mixing zones and close to the lake shore such as duck faeces giving higher concentration readings; but generally agreed that many years of community testing of creeks and bores (water sources), and regularly finding above safe drinking levels of E.coli and varying levels of nitrates that the results, were in line with what is widely known that the creeks and lake shore are in poor condition. SO clarified in the meeting that QLDC have "unsafe to drink" water signs inside the building they supply water to in Kingston via a QLDC owned bore. Discussion about contributors likely being farming practices and domestic septic systems. Comment from BE that the water is only unsafe due to bacterial contamination (ec.coli) and nitrate levels are below safe drinking water standards.<br>*Noted that there is currently more than 5 years data for the established FMU for the area that is compliant. The FMU is in Lake Wakitipu, not in Kingston. Noted the FMU in lake Wakatipu is a deep water column monitoring point in Queenstown. KCA do not believe this gives a good guide on the condition of Kingston's creeks and lake shore. Discussed requirements for FMU locations and that Kingston beach samples attained are not an applicable place to apply Schedule 15.* NPS-FM Policy and RPW Schedule 15 comparisons discussed.<br>*Noted the lake quality results recorded (13 October 2020) TN values ranging from 80 - 220 mg/m3. Two of the three lake sites (SW10 & 11) are over RPW schedule 15 limits (refer to table on page 24 of the Aquatic Ecology Assessment). However, lake limits only apply to formal FMU sites and one-* | N/A |

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| | *off measures aren't appropriate for determining limit compliance. So, although the TN levels recorded are higher than those in the lake in general (at FMU site in Queenstown), this is likely due to local inputs of nutrients as samples collected in the mixing zone. Therefore, it can be expected that if Kingston Bay had an FMU sampling site (open water column), the overall water quality regarding nitrogen is expected to be achieved in Lake Wakatipu at Kingston. Two of the Kingston creek samples also show nitrate concentrations just above schedule 15 limits. However, once again one-off samples aren't sufficient for determining compliance.*<br>*Noted that 12 months of water quality data (lake shore and creeks included) is required prior to commissioning the treatment plant then ongoing monitoring throughout the duration of the consent.* | |
| 2.2 | KCA Concern 2:<br>• Modelling software (overseer) for nitrogen loss is inappropriate as a standalone measure (for nitrogen fluxes)<br>*BE noted that mass balance calculations were also completed, and that field testing will be undertaken throughout commissioning to confirm expected results.* | N/A |
| 2.3 | KCA Concern 3:<br>• Concern about contingency measures being reactive<br>• Comment on free side effects on environment<br>*KCA concerned that the period between the monitoring results being received and implementation of the mitigating factors means there is a chance the consent conditions could be exceeded before having to remedied.*<br>*Discussion about the philosophy of the full wastewater treatment train and staging. The WWTP and LTA is being constructed in stages with multiple mitigation measures in place to meet the proposed consent conditions (specifically nitrogen loading 450kgN/ha/year. These include:*<br>- *4 stages of wastewater treatment plant. These stages represent multiple opportunities for treatment adjustments and commissioning periods to ensure sizing of the LTA is sufficient.*<br>- *Each stage of the LTA has minimum sizing requirements that are larger than the loading requirements of the treatment effluent. Provides for commissioning adjustments, operator flexibility in irrigation, contingency during periods of higher concentration, switch off zones for maintenance etc. The ultimate design (1,175 dwellings) requires 15 hectares to be operational (on average) to meet demand/loading condition (nutrient, hydraulic etc). So the staging, monitoring conditions (at plant and in environment), and large command areas provides multiple layers of protection and opportunities to test performance; while growth in the township occurs.*<br>- *Further discussion about the monitoring conditions (monthly at the plant for concentrations and quarterly* | N/A |

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| | *during cropping for leaching). The condition of 450 kgN/ha/year is important to note that it's per year. So QLDC and their operator test the plant monthly and test the crop quarterly; all to aid in ensure the level of treatment and discharge leaching is as expected to meet consent conditions. If during the first quarter, the concentration and/or nutrient leaching is deemed to be above expected and putting the 450kgN/ha/year limit at risk; then additional treatment measures would be triggered (larger LTA, treatment effectiveness at plant etc). And as noted above, the LTA would be sized based on data collected during commissioning and the oversized for every stage of implementation (meaning fast ability to bring more area online). Also, discussion of constructor/operator contract in place the specifically require the consent conditions to be met.* | |
| 2.4 | KCA Concern 4:<br>• Why is nitrogen not treated to 10mg/l at the wastewater plant.<br>*Discussion and comparisons made to other treatment plants in the region. Wanaka and Queenstown treat to ~10mg/l but discharge effluent directly to ground; whereas Kingston's cut and carry cropping regime provides additional nutrient removal capability (approximate concentration at root zone is 7mg/l). Noted this consent is similar to the new Cardrona treatment facility.*<br>*Note we could treat the effluent further at the plant (to drinking water standard if was required) but this has other effects i.e. cost, additional energy and emissions, higher sludge generation etc. Again, we are balancing appropriate investment and outcomes while stay allowing for future improvements if deemed necessary.* | N/A |
| 2.5 | KCA Concern 5:<br>• Ensure existing township connection to prevent worse case nitrogen leaching scenario i.e. 750 new houses connected to WWTP and existing township still on septic tanks.<br>*Discussed condition 11, which allows for approximately 400 new houses (with mechanical treatment) before existing township must begin to be connected.*<br>*SO requested a consent condition about connecting township. Noted such a condition is outside of QLDC control for this type of application and that ORC have jurisdiction for the management/control of existing septic tanks within Kingston. However, QLDC have gone as far as limiting their ability to develop houses beyond a certain limit to ensure protection of the existing environment from increased effects; and have reserved capacity for the existing township in the treatment facility.* | N/A |
| 2.6 | KCA Concern 6:<br>• Soil temperature comparison to Cromwell<br>*Discussed similarities in soil temperature from NIWA data. Noted that even at the top of the ranges surrounding* | N/A |

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| | *Kingston soil temperature at 100mm below surface is not below 0 on average. Drippers will be installed at 200mm and considered very unlikely to freeze at these depths. If they do freeze water will flow into calamity pond until thawed and ready to apply again.*<br>*Confident with design that 12 ton/year is an achievable goal for growth and harvest of lucerne. Again, provisions in place to protect increase the nutrient loading limits..* | |
| 2.7 | KCA Concern 7:<br>• Winter vs summer loading<br>• Permanent residents vs holiday population and impacts on discharge<br>*Loadings are averaged and must always meet 450 kgN/ha/year. If loading is higher than average (testing monthly at plant and quarterly for cropping) the next stage of the WWTP can be commissioned earlier or more zones of LTA used.*<br>*Discussion about how ground water in winter would likely carry more leaching of nitrogen (as wet and cold) entering the much closer surface water bodies such as the unnamed tributary to the North of the LTA and the unnamed creek that runs through the golf course. BE response that if* there is higher drainage due to rainfall, this can increase the mass leached, but will reduce the concentration, which will reduce effects on surface water streams. *Also, noted that higher leaching in winter was modelled (refer RFI #2 response) and considered for the environmental effects. If hydraulic loading is exceeded in winter, LTA can be increased. There is a large duration for groundwater travel to the lake (150-1500 days), which will also manage any short term fluctuations in concentrations; but consent conditions would still have to be meet i.e. for the year.*<br>*Permanent resident populations i.e. 3 people per house per day is actually more aligned with the modelling assumptions.* | N/A |
| 2.8 | KCA Concern 8:<br>• Climate data set (1981 to 2010 instead of 1991 – 2020)<br>*Updated models for latest climate data and nitrogen leaching has reduced as a result.* | N/A |
| 2.9 | KCA Concern 9:<br>• Wastewater contributors i.e. school, employments, gas station, garage etc.<br>*QLDC will manage the outflow from these areas. Everything expected to be domestic i.e. no industrial areas that have higher concentrations. Areas of minor commercial activities are averaged with the influent for a largely domestic contribution.* | N/A |
| 2.10 | KCA Concern 10:<br>• Lot numbers and proposed staging (alignment of consented lot development and plant staging) | N/A |

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| | *Noted that requirements of nitrogen loading do not change throughout WWTP stages. Only treatment at the plant will change. Staging of wastewater treatment solution and consented number of lots are not interdependent. Flexibility is provided whilst maintained the consent loading requirements.* | |
| 2.11 | KCA Concern 11:<br>• Willingness of homeowners to connect and impact on consent<br>*Discussed that QLDC's goal is to connect existing community. Condition 11 shows willingness for QLDC to connect existing township as well the ensuring capacity in the treatment plant design. Discussed cost but noted that discharge consent is required to finalise design and cost. Noted that connection of existing township to wastewater scheme is not in QLDC's current ten year plan (2021-31).*<br>*Also noted that Otago Regional Council also has a role to play in the existing community connection i.e. stop permitted installation of private septic systems; requirements for monitoring and compliance of septic systems etc.* | N/A |
| 2.12 | KCA Concern 13:<br>• Location alternatives<br>*Briefly discussed and noted location chosen due to distance from town, agreement with landowner, depth of groundwater, limited surface water connections etc.* | N/A |
| **3** | **Close Out and Actions** | |
| 3.1 | *KCA to consider the discussions at this meeting and review their submission status, identifying areas of resolution and any remaining areas of concern/interest.*<br>*SO noted he is much more comfortable with the proposed system and that many of KCA's submission concerns had been address and that the proposal won't make the environment worse. Proposed a "neutral" position rather than "opposed".*<br>*However, SO reiterated concerns about not improving the existing environment (at least while the existing community is not connected) and would still wish to have this considered in decision making.* | KCA review submission items and finalise areas of residue concern/query.<br>TCP to confirm next steps i.e. how to respond to ORC with outcomes of this meeting. |
| 3.2 | SO – Noted several community members source drinking water from the creek. Wondered what we are/can doing/do in the interim (before WTP built and existing township not connected to WWTP) to inform safe drinking? i.e. people taking water from the creek.<br>*Agreed to update consent conditions to include the requirement to provide monitoring information to KCA as well as QLDC. Noted that KCA may request QLDC to send someone out to the community to explain monitoring information.* | BE/RH – update consent condition. TCP to send through with minutes and powerpoint. |
| 3.2 | KCA to provide feedback promptly after receiving agreed information to ensure consideration in ORC recommending report. | KCA – provide feedback |

Meeting ended 9:45PM